CITY OF
GAINESVILLE
every path starts with passion
FLORIDA

Staff Analysis

Fiber – Traffic Management System

Presented by:
Phil Mann, P.E.
Public Works Department

Emmanuel Posadas, P.E.
Public Works Department

August 11, 2016

CITY OF GAINESVILLE STAFF ANALYSIS

Legistar No:

Title: Fiber – Traffic Management System

Sponsor City Commissioner Adrian Hayes-Santos:

City Staff Contact: Phil Mann, P.E.; Emmanuel Posadas, PE

Summary of Issue

In a City Commission meeting on June 2, 2016, under Commission Comment, Commissioner Adrian Hayes-Santos made a motion to have staff present information about City-wide fiber infrastructure, particularly *"what fiber we have from city public works and GRUCom, who do we currently serve, what are we doing with it, and what are our current plans for increase productivity, higher speeds and end the digital divide."* The Motion was seconded, and presentations are to be made with the General Policy Committee.

History/Background Information

In 1984, the original Traffic Signal Master Plan was develop for Gainesville Urban Area, a computerized traffic signal system installed in 1987. Technologically this system became out of date, and did not provide for scalability, upward compatibility, and modernization.

In 1997 a feasibility study was performed to determine the future needs of the Gainesville Urban Area related to the Traffic Signal System. It was determined that an Advanced Traffic Management System (TMS) would best meet current and future needs and be capable of accommodating future technology changes.

The City of Gainesville, Alachua County and the University of Florida formed a funding partnership and committed to raising 50% of the required funds. Florida Department of Transportation (FDOT) matched the funding through a TRIP grant. To be eligible for TRIP Funding, the Gainesville & Alachua County MTPO partnered with the Ocala & Marion County MPO to form a regional consortium. This was beneficial as the 2 counties are in separate FDOT Districts and do not compete for TRIP grants. This partnership provided $18M infusion of capital funds specifically for TMS.

The fiber network of the TMS infrastructure provides the communication network necessary to bring all signalized intersections online in a central system, and provide traffic signal coordination and monitoring.

The Gainesville/Alachua County Traffic Management System is a stakeholder in the Northeast Florida Regional ITS Architecture (listing of stakeholders is attached). The following is taken from the FDOT District 2 Regional ITS Architecture website:

> The *Northeast Florida Regional ITS Architecture* is a roadmap for transportation systems integration in Northeast Florida over the next 20 years. The Northeast Florida Regional ITS Architecture has been developed through a cooperative effort by the region's transportation agencies, covering all modes. This regional ITS architecture was developed to satisfy the FHWA Rule 940 requirements, as well as the FTA policy directives, on ITS Architectures. This draft regional ITS architecture was developed from the existing ITS architecture, documentation provided by stakeholders, and interviews gathered from stakeholders. The Statewide and Regional ITS Architectures represent a shared vision of how each agencies' systems will work together in the future, sharing information and resources to provide a safer, more efficient, and more effective transportation system for travelers in the State of Florida.

> **Time Horizon and Services**

> The Statewide and Regional ITS Architectures have a time horizon of up to twenty years with particular focus on those transportation elements likely to be implemented in the next ten years. The ITS architecture covers the broad spectrum of Intelligent Transportation Systems, including Traffic Management, Transit Management, Traveler Information, Maintenance and Construction, Emergency Management, and Archived Data Management over this time horizon.

Information Requested

A.   What fiber do we have?

The TMS has approximately 105 miles of fiber. It is important to note that the TMS does not own all of the fiber; fiber installed on State Roads belongs to the FDOT. However FDOT has agreed to allow the TMS to utilize all fiber capacity until such time as needed for their transportation purposes.

A typical TMS fiber installation is 72 strands of fiber. As currently structured the TMS utilizes approximately 33.3% (1/3) of the network capacity (24 strands of fiber, leaving 48 strands of dark fiber.) The network is operating at 1 gigabit per second (Gbps). The network can be upgraded to any capacity up to 10 Gbps and soon will be able to accommodate speeds up to 100 Gbps. To modify the speeds requires optics be placed on either end of the fiber.

