# SOUTHWEST REGION
# ATIS MARKETABILITY STUDY


Prepared for

Florida Department of Transportation

Prepared by

PBS&J

May 2001

# TABLE OF CONTENTS

# LIST OF TABLES



# LIST OF FIGURES

# 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 Southwest Region, the Interstate Four (I-4) Corridor (including Tampa Bay, Orlando, and Daytona areas), and the Southwest Region of Florida.

## 1.1 Study Area

The Southwest Region study area in this market analysis is defined as the three-county metropolitan statistical area (MSA) in the southwest region of Florida which includes:

- Charlotte County;
- Lee County; and
- Collier County.

Figure 1 illustrates the Southwest Region ATIS study area.

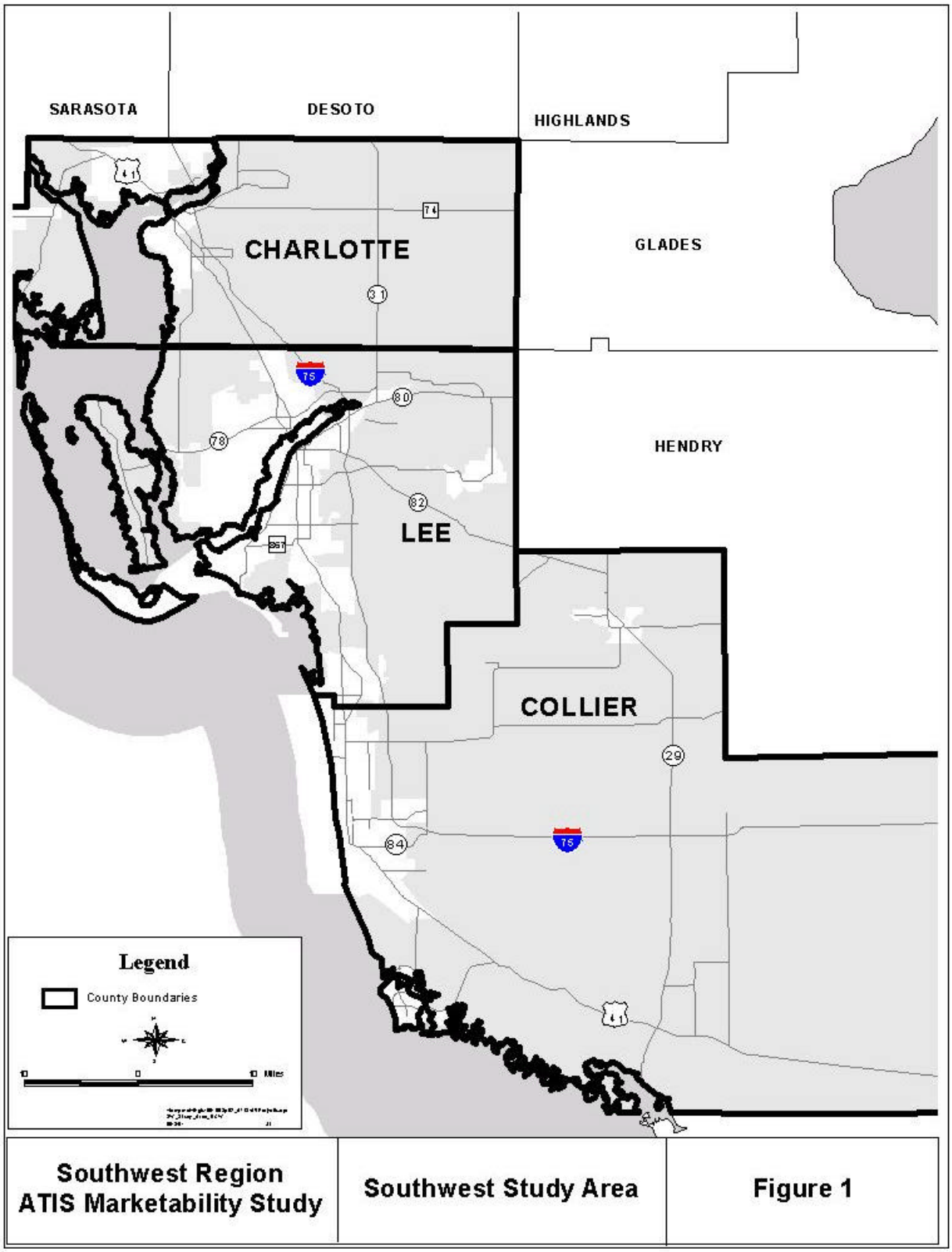
## 1.2 Study Structure

This marketability study provides a market analysis/approach for providing ATIS throughout the Southwest Region. 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 Southwest Region. The remainder of this report addresses the following issues:

- What is ATIS?
- The Southwest Region Consumer Context
- The ATIS Marketplace
- Basis for Estimates for Southwest Region 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."


SARASOTA
DESOTO
HIGHLANDS
CHARLOTTE
GLADES
HENDRY
LEE
COLLIER
Legend
County Boundaries
Miles
Southwest Region ATIS Marketability Study
Southwest Study Area
Figure 1

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 SOUTHWEST REGION CONSUMER CONTEXT

## 3.1 Scale of the Market for ATIS

Table 1 shows the population growth forecast for all the counties in the corridor between the current year (2000) and 2020. The table confirms that all counties in the Southwest Region will continue to grow at a fast pace. Collier County, which includes the City of Naples, is the fastest growing in the region. Naples MSA ranks fifth in the nation in population growth. Overall, the populations in the Southwest Region counties will grow to about 1.35 times their 2000 levels by 2020. This rapid growth will drastically increase travel demand.

