



Pasco County MPO

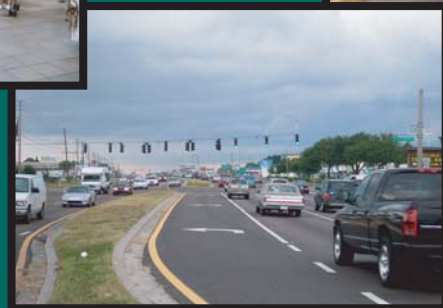
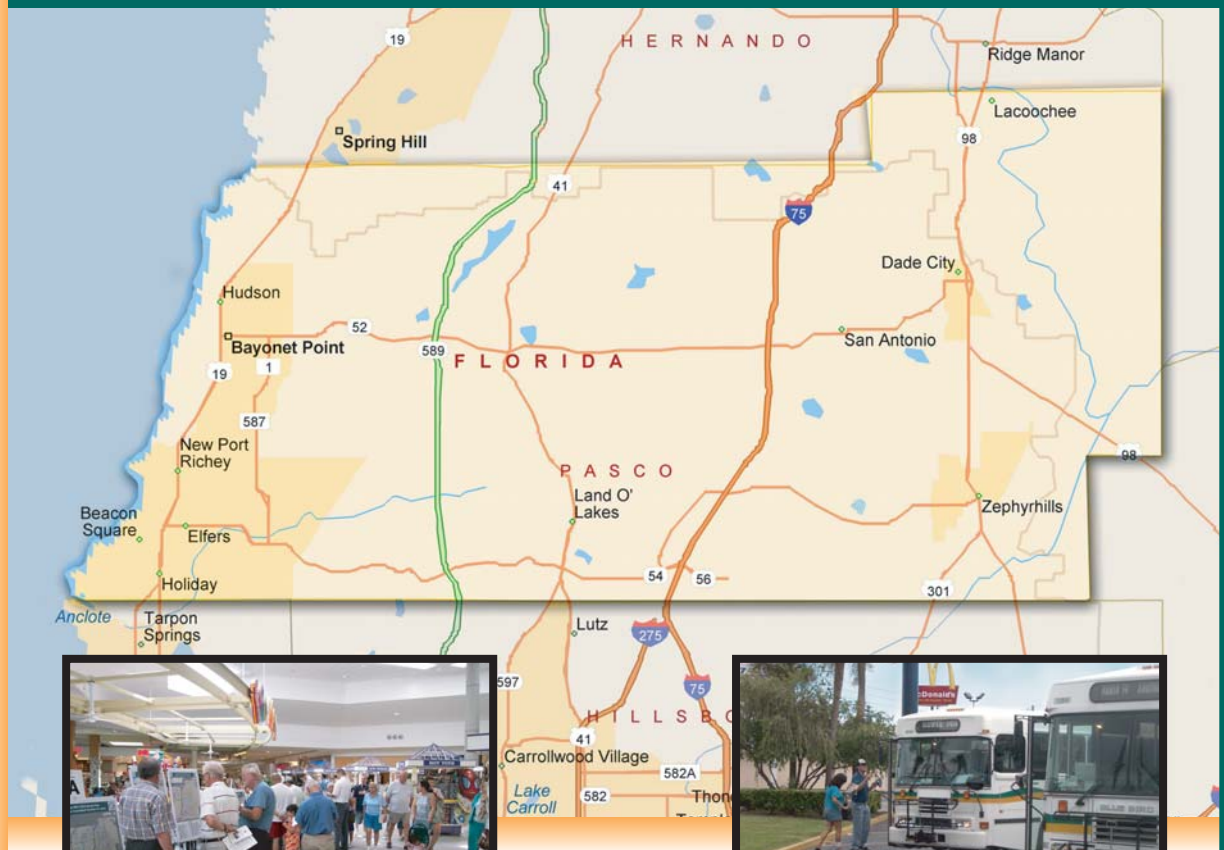
2025 Long Range Transportation Plan Update

Technical Memorandum

Intelligent Transportation Systems Component

Final Report

December 2004



**INTELLIGENT TRANSPORTATION SYSTEM (ITS)
2025 LONG RANGE TRANSPORTATION PLAN
UPDATE
PASCO COUNTY MPO**

Technical Memorandum

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Section 1

INTRODUCTION

The ITS Component of this Technical Memorandum is prepared as a conceptual ITS management plan for the 2025 Long Range Transportation Plan (LRTP) Update. The following five sections summarizing this effort primarily relied on existing data and information from the United States Department of Transportation (USDOT), Federal Highway Administration (FHWA), FDOT District Seven ITS architecture, and other information available from FDOT and Pasco County. The ITS Component includes an overview of ITS and various ITS architectures, a summary of existing ITS projects in Pasco County and future plans, potential roles and responsibilities of MPOs in developing ITS programs, a list and preliminary prioritization of user services in Pasco County, and a preliminary customized ITS architecture for Pasco County.

INTRODUCTION TO ITS

This section presents the definition of ITS provided by the FHWA and provides brief descriptions of the major ITS program areas by categorizing them into two major components: Intelligent Infrastructure and Intelligent Vehicles. In addition, a brief explanation of benefits and impacts of deploying ITS is also presented.

DEFINITION OF ITS

ITS, as defined by FHWA, means electronics, communications, or information processing used individually or in combination to improve the efficiency or safety of a surface transportation system. In more general terms, ITS is the application of various technologies to freeway, traffic, and transit systems to reduce congestion and improve flow of travel and air quality through a more efficient and safer transportation system.

ITS PROGRAM AREAS

The USDOT's ITS Joint Program Office (JPO) maintains an ITS cost-benefit database, and follows a taxonomy for reporting ITS benefits and costs by categorizing ITS program areas into two major components: Intelligent Infrastructure and Intelligent Vehicles. These components are then divided into 16 program areas which are summarized below.

