ENTER PRISE

Workplan for FY 2002-2003

Prepared for:
The ENTERPRISE Program

Prepared by:
Castle Rock Consultants

CASTLE ROCK

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Executive Summary

Program Overview

The ENTERPRISE Program is a pooled-fund with member agencies in the United States, Canada, and the Netherlands. Its main purpose is to use the pooled resources of its members, private sector partners and the United States federal government to develop, evaluate, and deploy Intelligent Transportation Systems (ITS).

As part of its mission, ENTERPRISE seeks to facilitate the sharing of technological and institutional experiences gained from its ITS projects, and the projects of its individual members.

Mission

By sharing funding, resources, and risks, ENTERPRISE provides a forum for multi-agency international and public-private initiatives to conduct member-supported research, development, and demonstration activities to advance innovative solutions that improve the quality of transportation service.

Ongoing Projects

ENTERPRISE currently has **three** ongoing projects, as follows:

1. **Evaluating The Benefits Of Technology Applications For Rural Transit Providers** will measure the costs and benefits of advanced technology in rural transit. It will also evaluate the effectiveness of a new cellular location technology called Radio Camera.

2. **ATIS Internet Guidelines** will promote the recommendations developed in the ongoing Internet Applications project's recommendations at the national level.

3. **Integrating NTCIP Compliant Hardware (INCH) 3** will continue efforts of earlier INCH projects to develop paper tools for CCTV Procurement, provide on-site testing services, develop user-friendly test software, and train Users on the Test Software.

New Projects

The Enterprise Board has approved **three** new projects for funding during the FY 2002-2003 period, as follows:

1. **VMS and HAR Usage During Non-incident Conditions** will provide a document useful to agencies responsible for operating Variable Message Signs (VMS) and Highway Advisory Radio (HAR), illustrating how agencies operate these motorist information devices during non-incident conditions. The document will summarize the current state-of-the-practice.

2. **Transportation Management Plan and ITS Implementation During Mass Evacuation** will assist the states in the development of effective transportation management plans for mass evacuation events by providing guidance on the application of ITS technologies and procedures.

3. **Sponsorship: Leveraging Successes in Gas/Food/Lodging Sign Sponsorship for ITS Traveler Information Systems** will build upon the results of the Oregon Traveler Information Council sponsorship project for gas/food/lodging signs and take the sponsorship project to the next level by reviewing the potential for sponsorship of advanced traveler information systems (i.e. 511 traveler information, Low Power FM, and Internet web sites).

Chapter 1—Program Overview

The ENTERPRISE Program represents a forum for collaborative ITS research, development, and deployment ventures reflecting the interests of governmental entities and industrial groups. This forum also facilitates the sharing of technological and institutional experiences gained from individual ITS projects conceived and initiated by each participating entity.

ENTERPRISE is a group of states and provinces joined by the mechanism of a pooled-fund program. The intent is to use the pooled fund to support jointly-sponsored ITS projects of shared interest. These projects form the annual ENTERPRISE workplan.

The scope of the ENTERPRISE Program promotes North American ITS development, reflecting the active involvement of U.S. and Canadian member agencies. ENTERPRISE also seeks to take advantage of technologies being developed outside North America. ENTERPRISE's European member is the Dutch Ministry of Transport, Rijkswaterstaat.

Goals & Objectives

The vision for the ENTERPRISE Program is **to be a recognized leader in delivering proven, useful, solutions to the transportation community**. To achieve this vision, ENTERPRISE members have developed the following mission statement to guide the program's activities: By sharing funding, resources, and risks, provide a forum for multi-agency international and public-private initiatives to conduct member-supported research, development, and demonstration activities to advance innovative solutions that improve the quality of transportation service.

Vision Statement:

"To be a recognized leader in delivering proven, useful, solutions to the transportation community"

The goals for ENTERPRISE aim to define areas of benefit that the group intends to pursue. ENTERPRISE goals include the following:

- Increase highway safety;
- Reduce highway congestion;
- Increase highway efficiency;

- Reduce environmental impacts of travel;
- Increase comfort and convenience of travel; and
- Support research and development of promising advanced technologies for use in solving transportation problems.

The ENTERPRISE objectives cite activities or areas of work that will support realization of the above goals. General objectives for ENTERPRISE include:

- Support the individual ITS program plans of ENTERPRISE participants;
- Provide a mechanism to support multi-state and international project cooperation and technical information interchange;
- Facilitate the formation of public-private partnerships for appropriate program activities;
- Pursue emerging ITS project opportunities in areas of interest to the group;
- Provide test beds in a variety of environments and locations for emerging ITS technologies; and
- Identify common needs within the group and proceed with appropriate technical activities.

Program Participants

As of September 2002 the following transportation agencies are represented on ENTERPRISE's Executive Board with full voting rights:

- Arizona Department of Transportation (ADOT)
- Colorado Department of Transportation (CDOT)
- Dutch Ministry of Transport, Rijkswaterstaat
- Federal Highway Administration (FHWA)
- Iowa Department of Transportation (IADOT)
- Kansas Department of Transportation (KDOT)
- Ministry of Transportation of Ontario (MTO)
- Minnesota Department of Transportation (Mn/DOT)
- New Mexico State Highway and Transportation Department (NMSHTD)
- Transport Canada
- Virginia Department of Transportation (VDOT)

- Washington State Department of Transportation (WSDOT)

The Maricopa County, Arizona Department of Transportation (MCDOT) is the first local government to participate in ENTERPRISE. MCDOT participates through ADOT and is not a full voting member. There are other agencies from North America and overseas that continue to follow ENTERPRISE's activities. However, only those organizations listed above are members of the program's Executive Board.

Program Structure

The ENTERPRISE organizational structure is arranged to maximize the group's ability to meet its objectives and to minimize bureaucratic impediments that sometimes result from the management of a large group. The figure below shows the organizational structure of ENTERPRISE.
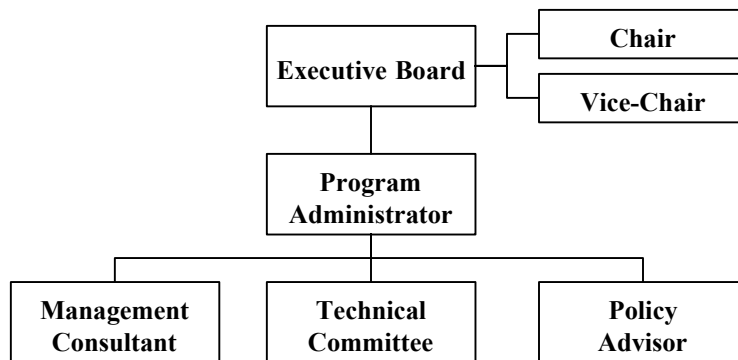
Figure 1: Organizational Structure

Executive Board

The Executive Board consists of one voting representative from each active member agency. All of ENTERPRISE's operating authority derives from the Executive Board. It is responsible for overall policy direction and budget approval as well as for organizing itself, establishing operating rules and conducting other business. The Board gave voting membership to the two federal agencies in ENTERPRISE: FHWA and Transport Canada. FHWA, however, does not vote on matters involving the expenditure of federal funds over which it has approval authority, such as State Planning and Research (SP&R) funds.

Program Chairs

The Program Chair serves as the head of the Executive Board for a two-year period. The duties of the Chair include developing meeting agendas, chairing meetings, and representing ENTERPRISE in discussions with other organizations.

The Program Vice Chair is elected by vote of the Executive Board and also serves this position for a two-year period. The Vice Chair is responsible for supporting the Chair, including temporarily assuming the duties of the Chair during periods of absence. The vice chair ultimately assumes the position of chair by vote after the chair serves his or her two year term.

