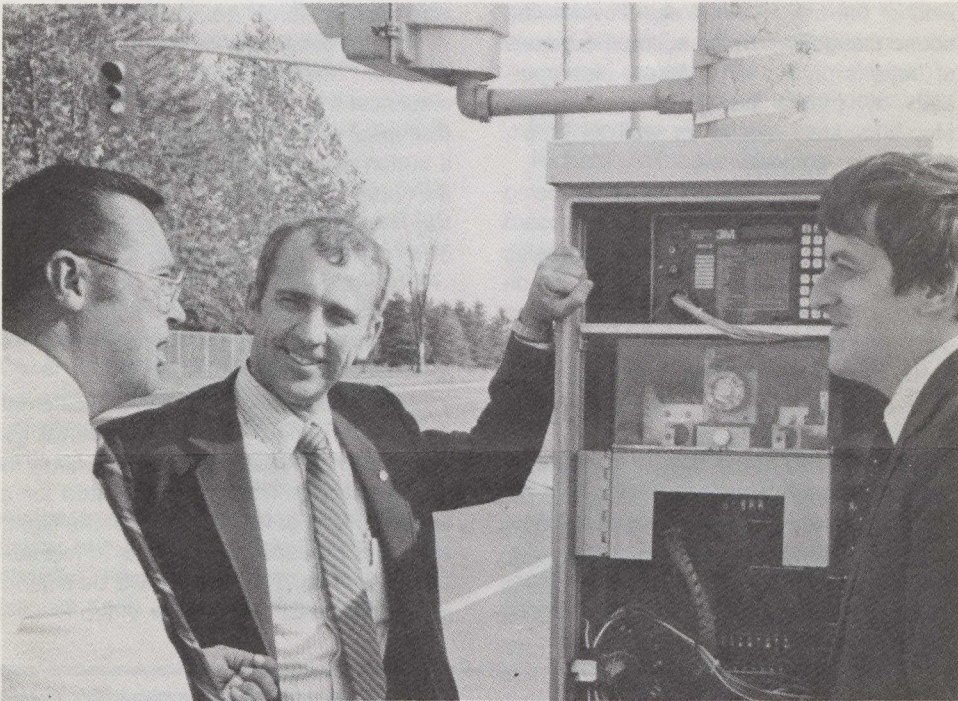


No-cable traffic signals rival centralized systems



Bill Woolford (left) of 3M, Leo Givogue of Cornwall Electric (centre) and Traffic Engineer Ewald Kuczera with one of the city's cableless traffic signal interconnection systems.

The city of Cornwall, Ontario, is the first municipality in Canada to adopt a cableless interconnection system for over-all co-ordination of its traffic signals that offers most of the major benefits of a fully centralized computer system.

Individual Intersection Management System (IMS) units from 3M Canada, which use a precision timer in conjunction with a built-in microprocessor for full 52-week programming of signal functions, were installed in 34 of Cornwall's 39 signalized intersections in 1981. They replaced the hardwired system that provided only a simple seven-day repeating cycle.

Wide control versatility

The no-cable units have proven to be not only more reliable than a hardwired system but provide exceptional control versatility that rivals a hardwired central computer system.

Each unit has programming capacity for up to 16 different single-day programs, the choice of five full-week programs and the ability to designate 30 "exception" days which can be isolated to handle unusual traffic demands throughout the year. This means that virtually any foreseen change in the city's traffic flow patterns for at least a full year, including statutory holidays, seasonal variations, special community events and transitions between standard and daylight time can be accommodated.

Installation costs about \$5 000 per

intersection including the IMS units, installation and several extra control cabinets. This is estimated to be considerably less than for a central computer system.

While Cornwall traffic engineer Ewald Kuczera estimates that hardwiring the signals would have been about the same as installing the IMS, the line lease costs would have been an additional, ongoing expenditure in a hardwired system.

Less maintenance

The IMS units have led to a dramatic reduction in maintenance time when compared to the original system, according to Leo Givogue, metering supervisor for Cornwall Electric. This municipal utility carries out installation and maintenance of signals, under contract with the city's Traffic and Parking Division.

Previously, a person had to check intersections every two weeks, resetting controllers that had been put out of synchronization by short power interruptions. This alone meant an expenditure of about \$4 000 per year over and above any emergency work performed.

"Even then, we couldn't guarantee the signals were always timed properly, since of course a power interruption could occur any time during the two-week maintenance cycle," said Mr. Givogue. This incurred needless delays and more stops for motorists, which meant increased

fuel consumption and greater potential for rear-end collisions.

Mr. Givogue said the regular maintenance schedule now involves a one-day inspection round by one person every four months, and the reliability of the IMS units indicates the schedule may be cut to a single annual inspection.

Maintenance is simplified further by the fact that, with the exception of offsets, all common programming can be performed on a spare unit while at the shop or office and transferred later to a field unit.

The IMS units, however do not provide all of the features of a centralized computer system. The chief exceptions are the ability to "trouble-shoot" intersections remotely and to use real-time, traffic responsive control of timing plans based on traffic density and other information fed back to the computer by detectors. Mr. Kuczera points out that these benefits are more critical to larger municipalities with hundreds of intersections to maintain and severe capacity problems.

Also, a centralized system would require the full-time attention of at least one employee. "It would be difficult to justify the expense of one person simply to look after the co-ordination of 39 traffic signals," said Mr. Kuczera.

To increase the efficiency of the IMS units even more, two additional dials in all controllers are being installed. This will allow lengthened signal cycles on busy routes during peak traffic hours, using the IMS unit's ability to switch from one dial to another. This also will allow initiation, at no extra cost, of split phases such as advanced and delayed greens when required, night-time flash operation, and different offsets and splits to accommodate special events such as those at the city's Civic Complex.

(From Civic Public Works Magazine.)

Fund for research projects

A \$1-million annual fund has been created to give money to public and private Canadian companies that share research projects with companies from other countries on new information technologies.

The International Collaboration Assistance Fund will give up to \$200 000 to each project, that may include exchanging information or scientists and developing new technologies used for information systems.

Applications will be evaluated in light of Canada's foreign policy objectives in science and technology, the importance of the transfer of knowledge to Canada and the likelihood that the transfer will lead to technological innovation.