Traffic Signals to be Interconnected with Cable TV

When the cable TV franchise was awarded to provide service to a consortium of communities in Oakland County, the cable TV company agreed to finance a project to demonstrate the use of cable TV for improving traffic signal control. The consortium included Ferndale, Pleasant Ridge, Huntington Woods, Berkley, Royal Oak, Clawson, Troy, Rochester Hills, Rochester, Auburn Hills, and Oakland Township.

In selecting an appropriate demonstration project, traffic officials in these communities concluded that the study area should be one which was in great need of traffic signal interconnection and that it should involve more than one community. The project was expected to use existing technology rather than develop new technology.

The study area selected was a six mile stretch of 14 Mile Road between Woodward Avenue and Deepdale which passes through the communities of Birmingham, Royal Oak, Clawson, Madison Heights, and Troy. This section of 14 Mile Road carries a two-way 24-hour traffic volume of approximately 18,000 vehicles. Traffic signal interconnect is studied on only small portions of this study area and, as a consequence, the public perception is that there is no coordination whatsoever between traffic signals.

The first step in the process of organizing this project was to get a commitment to the project from each of the legislative bodies in the study area. Obtaining approval of the project from each of the five city councils involved took approximately five months. Once these approvals were obtained a request for proposals was issued to qualified consultants. These consultants were given 90 days to submit a proposal for the engineering portion of the pilot study to use the cable television network constructed by Tribune/United of Oakland County to interconnect traffic signals along 14 Mile Road. The proposals were due on February 1, 1985.

After a review of these proposals and discussions with the consultants, Essman Associates of Houston, Texas was selected to do the feasibility study and to prepare plan specifications and estimates needed to install traffic control equipment interconnected with the cable television network.

Because the funding for the engineering study came directly from Tribune/United, the cable TV company, the contract had to be written between the cable TV company and the consultant. The consultant, although responsible for directing the work of the consultant, was not a party to the consultant contract. This unusual relationship led to delays in getting an executed contract. However, the contract has now been executed and the consultant has begun his work.

We expect that the consultant will have prepared plan specifications and estimates needed for this project by late fall of 1985. The installation of the equipment will be financed with funds from Urban Systems Inc. We expect the installation work to occur in 1986.

By Richard F. Beaubien, P.E.
U. K. PIONEERS BUS TO TRUCK CONCEPT

A unique vehicle that serves as both a bus and a delivery van has been developed. The Strathclyde Passenger Transport Executive (SPTE) in Scotland, for rural operations in the face of a cost crunch, worked with two interchangable bodies— one a modern midibus seating 20, the other a delivery van for freight operations. Alan Westley, who heads SPTE, had the versatile modules built by local companies for a Dodge bus chassis as an effort to tackle the problem of uneconomic passenger routes that need to be operated only at certain times of the day or on certain days of the week.

When the vehicle is not serving as a bus it delivers goods and packages. Using special equipment, either body can be set down and left standing on built-in extending legs. The chassis can then be driven clear and loaded under the other body. The driver can effect the change of use on his own in five minutes. The first of what is expected to become a fleet of modular vehicles is now in operation on the Isle of Arran north of Glasgow and has replaced two vehicles that did not receive adequate use. The body swap system is seen as a breakthrough in cost savings.

STUDY OF THE EFFECTIVENESS OF DEER CROSSING WARNING SIGNS

Deer crossing signs have been used by the Michigan Department of Transportation (MDOT) for many years with the assumption that they reduce motor-vehicle-deer accidents. However, no warrants for sign installation have been established. Signs were frequently installed as a result of motorist's complaints and discussions between MDOT traffic and safety engineers and Department of Natural Resources (DNR) officials. The impact that such signs had on accidents was seldom monitored, nor were there investigations to evaluate other factors which may have had a bearing on the causes of motor-vehicle-deer accidents.

In the study to assess warning sign effectiveness, motor-vehicle-deer accidents were tallied over a ten-year period (1973 through 1982) at 37 sites statewide where signs had been installed. Before and after accident rates were compared on a monthly basis for each site and compared with computed rates for the county in which each site was located. Statistical testing indicated that accident rates at the 37 sign sites evidenced a greater reduction (or lesser increase) in motor-vehicle-deer accidents than was experienced in the counties in which the sites were located. Although total motor-vehicle-deer accidents actually increased after signs were installed, the rate of increase at the 37 combined was less than expected had the signs not been installed. (Motor-vehicle-deer accidents increased 66 percent at the signs and 100 percent countywide.) Therefore, the statistical analysis of the collision data concluded that deer crossing warning signs reduced motor-vehicle-deer accidents.

The study shows that signs were cost-effective at 24 of the 37 sites. At those locations where signs were not cost-effective, it is suspected that other factors influencing accidents may have been overlooked. Some of the factors which may affect motor-vehicle-deer accident frequency include changes in traffic volumes, type of terrain and vegetational growth along highways, nighttime events, changes in crop farming patterns, and weather conditions that may affect deer herd size and browsing habits.

