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of Transportation

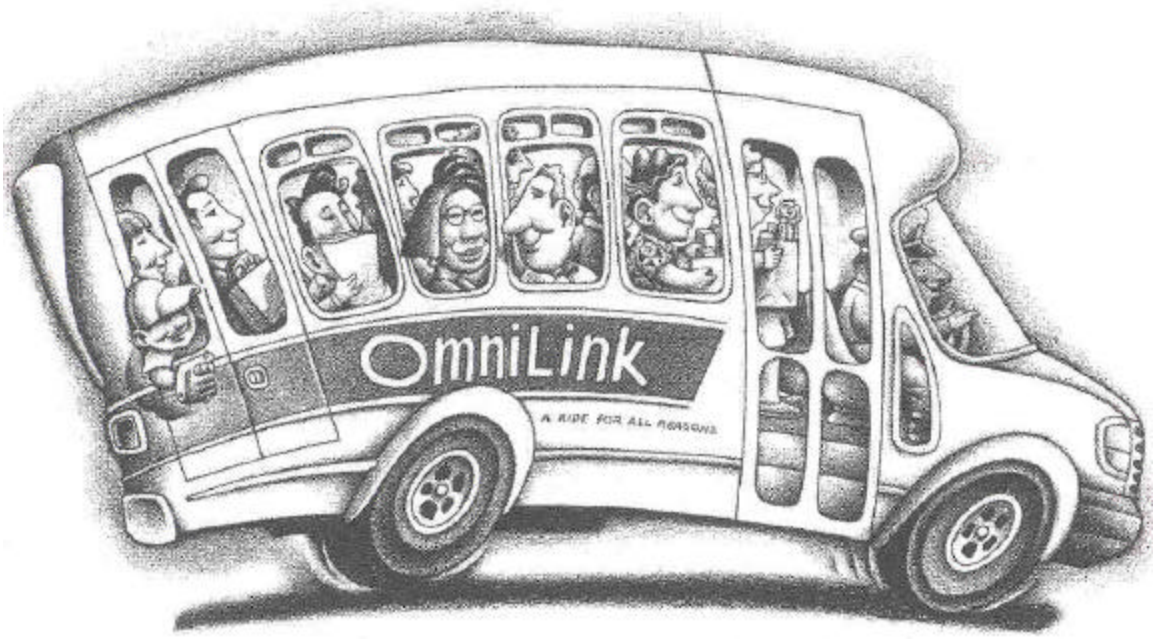
**Federal Transit
Administration**

A Ride Through SaFIRES

Lessons Learned from SaFIRES – An APTS Operational Test in Prince William County, Virginia

Research and Special Programs Administration
Volpe National Transportation Systems Center
Office of System and Economic Assessment
Service Assessment Division

Final Report
June 2002



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Michael Harris[1], Matthew Hardy[1], Robert Casey[2], and Judith Schwenk[2]

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13. ABSTRACT (Maximum 200 words)
This interim report documents the lessons learned to date from the Smart Flex-route Integrated Real-time Enhancement System (SaFIRES) operational test in Prince William County, Virginia. This route deviation service has proven to be popular with County residents as ridership on this small system exceeds 1,000 passengers per weekday. However, the integration of automatic vehicle location, mobile data terminals, and automated scheduling and dispatching software has proven difficult and has not yet been successfully achieved.

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Executive Summary

Operational tests in intelligent transportation systems (ITS) provide experience in the effects new technology has on the operations of transportation services. The Smart Flex-Route Integrated Real-Time Enhancement System (SaFIRES) operational test was conducted under the Advanced Public Transportation System (APTS) program of the Federal Transit Administration (FTA). It has provided many insights into deployment issues of ITS technologies in the operations of the Potomac and Rappahannock Transportation Commission, a transportation agency in Prince William County, Virginia, a Washington, D.C. suburb.

One of the transit services operated by the Potomac and Rappahannock Transportation Commission is OmniLink. OmniLink is a flex-route bus service that allows buses to deviate from their fixed routes up to three-quarters of a mile on either side for scheduled and near real-time passenger pick-up and drop-off. It operates midday on 45-minute headways on routes throughout the County. The Potomac and Rappahannock Transportation Commission has added the SaFIRES ITS enhancements to OmniLink. They consist of Global Positioning System automatic vehicle location technology, Trapeze-FLEX scheduling and dispatching software, mobile data terminals on buses, and a digital radio communications system.

SaFIRES is a public/private partnership. Partners in the operational test include: the Federal Highway Administration; the Federal Transit Administration; GMSI, Inc.; ManTech International; the Northern Virginia Planning District Commission; the Potomac and Rappahannock Transportation Commission; SG Associates, Inc.; Trapeze Software, Inc.; and the Virginia Department of Rail and Public Transportation. SaFIRES was evaluated for the FTA by the Volpe National Transportation Systems Center, Battelle, and Castle Rock Consultants, Inc.

Goals for the SaFIRES APTS operational test were to: test and implement a flexible-route bus system; provide mobility for the transit-dependent and general populations through a single system; provide an alternative to single occupancy vehicles; demonstrate the feasibility of route deviation service in a low population density environment; improve operational control; decrease response time; and integrate new services into an existing transit mode.