**Table 1**

**Population Growth Forecasts in the Southwest Region (2000 – 2020)**

| County | 2000 Population | 2010 Population | 2020 Population |
|---|---|---|---|
| Collier | 251,377 | 297,800 | 372,500 |
| Lee | 440,888 | 514,500 | 605,900 |
| Charlotte | 141,627 | 170,400 | 201,900 |
| **Southwest Region** | **833,892** | **982,700** | **1,180,300** |

Source: Unadjusted 2000 Census Data and Florida Statistical Abstract 2000.

The growth in employment is outpacing population growth rates, with the growth patterns matching population growth patterns commuting patterns to work may not change drastically in the future. The table illustrates the high growth anticipated for the counties in the Southwest Region. All counties are expected to achieve more than 50 percent of growth by 2020. Punta Gorda MSA (in Charlotte County) ranks third in the nation in employment growth, while Naples MSA ranks sixth. Overall, employment in the Southwest Region counties will grow by about 56 percent of their 2000 levels by 2020. Table 2 summarizes the expected growth in employment within the Southwest Region.

**Table 2**

**Employment Growth Forecasts in the Southwest Region (1999-2020)**

| County | 1999 Employment | 2010 Employment | 2020 Employment |
|---|---|---|---|
| Collier | 132,350 | 176,320 | 212,160 |
| Lee | 211,820 | 267,570 | 320,400 |
| Charlotte | 52,570 | 72,210 | 87,590 |
| **Southwest Region** | **396,740** | **516,100** | **620,150** |

Source: 2001 Woods & Poole Economics, Inc.

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 Southwest Region, real per capita income is projected to grow at an average annual rate of 1.54 percent and 1.30 percent between 1999 and 2020 for Collier County and Lee/Charlotte Counties, respectively. Table 3 displays the projected growth in real per capita income shown in constant 1996 dollars for the counties in the Southwest Region. Although there is a notable difference between the income levels among the counties (Collier County is ranked number one among all Florida counties in real per capita income), the annual growth rates projected for each county are close to each other.

