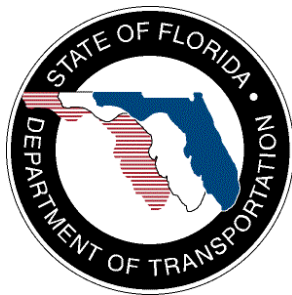


# Technical Memorandum

## Tallahassee License Plate Reader Deployment Project

# Procurement Options for a License Plate Reader-based Data Collection System

November 1, 2006  
Final Version 2



Prepared for:

Florida Department of Transportation  
Traffic Engineering and Operations Office  
Intelligent Transportation Systems Section  
605 Suwannee Street, M.S. 90  
Tallahassee, Florida 32399-0450  
(850) 410-5600

*Technical Memorandum – Tallahassee LPR Deployment Project  
Procurement for a LPR-based Data Collection System*

---

<b>DOCUMENT CONTROL PANEL</b>		
File Name:	<i>Technical Memorandum – Tallahassee License Plate Reader Deployment Project – Procurement Options for a License Plate Reader-based Data Collection System</i>	
File Location:	W:\ITS Program\ITS GC\060305 NEW ITS GC Contract\Assign 42 - TLH LPR Deployment\061101 LPR Procurement Ops v2.doc	
Deliverable Number:		
Version Number:	Final Version 2	
<b>Name</b>		
<b>Date</b>		
Created By:	Armand Ciccarelli, PBS&J	September 5, 2006
Reviewed By:	Michael Berman, PBS&J	September 12, 2006
	Ashis Sanyal, PBS&J	October 12, 2006
	Ashis Sanyal, PBS&J	October 27, 2006
	Armand Ciccarelli, PBS&J	November 1, 2006
Modified By:	Pam Hoke, PBS&J	September 14, 2006
	Armand Ciccarelli	October 19, 2006
	Pam Hoke, PBS&J	October 30, 2006
Completed By:	Pam Hoke, PBS&J	November 1, 2006

## Table of Contents

<b>List of Acronyms</b> .....	<b>iii</b>
<b>1. Introduction</b> .....	<b>1</b>
<b>2. Description of Potential Procurement Mechanisms</b> .....	<b>2</b>
<b>2.1 Low-bid Procurements</b> .....	<b>2</b>
<b>2.2 Requests for Proposals</b> .....	<b>2</b>
<b>2.3 Invitations to Negotiate</b> .....	<b>3</b>
<b>2.4 Systems Manager</b> .....	<b>4</b>
<b>3. Description of Project Requirements</b> .....	<b>6</b>
<b>4. Recommendations</b> .....	<b>8</b>
<b>4.1 Advantages / Disadvantages of Each Procurement Mechanism</b> .....	<b>8</b>
4.1.1 Low-bid Procurements .....	8
4.1.2 Requests for Proposals.....	9
4.1.3 Invitations to Negotiate .....	9
4.1.4 Systems Manager.....	10
<b>4.2 Conclusions</b> .....	<b>10</b>

## **List of Acronyms**

DMS.....	Dynamic Message Sign
FDMS .....	Florida Department of Management Services
FDOT.....	Florida Department of Transportation
ITN.....	Invitation to Negotiate
ITS America™.....	Intelligent Transportation Society of America
LPR.....	License Plate Reader
MOT .....	Maintenance of Traffic
RFP .....	Request for Proposals
RTMC.....	Regional Transportation Management Center

## **1. Introduction**

This paper has been developed to support the Florida Department of Transportation's (FDOT) data collection efforts to enable travel times to be provided on dynamic message sign (DMS) devices in the Tallahassee area. The current recommendation is to deploy license plate readers (LPRs) to collect raw license plate data, analyze this data to produce usable travel times, transfer the travel-time data to the City of Tallahassee regional transportation management center (RTMC), and publish travel times on area DMSs. The DMSs are not yet installed; contracting for their installation is expected to begin during the fall of 2006.

The primary purpose of this report is to provide an overview of the FDOT's options for procuring the LPR-based data collection and analysis system and, based on this information, to recommend how the FDOT should proceed.