The study concludes that deer crossing signs can be cost-effectively used where it can be established that the potential for accidents is high. It was also recommended that an interdepartmental committee (MDOT, DNR, and Michigan Department of State Police) be established to review and evaluate all factors which may influence motor-vehicle-deer accidents and to develop warrants for the use of deer warning signs.

CALVIN ROBERTS HEADS UP MDOT TRAFFIC & SAFETY DIVISION

Calvin Roberts of Darien, Connecticut, has replaced Maurice Witteveen as the Engineer of Traffic and Safety for the Michigan Department of Transportation. He previously was a vice president of Salcon Associates, a consulting engineering firm in Long Island City, New York. With Salcon Associates he was the Director of the Transportation/Traffic Division with responsibilities ranging from preliminary and final design of transportation projects to environmental and energy studies and marketing.

All of his professional career has been with consulting engineering firms. His experience includes stints as project manager with US Company, Inc., of New York City, senior project engineer with Wilbur Smith & Associates, New Haven, Conn., and project engineer and design engineer with Frederick R. Harris, Inc., of Stamford, Conn.

A native of Savannah, Georgia, Roberts has a degree in electrical engineering from Norwalk (Conn.) State Technical College, a bachelor's in civil engineering from New York University and a master's degree in transportation engineering from Pennsylvania State University.

He has taught engineering courses at Norwalk State since 1976 and is a member of I.T.E. Reprinted in part from MDOT High-Lighter

Calvin Roberts MAURICE E. WITTEVEEN

Maurice E. Witteveen, Engineer of Traffic and Safety since 1980, is the new Engineer of Maintenance. He was administrative assistant to the Director for 14 months before his appointment to Traffic and Safety. He also headed Testing and Research's Testing Lab.

Witteveen joined MDOT in 1960 immediately after graduation from the University of Michigan and worked for seven years in the Design Division. He is also a graduate of Yale University's Traffic Engineering School and has served most of his career with the Department in traffic and safety engineering. Reprinted from MDOT High-Lighter

The Break You've Been Waiting For

Replacement of damaged sign posts can often be expensive. However, with the Telespar Sign Support System from UNISTRUT, replacement costs can be translated into savings. The unique Telespar anchor post system allows replacement of downdamaged posts in less time required by other methods and it proves to be salvageable and reusable most of the time. Thus, the more breaks you get, the more you save.

The Telespar System offers the flexibility of four-sided extensions and a wide range of engineered fittings and accessories for greater versatility and fabricating efficiency. Moreover, the Telespar Sign Support System has been performance-proven for over two decades.

For further information, contact Unistrut Detroit Service Company, P.O. Box 458, 4090 Second Street, Way, MI 48184 (313) 722-1400.

SECTION HISTORICAL MATERIAL

The Bentley Historical Library at the University of Michigan is a depositary for Michigan Section historical materials. If anyone has any membership information, Section accomplishments, awards, or any other memorabilia please send the material to Don Kielteita or Bob Larfiere.

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SEAT BELTS FOR SCHOOL BUSES

Legislation (House Bill No. 4892) was introduced this past June which would require each passenger of a school bus to wear a seat belt. It proposes to do so by amending the portion of Michigan’s new safety belt law (P.A. No. 1 of 1985) which currently exempts school bus passengers. The proposal is expected to create a large amount of discussion, pro and con, among legislators and members of the highway safety community. Many of the arguments will be based on facts; others will not. In search of some facts, the following article has been taken, from the May 11, 1985 "Status Report" published by the Insurance Institute for Highway Safety.

Canadian Crash Tests

Recent tests conducted by the Canadian government indicate that in severe frontal impacts, lap belts in school buses could do children more harm than good. The 1985 study of lap belt performance in frontal impacts was conducted by Transport Canada, the equivalent of the U.S. Department of Transportation. The "School Bus Safety Study" was written by G.K. Ferr, an automotive safety engineer with the crashworthiness section of Transport Canada. The tests were conducted under contract with Calspan, a private research company. The Canadians conducted three full-scale 30 mph barrier impacts using various sizes of dummies, some equipped with instruments to record injury levels. The vehicles tested were a 56-passenger Bluebird school bus, which meets U.S. standards designed to protect unbelted occupants, and two smaller buses seating 20 and 22 passengers.

The lap belt dummies on the large bus recorded head impacts two to three times more severe than the unbelted dummies. But by far the worst scores were recorded by the lap belt dummies on the small buses. Dummies noted, as have other NHTSA officials, that in side and rollover crashes, belts would provide safety benefits to school bus occupants. However, he contends that lap belts for large buses are a poor investment from a cost-benefit point of view. "You’d be better off spending the money on better brakes and better drivers," he says.

