PROGRAM STATEMENT ON THE
COUNTYWIDE SIGNAL SYSTEM
(July 3, 2001)
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The Metropolitan Planning Organization (MPO) Intelligent Transportation Systems (ITS) Advisory Committee reviewed the ATMS Requirements Document for the Countywide Signal System. It was concluded there were six subject areas that are in need of clarification to minimize misunderstanding and to better define the program for all participants.

With that intent in mind, the following six areas are listed and a statement is provided.

A. THE MANAGEMENT TEAM POLICY DIRECTION

The Requirements Document defines that a Management Team consisting of the Director of Public Works for Pinellas County, the City of Clearwater, and the City of St. Petersburg would be providing technical advice to the County government Primary Control Center. While this would provide good technical input and representation, an agency authorized and accountable for the ITS corridors must be clear. This is agreed upon to be the Board of County Commissioners.

B. PROGRAM STAFFING

The Requirements Document calls for a staffing of the Primary Control Center, which is at the heart of the Countywide Signal System. It is assumed there are two scenarios to implement this and the balance of the full system. The first scenario is that each of the three participating agencies would provide staff to the program, with the assignment that they would perform the necessary tasks to operate the countywide system. The expense of this effort would then be incurred by the respective jurisdictions with the understanding that all participants will benefit from this united effort. The staffing would thereby be accomplished through an appointment procedure, with a full or part-time appointment to countywide functions. The second scenario would be that those selected to be associated with the countywide ITS system would then be separately funded for this purpose by a revenue source set up for this function. The agreed upon staff approach is as follows:

a. An integrated staffing program where the primary jurisdictions provide all of the staff necessary to support systems not otherwise on the ITS system but coordinated with the countywide system. Each jurisdiction would be responsible for funding their staff.

b. A countywide ITS staffing program where all of the staff who are performing the countywide ITS functions would be working under the County government which would have sole funding responsibility.

C. SYSTEM EQUIPMENT RESPONSIBILITIES

The Requirements Document defines the equipment and resources that will be needed for the system. The two scenarios as noted in Paragraph B on staffing would apply to this aspect of the program as well. The first scenario would be for each of the participating jurisdictions to be responsible for operating and maintaining a portion of the equipment utilizing federal, state, and local funding. The second scenario would be that all of the equipment associated with the Countywide ITS Signal system would be acquired, operated, and maintained by one jurisdiction utilizing federal, state, and local funding. It is understood that all of the

equipment would operate as one system and be fully coordinated. The system equipment responsibilities are:

a. An integrated program as used in Paragraph B for staffing where the participating jurisdiction provides the equipment operation and maintenance in direct association with the staffing effort that jurisdiction is assigned responsibility for.

b. The ITS where the system equipment, operation, and maintenance would be the responsibility of one jurisdiction, the Board of County Commissioners.

D. TIED-IN (NON SIGNAL) FUNCTIONS

The Countywide Signal System is concerned with a fully-coordinated signal system that is responsive as an integral part of the Intelligent Transportation Systems (ITS). Those ITS functions that are relevant and identified to be part of the system will be coordinated through the ITS framework. These functions are identified to be: a) fire response services, b) law enforcement, c) emergency medical services (EMS), d) emergency communications, e) transit services, and f) traveler information services. These will be considered the core non-signal functions with additional ancillary services that would be involved on an as-needed basis.

E. PROTOCOL FOR FUNCTIONS (CORRIDORS EVENTS)

The traffic signals within the County must respond to different functional responsibilities that range from traffic control on a local street that has very little surrounding impact to traffic signals on major arterials where their function could dramatically effect the flow of countywide traffic. There is, therefore, the need to establish protocols for the functioning of these signals and their different levels of influence. As a minimum, there is the need to establish a protocol to ensure that the arterials function at their most optimum level at all times of the day irrespective of events or incidents. This would be of primary concern to the countywide system. At the other end of the spectrum is the need to establish a protocol for special local events that are of interest to a community. The protocols are important because they define which signals are involved on which roadways and then how that system functioning is to be carried out through both normal operations and in response to incidents that may occur. The protocols presumed to be included within the system would be: a) primary countywide corridors protocol, b) secondary countywide corridors protocol, c) special event protocol, d) local street protocol, e) controlled access ramp system protocol, and f) a regional protocol that would be concerned with disaster responses and other such across-the-board situations.

F. DOCUMENTATION – TIME TABLE PLANS

Concerning the Advanced Traffic Management System (ATMS) for the signal system, the Requirements Document defined the ATMS functions to be:

a) traffic adaptive signal control;
b) video monitoring;
c) dynamic message signs;
d) vehicle detection; and
e) archive database management.

The key function is that of adaptive control where the system can register the traffic on a corridor and then adjust the signals to make that traffic flow more efficiently. This is a change from the current use of predetermined timing plans for each signal along a corridor. Concerning the adaptive control program, consideration may need to be given to a counter

adaptive program for the ancillary or crossing roads in that corridor to ensure that the efficiency of those roads is somewhat preserved. Such a counter program will not be needed once the full road system is on adaptive control.

The Requirements Document calls for the need for agreements among participants as to how the system would function. It will be important that these agreements be defined as early as possible so that there will be a clear understanding of relationships and responsibilities. As part of this additional business, there is also the need to identify what activities in the program development would occur over the next several years to ensure not only the correct sequencing of events based upon a rational approach but also based upon the priorities that have been approved. This exercise would permit the MPO and participating policy groups to confirm the specific system functions they agree to along with the phasing of those functions in terms of staffing, equipment, tied-in functions, protocols, and corridor applications. In addition, the cooperative decision making by the various participating agencies as this system is developed is critical.

Concerning the above functions, the following approaches are recommended:

a) Traffic adaptive signal control should be implemented on a selected corridor basis beginning with U.S. 19 and Gulf-to-Bay Boulevard, followed by Ulmerton Road, McMullen-Booth/East Lake Road, and the Interstate system. However, it would be important to have other corridors (such as S.R. 580, Bay Drive, and C.R. 296) in this system as soon as possible to derive the full benefit of adaptive control, diversion procedures, and other ITS functions. It is the MPO intent to establish a full corridor network to be part of the MPO ITS Plan.
b) Video monitoring should be explored for as much area of the County as possible and in a joint venture with the private sector.
c) Dynamic message signs could either be applied within the original ATMS corridors or could be approached on a countywide basis.
d) A vehicle detection system should be initiated in conjunction with the adaptive signal control within those same corridors.
e) The archiving of the database should be as comprehensive as possible, including not just the initial corridors but the full system.