Connected Vehicle Pilot Deployment Program Phase I

Partnership Status Summary – Tampa (THEA)

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16. Abstract

The Tampa Hillsborough Expressway Authority (THEA) Connected Vehicle (CV) Pilot Deployment Program is developing a suite of CV applications, or apps, that utilize vehicle-to-infrastructure (V2I), vehicle-to-vehicle (V2V) and Vehicle to everything (V2X) communication technology to reduce traffic congestion, improve safety, and decrease emissions. These CV apps support a flexible range of services from advisories, roadside alerts, transit mobility enhancements, and pedestrian safety. The pilot is conducted in three Phases. Phase I includes the planning for the CV pilot including the concept of operations development. Phase II is the design, development, and testing phase. Phase III includes a real-world demonstration of the apps developed as part of this pilot.

This document describes the partnership coordination and financial sustainability for the Tampa Hillsborough Expressway Authority (THEA) Connected Vehicle (CV) Pilot Deployment. This document describes the funding for the initial phases of the implementation and operations and the funding commitment for the long-term operations of the THEA CV Pilot program. This document presents the agreements that are in place (or being put in place) for the deployment and operations between the various agencies involved in the deployment and operations of the pilot. This document also presents the governance strategy being implemented between the partners to support operations.

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Executive Summary

The Tampa Hillsborough Expressway Authority (THEA) Connected Vehicle (CV) Pilot Deployment aims to create a connected urban environment to measure the effect and impact of CVs in Tampa's vibrant downtown. The proposed pilot project offers several CV applications, or apps, that can be deployed in Tampa's Central Business District (CBD) and environs to create a more connected downtown. This environment has a rich variety of traffic, mobility, and safety situations that are amenable to vehicle-to-vehicle (V2V), vehicle-to-infrastructure (V2I), and vehicle-to-"everything" (V2X) solutions. The deployment area is in a busy downtown and offers a tolled expressway with a street-level interface, bus and streetcar service, high pedestrian/bicycle densities, special event trip generators, and high dynamic traffic demand over the course of a typical day. These diverse environments in one concentrated deployment area collectively encompass many traffic situations that allow for deployment and performance testing of CV applications.

These CV applications support a flexible range of services from advisories, roadside alerts, transit mobility enhancements, and pedestrian safety. The pilot will be conducted in three phases. Phase I includes planning for the CV pilot and developing the concept of operations. Phase II is the design, development, and testing phase. Phase III includes a real-world deployment of the applications that were developed and gathering CV data for performance measurements as part of this pilot.

The Partnership Coordination and Finalization report documents the key issues surrounding the implementation of the Pilot from a financial, governance and expansion standpoint. This document also outlines a strategy for regional growth of Connected Vehicle infrastructure, including the development of a regional task force and authority to develop deployment, technical and operational plans as well as the development of a regional governance strategy for deployment.

1 Introduction

This document describes the partnership coordination and financial sustainability for the Tampa Hillsborough Expressway Authority (THEA) Connected Vehicle (CV) Pilot Deployment. This document describes the funding for the initial phases of the implementation and operations and the funding commitment for the long-term operations of the THEA CV Pilot program. This document presents the agreements that are in place (or being put in place) for the deployment and operations between the various agencies involved in the deployment and operations of the pilot. This document also presents the governance strategy being implemented between the partners to support operations.

The THEA CV Pilot is intended to serve as a foundation for regional expansion as the deployment of the underlying technologies become more widespread in transit and passenger vehicles. As a result, this document presents a model for regional expansion and operations, both from an organizational perspective as well as a financial perspective.

This document will continue to function throughout project phases two and three as well. If an update is needed, THEA has committed to provide an update annually as part of the THEA annual Work Program updates which occur between January and April of each year (with Board approval in June). Updates may be submitted periodically to reflect the evolving Public Private Partnerships and system development in greater detail and document changes that may occur based on future conditions.

Additionally, Phases 2 and 3 of the project require updates to sections and components of this report at key intervals, including Task 2-G (Operational Readiness Test and Demonstration Planning) and 3-E (Post-Deployment Transition Planning).

2 Project Scope

The THEA CV Pilot Deployment (Herein referred to as the "Pilot") in downtown Tampa aims to create a connected urban environment to measure the effect and impact of CVs in Tampa's vibrant downtown. To the vision of a connected downtown, the proposed Pilot Project offers several CV applications that can be deployed in Tampa's Central Business District (CBD) and environs. This environment has a rich variety of traffic, mobility and safety situations that are amenable to vehicle to vehicle (V2V), vehicle to infrastructure (V2I) and vehicle to "everything" (V2X) solutions. The deployment area is within a busy downtown and offers a tolled expressway with street-level interface, bus and streetcar service, high pedestrian densities, special event trip generators and high dynamic traffic demand over the course of a typical day. These diverse environments in one concentrated deployment area collectively encompass many traffic situations that allow for deployment and performance testing of CV applications.

The successful development and execution of the pilot requires the support and coordination of multiple stakeholders, partners and tasks, including THEA/City of Tampa (CoT) Combined TMC Operations, HART Bus Operations, CoT signal Operations and Maintenance (O&M), CV-Pilot System Development, CV-Pilot Design, Deployment and O&M, Key Agency Partners, Stakeholders and System Users, and Sustainability Models/Partners.

2.1 THEA CV Pilot Summary

The THEA CV Pilot is funded by a federal grant awarded in September of 2015 by the United States Department of Transportation (USDOT, Joint Project Office (JPO)). The pilot is one of three selected from more than forty applicants and continues the efforts to generate a body of research data from tested utilization of CV applications to address real world issues impacting Safety, Mobility, Environment and Agency Efficiency. Phase 1 of the Pilot began in mid-September 2015 and will run for one year. If all approvals are granted, Phase 2 and 3 would run until February 2020.

The stated goals of the USDOT CV Pilot Deployments research experiment are improving Mobility, Safety, Environment and Agency Efficiency through CV technology. The performance measures desired for the six Use Cases are treated in the next section where measures of effectiveness are identified. The ConOps (THEA, February 2018) identifies goals and objectives for the project:

Goal 1: Develop and Deploy CV Infrastructure to Support the Applications Identified During Phase 1

- Objective 1: Deploy DSRC technologies to support V2V, V2I and V2X applications
- Objective 2: Upgrade TMC software to ensure compatibility with CV Applications
- Objective 3: Recruit a fleet of transit and private vehicle owners and individuals carrying V2X-enabled mobile devices to participate in the CV Pilot by installing and using CV technology offered in the pilot.

Goal 2: Improve Mobility in the Central Business District (CBD)

- Objective 1: Replace existing traffic controllers and control systems at key intersections with intelligent-signal (I-SIG) CV technology to improve traffic progression at identified problem areas.
- Objective 2: Provide TSP applications to help HART buses stay on a predictable schedule.

Goal 3: Reduce the Number of Safety Incidents within the Pilot Area

- Objective 1: Provide detection of pedestrians and warnings to drivers of potential pedestrian conflicts.
- Objective 2: Provide detection of potential vehicle conflicts and warnings to pedestrians.

- Objective 3: Provide early detection of wrong-way drivers and issue warnings to wrong- way drivers and upstream motorists
- Objective 4: Give drivers warnings of the REL exit curve and stopped vehicles ahead
- Objective 5: Provide detection and warning of potential conflicts between streetcar and vehicles

Goal 4: Reduce Environmental Impacts within the Pilot Area

- Objective 1: Provide CV Mobility and Safety applications to improve overall mobility and reduce stops and idle time within the CBD, thus reducing emissions
- Objective 2: Provide TSP applications to reduce idle time of HART buses

Goal 5: Improve Agency Efficiency

- Objective 1: Improve traffic data collection capability, reducing the costs of collecting data
- Objective 2: Reduce the number of incidents and police and rescue responses to incidents
- Objective 3: Reduce crashes and time agencies take to gather data
- Objective 4: Improve technology for crash statistics gathering
- Objective 5: Improve scheduling and dispatching of HART vehicles with improved trip times and vehicle information
- Objective 6: Reduce overhead of THEA responding to wrong-way entries and crashes on REL exit ramp

Goal 6: Develop Business Environment for Sustainability

- Objective 1: Work with CAMP and third party developers to develop business cases for advancing CV-ready vehicles
- Objective 2: Work with industry sectors that will benefit from CV implementation, e.g.: insurance carriers, fleet managers, safety organizations, etc., to provide education on the benefits and seek support for advancement of the system
- Objective 3: Work with Chambers of Commerce and other business organizations to educate members on the return on investment from increased mobility.
- Objective 4: Work with state and local Government to encourage positive legislation and funding in support of CV technology.

2.2 CV Apps and Use Cases

THEA intends to deploy ten different CV apps in the Tampa Pilot region that fall under the four categories of V2I and V2V enabled safety applications, mobility applications, and agency data applications. The Use Cases are amply treated in the ConOps (THEA, February 2018) and succeeding Tasks.

Approximately 40 RSUs will be installed on city streets. Up to 1100 vehicles will be equipped with OBUs. It is expected that several the transit vehicles at HART will be equipped – 10 buses and 9 streetcars.

2.2.1 Apps, Use Cases and Locations

The THEA CV Pilot Deployment is an experiment that uses a subset of the applications, or apps, that are delineated in the Connected Vehicle Reference Implementation Architecture (CVRIA) (Iteris, Accessed June 2015) as well as apps created specifically for the THEA CV Pilot. The project uses ten apps from CVRIA and the THEA CV Pilot specific apps and are listed in Table 1 with a brief description. Several of the applications to be examined in this traffic-effects study were tested in the University of Michigan Transportation Research Institute (UMTRI) CV Safety Pilot Model Deployment (EEBL, FCW and IMA) (Harding, et al., August 2014).

Table 1: CV Apps in the THEA CV Pilot.

Application	Description

Application	Description
End of Ramp Deceleration Warning (ERDW)	Alerts driver approaching curve with speed safety warning
Emergency Electronic Brake Light (EEBL)	Enables broadcast to surrounding vehicles of severe braking
Forward Collision Warning (FCW)	Warns driver of impending collision ahead in same lane
Intersection Movement Assist (IMA)	Indicates unsafe (i.e., wrong way) entry into an intersection
Intelligent Traffic Signal System (I-SIG)	Adjusts signal timing for optimal flow along with PED-SIG and TSP
Transit Signal Priority (TSP)	Allows transit vehicle to request and receive priority at a traffic signal
Vehicle Turning Right in Front of a Transit Vehicle (VTRFTV)	Alerts transit vehicle driver that a car is attempting to turn right in front of the transit vehicle
Wrong Way Entry (WWE)	Warns driver of potential and actual Wrong Way travel direction
Pedestrian Collision Warning (PCW)	Alerts vehicle to the presence of pedestrian in a crosswalk
Probe Date Enabled Traffic Monitoring (PDETM)	Uses vehicles as probes to calculate travel times

Source: (THEA, Task 2, ConOps, February 2018).

The THEA CV Pilot has developed six Use Cases that combine the ten CV apps. They are summarized in Table 2.

Table 2: THEA CV Pilot Deployment Use Case Summary

Use Case	Condition	Location
UC1	Morning Backups	Selmon Expressway REL at E. Twiggs Street
UC2	Wrong Way Entry	REL at E. Twiggs Street and Meridian Street
UC3	Pedestrian Safety	E. Twiggs Street at George E. Edgecomb Courthouse
UC4	Transit Signal Priority	REL to Marion Street Transit Mall
UC5	Streetcar Conflicts	Channelside Drive
UC6	Traffic Progression	Meridian Avenue and Florida Avenue

Source: (THEA, Task 2, ConOps, February 2018)).

Figure 1. Focused Pilot Area

Source: THEA CV Pilot Concept of Operations, FHWA-JPO-16-311

2.2.1.1 Use Case 3: Pedestrian Conflicts

At the George E. Edgecomb Hillsborough County Courthouse, there is one primary mid-block crosswalk for pedestrian access to/from the main parking garage. Lack of attention by drivers causes a safety concern for pedestrians trying to reach the courthouse. Planned CV deployments in this Use Case include:
V2I - Pedestrian Collision Warning

2.2.1.2 Use Case 4: Transit Signal Priority

Marion Street is a two-lane urban arterial in the heart of the Tampa CBD that serves as the primary bus route and Transitway and terminates on the north end at the Marion Transit Center. HART operates several routes that converge onto Marion Street at the Marion Street Transit Station. Along these routes, many of the bus stops are on the near-side approach to an intersection. When there is congestion, buses are unable to reach their stops causing them to potentially fall behind schedule, thus, causing a mobility concern. CV applications planned for deployment of this Use Case include:

- V2I - I-SIG
- V2I - Transit Signal Priority (TSP).

2.2.1.3 Use Case 5: TECO Streetcar Conflicts

The TECO Streetcar Line, operated by HART, runs along Channelside Drive from the Amalie Arena area up Channelside Drive and past the Selmon Expressway. As the pedestrians disembark from the streetcar and

the streetcar prepares to depart, it is possible for a vehicle to attempt a right turn in front of the streetcar. The potential of a streetcar-vehicle crash and a pedestrian incident are safety concerns. CV Technology will be used to provide information to streetcar operators and auto drivers to improve safety at these locations. The CV applications to be used in this Use Case are:

- V2I - Vehicle Turning in Front of Transit Vehicle (VTRFTV)

2.2.1.4 Use Case 6: Traffic Progression Enhancement

There is significant congestion and delay along Meridian and Florida Avenue during morning peak travel periods. The interaction of traffic modes increases the potential for pedestrian incidents, creating a safety concern. The CV technologies that will be used to improve mobility and safety through the downtown area for this Use Case are:

- V2I - I-SIG
- V2I - Probe Enabled Traffic Monitoring (VDTO in CVRIA).

3 Pilot Funding

The THEA CV Pilot is being designed, deployed and operated in three phases. Phase 1 is a contract between the USDOT and THEA and covers 100% of the costs, based on the original proposal submitted by THEA, for the design activities associated with the Pilot deployment. Phases 2 and 3 cover the final design, implementation, testing, operations and data collection for the duration of the pilot. Phases 2 and 3 are being contracted as a cooperative agreement between THEA and the USDOT. Ongoing operations after the completion of Phase 3 are not funded by the USDOT. This section outlines the funding that will be used for phases 2, 3 and continuing operations.

THEA is funded entirely by toll revenues from the facility. These revenues must cover the Operations, Maintenance and Administration expenses, renewal and replacement costs and debt servicing costs. THEA annually produces a 30-year work program to account for not only the expenses associated with the expressway operations, but also the anticipated revenue and a work program to cover expansion activities. The most current work program is provided in Appendix C. The work program shows THEA funding for both the match associated with the Pilot and with the ongoing operations. The CV Pilot Budget line item is specific to the activities associated with the Pilot activities (Phases 1-3). Ongoing operations are covered in the later section on "Automated Connected Vehicle Support." Appendix C does not include the entire 30-year work program, only the pages that are relevant to the THEA CV Pilot.

3.1 Phases 2 and 3

Phase 2 of the THEA CV Pilot includes the final design, procurement, implementation, testing and preliminary operations of the pilot site. Phase 3 of the Pilot includes the operations, data collection and performance metrics calculation by both THEA (which is part of the Phase 3 funding) and by the USDOT and their separately funded evaluation contractor. Phases 2 and 3 are funded through a cooperative agreement between the USDOT and THEA. The USDOT funding covers 80% of the costs identified through the original response to the USDOT BAA and THEA. THEA has budgeted the match as a 100% hard cash match (not a soft match) as shown in Appendix C.

3.2 Ongoing Operations

THEA develops and approves a work program that financially accounts for the on-going needs of its facilities. In its most recent work program THEA has programmed funds beginning in Fiscal Year 2017 through Fiscal Year 2047 to support automated and connected vehicle activities including operating and maintaining the roadside equipment and networks associated with this Pilot Deployment. A total of $6.9 million to fund these activities is being accounted for and funded by THEA revenue. These needs are used in the agency's financial forecasts and are treated as a priority as are any operational, maintenance and system preservation needs are. In other words, this operations and maintenance funding is considered core and only after the payment of debt service in hierarchy of funding priorities.

4 On-going Operating Agreements

The deployment, operations and maintenance of the Pilot will be the responsibility of THEA and THEA's contractors/vendors. The deployment and operations, however, will require coordination with the City of Tampa, HART and the Florida Department of Transportation. There are already contractual relationships between all of these agencies that, based on an initial review, cover all aspects of the Pilot program and no new agreements or addendums are anticipated. In the event that a new agreement or addendum is needed, it will be included in the annual update and in Task 2-G and 3-E.

The Pilot program development and deployment is also reliant on vendors and partners, including, but not limited to, HNTB, Siemens, BrandMotion, Sirius and CUTR. These vendors are all under contract with THEA to provide this support. At this point, the need, scope and appropriate contractual relationship for these vendors beyond Phase 3 has not been identified. Any ongoing need, roles and responsibilities and necessary agreements with these vendors will be documented in the annual updates and in Tasks 2-G and 3-E.

4.1 City of Tampa and THEA

As mentioned earlier, City of Tampa operates the Traffic Management Center (TMC) that is responsible for operations of all traffic control devices at intersections and areas that will be effected by the Pilot Deployment. In addition, the City operates the Reversible Express Lanes (REL) for THEA including all ITS devices. An interlocal agreement was signed on February 9, 2006 and recorded with the Circuit Court of Hillsborough County, Florida. The agreement is a 20-year arrangement that THEA provide the City a TMC facility and that the City provide operation of the REL.

