

Escambia-Santa Rosa Regional ATMS

Escambia-Santa Rosa Regional Advanced Traffic Management System (ATMS)



BCC Meeting: June 6, 2019

Ben Faust, P.E.

Escambia-Santa Rosa Regional ATMS

The Challenge

Adding capacity has traditionally been the first approach to addressing congestion, although it is costly in both time and dollars.



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Escambia-Santa Rosa Regional ATMS

The Solution

New Transportation Systems Management and Operations (TSM&O) approaches keep traffic moving by **maximizing** the existing roadway capacity and **minimizing** the impact of unexpected events.



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Escambia-Santa Rosa Regional ATMS

- What is TSM&O?
 - Transportation Systems Management and Operations
 - Strategies that use ATMS technology to leverage existing roadway infrastructure (i.e. Signals, etc.)
- What does TSM&O do for us?
 - Incident Management – Ensure safety of motorists and first responders
 - Monitoring – CCTVs allow operators to view roadways and incidents in real-time
 - Evacuations – Arterials are often under-utilized and require improved operations
 - Event traffic and parking management
 - Detector Failures – Identified immediately so they can be fixed/replaced



Escambia-Santa Rosa Regional ATMS

TSM&O Strategies

- Communications
- Fiber
- Monitoring
- CCTVs
- Vehicle detection
- Information dissemination
- Incident management
- Traffic signal technology
- Retiming
- Preemption
- Priority
- Demand management
- Work zone management
- Integrated Corridor Management
- Parking management
- Transit management
- Electronic payment
- Connected vehicles
- Freight technologies
- Data management
- Event management
- Asset management
- Bike/ped safety



Escambia-Santa Rosa Regional ATMS

Proven TSM&O Tactics

- Incident management
- Synchronized/adaptive traffic signals
- Message signs
- Active traffic management
- Managed lanes/transit

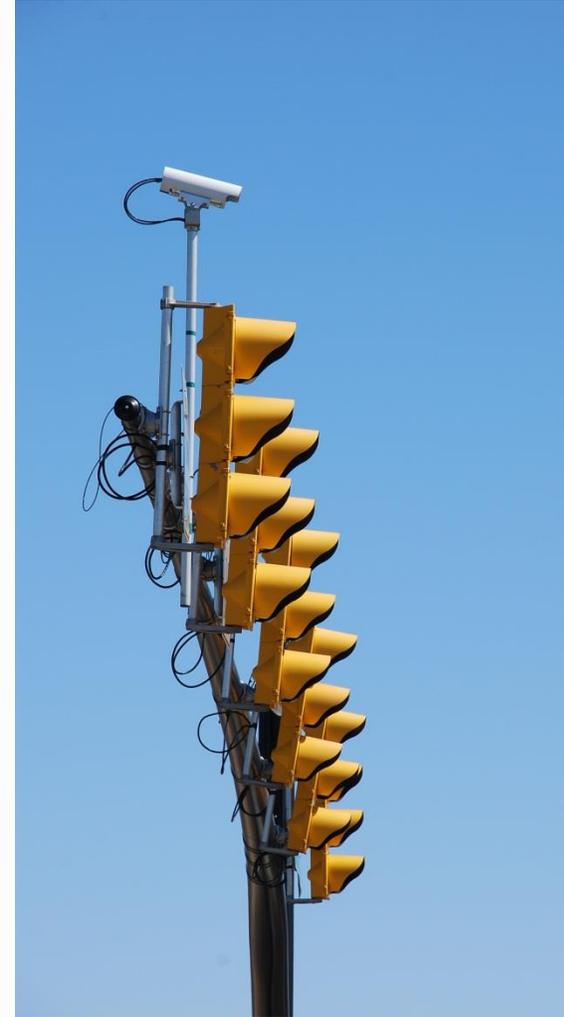


Photo: © Kevin Lee, Kittelson & Associates, Baltimore, MD

Benefits of ATMS

- Benefits of TSM&O
 - Better experience for all roadway users
 - Increased travel time reliability
 - More efficient operations and maintenance of roadways
 - Normal operations
 - Emergency/evacuation situations
 - Increased safety for motorists and first responders
 - Infrastructure can be deployed in conjunction with capacity improvements
 - Typically high cost-benefit ratio