The current optics utilized by the TMS costs approximately $1,200 per node. To upgrade to 10 Gbps would cost approximately $10,000 per node. The TMS network includes approximately 200 nodes.

B.   Who do we currently serve?

The TMS fiber optic network interconnects all traffic signals to the central system. The fiber optic network is also utilized to interconnect critical infrastructure related to transportation, such as the RTS facility, Fire Stations, Gainesville Parking Garage, Combined Communications and Law Enforcement agencies.

We currently serve: Gainesville TMS, GPD, GFR, Alachua County Combined Communications Center, Alachua County Department of Emergency Management, Alachua County Public Works Department, University of Florida Police Department, University of Florida – School of Journalism (WUFT Channel 5), University of Florida – School of Civil Engineering, Santa Fe College Police Department, and, the FDOT Regional TMS in Jacksonville. These are developed partnerships to improve traffic management and the service provided to the community. We are working, through Florida Department of Transportation, to be implemented into the Waze travel app.

As part of our service to the University of Florida and FDOT, the City of Gainesville also belongs to the Florida LambdaRail (FLR). The FLR is a statewide high speed service that connects the state universities and agencies that perform transportation research such as the FDOT and the City of Gainesville. The Public Works Department regularly partners with the FDOT and the University of Florida's College of Engineering on traffic related research projects. Most recently, wind tunnel testing on traffic signals to improve traffic signal hardware during severe afternoon storms, hurricanes, etc.

C.   What are we doing with it?

The TMS focuses on safe and efficient transportation. This includes, but is not limited to:
1. Daily Commuter Traffic Management;
2. Incident Management (Construction, traffic crashes, etc.);
3. Special Event Management (Gator Football, Gator Nationals, Large Funeral Processions, parades, etc.)
4. Emergency vehicle response traffic signal control;
5. Working with other first responders during incidents of regional significance (hurricanes, homeland security issues, etc.);

The fiber optic network is part of a network management system (NMS) and is one of many sub-systems that support the TMS. Other sub-systems include traffic signal system, vehicle detection systems, video monitoring system, and travel time information systems are also components of the Traffic Management System.