This report documents the views and opinions of four key stakeholders who were involved with the planning and deployment of SaFIRES: Randy Farwell, SG Associates; Paul Diaczun, ManTech International; Eric Marx, Potomac and Rappahannock Transportation Commission; and Tom Jennings, Federal Highway Administration. This report is based on the experiences of these people during the period from the acceptance of the project by FTA as an APTS operational test in July 1993 through the end of 1998 and has been updated to reflect current project status.

Issue areas emerged from interviews with the SaFIRES stakeholders that may provide valuable lessons learned to other agencies involved in similar deployments. These areas were: communications; automatic vehicle location; scheduling and dispatching software; technology platforms; project management; operations effects; service impacts; and project duration.

Some of the lessons learned include:

- If implementation of various phases takes longer than anticipated, extending the project duration, employee confidence may be eroded, employee turnover may increase, and a smooth implementation of ITS components will be more difficult.
- The failure to designate an overall program manager and project managers responsible for particular phases will compound the effects of the extended project duration.
- Education about the purpose of the project and its intended outcomes will facilitate employee "buy in" and alleviate concern about the future.
- Comprehensive training on the ITS components will enable the employees to overcome initial implementation and operational difficulties.

This report is not an evaluation or quantitative analysis of the SaFIRES APTS operational test; rather, it presents some of the important issues that emerged during this period of the operational test that provide useful lessons learned for other transit agencies considering a similar ITS investment.

1. Overview

The Potomac and Rappahannock Transportation Commission (PRTC) operates two transit services within Prince William County, Virginia: OmniRide and OmniLink. OmniRide is a commuter bus service that runs between various park-and-ride lots in Prince William County and Washington, D.C. OmniLink is a flexible-route deviation transit service that operates within Prince William County. OmniLink was developed as a result of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), which allocated federal funds for new and innovative transit services. For the Advanced Public Transportation Systems (APTS) operational test, PRTC added components to OmniLink to demonstrate how intelligent transportation systems (ITS) can be a cost-effective approach to reduce per capita vehicle trips and vehicle miles and also improve the efficiency of transit service in suburban sprawl areas, such as Prince William County. This APTS operational test is known as The Smart Flex-Route Integrated Real-time Enhancement System (SaFIRES) and is sponsored by the Federal Transit Administration (FTA).

1.1 SaFIRES Background

SaFIRES is a public/private partnership that includes:

- **The Federal Highway Administration** (FHWA) and the **Federal Transit Administration**, technical advisors in all phases of system start-up and operation.
- **The Northern Virginia Planning District Commission**, provider of local geographical information system (GIS) mapping and travel time identification, data collection, and theme maps for target markets.
- **Potomac and Rappahannock Transportation Commission**, the overall project manager.
- **The Virginia Department of Rail and Public Transportation** (VDRPT), provider of funding, facilitators of the transfer of federal funding. DRPT plans to suggest other implementation sites within the state based on project results.
- **GMSI, Inc.**, provider of the hardware and software required for the mobile data terminals, including Global Positioning System (GPS) hardware, card readers, and odometer readers.
- **ManTech International**, technical project manager.
- **SG Associates, Inc**., operations manager during the operational test.
- **Trapeze Software, Inc**., the software vendor that developed the scheduling and dispatching system.

PRTC and its partners received $1.2 million in ISTEA funds (both Congestion Mitigation and Air Quality and Surface Transportation Program funds) to help offset start-up, operating, and capital costs of launching OmniLink and implementing SaFIRES. SaFIRES is being evaluated for FTA by the Volpe National Transportation Systems Center and their contractor, Battelle/Castle Rock Consultants.

OmniLink, in conjunction with the SaFIRES ITS enhancements, was designed to:

- Test and implement a flexible-route bus system that would provide Prince William County area's population with an attractive, convenient transportation alternative and user-friendly link to an integrated, multi-modal network.
- Provide mobility for the transit-dependent population of the Prince William County area through a single transit service for all County residents.
- Provide an attractive alternative to the single occupancy vehicle, thereby reducing vehicle trips, miles traveled, and traffic congestion (contributing toward air quality goals).
- Demonstrate through innovative technology that route deviation service can provide a cost-effective and efficient service in a low population density environment.
- Improve operational control in the day-to-day running of the system.
- Decrease the required time between requesting and providing pick-ups and drop-offs.
- Integrate new and innovative services into an existing transit mode.

The operational test service area, located approximately 25 miles south and west of Washington, D.C., includes Prince William County and the Cities of Manassas and Manassas Park, Virginia. Prince William County is a suburban and rural district located on the heavily traveled I-95 and I-66 corridors with mostly suburban sprawl development. Suburban areas, such as most of Prince William County, present a difficult environment for fixed-route transit, because they lack the high development densities with large concentrations of potential riders needed for fixed-route transit to operate efficiently and effectively. Additionally, traditional fixed-route services require complementary paratransit (door-to-door) services for individuals with disabilities.