At the September 2002 meeting, Manny Agah was elected Chair of the Enterprise Board and Job Klijnhout was elected Vice Chair. The new Chair and Vice Chair were formalized at the April 2002 meeting.

Chair
Mr. Manny Agah, P.E.
Arizona Department of Transportation
2302 West Durango Street
Mail Drop PM02
Pheonix, Arizona 85009-6452
(602) 712-7640
magah@dot.state.az.us

Vice Chair
Mr. Job Klijnhout
Rijkswaterstaat, Dutch Ministry of Transportation
Boompjes 200 PO Box 1031, 3000 BA, Rotterdam, The Netherlands
jj.klijnhout@avv.rws.minvenw.nl

Program Administrator

The Program Administrator operates under delegated authority from the Executive Board and is responsible for day-to-day management of ENTERPRISE. The administrator is an employee from the lead administrative state that controls expenditures from the program's pooled funds. The Program Administrator is responsible for contract administration. The Administrator is also responsible for quality control and evaluation, recommendations on contract preparation, change order requests, authorizing payments, and for informing the Executive Board of all contract progress. Finally, the Administrator is responsible for administering the ENTERPRISE management budget and approving all travel authorizations.

Program Administrator
Mr. John Whited
Iowa Department of Transportation
800 Lincoln Way

Ames, Iowa 50010
(515) 239-1411
jwhitec@dot.state.ia.us

Technical Committees

ENTERPRISE Technical Committees are established to study, in detail, those areas of group interest identified by the Executive Board. Potential committee activities include problem definition, analysis of alternative approaches, RFP development, project selection recommendations, project oversight, and future program planning. Voting authority on the technical committees is limited to Executive Board member agencies. This authority may be given to an agency's full Board member or a designated representative.

Management Consultant

The role of the Management Consultant is to provide general and specific support to the Chair, Program Administrator, and program participants on an ongoing basis. These duties may range from preparing meeting agenda and minutes to coordinating complex technical studies and activities.

<u>Management Consultant</u>
Mr. Dan McCreery
Castle Rock Consultants
100 Arapahoe Ave., Suite #9
Boulder, Colorado 80302
(303) 444-4391
mccreery@crc-corp.com

Project Definition

The following three approaches discuss how ENTERPRISE defines and develops projects:

1. Review of state and provincial plans

On an ongoing basis, the Management Consultant remains apprised of the activities, interests, and state/provincial ITS plans of the ENTERPRISE members. The Management Consultant identifies common themes among program participants, which can be used as guidelines by others in preparing project outlines. These common themes may be used as the basis for developing further project outlines for group consideration.

2. Proposals by ENTERPRISE members

ENTERPRISE members propose projects that are developed through discussions with colleagues in the participants' state/provincial transportation agencies. Although proposed projects may initially reflect the interests of the proposing state or province, it is in their best interest to suggest activities with broad group appeal. This increases the chances of support by other Executive Board members. To facilitate this, a summary of identified areas of common interest is prepared and distributed to the members by the Management Consultant.

In many cases, the specific interest of a member is expanded into a project that incorporates the interests of other members.

3. FHWA & Transport Canada

ENTERPRISE offers its services to FHWA and Transport Canada for the coordination of appropriate ITS activities that address national and North American interests. These activities could include projects that might otherwise be performed by individual agencies, but are more ideally suited for delegation to ENTERPRISE because it represents a broad spectrum of ITS stakeholders.

Project Selection

In general, ENTERPRISE projects are considered on an annual basis. This supports development of an annual workplan with a consistent schedule. However, if a member identifies a project that offers significant immediate benefits or takes advantage of short-term opportunities, the member may suggest it to the group for early consideration. The group can then choose to accept such projects for fast-tracked initiation, reject them, or delay a decision until the start of the normal workplan development process.

Selection Process

Project outlines, no more than two pages long, are submitted to the members, who use them to narrow down activities for the coming fiscal year. ENTERPRISE then convenes a meeting, if necessary, to discuss and select projects. Telephone, Internet or facsimile polling is also an option. At this time, the members narrow down the number of projects for further consideration. These projects form the initial basis of the annual workplan.

The projects still under consideration are elaborated into more detailed work scopes. Based on these detailed work scopes, the members select those projects that, based on funding and other considerations, are undertaken by ENTERPRISE.

Following project selection, the work scopes are refined based on previous discussions and are prepared for final vote and approval. Once approved, the work scopes are included in the annual workplan and submitted to FHWA as an indication of ENTERPRISE's plans for the coming year.

For the projects in the annual workplan, Requests For Proposals (RFP) and other contract documents are developed and mailed to prospective bidders. The Program Administrator reviews proposals and determines compliance. All compliant proposals are mailed to the appropriate ENTERPRISE committee members. Evaluation criteria are used by the members to facilitate the proposal selection process. The evaluation criteria are developed to match each study and are included in the appropriate RFP. Members use rankings based on these criteria to identify a short-list of preferred proposals. Short-listed teams give presentations, upon which ENTERPRISE members make final selections.

Since ENTERPRISE's legal authority to solicit proposals and award contracts lies with the lead state, the lead state's procurement process takes precedence over ENTERPRISE's Charter and Operating Rules when soliciting for and awarding contracts.

Each U.S. State DOT's procurement procedures are approved by the Federal Highway Administration. Under the procurement rules of the current lead state Iowa, solicitation lists produced by other American states may be used to award contracts for the state of Iowa provided that the award is within the soliciting state's scope of work.

Selection Criteria

The selection process is designed to quantify the relative importance and value of proposed initiatives based on the group's requirements. Each member ranks each proposed project and the most useful projects are chosen for inclusion in the annual workplan.

The six selection criteria used to assess individual projects are as follows:

1) **Value and sustainability of results and efforts (0–25 points)**—This is the most important criterion because it rates the value and usefulness of the project.

2) **Suitability to ENTERPRISE (0–20 points)**—This criterion is meant to determine whether or not this is an appropriate project for ENTERPRISE to pursue based on its goals and objectives and consistency with group needs.

3) **Project feasibility (0–15 points)**—Will the project, if implemented, help multiple entities to deploy ITS products and services?

4) **Validity of approach (0–15 points)**—Is the methodology logical and does it include all of the proper elements for a complete project?

5) **Cost realism (0–15 points)**—Does the anticipated cost for the proposed project seem reasonable and appropriate to ENTERPRISE?

6) **Timeliness of project (0–10 points)**—To what degree is the proposed project timely to the ENTERPRISE consortium? Is it appropriate to be undertaken at this time?

Once the individual agencies rank the proposed projects, the Program Administrator assimilates the information, and identifies the contenders by their rankings.

When the final project descriptions have been expanded into work scopes, they go through a final ranking process by the Board. While five or six projects may be included in the annual workplan they do not necessarily receive full or even partial funding. The Board attempts to fully fund the highest ranked projects. If there are additional funds, the Board allocates them to the remaining projects. This allocation is normally based on a project's ranking and its need for initial seed money to further develop and expand the concept and scope.

Each agency is afforded the opportunity to choose not to participate in a project. This decision means that the non-participating agency does not take part or fund an effort with which other agencies may choose to proceed. The lack of allocation of funding by any one agency does not prevent projects from being undertaken if they are considered important enough, and sufficiently highly ranked, by the other participants.

Workplan Development Schedule

The 2002-2003 Workplan was developed based on the process described above. New project proposals were distributed to all Board members in

for their review. A conference call followed that allowed members to ask questions of the proposer about each project idea. Board members submitted their evaluations of the projects (i.e., scoring sheets) to the management consultant. At this time, board members indicated their willingness to "champion" the different project proposals. Based on the review and feedback received from all Board members, a draft version of the project scopes was developed and distributed to all members. The final comments and revisions were incorporated by the management consultant team, and the final Workplan for 2002-2003 was submitted to FHWA for review.