Options

In conjunction with the regional and nationwide ITS architecture, the TMS fiber network might be utilized for enhanced services such as:
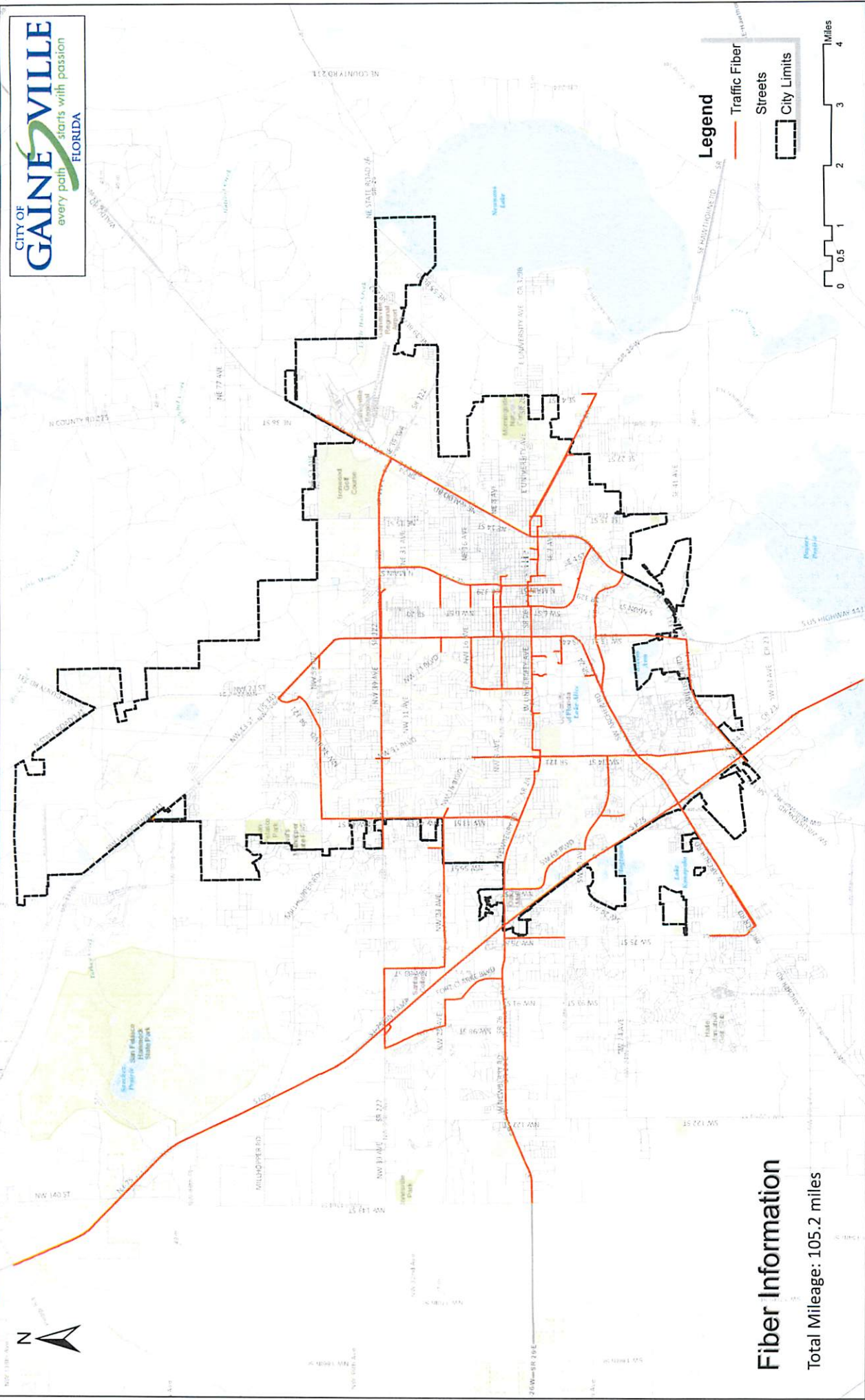
1. Public-Private Partnership (P3) Opportunities:
   a. An example is Palm Beach County's PBCnet (partnership with Florida LambdaRail (FLR), AT&T and FPL-FiberNet) which provides direct fiber-attached broadband connections as a service to eligible organizations (government, education, non-profits, healthcare). The internet is supplied via a direct fiber connection to FLR with multiple 10Gb paths connecting to other major university cities in Florida.
2. Smart City features such as:
   a. Street light dimming & monitoring;
   b. Transit;
   c. Parking applications;
3. Providing interconnectivity between city buildings and/or select city venues.
   a. Allow broadcasting of public meetings in alternate locations such as GPD and the Senior Center;
   b. Enhance Emergency Coordination between agencies;
   c. Allow remote meeting attendance through live streaming applications;
4. Expand traffic management/motorist alert signage along primary corridors to broadcast;

5. Provide secure network Wi-Fi access points at selected nodes to authenticated users;

Staff Recommendations

Staff recommends that TMS fiber be leveraged in a public-private partnership similar to PBCnet as outlined in 1 above in order to enhance and provide redundant fiber connections to eligible organizations outlined in the Northeast Regional Florida ITS Architecture stakeholders; and continue seeking opportunities to enhance City and TMS operations as outlined in 2, 3, 4, and 5 above.

Attachments:

- TMS Fiber Map
- FDOT District 2 ITS Stakeholders
- City of Gainesville Transportation Services Operational Concepts
- Network Services Brochure (PBCnet)

#160101B

CITY OF
GAINESVILLE
every path starts with passion
FLORIDA

N

Legend

Traffic Fiber
Streets
City Limits

Miles
0 0.5 1 2 3 4

Fiber Information

Total Mileage: 105.2 miles

This data is for informational purposes only. Do not rely on this data for accuracy of dimensions, size, or location. The City of Gainesville does not assume responsibility to update this information or for any error or omission in the data. For more information please contact the City of Gainesville Public Works Dept. GIS at (352) 393-8483. Data prepared: 5/18/2016