**Table 3**

**Real Per Capita Income Growth Forecasts in the Southwest Region (1999-2020)**

| County | 1999 Income ($1996)* | 2010 Income ($1996) | 2020 Income ($1996) | Annual Growth Rate** |
|---|---|---|---|---|
| Collier | $42,011 (1) | $50,296 (1) | $58,021 (1) | 1.54% |
| Lee | $27,346 (12) | $31,696 (12) | $35,836 (12) | 1.30% |
| Charlotte | $23,499 (22) | $27,243 (22) | $30,786 (21) | 1.30% |

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

As a single marketplace for advanced traveler information, the Southwest Region total population in 2000 is about 1.18 million in 2020. Meanwhile, the area's total employment is estimated to be 397,000 in 1999. The market size in the Southwest Region is of small to moderate size. The current 2000 median age in the area is over 45 years (53 years in Charlotte County, and it is projected to increase to 50 years by 2020 (50 years in Charlotte County). This indicates that the current and projected real per capita income for the area, that ranks very high on the state and national levels, will continue to improve, but the median age will continue to increase. The scale and demographics of the market place make it a less than moderately attractive opportunity for information service providers (ISPs) especially with the lack of adequate traveler information that can be provided for dissemination. In the long-range, as population, employment, and income levels continue to increase and as ITS infrastructure becomes a reality the Southwest Region will become an attractive area for ATIS.

## 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:

- ***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
- ***Web Heads***: Most technologically savvy segment, high users of Internet, but low use of portable information devices.
- ***Low-tech Pre-trip Information Seekers***: Prefer pre-trip information, and are less interested in new high technology gadgets.
- ***Wired with Children***: Younger, higher income, with more children in household, seeks convenience in information acquisition.
- ***Mellow Techies***: Little interest in traffic conditions or trip planning, and little concern about being late, but high levels of computer and Internet use.
- ***Buyers of Value-added Services***: Low comfort with computers and Internet, may prefer customized information services.
- ***Trendy and Casual***: Use pagers and cell phones, but express little interest in traffic information or time savings.
- ***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, consumers' 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 website (believed to be the heaviest used real-time traffic website) customers provide insight into motivations of use. These motivations are representative of most ATIS users in other regions. The answers to the questions are place in order of frequency:

*Why use the website?*
- 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 driver opinions were based on their experience of radio broadcast traffic information, their traffic information concerns have proven to be true of all drivers surveyed since. The following is a list of critical features as defined by the market research:

- 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), six of the consumer market segments are likely candidates for deployment of ATIS products and services for the Southwest Region:

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. ***Mellow Techies***: Little interest in traffic conditions or trip planning, and little concern about being late, but high levels of computer and Internet use.
5. ***Trendy and Casual***: Use pagers and cell phones, but express little interest in traffic information or time savings.
6. ***Male Techno-Phobes***: Less comfortable with technology, less likely to change behavior, less interested in traffic information.

*Market Segmentation*
In the Southwest Region, 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 Southwest Region, 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 Southwest Region or have one trip-end in the area are less sensitive to minor variations in the travel time, along the two major corridors in the region (I-75 and US 41); however, these travelers require major incident and slow down 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. More than five million visitors, or close to 7 percent, of Florida's estimated 74.1 million tourists in year 2000 visited the Southwest Region. The Southwest Region is ranked last 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-75 provides direct access to/from this market area's ports and distribution centers to national market areas from Miami to Michigan and beyond. The importance of this major interstate in this market area requires a predicable and reliable traffic flow to support the industry's shift in business logistic practices to just-in-time manufacturing and complex supply chains/distribution networks. Traveler information needed for trade and commerce is similar to intercity travelers.

*Conclusions*
With the level of traffic volumes and congestion in the Southwest Region, ATIS can play a role in the region in the long term. 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 major routes.
- 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.

*Southwest Region Perspective*
The Southwest Region does benefit from some these national trends. Traditional traffic reports on radio and television, in addition to traffic reports on the Internet are the available types of travel information. Currently, there is one major ISP in the area (Metro Network, a Westwood One company) that collects and provides this information. In summary, the traveler information collected and distributed to consumers in the Southwest Region is incident and construction information only.