Project Management

Technical Committees serve to manage projects from a technical perspective. The Management Consultant provides technical support to the committees on an as-needed basis. The Program Administrator serves as the contract manager and is responsible for all specific and performance-related contract compliance.

CHAPTER 2—ONGOING PROJECTS

Overview

This chapter summarizes the Enterprise projects that are currently ongoing. These projects have been approved by the Enterprise Board for implementation during previous years. A brief description and status is provided for each of the projects currently ongoing. The next chapter provides a description of the new projects that have been approved for the FY2002-2003 period.

The following projects are ongoing:

- Project #1: Evaluating the Benefits of Technology Applications for Rural Transit Providers
- Project #2: ATIS Internet Guidelines
- Project #3: Integrating NTCIP Compliant Hardware (INCH) 3

Project #1: Evaluating the Benefits of Technology Applications for Rural Transit Providers

1. Project Background

Rural areas that have small transit agencies covering large geographical areas can greatly increase their operational efficiencies through the use of advanced technologies. Potential technologies to be applied include automated vehicle location (AVL), computer aided dispatch (CAD), mobile data terminals (MDT), advanced traveler information systems (ATIS), and different communications backbones. KDOT's goal is to have a model deployment of these technologies within a rural transit providers system and quantify the benefits of such technology uses. This system can then be used as a showcase for other transit providers who are concerned with the capital costs of technology, but are uncertain of the benefits they will receive in return.

2. Project Summary

KDOT has two rural transit providers who are willing to act as test beds for technology applications. One uses a radio system as its communications backbone and the other uses cellular communications. Both of these transit providers transport the elderly and disabled along with other users. KDOT is considering the funding of advanced technologies for rural transit providers and the money requested of Enterprise will be used to quantify the benefits of the technology. Potential measures of effectiveness include system costs, maintenance costs, usage by drivers, usage by dispatchers, communication costs/savings, training needs, customer satisfaction, safety aspects, and cost savings on vehicle purchases.

3. Goals and Objectives

The goal of this project is to provide a means of evaluating the costs and benefits of advanced technologies applied to rural transit systems either 800 MHZ or Cellular location technology.

- The project seeks to achieve these goals through the following four objectives.
- To document the technologies used.
- To identify the costs associated with implementing those technologies;
- To identify the benefits (both perceived and quantifiable) of the technologies; and
- To assess how the results can be used.

4. Anticipated Activities

The work to be completed as part of this project is as follows:

Task 1 - Literature Search
A thorough literature search on costs and benefits associated with rural transit technologies will be conducted. The findings in these studies will serve as benchmarks for the KDOT study.

Task 2 - Cost Analysis
Lifecycle cost data will be collected throughout the project. This data will include capital expenses, personnel, maintenance, and operations costs. Once a steady stream O&M costs are established these on-going costs can be projected beyond the duration of this study to estimate full lifecycle costs.

Task 3 - Benefits Analysis
Once the system is operational, the full range of benefits will be quantified. Potential benefits to be examined will include operational cost savings, improved performance (e.g., on-time), increased revenue (if applicable), improved customer satisfaction, improved employee satisfaction, and enhanced safety and security.

Task 4 - Final Report
The findings of Tasks 1, 2, & 3 will be documented in a final report. The report will also note what technologies were easiest to implement, which technologies had the greatest benefit/cost ratio, deployment lessons learned, and how the system can be used as a showcase for other transit providers.

5. Deliverables

The following products will be delivered from this project:

- A report that can be used by transit providers, state DOT's, cities and counties to justify the implementation of advanced technology into their transit systems;
- An evaluation of the Radio Camera technology as it is applied to fleet AVL systems; and
- Updates and public presentations by the project monitor to local and national audiences.

6. Schedule

This project began in September of 2001 and will last approximately 24 months.

7. Budget

The project tasks will be performed in conjunction with the model transit technology deployment. Funding needs for the benefit cost evaluation will be $20,000 over a period of 24 months. (Funding needs for the technology deployment is estimated at $200,000, however that will be paid through other sources.) The $20,000 for the cost/benefit analysis is being requested from ENTERPRISE and will be used as follows:

Task		TOTAL
Task 1	Literature Search	$4,000
Task 2	Cost Analysis	$6,000
Task 3	Benefits Analysis	$6,000
Task 4	Final Report	$4,000
TOTAL		**$20,000**

8. Project Participants

The following agencies are participating in the Rural Transit Technologies project:

- Kansas Department of Transportation;
- Other interested ENTERPRISE members; and
- A consultant to be determined.

9. Project Contact

Karen Gilbertson (replacing Matt Volz, P.E.)
Intelligent Transportation Systems (ITS) Coordinator
Bureau of Transportation Planning
Docking State Office Building, Room 830
Topeka, KS 66612
(785) 296-3387
Fax: (785) 296-8168
kareng@ksdot.org

Project # 2: ATIS Promoting Common Specifications For ITS Internet Applications

1. Project Background

In the past ten years, use of the Internet has grown exponentially. For travelers, a variety of information sources are available. They can collect driving instructions, weather and road conditions, maps and tourism information from a set of sources that grows every day with new public and private sector agencies offering traveler information.

One issuing facing the traveler is the increasing difficulty of efficiently collecting and easily interpreting information that comes from many independent sources. Because the sites are independently developed, each reflects the preferences of different designers and Internet developers. The result is different site characteristics that may make gathering information more difficult than necessary, including:

- The emphasis of each site may be different, such as tourism, promotion of local facilities, safety, road and weather information;
- The "look and feel" of the each site is relatively unique (e.g., different icons and navigation controls); and
- There are no logical links to sites for adjacent jurisdictions making cross boundary navigation difficult.

These problems will increase in severity as more sites come on-line, and as the availability of remote and personal 'Internet' style applications, such as personal digital assistants and cellular phones with wireless Internet, increases.

2. Project Summary

ENTERPRISE has always demonstrated a strong interest in leading the development of traveler information systems standards. Early work on ITIS formed the basis of an ongoing role on the SAE ATIS Standards Committee (Stephen Erwin representing ENTERPRISE and AASHTO).

The ENTEPRISE project (Internet Applications) has addressed the consistency and navigation issues by identifying and recommending Internet common specifications. Specifically, this project:

- Identifies the needs and uses of various jurisdictions in presenting and exchanging information through the Internet;
- Develops an open architecture that defines the interaction and linking of Internet information dissemination tools developed by different jurisdictions; and

- Established guidelines for data exchange over the Internet in a variety of formats including graphical, tabular and text.

The Internet Applications project, however, stopped short of the mark. In order for the results of the project to be successful they must be accepted by the developers of ITS Internet applications (public sector jurisdictions and private information service providers (ISP)) and to the Standards Development Organizations (SDO).

Only through their acceptance can a common format for data exchange and display on the Internet be achieved. The commercial information providers are very much interested in this standardization. They seek ways to be able to collect and share information more easily. Through common specifications, the public sector will also be able to more easily disseminate information. Common specifications will allow for wider dissemination, and more users who will be able to interpret and process data.

This project promotes the common specification recommendations developed in the ongoing ITS Internet Applications project. It attempts to build consensus and support among key public and private sector ITS Internet developers.

3. Goals and Objectives

The goal of this project is ***to create an environment for developing and using common specifications for ITS Internet applications.***

The project will achieve this goal through the following objectives:

- Promote common specifications to the public and private sector traveler information service providers;
- Raise national and international awareness concerning the needs for ITS Internet application standards; and
- Put the Internet Application project's recommendations into use so they may be validated and expanded.