ITS Stakeholders

ITS Stakeholders	Description
Airport Authorities	Represents regional airport authorities and agencies responsible for operating and maintaining regional airports.
Amtrak	Nationwide passenger rail organization with service throughout the United States.
Archived Data Users	Users of archived data.
CHEMTREC	CHEMTREC (CHEMical TRansportation Emergency Center) was established by the chemical industry as a public service hotline for fire fighters, law enforcement, and other emergency responders to obtain information and assistance for emergency incidents involving chemicals and hazardous materials.
City of Jacksonville	Represents the municipal agencies and departments of the City of Jacksonville and Duval County.
City of Jacksonville Fire and Rescue	The Jacksonville Fire and Rescue Department, serving the City of Jacksonville and parts of Duval County.
City of Jacksonville Sheriffs Office	Law enforcement provider for the City of Jacksonville and Duval County.
City of Jacksonville Traffic Engineering Division	The Traffic Engineering Division of the Public Works Department is concerned with the safe and efficient movement of vehicles and pedestrians on the City of Jacksonville's transportation system as well as assisting in the planning of additions or upgrades to that system. This division is responsible for traffic engineering services, street markings and signs, traffic signals and other control devices in the City of Jacksonville. Responsibility includes the regulation and governing of both pedestrian and vehicular traffic through the use of traffic control devices.
City of Palatka	Represents the municipal agencies and departments of the City of Palatka.
City of St. Augustine	Represents the departments and divisions of the City of St. Augustine.
Clay County Public Works Traffic Control Division	The Traffic Control Division is to maintain and install as needed, traffic signals, signs, road markings and lighting to the State of Florida Department of Transportation standards for all roadways, waterways, public parking lots, and recreational facilities of Clay County.
Counties and Cities	Represents generic county and municipal agencies and departments, including public works departments, and permit offices.
County and City Traffic Engineering	Represents the generic county and local traffic management agencies.
County Emergency Management Agencies	Represents the generic county agencies and departments that coordinates emergency response during major disasters or incidents.
County Paratransit	Represents county-operated paratransit systems.
County Public Safety Agencies	Represents the generic county public safety agencies, including EMS, fire departments, and sheriff's departments.
County Public Safety Agencies - Fire/EMS	Represents the generic county fire and EMS departments, including volunteer fire departments.
County Public Safety Agencies - Sheriffs Department	Represents the generic county sheriff's departments.
County School Districts	Represents the public school districts in Florida.
FDOT	Florida Department of Transportation (FDOT). The mission of the department is to provide a safe and reliable transportation system that ensures the mobility of people and goods, enhances economic prosperity and preserves the quality of Florida's environment and communities. Various modes of transportation are supported by the department including roadways, railways, seaport and airports.
FDOT Commission for the Transportation Disadvantaged	State of Florida Commission for the Transportation Disadvantaged (CTD). An independent commission housed administratively within the Florida Department of Transportation whose mission is to insure the availability of efficient, cost-effective, and quality transportation services for transportation disadvantaged persons.
FDOT D5/FHP	A stakeholder group consisting of FDOT District 5 and FHP. Created for elements that are jointly operated by FDOT District 5 and FHP.
FDOT District 2	Represents Florida Department of Transportation District 2, Northeast Florida, which includes Alachua, Baker, Bradford, Clay, Columbia, Dixie, Duval, Gilchrist, Hamilton, Lafayette, Levy, Madison, Nassau, Putnam, St. Johns, Suwannee, Taylor, and Union counties.