Benefits of ATMS

FHWA* Estimated ATMS Benefits - Based on previous studies expected benefits from implementing an ATMS are:

- 25% travel delay reduction
- 30% incident duration reduction
- 12.5% crash reduction
- 17:1 Benefit/cost ratio (based on reduction in delay and the cost for operations and maintenance)



* FHWA ITS Benefits, FHWA TSM&O Benefit Cost Analysis for Arterial Operations.

Benefits of ATMS

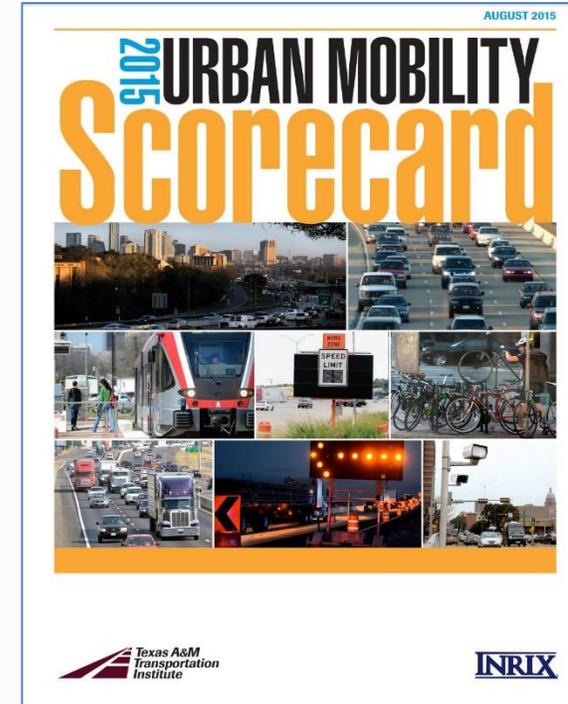
- Travel Time Benefits
 - Esc. Co. 5.7M miles/day traveled
 - SR Co. 3.1M miles/day traveled

3.2B miles/year

Source: FDOT Traffic Data 2017

Annual Hours of Delay per Commuter – 38 Annual
Traffic Congestion Cost per Commuter - \$849

Source: Urban Mobility Scorecard 2015 by Texas A&M and
INRIX for Pensacola Urban Area



Freight and fuel savings would be even greater

Benefits of ATMS

- Safety Benefits
 - Escambia County – 6227 crashes
 - Santa Rosa County – 1893 crashes

Table 23.5.1 FDOT (HSIPG) Average Crash Costs by Facility Type

FACILITY TYPE	DIVIDED			UNDIVIDED		
	URBAN	SUBURBAN	RURAL	URBAN	SUBURBAN	RURAL
2-3 Lanes	\$144,112	\$215,885	\$374,247	\$155,444	\$310,580	\$589,421
4-5 Lanes	\$152,103	\$260,271	\$519,109	\$133,200	\$255,081	\$90,957
6+ Lanes	\$151,384	\$184,426	\$815,085	n/a	n/a	n/a
Interstate	\$193,477	n/a	\$395,511	n/a	n/a	n/a
Turnpike	\$180,836	n/a	\$285,189	n/a	n/a	n/a