Current and Short-Range Data Sources:

1. FDOT: FDOT does not have any ITS infrastructure in the Southwest Region that can collect traveler information data. FDOT is planning a full freeway management system along I-75 in the Southwest Region for implementation in three stages but the first stage will not start before 2007 or 2008.

2. Private information service providers (ISPs): Metro Network, the only major private provider in the area, collects incident and construction data through the following sources:
   a. Police, Florida Highway Patrol (FHP) scanners;
   b. In agreement with the Road Rangers program on I-75, Metro provided two-way Nextel phones to truck drivers who call-in with incident reports or verify reports provided by others;
   c. Metro has it own fleet of mobile units that drive major routes (mainly I-75, US 41, and major roads connecting the two routes) during peak hours and call-in traffic conditions;
   d. Cell phone calls from drivers (usually verified by calling a local business in a customized database in the vicinity of the site or by calling Road Rangers);
   e. Download incident reports from FHP hyperlink; and
   f. Construction data provided by FDOT and local agencies.

Current and Short-Range Data Dissemination:

1. FDOT: FDOT distribute the data it collects by providing:
   a. Highway advisor radio (HAR) services for major construction projects;
   b. Construction and lane closure data to media services; and
   c. Travel information on major incidents, construction projects, historic volumes and emergency operations through FDOT central Internet web site (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 through its Web Traffic Internet site via a password protected web site to specific media clients.
   b. MapQuest provides live traffic report via its Internet site with map displaying incidents and construction activities in the Southwest Region. Metro Traffic provides travel data.

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 Southwest Region

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 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 and telecommunications carriers. There are no Federal requirements and no mandated way to pay for 511; however, USDOT and FCC expect to see some type of nationwide deployment. In 2005, the FCC will review progress in implementing 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 sort 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 Southwest Region 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.

### 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 Southwest Region 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 website with traveler information in the Southwest Region. 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. 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?

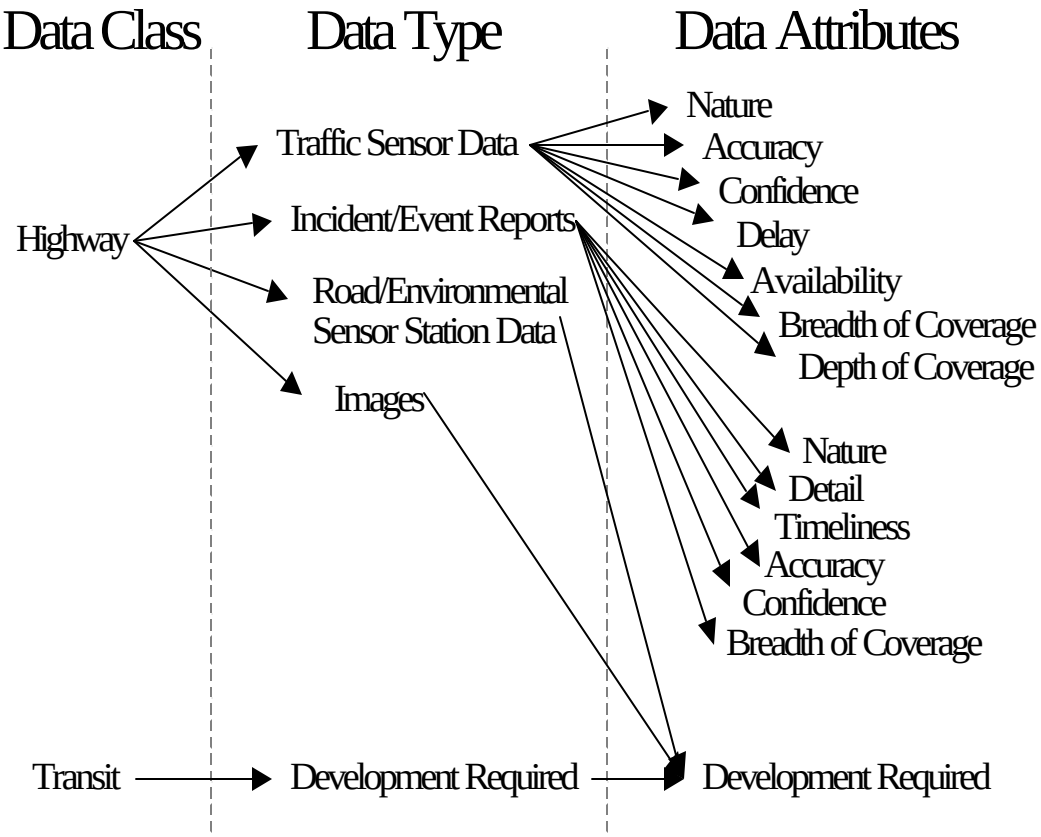
In August 2000, ITS America published "Closing the Data Gap: Guidelines for Quality ATIS Data." The guidelines were intended to define what data is needed to support ATIS services desired by the public. Generated by the ATIS Committee of ITS America, public agencies, information service providers and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