The Interlocal Agreement is provided in Appendix D. Appendix "C" of the interlocal agreement is the "Operations Manual" and can be updated from time to time as needed. This document (and any other relevant documents) governs the relationship between CoT and THEA and, based on an initial review, includes provisions for all aspects of the Pilot. As the Pilot approaches final design, the interlocal agreement will be reviewed and updated if necessary and documented in the annual update to the Task 10 report and in Tasks 2-G and 3-E. Issues that may need to be considered by modification of the existing agreement include:

- Maintenance of devices purchased under the CV Pilot Deployment that are not installed on a THEA owned facility post Phase 3
- Maintenance arrangements for equipment deployed in the pilot on THEA- owned facilities – Selmon Expressway, REL, Meridian post Phase 3
- CV Deployment data sharing arrangements
- Replacement and renewal costs of equipment off THEA owned facilities post Phase 3

4.2 City of Tampa and Florida Department of Transportation

The City of Tampa and the Florida Department of Transportation have a "Traffic Signal Maintenance and Compensation Agreement," the most recent version of which was approved on December 23, 2015. Under this agreement, FDOT compensates the City for the maintenance of all traffic control devices and associated communications equipment for devices that are on the State Highway System (SHS). Exhibit A of the agreement lists the applicable locations and devices. This agreement will need to be reviewed in detail to determine which of the Pilot Deployment locations are located on the SHS and what, if any, modifications are required. The agreement defines the maintaining agency's responsibility to include, " the maintenance and continuous operation of the traffic signals, interconnected and monitored traffic signals, traffic signal systems (defined as central computer, cameras, message signs, communication devices, interconnect/network, vehicle, bicycle and pedestrian detection devices, traffic signal hardware and software, preemption devices, and uninterruptible power supplies), control devices (defined as intersection control beacons, traffic warning beacons, illuminated street name signs, pedestrian flashing beacons, and emergency/fire department signals and speed activated warning displays)."

As FDOT District 7 is "Key Agency Partner" in THEA Pilot Deployment, discussions will need to continue to take place to determine what if any existing agreements require modification and if any new institutional arrangements are required.

4.3 Hillsborough Area Regional Transit (HART) and THEA

Several of the Pilot Deployment Use Cases will involve the equipping transit vehicles owned and or operated by HART. Specifically, Use Case 4 involves Transit Signal Priority to assist in transit mobility for buses destined to and from the Marion Street Transit mall that serve routes to the east of downtown. This will require a number of HART buses to be outfitted with on-board equipment. In addition, Use Case 5 targets the reduction of automobile conflicts with the TECO Streetcar vehicles. These streetcars will also require installation of on-board units (OBU).

While the acquisition and operation of the transit OBUs are considered as a part of the Phase 2 and 3 deployment, there are understandings that will need to be reached. These will require a formal agreement addressing issues such as:

- The entity performing the installation
- Location of installation facility
- Access to vehicles for checking and maintaining OBUs during Phases 2 and 3
- Financial obligations for on-going operation after completion of Phase 3
- Roles and responsibilities for potential expansion of the deployment to additional transit vehicles

These three agreements with Key Agency Partners will be examined and discussed in Phase 2 of the deployment with resolution of the major issues being completed prior to the start of Phase 3. It should be noted that there may be other agreements between these and other partners that will require development or modification during subsequent phases of work.

5 Governance

The THEA CV Pilot will engage multiple stakeholders in the Tampa Bay area, including THEA, the City of Tampa and HART. The success of the long-term operations requires a close working relationship amongst all of these stakeholders for both policy and technical issues. This chapter briefly outlines the governance models that will be used for both.

5.1 Stakeholders

A list of Stakeholders was developed and presented as part of the Concept of Operations. From the Review Panel Roster a listing of Stakeholders and their roles in the project is shown in Table 3.

There are many stakeholders identified for the Pilot. Core team stakeholders are the members of the project team. Key Agency Partners are those agencies that are directly affected by the Pilot Deployment. Key Stakeholder Agencies and Key Stakeholder Organizations are those agencies/organizations that may interact with the pilot. Key Technology and Vendor Stakeholders are those private companies that may supply hardware or software to be used during the operation of the pilot. Project Originators is the USDOT offices that are overseeing the pilot project. Independent Evaluators are those entities that are supporting the USDOT in conducting the pilot project. Pilot participants such as drivers, bus drivers, and streetcar operators are user stakeholders. Because of the number of participants is large, these participants will be represented by other stakeholders such as TECO Streetcar Line, HART, or City of Tampa.

Table 3. THEA CV Pilot Stakeholders

Partner/Stakeholder Organization	Stakeholder Category
Tampa Hillsborough Expressway Authority	THEA CV Team (Lead Agency)
HNTB Corporation	Core Team Member
City of Tampa (COT) Traffic Engineering/Traffic Management Center (TMC)	Core Team Member
Siemens Industry, Inc. Mobility Division - Intelligent Transportation Systems	Core Team Member
BrandMotion	Core Team Member
University of South Florida Center for Urban Transportation Research (CUTR)	Core Team Member
Global 5 Communication	Core Team Member
Salus IRB	Institutional Review Board
Hillsborough Area Regional Transit (HART) TECO Streetcar Line (a Division of HART)	Key Agency Partner
Florida Department of Transportation (FDOT) District 7 (D7)	Key Agency Partner
Hillsborough County	Key Stakeholder Agency
Amalie Arena	Key Stakeholder Agency
City of Tampa Police (TPD)	Key Stakeholder Agency

Partner/Stakeholder Organization	Stakeholder Category
Florida Highway Patrol – Tampa	Key Stakeholder Agency
Hillsborough County Sheriff's Office	Key Stakeholder Agency
Tampa Bay Port Authority (Cargo and Cruise)	Key Stakeholder Agency
Tampa Convention Center	Key Stakeholder Agency
Tampa Downtown Partnership	Key Stakeholder Agency
Tampa Bay Lightning Hockey Team	Key Stakeholder Organization
Tampa Bay Lightning Hockey Club	Key Stakeholder Organization
Crash Avoidance Metrics Partnership (CAMP)	Key Technology Stakeholder
Metrotech Net, Inc.	Key Vendor Stakeholder
USDOT ITS JPO	Project Originator
USDOT FHWA	Project Originator
Noblis	USDOT Support Contractor
Texas A&M Transportation Institute	Independent Evaluator (IE)
Volpe	Independent Evaluator (IE)

***Source*:** (THEA, Task 2, ConOPs, February 2018)

5.2 Policy Governance

THEA has developed partnerships of multiple stakeholders to deploy infrastructure, both in the vehicle and along the roadside, and applications using data captured from multiple sources (e.g., vehicles, mobile devices, and infrastructure) across multiple elements of the surface transportation system (i.e., transit, arterial, and electronically tolled roadways) to support improved system performance. The deployment of the Pilot will require partnerships as the Pilot site comprises multiple jurisdictions. These partnerships and the decision making authority and guidance follow the ad hoc organization that already exists as is authorized by the interlocal agreement identified in Section 4.1:

- THEA owns and maintains the TMC while the City of Tampa staffs the TMC.
- The City of Tampa operates and maintains signing and flashers at the mid-block crossing at the County courthouse. The City of Tampa also operates the parking garage across from the courthouse.
- THEA owns the Meridian Avenue roadway and the City of Tampa operates the Meridian Avenue signals.
- The City of Tampa owns the city streets with the exception of Meridian Avenue and operates the traffic signal system citywide.
- THEA owns and operates the Selmon Expressway, a primary route into downtown.
- HART owns, maintains, and operates its transit operations center. HART operates an express route along and through the downtown city streets to the Marion Street Transit Station.

During the course of the project (phases 1-3), THEA is the responsible entity for the execution of the CV Pilot. As such, THEA will be the lead agency for the entire project, including technical, policy and funding. However, given the cooperative nature of the project between THEA and the USDOT and between THEA and the stakeholders identified above, cooperation and partnership is necessary for the successful execution of the pilot and will follow the direction of the interlocal agreement identified in Section 4.1.

5.2.1 USDOT

During the course of the Pilot, THEA will be participating in regular coordination meetings. To date, these meetings have been via teleconference on a bi-weekly basis with larger, monthly meetings that include the entire team on both the THEA and USDOT sides to ensure that all issues are identified and addressed. During the course of Phase 2 and 3, these meetings will continue to ensure coordination, however, the frequency may change over the course of the project as needed or warranted.

5.2.2 Local Coordination and Governance

The agreements between THEA and the local agencies are identified in Section 4. Coordination between these agencies has been on an as-needed basis, with THEA taking the lead on all technical and other issues. As the project shifts from preliminary to final design and into implementation and operations, it is anticipated that additional coordination will be required between all of the partners. The coordination is spelled out in the Interlocal agreement identified in section 4.1, including the activities necessary for coordination to support the Pilot. Regular coordination meetings will be scheduled between the local agencies to identify and address these issues as they arise using the ad hoc organization that already exists as authorized by the interlocal agreement. However, with THEA as the lead agency on the project, THEA will take responsibility for all implementation issues to ensure the successful deployment and operations.

5.3 Technical Project Governance

The technical project governance will generally be handled by the technical team through the configuration management process which will be defined and well documented at a later point. However, the technical project team will follow the guidance from section 5.4.3 of the FHWA Systems Engineering Guide for Intelligent Transportation Systems.

> **"**Once the configuration items have been identified, any changes to them must be handled in a controlled fashion. All changes must be clearly described and presented to the CCB to assess the technical, cost, and schedule impacts. Only after the CCB has approved the change should it be implemented and the baseline changed. Once the change has been approved and implemented, it is formally documented, the baseline is updated, and the control number is updated."

For the THEA CV Pilot, the team is basing the Configuration Management program by assuming that the "configuration items" are the Phase 1 Requirements, and that a Requirements Management process exists during Phase 2 to add, delete or restate Requirements when agreed by the authorized stakeholders (Change Control Board, CCB) as the applications are better understood. For example, we may have a requirement that is at odds with the app implementation. At that point, the CCB would agree to restate the requirement to fulfill the need according to the existing app.

At the start of Phase 2, each organization team member will identify a CCB point person to support Configuration Management activities. Although configuration management typically focuses on the events being developed and deployed by the THEA team, over the life of the project, it's likely that each of the agencies involved will make changes to their infrastructure as well that could impact the operations. These changes include settings on traffic signal controllers, network and firewall settings being modified or new hardware being deployed in the field, including in controller cabinets and fleet vehicles. As a result, each of the partner agencies will be asked to identify a CCB point person to ensure that any changes are identified, documented and shared with the entire project team.

The CCB will consist of the System Engineering Lead, Infrastructure Integration Lead, In-vehicle Integration Lead, and a to be determined number of key technical staff. The CCB's responsibility is to manage procedures for handling proposed changes to items under configuration control, determine the disposition of proposed changes, and the role of the USDOT in configuration control. During Phase 2 as the project moves through the system engineering process, the CCB will review the results of testing, work with the project team to address changes needed for the CCB to recommend the project progress through the quality gate. Additionally, the CCB will meet with the stakeholders and make a recommendation as to whether to advance the project through the quality gates. The stakeholders are the ultimate approvers for advancing the project through a quality gate. There are quality gates following the Unit/Device testing, Subsystem Testing, Validation testing, and Verification testing. Following each of these tests, the CCB meets, determines whether to recommend advancing the project, and shares its recommendation with the stakeholders. The CCB will also be called to meet virtually or in-person as necessary during Phases 2 and 3 to support other proposed changes as they may arise. The CCB will be chaired by Steve Novosad and will meet at THEA offices.

6 Regional Expansion Model

One of the primary objectives of the THEA CV Pilot is that it can serve as a catalyst for the deployment of Connected Vehicle technologies in the entire Tampa Bay region. To support this initiative, THEA will be working with our primary partners, the City of Tampa, FDOT and HART to create a region-wide Connected Vehicle Task Force. The primary mission of this Task Force is to support the deployment of Connected Vehicle infrastructure in the region in a uniform manner to ensure interoperability and interagency coordination as these deployments transition from concept to planning to operations. While THEA plans to initiate this process, the intent is to work with the other partner agencies to ultimately host this task force, including funding the studies and administrative activities identified below as much of this work is beyond the THEA's scope with the CV Pilot and beyond THEA's overall charter and mission. It's THEA's intent that the Task Force initiate the following region-wide initiatives in support of connected vehicles:

- **Increase participation from infrastructure owners and operators**. The current Pilot is focused on approximately 1 square mile and has a fairly limited number of agencies involved. Expansion throughout the region will require coordinating with additional agencies. The primary new partners will include Hillsborough County, City of St. Petersburg, Pinellas, Manatee and other surrounding Counties as well as the appropriate local MPOs. This cross-section of agencies are the major transportation infrastructure owners and operators in the immediate area, and any CV expansion would likely start in one of these areas. Reaching out to these agencies and beginning the educational activities regarding CV infrastructure deployment and operations and crafting any necessary formal agreements will be critical to the long-term success of CV in the Tampa Bay area.
- **Develop a Regional CV Master Plan.** Because the ownership of transportation infrastructure in the Tampa Bay area is not homogenous, there is a need for a regional plan to support the deployment of infrastructure and applications as well as the operations of the systems (which is addressed later). The intent of the regional plan, therefore, is to serve as a guide for future deployment in terms of physical locations of devices, the justification of the placement of those devices and an initial cost for the deployment, operations and maintenance of those devices. Additionally, a preliminary communications plan will be developed to ensure connectivity of each infrastructure device to a central system to support operations and data collection and distribution. The plan will be used to permit budgeting for deployment activities, support future grant applications and other actions associated with the regional CV master plan by each agency independently or cooperatively amongst multiple agencies.
- **Develop a Regional CV Operations Plan.** The deployment and ongoing operations of CV infrastructure in the THEA Pilot area is a controlled deployment. The CV Operations Plan will also need to include a formal CV Asset Management effort that includes inspection, maintenance, upgrades and configuration management and control. While there are multiple agencies involved, the scale of the infrastructure deployment is limited. As a result, operational issues and decisions are simplified. System monitoring, for example, can be done through the City of Tampa TMC and if a technical issue is identified at any of the sites, a repair crew can be quickly mobilized to rectify the situation. Likewise, configuration control for the 44 sites is straightforward, and as RSU firmware needs to be upgraded or applications are updated, it's a relatively easy issue to test the changes and track the process of deployment of the enhancements. As deployment spreads across the region, it will become increasingly difficult to support operations. The Regional CV Operations Plan will address items that include CV asset management plan and program, including configuration management and

control, operations and reporting of issues (including the development of an operating framework to determine if a central or distributed operations framework needs to be deployed), and maintenance response time and reporting requirements.

- **Develop Regional CV Technical Requirements**. Through the process of developing the THEA CV Pilot, the THEA team has developed formal requirements for hardware and applications. As part of the Tampa Bay CV Task Force, formal technical requirements for deployment will be developed and approved for the entire region to ensure a uniform deployment across the region. These technical requirements will include specifications for hardware, including RSU's antennas, guidelines for installation of the hardware, including configuration of the RSUs, network requirements for backhaul and security and requirements for channel usage across the region. While much of this work has been done as part of the Pilot efforts, the Task Force will be responsible for "adopting" the requirements or modifying them as needed to support the entire region.
- **Develop a region-wide data sharing and management plan.** One of the key issues associated with CV deployments has to do with data ownership and sharing. In an area like Tampa Bay where a deployment along a corridor could be implemented by 5 or more agencies, it's important that the issues associated with data be addressed at an early stage to avoid complications and misunderstandings at a later date, as well as to maximize the potential for both operations and public-private partnerships to be developed. The regional data plan will be built on the foundation of the deployment and operations plans as those two plans will lay the groundwork for a regional communications architecture. The plan will include what data is collected, how it is used by the members of the task force to support the goals of safe and efficient transportation throughout the Tampa Bay area, how it is stored and transmitted and how it is ultimately shared with potential third party users. In addition to the obvious engineering issues associated with data, this plan will also require a legal evaluation of each stakeholders existing laws and policies as well as potentially crafting a legal framework to protect the agencies and the data.
- **Evaluate and support funding and business opportunities.** It is clear that the successful deployment and operations of a connected vehicle system will require funding. Although there had been discussions about a large influx of federal funds to support a nationwide deployment, the likelihood of a federal deployment funding strategy is very small. As a result, deployment, operations and maintenance will need to be funded using either existing funding sources or from new, innovative funding. Once a formal plan is developed for both deployment and operations, the funding necessary for those two components can be calculated using the assumptions in the AASHTO Footprint Plan or a more sophisticated model. This will give the Task Force a good starting estimate for the funding necessary to bring the plan for a regional deployment to fruition. While the Task Force will evaluate traditional funding sources to support deployment and operations, the Task Force will also be charged with evaluating and commenting on potential partnership activities. Like the issues associated with the technical deployment identified above, partnerships need to be consistent across the entire region to be effective for the entire region. As a result, partnership opportunities associated with right-of-way access for traffic signal and street light poles or opportunities associated with data, need to be evaluated at a regional level. The Task Force will be charged with evaluating these potential partnerships and making recommendations as appropriate regarding their potential.

The creation of the task force and the projects identified have not yet been funded.

One of the factors that the region will need to address as the region moves forward developing a plan is the potential need to create a formal authority to support deployment and operations, especially with respect to some of the legal and policy issues surrounding data and the potential opportunities associated with Public

Private Partnerships. While the early work of the Task Force will focus on the key technical issues, the Task Force will also be working with their associated legal bodies to evaluate the need to create a more formal entity.

The THEA team plans to focus on these growth issues, especially the formation and governance of the Task Force once the project shifts from the planning and design in Phase 1 and early Phase 2 and into the implementation and operations phases in Phase 2 of the Pilot.

7 "Mobility as a Service" Concessionaire Opportunities

Although THEA will fund the operations and maintenance of the CV needs along the Meridian Avenue corridor, as part of the sustainability requirement of the THEA CV Pilot the THEA team will be actively working with the private sector to identify concessionaire opportunities to help offset the costs of deployment, operations and maintenance of the connected vehicle infrastructure. The purpose of this effort will be to provide valuable information on an alternate funding model for the CV community. As a whole, the current funding sources for the majority of CV deployments, Federal Grants, are not a long-term sustainable source of funding and will ultimately be insufficient for funding a nation-wide deployment.

The objective of the concessionaire evaluation efforts by the THEA CV Pilot team is to work with potential partners who have concepts for commercially sustainable solutions that are built around products and services that customers are willing to pay for. In the context of the THEA CV Pilot, the term customers is being used in a broad sense in that customers could include vehicle occupants, Internet Service Providers, advertisers or others. The intent is to use the Pilot to gauge the interest of potential partners and support their efforts, within the context of the safety management plan and human use approval, to determine the ability of CV technologies to be deployed in a private funded self-sustaining manner.

