

JACKSONVILLE AREA ATIS MARKETABILITY STUDY



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1. INTRODUCTION

The Florida Department of Transportation (FDOT or Department) recently issued an invitation-to-negotiate (ITN) for advanced information services in the Southeast Region of Florida in an effort to implement advanced traveler information services (ATIS) through the privatization of the dissemination of information to travelers regarding traffic conditions. As part of its continuing effort to implement the program throughout the state, the Department is investigating other areas around the state that might warrant a similar effort. Specific areas of interest are the Jacksonville Area, the Interstate Four (I-4) Corridor (including Tampa Bay, Orlando, and Daytona areas), and the Southwest Region of Florida.

1.1 Study Area

The Jacksonville study area in this market analysis is defined as the Jacksonville Metropolitan Statistical Area (MSA) which includes:

- Clay County;
- Duval County;
- Nassau County; and
- St. Johns County.

Figure 1 illustrates the Jacksonville ATIS study area.

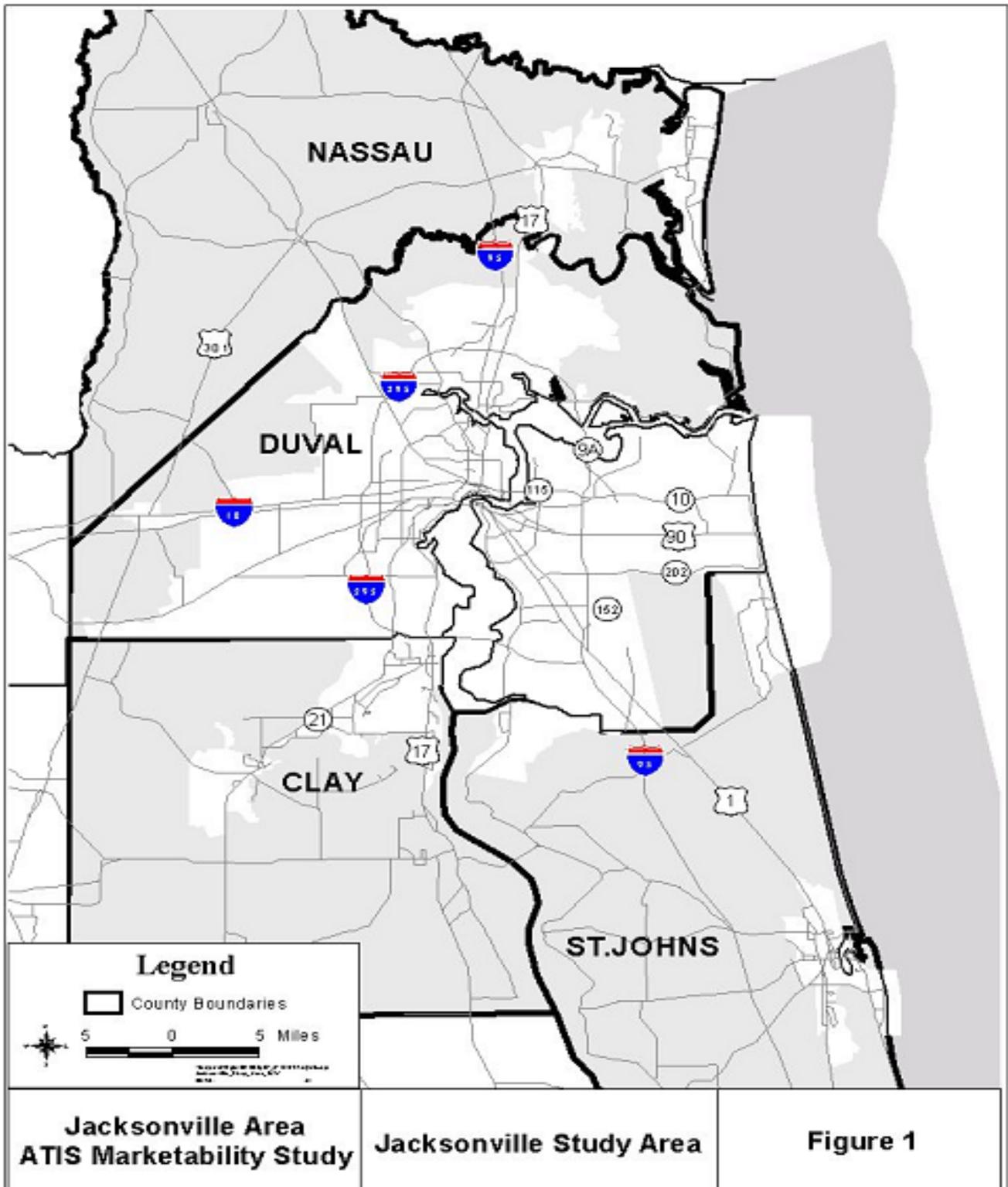
1.2 Study Structure

This marketability study provides a market analysis/approach for providing ATIS throughout the Jacksonville area. It also provides a detailed description of the elements necessary for FDOT to reach a Go/No Go decision on proceeding with an ITN for ATIS in the Jacksonville area. The remainder of this report addresses the following issues:

- What is ATIS?
- The Jacksonville Area Consumer Context
- The ATIS Marketplace
- Basis for Estimates for Jacksonville Area ATIS
- Conclusions and Recommendations

2. What is ATIS?

According to the Strategic Plan for IVHS in the United States, published in May 1992 by ITS America, ATIS is defined as “Advanced Traveler Information Systems (ATIS) acquire, analyze, communicate, and present information to assist surface transportation travelers in moving from a starting location (origin) to their desired destination. The systems provide such assistance in a manner that best satisfies the traveler’s needs for safety, efficiency, and comfort. The travel may involve a single mode of transportation, or it may link multiple modes together during various parts of the trip.”



Architecturally, the central role in ATIS is the information service provider (ITS) subsystem. The information service provider is a user of each of the subsystems that collects transportation system information. This includes the transit management, transit vehicle, traffic management, roadside, and parking management subsystems. The ISP provides the focal point for traveler information to the vehicle, personal information access, and remote traveler support subsystems. In the same way, the public agencies responsible for traffic management can use the information made available through the ISP from vehicle subsystems. In some cases, the private sector service provider may also fund additional surveillance infrastructure to become a primary agent for data collection as well as for data distribution.