**Table 1-1
ITS Program Areas**

Component	Program Area
Intelligent Infrastructure	Arterial Management Systems
	Transit Management Systems
	Freeway Management Systems
	Incident Management Systems
	Emergency Management Systems
	Electronic Payment Systems
	Traveler Information
	Information Management
	Crash Prevention & Safety
	Roadway Operations & Maintenance
	Road Weather Management
	Commercial Vehicle Operations
	Intermodal Freight
Intelligent Vehicles	Collision Warning Systems
	Driver Assistance Systems
	Collision Notification Systems

BENEFITS AND IMPACTS OF ITS

ITS was introduced in January 1996 by the USDOT with a goal of saving every American up to 15 percent in travel time. ITS makes use of advanced technology solutions to integrate traffic, public transportation, and emergency services that are new or are already in place. Its objective is to enable all agencies and operators who have a role in providing transportation services to operate more effectively in a coordinated manner, sharing information in standardized formats to provide a more reliable and efficient transportation system.

Examples of ITS technology include: computerized systems that optimize traffic flow by automatically adjusting traffic signals; freeway management systems such as variable message signs and highway advisory radio messages based on real-time traffic surveillance; electronic fare payment on public buses; and incident management programs designed to reduce accident response times by emergency vehicles.

Other benefits may include, but not necessarily be limited to the following:

- reduced crashes and crash risk;
- reduced fuel consumption;
- reduced incident response delay;

- reduced travel time;
- improved travel time reliability;
- lower air emissions;
- reduced lane closure time resulting from incidents;
- reduced delay for passenger and commercial vehicles at toll plazas; and
- reduced congestion during incident response and clearing.

Section 2

ITS ARCHITECTURE

DEFINITION OF AN ARCHITECTURE

An architecture is a framework within which a system (a collection of hardware, software, data, processes, and people that work together to achieve a common goal) can be built. An architecture functionally defines the elements of the system and the information that is exchanged between them. An important aspect of an architecture is that although it is functionally oriented, it is not technology-specific, which allows ITS architecture to remain effective over time.

ITS, which is defined in the previous section, involves interrelated systems that work together to deliver transportation services. Integration of these systems requires an architecture, or a framework, to illustrate and gain consensus on the approach to be taken by a group of stakeholders regarding their particular systems. An ITS architecture defines the systems and the interconnections and information exchanges between these systems. The primary components of an ITS architecture are subsystems and information flows:

Subsystems

Subsystems are individual pieces of the overall ITS that perform particular functions such as managing traffic, providing traveler information, or responding to emergencies. Subsystems can be associated with particular organizations such as departments of transportation, information service providers, or public safety agencies. They are sources and/or users of information provided by other subsystems within or on the boundary of the ITS architecture. Subsystems include center systems, roadside components, vehicle equipment, and traveler devices that participate in ITS.

Information Flows

Information flows define information that is exchanged between subsystems such as traffic information, incident information, or surveillance and sensor control data. They depict ITS integration by illustrating the information links between subsystems. In ITS, this integration is not only technical but also institutional. The system interfaces that are defined require cooperation and shared responsibilities on the part of the owners and operators of each participating system.

TYPES OF ARCHITECTURE

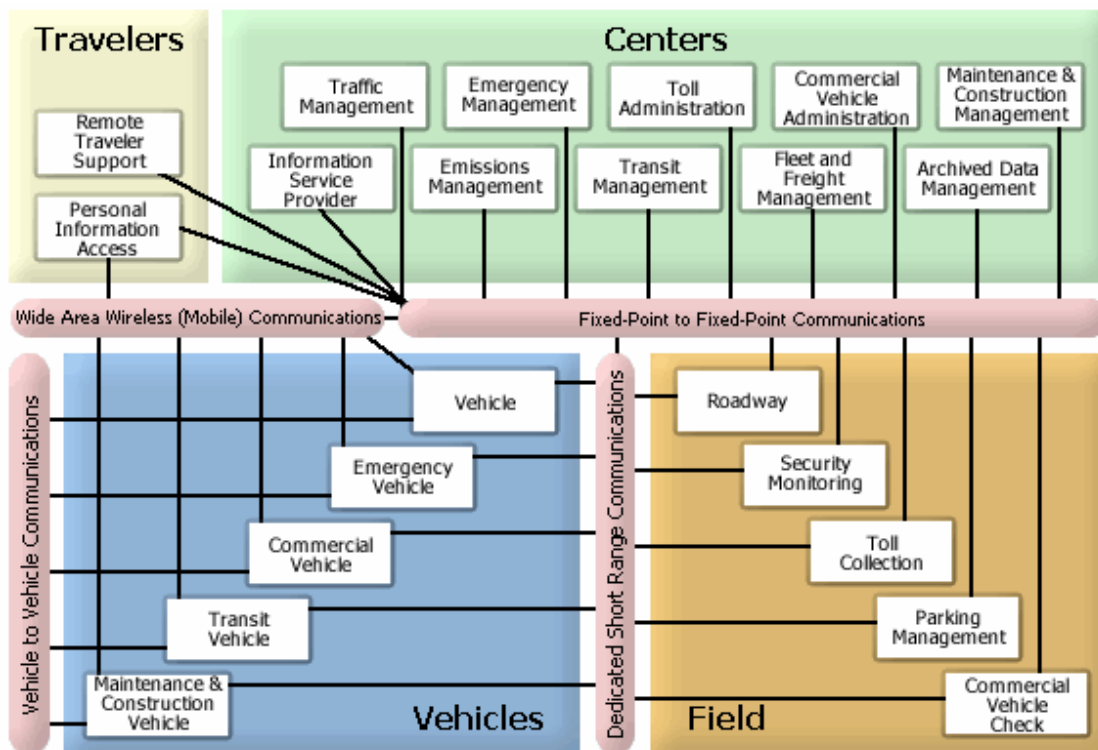
Two different types of ITS architecture are discussed in the Regional Architecture Guidance, prepared by the national ITS Architecture Team of the USDOT in October 2001. These include the National ITS Architecture, which is a general framework for planning, defining, and

integrating ITS, and Regional ITS Architecture, which is a specific regional framework for ensuring agency agreement and technical integration for the implementation of ITS projects in a particular region. The following paragraphs define national and FDOT regional architecture.