Two examples have already been brought forward by a potential partner for the THEA CV Pilot. While these two examples are early in the exploratory phase and are not solidly defined, they are presented to provide examples of the discussions that are currently occurring. The first involves a Public-Private Partnership (P3) that is focused around Mobility-as-a-Service (MaaS). This concept would be the in-vehicle THEA CV deployments that would allow 3rd-party service providers to compete for access to customers. As a pull-based service it would involve the development of an open framework for access to the in-vehicle (within the context of the safety management plan and the human use approval) that would allow the 3rd-party providers to differentiate their offerings with price and value-added services. Public oversight would occur through an authority like the one defined in the previous section that would provide the basic CV services (safety and operations) who would create the platform and the rules through which 3rd-party and independent service provider would connect. Sustainability in this business model would be derived from the 3rd-party and independent service providers paying fees to the public authority.

A second example that's been brought forward would be to use the CV platform as an open framework for urban parking for both identifying open spaces and paying for parking through the system. The concept is that the CV platform would allow public and private parking providers to compete for access to customers. Through the platform, drivers with properly equipped vehicles could find, reserve, access and purchase parking as they approach an urban area. Third party providers could offer different quality or price incentives for different locations, integrate with the vehicle's navigation system to provide directions to the parking facility or spot and provide merchant or restaurant discounts (or parking validation). By owning the underlying system, the public authority could essentially charge for each transaction to support CV sustainment activities. This concept may include testing using a technology shown at the 2014 ITS Annual Meeting that uses 5.9GHz DSRC signals to identify the occupancy of parking spaces to test the concept of a payment-infrastructure free parking facility that could also be used as a further incentive to entice private vehicle owners to equip their vehicles with an aftermarket in-vehicle DSRC radio unit.

It's important to note that all of these potential concepts will require significant development activities that are outside the scope of the THEA CV Pilot. Specifically the in-vehicle devices. The successful deployment of these concessionaire approaches require in-vehicle components that will either have a significantly more advanced Human Machine Interface (HMI) than is being developed for the applications listed in Section 1 or will require integration with a navigation system already implemented in the vehicle. Once the basic communication system is deployed (Roadside DSRC Radio units and the backhaul communications network), the THEA CV Pilot team could be in a position to support the types of activities necessary by 3rd parties to do their testing and development activities. Through the participation of all of the area partners, facilitated by a centralized operator (which could be public or private organization), the long-term financial sustainability of the CV system can be realized.

Urban parking is only one aspect of value-added benefits that could drive financial sustainability. During the coming months, CV Pilot Projects will be open to investigating how other opportunities to partner with public and private organizations with the objective of identifying and implementing approaches that will help financially support the long-term operation of the CV system.

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Appendix A. Acronyms

Table 4. Acronyms

ACRONYM	DEFINITION
BSM	Basic Safety Message
CAMP	Crash Avoidance Metrics Partnership
CAN	Controller-Area Network
CBD	Central Business District
CRL	Certificate Revocation List
COT	City of Tampa
CU	Controller Unit
CUTR	Center for Urban Transportation Research
CV	Connected Vehicle
CVRIA	Connected Vehicle Reference Implementation Architecture
DSRC	Dedicated Short Range Communications
EE	End Entity
EEBL	Emergency Electronic Brake Light
ERDW	End of Ramp Deceleration Warning
FCW	Forward Collision Warning
FDOT	Florida Department of Transportation
FHWA	Federal Highways Administration
FIPS	Federal Information Processing Standard
HART	Hillsborough Area Regional Transit
HMI	Human Machine Interface
IE	Independent Evaluator
IEEE	Institute of Electrical and Electronics Engineers
IMA	Intersection Movement Assist
IP	Internet Protocol
IRB	Institutional Review Board
I-SIG	Intelligent Signal Systems
ITS	Intelligent Transportation Systems
JPO	Joint Program Office

ACRONYM	DEFINITION
MaaS	Mobility as a Service
MMITSS	Multi-Modal Intelligent Traffic Signal System
MUTCD	Manual of Uniform Traffic Control Devices
NTCIP	National Transportation Communications for Intelligent Transportation System Protocol
O&M	Operations and Maintenance
OBE	On-Board Equipment
OBU	On-Board Unit
OSADP	Open Source Application Development Portal
PCW	Pedestrian Collision Warning
PDETM	Probe Data Enabled Traffic Monitoring
RDE	Research Data Exchange
REL	Reversible Express Lanes
RLVW	Red Light Violation Warning
RSD	Retrofit Safety Device
RSE	Roadside Equipment
RSU	Road Side Unit
SAE	Society of Automotive Engineers
SCMS	Security Credential Management System
SHS	State Highway System
SPaT	Signal Phase and Timing
THEA	Tampa Hillsborough Expressway Authority
TMC	Transportation Management Center
TPD	Tampa Police Department
TRP	Transit Safety Retrofit Package
TSP	Transit Signal Priority
USDOT	United States Department of Transportation
V2I	Vehicle-To-Infrastructure
V2V	Vehicle-To-Vehicle
V2X	Vehicle-To-Everything
VDTO	Vehicle Data For Traffic Operations
VMS	Variable Message Sign
VSC-A	Vehicle Safety Communications Applications
VTRFTV	Vehicle Turning Right in Front of a Transit Vehicle
WAVE	Wireless Access In Vehicular Environments
WSA	Wave Service Announcement
WWE	Wrong Way Entry

Appendix B. Glossary

Table 5. Glossary

Term	Definition
1609.2 - IEEE Standard for Wireless Access in Vehicular Environments — Security Services for Applications and Management Messages	Secure message formats and processing for use by Wireless Access in Vehicular Environments (WAVE) devices, including methods to secure WAVE management messages and methods to secure application messages are defined in this standard. It also describes administrative functions necessary to support the core security functions.
Accelerated Vehicle to Infrastructure (V2I) Safety Applications ConOps	Describes the concept of operations for three connected vehicle V2I safety applications (RLVW, SSGA, CSW) related to intersection safety and speed management.
Accelerated Vehicle to Infrastructure (V2I) Safety Applications System Requirements	Describes the system requirements for three connected vehicle V2I safety applications (RLVW, SSGA, CSW) related to intersection safety and speed management.
Basic Safety Message (BSM)	The outgoing message sent by a vehicle that communicates information and data about its current state to a set of neighboring vehicles. That information or data is used by Vehicle-to-Vehicle (V2V) safety applications in the neighboring vehicles to warn users of crash-imminent situations.
Bootstrapping	The process of configuring and updating an uninitialized vehicle's on-board equipment (OBE), which results in the issuance of the OBE's enrollment certificate and transition to the Operating Mode.
Certificate Revocation List (CRL)	A list of certificate identifiers that the Misbehavior Authority (MA) function identifies to be misbehaving due to technical error or human malfeasance.
Dedicated Short Range Communications (DSRC)	The one-way or two-way short-to-medium range wireless communication channels specifically designed for automotive use and a corresponding set of protocols and standards. DSRC is sometimes referred to as Wireless Access in Vehicular Environments (WAVE) in other literature.
FIPS Publication 140-2 Security Requirements for Cryptographic Modules	The FIPS protocol for computer security standard used to accredit cryptographic modules.
IEEE 829-2008 Standard for Software and System Test Documentation	Specifies the form of a set of documents for use in eight defined stages of software testing and system testing, each stage potentially producing its own separate type of document.
MMITSS-AZ 1.0	Source code for MMITSS prototype, including Intelligent Traffic Control, Priority Control, Pedestrians Smartphone app, and Performance

Term	Definition
	Observer.
MMITSS-CA Field Test	Source code for MMITSS prototype for California Field Test, including Intelligent Traffic Control, Priority Control, Pedestrians Smartphone app, and Performance Observer.
Multi-Modal Intelligent Traffic Signal System (MMITSS) ConOps	Captures a vision and a roadmap for the development, deployment, operation and maintenance for MMITSS, which includes I-SIG, TSP, Pedestrian Mobility, Freight Signal Priority, and Emergency Vehicle Priority
Multi-Modal Intelligent Traffic Signal System (MMITSS) Impact Assessment	Evaluates the potential network-wide impacts of the Multi-Modal Intelligent Transportation Signal System (MMITSS) based on a field data analysis utilizing data collected from a MMITSS prototype and a simulation analysis
Multi-Modal Intelligent Traffic Signal System Final System Requirements	Describes the systems requirements for the MMITSS, which includes the following CV applications I-SIG, TSP, Pedestrian Mobility, Freight Signal Priority, and Emergency Vehicle Priority
Multi-Modal Intelligent Traffic Signal System- System Design	Describes a high level system and software design for the MMITSS, which includes the following CV applications I-SIG, TSP, Pedestrian Mobility, Freight Signal Priority, and Emergency Vehicle Priority
On-Board Equipment (OBE)	The user equipment that provides an interface to vehicular sensors for safety measures, as well as a wireless communication interface to the Location Obscurer Proxy (LOP) for Security Credentials Management System (SCMS) processes.
Open Source Application Development Portal (OSADP)	Designed to enable stakeholders to collaborate and share insights, methods, and source code on a set of research projects sponsored by the USDOT Dynamic Mobility Applications program (DMA). The portal also contains test data sets for bench-marking the applications, procedures for testing the applications, and supporting documentation for running the test procedures.
Pseudonym Certificates	The implicit, short-term certificates used during message exchange in the pseudonym system. These certificates do not explicitly contain the holder's public key, but contain a reconstruction value which can be combined with the CA's public key to derive the holder's public key. They are smaller than traditional certificates which contain the holder's public key explicitly and offer performance advantages when messages are verified infrequently.
Research Data Exchange (RDE)	RDE is a transportation data sharing system that promotes sharing of both archived and real-time data from multiple sources (including vehicle probes) and multiple modes.
Retrofit Safety Device (RSD) Project	Source code and detail information on the RSD kits which includes a DSRC radio and antenna(s), GPS receiver and antenna, embedded gyroscope, J1939 Controller Area Network (CAN) interface, human machine interface (HMI), and interface to a Data Acquisition System (DAS).

Term	Definition
Roadside Equipment (RSE)	An infrastructure node that serves as an intermediary in Vehicle-to-Vehicle (V2V) two-way communications between CMEs and vehicles. RSE may also send its own messages to OBE
SAE J2735 Dedicated Short Range Communications (DSRC) Message Set Dictionary	Standards for DSRC to meet the requirements of applications that depend upon transferring information between vehicles and roadside devices as well as between vehicles themselves.
SAE J3067- Candidate Improvements to Dedicated Short Range Communications (DSRC) Message Set Dictionary (SAE J2735)Using Systems Engineering Methods	Specifies dialogs, messages, and the data frames and data elements that make up the messages specifically for use by applications intended to utilize the 5.9 GHz DSRC for Wireless Access in Vehicular Environments (DSRC/WAVE, referenced in this document simply as “DSRC"), communications systems.
Security Credentials Management System (SCMS)	The set of organizations that house the various functions and activities necessary for the certificate management process.
Signal Phase and Timing (SPaT)	A message that is used to convey the current status of a signalized intersection. The receiver of this message is able to determine the current state of each phase and when the expected next phase is to occur.
Transit Safety Retrofit Package Development Applications Requirements	Describes the application requirements for the Transit Safety Retrofit Package, which includes five connected applications (PCW, VTRW, CSW, FCW, EEBL), focusing on system, hardware and software requirements.
Transit Safety Retrofit Package Development Architecture and Design Specifications	Describes the Architecture and Design Specifications, with design components including hardware and software overview, description of TRP inputs and outputs, detailed description at each of the architectural components, description of the external roadside equipment (RSE) that interfaces with the TRP for five connected applications (PCW, VTRW, CSW, FCW, EEBL).
Transit Safety Retrofit Package Development TRP Concept of Operations	Describes the concept of operations for five connected applications (PCW, VTRW, CSW, FCW, EEBL) related to transit.
Transportation Management Center (TMC)	The physical TMC room and communications infrastructure; excluding the existing TMC software system.
USDOT Connected Vehicle Safety Pilot	Research program that demonstrates DSRC-based connected vehicle safety applications for nationwide deployment.
Vehicle Safety Communications Applications (VSC-A) Final Report	Develop and test communications-based V2V safety systems to determine if DSRC at 5.9 GHz, in combination with vehicle positioning, can improve upon autonomous vehicle-based safety systems and/or enable new communications-based safety applications.
Vehicle-to-Device (V2X)	The wireless communication exchange of messages and data between and among vehicles, infrastructure, and capable nomadic devices within

Term	Definition
	the connected vehicle system.
Vehicle-to-Vehicle (V2V)	A dynamic wireless exchange of data between nearby vehicles that offers the opportunity for significant safety improvements.
WAVE Service Advertisement (WSA)	A message sent by DSRC Provider Terminals (e.g., Roadside Equipment (RSE)) announcing service and channel information so that DSRC User Terminals can determine which services are being offered on which service channels during the service channel interval.
Wireless Access in Vehicular Environments (WAVE)	The IEEE networking, upper messaging, and security layers associated with DSRC. Defines communications conforming to the IEEE 1609 protocol suite and IEEE Standard 802.11-2012, operating outside the context of a basic service set

Appendix C. THEA 30-Year Work Plan

FY 17 Work Program

Project	Phase	Project Total	FY 15 Amount	FY 16 Amount	FY 17 Amount	FY 18 Amount	FY 19 Amount	FY 20 Amount	FY 21 Amount	FY 17-21 Total Cost	Cost to Complete	FY 22 Amount	FY 23 Amount	FY 24 Amount	FY 25 Amount	FY 26 Amount	FY 22-26 Total Cost	FY 27 Amount	FY 28 Amount
Joint Channelside PM: David May	**PL**	$ -	$ 47,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	1.1 Concepts (Sketch Level Analysis)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$	$	$	$	$	$ -	$ -	$ -
	1.2 PD&E	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$	$	$	$	$	$ -	$ -	$ -
	1.3 T&R	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$	$	$	$	$	$ -	$ -	$ -
	1.4 Transit	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$	$	$	$	$	$ -	$ -	$ -
	PE	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	2.1 Prelim	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	2.2 Final	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$	$	$	$	$	$ -	$ -	$ -
	2.3 Post Design Srv	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	ROW	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	3.1 Apprais	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	3.2 Aquis.	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	CST	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	4.1 Prime Contractor	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	4.2 CEI/Management	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	GEC	$ 250,000	$ -	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ -	$ 200,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$	$	$	$	$	$ -	$ -	$ -
	Joint Channelside Total	$ 250,000	$ -	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ -	$ 200,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Joint Channelside Total + Inflation Rates	$ 269,950	$ -	$ 51,350	$ 52,650	$ 53,950	$ 55,300	$ 56,700	$ -	$ 218,600	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	THEA Funding	$ 269,950	$ -	$ 51,350	$ 52,650	$ 53,950	$ 55,300	$ 56,700	$ -	$ 218,600	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Other Funding	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
MacDill AFB PM: David May	**PL**	$	$ 186,000	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$
	1.1 Concepts (Sketch Level Analysis)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$	$	$	$	$	$ -	$	$
	1.2 PD&E	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$	$	$	$	$	$ -	$ -	$ -
	1.3 T&R	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$	$	$	$	$	$ -	$ -	$ -
	1.4 Transit	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$	$	$	$	$	$ -	$ -	$ -
	PE	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	2.1 Prelim	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	2.2 Final	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$	$	$	$	$	$ -	$ -	$ -
	2.3 Post Design Srv	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	ROW	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	3.1 Apprais	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	3.2 Aquis.	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	CST	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	4.1 Prime Contractor	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	4.2 CEI/Management	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	GEC	$ 150,000	$ -	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ -	$ 120,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
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		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$	$	$	$	$	$ -	$ -	$ -
	MacDill AFB Total	$ 150,000	$ -	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ -	$ 120,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	MacDill AFB Total + Inflation Rates	$ 161,970	$ -	$ 30,810	$ 31,590	$ 32,370	$ 33,180	$ 34,020	$ -	$ 131,160	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	THEA Funding	$ 161,970	$ -	$ 30,810	$ 31,590	$ 32,370	$ 33,180	$ 34,020	$ -	$ 131,160	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Other Funding	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CV Pilot Deployment PM: Bob Frey	**PL**	$ 443,071	$ 83,000	$ 27,749	$ 415,322	$	$	$	$	$ 415,322	$	$	$	$	$	$	$	$	$
	1.1 Concepts (Sketch Level Analysis)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	1.2 PD&E	$ -	$ -	$ 2 -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	1.3 T&R	$ 2 -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	1.4 Transit	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	PE	$ 5,736,484	$ -	$ -	$ 3,335,070	$ - 384,226	$ - 1,584,934	$ - 432,254	$ -	$ 5,736,484	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	2.1 Prelim	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	2.2 Final	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	2.3 Post Design Srv	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	ROW	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	3.1 Apprais	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	3.2 Aquis.	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	CST	$ 13,340,283	$ -	$ -	$ 5,836,374	$ 7,503,909	$ -	$ -	$ -	$ 13,340,283	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	4.1 Prime Contractor	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	4.2 CEI/Management	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	GEC	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
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	CV Total	$ 21,519,838	$ 83,000	$ 2,027,749	$ 9,586,766	$ 7,888,135	$ 1,584,934	$ 432,254	$ -	$ 19,492,089	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	THEA Funding	$ 3,815,353	$ 83,000	$ -	$ 1,834,289	$ 1,577,627	$ 316,987	$ 86,451	$ -	$ 3,815,353	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Other Funding	$ 17,704,485	$ -	$ 2,027,749	$ 7,752,477	$ 6,310,508	$ 1,267,947	$ 345,803	$ -	$ 15,676,736	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