3. THE JACKSONVILLE AREA CONSUMER CONTEXT

3.1 Scale of the Market for ATIS

Table 1 shows the population growth forecast for all the counties in the study area between the current year (2000) and 2020. The table confirms that all counties in the Jacksonville Area will continue to grow at a fast pace. Duval County, which includes the City of Jacksonville, will approach a population of one million people by 2020. All surrounding counties, Clay, Nassau, and St. Johns, will continue to grow to about 1½ times their 2000 levels by 2020. Overall, the populations in the Jacksonville Area counties will grow by about 1.25 times their 2000 levels by 2020. This rapid growth will drastically increase travel demand.

Table 1

Population Growth Forecasts in the Jacksonville Area (2000 – 2020)

County	2000 Population	2010 Population	2020 Population
Clay	140,814	179,500	217,100
Duval	778,879	863,100	956,100
Nassau	57,663	73,000	88,200
St. Johns	123,135	148,700	181,600
Jacksonville MSA (51)	1,100,491	1,264,300	1,443,000

Source: Unadjusted 2000 Census Data and Florida Statistical Abstract 2000.
 Rank of the MSA in Population Growth among all 318 MSA/PMSA/NECMAs in the United States – in parenthesis

The growth in employment is outpacing population growth rates, although commuting patterns to work may complicate the travel demands for some counties. Table 1 illustrates the high growth anticipated for the counties surrounding the City of Jacksonville (over 60% forecasted growth). Jacksonville/Duval County will grow at a slower pace than surrounding counties, which means that commuting patterns to work will get more diverse. Table 2 summarizes the expected growth in employment within the Jacksonville Area.

Table 2

Employment Growth Forecasts in the Jacksonville Area (1999-2020)

County	1999 Employment	2010 Employment	2020 Employment
Clay	49,300	65,520	83,660
Duval	560,480	653,010	738,550
Nassau	21,790	26,790	32,202
St. Johns	50,570	65,560	82,410
Jacksonville MSA (64)	682,140	810,880	936,822

Source: 2001 Woods & Poole Economics, Inc.

Rank of the MSA in Employment Growth among all 318 MSA/PMSA/NECMAs in the United States – in parenthesis

The real per capita income is a measure of the average resident’s standard of living and is one of the key variables influencing the amount and frequency of discretionary and recreational travel. In the Jacksonville Area, real per capita income is projected to grow at an average annual rate of almost 1.02 percent between 1999 and 2020. Table 3 displays the projected growth in real per capita income, shown in constant 1996 dollars, for the counties in the Jacksonville Area. There is a notable difference between the income growth rates projected for each county.

These differences also have a different pattern than the differences in employment growth rates. For example, Duval County is the slowest growing county in employment in the study area, but ranks as the second highest in per capita income annual growth rate. On the other hand, Clay County is the fastest growing county in both employment and income growth rates.

Table 3

Real Per Capita Income Growth Forecasts in the Jacksonville Area (1999-2020)

County	1999 Income (\$1996)*	2010 Income (\$1996)	2020 Income (\$1996)	Annual Growth Rate**
Clay	\$23,231 (23)	\$25,951 (25)	\$29,660 (24)	1.17%
Duval	\$26,429 (13)	\$30,020 (15)	\$33,279 (16)	0.96%
Nassau	\$25,253 (17)	\$25,877 (26)	\$27,442 (38)	0.40%
St. Johns	\$36,332 (6)	\$37,943 (7)	\$41,266 (6)	0.61%
TOTAL MSA	\$27,056 (91)	\$30,259 (106)	\$33,496 (106)	1.02%

Source: 2001 Woods & Poole Economics, Inc.

Notes: * Income per capita rank is for 1998

** Annual Growth Rate was calculated from 1999-2020

Rank of the county among all 67 counties in Florida - in parenthesis

Rank of the MSA among all 318 MSA/PMSA/NECMAs in the United States – in parenthesis

As a single marketplace for advanced traveler information, the Jacksonville Area total population in 2000 is estimated about 1.16 million in 2020. Meanwhile, the area's total employment is estimated to be 682,000 in 1999. The market size in the Jacksonville Area is of moderate size, but the 1999 and projected 2015 median age in the area is less than 40 years. ***This indicates that the current and projected real per capita income for the area, which ranks high on the national level, will continue to improve.*** The scale and demographics of the market place make it a moderately attractive opportunity for information service providers (ISP) if adequate traveler information can be provided for dissemination. As population, employment, and income levels continue to increase, the scale of the market and ability of consumers to afford traveler information will also increase.

3.2. National Research on Consumer Needs and Demands for ATIS

Significant national research has been performed to understand what consumers want from ATIS. The following is taken from *Closing the Data Gap: Guidelines for Quality ATIS Data*.

Research of current ATIS users, as well as the general public that are not yet ATIS users has identified four factors that influence ATIS customer demand:

1. ***The regional traffic context:*** This includes attributes of the region, such as highway-roadway network and capacity, levels of traffic congestion, and future highway-roadway expansion plans. Prime ATIS markets appear to be highly congested regions that have limited build-out options, constrained alternate route possibilities, and frequent unpredictable traffic events (e.g., weather, crashes).
2. ***The quality of the ATIS services:*** This is at least as important as the level of network congestion. Information quality determines whether, how frequently, and with what level of confidence the traveler consults traveler information. Quality determines whether the information will meet customer needs with respect to personal benefit and value.
3. ***The individual trip characteristics:*** The trip purpose, the time of the trip in relation to peak congestion periods, trip length, and the particular route or route choices available to the individual traveler all have a significant effect on whether the individual will consult traffic information. To a limited extent, the availability and convenience of alternative mode choices for a given trip affects use of ATIS. Travel time flexibility, or lack thereof, is another determinant in the choice to consult traffic information.
4. ***The characteristics of the traveler:*** The fourth factor includes values and attitude characteristics of the ATIS user, or potential user. These characteristics are important determinants of user awareness, use patterns, behavioral responses, and valuation of ATIS.

Based upon numerous surveys, focus groups and research, ITS America identified eight consumer market segments that cover approximately 90% of a region's population. The market segments help determine the potential market size for specific ATIS products and services, as well as the features of those services that are related to the data required to provide the service.