National Architecture

The National ITS Architecture provides a common structure for the design of ITS. It is the framework around which multiple design approaches can be developed, each one specifically tailored to meet the individual needs of the user, while maintaining the benefits of a common architecture. The architecture defines the functions (e.g., gather traffic information or request a route) that must be performed to implement a given user service, the physical entities or subsystems where these functions reside (e.g., the roadside or the vehicle), the interfaces/information flows between the physical subsystems, and the communication requirements for the information flows (e.g., fixed-point to fixed-point or wide area wireless). In addition, it identifies and specifies the requirements for the standards needed to support national and regional interoperability, as well as product standards needed to support economy of scale considerations in deployment (National ITS Architecture Documents, October 2003 Update, FHWA). Figure 2-1 shows the “Sausage” Diagram with subsystems and information flows in the National ITS Architecture.

**Figure 2-1
National ITS Architecture “Sausage” Diagram**



Source: USDOT. Online: <http://itsarch.iteris.com/itsarch/html/entity/paents.htm>, accessed on 4/21/04.

FDOT Regional Architecture

According to Regional Architecture Guidance issued by USDOT, the purpose of developing a regional ITS architecture is to illustrate and document regional ITS integration so that planning and deployment can take place in an organized and coordinated fashion. Typically, a region contains multiple transportation agencies and jurisdictions, having adjoining and/or overlapping geographies or both. These agencies and jurisdictions, however, share a common thread for all of the problems such as traffic congestion and safety hazards. A regional ITS architecture is comprised of several components such as the operational concept, list of institutional agreements, standards, etc. It is important that ITS solutions be provided economically, utilizing public funds in a responsible manner. Regional integration allows for the sharing of information and coordination of activities among regional transportation systems to efficiently and effectively operate. A regional ITS architecture illustrates this integration and provides the basis for planning the development of existing systems and the definition of future systems that facilitate integration over time. A regional ITS architecture is based on the National ITS Architecture and is customized to meet the needs and requirements of the region.

For the MPO and other area-wide and statewide planning agencies, the regional ITS architecture provides information for updating both the LRTP and the Transportation Improvement Program (TIP). It also provides information for use in other planning activities, including the Mobility Management System, corridor and sub-area studies, performance-monitoring activities, transit plans, and other locally defined studies or plans. For statewide planning agencies, it provides information for updating the Statewide TIP, the State Implementation Plan (SIP), and other statewide or multi-region plans and studies. The regional ITS architecture is also useful to private companies contemplating ITS investments, by helping them understand short and long-range ITS planning goals of the local public sector agencies, plus the technical and institutional context in which private investments would be made.

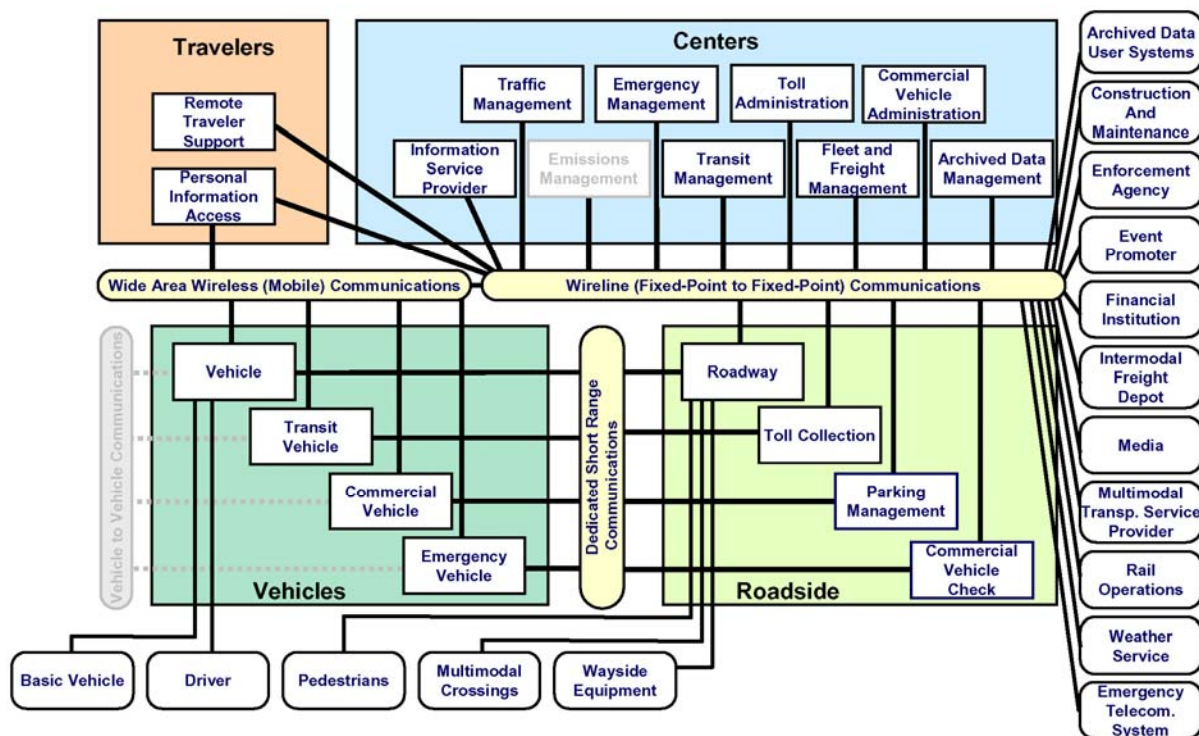
A statewide architecture for ITS applications has been developed by FDOT. The project to develop statewide architecture was undertaken based on one of the recommendations made in Florida's Intelligent Transportation System Strategic Plan published by FDOT in 1999. The recommendation called for the Department to develop and maintain a statewide ITS architecture and supporting standards that utilize the National ITS Architecture and adapt as needed to meet Florida's needs.

In developing the statewide regional architecture, eight regional workshops were held to gather stakeholder input in all aspects of ITS in each FDOT District. This and other collected information was used to complete the district regional ITS architectures, including District Seven. Subsequently, all district architectures were merged to form the Florida Statewide ITS Architecture.

As mentioned above, a result of this Statewide ITS Architecture development was an FDOT District Seven Tampa Bay Regional ITS Architecture (TBRIA) that includes an inventory of

physical ITS elements, along with the stakeholders in the District. However, subsequent to its development, FDOT District 7 modified and updated the regional ITS architecture to become the current TBRIA. As part of the Statewide ITS Architecture Update, to be completed in April 2005, the current TBRIA will be incorporated into the SITSA and its' District Seven architecture component for consistency. The FDOT District Seven TBRIA Sausage Diagram is shown in Figure 2-2. This FDOT recommended TBRIA 2002 District Architecture, together with the National Architecture serve as frameworks for the development of a Pasco County ITS Architecture.