FY 17 Work Program

Project	FY 29	FY 30	FY 31	FY 32	FY 33	FY 34	FY 35	FY 36	FY 37	FY 38	FY 39	FY 40	FY 41	FY 42	FY 43	FY 44	FY 45	FY 46	FY 47	FY 26-45 Total Cost
	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount			
Joint Channelside PM: David May	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -			$ -
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CV Pilot Deployment PM: Bob Frey	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$			$
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Project	Phase	Project Total	FY 15 Amount	FY 16 Amount	FY 17 Amount	FY 18 Amount	FY 19 Amount	FY 20 Amount	FY 21 Amount	FY 17-21 Total Cost	Cost to Complete	FY 22 Amount	FY 23 Amount	FY 24 Amount	FY 25 Amount	FY 26 Amount	FY 22-26 Total Cost	FY 27 Amount	FY 28 Amount
ITS-Replace VMS Systemwide PM: Shari Callahan	PE	$ 115,556	$ -	$ -	$ -	$ -	$ -	$ 19,572	$ -	$ 19,572	$ 95,984	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 24,793
	CST	$ 962,967	$ -	$ -	$ -	$ -	$ -	$ 163,097	$ -	$ 163,097	$ 799,870	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 206,606
	CEI	$ 77,037	$ -	$ -	$ -	$ -	$ -	$ 13,048	$ -	$ 13,048	$ 63,990	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 16,528
	GEC	$ 38,519	$ -	$ -	$ -	$ -	$ -	$ 6,524	$ -	$ 6,524	$ 31,995	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 8,264
	Total	$ 1,194,079	$ -	$ -	$ -	$ -	$ -	$ 202,240	$ -	$ 202,240	$ 991,839	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 256,191
	THEA Funding	$ 1,194,079	$ -	$ -	$ -	$ -	$ -	$ 202,240	$ -	$ 202,240	$ 991,839	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 256,191
	Other Funding	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
ITS-Upgrade Camera Cabinents Systemwide PM: Shari Callahan	PE	$ 1,105,234	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,105,234	$ 399,698	$ -	$ -	$ -	$ -	$ 399,698	$ -	$ -
	CST	$ 4,708,299	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,708,299	$ 1,702,711	$ -	$ -	$ -	$ -	$ 1,702,711	$ -	$ -
	CEI	$ 736,823	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 736,823	$ 266,465	$ -	$ -	$ -	$ -	$ 266,465	$ -	$ -
	GEC	$ 368,411	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 368,411	$ 133,233	$ -	$ -	$ -	$ -	$ 133,233	$ -	$ -
	Total	$ 6,918,768	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,918,768	$ 2,502,107	$ -	$ -	$ -	$ -	$ 2,502,107	$ -	$ -
	THEA Funding	$ 6,918,768	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,918,768	$ 2,502,107	$ -	$ -	$ -	$ -	$ 2,502,107	$ -	$ -
	Other Funding	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
ITS Master Plan Systemwide PM: Shari Callahan	CST	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	GEC	$ 1,143,344	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,143,344	$ -	$ -	$ 275,503	$ -	$ -	$ 275,503	$ -	$ -
	Total	$ 1,143,344	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,143,344	$ -	$ -	$ 275,503	$ -	$ -	$ 275,503	$ -	$ -
	THEA Funding	$ 1,143,344	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,143,344	$ -	$ -	$ 275,503	$ -	$ -	$ 275,503	$ -	$ -
	Other Funding	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Replace UPS and Server for Mainline Gantries PM: Shari Callahan	CST	$ 200,000	$ -	$ -	$ 200,000	$ -	$ -	$ -	$ -	$ 200,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	GEC	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Total	$ 200,000	$ -	$ -	$ 200,000	$ -	$ -	$ -	$ -	$ 200,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	THEA Funding	$ 200,000	$ -	$ -	$ 200,000	$ -	$ -	$ -	$ -	$ 200,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Other Funding	$ -								$ -	$ -						$ -		
Software Licensing PM: Shari Callahan	CST	$ 1,650,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 250,000	$ 1,300,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 250,000	$ 50,000	$ 50,000
	GEC	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Total	$ 1,650,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 250,000	$ 1,300,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 250,000	$ 50,000	$ 50,000
	THEA Funding	$ 1,650,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 250,000	$ 1,300,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 250,000	$ 50,000	$ 50,000
	Other Funding	$ -								$ -	$ -						$ -		
ITS-Replacement and Renewal	Replacement and Renewal	$ 42,448,623	$ 66,530	$ 313,232	$ 6,509,917	$ 230,000	$ 258,733	$ 432,240	$ 315,675	$ 7,746,565	$ 35,639,705	$ 3,344,554	$ 95,177	$ 1,585,835	$ 580,122	$ 1,466,850	$ 7,072,538	$ 1,466,850	$ 75,924
	Contingency 10%	$ 4,244,862	$ 6,653	$ 31,323	$ 650,992	$ 23,000	$ 25,873	$ 43,224	$ 31,568	$ 774,657	$ 3,563,971	$ 334,455	$ 9,518	$ 158,584	$ 58,012	$ 146,685	$ 707,254	$ 146,685	$ 7,592
	Replacement and Renewal + 10% Contingency	$ 46,693,486	$ 73,183	$ 344,555	$ 7,160,909	$ 253,000	$ 284,606	$ 475,464	$ 347,243	$ 8,521,222	$ 39,203,676	$ 3,679,010	$ 104,695	$ 1,744,419	$ 638,134	$ 1,613,535	$ 7,779,792	$ 1,613,535	$ 83,517
	THEA Funding	$ 46,693,486	$ 73,183	$ 344,555	$ 7,160,909	$ 253,000	$ 284,606	$ 475,464	$ 347,243	$ 8,521,222	$ 39,203,676	$ 3,679,010	$ 104,695	$ 1,744,419	$ 638,134	$ 1,613,535	$ 7,779,792	$ 1,613,535	$ 83,517
	Other Funding	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Automated Connected Vehicle Support Systemwide PM: Bob Frey	PE (CUTR)	$ 4,130,836	$ 75,000	$ 77,250	$ 79,567	$ 81,954	$ 84,413	$ 86,946	$ 89,554	$ 422,434	$ 3,556,152	$ 92,240	$ 95,008	$ 97,858	$ 100,794	$ 103,817	$ 489,717	$ 106,932	$ 110,140
	CST	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	GEC	$ 2,753,910	$ 50,000	$ 51,500	$ 53,045	$ 54,637	$ 56,276	$ 57,964	$ 59,703	$ 281,625	$ 2,370,784	$ 61,494	$ 63,339	$ 65,239	$ 67,196	$ 69,212	$ 326,480	$ 71,289	$ 73,427
	Total	$ 6,884,746	$ 125,000	$ 128,750	$ 132,613	$ 136,591	$ 140,689	$ 144,910	$ 149,257	$ 704,060	$ 5,926,936	$ 153,735	$ 158,347	$ 163,097	$ 167,990	$ 173,030	$ 816,198	$ 178,221	$ 183,567
	THEA Funding	$ 6,884,746	$ 125,000	$ 128,750	$ 132,613	$ 136,591	$ 140,689	$ 144,910	$ 149,257	$ 704,059	$ 5,926,936	$ 153,735	$ 158,347	$ 163,097	$ 167,990	$ 173,030	$ 816,198	$ 178,221	$ 183,567
	Other Funding	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

UPDATE 6/17/2016

FY 17 Work Program

way Authority

Project	FY 29	FY 30	FY 31	FY 32	FY 33	FY 34	FY 35	FY 36	FY 37	FY 38	FY 39	FY 40	FY 41	FY 42	FY 43	FY 44	FY 45	FY 46	FY 47	FY 26-45 Total Cost
	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount			
ITS-Replace VMS Systemwide PM: Shari Callahan	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 31,407	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 39,785	$ -	$ -	$ -	$ 95,984
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 261,722	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 331,542	$ -	$ -	$ -	$ 799,870
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 20,938	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 26,523	$ -	$ -	$ -	$ 63,990
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,469	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 13,262	$ -	$ -	$ -	$ 31,995
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 324,536	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 411,112	$ -	$ -	$ -	$ 991,839
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 324,536	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 411,112	$ -	$ -	$ -	$ 991,839
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
ITS-Upgrade Camera Cabinents Systemwide PM: Shari Callahan	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 705,537	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 705,537
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,005,587	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,005,587
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 470,358	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 470,358
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 235,179	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 235,179
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,416,661	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,416,661
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,416,661	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,416,661
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
ITS Master Plan Systemwide PM: Shari Callahan	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	$ -	$ -	$ -	$ -	$ -	$ 370,253	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 497,589	$ -	$ -	$ -	$ 867,842
	$ -	$ -	$ -	$ -	$ -	$ 370,253	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 497,589	$ -	$ -	$ -	$ 867,842
	$ -	$ -	$ -	$ -	$ -	$ 370,253	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 497,589	$ -	$ -	$ -	$ 867,842
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Replace UPS and Server for Mainline Gantries PM: Shari Callahan	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
																				$ -
Software Licensing PM: Shari Callahan	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 1,050,000
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 1,050,000
	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 1,050,000
																				$ -
ITS-Replacement and Renewal	$ 306,191	$ 823,000	$ 1,804,716	$ 7,797,594	$ 1,008,140	$ 736,863	$ 420,253	$ 115,631	$ 374,536	$ 201,231	$ 5,720,545	$ 86,962	$ 4,417,822	$ 1,386,217	$ 50,000	$ 91,601	$ 958,701	$ 241,575	$ 482,815	$ 28,567,167
	$ 30,619	$ 82,300	$ 180,472	$ 779,759	$ 100,814	$ 73,686	$ 42,025	$ 11,563	$ 37,454	$ 20,123	$ 572,055	$ 8,696	$ 441,782	$ 138,622	$ 5,000	$ 9,160	$ 95,870	$ 24,157	$ 48,282	$ 2,856,717
	$ 336,811	$ 905,300	$ 1,985,188	$ 8,577,354	$ 1,108,954	$ 810,550	$ 462,278	$ 127,194	$ 411,989	$ 221,354	$ 6,292,600	$ 95,658	$ 4,859,605	$ 1,524,839	$ 55,000	$ 100,761	$ 1,054,571	$ 265,732	$ 531,097	$ 31,423,884
	$ 336,811	$ 905,300	$ 1,985,188	$ 8,577,354	$ 1,108,954	$ 810,550	$ 462,278	$ 127,194	$ 411,989	$ 221,354	$ 6,292,600	$ 95,658	$ 4,859,605	$ 1,524,839	$ 55,000	$ 100,761	$ 1,054,571	$ 265,732	$ 531,097	$ 31,423,884
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Automated Connected Vehicle Support Systemwide PM: Bob Frey	$ 113,444	$ 116,848	$ 120,353	$ 123,964	$ 127,682	$ 131,513	$ 135,458	$ 139,522	$ 143,708	$ 148,019	$ 152,459	$ 157,033	$ 161,744	$ 166,597	$ 171,594	$ 176,742	$ 182,045	$ 187,506	$ 193,131	$ 3,066,434
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	$ 75,630	$ 77,899	$ 80,236	$ 82,643	$ 85,122	$ 87,676	$ 90,306	$ 93,015	$ 95,806	$ 98,680	$ 101,640	$ 104,690	$ 107,830	$ 111,065	$ 114,397	$ 117,829	$ 121,364	$ 125,005	$ 128,755	$ 2,044,304
	$ 189,074	$ 194,746	$ 200,589	$ 206,606	$ 212,805	$ 219,189	$ 225,764	$ 232,537	$ 239,513	$ 246,699	$ 254,100	$ 261,723	$ 269,575	$ 277,662	$ 285,992	$ 294,571	$ 303,409	$ 312,511	$ 321,886	$ 5,110,738
	$ 189,074	$ 194,746	$ 200,589	$ 206,606	$ 212,805	$ 219,189	$ 225,764	$ 232,537	$ 239,513	$ 246,699	$ 254,100	$ 261,723	$ 269,575	$ 277,662	$ 285,992	$ 294,571	$ 303,409	$ 312,511	$ 321,886	$ 5,110,738
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

UPDATE 6/17/2016

Appendix D. City of Tampa Interlocal Agreement

Prepared by and return to:
Rolando J. Santiago, Esq.
City of Tampa Attorney's Office
315 E. Kennedy Blvd
Tampa, FL33602
Tel: 813-274-8996
Fax: 813-274-8809

FINAL

COPY
ORIGINAL
5/16 per S. Anderson
Mary Hall + Marty Stor

7.1.1.1 INTERLOCAL AGREEMENT

By and Between

THE CITY OF TAMPA, FLORIDA

and

THE TAMPA-HILLSBOROUGH COUNTY
EXPRESSWAY AUTHORITY

FOR USE AND OPERATION OF
THE TRAFFIC MANAGEMENT CENTER AND
OPERATION OF THE REVERSIBLE LANE?? PROJECT
(Located at Twiggs Avenue and Meridian Avenue)

7.1.1.1.1.1.1.1 This Interlocal Agreement (the "Agreement") is made and entered into this

&O!/°'
_____ day of February ,-£005 by and between the CITY OF TAMPA (the "City"), whose address is 315 East Kennedy Boulevard, Tampa, Florida 33602, and the TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY (the "Authority"), whose address is 412 East Madison Street, Suite 800, Tampa, Florida 33602.

7.1.1.1.1.1.1.2 RECITALS:

A. WHEREAS, the Florida Interlocal Cooperation Act of 1969, Chapter 163, Part 1, Florida Statutes, authorizes government units to cooperate and make the most effective use of their powers and resources; and

B. WHEREAS, in the interest of public "safety and convenience, the Authority intends to construct roadway improvements for the establishment of its Reversible Express Lanes Project ("Project"); and

C. WHEREAS, the Authority owns and manages a building for the operation of the Project and its administrative offices (the "Building"); and

D. WHEREAS, the Authority acquired three (3) parcels of real property from the City as more particularly described on attached Exhibit "A" (the "Land"), one of which serves as the location for the Building. As of the date of this agreement the parties have not yet agreed to the total compensation for such Land, which is the subject of that certain action identified as Hillsborough Circuit Court Case No. 02-8767, Div "I", Parcel 206A, herein the "Pending Litigation"; and

E. WHEREAS, the parties recognize that there is an overriding public purpose in proceeding with this Agreement and in separately and independently, without delaying this matter, determining the value of the Land and of the City's rights of occupancy and use of the TMC (as later defined) net of additional City operating costs for providing lane switching for the project; and

F. WHEREAS, the portion of the Building, shown as the "Traffic Management Center" on Exhibit "B" attached hereto and made a part hereof, will be used as a traffic management center by the City (the "TMC" or "Traffic Management Center") for the operation and management of the City's roadways and the switching of the Authority's Project; and

G. WHEREAS, it is the intent of the City and Authority that upon completion of construction of the Project, daily operation of switching the reversible lanes shall be managed and administered by the City.

NOW, THEREFORE, in consideration of the parties' mutual covenants and promises contained herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Authority and the City agree as fOllOWS

1. Recitals. All of the foregoing recitals are hereby ratified and confirmed by each of the parties as being true and *correct* and are hereby incorporated into the body of this Agreement.

2. Construction of Traffic Management Center. The Authority shall construct the Traffic Management Center within the Building which shall, at time of occupancy, include: a) state of the art control room, b) computer facilities, c) uninterrupted power

7.1.1.1.1.1.1.3 supply, d) backup electrical generator, and (e) video switch/server for City of Tampa CCTV cameras. The City has participated in the design of the interior offices of the TMC and accepts them as constructed.

3. TMC Operators The City agrees that the operators of the TMC must be City employees who are properly trained and authorized to operate the City's traffic signalization system and administration and operation of the Authority's Reversible Express Lanes Project (the "TMC Operators").

4. Reversible Lanes Administration. Recognizing that the flow of traffic into and out of the City of Tampa resulting from the Project will require coordinated administration by the City, it is hereby agreed by the parties that upon completion of the Project the City shall assume the daily operation, management and administration of the process of switching the reversible lanes. Reversible lane management and switching operations shall be administered pursuant to the attached Memorandum of Reversible Lanes *ODeratina* Procedure and Resoonsibilities f"The Ops Manual"), marked Exhibit "C".

The Ops Manual may be updated and revised administratively by the City and Authority as necessary, contingent, however, that each updated and revised version the Ops Manual must be recorded in the Office of the Clerk of Circuit Court for Hillsborough County. Each revised Ops Manual shall reference this agreement as authority therefore and shall contain the signature of the chief executive of each agency. The last recorded version of the Ops Manual shall control and all previous versions shall be deemed replaced and supplanted immediately upon recording of the revised manual. The Authority shall at all times remain responsible for maintenance, repair and capital improvements of the Project.

5. *Use of TMC and Building*.

(a) *Space Allocation to City:* The Authority grants the City four thousand (4,000) net useable square feet to be used by the City (the "City-TMC Space") as office space for monitoring and control of City traffic operations and Reversible Lanes Project administration. The Authority and City recognize the complexities involved in relocating these facilities and hereby agree to coordinate the relocation and compatibility of equipment and necessary infrastructure.

(b) *20-year Term of Agreement.'* The Authority grants the City right to use the TMC for the period commencing on the date of occupancy of the Building and ending twenty (20) years from the date of occupancy (the "Term"), subject to the terms and conditions set forth herein, for the sole purpose of operating, monitoring and managing the City's traffic signalization systems and switching the Authority's Reversible Express Lanes and no other purpose without the Authority's prior written consent.

7.1.1.1.1.1.1.4 (c) Date of Occupancy. *The City shall have the right to enter upon and occupy the City-TMC Space on March 1, 2006, or on such earlier date as may be mutually agreed by the parties.*

(d) L/se *of Common Areas; Parking:* The Authority shall allow the City TMC Operators to have access to the common areas of the Building, including conference and break rooms ("Common Areas"), during the Term, subject to Authority's rules and procedures applicable to all users, tenants or occupants of the building, as may be adopted or amended from time to time, relating to scheduling and use of such areas. The City shall at all times during the term of this agreement have the right to two (2) permanently dedicated parking spaces for City vehicles. The City shall provide, install

and maintain signage for the two (2) designated parking spaces. Neither the City, nor its licensees, agents, successors or assigns, shall use the TMC or Common Areas (collectively, the "Premises") for any purpose that would be unlawful or constitute a nuisance or interfere in any way with the use and occupancy of any other part of the Building by the Authority or its tenants, licensees, successors or assigns. The Authority will also provide all cubicles and furniture for use by the TMC Operators within the Traffic Management Center. The City shall provide all computers, printers, and other equipment required by the TMC Operators to perform their duties.

