

ITS Transpo 2010 Conference System Manager Approach

Pete Vega, P.E.
District Two ITS Engineer

Presentation Outline

- ✓ **ITS Deployment Strategies**
- ✓ **FHWA Documentation**
- ✓ **System Manager Approach**
- ✓ **Project Example**
- ✓ **Discussion**

ITS Deployment Strategies

1. **Design-Bid-Build**
2. **Design-Build**
3. **System Manager Approach**
4. **Construction Manager at Risk**

ITS Deployment Strategies

Design-Bid-Build

- **Traditional method of procurement**
- **Long lead time between design and build**
- **Limited cost effectiveness**
- **Limited schedule control**
- **Usually stuck with outdated technology**

Comparison Chart

Design-Bid-Build Factors to Consider

Factor/Impact	Low	Medium	High
Complexity		X	
Coordination		X	
Cost			X
Project Schedule			X
Satisfaction	X		

ITS Deployment Strategies

Design-Build

- **Most often used method of procurement**
- **Long lead time between design and construct**
- **Limited assurances on product delivery**
- **Limited schedule control**
- **Possible Design firm & Contractor issues**

Comparison Chart

Design-Build Factors to Consider

Factor/Impact	Low	Medium	High
Complexity			X
Coordination			X
Cost			X
Schedule			X
Satisfaction		X	

ITS Deployment Strategies

System Manager Approach

- **District Two preference for procurement**
- **Projects can be expedited**
- **Obtain the “latest and greatest” technology**
- **Strong schedule control**
- **Removal of contractor risk**
- **Least expensive projects**

Comparison Chart

System Manager Factors to Consider

Factor/Impact	Low	Medium	High
Complexity	X		
Coordination			X
Cost	X		
Schedule	X		
Satisfaction			X

ITS Deployment Strategies

Construction Manager At Risk

- **Good for large and very complex projects**
- **Projects can be expedited**
- **Obtain the “latest and greatest” technology**
- **Strong schedule control**
- **Increased project risks**
- **Very expensive projects**

Comparison Chart

Construction Manager at Risk Factors to Consider

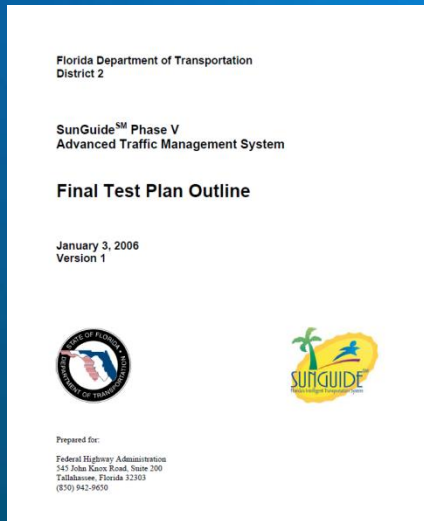
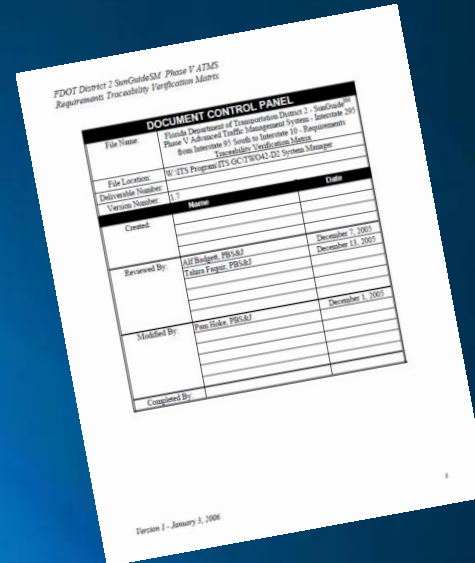
Factor/Impact	Low	Medium	High
Complexity		X	
Coordination			X
Cost			X
Schedule	X		
Satisfaction	?	?	?

FHWA Documentation

Project Documentation for any approach

- **Concept of Operations**
- **Requirement specifications documentation**
- **Regional ITS architecture tie-in**
- **System test plan & requirements verification**
- **Quality management plan**

FHWA Documentation



FDOT District 2
SunGuideSM Phase V Advanced Traffic Management System
I-295 from I-95 South to I-10
Requirements Traceability Verification Matrix