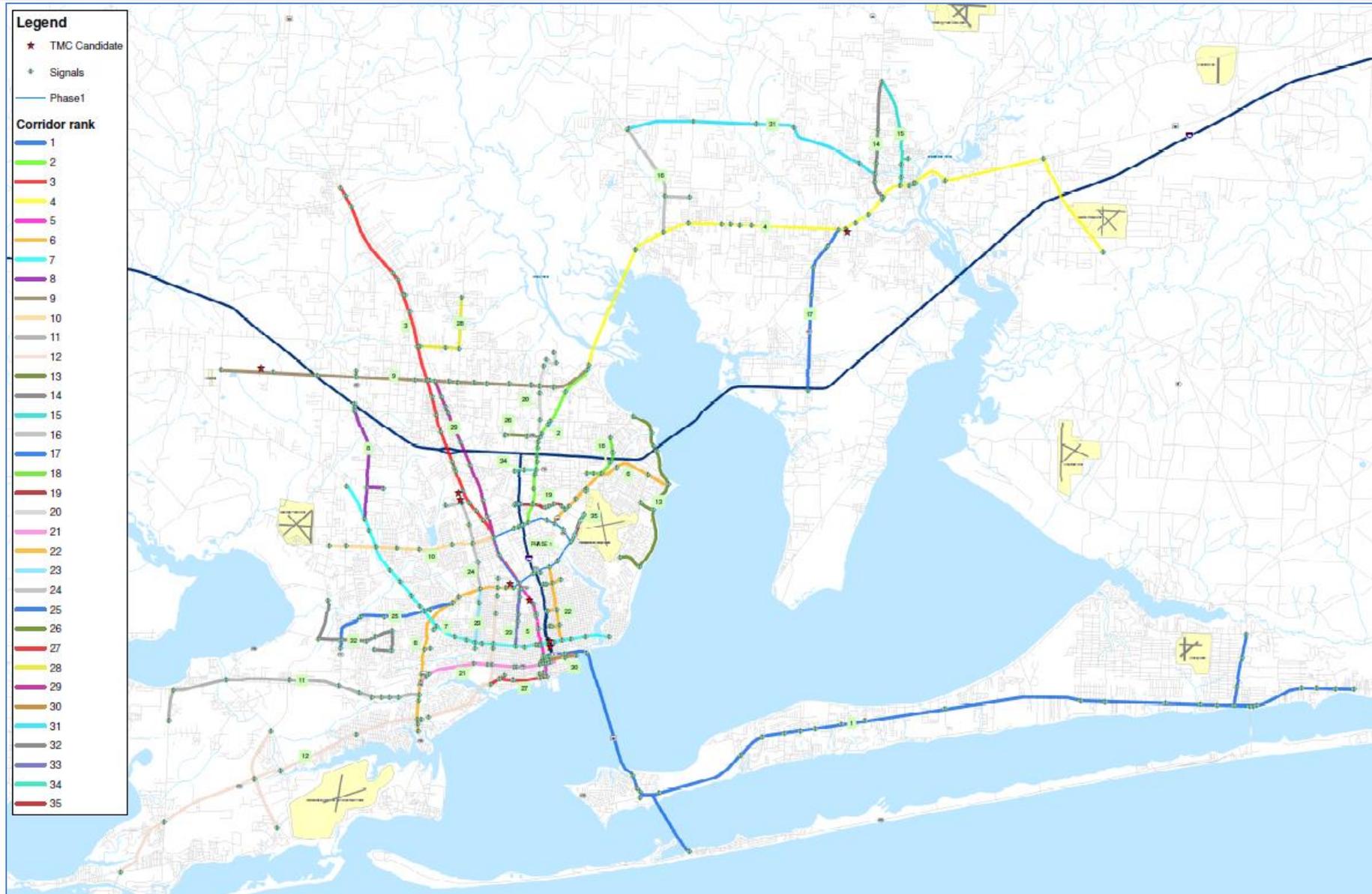
ATMS Deployment

Study included several ATMS deployment scenarios

from partial/phased build to full build out (approximately \$45 million)

- **Full Build Out Deployment:**
 - Full dedicated communications network
 - New Regional Traffic Management Center
 - Complete terminal equipment
 - Dynamic Message Signs
 - Bluetooth readers
 - Road Weather Information Systems
 - Microwave Vehicle Detection Systems