6. Compensation; **Utilities.** In consideration of the services provided by the City, the City shall have no rental obligation for the term of this agreement. The Authority shall be responsible for all utility expenses (electric, water, gas etc.), except that the City shall be responsible for any and all telecommunications expenses (cable TV, telephone, internet, etc.) related to the City's use of the TMC facilities

7. Operation of Traffic Management Center. The TMC Operators shall operate ITS, the gates, variable signs, and the traffic signs necessary for the safe and efficient operation of the Project from the TMC. The TMC Operators may also operate the traffic signals and control devices for the City's roadways from the TMC. As provided in the attached memorandum, the Authority agrees to coordinate the Reversible Lanes Schedule with the City's Traffic Management Department. The parties agree to cooperate concerning the switching of the Project and explore options to share traffic management facilities and costs.

8. Reservation of Riehts (Pending Litigation). The City and the Authority agree that any amounts owed to the City by the Authority for the Land arising from the

Pending Litigation shall be handled separately. In connection therewith, City and Authority agree that the fair market value of the City's right of use with respect to the TMC as set forth herein, less the actual costs of the services provided by the City, as described herein, shall be applied against the value of the Land in order to determine any additional amount due to the City under the Pending Litigation. City's actual costs shall include such items as salary, benefits, employer contributions and any equipment or machinery provided by the City for the purpose of operating the Project. Said cost shall be calculated for the entire proposed term of this agreement using generally recognized accounting assumptions, principles and standards.

9. Indemnification by the Authority. To the extent permitted by applicable law, the Authority hereby agrees to indemnify and to hold the City harmless from and against any and all claims, suits, liability, costs, losses or expenses of any nature (including reasonably attorneys' fees, whether incurred at trial or on appeal) arising in connection with the operation, maintenance, repair and regulation of the Project by the Authority or in connection with the operation by the City and/or the TMC Operators of the traffic control signals as it relates with the switching of the Project by the Authority, except for such claims, suits, liability, costs, losses or expenses caused by the sole negligence or willful misconduct of the City. Notwithstanding any provision of this Agreement to the contrary, the City and the Authority agree that while the City shall cooperate with the Authority in connection with the switching of the Project, the proper and safe switching of the Project shall be the sole and exclusive responsibility of the Authority. Further, the Authority shall be responsible for the cost and operation of all special traffic control devices required in connection with the Project by the Authority.

10. Indemnification by the City. The City covenants and agrees to defend and indemnify the Authority, its directors, officers, employees, successors and assigns and hold them harmless from any and all liability, damages, claims, costs, or expenses, including attorneys' fees, arising from: any act, omission, or negligence of the City, its officers, contractors, licensees, tenants, agents, servants, employees, guests, occupants, invitees, or visitors within or about the Land or Building; or any loss, accident, injury, or damage to any person or property sustained by the City or other persons, caused by theft, or by any act, omission, or negligence of the City or its officers, contractors, licensees, tenants, agents, servants, employees, guests, occupants, invitees, or visitors, including, without limitations, any and all environmental damages, claims, costs, and expenses due to the contamination, spill, release or discharge of hazardous materials, hazardous wastes or other contaminants occurring in or about the Premises; or any use of the Land or Building under this Agreement, except for any such claim caused by the sole negligence or willful misconduct of the Authority or any agent or employee of the Authority.

11. Entire Agreement. This Agreement embodies the whole agreement of the parties. There are no promises, terms, conditions, or obligations other than those contained herein, and this Agreement shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties hereto.

12. Severability. It is understood and agreed by the parties hereto that if any part, term, or provision of this Agreement is by the courts held to be illegal or in conflict with a law of the State of Florida, the validity of the remaining portions or provisions shall not be

7.1.1.1.1.1.1.5 affected, and the rights and obligations of the parties shall be construed and enforced as if the Agreement did not contain the particular part, term or provision held to be invalid.

13. Notices. All notices required to be given to the Authority and the City hereunder shall be sent in writing to their respective addresses set forth herein, or to such other addresses as the parties may direct from time to time by written notice in accordance with this paragraph, by (a) registered or certified mail, whereupon notice shall be deemed to have been given on the third day after deposit for mailing; or (b) delivery (i.e., courier or other hand delivery), or overnight delivery, whereupon notice shall be deemed to have been given on the day of delivery. If the day of notice is a Saturday, Sunday, or legal holiday, notice shall be deemed to have been given on the first calendar day thereafter which is not a Saturday, Sunday, or legal holiday.

14. Default. If either party to this Agreement has reason to believe that it or the other party is in default of any provision of this Agreement, the party shall promptly notify in writing the other party. Such notification shall specify in reasonable detail the facts and circumstances constituting the default. Promptly upon receipt of such notification, the parties shall consult with each other as to what steps shall be taken to cure the default or to mitigate or remedy consequences thereof. If no resolution is achieved within thirty days after the receipt of such notice, the non-defaulting party shall be free to exercise whatever rights it has under this Agreement or at law or in equity.

15. Modification or Amendment. This Agreement may not be modified or amended except by a written agreement signed by authorized representatives of the Authority and the City, provided, however, that in the interest of health, safety and welfare of the public,

7.1.1.1.1.1.1.6 The Ops Manual may be amended from time to time as necessary in the manner provided herein

16. Counterparts. This Agreement may be executed in any number of counterparts and by different parties hereto by separate counterparts, each of which when so executed shall be deemed to be an original and all of which taken together shall constitute one and the same Agreement.

17. Recording and Effective Date. As required by Section 163.01(11), Florida Statutes, upon execution by the Parties this Agreement shall be recorded with the Clerk of the Circuit Court of Hillsborough County, Florida. The City shall record this Agreement. This Agreement shall be effective upon recording.

18. Fees and costs. Should any of the terms of this Agreement, except paragraph 8, require enforcement, the prevailing party shall be entitled to reasonable attorney's fees and court costs. Any costs, fees and expenses, including but not limited to attorneys fees, with regard to paragraph 8 shall be addressed and resolved in proceedings related to the Pending Litigation.

19. Non-Assignability. Neither the City nor the Authority may assign any rights or obligations under this Agreement without the prior written consent of the other. Any purported assignment of rights or obligations in violation of this section is void.

7.1.1.1.1.1.1.7 REMAINDER OF PAGE INTENTIONALLY LEFT BLANK

IN WITNESS WHEREOF, the parties have hereunto affixed their hands and seals effective as of the date above.

ATTEST:

Ralph Mervine Executive Director

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

By: _____, Chairman

Name: J. Thomas Gibbs

Approved as to form:

Steve Anderson Esq. General Counsel

ATTEST:

Shirley Foxx-Knowles

City Clerk ~~or Deputy City Clerk~~

CITY OF TAMPA

By: _____

Pam Iorio, Mayor

7.1.1.1.1.1.1.8 *Approved as to forms*

Rotando J. Santiago

Assistant City Attorney

The execution of this document was authorized pursuant to Resolution No. 2002-943 & 2006-158

(signature)

☐ City Attorney

☒ Assistant City Attorney

State of Florida
County of Hillsborough

This is to certify that the foregoing is a true and correct copy of Agmt 2006-158 on file in my office
Witness my hand and official seal this 3rd day

Shirley Foxx-Knowles

CITY CLERK / DEPUTY CITY CLERK

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY
NOTARY ACKNOWLEDGMENT

STATE OF FLORIDA
COUNTY OF HILLSBOROUGH

The foregoing instrument was acknowledged before me this " day of December, 2005, by T. Thomas Gibbs as Chairman of the Tampa-Hillsborough County Expressway Authority, who" is personally known to me or presented as identification and did not take an oath.

Seal:

Name: Mary J Hall
Notary Public, State of Florida at Large
Serial Number:
Commission Expires:

MARY J. HALL
MY COMMISSION EXPIRES
August 30, 2006
#DD 113732
Bonded thru Notary Public Underwriters
NOTARY PUBLIC, STATE OF FLORIDA

CITY OF TAMPA
NOTARY ACKNOWLEDGMENT

STATE OF FLORIDA
COUNTY OF HILLSBOROUGH

The foregoing instrument was acknowledged before me this 'h day of February, 2005, by Pam Iorio as Mayor of the City of Tampa, who ✓ is personally known to r presented as identification di n t take an oath.

My commission expires:

NOTARY PUBLIC STATE OF FLORIDA
ROLANDO J. SANTIAGO
#DD341457
MY COMMISSION EXPIRES
August 23, 2008
Bonded Thru Fain-Insurance 800-385-7019

1.1.1.1.1.1.1.9 Nam •/z

Not Public, State of FI r' a at Large
Serial Number:

1
2

Exhibit "A”
"The Land"

LEGAL DESCRIPTION OF TRAFFIC MANAGEMENT CENTER PARCEL

TPA:399032:6

7.1.1.1.1.1.1.10 13

LEGAL DESCRIPTION

All of Lots 12 and 13; the South 20 feet of Lot 15; all of Lots 16, 17, 18, 19, and 20; and the North 23 feet of Lots 21 and 22, In Block 3 of CAIRO SUBDIVISION, according to map or plat thereof recorded in Plat Book

Being more particularly described as follows:

All of Lots 12, 13, 16, 17, 18, 19 and 20 and the south 20 feet of Lot 15 and the north 23 feet of Lots 21 and 22, Block 3, Cairo Subdivision, lying in Section 18, Township 29 South, Range 19 East, as per plat recorded in Plat Book 3, Page 40, Public Records of Hillsborough County,

COMMENCE at the northeast corner of Block 3, Cairo Subdivision, lying in Section 18, Township 29 South, Range 19 East, as per plat recorded in

thence S 04°04'53"E along the east line of said Block 3, 179.97 feet to the northeast corner of said lot 12 of said Block 3, said point being the POINT OF BEGINNING; thence continue S 04°04'53"E, 203.58 feet a said east line of Block 3 to a point on the northerly right of way line of Twiggs Street per Deed Book 1341 Page 297 recorded in the Public

right of way line of Twiggs Street N 89°29'14"W, 180.15 feet to a point on the existing easterly right of way line of Meridian Avenue as shown on

Hillsborough County Expressway Authority by AIM Engineering and Surveying, Incorporated (AIM Job#00-7868), said point lying S 89°29'14"E, 15.05 feet from survey center line station 132+80.26 of said Meridian Avenue; thence N 04°03'46"W, along said existing easterly right of way line of said Meridian Avenue being the west line of said Block 3, 115.98 feet to the [illegible] of the south 20 feet of lot 15 of said Blo 3; thence departing said west line of Block 3, S 89°18'04"E, 89.93 feet along the north line of said south 20 feet of lot 15 to the northeast corner of said south 20 feet of lot 15; thence departing said north line of said south 20 feet of lot 15, N 04°02'41"W, 87.88 feet along the west

GENERAL NOTES

1. THE [illegible] AND COORDINATES SHOWN HEREON ARE BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE, 1983 NORTH AMERICAN DATUM, 1990 ADJUSTMENT, DERIVING A BEARING OF NORTH 04°02'54" WEST ALONG

2. THIS LEGAL DESCRIPTION AND SKETCH THE TITLE COMMITMENT NUMBER 4023495LA PREPARED BY THE COMMONWEALTH LAND TITLE INSURANCE COMPANY.

3. THE ONE STORY CONCRETE BLOCK BUILDING ENCROACHES APPROXIMATELY ONE FOOT ALONG THE NORTHERN PROPERTY LINE OF LOT 12.

4. THE TOPOGRAPHY SHOWN HEREON WAS OBTAINED FROM AERIAL PLANIMETRIC DATA AND NOT FIELD VERIFIED AND IS SHOWN FOR INFORMATIONAL PURPOSES ONLY.

A.P.P.R.D. = AS
AVE. = AVENUE
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D.B. = DEED BO
L = LENGTH OF
L/A = LIMITED
M.T.S. = NOT M
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P.C. = POINT OF
P.I. = POINT OF
P.T. = POINT OF
P.O.C. = POINT
P.O.T. = POINT
PG. = PAGE
PROJ. = PROJEC

LEGEND

R = RADIUS
R/W = RIGHT OF WAY
S.R. = STATE ROAD
ST. = STREET
STA. = STATION
T = TANGENT LENGTH OF CURVE
E = EASTING STATE PLANE COORDINATE VALUE
N = NORTHING STATE PLANE COORDINATE VALUE
Δ = DELTA (CENTRAL ANGLE)
(D) = DEED DATA
(F) = FIELD DATA
(P) = PLAT DATA
℄ = PROPERTY LINE OF PARENT TRACT
○ BLOCK NUMBER

NOT A SURVEY

NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

PREPARED BY:
AIM ENGINEERING & SURVEYING, INC.

6-3-02
DATE

DOS L. POTTER
PROFESSIONAL SURVEYOR AND MAPPER
FLORIDA CERTIFICATE NO. 5088
LICENSED BUSINESS #3214

ENGINEERING & SURVEYING, INC.

REVISION	BY	DATE
PRELIM	G. JONES	5-02-02
FINAL	G. JONES	6-03-02
CHECKED	B. POTTER	6-03-02

APPROVED BY — DATE

TAMPA BYPASS CANAL EXPRESSWAY AUTHORITY

LEGAL DESCRIPTION AND SKETCH

MAPS PREPARED BY
AIM ENGINEERING & SURVEYING, INC.

FIELD BOOK AND PAGE: NOT APPLICABLE

SCALE: N.T.S.

STATE ROAD NO. 618 — HILLSBOROUGH COUNTY

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SECTION

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OR BK 12274 PG 1300

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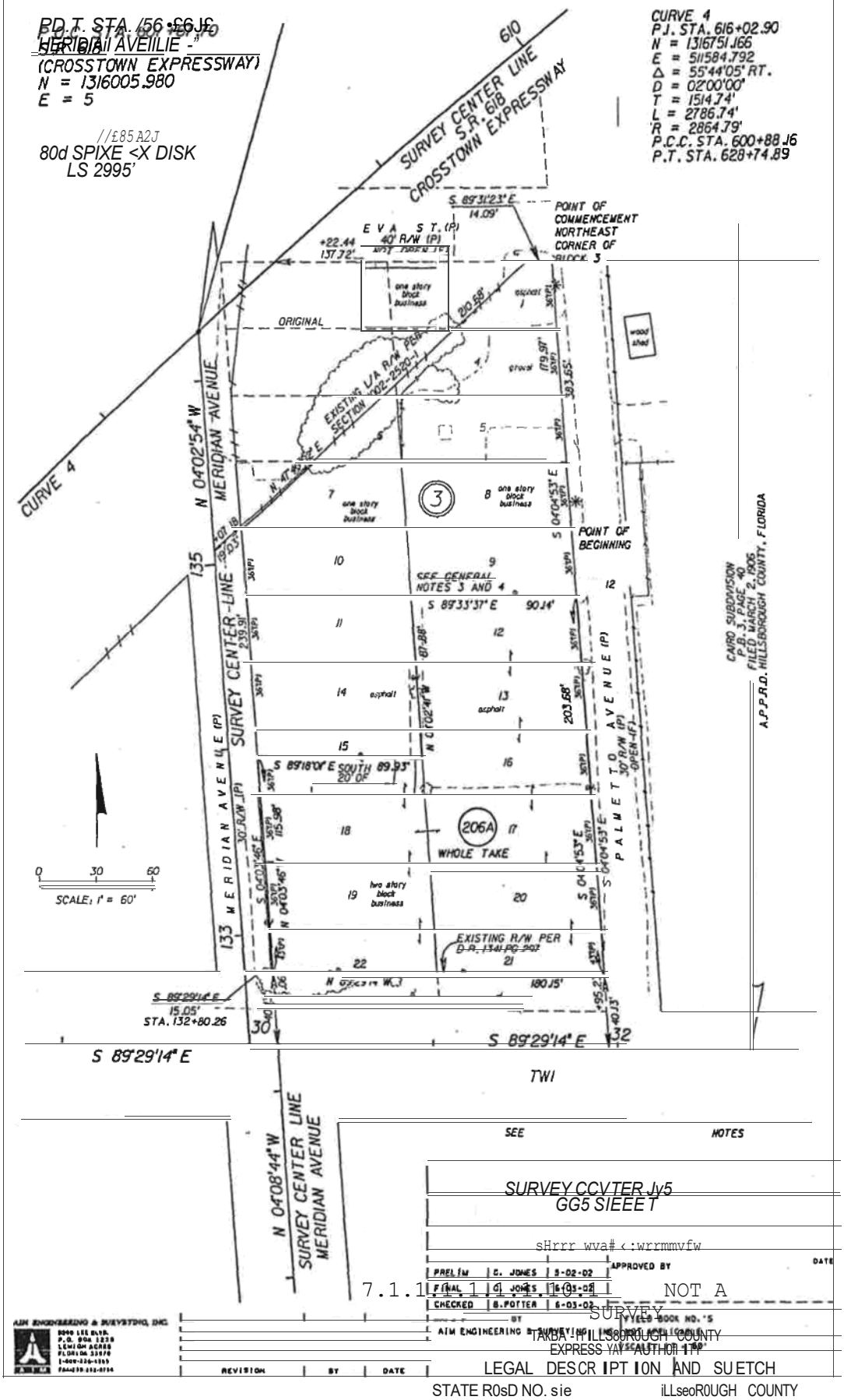

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GG5 SIEEE T

sHrrr wva# ‹ :wrrmmvfw

PRELIM	E. JONES	5-02-02	APPROVED BY
FINAL	E. JONES	6-03-02	DATE
CHECKED	B.POTTER	6-03-02	

7.1.1 1.1 1.1.1.1 NOT A

SURVEY

AIM ENGINEERING & SURVEYING, INC.
8940 LEE BLVD.
P.O. BOX 1220
LEHIGH ACRES
FLORIDA 33970
1-800-226-1151
FAX 239-332-6720

REVISION	BY	DATE

AIM ENGINEERING BY SURVEYING BOOK NO. 'S

TAKBA - PILLSBOROUGH COUNTY

EXPRESS YAY AUTHOR 1 TY

LEGAL DESCR IPT ION AND SUETCH

STATE R0sD NO. sie iLLseoR0UGH COUNTY

OR Bk 2274 PG J 30J

LEGAL DESCRIPTION

PARCEL 206B

COMMENCE at survey center line station 136+26.52 of Mer... being survey center line station 607+67.70 of State Road 618 as shown on the Right of Way Control Survey for State Road 618 prepared for the T... County E... Authority by AIM Engineering and Su..., incorporated ... the beginning of a ... curve ... survey ... line of State Road 618 being the arc of said curve to the right, having a radius of 2864.79 feet, a central angle of 03°02'51", the chord for which bears N 48°44'10" E, a chord ... of 152.36 feet, an arc distance of 152.38 feet to survey center line station 609+20.08; ... survey center line N 39°44'24" W, 114.10 feet to the POINT OF BE... on the existing northwesterly right of way

Hillsborough County, Florida; thence N 38°21'48" E along said existing northwesterly right of way line of Meridian Avenue, 329.71 feet to the northeastern corner of Lot 6, Block 6, Finley and Jonas Subdivision, as

along the arc of said curve to the left being the westerly line of Lots 6, 8 and 9 of said Block 6 and Lots 1 and 2 of Block 7, of said Finley and Jonas Subdivision, having a radius of 950.00 feet, a central angle of 13°55'01", the chord for which bears S 25°49'31" W, a chord distance of 230.19 feet, an arc distance of 230.75 feet; thence continue along the westerly line of said Lots 2, 3 and 4, Block 7, S 18°15'03" W, 72.56 feet;

OF BEGINNING.