Recognizing these challenges, PRTC created the OmniLink transit service. OmniLink began operation in April 1995 serving the general public along three flex-route corridors. In September 1995, three additional flex-route corridors were added. Figures 1, 2, and 3 show maps of the OmniLink routes. Riders can access the service as if it were fixed-route bus service by boarding and alighting at fixed bus stops. If the OmniLink fixed bus stops are not convenient, riders can call to arrange for the bus to pick them up or drop them off anywhere along the 1.5-mile-wide flex-route corridors centered on the bus's fixed routes. The ability to deviate from a fixed route for passenger pick-up and drop-off increases OmniLink's attractiveness to travelers and also eliminates the need to provide a separate paratransit service which would otherwise be required by the Americans with Disabilities Act (ADA). Individuals with disabilities can therefore be served by the same transit service available to the rest of the population, resulting in reduced operating costs.

When OmniLink first began operations, riders requesting a pick-up or drop-off at a location off the fixed route were required to call OmniLink two days before the requested date. The scheduling process took more than one day, requiring multiple phone calls and a large amount of paperwork. After documenting the location and time of the request, a customer service representative (CSR) would refer to the appropriate manifest for the particular day and route to see if a route deviation were possible. If the location and time were possible, the CSR would call the individual to verify the information and inform the rider of the exact time and location of the pickup or drop-off. If the CSR could not fit the requested route deviation into the requested time slot and location, the CSR would call the rider to see if any other times or locations would be acceptable, starting the process over again.

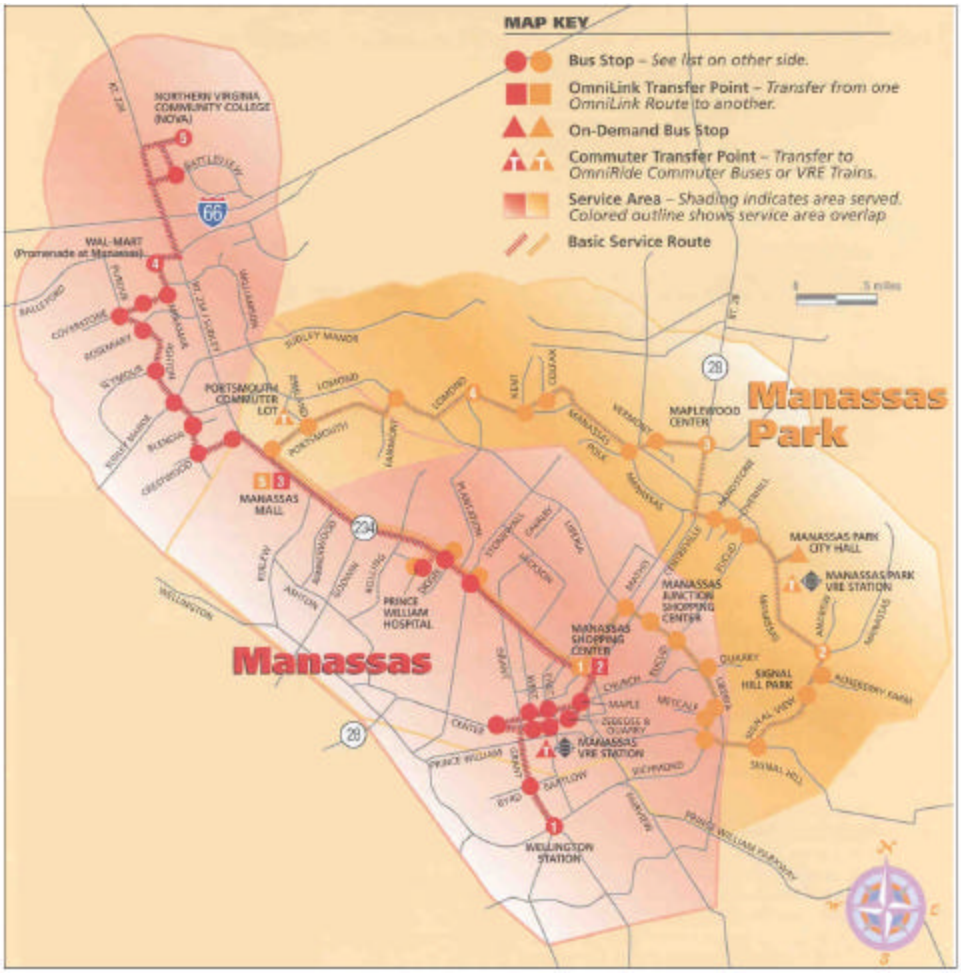

Figure 1. Manassas and Manassas Park Routes

The ITS technologies and their relevance to this APTS operational test are shown in Table 1. The Global Positioning System Automatic Vehicle Location (AVL), the Trapeze-FLEX software (Trapeze-FLEX SW), and Mobile Data Terminals (MDT) were the technologies selected for this test. These technologies enhance vehicle tracking capabilities and improve dispatching and communications, including allowing real-time reservations for off-route pick-ups.

