Memorandum

MIAMI-DADE COUNTY

Date: January 24, 2012

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

Agenda Item No. 8(M)(2)

From: Carlos A. Gimenez
Mayor

Subject: Amendment to an Existing Contract between Miami-Dade County and Kimley-Horn and Associates for the People's Transportation Plan (PTP) Project Entitled Advanced Traffic Management System (ATMS) in the Amount of $3,900,000 and Authorizing the Use of Charter County Transportation Surtax Funds.

RECOMMENDATION

It is recommended that the Board of County Commissioners (BCC) approve the attached Resolution authorizing a second amendment to an existing contract between Miami-Dade County (MDC) and Kimley-Horn and Associates (KHA) in the amount of $3,900,000 and to grant a contract extension until July 2014 to provide communications and system integration services for current Phase 2 and accelerate elements of Phase 3 of the Countywide ATMS project (Project). This Project is funded through the Charter County Transportation Surtax. Therefore, approval by the BCC and the Citizens' Independent Transportation Trust (CITT) is required.

SCOPE

This Project is Countywide and, as such, will benefit all Commission Districts.

FISCAL IMPACT/FUNDING SOURCE

The amount of this amendment is $3,900,000 and will be funded from Charter County Transportation Surtax 2010 Bond Proceeds as programmed within Public Works and Waste Management's (PWWM) Multi-Year Capital Budget. There are no recurring operation or maintenance costs anticipated with this Amendment. The funding index code for this Project is CPEPTP500ATM.

The Project is listed in Exhibit 1 of the PTP Ordinance under Major Highway and Roadway Improvement Projects.

DELEGATION OF AUTHORITY

This Contract includes provisions which authorize PWWM's Director or representative to grant a contract modification/extension until July 2014. The services described under this Amendment are anticipated to be completed within this time frame. No additional authority is being requested within the body of this contract.

TRACK RECORD/MONITOR

The County is supervising, monitoring, and inspecting all aspects of the Project's implementation, deployment, and administration. Mr. Robert Williams, P.E., PTOE, Chief, Traffic Signals & Signs Division, PWWM, is responsible for this Project.

BACKGROUND

On July 7, 2005, the BCC adopted Resolution No. R-876-05 authorizing a contract with KHA to replace the obsolete, Urban Traffic Control System (UTCS) with a modern ATMS platform, and to migrate all of the County's traffic signals to the new system. Phase 1 and Phase 2 of the project consisted of the integration of all of the County's traffic signals into the ATMS, for which the consulting and system integration services were originally budgeted for $9 million.

The original project scope and System Manager Contract contemplated the development of a hybrid wireless and fiber-optic communication network by the County's Information Technology Department (ITD)

backbone of the ATMS' network communication subsystem. Since this proposed network did not come to fruition, KHA was required to develop an alternate communication strategy using a modified version of the existing leased AT&T phone line network. The first amendment to this contract, approved under BCC Resolution R-42-10, provided an additional $2,160,000 in order to carry out the abovementioned communication strategy; as well as for System Operations and Communications for the Kendall Drive Bus Rapid Transit (BRT) Concept, and the re-timing of five (5) major north-south and five (5) major east-west corridors and allowed for PWWM's Director to grant a contract modification/extension until July 2012 as per the Contract's original provisions. This retiming effort consisted of extensive data gathering and management which was originally envisioned for a future phase of the ATMS project. As of October 31, 2011, 2,702 traffic signals (99% of the total) had been successfully migrated to the new ATMS, and numerous operational benefits have been provided to the public.

This second proposed Amendment will allow KHA to continue working with PWWM's Traffic Signals and Signs Division (TS&S) and ITD's staff to provide necessary services and transition into the commencement of Phase 3 of the Project. KHA will assist County staff in the development of high-speed communication strategies and facilities that will allow the County to proactively take advantage of various communication technologies, both wire line and wireless, in its effort to upgrade and enhance the already operational ATMS. The total of all fee payments to KHA with the approval of this Amendment shall not exceed $15,060,000 and will allow for PWWM's Director to grant a contract modification/extension until July 2014 as per the Contract's original provisions. The work proposed under this Amendment is summarized below.

Further, the acceleration of these elements will allow the County to continue to utilize up to $10,499,382.50 in funds for the construction and implementation of the communication improvements at the signalized intersections from the County Incentive Grant Program (CIGP) Agreement (BCC Resolution R-687-09) with Florida Department of Transportation (FDOT).