This paper begins with an overview of the various procurement options the FDOT could potentially utilize as part of this effort. It is followed by a detailed description of the requirements associated with the LPR project and concludes by providing recommendations for proceeding.

## **2. Description of Potential Procurement Mechanisms**

There are numerous ways that the subsystems and services associated with this project could potentially be procured. This section provides an overview of the most likely options.

### **2.1 Low-bid Procurements**

In a low-bid procurement environment, contractor selection focuses on finding the lowest bidding contractor capable of furnishing a fully operational system. Low-bid procurement is commonly referred to as sealed bidding due to the fact that proposers' bids are generally submitted in a sealed envelope to be opened in a fully transparent, open meeting.

Transportation agencies traditionally use low-bid contracts for capital improvements, and situations where technology does not change rapidly and the owner's expectations of final results can be clearly stated at the beginning of the project.

### **2.2 Requests for Proposals**

A request for proposals (RFP) is a procurement document that an organization posts to elicit bids from potential vendors for a product or service. The quality of an RFP is very important to the success of the project because it clearly delineates the deliverables associated with the project and establishes a framework for project execution.

Requests for proposals are often used to support the procurement of design/build contracts. In such situations, the procurement is generally for a design prepared by the procuring agency. Design/Build contracts are typically most successful when they are structured around a preliminary design that is 20 to 60 percent complete.

Ideally, RFPs stipulate all technical requirements and conditions demanded of proposers clearly to minimize the possibility of misunderstandings and errors. As a result, an RFP should include:

- Specification of the product or service required, in as much detail as possible
- Information about the proposer, including the amount bid, information about the proposed project leader, all responsibilities being agreed to, a project timeframe, and an overview of the proposer's prior experience in the project area
- Any criteria for vendor eligibility or disqualification

- Relevant dates, including the deadline for proposal submission, dates for any associated interviews and other meetings, and the date when the selection will be made
- Any confidentiality requirements

As of mid-2006, the RFP process is the procurement mechanism most widely used by public agencies in the state of Florida. At the same time, there is increasing recognition that, due to the technically complex nature of many ITS-related projects, the RFP process may not be the ideal mechanism for procurement in all cases. This is especially the case in situations where the contract's scope of work cannot be completely defined by the FDOT, or when provision of the services involved in the contract can be provided in several different ways, any of which would be acceptable.

### **2.3 Invitations to Negotiate**

In contrast with the more traditional RFP-based procurement process, the invitation to negotiate (ITN) process was created by the Florida legislature to provide a tool that allows state agencies to obtain the best value for the State through a competitive process that involves negotiations for the procurement of commodities or contractual services. Unlike most RFP-based processes where the proposers' bid scores alone determine the successful vendor, the ITN statute allows an agency to negotiate among several top respondents and select the successful vendor based on which vendor, after negotiation, offers the best value to the State.<sup>1</sup>

Another way in which RFP and ITN-based procurements differ is that most ITN processes include comprehensive functional requirements, but not a detailed description of the end product (i.e., technical specification).

According to the requirements outlined in the Florida Department of Management Services' (FDMS) Memorandum No. 21-97-98,<sup>2</sup> the use of an ITN process must be justified as a result of the project meeting certain criteria, including:

- As a result of the range and complex nature of the technologies and services involved in the procurement, the scope of work for the contract cannot be completely defined by the FDOT.
- The provision of services involved in the contract can be provided in several different ways (using different technologies), any of which could be acceptable.

---

<sup>1</sup> *Florida Statutes, Section 287.057, Procurement of commodities or contractual services.* Available online at <http://www.leg.state.fl.us/statutes/>.

<sup>2</sup> FDMS Purchasing Memorandum No. 21-(97-98) – Invitation to Negotiate (June 15, 1998). Available online at [http://dms.myflorida.com/business\\_operations/state\\_purchasing/documents\\_forms\\_references\\_resources\\_1/purchasing\\_memos\\_rules\\_and\\_statutes/state\\_purchasing\\_numbered\\_memoranda/1997\\_1998](http://dms.myflorida.com/business_operations/state_purchasing/documents_forms_references_resources_1/purchasing_memos_rules_and_statutes/state_purchasing_numbered_memoranda/1997_1998)

- Contractor qualifications and the quality of the services to be delivered could be considered more important than contract price.
- Contractor responses may contain innovative solutions that differ from what the agency has requested in its scope of work. Consequently, a procurement methodology should be utilized that allows for such alternatives to be considered.
- Contractor responses may contain different levels of services than requested. Consequently, a procurement methodology should be utilized that allows for negotiations to be held related to the levels of services and/or the prices for those levels of services matched to available contract funds.