Table 1. SaFIRES Technologies and Benefits

	Benefit			
Technology	Improve dispatch	Enhance vehicle tracking	Enhance communications	Real-time reservation options
GPS AVL	x	x		x
Trapeze-FLEX SW	x	x		x
MDT	x	x	x	x

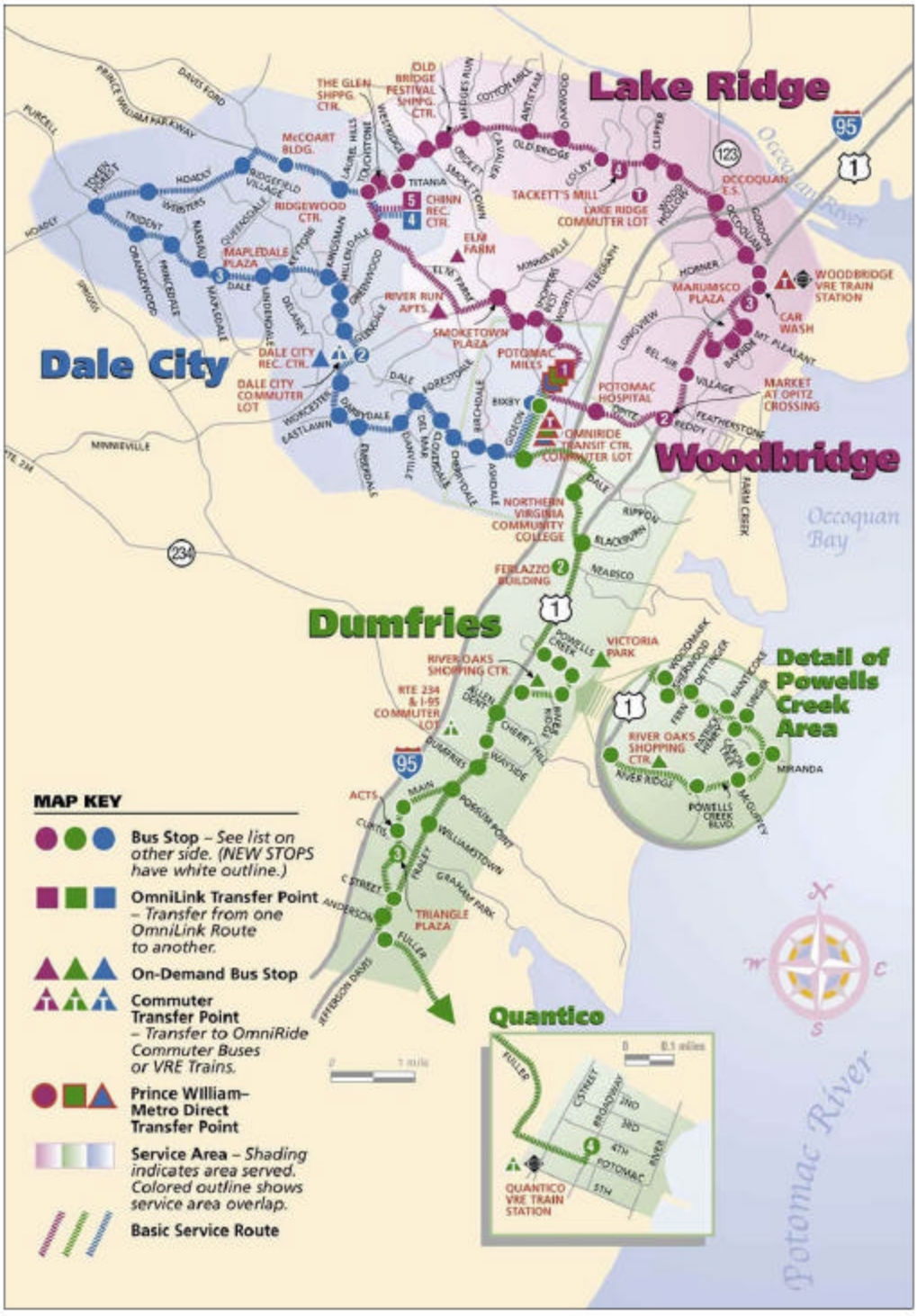

Figure 2. Lake Ridge/Woodbridge, Dale City, and Dumfries Routes

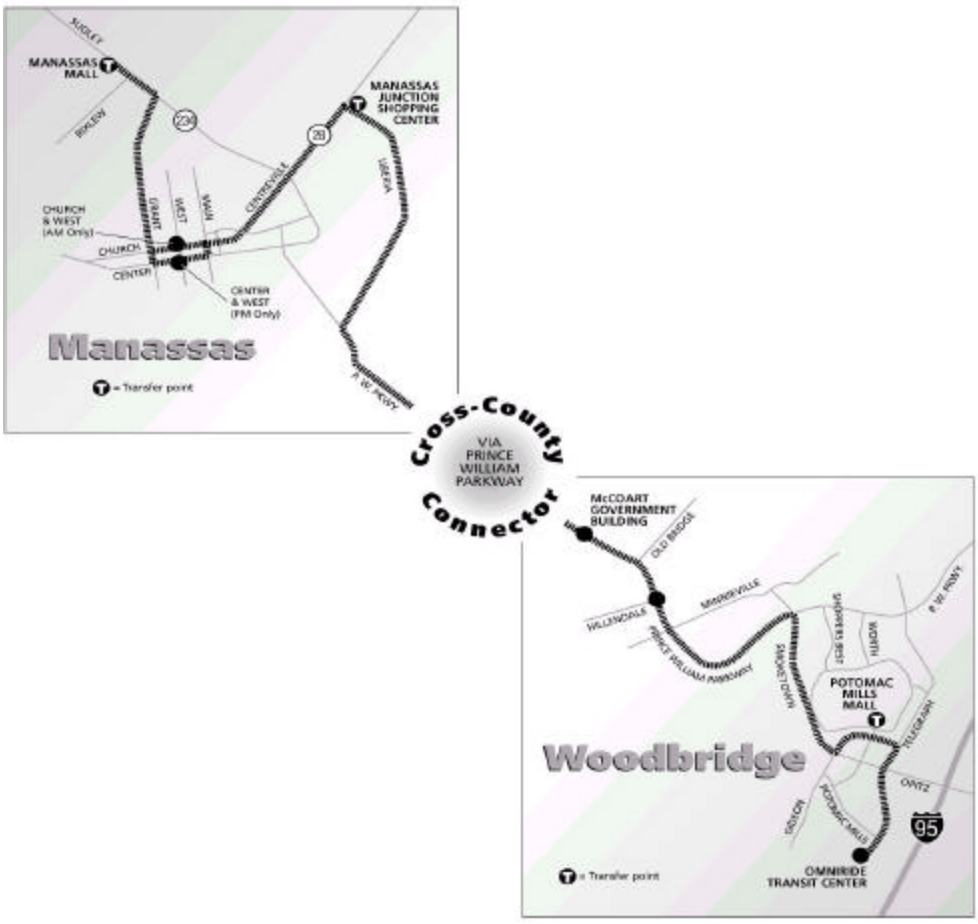

Figure 3. Cross-County Connector

With these technologies in place, SaFIRES would allow CSR's to make real-time reservations and confirmations to passengers. With the caller still on the line, the CSR would be able to check the schedules, manifests, current vehicle loads, and on-time performance of various services to determine the best trip itinerary. Vehicles would be dispatched via MDTs, and drivers could query the system to request routing instructions from their existing location to their next scheduled location, or between two upcoming scheduled locations. The fully integrated SaFIRES would be expected to enhance the operation of OmniLink and provide greater effectiveness and efficiency in serving the public transportation needs of the community. SaFIRES may also serve as a model for other suburban, low-density areas wishing to increase transit attractiveness and eliminate the need for operating both fixed-route and paratransit services. SaFIRES is expected to be completed by November 2002. Appendix A documents key milestones and activities that occurred over the duration of SaFIRES from the acceptance of the project by FTA as an APTS operational test in July 1993 through the end of 1998.

1.2 Report Approach

This report documents the views and opinions from key stakeholders -- those who were actively involved with either the day-to-day operations of OmniLink or the design of the SaFIRES ITS

components -- during the period from July 1993 through the end of 1998. It documents the problem areas, benefits, and issues that may have relevance to other projects, and what could have been done differently to further improve the success of the SaFIRES operational test.