ATMS Communication Upgrades

$2.2 million is the amount estimated to be required by KHA to provide ATMS communication upgrades. The absence of a reliable, high speed communications network for traffic control remains a challenge for the ATMS. Currently, approximately 88% of the County's signals are linked by leased lines, which incur recurring annual lease charges. As such, TS&S has initiated steps such that the County can eventually migrate to a reliable County owned traffic system communications network. This task will cover KHA's services required to bring the communication system's performance to an acceptable level of reliability, and reduce recurring costs. This communications upgrade will be designed to support all existing signals, existing and future closed circuit television (CCTV) cameras, school flashers, and dynamic message signs. Under this task, a Countywide ATMS communications architecture will be developed, and the design for a subarea will be prepared. Related central software enhancements to support the additional devices described above and associated functions made possible by the upgraded communications will also be included.

Additionally, approximately 750 school speed zone flashing signs are presently linked by one-way pager communications, a technology that is expected to no longer be viable in the near future. As such, TS&S has proposed the need to develop an alternative communication method. KHA will provide planning and design support services, including support to ITD for the development of a broadband bi-directional communications alternative to support a County-wide school flasher control and monitoring system as well as support for Speed Feedback Signs. Related central software modification will be included.

Finally, the relocation of TS&S facilities, including the central system and communications, is planned to occur in the near future. KHA support is required to plan and implement a smooth transfer of the central

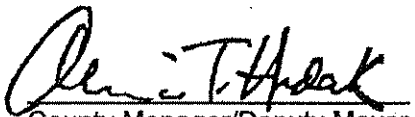
system and communications to the new location in a manner that will maintain normal, uninterrupted, operation of the ATMS.

Controller Upgrade and Video Surveillance Subsystem

$1.7 million is the amount estimated to be required by KHA to provide controller upgrades and video surveillance subsystem. The Type 170 controllers currently installed at all signalized intersections are performing at maximum capacity and will require software and/or hardware upgrades to be able to handle additional functionality. This Amendment will enable KHA to assist the County in evaluating emerging controller options and related technologies, and select an alternate controller to support signal operations. Prior to the selection of the most viable option based on a life cycle analysis, the new controller type will be extensively bench and field tested to ensure a smooth migration, with related central software modifications to be included.

Additionally, video monitoring capability at major intersections is proposed to take full advantage of the new system's features. Video cameras can provide both vehicle detection and traffic surveillance at selected major intersections. This capability will initially be introduced at a limited number of major intersections. Related enhancements to the central software supporting this feature will also be implemented.

Due to the aforementioned facts and the need to provide continuity, it is recommended that the Contract be supplemented with an additional amount of $3.9 million, in order to reap the greatest benefits and more efficiently use the system's enhanced technologies.



County Manager/Deputy Mayor

MEMORANDUM

(Revised)

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

DATE: January 24, 2012

FROM: R. A. Cuevas, Jr.
County Attorney

SUBJECT: Agenda Item No. 8(M)(2)

Please note any items checked.

_____ **"3-Day Rule" for committees applicable if raised**

_____ **6 weeks required between first reading and public hearing**

_____ **4 weeks notification to municipal officials required prior to public hearing**

_____ **Decreases revenues or increases expenditures without balancing budget**

_____ **Budget required**

_____ **Statement of fiscal impact required**

_____ **Ordinance creating a new board requires detailed County Manager's report for public hearing**

_____ **No committee review**

_____ **Applicable legislation requires more than a majority vote (i.e., 2/3's ____, 3/5's ____, unanimous_____) to approve**

✓ **Current information regarding funding source, index code and available balance, and available capacity (if debt is contemplated) required**

Approved _____ Mayor
Veto _____
Override _____

Agenda Item No. 8(M)(2)
1-24-12

RESOLUTION NO. _____

RESOLUTION AUTHORIZING EXECUTION OF AN AMENDMENT TO AN EXISTING CONTRACT BETWEEN MIAMI-DADE COUNTY AND KIMLEY-HORN AND ASSOCIATES TO PROVIDE ADDITIONAL FUNDING IN THE AMOUNT OF $3,900,000 FOR THE PEOPLE'S TRANSPORTATION PLAN (PTP) PROJECT ENTITLED ADVANCED TRAFFIC MANAGEMENT SYSTEM (ATMS); AUTHORIZING THE COUNTY MAYOR OR COUNTY MAYOR'S DESIGNEE TO EXERCISE THE PROVISIONS THEREIN; AND AUTHORIZING THE USE OF CHARTER COUNTY TRANSPORTATION SURTAX FUNDS