ATMS – Regional Network and TMC



ATMS Operations Cost

Based on two shifts, five days per week:

- 4 Operators
- 2 Shift Supervisors
- 1 Traffic Engineer
- 1 Traffic Analyst
- Miscellaneous support staff: IT, electronics, locators
- Software licensing

Operational Costs

Number of Staff	Position	Annual Salary	Total
4	Operators	\$ 35,000.00	\$ 140,000.00
2	Shift Supervisors	\$ 55,000.00	\$ 110,000.00
1	Traffic Engineer	\$ 95,000.00	\$ 95,000.00
1	IT Support	\$ 55,000.00	\$ 55,000.00
2	Locators	\$ 40,000.00	\$ 80,000.00
2	Electronic Specialists	\$ 50,000.00	\$ 100,000.00
1	Traffic Signal Analyst	\$ 50,000.00	\$ 50,000.00
Annual Operation Staffing Sub-Total			\$ 630,000.00
Employee Benefits			\$ 100,000.00
Annual Software Licensing Fees			\$ 60,000.00
Annual Utility Fees			\$ 40,000.00
Specialized Tools for Fiber Communications Maintenance (i.e. OTDR, Power Meter, Fusion Splicer, Splice Van)			\$ 90,000.00
Total			\$ 920,000.00

Operational Costs

Agencies Estimated Annual O & M Cost of RATMS:

Agencies	No of Signals	% of Total	O & M Cost
Escambia County	195	53%	\$ 491,506.85
City of Pensacola	92	25%	\$ 231,890.41
Santa Rosa County	58	16%	\$ 146,191.78
City of Milton	15	4%	\$ 37,808.22
City of Gulf Breeze	5	1%	\$ 12,602.74
Total	365	100%	\$ 920,000.00

ATMS Resolution

In 2016 all five agencies passed resolutions “expressing support for the construction and operation of a unified ATMS and a regional TMC”

Escambia County
Clerk's Original
S. B. B. C. C. J. F. 4

RESOLUTION NUMBER R2016-54

A RESOLUTION OF THE BOARD OF COUNTY COMMISSIONERS OF ESCAMBIA COUNTY, FLORIDA, EXPRESSING SUPPORT FOR THE CONSTRUCTION AND OPERATION OF A UNIFIED ADVANCED TRAFFIC MANAGEMENT SYSTEM AND A REGIONAL TRANSPORTATION MANAGEMENT CENTER FOR ESCAMBIA COUNTY, SANTA ROSA COUNTY, THE CITY OF PENSACOLA, THE CITY OF MILTON, AND THE CITY OF GULF BREEZE, PROVIDING FOR TRANSMITTAL; PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the Advanced Traffic Management System (ATMS) consists of advanced communication technologies integrated into transportation infrastructure such as traffic control systems, monitoring/detection subsystems, and historical information designed to maximize the use of existing transportation systems; and

WHEREAS, the ATMS includes computerized signal systems and certain Intelligent Transportation System (ITS) components, including communications and reverbating traffic signals, dynamic message signs (DMS), closed-circuit television (CCTV) video monitoring, incident detection, data collection and monitoring systems, traffic operations center, regional center-to-center communications, and a public information portal; and

WHEREAS, the benefits of an ATMS include improved safety, improved air quality mitigation, improved congestion mitigation, improved emergency response, improved regional growth capability, improved maintenance, improved system communications, improved cross-jurisdictional traffic flow, improved integration of transportation systems, improved regional security, improved transportation agency operations, and reduced operations and maintenance costs by providing capabilities to remotely troubleshoot hardware and traffic operations before sending a technician to a traffic signal; and

WHEREAS, the development of ITS components such as an ATMS, Advanced Traveler Information, and Emergency Management Systems is an effective and efficient method to improve public safety, reduce fuel consumption, and reduce traffic congestion; and