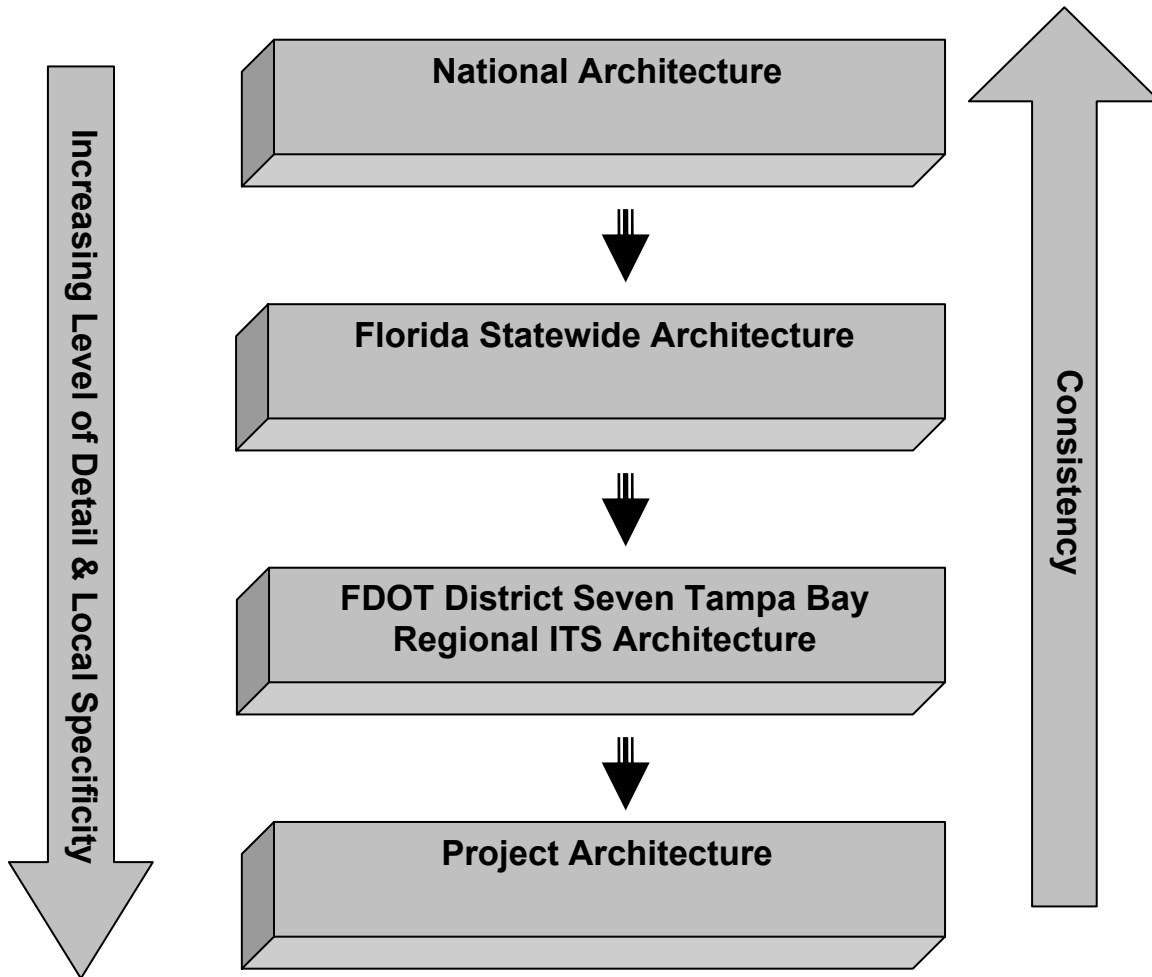
Figure 2-2
FDOT District Seven TBRIA "Sausage" Diagram



Source: FDOT District Seven and Consystec. Available online at <http://www.jeng.com/html/florida/districts/D7/D7.htm>

Figure 2-3 identifies the relationship between the various ITS architecture at each jurisdictional level, including national, statewide, district, and corridor levels. At each lower level ITS architecture becomes smaller in scale, more detailed in content, and is generally tailored to meet the ITS needs of a specific region or a corridor.

**Figure 2-3
ITS Architecture Hierarchy**



RULE 940 REQUIREMENT AND INTEGRATION IN THE MPO PLANNING PROCESS

In 2001, the FHWA issued Rule 940 entitled ITS Architecture and Standards, and concurrently, Federal Transit Administration (FTA) issued a policy entitled National ITS Architecture Policy on Transit Projects. The intent of the Rule and Policy is to establish procedures for implementing sections of the Transportation Equity Act for the 21st Century (TEA-21) and require that ITS projects conform to the National ITS Architecture (NITSA) and standards.

The Rule requires that agencies develop a regional architecture based on the NITSA that reflects the local needs, issues, problems, and objectives for implementation and is consistent with the transportation planning process for statewide and metropolitan planning practice. Each region is given four years to adopt a regional architecture that includes:

- a description of the region;
- identification of participating agencies and other stakeholders;
- an operational concept;
- any agreements required for implementation;
- system functional requirements;
- interface requirements;
- identification of ITS standards; and
- a sequence of projects required for implementation.

In addition, any project that moves into design is required to follow a systems engineering analysis that is commensurate with the project scope. A project is defined as an ITS project or program that will receive federal-aid. If the project moves into design prior to the completion of a regional architecture, a project architecture is required to support the system engineering analysis. The system engineering approach shall include at a minimum:

- identification of portions of the regional architecture being implemented;
- identification of participating agencies roles and responsibilities;
- requirements definition;
- analysis of alternate system configurations and technology options to meet requirements;
- procurement options;
- identification of applicable standards and testing procedures; and
- procedures and resources necessary for operations and management of the system.

