

Telemetering for Permanent Traffic Count Stations

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The Division of Planning, Indiana Department of Highways has operated permanent traffic count stations since around 1940. At the present time the Planning Statistics Unit maintains and operates 30 such stations. These stations count vehicles with a single loop sensor in each lane. The counters record vehicles per hour on printed paper tapes. Each station is visited twice a month to check on its status and retrieve the tape. This tape is sent to the central office where the hours are coded on a data sheet. That data sheet is then keypunched and a series of batch programs are run on the data. This information is used to annualize counts made with portable roadtube counters. Because of additional information needs and the fact that present staff would find it difficult to service additional counters we had been trying to update this program for several years.

We were given that opportunity in August of 1984 and are in the process of implementing a telemetering system of 60 locations across the state. At each of these locations two loops per lane will be installed and the wires fed back to an M-type cabinet. One hundred and ten volt electrical service and telephone service will also be fed into the cabinet. An electronic type of counter will be installed and wired to the loops. The counter runs on six-volt lead-gel batteries. The 110 service is required to maintain a trickle charge to the batteries. The counter will also be equipped with an interface which allows connection to a modem. Modem stands for modulator demodulator and what it does is turn data collected by the counter into information that can be sent over telephone lines to a central location.

The other major component of this system is a microcomputer to be located in the central office. It will also be interfaced to a modem and with appropriate software it will call a location and receive the traffic information over the telephone line. These data can then be edited and transmitted to the main frame for further processing.

The advantages of this system are numerous:

1. We will be able to double the number of permanent count stations with no increase of staff.
2. Realize savings in travel time and travel costs.

3. Greater reliability.
4. By gaining the ability to transfer data directly electronically savings will be realized from the elimination of manual coding and keypunching.
5. These locations will be multifunctional and be capable of the following functions:
 - A. Counting vehicles
 - B. Monitoring speeds
 - C. Classifying vehicles into a limited number of groups based upon their length
6. Opens up a number of new possibilities:
 - A. As axle sensors become more reliable they should be easy to interface into the system allowing detailed vehicle classification information to be collected.
 - B. A Weigh-in-Motion system can also easily interface to allow collection of truck weights.
 - C. Will allow the calculation of not only seasonal adjustment factors but also axle adjustment factors, thus assuring accurate traffic information for a variety of studies, design decisions, etc.

The present status of the implementation of this project is as follows: Contracts for each district to install the loops, cabinet and electrical service were awarded in early March. So the site preparation is underway. On April 1, 1985, bids are due to be opened that provide electronic counters, modems, and microcomputers.