4. Workplan

The goal of ATIS Internet Guidelines Demonstration and Outreach will be accomplished through three tasks. These tasks include development of a demonstration web site, promoting common specification to SDOs and involving Internet developers in the process of defining common specifications.

Task 1 - Update the Demonstration Web site
The consultant will use the existing www.travelerinformation.com web site as a demonstration web site. They will develop sample web pages that follow the common specifications recommended during the ITS Internet Applications project. The sample pages will provide a wide range of examples of text, graphical icons, mapping and tabular information. They will demonstrate applications for rural and urban areas, as well as various weather conditions.

The demonstration web site will also include creating functional, organizational and logical navigational tools for developing and linking related web sites and those for geographically adjoining areas.

The site will be intended as an example for Internet developers. It will also serve as a point of discussion, helping developers identify problem areas and issues that may require further development of common specifications.

Task 2 - Involve Internet Developers
The consultant will host a workshop for both public and private sector agencies to discuss the needs for standardization and the existing common specifications. This workshop will follow the demonstration web site and use that site's examples as a starting point for discussion.

The workshop will also be used to disseminate proposed guidelines and provide support to Internet developers. At the end of the workshop, a letter to the appropriate SDOs will be drafted and the developers will sign it to express interest in the issue of ITS Internet standards being adopted and formally adopted by the SDOs.

Task 3 - Promote Common specification to SDOs
The consultant will try to involve the SDOs and make a presentation on behalf of ENTERPRISE if possible. The purpose of this presentation will be to have the SDOs consider incorporating ITS Internet standards into their work. The presentation will describe the current needs for common specifications, including examples of good and poor traveler information exchange on the Internet. It will also present the list of agencies interested in ITS Internet standards to the SDOs.

5. Deliverables

The Promotion of Common Specifications For ITS Internet Applications will deliver the following products:

- Updated Project Demonstration Web Site to include an example of weather information exchange, a Web site developer guidelines and tools and discussion groups for demonstrated topics;
- Annotated Traffic Management DTD;
- One (1) day Workshop Presentation and discussion guidelines and minutes from the workshop;
- A letter of interest to deliver to the appropriate SDOs;
- Submission of Traffic Management DTD to xml.org Data Registry;
- Two presentation to SDO's SAE and ITE including travel expenses; and
- Presentation Material.

6. Schedule/Status

The ATIS Internet Guidelines Demonstration and Outreach began in November of 2000 and has completed tasks one and two. DelCan Corporation will hold a brief workshop during the April 2002 ENTERPRISE meeting to discuss initial findings and ask for member feedback. The project is estimated to near completion by the end of fiscal year 2002.

7. Budget

The total cost for this project will be $57,000. The budget is described in the following table.

Task	Cost
1. Develop a demonstration web site	$12,000
2. Involve Internet developers	$30,000
3. Promote common specifications	$15,000
Total	**$57,000**

8. Project Participants

The following agencies will participate in this project:

- Ontario Ministry of Transportation;
- Other interested ENTERPRISE members; and
- DelCan Corporation.

9. Project Contact

Henry Wong, P.Eng. (replacing Stephen W. Erwin, P. Eng.)
Ministry of Transportation Ontario
Intelligent Transportation Systems Office
3rd Floor, Building 'B'
1201 Wilson Avenue
Downsview Ontario, CANADA M3M 1J8

(416) 235-3850
Fax: (416) 235-5224
Henry.wong@mto.gov.on.ca

Project #3: Integrating NTCIP Compliant Hardware (INCH) 3

1. Project Background

The NTCIP standards development effort started in 1992, and it continues with new standards, amendments, and updated standards. The development of these standards provides a major step towards the goals of interoperability and interchangeability of ITS systems.

The NTCIP documents are designed with many options in order to meet the varied needs of different projects. While this flexibility allows the standards to be referenced by many projects, each procurement specification must explicitly call out which options are required for the specific project. Additionally, the need to test for compliance to both NTCIP and non-NTCIP project requirements proves to be a continuous challenge.

In order to provide a reference implementation for NTCIP implementations, FHWA sponsored the development of the NTCIP Exerciser. The NTCIP Exerciser is a useful tool to test certain NTCIP implementations but it has some limitations:

- The NTCIP Exerciser does not support routable protocols (i.e., TCP/IP)
- The NTCIP Exerciser does not support Dynamic Objects.
- The NTCIP Exerciser software is not maintained, meaning that none of the clarifications and updates found in amendments and new NTCIP standards is considered.
- The NTCIP Exerciser has an interface that requires a great deal of NTCIP expertise but is cumbersome to use and provides little assistance for novices.

Currently, only very few NTCIP experts are available to provide this type of NTCIP-compliance testing, which results in:

- Dependency on very few NTCIP experts, and
- Delays in scheduling the services of these few NTCIP experts, which may result in project-delivery delays.

Some agencies have therefore gone the route of performing cursory tests or to believing equipment supplier's statements that they are NTCIP-compliant. This approach allows any interoperability problems to remain hidden until an existing system is extended (either with equipment from a different vendor or new models from the original vendors), which is one of the main reasons why rigorous ITS standards testing need to be performed with delivery of the first system.

As such, initiatives were executed by organizations such as the ENTERPRISE Consortium to develop test procedures and perform project requirements/NTCIP standards testing. The ENTERPRISE Consortium developed and made available a number of procurement scripts and test procedures that can be used to purchase and test dynamic message signs (DMS) and environmental sensor stations (ESS, also known as RWIS).

However, the availability of these tools is not sufficient to address the above-mentioned issues due to the complex nature of the tools. Thus, this will simplify the user interface for these tools. Without this simplification, every project will require extensive manual testing by an expert or risk non-interoperability. Naturally, this will result in numerous repetitions of efforts among agencies, even though this could be avoided. Additionally, a general approach by a group of state and local agencies as represented by both the ENTERPRISE Consortium and the I-95 Corridor Coalition will also leverage the combined buying power and will ultimately lead to reduction in purchasing costs.

2. Project Summary

This project is a public/private joint effort among the ENTERPRISE Consortium, the I-95 Corridor Coalition, FHWA, NEMA, and Trevilon.

This project also does not start from zero, since it leverages off previous ENTERPRISE and FHWA efforts. Additionally, the consultants' experiences in working with both organizations (ENTERPRISE and I-95 Corridor Coalition) in developing relevant material, which will be used as the starting point, will expedite the process and the progress of this project. The existing ENTERPRISE tools have already been proven to work satisfactorily but it is important to enhance these tools to

- Cover additional field devices,
- Provide a 'friendlier' interface to the newcomer to NTCIP to utilize the NTCIP Exerciser

3. Goals and Objectives

A series of tasks are developed to accomplish the objectives of this project. The following are key objectives of this scope of work.

- Develop Paper Tools for CCTV Procurement
- Provide On-Site Testing Services
- Develop User-Friendly Test Software
- Train Users on the Test Software

4. Anticipated Activities

The following tasks will be performed in this scope of work.

Task 1: Develop Paper Tools for CCTV Procurement

Several agencies have identified their interest in deploying NTCIP-compliant CCTV equipment now that this standard is completed. However, these agencies are acutely aware of the challenges of being among the first to deploy a standard and are requesting expert assistance in order to minimize problems encountered in this effort. There are two subtasks to this effort as described below.

Task 1.1 Develop CCTV Procurement Specifications

Previous INCH projects have produced guides for developing procurement specifications for NTCIP-compliant dynamic message signs (DMS) and environmental sensor stations (ESS). This task will extend this previous work by developing a similar guide for the procurement of closed-circuit television (CCTV) camera controllers. The task does not include any software development efforts to add this capability to the SpecWizard software.

Discussions at the August ENTERPRISE meeting in Burlington, VT, identified this as the highest priority item for the INCH III effort. It is expected that this work will be performed under the Federal Highway IQC support contract that has recently started.