Draft FDOT Procedure to the Implementation of Rule 940 in Florida

This document is currently being finalized as “Guidelines” instead of a Procedure, however, it does identify a process for maintaining and updating the SITSA and regional ITS architectures in Florida and identifies the roles and responsibilities of the various FDOT Offices and the MPOs. Additionally, it provides guidance for the integration of ITS and the use of regional ITS architectures in the MPOs long-range transportation planning processes, specifically recommending an ITS Chapter or Component of the LRTP. The document is available on the ITS website at: www.Floridait.com.

The next section addresses existing and proposed ITS deployments in Pasco County.

Section 3

EXISTING AND PROPOSED ITS DEPLOYMENTS IN PASCO COUNTY

This section identifies the existing and proposed ITS deployment in Pasco County. In combination with multimodal congestion reduction strategies, these ITS deployments help the County to improve the local transportation system. The existing ITS deployments identified in this section includes committed projects, elements identified in the regional architecture, and an inventory of existing and proposed deployments for Arterial Management and Transit Management. This is followed by a summary of potential future ITS deployments.

EXISTING ITS DEPLOYMENTS

A number of ITS deployments are in effect with the aim of improving the transportation system in Pasco County. Examples include roadways, transit, and bike/pedestrian systems that are generally funded by either state or federal funds. Table 3-1 presents a list of current ITS projects in Pasco County and elements in the District Seven TBRIA for Pasco County.

**Table 3-1
Existing ITS Deployments**

ITS Project/Element	Stakeholder
Advance Traffic Management System (US 19 ITS Phase I- Pinellas/Pasco county line to Main Street)	Pasco County Public Works Department (PWD)

Source: FDOT

An inventory of existing and planned ITS deployments through 2005 in Pasco County for Arterial and Transit Management is summarized in Tables 3-2 and 3-3, respectively. These summaries are based on the information on deployment and integration of ITS technology gathered through a series of nationwide surveys conducted by USDOT, from 1996 to 2002. ITS deployment information, as reported by Pasco County to USDOT, included Arterial Management and Transit Management information only. The information on ITS use by PCPT is based on the survey, *“The Metropolitan Intelligent Transportation Systems (ITS) Infrastructure 2002 Transit Management Survey,”* which is one of several surveys being distributed annually to a selected group of transportation agencies in 78 of the largest metropolitan areas in the United States.

**Table 3-2
Inventory of Arterial Management ITS**

Arterial Management ITS	2005*
Total number of signalized intersections operated in Pasco County	180
Number of signalized intersections under closed loop or central system control	125
Number of signalized intersections that allow signal preemption for emergency vehicles	150
Number of signalized intersections within 200 feet of a highway-rail intersection that adjust signal timing in response to train crossing to avoid vehicle entrapment	3
Total number of signalized intersections with real-time electronic traffic data collection (electronic data collection capabilities)	175
Number of signalized intersections with loop detectors (for volumes, speed, and density)	160
Number of signalized intersections with video detection cameras (for volume, speed, and density)	2
Number of signalized intersections with microwave detection	6
Incident Detection and Verification Methods (by number of miles covered) – CCTV	2
Information collects/archives in real-time - Traffic volumes, Traffic speeds, Vehicle classification, Turning movements, Phasing/cycle lengths, and Emergency vehicle signal preemption	Data not available

Source: USDOT

*as estimated in 2002.

**Table 3-3
Inventory of Transit Management ITS**

Transit Management ITS	2005*
Demand response vehicles with software that displays AVL-equipped vehicle locations, vehicle data, and operator data on dispatcher monitors, or automated scheduling software for demand responsive service	35
Methods PCPT uses, or will use, to disseminate transit route schedules, and fare information to the public - Dedicated cable TV, Internet web sites, kiosks	Yes
Methods PCPT uses, or will use, to disseminate Real-time Transit Schedule Adherence or Arrival and Departure Times to the public - bus stops (total number)	1000
Security: Buses equipped with security devices - Silent alarms	17
Communication Technology: Radio system - Digital and/or Trunked	Yes

Source: USDOT

*as estimated in 2002.

PLANNED ITS DEPLOYMENTS

Plans exist for additional ITS projects funded by federal, state and local sources including recently imposed one-penny local option sales tax (Penny for Pasco) revenues. A general summary of planned ITS projects in Pasco County is presented below. Table 3-4 presents the details of these projects and the corresponding stakeholders.

- Pasco County MPO staff has identified the US 19 corridor in western Pasco County as a priority corridor for ITS applications. US 19 is the most heavily traveled and highly congested corridor in the county. The corridor is an urban interrupted flow arterial that extends 19.7 miles from Pinellas County to Hernando County. The current 2004/05 CIP includes two projects to install an Advance Traffic Management System (ATMS) for the

**Table 3-4
Future ITS Deployments**

ITS Element	Stakeholder
Advance Traffic Management System (US 19 ITS Phase II- Grand Boulevard to Beacon Woods Street)	Pasco County PWD
Advance Traffic Management System (US 19 ITS Phase III- Hudson to Hernando county line)	Pasco County PWD
ITS Improvements on Little Road, from SR 54 to SR 54	Pasco County PWD
ITS Improvements on Ridge Road, from US 19 to Moonlake Road	Pasco County PWD
ITS Improvements on SR 54, from US 19 to US 41	Pasco County PWD
Road Weather information System	FDOT
Freeway Management System (I-75 corridor)	FDOT District Seven

Source: FDOT and Pasco County LRTP.

US 19 corridor. These two projects are the remaining two phases of the ATMS project that was completed in 2003 on the southern portion of the US 19, as described under existing ITS deployments in Table 3-1. Similar to Phase I, these phases will install the adaptive signal system called SCATS to sense traffic flowing through each approach to an intersection. As a result, the signal timing at that intersection may be adapted to the traffic flows not only at that intersection, but also to other intersections in the corridor to optimize traffic flow. The components of these projects include 2070N signal controllers, additional vehicle detectors, video monitoring, dynamic message signs, fiber optic trunk line, and a new Pasco County Traffic Management Center (TMC).

- Expanding ITS applications to other major corridors in addition to US 19 has also been discussed by the County officials. Recent input through the MPO and County planning process called for exploring the possibilities of expanding ITS applications to Little Road, SR 52, SR 54, Ridge Road, and US 41 corridors. Exploration of ITS applications on these roads has resulted in the identification of three major corridors including Little

Road, SR 54, and Ridge Road. These projects, estimated to cost over \$25 million through 2025 and funded by county gas tax, are included in the recently adopted LRTP.