The key project individuals interviewed for this report were Randy Farwell of SG Associates, Paul Diaczun of ManTech International, Eric Marx of PRTC, and Tom Jennings of FHWA. Each individual was provided a series of questions designed to obtain specific information about the SaFIRES project. The questions did not ask the interviewee to quantify their answers, but to give their perception or feelings about the project. To ensure candid answers from the interviewees, they were assured that quotes would not appear within this report. The answers were summarized into eight issue areas: communications, automatic vehicle location, scheduling and dispatching software, technology, project management, operational effects, service impacts, and project duration. Section 2 of this report provides a summary of these eight issues and the lessons learned from them.

2. Issues and Lessons Learned

2.1 Communications

A reliable radio system is key to the success of this type of project. All the other components of the system, including the AVL and MDT's, rely on receiving accurate and timely information from other parts of the system. If AVL information is delayed or is never received by dispatch, for example, then the information loses some or all of its value, and the value of that component to the rest of the system is greatly diminished.

The original radio system for this project did not perform adequately. The Nextel trunked analog hardware transmitted over a leased radio bandwidth from a provider whose radio tower was over 15 miles away. At times, the radio bandwidth became congested, and data transmission between SaFIRES dispatch and the vehicles was delayed. Further, the location of the tower led to areas where vehicles could not receive or send transmissions at all, or "dead spots." Additionally, PRTC headquarters, including dispatch, moved three times during the project. Each time PRTC moved, new problems arose.

Finally, the Nextel trunked analog hardware had to be abandoned when the company switched to digital communications that were not capable of supporting data. A Geotek voice/data digital system was installed and activated in 1997. Unfortunately, just prior to full launch of the integrated system in 1998, Geotek went out of business, leaving SaFIRES without a data communications capability.

The communications problems have prevented the full realization of the system's potential capabilities. Full integration of AVL, MDT's, and the Trapeze software must wait for a working communications system.