Task 1.2: Develop Test Procedures for CCTV

Previous INCH projects have produced written test procedures detailing the precise steps that need to be taken in order to test DMS and ESS devices for compliance with the NTCIP requirements. This task will extend this previous work by developing similar test procedures for CCTV camera controllers.

This task was identified as the second highest INCH III priority at the Burlington, VT meeting and is similarly within the scope of the FHWA IQC project.

Task 2: Provide On-Site Testing Services

This task will include all work and costs required to perform on-site testing of one device for NTCIP compliance. The test will be conducted per the procedures of the current version of the relevant ENTERPRISE test procedures. It is expected that these tests will be required prior to the completion of the automated software tools to be developed in Task 3, although early versions of the software may be used to automate some tasks and test the development to date.

The project estimate is based on four distinct tests as follows:

(1) One test at an I-95 site of a DMS
(2) One test at an I-95 site of either an ESS or a CCTV controller
(3) One test at an ENTERPRISE site of a DMS
(4) One test at an ENTERPRISE site of either an ESS or a CCTV controller

Task 3: Develop User Friendly Test Software
In order to overcome the challenges related to testing NTCIP equipment, ENTERPRISE has expressed interest in funding the development of a series of front-end modules that will greatly simplify performing the ENTERPRISE test procedures for various devices.

This front-end user-interface will be designed to guide the NTCIP novice through an interview process to determine the user's needs and the device's proclaimed capabilities and will then use this information to test the project-specific requirements of the device and produce a project-specific summary report. This process will allow a user to quickly assess the conformance of a subject device while providing manufacturers with a detailed report summarizing the problems found.

The following subtasks identify the individual efforts required to develop the various components of this software while Annex A provides a more detailed discussion of the goals related to this software development effort as well as the architecture and maintenance for the software.

Task 3.1: DMS Wizard
The DMS Wizard will guide the user through the process of performing the ENTERPRISE Test Procedures for Dynamic Message Signs.

Task 3.1.1: Release Executable for DMS Wizard
The proposed lump-sum funding for this task will cover 50% of the expected costs of the wizard to automate testing of DMS devices. It will provide for the free distribution of this software; however, the source code will remain the property of Trevilon Corp, who will provide the other 50% of the funding.

As this will be the first wizard developed, this task will also include the development of the generic user interface that will bind all of the wizards together into a single software application.

Task 3.1.2: Testing the DMS Wizard
This task will fund the independent testing of the software developed in Task 3.1.1.

Task 3.1.3: Three Months Maintenance for the DMS Wizard
Three months of software maintenance will be provided. These maintenance activities will include correcting any bugs discovered through the independent testing as well as resolving bugs reported during this time frame.

Task 3.1.4: Release DMS Wizard Source Code
Due to the limited public funds available for this project, Trevilon Corp. has offered to provide partial funding for the development in exchange for owning the rights to the software code. Alternatively, a public source may

wish to fund this task and Task 3.1.3, in which case the rights will be placed in the public domain.

By investing in the software and receiving ownership, Trevilon becomes financially involved and has an incentive to maintain the software over time in exchange for the rights to charge for future updates. In return, the public agencies avoid having to make any financial commitment for the long-term maintenance of the software, but will be able to purchase updates when deemed appropriate.

Alternatively, a public agency may wish to fund the remaining development costs up front and thereby ensure that the software code is freely available, while also assuming the burden of developing a maintenance program in order to ensure that (1) any bugs can be resolved quickly and (2) the software is updated periodically to reflect revisions in the standards.

Task 3.2: ESS Wizard
The ESS Wizard will guide the user through the process of performing the ENTERPRISE Test Procedures for Environmental Sensor Stations.

Task 3.2.1: Release Executable for ESS Wizard
The proposed lump-sum funding for this task will cover 50% of the expected costs of the wizard to automate testing of ESS devices. It will provide for the free distribution of this software; however, the source code will remain the property of Trevilon Corp, who will provide the other 50% of the funding.

Task 3.2.2: Testing the ESS Wizard
This task will fund the independent testing of the software developed in Task 3.2.1.

Task 3.2.3: Three Months Maintenance for the DMS Wizard
Three months of software maintenance will be provided. These maintenance activities will include correcting any bugs discovered through the independent testing as well as resolving bugs reported during this time frame.

Task 3.2.4: Release ESS Wizard Source Code
Due to the limited public funds available for this project, Trevilon Corp. has offered to provide partial funding for the development in exchange for owning the rights to the software code. Alternatively, a public source may wish to fund this task and Task 3.2.3, in which case the rights will be placed in the public domain.

Task 3.3: CCTV Wizard
The CCTV Wizard will guide the user through the process of performing the ENTERPRISE Test Procedures for Closed Circuit Television Camera Controllers.

Task 3.3.1: Release Executable for ESS Wizard
The proposed lump-sum funding for this task will cover 50% of the expected costs of the wizard to automate testing of CCTV devices. It will provide for the free distribution of this software; however, the source code will remain the property of Trevilon Corp, who will provide the other 50% of the funding.

Task 3.3.2: Testing the ESS Wizard
This task will fund the independent testing of the software developed in Task 3.3.1.

Task 3.3.3: Three Months Maintenance for the DMS Wizard
Three months of software maintenance will be provided. These maintenance activities will include correcting any bugs discovered through the independent testing as well as resolving bugs reported during this time frame.

Task 3.3.4: Release ESS Wizard Source Code
Due to the limited public funds available for this project, Trevilon Corp. has offered to provide partial funding for the development in exchange for owning the rights to the software code. Alternatively, a public source may wish to fund this task and Task 3.3.3, in which case the rights will be placed in the public domain.

Task 3.4: SNMP ++ Software
SNMP++ is existing freeware developed by Hewlett Packard and provides a software library to perform all of the standard SNMP operations. A book is available for purchase that documents the software design and provides a sample application. We propose to use this software as the base of the product due to the fact that it is freely distributable and the interface is well defined. This selection will allow future projects to extend the work of this project to other devices, if deemed appropriate.

Task 3.5: WinSock
All 32-bit Microsoft Windows operating systems come with a WinSock interface. This is the software interface used by virtually all web browsers, e-mail applications, etc to communicate over the Internet. The SNMP++ software uses this interface as well, which ensures a robust design and presence on all target machines.

Task 3.6: T2/PMPP Subnet Connection
All 32-bit Windows operating systems are provided with drivers for Ethernet and dial-up networking interfaces that meet the NTCIP requirements. However, the T2/PMPP protocol stack combination is not supported by off-the-shelf software. However, NEMA has already expressed interest in funding the development of such software and this proposal assumes that this NEMA project will move forward. This

additional software will complete all regularly used communication profiles within the industry. If NEMA does not fund this effort, it could readily be funded by another source at some point in the future.

However, it should be noted that it is unclear at this time whether this software will support the relatively uncommon communications stack of T2 over PPP. This issue should be investigated once NEMA has made its final funding decision.

Task 4: Hands-On Training for Wizards

While the software developed under this project will be largely self-explanatory, public agency personnel will still be able to benefit from a hands-on training course designed to introduce the user to the overall testing process. Topics covered by this training course would include:

1. Importance of testing
2. Understanding NTCIP requirements
3. Understanding the types of operations performed during the test procedures
4. Process to prepare the test environment, including hands-on exercises
5. Understanding how to configure a test and to save the settings
6. Process of running the test, including hands-on exercises
7. Understanding the output generated
8. Understanding related software packages that address features not covered by this software
9. Understanding how to get technical support

Task 4.1: Develop Course Materials

This task will develop detailed training materials for a two-day hands-on training course on the use of the software. The training materials will be delivered under the project and be distributed under an ENTERPRISE name in the public domain.