- Tables 3-2 and 3-3, presented previously, show existing and projected Arterial and Transit Management ITS deployments reported to USDOT by both Pasco County and the PCPT.
- FDOT maintains and updates a Ten-Year ITS Cost Feasible Plan (ITS CFP). This plan includes ITS projects statewide. According to this plan, FDOT plans to install a statewide Road Weather Information System at various locations in Florida, including one in Pasco County.
- In addition to the statewide projects described above, the ITS CFP also includes district specific projects. The list of FDOT District Seven ITS projects includes a project for Pasco County to install a Freeway Management System for the I-75 corridor.

It should be noted that the regional ITS architecture will, where applicable, be modified accordingly to include these planned projects. In addition, any information regarding project evaluations which estimate the impacts and benefits associated with the implementation of these ITS projects should be included in the ITS Strategic Management Plan, targeted for development in 2005. This ITS component for the LRTP provides the starting point for the Strategic Management Plan.

FDOT District Seven identifies and maintains a list of ITS Elements and parallel Stakeholders applicable to the District. This comprehensive list, summarized in Table 3-5 with only the Stakeholders and Elements applicable to Pasco County (statewide and regional elements), is maintained and updated as part of the FDOT District Seven TBRIA.

**Table 3-5
District Seven ITS Elements Applicable to Pasco County**

Stakeholder	Element	Statewide or Regional ITS
Amtrak	Amtrak Passenger Train Terminal	Regional
Amtrak	Amtrak Regional Bus Service	Regional
Archived Data Users	Archived Data User Systems	Regional
CHEMTREC	CHEMTREC (Chemical Engineering)	Statewide
Commercial Vehicle Fleet Operators	Automated Collision Notification System	Statewide
Commercial Vehicle Fleet Operators	Commercial Vehicles	Statewide
Commercial Vehicle Fleet Operators	Infrastructure Assisted Hazardous Warning System	Statewide
Commission for the Transportation Disadvantaged	Demand-Response/Rural Transit Database	Statewide
Commuter Services	Bay Area Commuter Services - Rideshare network	Regional
Counties and Cities	County and City Public Information System	Statewide
County and City Permit Office	Municipality Event Permit Systems	Regional
County Emergency Management Agencies	County Warning Points	Regional
County Emergency Management Divisions	County Emergency Operations Centers	Regional

Table 3-5 (continued)
District Seven ITS Elements Applicable to Pasco County

Stakeholder	Element	Statewide or Regional ITS
County Paratransit	County Paratransit Systems	Regional
County Paratransit	County Paratransit Vehicles	Regional
County School Districts	School Buses	Regional
County School Districts	School District Transportation Dispatch	Regional
County School Districts	School District Web Site	Regional
Department of Community Affairs Division of Emergency Management	Regional Evacuation Routes Database	Statewide
Department of Environmental Protection	Air Quality Database	Statewide
Department of Highway Safety and Motor Vehicles	Florida Safety and Crash Data Collection System	Statewide
District 7 Public Safety Agencies	Other District 7 Public Safety Comm and Dispatch Centers	Regional
District 7 Traffic Mgmt Agencies	District 7 Regional Network	Regional
Emergency service providers (medical)	Emergency Medical Service Dispatch	Regional
FDOT	CVO Parking Facilities	Statewide
FDOT Central Maintenance	Draw Bridge Operations Schedules	Statewide
FDOT Central Maintenance	Equipment Management and Inventory System	Statewide
FDOT Central Maintenance	FDOT Bridge Management Inventory System (Pontis)	Statewide
FDOT Central Maintenance	FDOT Overdimension Permit System	Statewide
FDOT Central Office of Info Services	Florida DOT Traffic Information Web Page	Statewide
FDOT Central Office Public Information Office	FDOT Statewide Public Information System	Statewide
FDOT Central Planning Transportation Statistics	FDOT Roadway Characteristics Inventory	Statewide
FDOT Central Planning Transportation Statistics	FDOT Traffic Characteristics Inventory	Statewide
FDOT Central Public Transportation Operations	FDOT Transit Database	Statewide
FDOT Construction Office	Contracts Administration System (Virtis)	Statewide
FDOT D7	District 7 Emergency Operations Center	Regional
FDOT D7 Public Information Office	District 7 Static and Planned Traveler Info. System	Regional
FDOT District 7	FDOT D7 Regional Transportation Management Center	Regional
FDOT District 7	FDOT District 7 Arterial Field Equipment	Regional
FDOT District 7	FDOT District 7 Construction	Regional
FDOT District 7	FDOT District 7 Freeway Field Equipment	Regional
FDOT District 7	FDOT District 7 Maintenance	Regional
FDOT District 7	Rest Areas	Regional
FDOT District 7	Service Patrol Dispatch	Regional
FDOT District 7	Service Patrol Vehicles	Regional
FDOT District 7	Sunshine Skyway Motorist Service/Crisis Hotline Phones	Regional
FDOT District 7	Zone Traffic Management Centers	Regional
FDOT Districts	FDOT District Field Equipment	Statewide
FDOT Districts	FDOT District Transp. Data Collection Systems	Statewide
FDOT Districts	Motorist Aid Call Boxes	Statewide
FDOT Motor Carrier Compliance	CVIEW	Statewide
FDOT Motor Carrier Compliance	Motor Carrier Compliance Enforcement Vehicles	Statewide
FDOT Motor Carrier Compliance	Scales/Inspection Facilities	Regional
FDOT Office of Toll Operations	SunPass Customer Service Center	Statewide
FDOT Office of Toll Operations	Sunpass Electronic Toll Collection Equipment	Regional
FDOT Office of Toll Operations	SunPass Web Site	Statewide
FDOT Public Transportation Central Operations	FDOT Aviation Database	Statewide

