

Date: July 7, 2005

To: Honorable Chairman Joe A. Martinez
and Members, Board of County Commissioners

From: George M. Burgess
County Manager

Subject: Supplement to Item 8P1M
Re: Advanced Traffic Management System

8P1M
Supplement

Via the 1972 Decade of Progress Bond Issue, the citizens of Miami-Dade County authorized the development and installation of the most modern traffic signal control system in existence at the time. That system has successfully controlled traffic signals on Miami-Dade arterials for almost three decades. During this time, other cities throughout the world have followed Miami-Dade County's lead and have developed and installed similar systems. Many technological advancements have been incorporated into the newer systems. Some of those have also been incorporated into Miami-Dade's system, but many cannot be utilized due to the outdated design of the system.

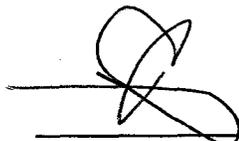
The time has come to replace Miami-Dade's aging Traffic Control System with a modern, state-of-the-art Advanced Traffic Management System (ATMS). The new ATMS will provide services to citizens that match, and in some cases exceed, those which are provided by the most modern systems currently available.

The Public Works Department has developed an aggressive program to complete the transition to the new ATMS over a period of approximately four years. The effort is divided into four distinct projects:

1. ATMS - This project will result in the actual acquisition and deployment of the software and central hardware components of the system to monitor and control the County's traffic signals. If approved by the Board of County Commissioners (BCC), the consultant will initially install the system on an Alpha Test network of 16 intersections near the existing Traffic Control Center. The contract establishes a total cost of \$325,000 for the first phase of the effort. Upon receiving the County's acceptance of the new system, the consultant will deploy it throughout the County during the following four years. The deployment schedule will be developed by the Department and the consultant in late 2005 with emphasis being placed on installing the system where it is most needed and where field equipment compatible with the system is already installed. Input from the BCC will be sought before the deployment schedule is finalized. All existing and future traffic signals will be integrated into the system by approximately late 2009. During the four-year deployment stage, the consultant will also develop and incorporate many system enhancements that will make this already-state-of-the-art system a new leader in the field. The maximum value of the ATMS contract has been set at \$9 million including the aforementioned \$325,000. The consultant will be under contract to implement all functionality specified in the contract in an amount not to exceed \$9 million.
2. Controller Replacements - An important advantage of the selected off-the-shelf ATMS product is that most of the County's 2600 existing traffic signal control cabinets require only a \$200 modification to operate on the new ATMS. However, about 750 cabinets which were installed in the 1980's need to be replaced with newer, system-compatible, equipment. The total cost of these upgrades is estimated to be about \$8 million. The Public Works Department is preparing a contract for this work and plans to bid it in early 2006. The actual field construction effort can then proceed simultaneously with the countywide deployment of the ATMS project itself.

3. Countywide Communication Network - The existing Traffic Control System uses leased BellSouth circuits to communicate between the Traffic Control Center and its 2000 field locations. To fully realize the benefits of the new system, the capacity of the communication network needs to be significantly increased. The cost of this effort is estimated at \$65 million. While the ATMS will be the "anchor tenant" and will be responsible for about half of that cost, which will be funded by the People's Transportation Program, the new communications system will also serve all other County departments. The system's use will significantly enhance all countywide inter- and intra-departmental communication activities and will eliminate approximately \$4.5 million of existing Miami-Dade County communication expenses. This project is therefore being developed by Enterprise Technology Services Department (ETSD) in close conjunction with the Public Works Department. ETSD expects to deploy the system during the next few years in synch with, or ahead of, each corridor deployment of the ATMS.
4. Traffic Management Center - The ATMS will initially be installed at the Public Works Department's Traffic Control Center (TCC), which is presently leased from the Aviation Department. The TCC was built in the early 1970's to house the old system. TCC, along with the rest of the Department's Traffic Signals and Signs Division facilities, needs to be moved to another site to accommodate a planned airport facilities expansion. Therefore, a new, ~\$10 million, facility is being planned. This four-year project will be completed just before the ATMS is completed. One of the ATMS consultant's final tasks will be to move the ATMS into the new facility in approximately mid 2009. Because of the component design of the new system, this move is not expected to be difficult and should not cause any noticeable affect to traffic flow.

As the above four projects come together during the next four years, their benefits to the public will gradually become apparent. Arterial capacities will generally increase about 5% and even more in some cases. This will enable more traffic to flow during saturated conditions to improve the economic vitality of the area. It will enable traffic to flow more efficiently during non-saturated conditions. Side street delays will be significantly decreased at many locations. Emergency vehicles will respond to incidents faster and with less interference to non-emergency traffic. Traffic signal malfunctions will be less frequent. Those that do occur will be identified and fixed faster to minimize their detrimental affect on traffic. The system will interface efficiently with other Intelligent Transportation Systems such as those operated by Miami-Dade Transit, Miami-Dade Expressway Authority, and the Florida Department of Transportation to provide additional benefits such as preferential treatment for buses that are behind schedule and traffic that is detoured off a freeway due to an incident. Traffic flow and signal operation information will be easily available to the public to enable them to make travel decisions more effectively.



Deputy County Manager