FLORIDA DEPARTMENT OF TRANSPORTATION VIDEOLOG PROGRAM

PROBLEM STATEMENT

The Florida Department of Transportation (FDOT) has responsibility for nearly 12,000 centerline miles of state roads, over 7,000 of which are classified as rural and close to 5,000 as urban. To manage this system within Florida's 45,477 square miles, FDOT is divided into nine major managerial components: a central office and eight district offices. The enhancement of FDOT's existing videolog program to assist in the planning, design, operation, maintenance, and asset management of the state roadway network is necessary due to the large roadway system and the significant differences in geometry and traffic volume across the state.

OBJECTIVES

The objectives of this project included the following:

(1) Report on the state-of-the-practice collection, processing, distribution, and use of video images and data within FDOT and other transportation agencies throughout the country.

(2) Assess the cost-effectiveness of current and possible future equipment use and methods for collecting, processing, distributing, and employing roadway images and physical data.

(3) Develop a comprehensive set of recommendations regarding videolog technology which FDOT could apply and make available to its employees.

FINDINGS AND CONCLUSIONS

Questionnaires were designed and distributed to appropriate personnel within FDOT and twelve other transportation agencies employing similar technology. Connecticut Transportation Institute staff reviewed the completed questionnaires and conducted personal follow-up interviews with some of the responders to gain more detail and to define more precisely their thoughts and responses.

The majority of FDOT responders regarded FDOT videolog images as useful and labor-saving, insofar as they can eliminate or reduce the number of necessary field trips. Eleven functional areas within FDOT reported using the images to do the following:

1. Document various studies.
2. Conduct damage assessment and various design, planning, and maintenance functions.
3. Locate roadway and roadside physical assets.

Many responders thought that the three-year image-acquisition cycle was too long. Others stressed the need to include side views to complement the windshield perspective, refine the current image-viewing system and its maintenance, and collect physical data on roadway condition and geometry along with the images.

Researchers conducted on-site, one-on-one visits in three District Offices (Districts 3, 4, and 5) and in the Central Office. The visits focused on user concerns and related technical strategies for addressing the aforementioned issues. The interviews provided insights as to how subsequent use of video images and related data sets could aid in the delivery of FDOT services.

Other transportation agencies revealed that a wide variety of equipment currently is employed to collect roadway images and physical data. The information is being used to conduct safety and engineering studies, document existing conditions, and provide input for public hearings, legal issues, and claims.

Researchers concluded the following:

1. The existing videolog effort does not adequately address the current needs of FDOT staff. Issues ranged from the lack of knowledge of the existing system to problems with obtaining needed data and information.
2. FDOT staff conduct duplicate field data acquisition activities in some areas. FDOT should examine how to combine these activities.
3. The existing Infonet provides an excellent means of distributing images and related roadway data. An application upgrade and substantial training in the use of the Infonet are required to address staff needs.

Researchers recommended improving the FDOT videolog process by the following:

1. First, improve existing image retrieval operations by accelerating access to and increasing the refresh rate of the Infonet; implement an awareness/training approach for use of the Infonet; install an invisible tracking system to document system usage; install software to allow measurements in the plane of the roadway; and develop software to link video-image mileages with actual mile markers. Second, improve image acquisition by providing a camera to obtain right-of-way data from the outer lane; make added passes on multilane freeways or provide a camera to obtain median data; provide camera systems to automate pavement distress data collection; reduce the image collection interval from 0.010 to 0.005 mile; and shorten the three-year image-acquisition cycles, preferably to one year.
2. Create a unit to manage the consolidated image and related field data acquisition, processing, storage, and retrieval operations. It should be charged with department-wide responsibilities.

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