The eight segments are:

1. **Control Seekers**: Like to plan ahead, desire to be accessible at all times, like using portable information devices, and want to predict travel time accurately.
2. **Web Heads**: Most technologically savvy segment, high users of Internet, but low use of portable information devices.
3. **Low-tech Pre-trip Information Seekers**: Prefer pre-trip information, and are less interested in new high technology gadgets.
4. **Wired with Children**: Younger, higher income, with more children in household, seeks convenience in information acquisition.
5. **Mellow Techies**: Little interest in traffic conditions or trip planning, and little concern about being late, but high levels of computer and Internet use.
6. **Buyers of Value-added services**: Low comfort with computers and Internet, may prefer customized information services.
7. **Trendy and Casual**: Use pagers and cell phones, but express little interest in traffic information or time savings.
8. **Male Techno-Phobes**: Less comfortable with technology, less likely to change behavior, less interested in traffic information.

ATIS market segmentation based on attitudes and values related to control, time, travel, and technology successfully identifies much of the current ATIS customer market, differentiating ATIS customers from others with similar demographic characteristics.

Control Seekers dominate the ATIS customer market. These customers consult ATIS to save time, to use their time efficiently, to stay on schedule, and to stay informed. *Control Seekers* use information more intensively than the general population.

Technology has an important and complex role in ATIS. *Web Heads* comprise the second largest group of ATIS customers. However, their allegiance appears linked to the Internet media, and may or may not migrate to other information platforms as the web becomes more mobile.

Individuals in the *Low-tech Pre-trip Information Seekers* market segment had a low acceptance and comfort level with the Internet and web-based information. Nevertheless, this customer segment represents a large portion of the current ATIS customer pool, and can be expected to continue to demand good information services on low-tech media in the future.

Current Context

Drivers' points of reference for all traffic information are their personal experience with both local traffic conditions and radio traffic broadcasts. They generally rate their own experience as a reliable source of traffic information. But based on their experience with unreliable traffic information from the radio, some drivers do not believe that better, personally useful traffic information could exist. Other drivers believe that there's no alternative to traffic congestion and thus little value to ATIS. Therefore, new ATIS services are competing against drivers' personal knowledge of local traffic conditions, traffic broadcasts on the radio, and drivers' underlying belief that there's no benefit ATIS could provide to relieve the situation.

Concurrently, consumer expectations for advanced information services generally are very high. They've been conditioned by the Internet and a computing environment in which information

services and electronic devices get faster, better, and cheaper very quickly. In the research and evaluation to date, we see a progression in the expectations and requirements of drivers as they become more experienced ATIS consumers.

Why do travelers use ATIS?

Washington State DOT traffic web site (believed to be the heaviest used real-time traffic web site) customers provide insight into motivations of use. These motivations are representative of most ATIS users in other regions. The answers to the questions are placed in order of frequency:

Why use the web site?

- To assess traffic congestion on their route.
- To judge the effects of incidents on their trip.
- To decide among alternate routes.
- To estimate their trip duration.
- To time their trip departure.

What actions result from the information?

- Change route or time of departure maximizing for a faster trip time
- Change route or time of travel to reduce the stress of driving in congestion, perhaps lengthening trip distance or duration
- Adjust their expectations, listen to an audiotaped book, make phone calls, adjust appointments, and make alternative arrangements.

What benefits are perceived from use?

- Save time.
- Avoid congestion.
- Reduce stress.
- Avoid unsafe conditions.

Critical features of a traffic-related ATIS service

The U.S. Department of Transportation (USDOT) ITS program fielded qualitative market research in 1996 on various traffic information concepts with drivers in congested regions. While the opinions of these drivers' were based on their experience of radio broadcast traffic information, their traffic information concerns have proven to be true of all drivers surveyed since.

- Accuracy of information.
- Timeliness of information.
- Reliability of information.
- Cost to use.
- Degree of decision guidance and personalization offered.
- Convenience of access and speed.
- Safety of operation.

3.3 Consumer and Market Segmentation

Consumer Market Segments

Based on population, employment, income, median age projections, and other local factors (like tourism and seasonal residents), four of the consumer market segments are likely candidates for deployment of ATIS products and services for the Jacksonville Area:

1. **Control Seekers:** Like to plan ahead, desire to be accessible at all times, like using portable information devices, and want to predict travel time accurately
2. **Web Heads:** Most technologically savvy segment, high users of Internet, but low use of portable information devices
3. **Low-tech Pre-trip information seekers:** Prefer pre-trip information, and are less interested in new high technology gadgets.
4. **Wired with Children:** Younger, higher income, with more children in household, seeks convenience in information acquisition.

Market Segmentation

In the Jacksonville Area, the markets segments for ATIS can be divided into four basic segments: urban commuters, regional/interstate travelers, tourism and commerce.

1. **Urban Commuters:** The urban commuter is growing and highly elastic to congestion levels. As congestion continues to increase throughout the Jacksonville Area , urban commuters will seek new sources of traveler information to assist them in their daily commutes. Local traveler information and personalize traveler information are the primary services needed. The information provided should include speeds, congestion, and delays on primary commuting routes.
2. **Regional/Interstate Travelers:** Travelers driving through the Jacksonville Area or have one trip end in the area less sensitive to minor variations in the travel time along major corridors in the area; however, these travelers require major incident and slowdown information, including diversion routes. These drivers are typically less familiar with the transportation network and require route guidance for diversion. These travelers are typically business travelers and have a higher sensitivity of time than tourists, but because of the trip length, less sensitivity to localized problems than commuters.
3. **Tourism:** A healthy tourism market is essential for Florida's economy and travelers in this market have unique needs. Seven million visitors, or close to 10 percent, of Florida's estimated 74.1 million tourists in year 2000 visited the Jacksonville area. The Jacksonville Area is ranked sixth out of the seven Florida's vacation regions according to Visit Florida (www.FLUSA.com) data. Many tourists are unfamiliar with the transportation network and like regional/intercity travelers are less sensitive to minor variations in travel time. Major incident and slowdown information combined with route guidance and diversion opportunities are the primary traveler information needed. Tourists are less likely to divert to alternate routes than other regional/intercity travelers. Tourists also seek additional information that provides commercial opportunities related to tourist attractions, the beaches, accommodations, lodging, and food service. Language is a market differentiation with tourism as opposed to regional/intercity travel. Florida

hosts a large number of international tourists who do not speak English as a first language.