WHEREAS, this Board desires to accomplish the purposes outlined in the accompanying memorandum, a copy of which is incorporated herein by reference; and

WHEREAS, both Kimley-Horn and Associates (KHA) and Miami-Dade County wish to facilitate the County wide implementation and deployment of the Advanced Traffic Management System (ATMS),

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF MIAMI-DADE COUNTY, FLORIDA, that this Board approves this contract amendment of the existing contract between Miami-Dade County and KHA providing additional funding in the amount of $ 3,900,000 for eligible expenses incurred during the current implementation program, in substantially the form attached hereto and made a part hereof; authorizing the County Mayor or County Mayor's designee to execute same for and on behalf of Miami-Dade County and to exercise the provisions contained therein; and authorizing the use of Charter County Transportation Surtax funds.

The foregoing resolution was offered by Commissioner ,

who moved its adoption. The motion was seconded by Commissioner

and upon being put to a vote, the vote was as follows:

Joe A. Martinez, Chairman
Audrey M. Edmonson, Vice Chairwoman

Bruno A. Barreiro	Lynda Bell
Esteban L. Bovo, Jr.	Jose "Pepe" Diaz
Sally A. Heyman	Barbara J. Jordan
Jean Monestime	Dennis C. Moss
Rebeca Sosa	Sen. Javier D. Souto
Xavier L. Suarez	

The Chairperson thereupon declared the resolution duly passed and adopted this 24th day of January, 2012. This resolution shall become effective ten (10) days after the date of its adoption unless vetoed by the Mayor, and if vetoed, shall become effective only upon an override by this Board.

MIAMI-DADE COUNTY, FLORIDA
BY ITS BOARD OF
COUNTY COMMISSIONERS

HARVEY RUVIN, CLERK

By:_____
Deputy Clerk

Approved by County Attorney as
to form and legal sufficiency.

Bruce Libhaber

AMENDMENT NO. 2 TO THE MIAMI-DADE COUNTY ATMS SYSTEM INTEGRATOR CONTRACT

This Amendment No. 2 to the Contract is made and entered into this _____ day of _____,20____, by and between Miami-Dade County, a political subdivision of the State of Florida, hereinafter referred to as the "COUNTY," and KIMLEY-HORN AND ASSOCIATES, INC., hereinafter referred to as the "SYSTEM INTEGRATOR".

WITNESSETH:

WHEREAS, pursuant to Resolution No. R-876-05 approved by the Board of County Commissioners on July 07, 2005, the parties hereto entered into a contract retaining the SYSTEM INTEGRATOR for the provision, installation, and implementation of a new Advanced Traffic Management System (ATMS), and providing a maximum compensation of $9,000.000.00 for all professional services required during the implementation of the current phase of the project;

WHEREAS, pursuant to Resolution No. R-42-10 approved by the Board of County Commissioners on January 21, 2010, the parties hereto entered into a contract amendment extending the SYSTEM INTEGRATOR Contract to allow for the continued provision, installation, and implementation of the new Advanced Traffic Management System (ATMS), and providing for a maximum compensation of $11,160.000.00 for all professional services required during the implementation of the current phase of the project;

7

WHEREAS, the County requires for the SYSTEM INTEGRATOR to provide additional services beyond those authorized by Amendment 1; these additional services being described in the accompanying memorandum, a copy of which is incorporated herein by reference;

WHEREAS, the successful completion of these additional services requires additional funds in the amount of $3,900,000.00;

WHEREAS, the original contract was for a period of five (5) years and authorized the Director to extend this Agreement on a bi-annual basis for up to two (2) additional two-year periods;

WHEREAS, Amendment 1 authorized this Agreement to remain in full force and effect for a period of seven (7) years from the original date of execution or until depletion of the funds allocated to pay for the cost of said services, whichever occurs first, and authorized the Director to extend in writing prior to the applicable expiration date, if funding remains, or if additional funding becomes available, this Agreement for an additional two-year period;

WHEREAS, Exhibit D- Category Billing Rates within the original contract contained an escalation provision of 4% annually;

NOW, THEREFORE, in consideration of the mutual desires of the parties hereto, the following modifications are made to the aforementioned Agreement:

SECTION V – COMPENSATION

Subsection E. Maximum Compensation

Shall read as follows:

Both parties agree that compensation will only be made for work specifically authorized in writing by the COUNTY. The total of all fee payments to the SYSTEM

8

INTEGRATOR under this Agreement shall not exceed $15,060,000.00. The COUNTY at its discretion may supplement this amount with additional funds as required.