In Canada, large school buses meet safety standards that are similar to U.S. requirements. However, small Canadian school buses weighing less than 10,000 pounds are not equipped with lap belts and the head protection zone and seat spacing measurements differ from U.S. requirements.

Transport Canada concluded that in the tests "the belted dummies experienced higher head accelerations, lower chest accelerations, and more severe neck extension than did the unbelted dummies. This indicates that if lap belts are installed on current designs of school bus seats, a greater potential for head injury exists." The report said that the "passive occupant restraint system (frontal impact) is required (by Canadian safety standard 221) since 1980 functions as intended during frontal impacts and provides excellent protection for occupants.""The Canadian study was conducted because it might be more damaging to add lap belts and previous studies cited that head and neck injuries might be aggravated by them. The tests were done to answer those questions. About 55 percent of all school bus crashes in Canada during 1981 were frontal, the report noted. For the test series, 4-foot, 10-inch, 5 percentile adult female anthropomorphic dummies were used in each bus. Three were belted and three were unrestrained in each bus. Each was instrumented to determine head and chest acceleration during the crash.

TRAFFIC SIGN WORD SEARCH*

If you’ve been keeping up with the signs of the times, this word search should be right up your alley. The meanings of the 34 road signs below are hidden within the stop sign grid, some horizontally, some vertically, some diagonally, but each one in a straight line- no turns allowed. Too match IEEE members should be able to find all the answers.

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*FROM JUNE, 1984 "GAMES" MAGAZINE
JULY FAMILY WEEKEND AND TECHNICAL PROGRAM
HUGE SUCCESS

Tia Dwitt, of Carrier and Gale, Inc. was again the host at this year’s Family Weekend held at Mt. Pleasant’s beautiful Hollay Inn on July 26-28th.

This year’s outstanding technical program included presentations on: The proposed revisions to the gas and weight tax distribution formulas; Status of the MARS vehicle; Using the Media; Drunk Driving Task Force; and Traffic Engineering in Nigeria.

The technical program began with a panel discussion involving the three levels of government – State, County, and local, on the merits of the urban road construction proposal for the revision to the distribution formula for Gas and Weight Taxes. Brent Baird of the Oakland County Road Commission described the county’s position in favor of the changes, while Gus Kavelaris of MDOT representing the State and Richard Buschman of Troy, representing the local viewpoint, responded to the concerns.

Robert Naki of MDOT provided the group with an update on the status of the MARS vehicle. Bob reported that MDOT expects to have the vehicle on the road for final field testing and data collection this fall in the Lansing area. ‘It has been a long time coming,’ Naki said. MDOT fully expects the MARS vehicle to live up to its advance publicity.

Gary Holten of the Office of Highway Safety Planning reported on the Michigan Drunk Driving Task Force. He described the formation of the Task Force, it’s makeup and some of the special activities. Some of these were: public hearings on the use of sobriety checkpoints; a workshop with national experts presenting to the Task Force; and conducting national surveys on the use of sobriety checkpoints and administrative license revocation. Gary also handed out and discussed a digest of the Task Force final recommendations.

Richard Gourley of TIA presented extracts from the ITE program in San Francisco on “Improving Public Relations Through the Media.” This ITE program dealt with the why’s and how’s of developing an effective program for dealing with the media within your agency.

The technical portion of the weekend concluded with Tom Nale of MIU presenting a travel log on traffic engineering in Nigeria. Dr. Makik contrasted, in the extensive detail for which he has become famous, the fast differences in traffic engineering as practiced in Nigeria with that of the United States.

Saturday and Sunday of the weekend was spent in such mundane activities as: golf, tennis, racquetball, swimming, sunning, shuffleboard, etc.

The ITE members present would like to thank the Weekend Committee for their outstanding hospitality suite. Tia - you did a great job again!

RECESSED PAVEMENT MARKERS

The experience of recessed "plowable" pavement markers has been a major improvement to the present surface. The body of the marker is from Carrier and Gale, Inc., at an I.T.C. technical meeting, held in Detroit, Michigan. A total of sixteen locations in the lower peninsula were surveyed for the recessed markers. What was surprising in the study was that the unmarked portion of the marker was still visible from a distance.

Extending the effective service life of the marker has also been increased by the addition of a glass lens. The lens covers the reflective surface to aid in scratch resistance of the surface.

One other question that had to be addressed in this study concerned the ability of the groove to "clean" itself of debris and water collected in it. Investigation showed that snow, slush, and debris of concern, if the groove is located in a horizontal curve, the accompanying traffic demonstrated enough crossover on the centerline that the groove quickly cleaned itself. This indicated that in this high snowfall corridor, the recessed markers were very effective in providing the motorist with good delineation to effectively navigate the roadway.

Considering the opinions voiced thus far, from all who have tried the recessed pavement markers, the system is a winner. Not only for the governmental agency who elects to use them, but the motorist as well. The system works, and it is cost effective, ranking 3rd in a cost/benefit study done by the FMA, by Tia Dwitt