Said parcel contains 19149 square feet, more or less.

GENERAL NOTES

1. THE BEARINGS AND ... ARE BASED ON THE FLORIDA STATE ... SYSTEM, WEST ..., 1983 NORTH AMERICAN DATUM, 1990 ADJUSTMENT, ... A BEARING OF NORTH ... WEST ... THE SURVEY CENTER LINE OF ... STATION 135+00.00 TO STATION 136+26.52.

2. THIS LEGAL DESCRIPTION AND SKETCH WAS PREPARED WITH THE BENEFIT OF THE OWNERSHIP AND ... BY THE ...

D.B. = DEED BOOK
L = LENGTH OF CURVE
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N.T.S. = NOT TO SCALE
NO. = NUMBER

P.C. = POINT OF CURVATURE
P.C.C. = POINT OF COMPOUND CURVATURE
P.I. = POINT OF INTERSECTION
P.T. = POINT OF TANGENCY
P.O.C. = POINT ON CURVE
P.O.T. = POINT ON TANGENT

R/W = RIGHT OF WAY
S.R. = STATE ROAD
ST. = STREET
STA. = STATION
T = TANGENT LENGTH OF CURVE
E = EASTING STATE PLANE COORDINATE VALUE
N = NORTHING STATE PLANE COORDINATE VALUE
Δ = DELTA (CENTRAL ANGLE)
(D) = DEED DATA
(F) = FIELD DATA
(P) = PLAT DATA
℄ = ... LINE OF PARENT TRACT
○ BLOCK NUMBER

CERTIFIED TO:
1) COMMONWEALTH LAND TITLE INSURANCE COMPANY
2) RUDEN, McCLOSKY, SMITH, SCHUSTER & RUSSELL, P.A.
3) TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY
4) CITY OF TAMPA

NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

PREPARED BY:
AIM ... INC.

9-26-02
DATE

... L. POTTER
... AND ...
... NO. 5658

NOT A SURVEY

TA/• 'A - H ILL SBOROUGIJ COUNTY
EXPnE ssxx Y AuTri"0R ITx

LECAL DESCR IPT 10N AND SKETCH

STATE ROAO NO. 618 | HILLSBOROUGH COUNTY

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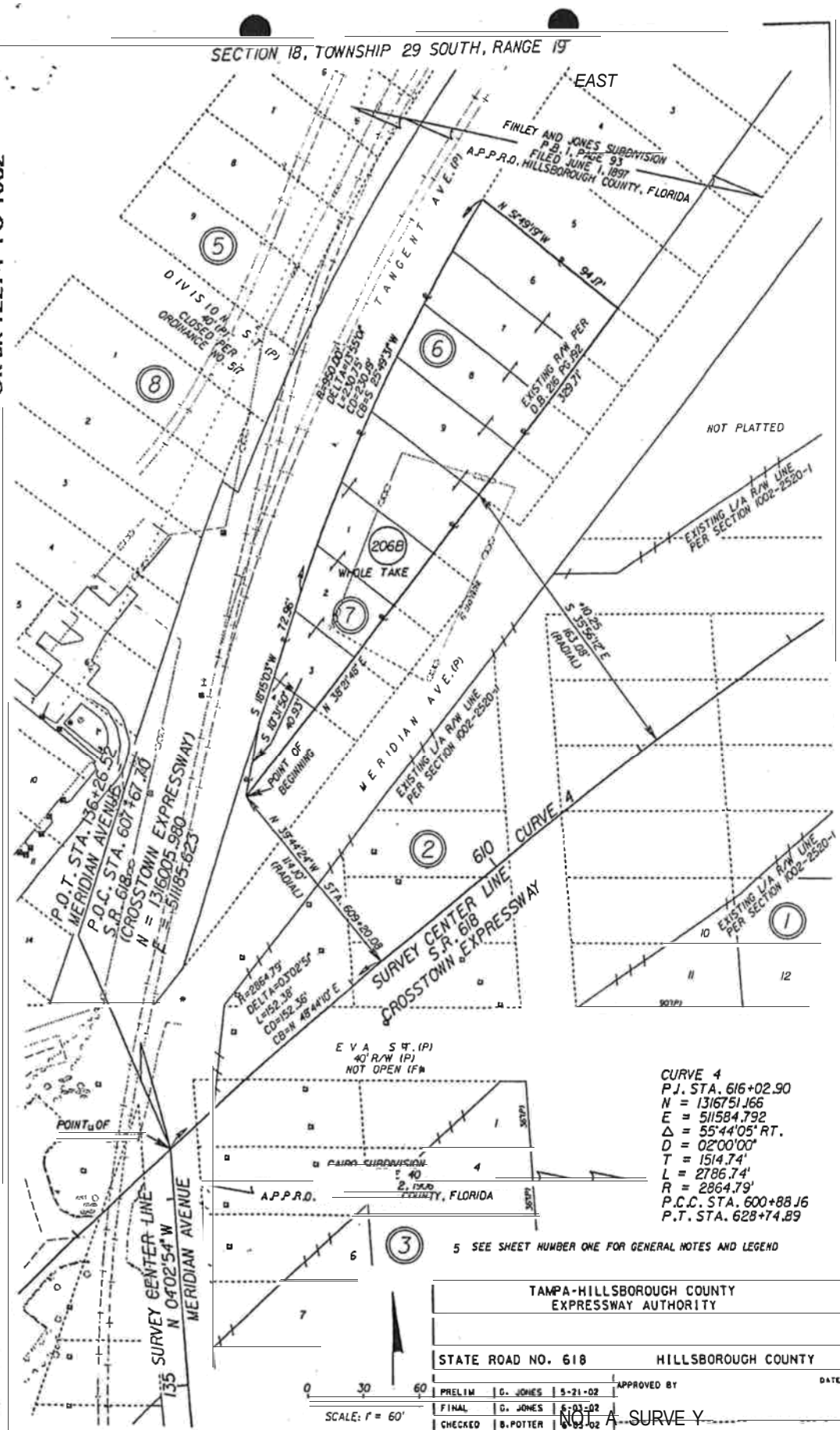

PARCEL 206C LEG ALD N:iCRIPTION

A parcel of land lying in Section 18, Township 29 South, Range 19 East, Hillsborough County, Florida, together with that portion of Border Street and Division Street vacated per City of Tampa Ordinance Number 978-A, being more particularly described as follows:

BEGIN at the northwest corner of Block 2, K & W Subdivision, lying in Section 18, Township 29 South, Range 19 East, as per plat recorded in Plat Book 16, Page 4, Public records of Hillsborough County, Florida, said point being on the westerly line of Lot 5 of said Block 2 and being at the intersection of the existing easterly right of way line of Meridian Avenue and the easterly right of way line of Border Street (now closed per [illegible] No. 978-A); thence S 03°55'27" E, 129.95 feet along said easterly right of way line of Border Street (now closed) being the westerly line of said Block 2 to the existing northern limited access right of way line of State Road 618 per Section 1002-2520-1; said point lying N 03°55'27"W, 93.87 feet from survey center line station 612+88.79 of State Road 618 as shown on the Right of Way Control Survey for State Road 618 prepared for the Tampa-Hillsborough County Expressway Author by AIM Engineering and Surveying, Incorporated (AIM Job#00-7868); thence along said existing northern limited access right of way line the following two (2) courses: 1) S 56°58'27"W, 192.80 feet; 2) N 89°47'09"W, 35.00 feet to said existing easterly right of way line of Meridian Avenue; thence along said existing easterly right of way line of Meridian Avenue, N 38°40'18" E, 300.48 feet to the POINT OF BEGINNING

GENERAL NOTES

1. THE BEARINGS AND COORDINATES SHOWN HEREON ARE BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE, 1983 NORTH AMERICAN DATUM, 1990 ADJUSTMENT, DERIVING A BEARING OF SOUTH 03°55'27" EAST ALONG THE WEST LINE OF BLOCK 2, K & W [illegible] BEING THE EASTERN RIGHT OF WAY LINE OF BORDER STREET.

2. THIS LEGAL DESCRIPTION AND SKETCH WAS PREPARED WITH THE BENEFIT OF THE OWNERSHIP AND ENCUMBRANCE REPORT NUMBER 1012484-CA PREPARED BY THE COMMONWEALTH LAND TITLE INSURANCE COMPANY.

LEGEND

'N.D. = AS PER PUBLIC R
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= LIMITED ACCESS
= NOT TO SCALE
NUMBER
= PLAT BOOK
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= POINT OF TANGENCY
= POINT ON CURVE
= POINT ON TANGENT
PAGE
= PROJECT

R = RADIUS
R/W = RIGHT
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T = TANGENT
E = EASTING
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(P) = PLAT DA
℄ = PROPERTY
BLOCK NUMBER

COORDIN
COORDINA

CERTIFIED TO:
1) COMMONWEALTH LAND TITLE INSURANCE COMPANY
2) RUDEN, McCLOSKY, SMITH, SCHUSTER & RUSSELL, P.A.

NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

PREPARED BY:
AIM ENGINEERING & SURVEYING, INC.

10-2-02
DATE

BOB K. POTTER
PROFESSIONAL SURVEYOR AND MAPPER
FLORIDA CERTIFICATE NO. 5688
LICENSED BUSINESS #3849

AIM ENGINEERING & SURVEYING, INC.
6606 LEE BLVD.
P.O. BOX 1328
LEHIGH ACRES
FLORIDA 33970
1-800-226-1969
FAX(239)332-6736

REVISION	BY	DATE
MODIFIED LEGAL DESC.	C. JONES	10-02-02
ADDED ORDINANCE NUMBER	C. JONES	9-25-02

	BY	DATE
PRELIM.	C. JONES	5-02-02
FINAL	C. JONES	6-03-02
CHECKED	B. POTTER	6-03-02

APPROVED BY DATE

MAPS PREPARED BY
AIM ENGINEERING & SURVEYING, INC. NOT APPLICABLE
SURVEYED BOOK NO. 'S

7.1.11.10.2 NOT A SURVEY

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

LEGAL DESCRIPTION AND SKETCH

STATE ROAD NO. 610 HILLSBOROUGH COUNTY

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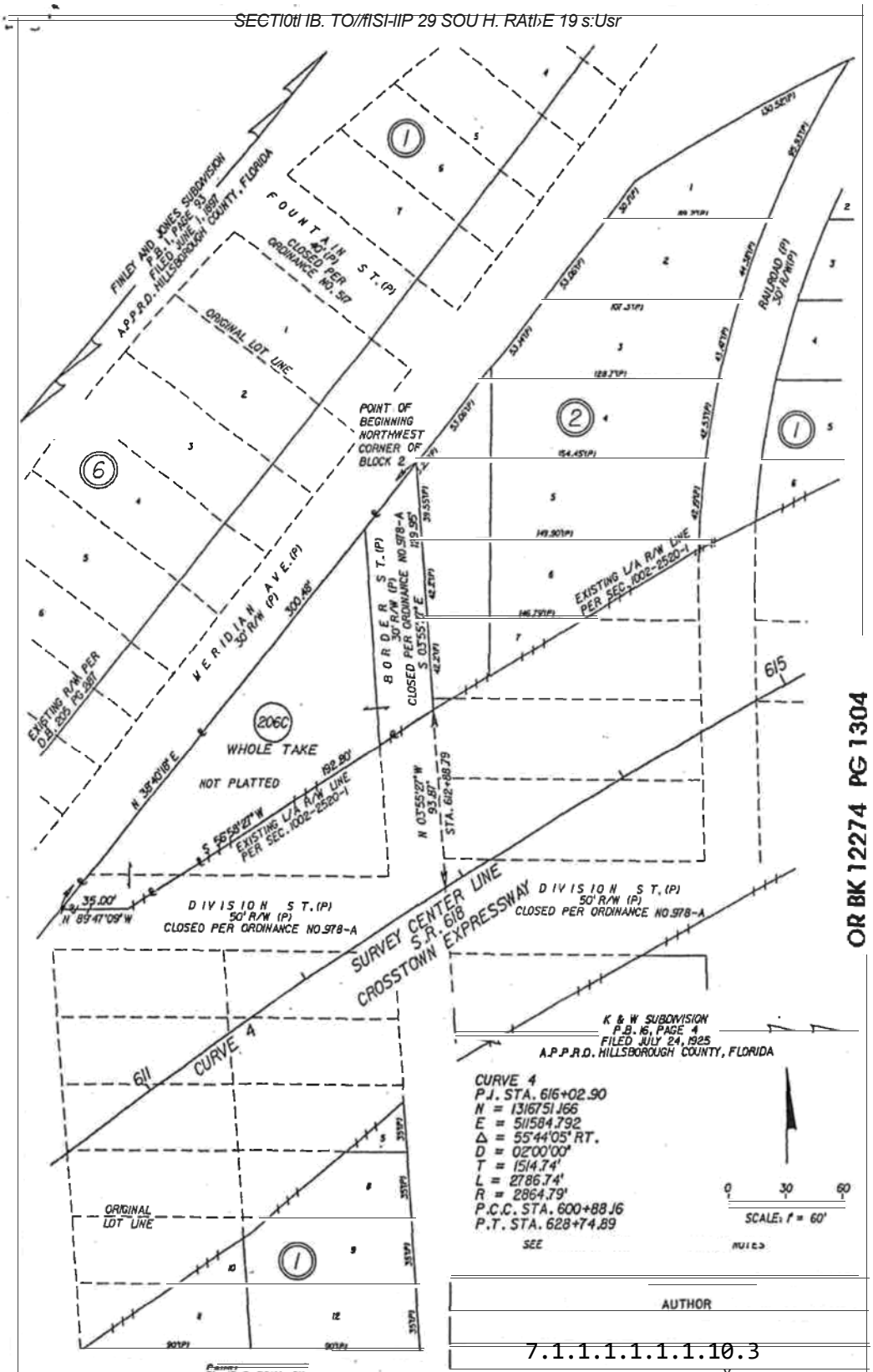


OR BK 12274 PG 1304

LEGAL DESCRIPTION AND SKETCH

STATE ROAD NO. 618 HILLSBOROUGH COUNTY

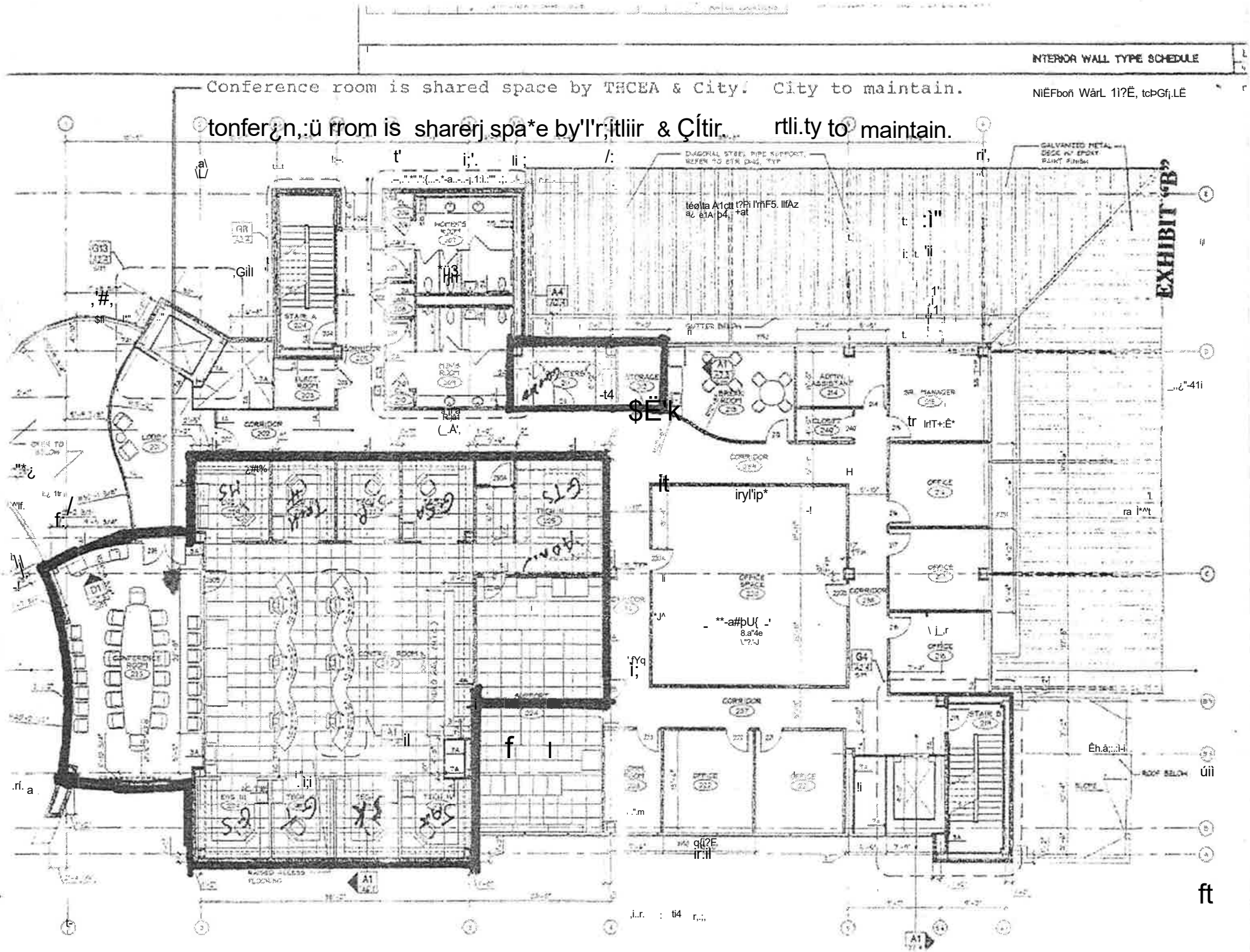
„\0CN-PLOT»n•= . - ‹ 10/02/02 0:I:39:44 PN

7.1.1.1.1.1.1.11 Exhibit "B"

TRAFFIC MANAGEMENT CENTER

TPA:599052:6

7.1.1.1.1.1.1.12 14


INTERIOR WALL TYPE SCHEDULE
Conference room is shared space by THCEA & City. City to maintain.
tonfer¿n,:ü rrom is sharerj spa*e by'l'r;itliir & ÇÍtir. rtli.ty to maintain.
EXHIBIT "B"
ROOM
OFFICE
CORRIDOR
STAIR B
STAIR A
ROOF BELOW
RAISED ACCESS FLOORING

f, ,J.: '.t. '4

Exhibit “C”

OPERATIONS MANUAL

Upon Recording, Return to: City
of Tampa DPW/Transportation
Manager 306 East Jackson
Street Tampa, FL 33602
Tel: 813-274-8333

[Space Above This Line For Recording Data]

MEMORANDUM OF REVERSIBLE LANES OPERATING PROCEDURE & RESPONSIBILITIES

By and Between

THE CITY OF TAMPA, FLORIDA

and

THE TAMPA-HILLSBOROUGH COUNTY
EXPRESSWAY AUTHORITY

This outline shall set forth the Reversible Lanes Operating Procedure and Responsibilities for the City of Tampa and the Tampa-Hillsborough County Expressway Authority. This outline is not intended to be all inclusive, it is understood that special events and emergency circumstances may arise that require coordination of additional services to operate the Crosstown Reversible Lanes Project. It is further understood and agreed that the terms and provisions herein may be amended and supplemented as necessary in the course of operating the system.