2.2 Automatic Vehicle Location

While the Nextel radio system was working, the GPS AVL technology provided valuable information to PRTC personnel, even though the AVL was not integrated with the MDTs and the Trapeze-FLEX automated scheduling and dispatch software (ASDS). AVL provided a means to continuously monitor schedule adherence and to quickly determine the location of outfitted vehicles in the event of an emergency. This capability provided both the passengers and bus drivers a sense of safety and security.

The use of AVL in the SaFIRES operational test was not the focus of the test, however. AVL has been successfully used in various other operational tests from monitoring snowplows to transit systems. The challenges were not in implementing the AVL, but in integrating AVL with the radio communication system and Trapeze-FLEX software. However, because of technical communications problems described in Section 2.1, the system's full integration has not been realized.

2.3 Scheduling and Dispatching Software

PRTC is currently utilizing the Trapeze-FLEX automated scheduling and dispatching software package. The automated scheduling system has reduced the time-consuming and paper-intensive scheduling process from two days to two hours. Once the integration of the ITS components is successfully accomplished, the scheduling software will be able to operate in real-time, allowing immediate analysis of routing alternatives and availability of vehicles for diversion.

The implementation of the scheduling software would have gone more smoothly if designers had obtained input from the users to ensure it met operational needs. The software should have been tested extensively with selected users to ensure it met functional and usability requirements and to gain the confidence of potential users. Rollout, training and full implementation of the software should have begun only after the testing of the software had been completed.

2.4 Technology

Computers, communication and other ITS technologies are rapidly changing and new products are constantly becoming available that store greater amounts of data, process data faster, and display data on clearer and larger screens. Since SaFIRES technologies were installed over an extended time period, some technologies were obsolete before they became operational. The long installation period led to unforeseen incompatibilities and resulting delays in project implementation.

The SaFIRES project was initiated using the latest technology available at that time. In 1993, when the project was proposed, computers using the Intel 486 processor were the most powerful and fastest available. The system was designed with then state-of the art hardware and software. Today, computers are an order of magnitude faster. In addition, the scheduling software had to be transferred from a MSDOS platform to Windows 95, even before Windows 95 was available to consumers. Finally, when MDT's were first specified, none had the capabilities to store information. The SaFIRES project has proven that the MDT's should have the ability to store messages.

Knowing and understanding the dynamics of the technology industry is important. Adapting with these changes is necessary for success of any ITS project. A technology assessment needs to be performed which evaluates the current environment, market availability and full scope of work in order to eliminate as many hardware and software incompatibilities (different standards, protocols, software languages) as possible. Equally important is consideration of technological advances, and the ability to upgrade the system as needs dictate.

2.5 Project Management

At the project outset, neither PRTC nor their technical consultant provided a designated project manager who had authority for overall project implementation. The absence of such a designated project manager resulted in a weakened organizational structure. Problems such as communications difficulties would be identified but no one individual had the authority or responsibility to fix them. A full-time project manager should have been included in the project budget to serve as a central point of communication to solve and address problems, ensure contracting mechanisms were in

place, and provide oversight of systems integration and implementation. This position is critical to the success of any project.

Throughout the project, various people were responsible for various pieces of the project. In October 1996, the Director of Planning for PRTC took on the project manager role as an adjunct to his other responsibilities. A management structure with a full-time project manager who was responsible for all aspects of the SaFIRES project -- budget, personnel, problems, challenges, vendors, consultants -- would have provided for more efficient problem solving.

2.6 Operational Effects

The implementation of the scheduling software features of SaFIRES has increased PRTC's operational efficiency. The system impacts - better scheduling, increased customer service, easier planning, better staff utilization, and reduced costs - have been overwhelmingly positive. As employees eventually became more familiar with the use of new technologies, they were better able to use these tools to plan effectively. Schedulers could look at future route deviation requests and plan route deviation trips accordingly. The ITS enhancements allowed dispatchers the ability to schedule changes to the manifests with only two hours advance time in case of cancellations or additional off-route (route-deviated) pickups.

Initially, the introduction of the new software created employee stress due to fear of the unknown, anticipation of additional workload, and fear for job security. An effective employee education program would have helped reduce this stress. Such an education program would have presented a formalized plan that clearly defined the employees' roles and the benefits that the proposed changes would have in terms of service and their jobs.

Systems and technologies should be fully tested prior to training employees on the new equipment. As seen in the SaFIRES operational test, pieces of technology were phased in throughout the project, requiring the employees to serve as a test group. Training courses were provided too late and often proved to be redundant or ineffective. Frustration and a lack of confidence in the new technologies caused a delay in employee willingness to accept the changes as positive. Ensuring that employees are informed about technology changes and training them on the new technologies in an effective manner are imperative to the success of a project.

In order for OmniLink to maximize its operational efficiency, PRTC planners must have accurate and reliable transit information and data on OmniLink riders. Currently, the most reliable source for transit ridership is through drivers' handwritten logs. However, these logs are not very accurate and are cumbersome to retrieve and analyze. Once the project is completely integrated, the automated data that will be collected from the ITS components will provide valuable information for PRTC planners. This will allow PRTC to better optimize the current OmniLink routes and plan for additional routes.