Task 4.2: Deliver Course

This task will consist of the delivery of the two-day training course to a group up to 12 people at a member agency's facility. The cost associated with this task includes the necessary computer rentals.

Task 4.2.1 Deliver Course at Site 1

One course shall be given for the I-95 Corridor Coalition. For budgetary purposes, it is assumed that this course will be held in New York City.

Task 4.2.2 Deliver Course at Site 2

One course will be given for the ENTERPRISE membership. For budgetary purposes, it is assumed that this course will be held in Northern Virginia.

5. Schedule

Task	2001		2002											
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Develop CCTV Tools														
Procurement Specifications			▓	▓										
Written Test Procedures					▓	▓								
On-Site Testing														
Site 1				▓										
Site 2						▓								
Site 3								▓						
Site 4										▓				
Software Development														
DMS Wizard														
Executable	▓	▓	▓	▓	▓									
Testing					▓	▓								
Maintenance						▓	▓	▓						
Source Code	▓	▓	▓	▓	▓									
ESS Wizard														
Executable						▓	▓							
Testing							▓							
Maintenance								▓	▓	▓				
Source Code						▓	▓							
CCTV Wizard														
Executable								▓	▓					
Testing									▓					
Maintenance										▓	▓	▓		
Source Code								▓	▓					
SNMP++														
WinSock														
PMPP/T2 Driver				▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓
Hands-On Training														
Develop Materials								▓	▓					
Deliver Course														
Site 1										▓				
Site 2											▓			

6. Budget

INCH 3 Budget		Projected Costs		
Task	Item	Time	ODCs	Total
1	Develop CCTV Tools			
1.1	Procurement specifications	$15,000		$15,000
1.2	Written test procedures	$9,000		$9,000
2	On-site testing (3 sites)			
2.1	Site 1	$5,000	$1,000	$6,000
2.2	Site 2	$2,500	$1,000	$3,500
2.3	Site 3	$5,000	$2,000	$7,000
2.4	Site 4	$2,500	$2,000	$4,500
3	Software Development			
3.1	DMS Wizard			
3.1.1	Release Executable		$40,000	$40,000
3.1.2	Testing	$3,000		$3,000
3.1.3	3 Months Maintenance		$20,000	$20,000
3.1.4	Source Code		$20,000	$20,000
3.2	ESS Wizard			
3.2.1	Release Executable		$10,000	$10,000
3.2.2	Testing	$1,000		$1,000
3.2.3	3 Months Maintenance		$5,000	$5,000
3.2.4	Source Code		$5,000	$5,000
3.3	CCTV Wizard			
3.3.1	Release Executable		$10,000	$10,000
3.3.2	Testing	$1,000		$1,000
3.3.3	3 Months Maintenance		$5,000	$5,000
3.3.4	Source Code		$5,000	$5,000 [7]
3.4	SNMP ++			[8]
3.5	WinSock			
3.6	PMPP/T2 Driver		$50,000	$50,000
4	Hands-On Training Course			
4.1	Develop Materials	$12,000		$12,000
4.2	Deliver Course			
4.2.1	Site 1	$6,000	$8,000	$14,000
4.2.2	Site 2	$6,000	$8,000	$14,000
	Total			**$260,000**

7. Project Contacts

Gene Martin
Virginia DOT
1401 East Broad St.
Richmond, VA 23219
(804) 786-4186
Fax (804) 786-9748
Martin_ea@vdot.state.va.us

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[1] ENTERPRISE has tentatively agreed to provide $70,000 in funding to the INCH 3 project via VDOT. It is proposed that these funds be used to cover the costs associated with the release of the executable software and to cover a portion of the costs of one training workshop.

[2] The I-95 Corridor Coalition has previously authorized $10,000 to support the INCH projects, but the funding has not yet been assigned to specific tasks. This project proposes to use these funds by covering a portion of the costs of the second workshop.

[3] The I-95 Corridor Coalition has tentatively agreed to provide $40,000 worth of funding to assist the INCH 3 projects. In addition to covering a portion of the workshop costs, these funds would be used to provide near-term compliance testing of NTCIP equipment and testing of the software developed by the INCH 3 project. The test sites will be in ENTERPRISE states to reflect the overall higher dollar value contributed by ENTERPRISE; in return I-95 will still receive recognition in supporting the INCH 3 project and in supporting the development of the software and training materials.

[4] The FHWA is currently funding a range of ITS Standards experts to assist agencies in early deployment activities for standards through their Indefinite Quantities Contract. It is proposed that this contract be used to provide the ENTERPRISE/I-95 states with assistance in the development of CCTV procurement materials and materials for the training course on testing.

[5] Trevilon is proposing to privately fund 50% of the costs to develop the software and maintain it for the first three months in exchanged for the copyrights to the software code. However, the executable version of the software produced during this period would be released to the industry free of charge while giving full recognition to ENTERPRISE and the I-95 Corridor Coalition. Updates to the software made after the first three months would be made available for a nominal fee. Alternatively, these tasks could be funded by some public agency prior to the final contract, in which case the source code would be provided to the public domain.

[6] NEMA is currently considering funding the development of the PMPP/T2 driver. This software would be made available to the industry for a nominal fee.

[7] SNMP++ is freeware software developed by HP

[8] WinSock is included as a part of all current Microsoft Windows Operating Systems

CHAPTER 3—NEW PROJECTS

Overview

For the Fiscal Year 2002-2003 period, the Enterprise Board has selected four new projects, based on the project selection process described in Chapter 1. This section of the work plan provides a description of each approved project for FY 2002-2003:

- Project #1: VMS and HAR Usage During Non-Incident Conditions
- Project #2: Transportation Management Plan and ITS Implementation During Mass Evacuation
- Project #3: Sponsorship: Leveraging Successes in Gas/Food/Lodging Sign Sponsorship for ITS Traveler Information Systems

Project # 1: VMS and HAR Usage During Non-incident Conditions

1.   Project Background

Variable Message Signs (VMSs) are widely used to advise motorists of roadway conditions and incidents so that appropriate actions can be taken by the driver to enhance the safety and efficiency of transportation operations. VMSs are often supplemented by Highway Advisory Radios (HARs) in urban and recreational areas to provide a comprehensive Advanced Traveler Information Systems (ATIS). While extensive work has been done studying the use of the VMS technology for incident scenarios, little or no known work has been done to define practices and policies for use of VMS and HAR during non-incident conditions.

Variable message signs are often used in both urban and rural applications to provide information to motorists related to incidents. An incident is any non-recurring event that causes a reduction in roadway capacity or an abnormal increase in demand. Some examples of incidents include traffic collisions, disabled vehicles, spilled cargo, highway maintenance and construction projects, weather-related concerns, and special events attracting large numbers of vehicles. Significant research has been done in the art of displaying and formatting messages for incident applications; these messages typically include a location and problem description in the message.

2.   Project Summary

Many state transportation departments and other local and municipal agencies have been at the forefront of ATIS implementation, providing motorist information in order to create a more efficient and safer transportation system. Numerous agencies also maintain a large number of urban and rural permanent VMSs, as well as a number of HAR transmitters, during construction and incident-related conditions. However, many agencies, such as the Arizona DOT, currently only make limited use of their ATIS infrastructure for non-incident-related conditions. Because there are no official documents and information related to the non-incident use of VMS and HAR, this research will provide guidance to the ENTERPRISE members in developing policies for non-incident use of VMS and HAR.

3.   Goals & Objectives

The primary goal of this project is to provide a document useful to agencies responsible for operating VMSs and HARs, illustrating how agencies operate these motorist information devices during non-incident

conditions. The document will summarize the current state-of-the-practice and provide the following information:

- Develop a set of "best management practices" or recommendations for VMS and HAR usage during non-incident conditions.