As of mid-2006, the ITN procurement approach has been used to support a number of ITS deployments conducted by the FDOT. The FDOT typically utilize the ITN procurement approach when they intend to procure technologies that are in the early stages of development. This is done in recognition of the fact that the procurement of “cutting edge” technologies can be difficult to scope and, therefore, introduces a lot of risks. The ITN procurement approach helps to mitigate these risks by focusing on functional, rather than technical specifications.

## **2.4 Systems Manager**

A systems manager is a representative of the FDOT that provides planning and design services to the FDOT, as well as oversight of design, integration, testing, and acceptance activities of other contractors or consultants for a project or series of projects. This includes project administration activities, independent third party assessment(s), and extension(s) of agency staff activities.

A few examples of how this role can be configured are provided in the following bulleted list.<sup>3</sup>

- A systems manager can be hired for a specific project to oversee the development of the design and specifications; to support the agency through procurement; and then to oversee the contractor during the construction, implementation, and integration phases.
- A systems manager can administer and oversee the consultant/contractor team(s), which may include a design/build team or a series of firms that have individual contracts, and can manage the entire project from design through integration and testing.

---

<sup>3</sup> Florida Department of Transportation, *Issue Paper: Management of Florida’s Intelligent Transportation System Deployments – Florida’s Contracting Policies and the System Manager Approach* (Version 5, May 19, 2004), page 4. Available online at [http://floridait.com/ITS\\_Specs.htm](http://floridait.com/ITS_Specs.htm).

*Technical Memorandum – Tallahassee LPR Deployment Project  
Procurement for a LPR-based Data Collection System*

---

- A systems manager can be hired for a multiyear contract and can be provided with task work orders based on the projects and needs of a District. This includes providing third party testing of a contractor's system to ensure that it meets the specifications; providing various design and planning services; and developing the prototype systems prior to full deployment.

Use of the systems manager approach has the potential to provide the FDOT with greater flexibility in determining the means of project delivery. For example, the previous examples apply to instances where the systems manager prepares purchasing documents for ITS equipment; draws up the contract for system installation; and is then responsible for system integration and testing prior to the project's completion. As a result, it provides a large degree of flexibility to ensure that the project meets the FDOT's needs.

As of mid-2006, only a small number of ITS projects have been conducted in Florida using the systems manager method.

### **3. Description of Project Requirements**

As part of this project, the FDOT will need to develop a scope of services to use during the procurement of the LPR-based data collection/travel time determination system. This scope should encompass:

- Overall project goals, objectives, and schedule
- The coverage area/data collection locations where data is to be collected
- Requirements for site design and review/approval, including:
  - Provision of power and communications
  - Provision of staff/equipment for site installation and removal
  - Maintenance of traffic (MOT) during equipment installation
- Data quality parameters to be adhered to in capturing/converting plate images and calculating roadway travel times to:
  - Ensure that the LPRs procured as part of this project have the ability to successfully operate in a range of weather and light conditions without distracting drivers
  - Automatically read license plates that pass through the capture zone
  - Generate roadway segment travel times for configurable periods of time
- Interface through which processed travel-time data will be provided to the FDOT and the City of Tallahassee
- The parameters/conditions under which system acceptance testing will be conducted and evaluated
- Application of the Intelligent Transportation Society of America's (ITS America™) *Fair Information and Privacy Principles* for the purpose of preventing precise identification of individual vehicles<sup>4, 5</sup>

---

<sup>4</sup> ITS America is a trademark of the Intelligent Transportation Society of America.