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.

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




The recommended quality levels for the Southwest Region 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: I-75 – Aggregated Point Data
Principal Arterials – Aggregated Section Data

[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 Southwest Region.

- Accuracy: < 15% error: Confidence: Qualitative measure of suspicious data communicated along with the data
- Delay: < 5 minutes
- Availability: > 95% availability
- Breadth of Coverage: Essential Roadways – I-75 and US 41
  Desired Roadways (Other Principal Arterials)
- Depth of Coverage: I-75 – Between Major Interchanges
  Principal Arterials – Between Major Arterials/Limited Access Highways

## 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 – I-75 and US 41
  Desired Roadways (Other Limited Access Highways and Principal Arterials)

## Data Type: Images

*Possible Attributes:*

- Breadth of Coverage: Essential Roadways – I-75 and US 41

- 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-75, at most, every 30 miles apart (based on Canadian standard) and on major structures.

- 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 SOUTHWEST REGION

The FDOT's cost of providing ATIS services in the Southwest Region 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 Southwest Region will be covered at the same level due to lack of infrastructure. To insure a guarantied coverage of essential roads in the Southwest Region 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.

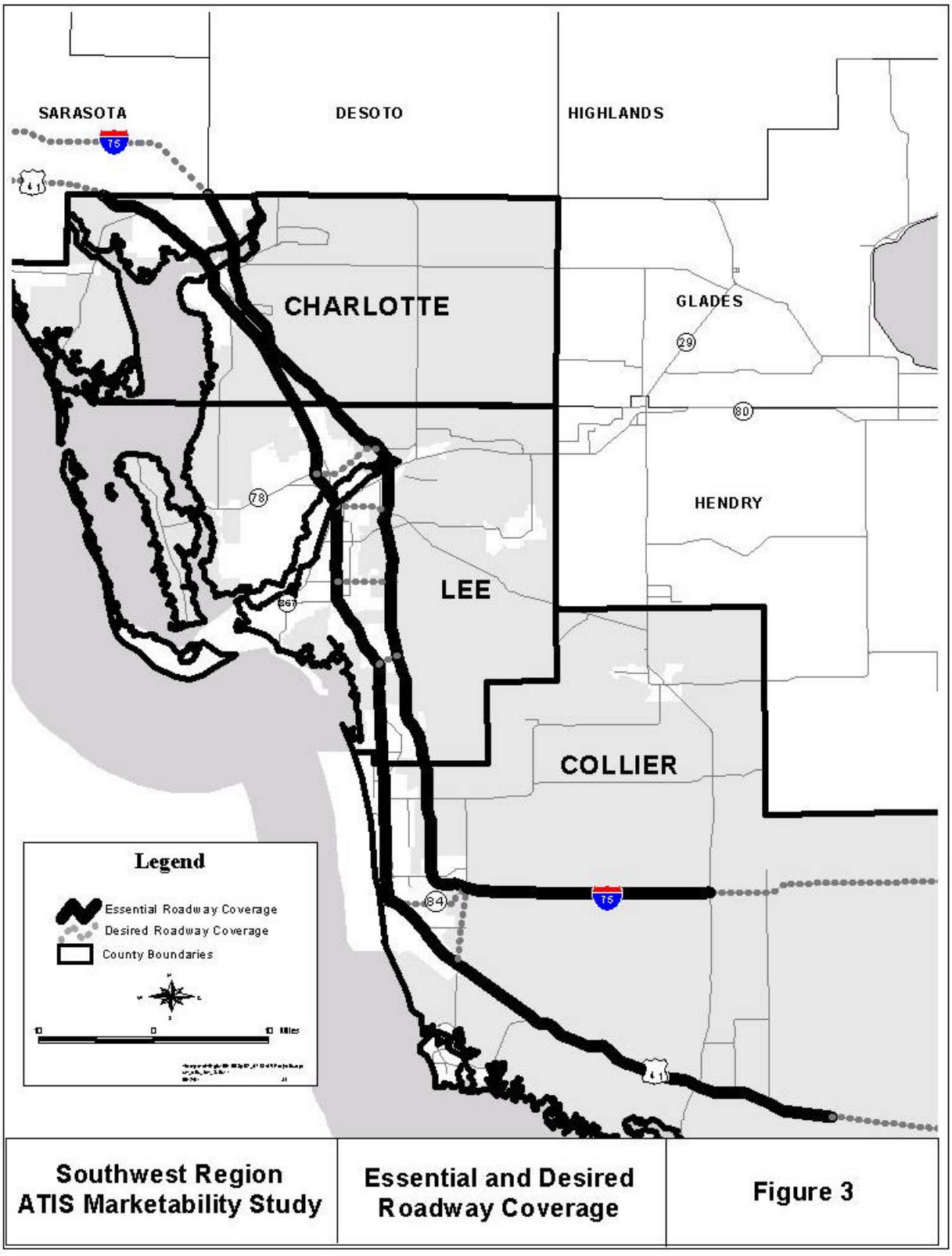
Desired Coverage illustrates areas where a traveler would be able to retrieve information on current conditions should there be an incident present, but where detailed information on "normal" travel flow might not be as complete (due to a lack of resources in the area).

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.
   - I-75 (from Alligator Alley Toll Plaza to Charlotte/Sarasota County Line)