- Identify criteria for when VMS or HAR should be maintained in blank or off-state conditions.

- Identify the types of information that may be displayed on VMS or broadcasted on HAR during non-incident conditions. Some general types of information to be considered will include:

    a. No Information

    b. Pre-warning of upcoming construction closures and scheduled events

    c. Travel time information

    d. Weather information

    e. 511 Information

    f. Date and time

    g. Public service announcements

    h. Other information

- Recommend message formats for the information to be presented.

- Provide detailed information dissemination via HAR, since HAR has the ability to convey more information than VMS.

4.   Anticipated Activities

The work to be completed as a part of this project includes the following:

Task 1: Literature Search
A thorough literature research will be conducted to identify pertinent documents related to non-incident usage of VMS and HAR.

Task 2: VMS and HAR User Surveys
This task will identify and make telephone contacts with VMS and HAR users at all 50 State transportation departments to learn what each department's current polices and practices are related to non-incident usage of VMS and HAR. Some examples of questions that practitioners will be asked include:

- How many VMSs or HARs are you responsible for?

- Do you use your VMSs and HARs during non-incident conditions?

- What types of non-incident information do you display on your VMSs?

- How are your HARs used during non-incident conditions?

- Do you have warrants for each type of message you disseminate?

- Do you have examples of formats of the common messages used during non-incident conditions?

- Can you identify any difficulties with VMS or HAR usage during non-incident conditions?

- What is the public perception of the ATIS program, which you operate?

It is anticipated that more detailed follow-up questions will be asked of those practitioners who make frequent use of non-incident-related messages for their ATIS operations.

Task 3: Draft Report
A concise draft report will be developed to document the results of the literature search, and practitioners' interviews. The report will contain summaries of the responses received in tabular and graphical formats. A main focus area of the report will be recommendations for non-incident use of the VMS and HAR ATIS technology. The consultant will also endeavor to qualitatively identify the benefits of non-incident use of the technology.   The report will include an Executive Summary of key findings.

Task 4: Final Report
Following review by ENTERPRISE and other interested parties, the project consultant will incorporate comments and prepare a final report. The report will be presented both electronically and in hard copy formats. The consultant will develop a PowerPoint presentation of the project findings for public presentation.

5.   Deliverables

The following products will be delivered from this project:

- A Final Report that can be used by ATIS operators to develop policies and procedures for non-incident use of VMS and HAR.

- A public presentation of the report's findings to an appropriate national technical audience, as recommended by the ENTERPRISE group.

6.   Schedule

The estimated duration of this project is six months.

Day 1:	Hold project kickoff meeting with the ENTERPRISE project manager.
Day 30:	Submit a list of practitioner questions for discussion with the ENTERPRISE project manager. Discuss preliminary results of the literature search with the project manager.
Day 31 to Day 90:	Conduct practitioner interviews via telephone and summarize the results.
Day 120:	Present Draft Report to ENTERPRISE
Day 120 to Day 150:	ENTERPRISE review period.
Day 150 to Day 180:	Finalize Report
Day 180:	Present Final Report

7.   Budget

A probable opinion of cost for this project is presented below:

Task #	Description	Estimated Cost
1	Literature Search	$4,000
2	VMS & HAR User Surveys	$18,000
3	Draft Report	$4,000
4	Final Report & Presentation	$4,000
	TOTAL	$30,000

8.   Project Participants

The following agencies are participating in this project:

- The Arizona Department of Transportation

- Other interested ENTERPRISE members

- An experienced consultant, who has past experience conducting research projects for ENTERPRISE.

9.   Project Contact

Manny Agah, P.E., Traffic Operations Center Manager
Arizona Department of Transportation
2302 W. Durango St.

Phoenix, AZ 85009
Phone: 602-712-7640
Fax: 602-495-9013
E-Mail: magah@dot.state.az.us

Project # 2: Transportation Management Plan and ITS Implementation During Mass Evacuation

1. Project Background

In response to recent homeland security concerns, transportation agencies are starting to reassess their roles and responsibilities in the event of security threats or disasters requiring a mass evacuation. During a mass evacuation, the key role of transportation agencies is to provide primary support for movement of vehicles, supplies, and emergency resources through the transportation network. With the deployment and wide availability of Intelligent Transportation Systems (ITS) technologies spurred over the last 10 years by ISTEA and TEA-21 funding, state transportation agencies now have some very powerful tools for managing transportation and the transportation network. However, based on initial research, there is very little guidance on the use of ITS technologies and procedures as part of a comprehensive emergency and transportation management plan during a mass evacuation. In fact, while most state and local agencies are working aggressively to update these plans in light of national security threats, there is a realization that many of these plans do not take advantage of available ITS technologies and procedures that can vastly improve evacuation operations.

One of the few good sources of information regarding the use of ITS technologies and procedures for mass evacuation events is from the states that face threats of severe hurricanes and tropical storms each year. Many of these states have actual experience in conducting mass evacuations during hurricane and flood events. This highlights the fact that while some states have long had sound evacuation plans, other states are less prepared and have little experience or guidance available for developing effective plans making use of current ITS technologies and procedures.

2. Project Summary

This project will assist the states in the development of effective transportation management plans for mass evacuation events by providing guidance on the application of ITS technologies and procedures. This guidance will be based on the actual experiences of other states, which have been involved with mass evacuation, as well as those agencies that have used ITS technologies during such events. Because there are no official documents and information related to this subject, this research will provide guidance to the ENTERPRISE group, as well as other agencies, in developing plans during mass evacuation events.

3. Goals & Objectives

The primary goal of this project is to provide a document that illustrates the implementation of a transportation management plan utilizing ITS technologies and procedures as part of the overall effort during and after mass evacuation. The document will summarize the current state-of-the-practice and provide guidance based on the following information:

- Develop a set of "best management practices" or recommendations for use of ITS infrastructure during mass evacuation.

- Identify the types of ITS infrastructure that are critical to homeland security and mass evacuation, and how those ITS components can be used effectively and in a timely manner. Some types of ITS components that will be considered include:

    a. Variable Message Signs

    b. CCTV Surveillance

    c. Traffic Detectors

    d. Reversible Roadways

    e. 511 Traveler Information

    f. Internet

    g. HAR and Low-Power FM

    h. Portable Traffic Management Centers

    i. Public Cable TV and Radio Broadcasts

    j. RWIS Information

- Provisions for one or more redundant Traffic Management Centers (TMCs) and/or mobile TMCs.

- Guidance on best use of surveillance and information dissemination mechanisms during a mass evacuation.

- What the DOTs should be doing during mass evacuation and with whom to coordinate the required roles and responsibilities.

4. Anticipated Activities

The work to be completed as a part of this project includes the following:

Task 1: Literature Search
A thorough literature research will be conducted to identify available documents and research related to the use of ITS components as part of mass evacuation procedures. One example of such research is a study conducted by Louisiana State University, which identified CCTV, VMS, and traffic detection as useful tools during mass evacuation.

Task 2: Agency Surveys and Interviews

This task will identify and make telephone contacts with all 50 State transportation departments to learn what each department's current plans are for the use of ITS technologies and procedures in the event of mass evacuation.

Some examples of questions that agencies will be asked include:

- Does your agency have a transportation management plan (TMP) for mass evacuation?

- Does the TMP address the use of intelligent transportation systems components during mass evacuation event?

- What types of ITS components are included?

- How would ITS components be used during a mass evacuation event?

- How can the various ITS components from different agencies be integrated?