WHEREAS, the Florida-Alabama Transportation Planning Organization (TPO) has designated the Escambia-Santa Rosa Regional ATMS Project as the number one priority in the TPO's Fiscal Year 2017-2021 Project Priority list; and

WHEREAS, the Florida-Alabama TPO has established an ITS subcommittee comprised of technical staff from participating local agencies meeting monthly to provide oversight of the development and implementation of the regional ITS/ATMS improvement; and

WHEREAS, the Florida Department of Transportation (Department) recently completed the implementation of the ATMS Phase 1 on Brent Lane from North Palatka Street to North 12th Avenue, on North Palatka from Brent Lane to East Fairfield Drive, and on East Fairfield Drive from North Palatka Street to North 12th Avenue; and

WHEREAS, the Department funded and entered into a Joint Project Agreement (JPA) with the City of Pensacola to administer the development of the Escambia-Santa Rosa Regional ATMS Feasibility Study and Implementation Plan project which will be a blueprint for the modernization of the signal systems within Escambia County and Santa Rosa County.

Date: 5/10/16 Verified by: *[Signature]*

The projected completion date of the Regional ATMS Feasibility Study and Implementation Plan project is spring of 2016; and

WHEREAS, the Department has encouraged the creation of a unified regional ATMS, and agreed to provide funding assistance for the design, construction, operation, and maintenance of the system; and

WHEREAS, the joint operation and maintenance of the ATMS at a regional Transportation Management Center (TMC) would provide enhanced safety by streamlining communication and interagency coordination.

NOW THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF ESCAMBIA COUNTY, FLORIDA, AS FOLLOWS:

Section 1. That the Board of County Commissioners finds the above recitals to be true and correct and incorporate them herein by reference.

Section 2. That the Escambia County Board of County Commissioners hereby expresses its support for the Department's administration of the design and construction of a regional ATMS and a regional TMC for Escambia County, Santa Rosa County, the City of Pensacola, the City of Milton, and the City of Gulf Breeze.

Section 3. That the Escambia County Board of County Commissioners will endeavor to establish interagency cooperation and coordination for the joint development, operation, and maintenance of a regional TMC to operate the regional ATMS through a regional Transportation Management Team.

Section 4. That this resolution shall take effect immediately upon its adoption by the Board of County Commissioners.

Section 5. That the Clerk shall forward a copy of this Resolution to James T. Barfield, District Three Secretary, FDOT.

ADOPTED this 12th day of April, 2016.

CERTIFIED TO BE A TRUE COPY OF THE ORIGINAL FILED IN HIS OFFICE. WITNESS MY HAND AND OFFICIAL SEAL OF ESCAMBIA COUNTY, FLORIDA.

CLERK OF THE CIRCUIT COURT & COMPTROLLER OF ESCAMBIA COUNTY, FLORIDA
By: *[Signature]* DATE: *May 10, 2016*

ATTEST: Pam Chisem, Clerk of the Circuit Court, BCC Approved: 05-05-2016

Approved as to form and legal sufficiency: *[Signature]* Date: *5/10/16*

projected completion date of the Regional ATMS Feasibility Study and Implementation Plan project is spring of 2016; and

WHEREAS, the Department has encouraged the creation of a unified regional ATMS, and agreed to provide funding assistance for the design, construction, operation, and maintenance of the system; and

WHEREAS, the joint operation and maintenance of the ATMS at a regional Transportation Management Center (TMC) would provide enhanced safety by streamlining communication and interagency coordination.

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF MILTON, FLORIDA, AS FOLLOWS:

Section 1. That the City Council finds the above recitals to be true and correct and incorporate them herein by reference.

Section 2. That the City Council hereby expresses its support for the Department's administration of the design and construction of a regional ATMS and a regional TMC for Escambia County, Santa Rosa County, the City of Pensacola, the City of Milton, and the City of Gulf Breeze.