<sup>5</sup> Intelligent Transportation Society of America, *ITS America's Fair Information and Privacy Principles* (adopted January 11, 2001). Available online at [http://www.itsa.org/Fair\\_Privacy.html](http://www.itsa.org/Fair_Privacy.html).

*Technical Memorandum – Tallahassee LPR Deployment Project  
Procurement for a LPR-based Data Collection System*

---

- Other relevant issues may include the following:
  - Permitting requirements for both the FDOT and the City of Tallahassee
  - Design plan and deployed equipment review requirements for both the FDOT and the City of Tallahassee
- The development of evaluation criteria for use by the FDOT during contractor selection

The nature of these requirements suggests that the procurement method be based on functional specifications (i.e., what the FDOT wants the system to accomplish) rather than on technical specifications (i.e., how the system performs its function). As such, it is in the FDOT's best interest to seek a procurement mechanism that increases the likelihood of selecting a contractor that best meets the project's functional specifications, regardless of the specifics of the LPR/related technology utilized.

## **4. Recommendations**

The key to this project is to select a procurement methodology that facilitates the deployment of a data collection and analysis system to generate useful travel times. This section provides an overview of the advantages and disadvantages of each procurement mechanism toward achieving this goal, as well as overall recommendations for moving forward.

### **4.1 Advantages / Disadvantages of Each Procurement Mechanism**

#### **4.1.1 Low-bid Procurements**

Advantages of the low-bid procurement option include:

- When applied in the right situation, a low-bid procurement process ensures that the client's needs are fully met at the lowest available price.
- This approach has a long history of use, with roles clearly defined.
- The end product is well defined at an early stage in the project.

Disadvantages of the low-bid procurement option include:

- It is generally accepted that low-bid procurement processes are not suitable in situations where technology is changing rapidly and/or the final scope of the project cannot be clearly stated.
- The low-bid procurement option does not allow proposers the flexibility to develop innovative approaches for meeting a client's project-related needs.
- This option is generally not the best approach in situations where software development/procurement is involved.
- The contractor has financial incentive to find deficiencies in the bid documents and "changed" site conditions to seek change orders.

#### *4.1.2 Requests for Proposals*

Advantages of the RFP option include:

- The use of an RFP provides the FDOT with the most widely understood procurement mechanism available.
- This approach is better-suited to complex systems procurement and integration than the low-bid option.

Disadvantages include:

- The RFP process can still result in the selection of a low-bid proposer that may not provide a system that meets the FDOT's true needs.
- The RFP process often requires contract clauses/incentives to assure quality materials and construction.

#### *4.1.3 Invitations to Negotiate*

Advantages include:

- The use of an ITN affords the FDOT greater flexibility in pursuing the procurement of systems based on functional rather than technical requirements.
- The ITN process allows the FDOT to avoid the selection of low-bid proposers that may not provide a system that meets the FDOT's true needs.
- This process can spur proposals from vendors that may have cutting edge methods for meeting the FDOT's requirements.

Disadvantages include:

- The ITN process is more complex than the traditional RFP process and will require an additional investment of time from the FDOT staff involved in process.
- The ITN process requires the development of proposal evaluation schema to enable the comparison of proposals that use different approaches and technologies.

#### **4.1.4 Systems Manager**

Advantages include:

- A systems manager is responsible for reporting to the FDOT and provides a single point of contact for the whole project, from concept through final acceptance.
- The use of a systems manager affords the FDOT greater expertise in monitoring projects, and in modifying or adjusting functional requirements as the project evolves so that specified subsystems are able to be appropriately integrated to form a comprehensive system.
- The FDOT can handle more projects with current staff levels.
- The process is flexible and supports different procurement methods.

Disadvantages include:

- Without proper management, an agency may become overly dependent on a systems manager.
- There are a limited number of consultants who are capable of providing system management services for large projects.

## **4.2 Conclusions**

Due to the technical and operational nature of this project, it is believed that the use of an ITN is the most appropriate mechanism for procurement of the required services. Although the systems manager approach may also serve the FDOT's needs, the small size of this project results in there being limited management complexity associated with it. As a result, this project can easily be managed by the FDOT using its existing ITS General Consultant contract, without the need to bring on a separate systems manager focused on overseeing this specific project.