ITS Stakeholders	Description
FDOT District 5	Represents Florida Department of Transportation District 5, Central Florida, which includes the following counties: Brevard, Flagler, Lake, Marion, Orange, Osceola, Seminole, Sumter, and Volusia.
Financial Institutions	Financial and banking institutions that play a role in electronic payment financial transactions.
Florida Department of Environmental Protection	The Florida Department of Environmental Protection is the lead agency in state government for environmental management and stewardship. The department administers regulatory programs and issues permits for air, water and waste management.
Florida Department of Highway Safety and Motor Vehicles	The Florida Department of Highway Safety and Motor Vehicles promotes a safe driving environment through law enforcement, public education and service, reduction of traffic crashes, titling and registering of motor vehicles and vessels, licensing motor vehicle operators, and regulation of motor vehicle exhaust.
Florida Department of Law Enforcement	Florida Department responsible for initiating Amber Alert messages.
Florida Division of Emergency Management	A division of the Florida Department of Community Affairs, the Florida Division of Emergency Management is responsible for ensuring that the State of Florida is prepared to respond to emergencies, recover from them, and mitigate their impacts.
Florida Highway Patrol	The Florida Highway Patrol's (FHP) mission is to promote a safe driving environment through aggressive law enforcement, public education, and safety awareness; reduce the number and severity of traffic crashes in Florida, preserve and protect human life and property.
Floridas Turnpike Enterprise	Represents Florida Department of Transportation Turnpike Enterprise Division, which manages and operates limited-access toll highways in the State of Florida, including the Florida Turnpike.
Gainesville MTPO	The Metropolitan Transportation Planning Organization (MTPO) is responsible for the continuing, comprehensive, and cooperative urban transportation planning program for the Gainesville Metropolitan Area. The area of planning responsibility for the MTPO does not include all of Alachua County, but rather the developed and developing portions in and around the City of Gainesville.
Gainesville Transportation Services Division	The Transportation Services Division is responsible for the planning, design, operation and maintenance necessary to provide an effective and safe transportation network for vehicular, bicycle and pedestrian traffic.
Gainesville-Alachua County Regional Airport Authority	The overseeing body of airport management is the Gainesville-Alachua County Airport Authority (GACRAA) which consists of 9 members appointed by County, City, and State officials. The airport authority has a public responsibility to insure that Gainesville Regional Airport is managed in the most efficient manner to ultimately benefit the customers it serves.
Jacksonville Port Authority	The Jacksonville Port Authority (JAXPORT) owns and operates three public marine terminals and one passenger cruise terminal in Jacksonville Florida:
Jacksonville Transportation Authority	The Jacksonville Transportation Authority, an independent state agency serving Duval County, has multi-modal responsibilities. JTA designs and constructs bridges and highways and provides varied mass transit services. These include express and regular bus service, a downtown Skyway monorail, the Trolley service, the Stadium Shuttle for various sporting events at ALLTEL Stadium, JTA Connexion for the disabled and elderly, and ChoiceRide that connects employers and employees to job access through customized transportation options.
Lake City	Represents the agencies and departments of Lake City.
Local Agencies	Represents local government agencies and departments, including local fire/rescue departments, law enforcement providers, and emergency management agencies.
Local Agencies - Fire EMS/Rescue Departments	Represents the generic municipal and local fire, EMS and Rescue Departments.
Local Agencies - Police Departments	Represents the generic municipal and local police departments and other law enforcement providers. May include campus police.
Local Media	Owner/operators of communications media including television, cable TV, radio, and news papers.
Local TMAs	Local Transportation Management Agencies (TMAs) - Non-profit, public/private partnership established between businesses and local government to provide commuter information and services.