2.7 Service Impacts

The greatest successes of SaFIRES are the more responsive bus service now offered to the residents of Prince William County and the increased efficiency of OmniLink. The use of scheduling

software has allowed PRTC to reduce the advanced reservation requirement from two days to two hours. Also, the ability to make a single phone call and receive a confirmed pick-up time at a designated location makes it much more attractive to the riding public. In three years ridership increased from 2,000 to 22,000 boardings per month.

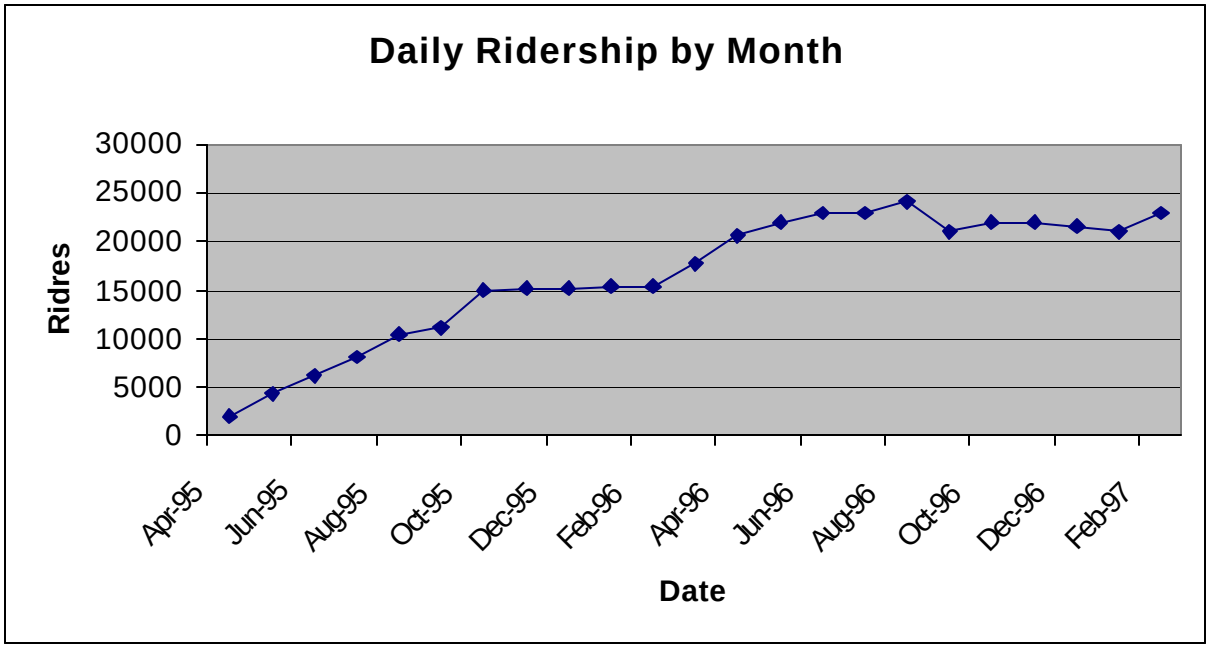

Figure 4. Daily Ridership by Month

When the communications system was working, the AVL system gave drivers and passengers a greater sense of improved safety and security since the dispatcher could quickly pinpoint the location of a bus in emergency situations. The ITS components also should improve the reliability of the transit service when fully integrated.

2.8 Project Duration

Throughout the interviews with key project stakeholders, concerns about the duration of the project continually arose. The SaFIRES project, originally planned for three years, was entering its fifth year in 1998 when the interviews were conducted. Since operational test projects are often exploring new areas, unforeseen difficulties can arise. For SaFIRES, a combination of systems integration, software development and technology difficulties all contributed to SaFIRES extending beyond the original expected completion date. The duration of the SaFIRES operational test project has led to some of its problems, specifically personnel turnover and changing operational procedures. Software development and systems integration problems, computer crashes, and hardware failures also led to lost employee confidence and buy-in.

3. Summary

OmniLink provides route deviation transit service in a suburban environment. When fully implemented, SaFIRES will enhance OmniLink with ITS technologies that integrate a computerized reservation process, automatic vehicle location, and real-time route deviation in an effort to provide an improved transit system to Prince William County residents. Even now, the combination of OmniLink and SaFIRES are helping PRTC to meet the goals of:

- Providing Prince William County residents with a route deviation transit system;
- Mainstreaming paratransit with traditional transit; and
- Reducing congestion and pollution by offering a viable, accessible alternative to personal vehicles.

In three years, ridership has significantly increased on OmniLink. Prince William County residents have recognized additional freedom in mobility, allowing 20 percent of surveyed riders to work for the first time due to transit accessibility.

The future years will prove whether the SaFIRES ITS components can be successfully integrated. On many levels, the operational test is already providing benefits. OmniLink riders have the ability to reserve a route deviation ride two hours in advance rather than two days in advance as CSRs can now easily schedule route deviation service through a computer rather than manually.