Federal Aid Project Number: ITS-XXXXX
FINANCIAL PROJECT NUMBER(S): 21238-62-01

Req ID	Control ID	Req Description	Requirement	Owner	State	Verification Method	Control ID
CONCEPT OF OPERATIONS							
1.1	4.1	Justification for Changes	The development of a system with advanced traffic management system (ATMS) will increase transportation efficiency, improve safety, increase traffic flow, reduce emissions, and improve traveler information.	Function		Inspection	
1.2	4.2	Description of Change	The project will include the installation of a traffic management system (TMS) that will include the following: traffic management system (TMS) message sign (TMS) devices, and a communications infrastructure on the fiber optic backbone.	Function		Inspection	
1.4	4.3	Change Description	The system will have the capability to be expanded and other agencies at key system interchanges for purposes of data sharing and emergency operational control.	Function		Inspection	
1.6	4.4	Constraints	Existing and proposed systems will be installed along with and adjacent to the interchanges. Existing and proposed systems will be installed along with and adjacent to the interchanges. Existing and proposed systems will be installed along with and adjacent to the interchanges.	Function		Inspection	
2.1	5.1	Background and Objective	The SunGuide SM Phase V Intelligent Transportation System (ITS) Program will deploy and integrate a communications infrastructure, traffic monitoring, incident management, and operational dissemination hardware and software components. The SunGuide SM Phase V ITS Program will include the following: traffic management system (TMS) message sign (TMS) devices, and a communications infrastructure on the fiber optic backbone.	Function		Inspection	
2.2	5.1	Background and Objective	The SunGuide SM Phase V ITS Program will include the following: traffic management system (TMS) message sign (TMS) devices, and a communications infrastructure on the fiber optic backbone.	Function		Inspection	
2.3	5.1	Background and Objective	The SunGuide SM Phase V ITS Program will include the following: traffic management system (TMS) message sign (TMS) devices, and a communications infrastructure on the fiber optic backbone.	Function		Test	
2.4	5.1	Description	The SunGuide SM Phase V ITS Program will include the following: traffic management system (TMS) message sign (TMS) devices, and a communications infrastructure on the fiber optic backbone.	Function		Inspection	
2.5	5.1	Description	The SunGuide SM Phase V ITS Program will include the following: traffic management system (TMS) message sign (TMS) devices, and a communications infrastructure on the fiber optic backbone.	Function		Inspection	
2.6	5.1	Description	The SunGuide SM Phase V ITS Program will include the following: traffic management system (TMS) message sign (TMS) devices, and a communications infrastructure on the fiber optic backbone.	Function		Inspection	
2.7	5.1	Description	The SunGuide SM Phase V ITS Program will include the following: traffic management system (TMS) message sign (TMS) devices, and a communications infrastructure on the fiber optic backbone.	Function		Test/Inspection	
2.8	5.1	Description	The SunGuide SM Phase V ITS Program will include the following: traffic management system (TMS) message sign (TMS) devices, and a communications infrastructure on the fiber optic backbone.	Function		Inspection	
2.9	5.1	Description	The SunGuide SM Phase V ITS Program will include the following: traffic management system (TMS) message sign (TMS) devices, and a communications infrastructure on the fiber optic backbone.	Function		Inspection	
2.10	5.1	Description	The SunGuide SM Phase V ITS Program will include the following: traffic management system (TMS) message sign (TMS) devices, and a communications infrastructure on the fiber optic backbone.	Function		Test	
2.11	5.1	Description	The SunGuide SM Phase V ITS Program will include the following: traffic management system (TMS) message sign (TMS) devices, and a communications infrastructure on the fiber optic backbone.	Function		Inspection	

Version 1 - January 3, 2006

System Manager Approach

Selection Process

- **Scope of work**
- **Consultant workload**
- **Submittal reviews**
- **Interview questions**
- **Scoring**
- **Contract negotiation**

System Manager Approach

Key Elements in Selection Process

- **System Manager experience**
- **SM partnership**
- **SM ownership**
- **Demand on FDOT ITS staff**
- **SM availability**
- **SM knowledge and vision**

System Manager Approach

Design Process

- **SM knows existing system and infrastructure**
- **“Sole” coverage**
- **Look for economies of scale**
- **Look beyond for future opportunities**
- **Input from regional partners (public/private)**
- **Generate necessary MSPs**
- **Design for future maintenance**

System Manager Approach

Procurement Process

- Utilize FDOT APL equipment contract
- Develop project specific procurement contract
- Utilize a “hybrid” system as much as possible
- Assist with the procurement
- Assist with storage

System Manager Approach

Procurement Process

- **Create an inventory**
- **Incorporate into project schedule**
- **Verify operability of procured equipment**

System Manager Approach

Equipment Assembly and Testing Process

- **Assemble cabinets**
- **Test cabinets for operability**
- **Handle contractor transfer of ownership**
- **Verify contractor field installations**

System Manager Approach

Field Equipment Testing and Integration Process

- **Assist w/ subsystem test of field installations**
- **Integrate equipment into network**
- **Assist w/ system test of deployment**
- **Assist w/ SunGuide database**
- **Verify equipment operability in SunGuide**

System Manager Approach

Project Close-Out

- **Assist w/ completion of FHWA documentation**
- **Address any final integration issues**
- **Hand over system to Department**



District Two ITS Program

- There are five “C’s” to our District ITS Program
 - Commitment
 - Cooperation
 - Communication
 - Consistency
 - Creativity

Florida Department of Transportation Mission Statement

“The Department will provide a safe transportation system that ensures the mobility of people and goods, enhances economic prosperity and preserves the quality of our environment and communities.”