4. **Trade and Commerce:** I-95 and I-10 provide direct access to/from this market area's ports and distribution centers to all national market areas in all the east coast and Sunbelt states. This converge of major interstates in this market area requires a predictable and reliable traffic flow along all interstates in the area (I-10, I-95, and I-295) to support the industry's shift in business logistic practices to just-in-time manufacturing and complex supply chains/distribution networks. Intermodal linkages are also important to support Florida's growth in international trade, especially in container movements (Port of Jacksonville and Port of Fernandina). Traveler information needed for trade and commerce is similar to intercity travelers. Links to intermodal facilities gate operations is also a possible market for ATIS.

Conclusions

With the high level of traffic volumes and congestion in the Jacksonville Area, ATIS clearly has a role in the region. The research indicates several factors will be critical to providing ATIS consumers desired by customers:

- Information must be accurate, reliable, and timely.
- The multiple user segments have different needs for information and will access information through several different media and devices.
- Information on alternate routes is needed, as well as on all interstates and limited access facilities.
- Information can be valuable even if no alternatives exist – there is value in just knowing what is occurring.

4. The ATIS MARKETPLACE

4.1 Information Service Providers

National Perspective

Nationally, the market for traveler information has evolved and matured in recent years. Significant trends include:

- The emergence of information service providers (ISPs) who gather information regionally and package the regions together to provide “national” information to other private firms or to consumers directly.
- The explosion of the Internet and wireless communications as methods of providing information to consumers.
- Venture capital underwriting start-up firms in the traveler information business.

Jacksonville Area Perspective

The Jacksonville Area does not currently benefit from these national trends. Traditional traffic reports on radio and television are the only available types of traveler information. Currently there is one private ISP in the area (First Coast Traffic Center, a Westwood One/Metro Traffic operation) that collects and provides this information. Westwood One packages and offer incident reports via a password protected web site to specific media clients. In summary, the

traveler information collected and distributed to consumers in the Jacksonville Area is incident and construction information only.

Current and Short-Range Data Sources:

1. Jacksonville Sunguide: FDOT collects data through its Jacksonville Sunguide system. The system currently includes the Jacksonville interstate surveillance and control system that has the following elements:
 - a. Forty-one video incident detection systems (VIDS), 13 closed circuit television (CCTV) cameras, one classification/count station, and one weather sensor;
 - b. Three CCTV cameras on the Buckman Bridge (I-295);
 - c. One CCTV camera on I-295 southbound, north of Commonwealth Avenue;
 - d. One inductive loop count station and one weather sensor on I-295 north of Normandy Boulevard;
 - e. One CCTV camera on I-95 southbound, north of 20th Street;
 - f. Two CCTV cameras on I-95 Southbound, north of Airport Road;
 - g. One CCTV camera on I-95 northbound, south of the I-295 southern interchange; and
 - h. Programmed expansions of the system include installing CCTV cameras and VIDS along the section of I-95 between the I-295 southern interchange and I-10.
2. Private information service providers (ISP): First Coast Metro Center (Metro Traffic), the only private provider in the area, collects incident and construction data through the following sources:
 - a. Police, Florida Highway Patrol (FHP), and Marine Radio scanners;
 - b. Fixed wing planes (during AM and PM peak periods);
 - c. Cell phone calls from drivers (usually verified verbally or by calling a local business in a customized database in the vicinity of the site);
 - d. Three CCTV camera located on top of the building that hosts Metro Traffic; and
 - e. Construction data provided by FDOT and Local agencies.

Current and Short-Range Data Dissemination:

1. Jacksonville Sunguide: FDOT distributes the data it collects by providing:
 - a. Changeable message signs (CMSs) associated with the Jacksonville Interstate Surveillance and Control System:
 - i. Two CMSs along I-10 from east of I-295 to the I-95 interchange;
 - ii. One CMS on I-295 southbound, north of Commonwealth Avenue;
 - iii. One CMS on I-95 southbound, north of 20th Street;
 - iv. Two CMSs on I-95 southbound, north of Airport Road;
 - v. Two CMS on I-95 northbound, south of the I-295 southern interchange; and
 - vi. Programmed expansions of the system include installing CMSs along the section of I-95 between the I-295 southern interchange and I-10
 - b. Highway advisor radio (HAR) services for major construction projects;
 - c. Construction and lane closure data to media services;

- d. Provides travel information on major incidents, construction projects, historic volumes and emergency operations through the FDOT central Internet website (www.dot.state.fl.us/traveler.htm).
2. Private information service providers (ISPs):
 - a. Metro Center distribute incident and construction data through the following channels:
 - i. Information to the general public is provided through radio and TV channels.
 - ii. Westwood One packages and offer incident reports via a password protected web site to specific media clients.
 - b. Personalized services are under considerations by at least one ISP. *Etak*, using Westwood One/Metro Traffic data, is investigating the expansion of its “*EtakTraffic*” and “*Traffic Touch*” into the Jacksonville Area. *EtakTraffic/Traffic Touch* provides personalized traffic information for Palm VII device users, for as little as \$4/month. Subscribers can create a profile of routes, times traveled, and how they would like to be informed (e.g., phone, page, e-mail) when abnormal situations occur along these routes.

Experience suggests that services, service providers, and the types of devices that are used are constantly evolving. This continuing challenge must be accepted as business as usual in the traveler information business. An important element to consider is that private services have focused on incident-based information, provided as traveler information in the Jacksonville Area today. However, several areas that are lacking in these services must be improved before they can meet the vision of “advanced” services, needing enhancements such as:

- Much better incident data;
- Travel time data and/or average speed data on major routes;
- Transit data; and
- More specific special event data.

4.2 511 Services

In July 2000, the Federal Communications Commission (FCC) designated the abbreviated dialing code 511 for traveler information services. The FCC ruling leaves nearly all implementation issues and schedules to state and local agencies as well as telecommunications carriers. There are no federal requirements and no mandated method to fund 511; however, the USDOT and FCC anticipate a nationwide deployment. In 2005, the FCC will review progress in the implementation of 511.

While the flexibility provided in the FCC ruling is highly desirable, it also presents a challenge. There is a great deal of interest in using 511 throughout the U.S. It is expected that there will be multiple requests for 511, at least in some parts of the U.S., from DOTs, transit agencies, regional and local transportation agencies, as well as, private service providers who will offer to implement 511 services for some type of compensation. If not thoughtfully planned, 511 services could devolve into an inconsistent set of services, widely varying in type, quality, and cost.