ITS Stakeholders	Description
Local Transit Operators	Represents generic public transit operators, agencies, and their systems.
Local Venue Promoters	Local event promoters, such as arenas.
Nassau County	Represents the agencies and departments of Nassau County
NOAA	National Oceanic and Atmospheric Administration. Includes the National Weather Service and the National Hurricane Center.
North Florida TPO	The North Florida Transportation Planning Organization (TPO) covers nearly 1,118 square miles which includes Duval County and major portions of St. Johns, Clay, and Nassau Counties. The North Florida TPO is responsible for transportation related air, noise, and water quality planning within the Jacksonville urbanized area; and the development of the transportation improvement plan, an annually updated unified planning work program; and the comprehensive transportation plan which includes consideration of long-range goals and transportation systems management measures.
Parking Facility Operators	Operators of public or private parking facilities, including park-and-ride facilities. May include bus shuttle services provided by private park-and-ride facilities.
Private Commercial Vehicle and Fleet Operators	Owner/operators of private commercial vehicles and fleets.
Private Concierge Service Provider	Private concierge service providers within the region. Includes OnStar, etc.
Private Maintenance Contractors	Represents private companies hired by the public sector to provide roadway maintenance, ITS equipment maintenance or vehicle maintenance.
Private Parking Vendors	Represents third party vendors that operate a parking system.
Private Sector ISPs	Private traveler and transportation information service providers, including Mobility Technologies, SmartRoute Systems, Shadow Traffic, and Metro Traffic.
Private Taxi Operators	Private companies providing taxi service.
Private Transit Operators	Owner/operators of bus services, including private long-distance bus service, private shuttle services, and demand-responsive bus services
Private/ Public Utilities	The companies (or public agencies) that provide various utilities such as electric, gas, water, telephone, and cable TV.
Private/Public Regional Medical Centers	Hospital/trauma centers in the region.
Putnam County	Represents the agencies and departments of Putnam County.
Rail Operator	Generic owner/operator of commercial or passenger rail service. Includes CSXNS and FEC.
Regional Public Safety Agencies	Represents the generic county and municipal public safety agencies, including EMS, fire departments, police departments, and sheriff's departments. Also represents the agencies that manage and operate PSAPs (Public Safety Answering Points).
Regional Transit Management Agencies	Generic element representing transit management agencies and operators in the State of Florida.
St. Augustine - St. Johns County Airport Authority	Represents the St. Augustine - St. Johns County Airport Authority, which operates the Northeast Florida Regional Airport.
St. Augustine Port, Waterway and Beach District	Represents the St. Augustine Port, Waterway and Beach District, which operates ports in St. Augustine.
St. Johns County Council On The Aging	Represents the St. Johns County Council on the Aging, which operates the public transit system in St. Johns County.
St. Johns County Traffic and Transportation Department	The St. Johns County Traffic and Transportation Department provide for the safe and efficient traffic flow through county intersections, routes and roads.
St. Johns County/City of St. Augustine	Represents a stakeholder group comprising the City of St. Augustine and St. Johns County.
State of Florida	Represents the State of Florida
Travelers	Represents the general public, including passengers and travelers.
University of Florida	Represents the University of Florida in Gainesville
University of Maryland	Represents the University of Maryland
US Coast Guard	The United States Coast Guard.
US Department of Defense	The United States Department of Defense (DoD) is responsible for providing the military forces needed to deter war and protect the security of the United States.

FDOT

State Home   FDOT D2 Home   Stakeholders   Inventory   Services   Architecture   Projects   Resources   Feedback

◉ OPERATIONAL CONCEPTS: GAINESVILLE TRANSPORTATION SERVICES DIVISION

The following are the roles and responsibilities, by functional area or by project, for Gainesville Transportation Services Division.

Functional Area or Project	Roles and Responsibilities	Status
East University Ave Signal Maintenance Roles and Responsibilities	Operate traffic signal systems for the City of Gainesville and Alachua County.	Existing
Gainesville Arterial DMS Roles and Responsibilities	Provide traffic information to travelers using City of Gainesville DMS equipment.	Planned
Gainesville Expanded Automated Arterial Travel Time System Roles and Responsibilities	Provide traffic information to travelers using City of Gainesville DMS equipment.	Planned
	Obtain traffic images and traffic flow data using CCTVs and field sensors, and maintain operational control of its own field equipment.	Existing
Gainesville TDM Roles and Responsibilities	Coordinate with FDOT District 2 to operate express lanes on highways, including dynamic tolling.	Planned
	Provide traffic information to travelers using City of Gainesville DMS equipment.	Planned
	Obtain traffic images and traffic flow data using CCTVs and field sensors, and maintain operational control of its own field equipment.	Existing
	Coordinate traffic information with FDOT District 2.	Existing
I-75 ITS Corridor Roles and Responsibilities	Provide traffic information to travelers using City of Gainesville DMS equipment.	Planned
	Obtain traffic images and traffic flow data using CCTVs and field sensors, and maintain operational control of its own field equipment.	Existing
	Coordinate traffic information with FDOT District 2.	Existing
Incident Management (Traffic and Maintenance) for Northeast Florida Regional ITS Architecture - FDOT District 2	Receive incident information, incident response status, and resource requests from the county EOC/warning point.	Existing
	Provide incident information to travelers using traffic information devices on city streets, and through local ISPs, Web sites, and the local media.	Existing
	Perform network surveillance for detection and verification of incidents on city streets, and send traffic/incident information and traffic images to regional public safety agencies, such as county public safety (e.g., fire/EMS/sheriff), the FHP and local	Existing
	Coordinate maintenance resources for incident response with county and city maintenance and construction systems.	Existing
Newberry Road Traffic Signals #2 Roles and Responsibilities	Operate traffic signal systems for the City of Gainesville and Alachua County.	Existing
Newberry Road Traffic Signals #3 Roles and Responsibilities	Operate traffic signal systems for the City of Gainesville and Alachua County.	Existing
Newberry Road Traffic Signals #4 Roles and Responsibilities	Operate traffic signal systems for the City of Gainesville and Alachua County.	Existing
Newberry Road Traffic Signals #5 Roles and Responsibilities	Operate traffic signal systems for the City of Gainesville and Alachua County.	Existing

