

## Traffic Control Systems

“Beginning in 1965, the City of Wichita Falls, Texas, contracted for the delivery of an IBM 1800 process control computer for traffic control. This system was placed in daily operation in 1966, controlling 56 intersections in the central business district. It was later expanded to include 78 intersections. San Jose, California, shortly thereafter made a transition to an IBM 1800 computer, and similar systems were installed in Austin and Garland, Texas; Portland, Oregon; Fort Wayne, Indiana and New York City. In these systems, traffic signals were controlled by using stored timing plans developed off-line.” From Traffic Control Systems Handbook: 1. Introduction,  
[http://ops.fhwa.dot.gov/publications/fhwahop06006/chapter\\_1.htm](http://ops.fhwa.dot.gov/publications/fhwahop06006/chapter_1.htm)

This PDF describes the Wichita Falls 1800

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ALL SIGNALS ARE 'GO' IN WICHITA FALLS;  
COMPUTER INSTALLED FOR TRAFFIC CONTROL

WICHITA FALLS, Tex. Jan. 29. . . . This has become a city of green lights.

For at city hall in this growing community of 110,000 people, a new computer is at work trying, whenever possible, to eliminate unnecessary automobile stops.

The computer, an IBM 1800 data acquisition and control system, is the first of its kind to be installed for traffic control. "Preliminary results," said Jack Davis, city manager, "show a significant improvement in the flow of cars in and out of the city during peak hours."

The computer is operating traffic signals at 54 intersections in a 47-square block area of downtown Wichita Falls, Mr. Davis said. These signals are connected directly to the control computer by wire.

The 1800 system absorbs information about the flow of traffic from 19 pressure-sensitive devices buried in the pavement at strategic locations throughout the city. As cars pass over these devices, an electrical impulse is sent to the computer, which can gather and analyze millions of bits of information each second.

"In this way," said Mr. Davis, "the computer is informed of any traffic demands and can respond accordingly by changing traffic signals. By early next year, 32 additional sensing devices will be installed to increase the amount of data for the computer."

Roy Wilshire, city traffic engineer, indicated that the new devices will have the ability to detect not only the number of cars but also their speed, the lane they are in and the number of stops that they make.

"With the 1800 system," said Mr. Wilshire, "we have a control computer that is capable of immediately responding to the needs of traffic." Presently, the computer selects the best of 17 different traffic light timing sequences. Eventually, it will be programmed to develop an infinite number of patterns to meet the constantly changing demands of traffic.

Mr. Wilshire said the IBM 1800 provides a central location where all traffic data can be studied and controlled. "We have learned more about our downtown traffic here in the past few weeks from the computer than during the past 15 years by observation," he said.

The computer control system has the ability of turning itself on and off automatically. It also can operate unattended during the day. When not in use, the city's former fixed-time system takes control.

Mr. Wilshire said plans are underway to use the 1800 for studying the traffic capacity of various streets to determine if they should be widened; conducting downtown parking turnover studies; and scheduling maintenance of traffic signals, detectors and other equipment.

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