Purpose & Scope: The City of Tampa (TMC Operators) shall have primary responsibility to operate the Crosstown Reversible Lane Project (the Project) for the Tampa-Hillsborough County Expressway Authority (the Authority).

The responsibilities of the TMC Operators will be to staff the Reversible Lane consoles in the Traffic Management Center (TMC), monitor and engage the Reversible Lane software package and to perform a camera sweep of the facility before final gate opening/closing. A “camera sweep” will include verification of reversible lane device operations and that the facility is clear of conflicting traffic. TMC Operators will initiate the lane change/closure using the Reversible Lane console and will perform the camera sweep prior to each lane change/closure. A TMC Operator Supervisor shall oversee the operation and sign off on each event before road is opened. TMC Operators and the Authority shall operate the system under the following guidelines:

I. Reversible Lanes Operation

1) The Reversible lanes shall be opened for general public use Monday thru Friday each day starting at 5:30 AM and closed to general public use Monday thru Friday each day at 7:00 PM (Normal Operating Hours).

2) The Reversible lanes shall be available for use outside of Normal Operating Hours during special events subject to coordination of proper staffing by the City and the Authority.

3) The Reversible lanes shall be available for use outside of Normal Operating Hours for emergency events in such manner as may be required by law or special circumstances, in such event the City and Authority shall coordinate staff and supporting services in the best interest of the health, safety and welfare of the public.

4) Reversible Lanes from 7 th St. east shall be changed from WB travel to EB travel at 9:30 AM each weekday.

5) Remaining WB travel lanes will be reversed to EB travel at 2:30 PM.

6) Reversible lane system shall be closed to travel each workday at 7:00 PM.

II. Reversible Lanes Maintenance Responsibilities

The City shall be responsible for monitoring Project facilities and initial recognition, documentation and reporting of deficiencies in Project facilities requiring minor or major repair or maintenance. The City has no direct maintenance responsibility for the Project facility beyond reporting issues discovered through routine system monitoring and operation. The City shall be responsible for routine maintenance of those TMC facilities in use by City staff.

The Authority shall be responsible for management and administration of routine and major maintenance of TMC facilities and Project facilities, including, but not limited to repair or replacement of Project monitoring equipment and software.

1) Response Contingency for system communications or monitoring systems shall be handled as follows:

2) Should a communications failure occur between the TMC and a remote Project device, then TMC operators will have to respond to a central field location to engage the system and perform one or more of the required Project changes.

3) Should there be a total communications failure, then TMC Operators will be required to go to each individual Project device location (5 locations, multiple devices are controlled from each location) to engage devices for each appropriate Project event.

4) Should there be an individual device failure (gates will not work, sign has no power, camera needs replacement, etc.) then TMC Operators will investigate, perform routine troubleshooting and repair problem, if possible. Repairs beyond basic routine maintenance, the City shall notify the Authority of same as provided herein.

III. Vehicle Collision and Incident Management

In the event of a vehicle collision or incident on or affecting operation of the reversible lanes, the Project may need to be partially or completely closed to public use. Immediately upon the occurrence of a vehicle collision or incident on or affecting operation of the reversible lanes, TMC Operators shall notify appropriate emergency service responders and the Authority. TMC Operators shall have primary responsibility to assess and determine whether the vehicle collision or incident on or affecting operation of the reversible lanes merits partial or complete Project closure.

In the event of a vehicle collision or incident on or affecting operation of the reversible lanes, the City shall have primary responsibility to prepare any and all reports regarding the collision or incident and provide same to the Authority. The City shall be responsible to inspect the Project (by camera sweep or physical inspection, as necessary) after each collision or incident prior to returning the Project to full or partial operation. Any remedial measures or actions required to document, restore, clear debris or repair the Project for the purpose of returning it to full or partial operation shall be the responsibility of the Authority.

IV. Staffing for Reversible Lanes Project Management and Operations: the following represents minimum staffing levels required for the safe operation of the Project.

REQUIRED DUTIES

Opening (1) requires 1 — Supervisor and 1 — Technician for 1 hour each.
Change (2) requires 1 — Supervisor and 1 — Technician for 1 hour each.
Change (3) requires 1 — Supervisor and 1 — Technician for 1 hour each.
Closure (4) requires 1 — Supervisor and 1 — Technician for 1 hour each.

Minimum staff time per day = 8 man hours

POSSIBLE ADDITIONAL DUTIES

1) Field operations would require a vehicle, supervisor and 1 technician for 1.0 hours.
2) Minimum staff requirements would be a vehicle and 1 technician for 1 hour.
3) This will require a vehicle, supervisor and 1 technician for 1.5 hours.
4) Based on previous MOT experience, 1 technician for 2 hours will be needed per incident

V. CONCLUSION

This is outline intended to be a manual and delineation of duties between the City and Authority in the administration and operation of the Project.

This memorandum has been prepared, reviewed and approved by the parties and shall be effective upon recording.

ATTEST:
Date: zz- a z -
=W

TAMPA-HILLSBOROUGH COUNTY
EXPRESSWAY AUTHORITY

Ralph Merbitt, ~~Executive Director~~

By:
Name: J. Thomas Gibbs, Chairman

ATTEST:

CITY OF TAMPA

7.1.1.1.1.1.1.13 By: Shirley Foxx-Knowles
City Clerk ~~or Deputy City Clerk~~

By:
7.1.1.1.1.1.1.14 Pam Iorio, Mayor
Date

Prepared pursuant to that certain
Interlocal Agreement authorized by
City of Tampa Resolution: 2006-154

Rol o J. Santia o
As stant City Attorney

K:\RJS\Agreements\Transportation\Traffic Management Center\TMC- Operations Manual 2005.DOC

Appendix E. FDOT TSMA

&Y OF T&MP&

Bob Buckhorn, Mayor

Office of the City Attorney
Julia C. Mandell
City Attorney

July 22, 2015

TO: Vik Bhide, Engineer IV
Transportation Division

FIIOIYI: Julic Hardy, Assistant City Attorney

RE: Rescinding of Resolution No. 2014-704; Traffic Signal Maintenance Agreement Between the City of Tampa and FDOT

Pursuant to Resolution No. 2015-545 passed and adopted by the City Council on June 25, 2015, enclosed are three (3) originals of each of the above-described Agreement. Please cause these original Agreements to be fully executed by the FDOT, then return one (l) completely executed original the Agreement to me for filing with the City Clerk's office.

Thank you.

JH:dd
Enclosures

RFSOL ON2MA ”'

A LURON BZ INC LUMON NO. *01+704,
WEICH PROVRDARENEAALOF A C AGNAL T
OE*MOW GBE: B& TA
(“CITY”) AND THE STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION (“FDOT”) IN CONNECTION WITH THE MAINTENANCE AND OPERATION OF TRAFFIC SIGNALS AND SIGNAL SYSTEMS; APPROVING THE ATTACHED AGREEMENT TO UPDATE TERMS AND CONDITIONS; PROVIDING FOR THE CITY TO OPERATE AWD , FOR TTOCOMTENSA YSE TO OPERATE AND MAIIITAIN CERTAIN FDOT TRA1T'IC SIGNALS ANII SIGNAL SYSTEMS; AUTHORIZING TKS MAVOR TO EKEC1JJ'E SAIH AGREEMENT, PROVIBINtIAN EFFECTIYE DATE

WHEREAS, City Council entered into a Traffic Signal Maintenance and Compensation Agreement with the FDOT in connection with traffic signals and signal systems dated October 1, 2002 pursuant In City Rmolution No. 2002-808 “Oiginal Agreement’; and,

WHEREAS, City Council entered into a renewal of the Original Agreement on October2, 2014, pursuant to City Resolution No. 2014-704, which updated terms and conditions, added signals, increased FDOT compensation to the City, and updated exhibits to reflect those changes; and,

WHEREAS, subsequently, VHMOUS bus jurisdictions met with FDOT in order to change some of the provisions related to maintenance, and FDOT provisions and to
7.1.1.1.1.1.1.14.1 agreed to change mine of the
replace the Original Agreement with the Agreement ~~altvhed~~ hereto; and,

WHEREAS, the it is necessary to useind Resolution No. 2014-704 and replace the Original Ag/e«raeotwi& &eAgreemsot attacbed bereto; aod,

WHEREAS, City Council has determined that it would be beneficial to the citizens of the City to enter into the attached Traffic Signal Maintenance and Compensation Agreement with the FDOT which establishes the City's maintenance and continued operation responsibilities for signals and signal systems and for FDOT to compensate the City upon the terms and conditions stated in said Agreement; and,

u'xzee»ts, th» moT •›<i bay » s›e ciç is» a„ n„ a iã«ai» g io, ti» operating expenses including cofl ofmaiideriance and cootinu& operation of said signals and systems.

1'IOW, THEREFORE,

BEITRESOLVED BY TBECI7'Y COUNCIL c›r+IIE‹:I4’+‹7r'IA>P›i,rr‹›I‹IBx
Sxéool. Rmoluéon201#70éi6ocby

Section 2. That the Traffic Signal Maintenance and Compensation Agreement between the City of Tampa and the Florida Department of Transportation, a copy of which is attached hereto and by reference made part hereof, is hereby approved in substantially similar form.

Section 3. That the Mayor is hereby auAorized to execute and die City Clerk to attest and aéhx &e ofEcial seal to said Agreement for and on &half of the City.

Section 4. That the funds from the Florida Department of Transportation shall be deposited in the Local Optiion Gas Tax Fund in the estimated amount of $500,000.00. Costs for the maintenance and continued I operation of said traffic signals and systems will be paid from the Eiepartieeni of Trainspor:ation and Stormwater Services operating budget of the City of Tampa.

Section 5. That &e, proper officials and staff of the City of Tampa me hereby authorized to do all things necessary in order to carry out edmAr effective the terms of séd Agreement, which shall take effect immediately upon its adoption.

AND &0FTED BY THE CITY COUNCIL OF TI-IE CITY OF TAMPA, FLORIDA, ON JUN 2 5 2015

CHAIRMAN, C

City Clerk

Prepared and Approved by:

e/s *Jitlie* ?far@
Assistant City Attorney

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7.1.1.1.1.1.14.2 TRAP6IC SIGNAL MAINTENANCE AND COMPENSATION A6BBBMENT

CONTRACT NO. ARK87
FINANCIAL PROJECT NO. 40592 6-1 9802
F.E.I.D. NO. / O)

THIS TRAFFIC SIONAL NIAINTENANCE AND COMPENSATION AGREEMENT{"Agreement"), is entered into this ! day of zr ›« /\ Z ,? /? between the Floi?la Department of Transportation, an agency of the State of Florida, herein called the "Department", and y ● ·» 7**1r , Florida, ("Maintaining Agency").

WITNESSETH:

A. The Department is authorized under Section 335.055, Florida Statutes, to enter into this Agreement.

B. The Maintaining Agency is authorized under / ¢ rt to enter into this Agreement and has authorized its undersigned representative to enter into and execute this Agreement on behalf of the Maintaining Agency.

NOW, THEREFORE, in consideration of the mutual covenants contained in the Agreement, the sufficiency of which is acknowledged, the parties mutually agree and covenant as follows:

1. The Maintaining Agency shall be responsible for the maintenance and continuous operation of the traffic signals, interconnected and monitored traffic signals (IMTS) (defined as signals that are interconnecte‹l with telecommunications and are monitored at a central location), traffic signal systems (defined as central computer, cameras, message signs, communications devices, interconnect / network, vehicle, bicycle & pedestrian detection devices, traffic signal hardware and software, preemption devices, and uninterruptible power supplies (“UPS")), control devices (defined as intersection control beacons, traffic warning beacons, illuminated street name signs, pedestrian flashing beacons (i.e., school zone dashing beacons, pedestrian crossing beacons, and Rectangular Rapid Flashing Beacons)), and emergency/fire department signals and speed activated warning displays. The Maintaining Agency shall be responsible for the payment of electricity and electrical charges incurred in connection with operation of such traffic signals and s'gnal systems and devices upon completion of installation of each signal or device. All traffic signals and control devices mentioned in this paragraph are referred to in this Agreement as “Traffic Signals and Devices".

2. The Department agrees to pay the Maintaining Agency an annual compensatio» amount based on the Department's fiscal year. The compensation amount consists of the cost of the maintenance and continuous operation of the Traffic Signals and DeviGes as identified in Exhibit A. .*ayments by the Department will be made in accordance with Exhibit 8. In the case of construction contracts, the Maintaining Agency shall be responsible for the payment of electricity and electrical charges incurred in connection with the operation of the Traffic Signals and Devices, and shall undertake the maintenance and continuous operation of these Traffic Signals and Devices upon final acceptance of the installation by the Department. Prior to any final acceptance of the installation by the Department, the Maintaining Agency will have the opportunity to inspect and request modifications or corrections to the installation(s) and the Department agrees to undertake those modifications or corrections prior to final acceptance so long as the modifications or corrections comply with the Agreement, signal plans, and speciications previously approved by both the Department and Maintaining Agency. Repair or replacement and other responsibilities of the installation contractor and the Department, during construction, are contained in the Department's Standard Specifications for Road and Bridge Construction.

3. The Maintaining Agency shall maintain and operate the Traffic Signals and Devices in a manner that will ensure safe and effcient movement of highway traffic and that is consistent with maintenance practices prescribed by the International Municipal Signal Association (IMSA) and cp rational requirements of the Manual on Uniform Traffic Control Devices (MUTCD), as amended.

4 The Maintaining Agency's maintenance responsibilities include, but are not limited to, locates, preventive maintenance (periodic inspection, service and ro« tine repairs), restoration of services, and emergency maintenance (trouble shooting in the event of equipment malfunction feil‹.re, or damage). Restoration of services may include tempe› ary po!zs, stcp signs or other methods to maintain traffic. The Maintaining Agency shall record its maintenance activities in a traffic signal maintenance log.

5. The Department intends to rcnduc,t,a structural inspection of the mast arm structure» r.›d st.ain poles every 60 months, which inspection shall comply with ‹'ae.c, »cklist included in Exhibit c, attached to and ir cord :rz I:'. in this Agreement. The inspection report will serve as a 90-du ' :,‹j .].caution to the Maintaining Agency that deficienciesexi'. •' .. .°ec,uire preventative maintenance and periodic maintenance. "': rt/ative maintenance includes but is not limited to: .-! "' ' -inting, cleaning, all wiring issues, graffiti removal, all signs r«!.•..'.crJ :¿u,es (lighting, signs and connections), and rcspc o \•' a/f!c impact including repair and replacement of all compcr«-»•:'s rla.raqeJ by the traffic impact. For any new painted •› .»°t ›: ‹'»s installed after the date of this agreement, preventative maintenance includes all items described above and als • °' '=,F, ,n.fainting, tightening of nuts, replacing missing or deficient. ¿Cement of missing cap covers or equivahn¿, i‹ :'in'zsing or deficient access hole cover plates, and repair or proper grounding. Damaged mast arm structures as :›- : a.just be properly repaired or replaced by the Mainia, party(ies) ... If the Maintaining Agency is not successhl n = rosts from responsible '" within 180 ‹1a/ . ... of damage, the Department w‹ll z ing Agency for costs

incurred due to traffic impacts to mast arms, which reimbursements will be prgcessed acer the Department receives a properly completed and supported invoice from the Maintaining Agency. The Department will pursue reimbursements from individuals and/or the third parties who cause damages to mast arms and are liable for replacement/repair costs. Failure to perform preventative maintenance after notification of an inspection deficiency will result in the Maintaining Agency being responsible for the corrective actions. If spot painting or any other described preventative maintenance is not carried out, there shall be a 25% retainage of the annual compensation amount for the affected signal locations urtil the preventative maintenance is performed. For each month subsequent to the expiration of the 90-day notice given to the Maintaining Agency that preventative maintenance deficiencies exist, 1/12a of the annual compensation amount for the affected si1nal locations will be forfeited up to 25% of the annual compensation amount. In the case of a total paint failure on a mast arm installed prior to the date of this Agreement, the Department will fund the cost of repainting. This does not include any mast arm that was installed with a separate mast arm painted finish agreement. The terms of that agreement will control.