Mindful of both the opportunity and challenge 511 presents, the American Association of State Highway and Transportation Officials (AASHTO), in conjunction with many other organizations including the American Public Transit Association (APTA), and the Intelligent Transportation Society of America (ITS America), with support from the USDOT, has established a 511 Deployment Coordination Program. The goal of the 511 Deployment Coordination Program is “the timely establishment of a national 511 traveler information service that is sustainable and provides value to users.” The intent is to implement 511 nationally, using a bottom up approach facilitated by information sharing and a cooperative dialogue through the national associations represented on the Policy Committee, the governing body of the program.

4.3 Issues for the Jacksonville Area ATIS

Regardless of the model utilized, the following questions will need to be answered in partnering with an information service provided to disseminate traveler information:

- What is the market potential for advanced traveler information systems (ATIS)?
- What are the potential sources of revenue generation and how will the revenue be shared?
- What will be the FDOT’s role and responsibilities with data disseminators?
- What is the impact of information sharing policies and procedures on the FDOT?
- What types of data will be made available to data disseminators?
- Will advertising be allowed in conjunction with dissemination?
- How will the traveler information be marketed?
- What quality control and performance criteria will be established for data disseminators?

4.3.1 What is the market potential for advanced traveler information systems (ATIS)?

Each geographic area is reviewed by each ISP in order to assess the potential to deliver revenue generating services to wholesale or private customers. This review includes not just the level of effort required to provide basic services such as data gathering, data management and data dissemination costs, but also the potential customer base and product requirements in order to become profitable. The Jacksonville Area has a core system in place and is programmed to expand the system within the next four years. This will help reduce the cost of data gathering.

4.3.2 What are the potential sources of revenue generation and how will the revenue be shared?

The current effort to disseminate traveler information in the Jacksonville Area to specific client through password protected Internet site, for example, can be expanded to the general public and implemented through a public/private partnership. Some cost of information dissemination may be recovered through advertising and/or charging users a fixed fee per month. Revenue opportunities are available through advertising and fee-based services.

The following media may be available for revenue generation:

- *511 Telephone Services*: User-initiated services are possible through this dedicated traveler information number established by the FCC for interactive voice responsive telephone systems. Advertisement or service charges may be used for revenue generation.

- *Web Services*: Currently, there is no FDOT or private website with traveler information in the Jacksonville Area. However, private opportunities would exist as the current freeway system expands. These private websites could generate revenue through advertisements or by providing “co-branded” services to other websites where a fee for information is charged to the site owner (best examples are local newspaper or radio/TV Websites).
- *Personalized Services for Fee*: Personalized traveler information could be provided based on a fee structure to be determined. Examples of these services would include wireless Internet messages to cellular/PCS phones or in-vehicle navigation systems. Services could be on a subscription basis, or included in bundled services. A revenue sharing policy agreement is needed between the Department and any ISP that may collect revenue as a result of traveler information provided by the Department. Because of the public benefit in providing traveler information, the Department may decide not to require revenue sharing for any ISP. If revenue sharing is implemented, this revenue should be dedicated to supporting the costs of collecting the data or offsetting project costs for other ITS components and operations. Revenue sharing is probably not feasible until advanced systems are in place and the ISP is profitable.
- It should be noted that to date, the revenue generated from advertising or re-selling of services has been limited at best. With the understanding that there is still the potential for an “up-sell” of services, this revenue stream will likely be limited in the near term.
- Examples:
 - In the ARTIMIS ATIS implementation in greater Cincinnati, the Kentucky Transportation Cabinet did not have in mind to receive in-kind revenue from the sale of services by the operators of the system. Indeed, though revenue sharing was contracted from the start of the project in 1995, to date KYTC has received only \$33,440 in shared revenue. Much of this revenue went directly back into the cost of moving from a temporary operations center to the new ARTMIS center in 1998/9.
 - By contrast, the SmarTraveler service in Boston was designed to have revenue sharing based on advertising sales and the sale of additional services (broadcast radio, television, text-paging and others). From 1993 through 1999 the revenue shared (once service provision and labor costs were netted out), was less than \$100. The current version of the operating contract for SmarTraveler is a “cost plus” contract with no shared revenue assumed.
- As noted above, the market is constantly in flux and new sources or alliances for generating revenue are always on the horizon.

4.3.3 What will be the Department’s role and responsibilities with data disseminators?

The Department’s responsibilities to data disseminators should be to support the provision of data that is readily available, using existing information and surveillance infrastructure. Where new data is requested by the data disseminators, the costs of generating this data may be shared between the disseminator and the Department. It is likely that these requests will be limited; however, it is recommended that the data disseminators be consulted when the department is

considering deploying new infrastructure, as they are very familiar with usage patterns and needs for information, or “holes” in the system.

Because of the public benefit of providing traveler information, the Department will need to balance this benefit with any revenue derived from the data. It is recommended that if data is provided to a disseminator who supplements this data with other sources (such as probe data) that data should be made available to the Department in turn. Requests by a data disseminator to install surveillance equipment in the Department’s right-of-way will be addressed on a case-by-case basis, but is generally discouraged.

4.3.4 What is the impact of information sharing policies and procedures on the Department?

A general policy statement is needed to guide the Districts in the procedures and limitations for information sharing. Under Florida’s “Sunshine Laws” most data and information developed by the Department is public information. However, many of the images involved in video surveillance or data collected using probe vehicles may have privacy limitations that will need to be explored. Additionally, a policy statement is needed with regard to public safety, public safety officers and emergency respondents in order to insure their personal safety and privacy, as well as that of the public.

4.3.5 What types of data will be made available to data disseminators?

Most data and information developed by the Department is public information. However, many of the images involved in video surveillance or data collected using probe vehicles may have privacy limitations that will need to be explored.

4.3.6 Will advertising be allowed in conjunction with dissemination?

A policy statement is needed by the Department to define the possibilities and limitations of advertisements in conjunction with data dissemination and traveler information. The Department’s Highway Advisory Radio (HAR) developed for the Turnpike District can be a used as a model for statewide application.