It is anticipated that more detailed follow-up questions will be asked of those agencies that have actual experience in mass evacuations. For example, Houston (Texas DOT and Houston Transtar) has had two major flooding events in the past five years due to torrential rains that accompanied tropical storms, resulting in mass evacuations. This real-life experience is anticipated to provide a solid basis for gathering operational guidance on the use of ITS during mass evacuation events.

Task 3: Draft Report

A concise draft report will be developed to document the results of the literature search and agency interviews. The report will contain summaries of the responses received in tabular and graphical formats. A main focus area of the report will be recommendations for the use of ITS technologies and procedures for mass evacuation events. The consultant will also endeavor to qualitatively identify the benefits of using ITS technologies during evacuations. The report will include an Executive Summary of key findings.

Task 4: Final Report

Following review by ENTERPRISE and other interested parties, the project consultant will incorporate comments and prepare a final report. The report will be presented both electronically and in hard copy formats. The consultant will develop a PowerPoint presentation of the project findings for public presentation.

5. Deliverables

The following products will be delivered from this project:

- A Final Report that can be used by transportation agencies to develop plans for the use of ITS technologies and procedures as part of a transportation management plan during mass evacuations.

- A public presentation of the report's findings to an appropriate national technical audience, as recommended by the ENTERPRISE group.

6. Schedule

The estimated duration of this project is six months as shown below.

Task	2003											
	1	2	3	4	5	6	7	8	9	10	11	12
Task 1: Literature Search	■											
Task 2: Agency Interviews		■	■	■								
Task 3: Draft Report					■							
Task 4: Final Report & Presentation						■						

7. Budget

A probable opinion of cost for this project is presented below:

Task#	Description	Estimated Cost
1	Literature Search	$4,000
2	Agency Interviews	$18,000
3	Draft Report	$4,000
4	Final Report & Presentation	$4,000
	TOTAL	$30,000

8. Project Participants

The following agencies are participating in this project:

- The Arizona Department of Transportation

- Other interested ENTERPRISE members

- An experienced consultant, who has past experience conducting research projects for ENTERPRISE.

The Project Manager for this project will be Manny Agah of Arizona Department of Transportation.

9. Project Contact

Manny Agah, P.E., Traffic Operations Center Manager
Arizona Department of Transportation
2302 W. Durango St.
Phoenix, AZ, 85009
Phone: 602-712-7640
Fax: 602-495-9013
E-Mail: magah@dot.state.az.us

Project #3: Sponsorship: Leveraging Successes in Gas/Food/Lodging Sign Sponsorship for ITS Traveler Information Systems

1. Project Background

The Oregon Traveler Information Council (TIC) recently completed a first phase study to determine whether the sponsorship of ITS Traveler Information pages could be modeled after the current method used for road sign sponsorship around Oregon. The results were positive, and as a result, the Oregon TIC is moving forward with a cooperative project with the Oregon Department of Transportation (ODOT) to leverage funding for a joint traveler information web page.

One thing that makes Oregon's approach to sponsorship unique is that the Oregon TIC is a public agency that sells the sponsorship for the gas/food/lodging signs. In most other states, this sponsorship function is outsourced. The agency performing the advertising sales typically either performs it without any payment from the DOT; or in the case of some states, actually pays the DOT for the authority to sell advertising on the road signs.

The results of the Oregon Study will be the starting point for this project. The research conducted in the Oregon study included a series of focus groups with businesses around the state, as well as, an examination of the legislation associated with such sponsorship. Although the sponsorship legislation is specific to each state, it will serve as a good starting point for this project.

Since many ENTERPRISE states have, or will soon have, traveler information systems that utilize one or more of 511, Low-Power FM (LPFM), or traveler information web pages, each of these are a potential candidate to have sponsorship help recover costs of operation.

2. Project Summary

This project will build upon the results of the Oregon sponsorship project and take the sponsorship concept to the next step in reviewing the potential for modeling sponsorship of traveler information systems (i.e. 511, LPFM, and web pages) off of the current model of gas/food/lodging signs.

The project will include close interaction with the agency (or agencies) that currently perform the sponsorship sales and maintenance in many of the states. These agencies have a proven and successful model for businesses in both rural and urban areas of the state supporting traveler information signs in the DOT right-of-way.

3. Goals & Objectives

The primary objective of this project is to use the Oregon model of gas/food/lodging sign sponsorship to review the potential for using that as a model for sponsoring other traveler information systems as a means of recovering costs of traveler information infrastructure.

Goals of this project include:

- Analyzing the current models for sponsorship in other states.

- Conducting business planning meetings in participating Enterprise states to determine potential for applying the sponsorship model for cost recovery.

- Developing preliminary sponsorship agreements in the Enterprise states that are interested in applying the sponsorship model.

- Developing a written report summarizing the findings of the analysis of current sponsorship models, as well as documentation of the business planning meetings and preliminary sponsorship agreements.

4. Anticipated Activities

The work to be completed as a part of this project includes the following:

Task 1: Sponsorship Analysis
This task will include conducting an analysis of how sponsorship for gas/food/lodging signs work in different ENTERPRISE states. In many states, this may be an initial discussion between the ITS group and the road sign group. A synopsis will be prepared which identifies the sponsorship models identified.

Task 2: Business Planning Meeting
This task will include conducting a local Business Planning Meeting in each ENTERPRISE state that is interested in pursuing the sponsorship option (budgeted as four states). The purpose of the meeting will be to facilitate a discussion between the ITS group, the road sign group, and the agency or firm currently responsible for selling the sponsorship slots. This meeting will attempt to determine if it is possible for the same sponsorship model to be used for 511, LPFM, or traveler web pages, and how this process can move forward.

Task 3: Development of Preliminary Sponsorship Agreements
This task will include developing preliminary Sponsorship Agreements in the states that agree to move forward with the sponsorship model. The agreements would ideally serve as a launching point for DOTs recovering operational costs through sponsorship of traveler information systems.

Task 4: Final Report and Presentation
Based on Tasks 1-3, a Final Report will be prepared documenting the feasibility of the sponsorship approach that may be shared with all states. The report will be presented both electronically and in hard copy formats. The consultant will

develop a PowerPoint presentation of the project findings for public presentation.

5. Deliverables

The following products will be delivered from this project:

- A synopsis of how sponsorship of gas/food/lodging sign sponsorships work in each ENTERPRISE state.
- Facilitated workshops in each state to determine the feasibility for cooperation.
- Business plans for each state interested in moving forward.
- Final report documenting the feasibility of this approach that may be shared with all states.

6. Schedule

The estimated duration of this project is eight (8) months as shown below.

Task	2003											
	1	2	3	4	5	6	7	8	9	10	11	12
Task 1: Sponsorship Analysis	■	■	■									
Task 2: Business Planning Meeting(s)			■	■	■							
Task 3: Sponsorship Agreements					■	■	■					
Task 4: Final Report & Presentation							■	■				

7. Budget

A probable opinion of cost for this project is $40,000, as presented below:

Task#	Description	Estimated Cost
1	Sponsorship Analysis	$10,000
2	Business Planning Meeting	$10,000
3	Sponsorship Agreements	$15,000
4	Final Report & Presentation	$5,000
	TOTAL	$40,000

8. Project Participants

The following agencies are participating in this project:

- New Mexico State Highway Transportation Department
- Other interested ENTERPRISE members

- An experienced consultant, who has past experience conducting research projects for ENTERPRISE.

The Project Manager for this project will be Terry Doyle of New Mexico State Highway Transportation Department.

9. Project Contact

Terrence Doyle, P.E.
ITS Engineer, District 3
New Mexico State Highway and Transportation Department
3693 Pan American Freeway N.E.
P.O. Box 91750
Albuquerque, NM 87199-1750
Phone: 505-841-4891
Fax: 505-841-2790
E-Mail: terrence.doyle@nmshtd.state.nm.us