SaFIRES was one of many APTS operational test projects deployed throughout the country and the first to include a route deviation component. The lessons learned from SaFIRES should prove useful to other agencies and should enable them to avoid some of the problems that occurred with SaFIRES.

Appendix A - SaFIRES Timeline

Date	Action
July 1993	Proposal accepted by FTA
January 1994	Final contract between USDOT and VDRPT signed
March 1994	Contract awarded between VDRPT and PRTC
July 1994	TCI (now ManTech International) hired as technical manager
October 1994	Contracts between partners and PRTC expanded
December 1994	OmniLink feeder service begins operation
March 1995	First MDTs installed
April 1995	OmniLink flex-route service begins
June 1995	Evaluation Plan presented to Volpe Center for evaluating SaFIRES
September 1995	Two additional routes added to OmniLink
December 1995	SaFIRES contract extended through December 1997
December 1995	Initial pre-ITS customer survey conducted
May 1996	Ridership increases by more than 16,000 compared to first year, same month
May 1996	OmniLink pre-ITS evaluation white papers distributed
July 1996	PRTC offices move
August 1996	Additional $30,000 awarded for continuance of project
September 1996	Software and MDT beta tested by PRTC
September 1996	Data collection from dispatch center begun
September 1996	Concern about two-year project timeline for ITS enhancements brought up at Quarterly Meeting
October 1996	PRTC Operations Manager leaves, PRTC Director of Planning assumes responsibility for OmniLink services

November 1996	Nextel gives notice of termination of PRTC's analog system
November 1996	Interim pre-ITS customer survey conducted
December 1996	Trapeze begins training on use of software
January 1997	Nextel moves repeater, PRTC experiences radio transmission problems
January 1997	Independent analysis of radio options performed
March 1997	Radio reception, integration of MDTs and radios experience problems
May 1997	New operations director hired
May 1997	Meeting with Geotek to discuss advantages of switching to their digital system
June 1997	CSRs use scheduling software for bookings
June 1997	ITS America tour of PRTC facilities
June 1997	Same-day booking begins
June 1997	Ridership exceeds 1,000 per day
August 1997	MDT integration into ITS system complete
October 1997	SaFIRES kick-off
October 1997	Computer-aided dispatch and reservation component of Trapeze system go live
November 1997	PRTC offices consolidated to OmniRide Transportation Center
December 1997	CSRs mandated to use scheduling software
December 1997	Drivers trained on the use of MDTs to send and receive messages and rider information
December 1997	AVL/Trapeze interface not reliable; drivers stop using MDTs on regular service
January 1998	Geotek radio system working smoothly; Trapeze and GMSI integration continue to have problems
April 1998	Time extension request approved; period of performance extended to December 1998
December 1998	PRTC considers whether to continue to proceed with integrating the final components of SaFIRES; ASDS is operational, but real-time communications for automated operations are not

Glossary

ADA	American with Disabilities Act. Federal law requiring public transit authorities to provide comparable services to individuals who cannot use traditional fixed-route transit systems.
ASDS	Automatic Scheduling and Dispatch Software. Software that allows the automation of scheduling route deviation trips and also disseminating that information real-time to the buses.
AVL	Automatic Vehicle Location. ITS component using GPS to constantly track or locate a vehicle in relation to a GIS map.
CSR	Customer Service Representative. PRTC employee who schedules route deviations for individuals that call in.
FHWA	Federal Highway Administration
Fixed-Route	Traditional transit system that has a predefined route, timepoints and stops.
Flex-Route	Innovative transit service that allows a bus to deviate from a predefined route to pick up and drop off passengers. Flex-route systems still have predefined stops and timepoints that are adhered to but can deviate from the route in between stops to pick up other passengers that cannot get to the regular stops.
FTA	Federal Transit Administration
GIS	Geographic Information System. A visual database that represents information and data on a map.
GPS	Global Positioning System. Technology developed by the United States Government that uses 24 satellites to pinpoint positions on the earth.
ISTEA	Intermodal Surface Transportation and Efficiency Act. ISTEA was landmark legislation when it was approved in 1991 and authorized federal-aid programs for highways and transit for a period of six years at a total funding level of $151 billion. Funding for highway programs increased by 63 percent and funding for transit jumped by 91 percent.
ITS	Intelligent Transportation Systems. A broad term used to categorize many different transportation technologies designed to improve traffic conditions, roadway capacities, transit operations and information dissemination.
MDT	Mobile Data Terminal. Device used within the buses that communicate with the computers in the dispatch center. The MDTs act as an electronic driver manifest operating in real-time.
OmniLink	Route deviation bus service begun in 1995 and operated by PRTC.

Paratransit	Transit service that caters to disabled riders. In order to comply with ADA regulations, many transit operators had to implement paratransit service since traditional fixed-route transit service is not disabled-friendly.
PRTC	Potomac and Rappahannock Transportation Commission. PRTC operates transit service in Prince William County including OmniLink, OmniRide and a number of other commuter transportation services.
SaFIRES	Smart Flex-Route Integrated Real-Time Enhancement System. Operational test that added ITS enhancements to PRTC OmniLink service.
USDOT	United States Department of Transportation