SECTION XVIII - DURATION OF AGREEMENT

Shall read as follows:

This Agreement shall remain in full force and effect for a period of nine (9) years from the original date of execution or until depletion of the funds allocated to pay for the cost of said services, whichever occurs first.

EXHIBIT D- CATEGORY BILLING RATES

Shall read as follows:

Escalation of 4% annually will be applicable up to the current FDOT fiscal year which began July 1, 2011. No further escalation will be allowed after the current FDOT fiscal year.

In all other respects, except as amended by this Amendment and by Amendment 1; the original Agreement shall remain unchanged and in full force and effect.

IN WITNESS WHEREOF the parties hereto have caused this Second Amendment to the Contract to be executed by their appropriate officials as of the date first entered above.

ATTEST:

HARVEY RUVIN
CLERK OF THE BOARD

BY: _____
Deputy Clerk

MIAMI-DADE COUNTY, FLORIDA,
BY ITS BOARD OF
COUNTY COMMISSIONERS

BY: _____
County Mayor or County Mayor's Designee

Approved by County Attorney
as to form and legal sufficiency _____
County Attorney

ATTEST:

By: _____

KIMLEY-HORN AND ASSOCIATES, INC.
a Corporation authorized to transact
business in Florida

By: _____
(K. K. SAXENA)
Senior Vice President
Kimley-Horn and Associates, Inc.

(CORPORATE SEAL)

KIMLEY-HORN AND ASSOCIATES, INC.
CORPORATE
SEAL
NC

10

Memorandum

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

From: Charles Scurr, Executive Director

Date: January 4, 2012

Re: **CITT AGENDA ITEM 7A:**
RESOLUTION BY THE CITIZENS' INDEPENDENT TRANSPORTATION TRUST (CITT) RECOMMENDING THAT THE BOARD OF COUNTY COMMISSIONERS (BCC), APPROVE AN AMENDMENT TO AN EXISTING CONTRACT (CONTRACT NO. 20050189) BETWEEN MIAMI-DADE COUNTY AND KIMLEY-HORN AND ASSOCIATES TO PROVIDE ADDITIONAL FUNDING IN THE AMOUNT OF $3,900,000.00 FOR THE PEOPLE'S TRANSPORTATION PLAN (PTP) PROJECT ENTITLED ADVANCED TRAFFIC MANAGEMENT SYSTEM (ATMS); AUTHORIZING THE COUNTY MAYOR OR COUNTY MAYOR'S DESIGNEE TO EXERCISE THE PROVISIONS THEREIN; AND AUTHORIZING THE USE OF CHARTER COUNTY TRANSPORTATION SURTAX FUNDS **(PWWM – BCC Legislative File No. 112567)**

On January 4, 2012, the CITT voted (8-0) to forward a favorable recommendation to the Board of County Commissioners (BCC) for the approval of the above referenced item, CITT Resolution No. 12-013. The vote was as follows:

Hon. Linda Zilber, Chairperson – Aye
Paul J. Schwiep, Esq., 1st Vice Chairperson – Aye
Hon. Anna E. Ward, Ph.D., 2nd Vice Chairperson – Aye

Christopher Benjamin, Esq. – Absent
David Concepcion – Absent
Glenn J. Downing, CFP® – Aye
Alfred J. Holzman – Aye
Marilyn Smith – Absent
Harold Braynon, Jr. – Aye
Joseph Curbelo – Absent
Peter L. Forrest – Aye
Miles E. Moss, P.E. – Aye

cc: Alina Hudak, Deputy Mayor/County Manager
Bruce Libhaber, Assistant County Attorney
Alexander Bokor, Assistant County Attorney

11

MIAMI-DADE COUNTY
BOARD OF COUNTY COMMISSIONERS
OFFICE OF THE COMMISSION AUDITOR

Legislative Notes

Agenda Item: 8M2

File Number: 112567

Date of Analysis: December 20, 2011

Summary

This resolution authorizes a *Second Amendment* to an existing contract between Miami-Dade County and Kimley-Horn and Associates (KHA) in the amount of $3,900,000; grants a contract extension until July 2014 to provide communications and system integration services for Phase 2; and accelerates elements of Phase 3 of the Countywide Advanced Traffic Management System Project (Project).