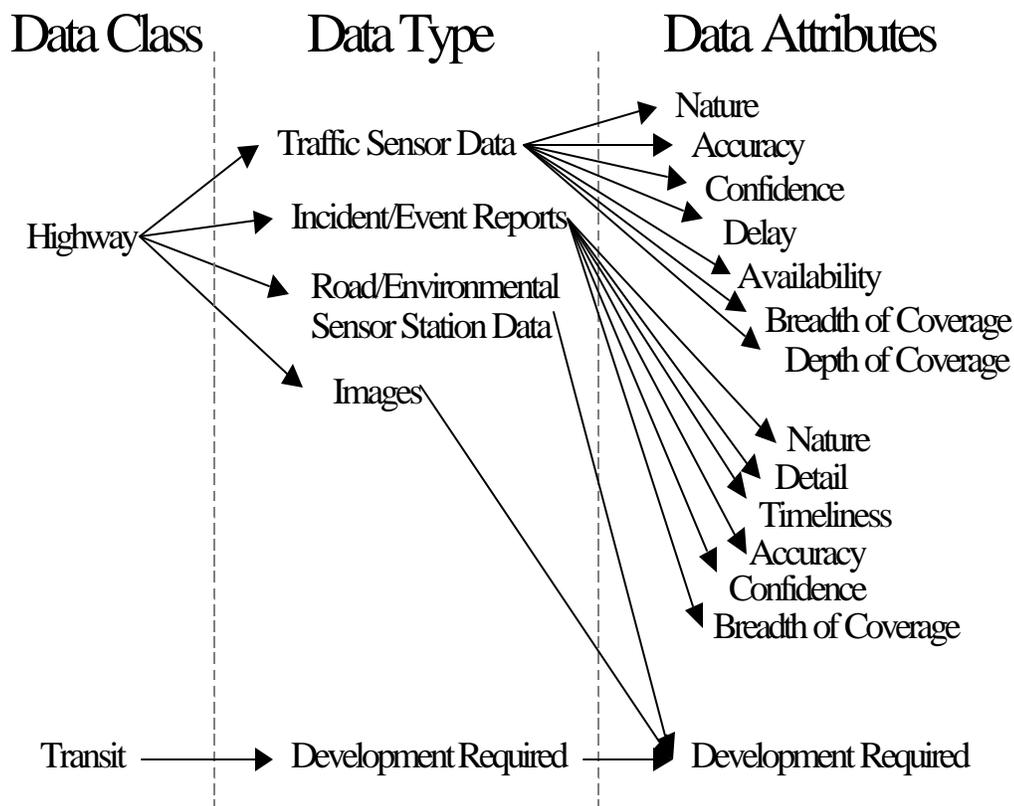
4.3.7 How will the traveler information be marketed?

All traveler information in Florida will be marketed under the SunGuide brand name. This brand was developed initially for the South Florida ATIS in conjunction with the ICS program. District 2 in the Jacksonville Area is already using the SunGuide brand name. A policy statement is needed as to whether co-branding of a service (to include the SunGuide name or not) will be allowed in order to increase the potential revenue of a service and thus any shared revenue.

4.3.8 What quality control and performance criteria will be established for data disseminators?

In August 2000, ITS America published “Closing the Data Gap: Guidelines for Quality ATIS Data.” The guidelines were intended to define what data is needed to support ATIS services desired by the public. Generated by the ATIS Committee of ITS America, public agencies, information service providers and synthesized consumer research contributed to establish these needs as shown in Figure 2.

Figure 2
Model for Data Attributes from ITS America’s ATIS Guidelines



Four types of real-time traffic data have been identified for quality ATIS services:

1. Traffic Sensor Data
2. Incident/Event Reports
3. Images
4. Road/Environmental Sensor Station Data

For the traffic sensor data and incident/event reports, consensus has formed regarding the attributes used to define the data type as well as the desired quality levels. The guidelines offer a baseline quality level, “good,” and enhanced quality levels “better” and “best.” If a data collection system meets the “good” quality level for all attributes, then the system is capable of supporting the envisioned ATIS products and services. Exceeding quality levels beyond good improves the data available and should improve the quality of the services that can be offered in the region.

The recommended quality levels for the Jacksonville Area are based on the good levels, or above, adapted as appropriate from the ITS America standards as follows:¹

Data Type: Traffic Sensor Data

Attributes and Quality Levels:

- Nature: Limited Access Highways – Aggregated Point Data Principal Arterials – Aggregated Section Data
- Accuracy: < 15% error: Confidence: Qualitative measure of suspicious data communicated along with the data
- Delay: < 5 minutes
- Availability: > 95% availability
- Breadth of Coverage: Limited Access Highways – Major Roadways Principal Arterials – Major Roadways
- Depth of Coverage: Essential Roadways – Urban Limited Access Highways Desired Roadways (Other Limited Access Highways and Principal Arterials)

Data Type: Incident/Event Reports

Attributes and Quality Levels:

- Nature: Crashes, breakdowns, or other unplanned vehicle stoppages; planned or emergency roadway construction or maintenance; and other natural disasters.
- Detail: Reason, Location, Severity, Time
- Timeliness: < 5 minutes (for detection and verification stages), < 10 minutes (total)
- Accuracy: < 15% error
- Confidence: Verified non-visual (the operator entering the information can not visually confirm).
- Breadth of Coverage: Essential Roadways – Urban Limited Access Highways

¹ Descriptions of the Images and Road/Environmental Sensor Station Data in the ITS America Guidelines contain possible attributes, but no attempt is made at present to define quality levels for these data types. Version 1.0 of the guidelines recommend including attributes and quality levels as industry consensus emerges. Where possible, requirements were identified and if standards available they were used. Where not available, initial recommendations are provided for a foundation in developing criteria for deployment of ATIS in the Jacksonville Area.

Desired Roadways (Other Limited Access Highways and Principal Arterials)

Data Type: Images

Possible Attributes:

- Breadth of Coverage: Essential Roadways – Urban Limited Access Highways.
- Depth of Coverage: All interchanges, major signalized intersections.
- Resolution: To be determined, but suitable for web-based viewing. Should evaluate statewide standards for 56 frames per second IP addressable cameras.
- Refresh Rate: To be determined, but suitable for web-based viewing.

Data Type: Road/Environmental Sensor Station Data

Possible Attributes:

- Nature: Roadway weather information stations focused on rainfall, visibility and wind conditions. Able to detect visibility problems such as fog and smoke. Able to determine when wind conditions are unsafe > 70 mph for hurricane evacuation conditions.
- Breadth of Coverage: Along I-10, I-95 and I-295, at most, every 30 miles apart (based on Canadian standard) and on major structures such as the Fuller Warren Bridge (I-95) and the Buckman Bridge (I-295).
- Timeliness: < 5 minutes (for detection and verification stages),
< 10 minutes (total)

In addition to these guidelines for data gathering and throughput, there needs to be an established level of service for each dissemination product required by FDOT (telephone, website, etc.).

