

Research Project

97-9SS

Capsule

Technology Transfer Program

LTRC

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Implementation of a Highway Advisory Radio (HAR) System for Construction Zones

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Problem

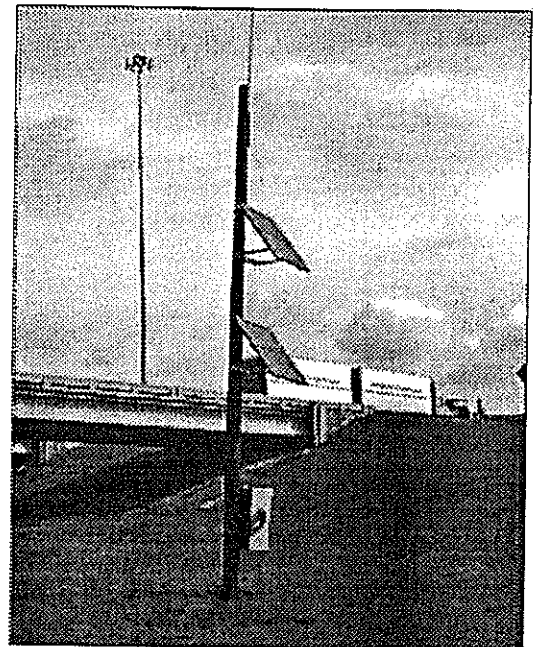
The most cost efficient way of communicating highway information is using standard traffic control devices such as road signs. Unfortunately, these familiar, low-cost, durable signs do not necessarily provide the best means of relaying important information to drivers during situations encountered in congested construction areas.

One way several highway agencies are attempting to solve this problem is by employing variable message signs to convey specific and up-to-date information about extreme traffic conditions as a result of construction. While the use of these devices is effective, it is also costly and requires additional labor. The amount of information and the time during which it takes to convey it is limited as well.

The Baton Rouge and Lake Charles metropolitan areas are currently undergoing extensive interstate construction work. The result is considerable congestion due to lane closures, detours, reduced speed zones, etc.

Currently, there is no effective method of informing interstate drivers of the continually changing roadway conditions other than the conventional information provided via newspaper, radio, and television.

Highway Advisory Radio (HAR) is a cost-efficient communication system that has the means to provide up-to-date, accurate information to drivers via AM radio broadcasts. HAR uses a low power radio transmitter to convey information to travelers who tune their radios to a specific frequency inside of the broadcast zone to receive information. This system is primarily intended for through traffic.



This highway advisory radio tower, replete with solar panels, is located along the interstate in East Baton Rouge Parish.



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Louisiana Transportation
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Objectives

- To implement a basic highway advisory radio system which will provide travel information to motorists during the construction projects on the interstate highway system in Baton Rouge and Lake Charles.
- To evaluate the use of HAR in Louisiana.
- To investigate the potential use of advanced traffic data collection and processing measures in combination with HAR.

Description

The first project phase involves a literature review of practices related to the development and application of HAR systems in the United States. Specifically, the review will address how existing HAR commercial systems are applicable to Louisiana's potential implementation in addition to specific planning, placement, and operational requirements needed for the achievement of an effective HAR system in Baton Rouge and Lake Charles.

The review will also include information concerning the potential means of integrating a traffic data collection/processing capability with real-time highway communication.

HAR broadcast transmitters will be purchased and installed in the Baton Rouge and Lake Charles areas during phase II. Based on the results of the review in phase I, equipment specifications and personnel operating requirements will be developed.

A review of field conditions and construction plans will also be made so that units are placed effectively in the construction vicinity. Installation also requires a Federal Communications Commission (FCC) broadcast license.

The final phase of the project will evaluate the effectiveness of each broadcast transmitter. This will determine the ability of the transmitters to broadcast traveler information to drivers in terms of both broadcast coverage area and message content.

The broadcast range will be determined using signal strength meters and a GPS system. Message content evaluation will be based on information regarding construction, traffic congestion, and alternative route guidance.

The development of guidelines for monitoring the system, suggested message information content, and training of system operation and maintenance personnel will also be included.

Implementation Potential

The intent of this research is to develop a modern, effective communication device which will supplement road signs and, at the same time, be cost-efficient. The successful implementation of a highway advisory radio, then, would benefit not only motorists but also the construction workers who work with passing traffic.