(First Amendment) The First Amendment to this contract, approved on January 21, 2010, through R-42-10, provided an additional $2,160,000 in order to carry out the abovementioned communication strategy; as well as for System Operations and Communications for the Kendall Drive Bus Rapid Transit (BRT) Concept, the re-timing of five (5) major north-south and five (5) major east-west corridors, and allowed for Public Works staff to grant a contract modification/extension until July 2012.

This retiming effort consisted of extensive data gathering and management which was originally envisioned for a future phase of the ATMS project.

Fiscal Impact

The $3,900,000 will be funded from Charter County Transportation Surtax 2010 Bond Proceeds as programmed within Public Works and Waste Management's (PWWM) Multi-Year Capital Budget. There are no recurring operation or maintenance costs anticipated with this amendment.

- The total of all fee payments to KHA with the approval of this Amendment will not exceed $15,060,000 and will allow for PWWM's Director to grant a contract modification/extension until July 2014.
- Further, the acceleration of these elements will allow the County to continue to utilize up to $10,499,382.50 in funds for the construction and implementation of the communication improvements at the signalized intersections from the County Incentive Grant Program (CIGP) Agreement (BCC Resolution R-687-09) with Florida Department of Transportation (FDOT).

Background and Relevant Information

On July 7, 2005, the BCC, through R-876-05, authorized a contract with KHA in the amount of $9 million to replace the Urban Traffic Control System (UTCS) with a modern ATMS platform, and to migrate all of the County's traffic signals to the new system. *The system would replace the* County's Traffic Control System *(TCS) that has been monitoring and controlling traffic signals in Miami-Dade County for over 29 years. A formal Request for Proposals following standard Department of Procurement Management processes was not initialized.*

Phase 1 and Phase 2 of the project consisted of the integration of all of the County's traffic signals into the ATMS, for which the consulting and system integration services were originally budgeted for $9 million.

The original project scope and System Manager Contract contemplated the development of a hybrid wireless and fiber-optic communication network by the County's Information Technology Department (ITD) (formerly Enterprise Technology Services Department). The proposed network was to serve as the backbone of the ATMS' network communication subsystem.

Since this proposed network did not come to fruition, KHA was required to develop an alternate communication strategy using a modified version of the existing leased AT&T phone line network.

- According to PWWM staff, as of December 13, 2011, 2682 signals have been implemented with ATMS software and 2664 have been linked to ATMS Central, deeming the Phase 2 of this project to be in substantial completion.(99% completed)

Some of the major software enhancements are as follows:

- Real Time Controller Hardware Interface.
- Scheduled automated reports. One of the most important is the "Daily Report", which includes 9 separate reports (Pre-Emption, Phase mal-function, communications, etc.).
- Enhanced preemption and equipment failure detection.
- Interface using maps for quick access to several features, functionalities, and reports.
- Ability to control 4000-plus intersections (previously limited to 2048).
- Ability to communicate using serial and Internet Protocol (IP) based communications.
- Ability to alert staff regarding system operations and equipment failures via email and paging.
- Ability to support BRT (Bus/Rapid Transit) operation.

This proposed amendment will allow KHA to continue working with PWWM's Traffic Signals and Signs Division (TS&S) and ITD's staff to provide necessary services and transition into the commencement of Phase 3 of the Project.

ATMS Deployment and Additional KHA Information

Phase 1 Alpha Test began in late 2005 and was completed in mid 2006. It consisted of the installation of the central ATMS processors and the integration of 16 Alpha-test intersections into the system.

On February 1, 2005, through R-172-05, the Administration requested that the BCC waive competitive bids and authorize the County Manager to enter into negotiations with selected vendors for the installation and implementation of a new ATMS.