Section 3. That the City Council will endeavor to establish interagency cooperation and coordination for the joint development, operation, and maintenance of a regional TMC to operate the regional ATMS through a regional Transportation Management Team.

Section 4. That this resolution shall take effect immediately upon its adoption by the City Council of the City of Milton.

Section 5. That the City Clerk shall forward a copy of this Resolution to James T. Barfield, District Three Secretary, FDOT.

ADOPTED this 12th day of April, 2016.

CITY COUNCIL OF CITY OF MILTON, FLORIDA
By: *[Signature]*
Wesley Meiss, Mayor

ATTEST:
[Signature]
Dewitt Nobles, City Clerk

(SEAL)

Feasibility Study and Implementation Plan project which will be a blueprint for the modernization of the signal systems within Escambia County and Santa Rosa County. The projected completion date of the Regional ATMS Feasibility Study and Implementation Plan project is spring of 2016; and

WHEREAS, the Department has encouraged the creation of a unified regional ATMS, and agreed to provide funding assistance for the design, construction, operation, and maintenance of the system; and

WHEREAS, the joint operation and maintenance of the ATMS at a regional Transportation Management Center (TMC) would provide enhanced safety by streamlining communication and interagency coordination; NOW THEREFORE,

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF PENSACOLA, FLORIDA, AS FOLLOWS:

SECTION 1. That the City Council finds the above recitals to be true and correct and incorporate them herein by reference.

SECTION 2. That the City Council hereby expresses its support for the Department's administration of the design and construction of a regional ATMS and a regional TMC for Escambia County, Santa Rosa County, the City of Pensacola, the City of Milton, and the City of Gulf Breeze.

SECTION 3. That the City Council will endeavor to establish interagency cooperation and coordination for the joint development, operation, and maintenance of a regional TMC to operate the regional ATMS through a regional Transportation Management Team.

SECTION 4. That a copy of this Resolution be forwarded to James T. Barfield, District Three Secretary, FDOT.

SECTION 5. This Resolution shall become effective on the fifth business day after the adoption, unless otherwise provided pursuant to Section 4(2)(d) of the City Charter of the City of Pensacola.

Adopted: *May 13, 2016*

Approved: *[Signature]*
President of City Council

Attest:
[Signature]
City Clerk

I DO HEREBY CERTIFY THAT THE ABOVE AND FOLLOWS IS A TRUE AND CORRECT COPY OF THE ORIGINAL FILED IN HIS OFFICE. WITNESS MY HAND AND THE CORPORATE SEAL OF THE CITY OF PENSACOLA, FLORIDA THIS 13th day of May, 2016.

Section 2. That the Santa Rosa County Board of County Commissioners hereby expresses its support for the Department's administration of the design and construction of a regional ATMS and a regional TMC for Escambia County, Santa Rosa County, the City of Pensacola, the City of Milton, and the City of Gulf Breeze.

Section 3. That the Santa Rosa County Board of County Commissioners will endeavor to establish interagency cooperation and coordination for the joint development, operation, and maintenance of a regional TMC to operate the regional ATMS through a regional Transportation Management Team.

Section 4. That this resolution shall take effect immediately upon its adoption by the Board of County Commissioners.

Section 5. That the Clerk shall forward a copy of this Resolution to James T. Barfield, District Three Secretary, FDOT.

PASSED AND ADOPTED by the Santa Rosa Board of County Commissioners on a vote of 4, yes, 0, no, and 0, absent, in regular session, this 14th day of July, 2016.

BOARD OF COUNTY COMMISSIONERS
SANTA ROSA COUNTY, FLORIDA

By: *[Signature]*
Lana Lynchard, Chairman

[Signature] deputy clerk for Donald C. Spencer
Donald C. Spencer, Clerk of Court

Escambia-Santa Rosa Regional ATMS

Escambia-Santa Rosa Regional Advanced Traffic Management System (ATMS)