Such requirements should include, but are not limited to:

- Telephone response time (number of rings before pickup)
- Telephone availability (number of calls handled before a busy signal)
- Telephone cost options (caller pays local, caller pays toll, caller pays fee, toll-free call)
- Website response time
- Website response volume (number of concurrent connections)
- Etc.

5. BASIS FOR ESTIMATES FOR THE JACKSONVILLE AREA

The FDOT's cost of providing ATIS services in the Jacksonville Area should be based on the following elements and understandings.

5.1 Type of Service Required

The Department desire is to have a 511 contractor plus a real-time traffic information website to disseminate the traveler information.

5.2 Roadway Coverage

Not all roadways in the Jacksonville Area will be covered at the same level due to lack of infrastructure. To insure a guaranteed coverage of essential roads in the Jacksonville Area the following list is established to identify two required levels of roadway coverage: Essential Coverage and Desired Coverage.

Essential Coverage illustrates roadways or areas where a traveler will always be able to retrieve information be it incident information, or information that a particular roadway or area is moving as expected for that time of day.

Desired Coverage illustrates areas where a traveler would be able to retrieve information on current conditions should there be an incident present, but where detailed information on "normal" travel flow might not be as complete (due to a lack of resources in the area).

In this manner, the expectation of a traveler will be the ability to retrieve information on the most "important" roadways or areas at all times, and the knowledge that incidents or significant delays in other areas will also be included when necessary or available. It also defines a base level of service for an ISP, wherein they *must* provide information for areas of Essential Coverage. One would never want a user to find no information available in one of these areas.

1. Essential (or Guaranteed) coverage is required for the following roadways:
 - a. I-95 (from one miles south St. Jones/Duval County Line to two miles north of I-95/Airport Road interchange).
 - b. I-295 (from its southern interchange with I-95 to one mile north of Commonwealth Avenue).
 - c. I-10 (from two miles east of I-10/I-295 interchange to I-10/I-95 interchange).

2. Desired coverage for the following roadways. The contractor is responsible for collecting traffic data. The Department will provide construction data:
 - a. Remaining portions of I-95, I-295 and I-10 in the four county area.
 - b. SR 9A (from I-95 interchange south to I-95 interchange north).
 - c. SR 202 (J.T. Butler Boulevard) (from I-95 interchange to SR AIA interchange).
 - d. SR 21 (Blanding Road) (from Green Cove to FCCJ).
 - e. U.S. 1 (from St. Augustine to Downtown Jacksonville).
 - f. SR 10 (Atlantic Boulevard) (from I-95 to the Beaches).

- g. U.S. 90 (Beach Boulevard) (from I-95 to the Beaches).
- h. S.R 115 (Southside Boulevard) (from I-95 to Downtown).
- i. SR 152 (Baymeadows Road) (from U.S. 1 to SR 9A).
- j. U.S. 17 (Roosevelt Road) (from Green Cove to Yulee).

Figure 3 identifies the location and limits of each of the essential and desired roadways included in the coverage area.

5.3 Data Collection

The Department is responsible for supplying all available data (non exclusive). The contractor is to supplement the data where needed. However, the ISP is responsible for providing whatever interface is required in order to automatically import FDOT data into the ISPs own database.

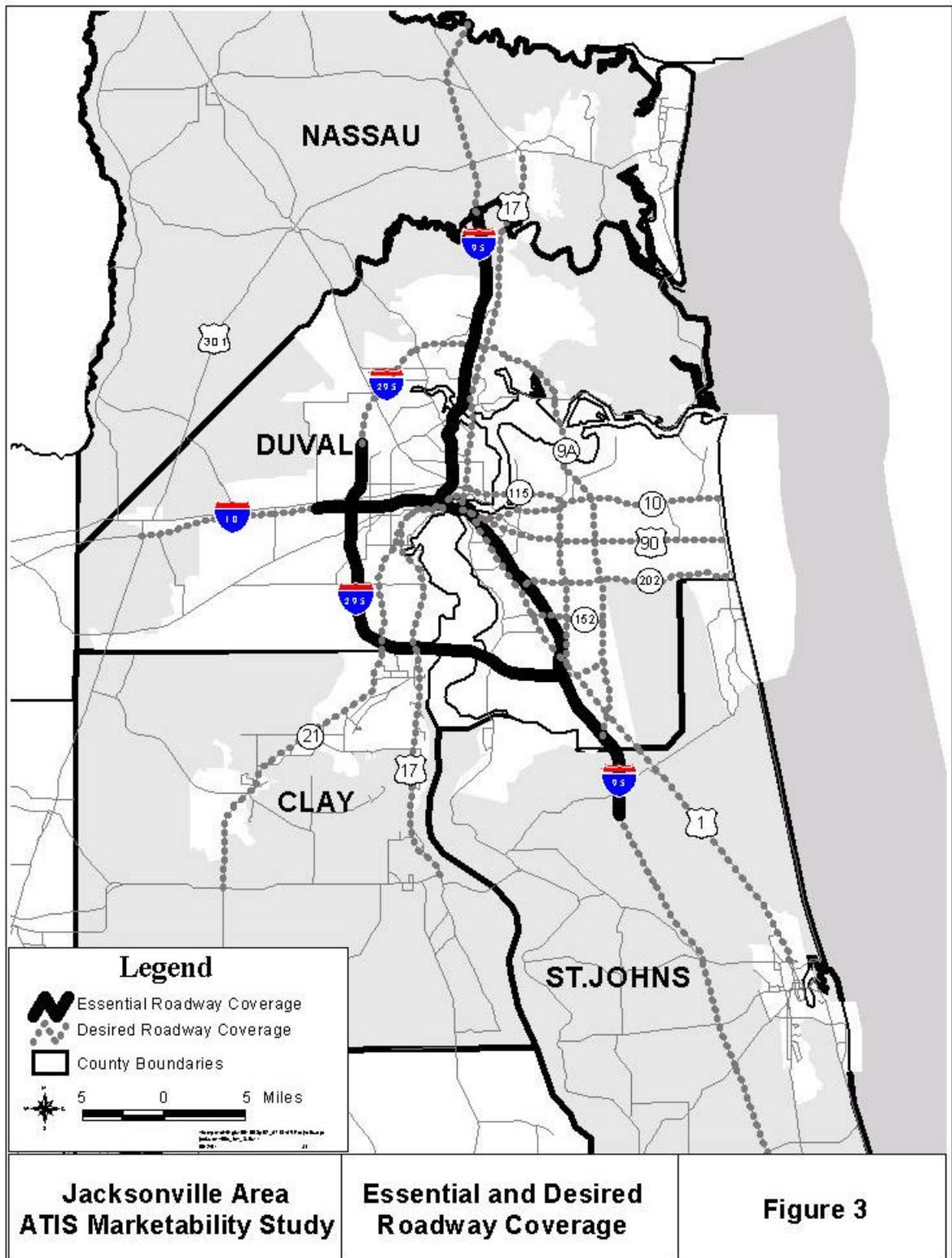
5.4 Start of Operations

The target start date for ATIS services should be around the end of 2005. That is when the programmed expansion of the Jacksonville interstate surveillance and control system on I-95 between I-295 and I-10.