The TCS was installed in the mid to late 1970s. In 1996, the County awarded F.R. Aleman & Associates a contract to install a new ATMS. The contract was terminated in June 2004 because F.R. Aleman & Associates' inability to make their proposed software operate in a large network. PWD staff in February 2005 identified and purchased an "off-the-shelf" (OTS) ATMS. PWD stated that a consultant to design a brand new system was not required.

A Request for Information to ascertain industry participation in the project was forwarded to 14 known suppliers of OTS ATMS products throughout the United States in late June 2004. A four-person committee consisting of PWD and Enterprise and Technology System Division staff concluded that of the 14 vendors, 6 vendors had the experience. The committee found that KHA stood out among the other 6 vendors to serve as the project's System Manager.

During the same time, FDOT stated that their participation would not be in the software development, but rather on the deployment of the project.

Primary vendors, contractors, and consultants for the ATMS:

- Kimley-Horn & Assoc – System Manager
    - Control Technologies – Hardware and software for controllers
    - GDI Communications – Communication modem

- McCain – Controller Manufacturer
- AT&T (Utility) – Communications rental
- IT Wireless – Wireless Communication System (County owned)

Pursuant to Small Business Development's firm history report, dated December 16, 2011, the firms mentioned above do not have violations with the County.

Additional Information

In response to questions posed by the Office of the Commission Auditor, PWWM staff provided the following information:

- Was the NW 199 Street Reversible Lane Control System addressed? Are there any other systems that require refurbishing? *Yes, the NW 199th Street Reversible Lane Control System (RLCS) was completely refurbished and is functioning well. There are no other reversible lane control systems scheduled under this project.*

- Has the ATMS operations and maintenance costs increased or have they stayed under control? *The primary operations and maintenance cost associated with the ATMS are the communications line leasing charges. In terms of per location per month charges, a majority of these (those converted from slow leased lines to faster digital lines) have remained roughly the same, while the recurring costs for a smaller number have come down through the use of communications technologies that were not previously available.*
    - *The cost of communications in 2006 of approximately 2000 signalized traffic intersections was approx. $ 2.3 million. per year*
    - *The cost of communications to-date with approx. 2700 (approx. 700 more than five years ago) intersections integrated to Central is approx. $ 2.7 million per year.*
    - *With the introduction of wireless technology the above-mentioned cost will decline approx. $240,000 in the next fiscal year and more thereafter as more intersections are migrated to the County-owned wireless infrastructure.*

- Please let me know if any work is being performed in-house or is all the work outsourced to KH and subcontractors? *Many work elements such as controller timing development, preparation and final pre-installation testing of traffic signaling cabinets, field installation, and field testing of installed controllers and communications devices were performed by in-house staff in addition to their day-to-day responsibilities for systems operation and maintenance.*

- Can the ATMS interface with the red light camera system? *The ATMS can interface with the red light running camera system. However, TS&S does not see any benefit to the County of doing so and prefers to keep the systems as separate as possible for purposes of liability and maintenance responsibility.*

- Have there been any issues with the Beacon Tradeport Community Development District or Light Speed Building and ATMS? *The development of the new Traffic Control Center at the Light Speed Building is ongoing. PWWM has been working with ISD to develop preliminary layouts for the new facilities as well as exploring alternative layouts. ISD is currently evaluating the building requirements and will be providing PWWM a cost estimate for the new facilities.*

- Is the ATMS experiencing any shortages in funding? *The ATMS project has been estimated to be $117 million in total with PTP funding $49 million, Local funding sources for $6 million, and an estimated*

funding of $62 million from FDOT and/or Federal sources. To date, PWWM has spent approximately $29M in PTP funds, along with obtaining $14M in State funds. While the PTP has been the primary funding source and there has not been any shortages in funding, additional funding will be needed in the future in order to carryout the implementation of the complete ATMS communications system that has been envisioned. PWWM has and continues to pursue State and Federal funds in order to carryout the full implementation of the ATMS

- Has the County experienced any savings or will they? *The primary financial savings being attained by the ATMS are in the communications realm. The Operations & Maintenance costs at the intersections that have been migrated to the wireless communications subsystem are half of what the previous hard-wired communications were costing on a monthly basis ($50/mo./intersection as opposed to $100/mo./intersection). As additional intersections are moved from the hard-wired subsystem to the wireless subsystem during the extension of Phase 2 of the project, savings will continue to grow.*

Prepared by: Michael Amador-Gil