   - U.S. 41 (from Everglades City to Charlotte/Sarasota County Line)

2. Second Priority (Major Arterials)
   - Remaining portion of I-75 in Collier County
   - Remaining portion of U.S. 41 in Collier County
   - Major connecting Routes between I-75 and US 41 in Collier County
   - Major connecting Routes between I-75 and US 41 in Lee County
   - Major connecting Routes between I-75 and US 41 in Charlotte County

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


SARASOTA
DESOTO
HIGHLANDS
CHARLOTTE
GLADES
HENDRY
LEE
COLLIER
Legend
Essential Roadway Coverage
Desired Roadway Coverage
County Boundaries
Southwest Region ATIS Marketability Study
Essential and Desired Roadway Coverage
Figure 3

## 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 set to coincide with the completion of the I-75 Freeway Management System in Lee and Collier County. The system is in the planning phase and programmed for construction and implementation yet. District 1 is anticipating that the system could be built by year 2008/2009.

## 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 Southwest Region:

- 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 Southwest Region minimizes potential for service confusion and leverages significant market opportunity the entire region provides.

- Given uneven data collection throughout the region, 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 Southwest Region, the following conclusions and recommendations are presented for the Department consideration:

- There is no ITS infrastructure currently in place or programmed before year 2007/2008.
- There is interest from at least one ISP in the Southwest Region but this does not warrant the issuance of ITN at this time.
- The Department should not proceed with an ITN at this time.

In conclusion, it is recommended that the Department does not issue an ITN in the Southwest Region. As plans solidify for the I-75 Freeway Management System, this recommendation should be revisited.