Newberry Road Traffic Signals Roles and Responsibilities	Operate traffic signal systems for the City of Gainesville and Alachua County.	Existing
NW 34 Street Traffic Signals Roles and Responsibilities	Operate traffic signal systems for the City of Gainesville and Alachua County.	Existing
NW 6 Street Traffic Signals Roles and Responsibilities	Provide transit signal priority using roadside devices for Gainesville transportation service vehicles.	Planned
	Provide interconnection between railroad equipment and traffic signal systems to update signal timing when HRIs are blocked by trains.	Existing
	Provide emergency signal preemption for county fire/EMS.	Existing
	Operate traffic signal systems for the City of Gainesville and Alachua County.	Existing
	Obtain traffic images and traffic flow data using CCTVs and field sensors, and maintain operational control of its own field equipment.	Existing
	Coordinate traffic information with FDOT District 2.	Existing
	Coordinate emergency traffic signal control with the county EOC/Warning Point.	Existing
SR-24 Signal Maintenance #2 Roles and Responsibilities	Operate traffic signal systems for the City of Gainesville and Alachua County.	Existing
SW 13 Street DMS Roles and Responsibilities	Operate traffic signal systems for the City of Gainesville and Alachua County.	Existing
SW 13 Street Traffic Signals Roles and Responsibilities	Operate traffic signal systems for the City of Gainesville and Alachua County.	Existing
SW 16 Avenue/SR 226 Traffic Signals Roles and Responsibilities	Operate traffic signal systems for the City of Gainesville and Alachua County.	Existing
Traffic Signal Control for Northeast Florida Regional ITS Architecture - FDOT District 2	Provide transit signal priority using roadside devices for Gainesville transportation service vehicles.	Planned
	Provide interconnection between railroad equipment and traffic signal systems to update signal timing when HRIs are blocked by trains.	Existing
	Provide emergency signal preemption for county fire/EMS.	Existing
	Operate traffic signal systems for the City of Gainesville and Alachua County.	Existing
	Obtain traffic images and traffic flow data using CCTVs and field sensors, and maintain operational control of its own field equipment.	Existing
	Coordinate traffic information with FDOT District 2.	Existing
	Coordinate emergency traffic signal control with the county EOC/Warning Point.	Existing
Traffic Signal Control for Northeast Florida Regional ITS Architecture - FDOT District 2 (Copy 1)	Operate traffic signal systems for the City of Gainesville and Alachua County.	Existing
Transit Management for Northeast Florida Regional ITS Architecture - FDOT District 2	Track and evaluate schedule performance on all system transit vehicles.	Existing
	Provide transit vehicle security using silent alarms and video surveillance.	Existing
	Provide transit schedule and fare information to regional traveler information systems, including the northeast Florida traveler information system.	Existing
	Provide transit passenger electronic fare payment on fixed-route vehicles.	Planned
	Provide the capability for transit traveler trip planning, including the ability to make paratransit trip reservations.	Existing
	Provide fixed-route transit and paratransit services for the City of Gainesville.	Existing
	Coordinate with local police for response to transit-related incidents.	Existing
	Coordinate transit signal priority for fixed-route transit vehicles with the traffic division.	Planned
	Coordinate multimodal connections for fixed-route transit vehicles with other regional transit agencies and multimodal service providers.	Existing
	Provide traffic information to travelers using the county public information system,	Existing