Table 3-5 (continued)
District Seven ITS Elements Applicable to Pasco County

Stakeholder	Element	Statewide or Regional ITS
FDOT Public Transit Central Operations	FDOT Seaport Database	Statewide
FDOT Public Transit Central Operations	Rail Operations Database	Statewide
FDOT Safety Office	State Highway System Crash Analysis Reporting System	Statewide
FDOT Turnpike District	FDOT Turnpike District Roadway	Regional
FDOT Turnpike District	Service Plazas	Statewide
FDOT Turnpike District	Turnpike Field Equipment	Statewide
FDOT Turnpike District	Turnpike Operations Center (Turkey Lake)	Regional
FDOT Turnpike District	Turnpike Traffic Management Centers	Statewide
FHP, FDOT	*FHP cellular system	Regional
Financial Institutions	Financial Institutions	Regional
FL Dept of Law Enforcement	FDLE Vehicles	Statewide
FL Dept of Law Enforcement	Manpower, Assets, and Resources System (MARS)	Statewide
FL Div. of Emergency Management	Florida State Emergency Operations Center	Statewide
FL Div. of Emergency Management	Florida State Warning Point	Statewide
FL Highway Patrol	Florida Highway Patrol Vehicles	Statewide
Florida Counties and Cities	County and City Field Equipment	Statewide
Florida Counties and Cities	County and City Overdimension Permit Systems	Statewide
Florida Department of Agriculture	Department of Agriculture Inspection Vehicle	Statewide
Florida Department of Agriculture Division of Forestry	Control Burn Permitting Database	Statewide
Florida Department of Environmental Protection	Florida DEP Air Quality Management System	Statewide
Florida Department of Highway Safety and Motor Vehicles	License, Registration, and Fuel Tax System	Statewide
Florida Highway Patrol	Florida Highway Patrol Dispatch	Regional
Florida, AL, GA, SC, NC, and MS Public Safety Agencies	Other Public Safety Communication and Dispatch Centers	Statewide
Florida, AL, GA, SC, NC, and MS State DOTs	Other Traffic Management Centers	Statewide
Greyhound Bus Company	Inter-City Bus Service	Regional
Local Fire Department	Local Fire Dispatch	Regional
Local Fire Department	Local Fire Vehicles	Regional
Local Media	Newspapers, Radio, Television Stations	Regional
Local Police Department	Local Police Dispatch	Regional
Local Police Department	Local Police Vehicles	Regional
Local Venue Promoters	Local Venue Event Scheduling System	Regional
Mayday/Concierge Service Provider	Mayday/Concierge Service Center	Statewide
Metro Traffic	Metro Traffic Traffic Information for Radio	Regional
National Weather Service	National Weather Service	Regional
North Florida Transit Management Agencies	Transit Kiosks	Regional
Private Sector ISPs	Private Traveler Information Providers	Regional
Rail Operator	CSX Rail Operations Centers	Regional
Rail Operator	CSX Wayside Equipment	Regional
Rail Operator	Rail Intermodal Terminals	Regional
Regional Planning Councils/MPOs	RPC/MPO Transp. Data Collection System	Statewide
Sensitive Materials Carriers	Sensitive Materials Carriers Information Provider	Statewide
Towing Companies	Tow Dispatch	Regional
Towing Companies	Tow Vehicle Systems	Regional
Transit Agencies	Florida Transit Kiosks	Statewide
Traveler Information Radio Network	Traveler Info. Radio Network Stations	Statewide
Travelers	Driver	Regional

Table 3-5 (continued)
District Seven ITS Elements Applicable to Pasco County

Stakeholder	Element	Statewide or Regional ITS
Travelers	Traveler PC/Information Appliance	Regional
Travelers	Traveler Vehicle	Regional
US Coast Guard	Draw Bridge Operational Status System	Statewide
Visit Florida	Welcome Centers	Statewide

Source: FDOT maintained Florida ITS Architecture website.

Online: <http://www.jeng.com/html/florida/web/District%207/InventorybyStakeholder.htm>

Accessed: 3/23/2004.

Notes: (1) Pasco County user services in FDOT District Seven were included in Table 3-1 titled "Existing ITS Deployments", and therefore not included in this table. (2) Regional ITS - Elements and interfaces relevant to the District 7 region only. (3) Statewide ITS - Elements and interfaces relevant to the District 7 region and many other regional architectures in the state. These broadly applicable interfaces are actually defined in a separate Statewide Services architecture. They are included in this District 7 architecture so that the architecture includes a complete, unified view of all elements/interfaces that are of interest to the region. (4) It is important to note that the two architectures (state and regional) are not the same. Elements contained in the SITSA and its District 7 regional component may not have been included in the TBRIA update. (3) This information from the TBRIA is presented here to benefit any further discussions of the relevance of these elements to Pasco County's ITS deployment.

This section provided a summary of existing and proposed ITS deployments in Pasco County. The next section introduces ITS User Services.

Section 4 ITS USER SERVICES

USDOT defines User Services as what ITS should do from the user's perspective. The National and state ITS Architectures refer to User Services as the building blocks of ITS deployment. Currently, 33 User Services are identified in the National Architecture. The 33 User Services are categorized into eight major "bundles." Bundles are logical groupings of User Services based on common functionality and/or the utilization of common technologies. The user service bundles are: Travel and Traffic Management, Public Transportation Management, Electronic Payment, Commercial Vehicle Operations, Emergency Management, Advanced Vehicle Safety Systems, Information Management, and Maintenance and Construction Operations. Table 4-1 summarizes the eight bundles, 33 User Services, and their applicability to statewide, region, or corridor ITS architectures.

**Table 4-1
ITS User Services and Their Applicability**

ITS User Service Bundle	ITS User Service Bundle	Statewide	Region	Corridor
Travel And Traffic Management	Pre-trip Travel Information	☑	☑	☑
	En-Route Driver Information	☑	☑	☑
	Route Guidance		☑	☑
	Ride Matching And Reservation		☑	☑
	Traveler Services Information	☑	☑	☑
	Traffic Control		☑	☑
	Incident Management		☑	☑
	Emissions Testing and Mitigation		☑	☑
	Travel Demand Management		☑	☑
	Highway-Rail Intersection	☑	☑	☑
Public Transportation Management	Public Transportation Management	☑	☑	☑
	En-Route Transit Information		☑	☑
	Personalized Public Transit		☑	☑
	Public Travel Security	☑	☑	☑
Electronic Payment	Electronic Payment Services	☑	☑	☑