5.5 Florida ISP Information Summary

Potential ISPs for Florida ATIS programs relating to possible business models:

- The general response from the ISPs is that the revenue sharing model does not work, and in some cases, ISPs have stated that they are not interested in pursuing a revenue sharing contract model. The belief is that there is value to the higher quality information that ATIS services can provide. Yet those paying for the services, the advertisers who are supporting broadcast reports and who might support an advertising based model, are not as interested in delivering quality information as they are getting their advertising messages out. As for personalized services and other fee based wholesale services, the feeling is that the market is growing, especially with the onset of in-vehicle Telematics, but it is not so mature as to eliminate the need for public funding and provide it's own self-sustaining revenue stream.
- It is the feeling of a number of ISPs that FDOT should fund a basic level of service, and that this funding would include the cost of all data gathering and dissemination media to the public This basic level of service could include a telephone service (511), Website or other base level services. [Note: No assumption is made that 511 be "free of charge," i.e. whether or not there is a cost beyond the cost of a local or toll call.]
- A number of ISPs extend this funding requirement to include the provision of space in an FDOT supported facility. The message is that the best information will come from FDOT and sharing the FDOT space is necessary to providing a competent level of service. Additionally, the cost of a stand-alone facility will likely remove at least one or more ISPs from the process as they have determined that setting up their own infrastructure is not financially viable. Other ISPs, however, have stated that they would consider providing services from within their own existing infrastructure or partnering with others for the use of their physical space.



- It is also assumed that some level of remuneration (profit) be offered in the form of a “cost plus” agreement with FDOT. However there was no mention of the term of this level of contract and one could assume that a sliding scale agreement could be reached based on revenue garnered from the increased level of information provided through FDOT resources.
- The ISPs displayed a desire for a better understanding of the level of service to be provided, and request for increases should that level of service change. To use 511 as the example; If a service were funded to provide for up to 3000 calls per hour, and the service proved successful to the point where additional telephone lines were required to increase the availability to 5000 calls per hour, the ISPs interviewed believe that this increase in cost would be borne by FDOT in it’s desire for uninterrupted service to the public.
- With regard to private revenue, the overall feeling is that the cost for re-packaging of data for private services would be borne by the ISPs. Any revenue garnered from these services *might* be shared with FDOT as funding to upgrade data services, (to “better the product”). This points out an important fact: The responses indicated that the ISPs are willing to share revenue based on additional sales or profit garnered by their additional capabilities or ties to the DOT information. However they are not willing to make this sharing the primary source of revenue for offering services in the name of the DOT.
- It is understood that other ISPs would be allowed to gain access to the public sector data, and as long as the other ISPs are required to fund their own access, then this is not problematic. However, as FDOT will likely request that data privately gathered by the funded ISP be shared back with FDOT, they will ask that this data is *not* shared back to the other ISPs. These other ISPs may in fact be competitors in certain platforms of service offered to the public.

5.6 Proposed Business Model

Based on the above information, the following business model is recommended for the Jacksonville Area:

- Make public agency data available for free to all ISPs under license agreement from a single location. The elements of the license agreement include:
 - Usage terms and restrictions
 - Specified data (e.g., sensor data, video) to be provided
 - Roles of both parties
 - Quality of data to be provided; Quality of services to be provided
 - Rules associated with retention of data
 - Acknowledgements and representations
 - Duration of agreement (recommend short agreements initially, 1-2 years)
- FDOT supports a website (could be part of statewide website), 511 and roadside information (as desired, DMS and HAR); leaves all other services to others. In this regard, FDOT must agree to what level it will fund operations for 511 and other services. Does this funding include the cost of telephone lines and service, or does it also include the cost of operations personnel or additional data sources, and to what limit.

- Franchise/contract 511 services and possibly a web site for the best deal (use an Invitation to Negotiate)
- Also FDOT should note, either in the franchise agreement for 511, or as a stand-alone agreement, that *all* services that contain data from FDOT be “synchronous,” to assure a single message is being delivered to the public. In other words, information that appears on the Website should be the same or highly similar to that which is provided through a 511 telephone service.
- Do not seek return revenue from information service providers in the near-term (review as part of license agreement renewal). Perhaps use a sliding scale, noting levels of increased business due to FDOT information or “name association.”
- FDOT and other agencies will continue to expand their data collection infrastructure to meet the data needs

This proposed model is largely based on the private competitive operations business model identified by ITS America. However, the 511 service element would be franchised. The reasons for this are:

- Only one 511 service can be operational in any given area. The approach of franchising to a single service operator in the Jacksonville Area minimizes potential for service confusion and leverages significant market opportunity the entire area provides.
- Given uneven data collection throughout the area, a franchise could provide supplemental data collection necessary to operate a satisfactory phone service. This data collection could in turn be provided to public agencies and, depending on the franchise agreement, other service providers.

6. CONCLUSIONS AND RECOMMENDATIONS

Based on the market research conducted for the Jacksonville Area, the following conclusions and recommendations are presented for the Department consideration:

- There is a basic ITS infrastructure currently in place with programmed expansion in the med-range (2 to 3 years).
- There is some interest from ISPs in the Jacksonville Area to warrant planning for an Invitation to Negotiate in three to four years.
- The Department should at the time of ITN reassess the proposed business model based on prevailing conditions at the time.

In conclusion, it is recommended that the Department plan for issuing an ITN in the Jacksonville Area to coincide with the completion of the surveillance and control system expansion on I-95 between I-295 and I-10.