#160101B

Traveler Information for Northeast Florida Regional ITS Architecture - FDOT District 2	private companies, the northeast Florida traveler information system, and the media.	
	Provide traffic information to travelers using City of Gainesville DMS equipment.	Planned
	Provide traffic and road network information to Gainesville transit operations.	Existing
Williston Road (SR 331) Traffic Signals Roles and Responsibilities	Operate traffic signal systems for the City of Gainesville and Alachua County.	Existing

PBCnet Services

Advanced broadband for local connectivity and Internet service

Cost-Effective Network Services

PBCnet allows you to cost-effectively connect to multiple locations and the Internet via a mature, County-owned and operated, fiber-optic and WiMax network.
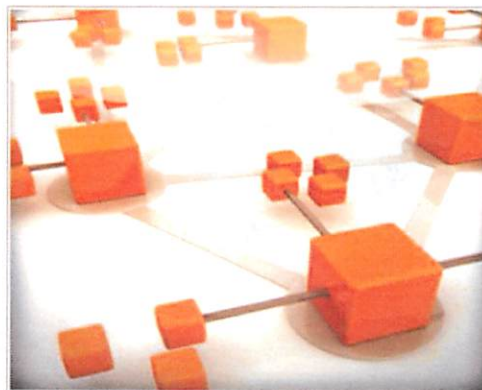
- Securely extend the reach of your network without the cost and complexity of traditional WAN technologies

- Ethernet simplicity via a direct fiber-optic connection

- Incremental speeds up to 10 Gigabit over the PBCnet MPLS core network

- Designed to effectively carry all of your converged services, such as voice, data and video over IP

Some 20 years ago Palm Beach County began installing fiber-optic cable in conjunction with the numerous construction projects across the County. Now extending more than 650 miles, this private fiber-optic and WiMax network, along with leased connections from the major telecommunications providers, connects more than 400 county facilities.

In 2008, responding to requests from municipalities and other organizations, Palm Beach County began providing direct fiber-attached broadband connections as a service to eligible organizations.

Connecting to PBCnet allows diversity and redundancy. We have multiple fiber routes with diverse entrances that supply connectivity to facilities. Our primary internet is supplied via a direct fiber connection to Florida LambdaRail (FLR) on which we have multiple 10Gb paths to Miami and Orlando, and we are exploring a third optical path to Tampa.

We also have a separate Internet pipe via AT&T which is brought directly into our Emergency Operations Center for an additional level of redundancy. Our entire Internet routing and peering is border gateway protocol (BGP) based and we have multiple load balanced firewall clusters along with screening routers handling perimeter security.

IT Partnership Opportunities

PBCnet Solutions

Advanced broadband for local connectivity and Internet service

Enhanced Connectivity Drives Business **Transformation**

- Support e-government initiatives

- Reliable and secure communications

- A proven track record of service to municipalities, education institutions and nonprofit organizations within Palm Beach County

- Scalable infrastructure for future technology planning and projects

Palm Beach County Information Systems Services

Steve Bordelon, Director
301 N Olive Avenue
West Palm Beach, FL 33401
(561) 355-6041
www.pbcgov.com

Palm Beach County Board of County Commissioners

Mary Lou Berger, Mayor
Hal R. Valeche, Vice Mayor
Paulette Burdick
Shelley Vana
Steven L. Abrams
Melissa McKinlay
Priscilla A. Taylor

Palm Beach County Administrator

Verdenia C. Baker

SERVICES AVAILABLE

- Installation and Setup
- Maintenance
- Application Support
- Hardware Support
- Technical Support
- Video Conferencing
- VoIP Telephony

More than ever, organizations are controlling expenses, eliminating duplication and looking for ways to collaborate; all with the intention of providing better service while maximizing taxpayer dollars.

Most of Palm Beach County municipalities are already connected to the County's fiber-optic and WiMax network, principally for internet access.

Having support 24/7 is a requisite for any critical infrastructure today. PBCnet has a dedicated local team of professionals who monitor the networks and provide responsive, business-class customer service.

CONTACT INFORMATION

Michael Butler, Director
Network Services Division
(561) 355-4601
mbutler@pbcgov.org

Visit our website for a full listing of available services:

http://www.pbcgov.org/iss/partnering