Table 4-1 (continued)
ITS User Services and Their Applicability

ITS User Service Bundle	ITS User Service Bundle	Statewide	Region	Corridor
Commercial Vehicle Operations	Commercial Vehicle Electronic Clearance	<input checked="" type="checkbox"/>		
	Automated Roadside Safety Inspection	<input checked="" type="checkbox"/>		
	On-Board Safety Monitoring On-board Safety And Security Monitoring*	<input checked="" type="checkbox"/>		
	Commercial Vehicle Administrative Processes	<input checked="" type="checkbox"/>		
	Hazardous Material Incident Response	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Freight Mobility	n/a	n/a	n/a
Emergency Management	Emergency Notification and Personal Security		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Emergency Vehicle Management		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Disaster Response And Evacuation	n/a	n/a	n/a
Advanced Vehicle Safety Systems	Longitudinal Collision Avoidance			<input checked="" type="checkbox"/>
	Lateral Collision Avoidance*			<input checked="" type="checkbox"/>
	Intersection Collision Avoidance*			<input checked="" type="checkbox"/>
	Vision Enhancement for Crash Avoidance*			<input checked="" type="checkbox"/>
	Safety Readiness*			<input checked="" type="checkbox"/>
	Pre-Crash Restraint Deployment*			<input checked="" type="checkbox"/>
	Automated Vehicle Operation*			<input checked="" type="checkbox"/>
Information Management	Archived Data Function	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Maintenance and Construction Management	Maintenance and Construction Operations	n/a	n/a	n/a

Source: NITSA Version 5.0.1, *Florida ITS Planning Guidelines*, and *Florida's Intelligent Transportation System Strategic Plan*.

*These user services are primarily provided by the private sector, i.e., automobile manufacturer, etc.

Section 5

ITS ARCHITECTURE FOR PASCO COUNTY

This section identifies possible roles and responsibilities for the Pasco County MPO towards the development of an ITS architecture. A preliminary prioritization of User Services is also presented based on the Florida's Intelligent Transportation System Strategic Plan. In addition, a preliminary list of stakeholders is identified.

MPO ROLES AND RESPONSIBILITIES

The Draft FDOT Procedure to the Implementation of Rule 940 in Florida identifies roles and responsibilities for MPO in the integration of ITS into the Florida transportation planning processes. Additionally, the MPOs may be responsible for:

- Participate in the update and maintenance of the regional ITS architecture
- Participating in regional operating organizations (ROOS)
- Identifying and developing institutional agreements
- Conducting ITS feasibility studies or master plans
- Performance monitoring and measuring.

Prioritization of User Services

A preliminary prioritization of User Services is presented in Table 5-1. This preliminary list of User Services in Pasco County is based on Florida's ITS Strategic Plan user services applicable to regions, including Pasco County. This preliminary list of User Services provides a good starting point for identifying the comprehensive list of all user services in Pasco County and may be expanded or reduced based on the input from stakeholders identified later in this ITS Component.

**Table 5-1
Preliminary Prioritization of ITS User Services**

User Service Bundle	User Service
Travel And Traffic Management	Pre-trip Travel Information
	En-Route Driver Information
	Route Guidance
	Ride Matching and Reservation
	Traveler Services Information
	Traffic Control
	Incident Management
	Emissions Testing and Mitigation
	Travel Demand Management
	Highway-Rail Intersection
Public Transportation Management	Public Transportation Management
	En-Route Transit Information
	Personalized Public Transit
	Public Travel Security
Electronic Payment	Electronic Payment Services
Commercial Vehicle Operations	Hazardous Material Incident Response
Emergency Management	Emergency Notification and Personal Security
	Emergency Vehicle Management
	Disaster Response And Evacuation
Information Management	Archived Data Function
Maintenance And Construction Management	Maintenance And Construction Operations

Note: These user services should be updated when the Florida's ITS Strategic Plan, which is currently being updated, becomes available.

Identification of Stakeholders

As previously discussed, identifying the stakeholders responsible for various ITS User Services is one of the major responsibilities for the MPO in integrating and mainstreaming ITS into the transportation planning process. A potential list of responsible stakeholders was identified for the Pasco County MPO. This list, identified as part of this ITS Component, includes agency stakeholders participating at some level in the county transportation network. This list also provides a foundation for identifying other possible interested parties responsible for future ITS deployments.

This list of stakeholders responsible for the User Services previously identified in Pasco County was based on the stakeholders identified in the FDOT District Seven TBRIA, guidance from USDOT presented earlier, and a review of ITS stakeholder committees in other counties. This list may be expanded based on additional user services identified later in the ITS planning process, as stakeholders meet to evaluate the existing and future ITS needs in Pasco County.

As appropriate, stakeholders responsible for ITS User Services in Pasco County should include but not necessarily limited to the following:

- Pasco County MPO
- Pasco County Public Works Department
- Public Works/Engineering Departments and Local Police of All Incorporated Municipalities (New Port Richey , Zephyrhills, Dade City, Port Richey, San Antonio, Saint Leo)
- Pasco County 911
- Pasco County Fire Department
- Pasco County Sheriffs Department
- Pasco County Emergency Management
- Pasco Community Traffic Safety Team
- Pasco County Public Transportation
- FDOT Central Office
- FDOT District Seven
- FDOT Turnpike Enterprise
- Commercial Vehicle Fleet Operators
- Commission for the Transportation Disadvantaged
- Pasco County School District
- Department of Community Affairs Division of Emergency Management
- Department of Environmental Protection
- Department of Highway Safety and Motor Vehicles
- Emergency Service Providers (medical)
- Pasco County Financial Institutions
- Florida Department of Law Enforcement
- Florida Highway Patrol
- Greyhound Bus Company
- Local Media
- Amtrak
- Local Venue Promoters
- National Weather Service
- Towing Companies
- US Coast Guard

ADOPTION OF REGIONAL ARCHITECTURE FOR PASCO COUNTY

The Florida Division of FHWA does not recommend that each county prepare an architecture, but participate in the regional ITS architecture to ensure interoperability between systems and multijurisdictional coordination in developing, operating and maintaining the regional systems. This can be accomplished by the MPO adopting District Seven's Tampa Bay Regional ITS Architecture (TBRIA).

Consistent with FDOT's guidance for implementing Rule 940 to allow for the continuance of using federal funds for ITS projects after February 7, 2005, the Pasco County MPO has adopted the TBRIA.