LOCAL EVALUATION REPORT

City of Hattiesburg, Intelligent Transportation Systems (ITS)
Deployment Program – Phase 1

EXECUTIVE SUMMARY

The Local Evaluation Report presented herein describes the progress achieved during Phase 1 of the Hattiesburg ITS project. Phase 1 consisted of installing the equipment necessary to create a Traffic Management Center (TMC) at the existing traffic headquarters located in Downtown Hattiesburg, and the installation of fiber optic cable along Hardy Street. The fiber optic cable installation included pullboxes and fiber drops at 6 existing Traffic Signals along the 2.4 mile stretch along Hardy Street. Due to the size of the project, the City of Hattiesburg let this project as a construction project with construction observation performed by a local engineering firm. As the scope of the Hattiesburg ITS project was rather limited, the items reported include the unit costs, a statement of lessons learned, and a brief discussion of institutional issues. The unit cost for the underground 48-count single-mode fiber optic cable installation was $112,500 per mile. This cost included a 4" HDPE roll pipe with (3) 1 ¼" interducts, and the fiber optic cable pulled through one of the interducts. Through the knowledge and experience gained by initiating the Hattiesburg ITS, the City of Hattiesburg can share its experiences with the Mississippi Department of Transportation (MDOT) as it begins to implement its portions of the ITS, which will connect to and be a continuation of this project.

PROJECT DESCRIPTION

The main objective of the Hattiesburg ITS project was the creation of a communications infrastructure to support the phased development of the Hattiesburg area ITS. The communications infrastructure is intended to facilitate the integration of traffic signal operations and emergency services in the Hattiesburg area. The project will connect advanced traffic signal controllers, vehicle detection systems, CCTV cameras, and dynamic message signs.

The local evaluation report presented herein describes the progress achieved during Phase 1 of the project. The infrastructure installed under Phase 1 will serve as the foundation for the phased development of the overall Hattiesburg area ITS. Descriptions of the various phases of the Hattiesburg ITS deployment project are presented in Table 1.

Table 1 – Description and Status of Hattiesburg ITS

Phase	Description	Status
1	Install Traffic Management Center (TMC) and fiber optic trunk cable (underground) along Hardy Street from Downtown Hattiesburg west to Highway 49	Complete
2	Extend fiber optic cable along Hardy Street / Highway 98 from Highway 49 to Interstate 59 and install fiber drops to signal controllers. Install fiber optic cable north along Highway 49 from Hardy Street to the newly constructed MDOT TMC located at the District Six headquarters. Interconnect the MDOT TMC and the City of Hattiesburg TMC. (Mississippi Department of Transportation Project)	Construction Documents Complete To be let winter 2006
3	Extend fiber optic cable west along Highway 98 from Interstate 59 to University Place. Install fiber drops to signal controllers.	Planned
4	Extend fiber optic cable west along Highway 98 from University Place to King Road / Old Highway 11. Install fiber drops to signal controllers.	Planned
5	Extend fiber optic cable south along Highway 49 from Hardy Street to Edwards Street.	Planned
6	Extend fiber optic cable southwest along Pine Street / Broadway Drive / Highway 11 from Hardy Street to Parkway Boulevard.	Planned
7	Extend fiber optic cable west along Lincoln Road from Broadway Drive / Highway 11 to South 40th Avenue.	Planned
8	Extend fiber optic cable along Front Street and Pine Street into downtown area from Hardy Street to 2nd Street, and along Main Street from Highway 42 Bypass to Southern Avenue.	Planned
9	Connect additional Side Street signals to the ITS with fiber optic cable to complete the system.	Planned

PROJECT BACKGROUND

Construction of the Hattiesburg ITS Project, Phase 1 began October 25, 2004 and was completed on May 23, 2005. Phase 1 of the project consisted of fiber optic cable installation along Hardy Street from downtown Hattiesburg to Highway 49, and the installation of computer hardware and software at the Hattiesburg TMC. Under Phase 1, fiber optic cable was installed underground in conduit over a 2.4 mile stretch of Hardy Street.

The installation of the Phase 1 project was completed by the letting of a construction project to a private contractor with construction observation performed by a local engineering firm. The total construction cost for Phase 1 was $608,252.60. The unit cost for the underground fiber optic cable installation was $112,500 per mile that includes the conduit, interducts, and a 48-count single-mode fiber. The lump sum cost associated with the TMC was $238,000.

Institutional Involvement

This project included the involvement of the City of Hattiesburg and the Mississippi Department of Transportation (MDOT). During the design and construction of the Phase 1 project, MDOT had the Phase 2 project in the design process. Due to the inevitable connection of the two phases coordination was required and successfully achieved.

EVALUATION PLAN

Goals and Objectives

The primary goal and objective for this project was the creation of a communications infrastructure to support the phased development of the Hattiesburg area ITS. Other goals and objectives included the communication capabilities with advanced traffic controllers and the installation of a Traffic Management Center infrastructure.

Additional Activities

As the scope of the Hattiesburg ITS project was rather limited, the items reported include the unit costs, a statement of lessons learned, and a brief discussion of institutional issues.

EVALUATION FINDINGS

Project Outcome

As indicated previously, the unit costs of the Phase 1 fiber optic cable installation was approximately $112,500 per mile, which included the conduit, interducts, and 48 count single-mode fiber. The most recent unit cost data published in the ITS Unit Cost Database indicated a range of value from $70,000 to $127,000 per mile. The ITS Unit Cost Database did not specify whether the conduit cost included additional inter-ducts as were included in this project.

Lessons Learned

The most apparent lesson learned from the Hattiesburg Phase 1 project is the success that the City of Hattiesburg feels was achieved in dealing with the Mississippi Department of Transportation. Due to this Phase 1 project's connection to the future MDOT project (Phase 2), coordination and cooperation was required between the agencies. With this relationship during Phase 1, a sense of confidence in the overall system has developed and should continue as additional project phases are implemented.

Institutional Issues

Coordination with the Mississippi Department of Transportation allowed for the sharing of information relating to Traffic Management Centers, fiber optic cable, pullboxes, and fiber drop cables. Through this coordination, a pullbox with additional fiber optic cable was provided in Phase 1 that allows for connection to Phase 2. With the connection of Phase 2, an interconnect between the MDOT TMC and the City of Hattiesburg TMC will be developed. Through the knowledge and experience gained by initiating the Hattiesburg ITS, the City of Hattiesburg and MDOT can share their experience and technical abilities with other MDOT districts as well as other cities throughout the state as they begin to implement a local ITS infrastructure.