6. Periodic maintenance includes but is not limited to: repair of cracks in the mast as structure; removal and/or repair of grout pads; resetting of anchor bolts; and repair or replacement of deteriorated anchor bolts and nuts. For any new mast arm installations after the date of this Agreement, if a Maintaining Agency requests a painted mast arm, the Maintaining Agency agrees to perform all required periodic and preventative maintenance. Any periodic maintenance performed on the mast arm structure by the Maintaining Agency needs Department approval prior to commencement of work and shall be performad within 90 days unless under an emergency situation. Any and all work performed by the Maintaining Agency must conform to the current Department Standard Specifications for Road and Bridge Construction as applicable. Mast arms that the Department determines to be at the end of its useful life will be replaced by the Department so long as documented preventative maintenance and any applicable periodic maintenance was satisfactorily performed by the Maintaining Agency.

   The Table below summarizes the roles of the Maintaining Agency and the Department with regard to preventative and periodic maintenance of mast arms:

Maintaining Agency	Florida DOT
Preventative maintenance of all mast arm structures	Periodic maintenance of all mast arm structures (except for any new painted and existing painted structures with signed separate Agreement)
Periodic maintenance of structures (for any new painted and existing painted structures with signed separate Agreement	
Damage repair or replacement of structures	Compensate Maintaining Agency for damage repair or replacement of structures
	Replacement at end of life cycle of the structure

7. The Department will reimburse the Maintaining Agency for costs incurred due to trafc impacts to traffic signal controller cabinet assemblies, traffic signal battery backup, UPS cabinet assemblies, pedestrian flashing beacons, strain pole repair or replacement, and all devices shown in Exhibit A, if the Maintaining Agency is not successful in recovering damage costs from responsible parties. The Maintaining Agency will be responsible for pursuing reirrbursements from individuals and/or the third parties that cause damages. However, if the Maintaining Agency is not successful in recovering damage costs from responsible party(ies) within 180 days from the occurrence of damage, the Department will pursue reimbursements from individuals and/or the third parties who cause damages and are liable for replacemenbrepair costs to the traffic signal controller cabinet assemblies, traffic signal battery backup, UPS cabinet assemblies, pedestrian flashing beacons, strain poles, and all devices shown in Exhibit
   A. Applicable reimbursements will be processed after the Department receives a properly completed and supported invoice from the Maintaining Agency.

8. The Maintaining Agency may remove any component of the installed equipment for repair or testing; however, it shall only make permanent modifications of equipment replacements and only if the equipment provided is capable of performing at minimum the same functions as the equipment being replaced. The Department shall not make any modifications or equipment replacements without prior written notice to and consultation with the Maintaining Agency.

   a. The Maintaining Agency shall implement and maintain the timing and phasing of the traffic signals in accordance with the Department's timing and phasing plans, specifications, special provisions, Department re-timing projects, and the Department's Traffic Engineering Manual. The Maintaining Agency shall obtain prior written approval from the Department for any modification in phasing of signals and flash times (where applicable). Signal Systems timings (cycle length, split, offsets, sequence) are considered operational changes and may be changed by the Maintaining Agency to accommodate changing needs of traffic. The Maintaining Agency may make changes in the signal timing provided these changes are made under the direction of a qualified Professional Engineer registered in the State of Florida. The Maintaining Agency shall make available a copy of the timings to the Department upon request. The Department reserves the right to examine equipment, timing and phasing at any time and, after consultation with the Maintaining Agency, may specify modifications. If the Department specifies modification in timing or phasing, implementation of such modifications will be coordinated with, or made by, the Maintaining Agency. All signal timing and phasing records shall be retained f» t•, -.k' in 3inil›g Agency fOr at least three (3) years, to the and will be made available from the Department upon request.

9. The Maintaining Agency shall note in the maintenance log any changes in timings and phasings, and keep a copy of the timings and phasings, and any approval documentation in a file. A copy of the log shah be provided to the Department upon request. Maintaining Agencies may provide this information electronically.

10. The Maintaining Agency and the Department shall update Exhibit A on an anrual basis which Exhibit A is attached to and incorporated in this Agreement. Exhibit A will contain all Traffic Signals and Devices on the State Highway System which are within the jurisdiction of the Maintaining Agency, those that are maintained by the Maintaining Agency and those that are maintained but not included for compensation. No changes or modifications may be made to Exhibit A during the Department's fiscal year for compensation. New Traffic Signals and Devices added by the Department during its fiscal year must be maintained and operated by the Maintaining Agency upon the Department's final acceptance as stated in paragraph 2. The Maintaining Agency and the Department shall update Exhibit A preceding each Department's fiscal year, which will include all new Department Traffic Signals and Devices added during the Department's previous fiscal year and delete those removed. Exhibit A will need to be incorporated into this Agreement by an amendment to this Agreement each time Exhibit A is updated. The Maintaining Agency will begin receiving compensation for new Traffic Signals and Devices in the Department's fscal year after the Traffic Signals and Devices are installed and final acceptance is given by the Department. In the event that no change has been made to the previous year's Exhibit A, a certification from the Maintaining Agency shall be provided to the Department certifying that no change has been made to Exhibit A in the Department's previous fiscal year. The annual compensation will be a lump sum payment (minus any retainage or forfeiture) as set forth in Exhibit 8. Future payments will be based on the information provided in Exhibit A, in accordance with the provisions as set forth in Exhibit B, attached to and incorporated in this Agreement.

11. Payment will be made in accordance with Section 215.422, Florida Statutes.

12. There shall be no reimbursement for travel expenses under this Agreement.

13. Bills for fees or other compensation for services or expenses shall be submitted in detail sufficient for a proper pre-audit and post-audit thereof.

14. The Maintaining Agency should be aware of the following time frames. Inspection and approval of goods or services shall take no longer than twenty (20) working days. The Department has twenty (20) days to deliver a request for payment (voucher) to the Department of financial Services. The twenty (20) days are measured frotn the latter of the date the invoice is received or the goods or services are received, inspected and approved.

15. If a payment is not available within forty (40) days, a separate interest penalty at a rate as established pursuant to Section 55.03(1), Florida Statutes, will be due and payable, in addition to the invoice *anount,* to the Maintaining Agency. Interest penalties of less than one (1) dollar will not be enforced unless the Maintaining Agency requests payment. Invoices returned to a Maintaining Agency because of Maintaining Agency preparation errors will result in a delay in the payment. The invoice payment requirements do not start until a properly completed invoice is provided to the Department.

16. A Vendor Ombudsman has been established within the Department of Financial Services. The duties of this individual include acting as an advocate for contractors or vendors who may be experiencing problems in obtaining timely payment(s) from a state agency. The Vendor Ombudsman may be contacted at (850) 413-5516 or by calling the Division of Consumer Services at 1- 877-693-5236.

17. Records of costs incurred under the terms of this Agreement shall be maintained and made available upon request to the Department at all times during the period of this Agreement and for three (3) years ater final payment is made. Copies of these documents and records shall be furnished to the Department upon request. Records of costs incurred include the Maintaining Agency's general accounting records and the project records, together with supporting documents and records, of the contractor and all subcontractors performing work on the project, and all other records of the Contractor and subcontractors considered necessary by the Department for a proper audit of costs.

18. Inthe event this contract is for services in excess of $25,000.00 anci a term for a period of more than one (1) year, tne provisions of Section 339.135(6)(a), F.S., are hereby incorporated:

> "The Department, during any fiscal year, shall not expend money, incur any liability, or enter into any contract which, by its terms, involves the expenditure of money in excess of the amounts budgeted as available for expenditure during such fiscal year. Any contract, verbal or written, made ir violation of this subsection is null and void, and no money way be paid on such contract. The Department shall require a statement from the Comptroller of the Department that such funds are available prior to entering into any such contract or other binding commitment of funde. Nothing h•rein contained shall prevent the making of contracts for periods exceeding 1 year, but any contract so made shall be executory only for the value of the services to be rendered or agreed to be paid for in succeeding fiscal years; and this paragraph shall be incorporated verbatim in all contracts of the Department which are for an amount in excess of $2s,ooo.00 and which have a term for a period of more than I year."

19. The Department's obligation to pay is contingent upon an annual appropriation be the Florida Legislature.

20. An entity or affiliate who has been placed on the diSC£iminatory vendor list may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a pUblic entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded of perform work as a contractor, supplier, contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity.

21. A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to a public entity, ray not submit a bid on a contract with a public entity foi the construction or repair of a put›lic f›uilding or public work, may not submit bids on leases of real property tc a public entity, may not be awarded *or pertorra* work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity In excess of the threshold amount provided in Section 287.017, Florida Statutes, for CATEGORY TWO *for a* period of thirty-six (36) months from the date of being placed on the convicted vendor list.

22. The Department shall consider the employment by any contractor of unauthorized aliens a violation of Section 274A(e) of the Immigration and Nationality Act. If the contractor knowingly employs unauthorized aliens, such violation will be cause for unilateral cancellation of this Agreement.

23. The Maintaining Agency may be subject to inspections of Traffic Signals and Devices by the Department. Such findings will be shared with the Maintaining Agenu°y and will be the basis of all decisions regarding payment reduction, reworking, Agreement termination, or renewal. If at any time the Maintaining Agency has not performed the maintenance responsibility on the locations specified in the Exhibit A, the Department has the option of (a) notifying th0 Maintaining Agency of the deficiency with a requirement that it be corrected within a specified time, otherwise the Department shall deduct payment for any deficient Traffic Signal(s) and Device(s) maintenance not corrected at the end of such time, or (b) take whatever action is deemed appropriate by the Department. Any suspension or termination of funds does not relieve any obligation of the Maintaining Agency under the terms and conditions of this Agreement.

24. The Department shall monitor the performance of the Maintaining Agency in the fulfillment of the agreement. The Maintaining Agency shall submit an annual Report prior to June 30 of each year detailing the following:

    a. Critical Detection device malfunctions: Critical detection is defined as the detection on side-streets and in left turn lanes on the main streets, and all pedestrian/bicycle detection. Repairs to the side-street and main street left turn detections shall be made within sixty (60) days of discovery and repairs to the pedestrian detection shall be made within 72 hours after notification. All these events shall be logged into the annual report. If repairs cannot be performed within 60 days, the agency shall document the reasons why. Discovery of such events shall be logged into the annual report. The Maintaining Agency shall ensure that 90'/o Of all critical detectors systemwide are operating properly at all time. Any time the level drops below 90%, the Agency would have ninety (90) days to correct the situation. A 5% retainage of the total annual compensation amount (as shown in Exhibit A) will be withheld whenever the 90% critical detection requirement is not met within the 90-day period.

    b. Traffic signal preventative maintenance inspections: All traffic signals shall receive at least one (1) minor preventative maintenance inspection, preferably *two* inspections, within a twelve (12) month period. Preventative maintenance inspection shall include verification that all detection is working, the signal is cycling properly, the ventilation system is functioning and filters are clean. Basic traffic cabinet maintenance shall also verify power feed voltages, verify that the vehicle and pedestrian indications are functioning properly, test the effective functioning of pedestrian push buttons, and check hinges and door locks. At least one (1) conflict monitor test shall be performed during a twelve (12) month period. Each test is to be documented and included in the annual report to the Department. The inspection report should note the location, date of inspection and any items noted. If the trafic signals do not receive at least one (1) minor preventative maintenance inspection during a twelve (12) month period, there shall be a 20% retainage of the annual compensation amount tor the affected signal locations until the preventative maintenance inspection is made. If rot performed *within* the state's fiscal year, the 20% retainage of the annual compensation amount for the affected signal locations will be forfeited.

    c. For any traffic signals that are interconnected with telecommunications and their real-time operation is electronically monitored via *software* by personnel at a central location and are therefore receiving the higher compensation amount as described in Exhibit B, the name(s), titles of those monitoring thote intersections, and the location of the central monitoring facility(s) are to be documented and contained in the annual report submitted to the Department.

    d. In addition to the above requirements, if at least 50% of the traffic signals are not inspected and if at least half of the critical detection requirements as stated in 24a are not met, the Department will retain an additional 25°/ of the remaining compensation amount.

25. The maintaining Agency may enter into agreements with other parties pertaining to traffic Signals and Devices including, but not limited to, agreements relating to costs and expenses incurred in connection with the operation of traffic signals and devices on the State Highway System, provided that such Agreements are consistent ›VitL the mutual covenants contained in this Agreement. The Maintaining Agency shall furnish a copy of such agreements to the Departi» ent.

26. This Agreement may not be assigned or transferred by the Maintaining Agency in whole or in part without consent of the Department.

27. The Maintaining Agency shall allow public access to all documents, papers, lekeFS, or other material subject to provisions of Chapter 119, Florida Statutes, and made or received by the Maintaining Agency in conjunction with this Agreement. Failure by the Maintaining Agency to grant such public access will be grounds for immediate unilateral cancellation of this Agreern0nt by the Department.

?8. This .4greem•nt is governed by and construed in accordance with the laws of the State af Florida. The invalidity or unenforceability of any portion of this Agreement does not affect the remaining provisions and portions hereof. Any failure to enforce or election on the part of the Department to not enforce any provision of this Agreement does not constitute a waiver of any rights of the Department to enforce its remedies hereunder or at law or in equity.

29. This term of this Agreement is twenty (20) years; provided that either party may cancel this Agreement prior to the expiration of ihe term of this Agreement. A minimum notico period of two (2) years plus the remaining months of the Department's!scal year shall be provided to the othei' party in writing. Should the Maintaining Agency provide its written notice of cancellation to the Department, the notice shall be endorsed by the elected body (County Commission, City Council, or local agency governing body) under which the Agency operates.

30. Upon execution, this Agreement cancels ated supersedes any and all prior Traffc Signal Maintenance Agreement(s) between the parties, except specific separate Agreements covering painted mast arm maintenance or any other aspect related to the painting of mast arms.

31. The Department reserves the right to remove select critical corridors or critical intersections from the Maintaining Agency's obligation under this Agreement. The remaining intersections and corridors would continue to be covered under this Agreement. The Department will provide a minimum of one year notice prior to take-over of maintenance of criticdl CO££ldors or critical intersections.

32. The Department agrees that the Maintaining Agency must comply with State law regarding appropriations and budgets. This Agreement shall not be interpreted to conflict with State law applicable to the Maintaining Agency.

33. The Maintaining Agency shall:
    a. utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the Maintaining Agency during the term of the contract; and
    b. expressly require any contractors and subcontractors performing work or providing services pursuant to the state contract to likewise utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term.

34. Exhibits A, B, and C are attached and incorporated by reference.

35. This Agreement contains all the terms and conditions agreed upon by the parties,

flat VYITf4ESS WHEREOF, the parties have caused these presents to be executed, the day and year first above written.

1.1.1.1.1.1.14.5 Ci ty of Tampa _ FloNda

(Maintaining Agency)

By _____

(Authorized Signature)

Print/Type Name: 0b Buc khor n

Title: Mayor

.4ttes t _____

Attorney: _____ Date: 6/14/15

STATE OP FLORIDA DEPARTSVIENT OF TRANSPORTATION

By _____

(Authodzed5ignature)

Print/Type Name: Brian W. McKishnie

Title: DIRECTOR OF TRANSPORTATION OPERATIONS

Legal Review: _____

7.1.1.1.1.1.1.14.6 TRA66I6 SIGNA& MAINTENAB6E AND COMPENSATION AGREEMENT

Exhibit A

Compensation for Maintainin g Traffic Signals and all other Devices for FY

6#ect%eDate:fiem _____ to

Intersection Location	Traffic Signals (TS)	Traffic Signal - interconnected & monitored (IMTS)	Intersection Control Beacon (ICB)	Pedestrian Flashing Beacon (PFB)	Emergency Fire Dept. Signal (FDS)	Speed Activated Warning Display (SAWD) or Blank Out Sign (BOS)	Traffic VVarning Beacon (TWB)	Travel Time Detector	Uninterruptible Power Supplies (UPS)	Compensation Amount (using Unit Rates from Exhibit B)
							Total Lump Sum Amount*			

'*Amount paid shall be the Total Lump Sum minus any retainage or forfeiture.

I certify that the above traffic signi is will be maintained and operated in accordance with the requirements of the Traffic Signal Maintenance and Compensation Agreement. For satisfactory completion of all servic:es detailed in this Agreement for this time period, the Department will pay the IVlaintaining Agency a Total Lump Sum (minus any retaina9e or forfeiture) of$_____

Maintaining Agency Date

District Traffic Operations Engineer Date

7.1.1.1.1.1.1.14.7 TRAFPI6 sIBNAL MAIN'7ENANeE AND 6OMP6N$ATI6B /\BR66BEd"F

EXHIBIT B
TRAFFIC 6IGNAL MAIBTENANCE AND COMPENSATION AQR6ERENT

1.0 PURPOSE

This exhibit defines the method and limits of compensation to be made to the Maintaining Agency for the services described in this Agreement and in Exhibit A and method by which payments will be made.

2.1 COMPENSATION

For the satisfactory completion of all services detailed in this Agreement and Exhibit A of this Agreement, the Department will pay the Maintaining Agency the Total Lump Sum (minus any retainage or forfeiture) in Exhibit A. The Maintaining Agency will receive one lump sum payment (minus any retainage or forfeiture) at the end of each fiscal year for satisfactory completion of service.

Beginning in the fiscal year 2016-17, for traffic signals which are not interconnected with telecommunications and are not monitored at a central location, the compensation amount shall be $3,1?1. The compensation amount for traffic signals that are interconnectecl with telecommunications and are monitored at a central location shall be $4,500 per signal location. These differential compensation amounts shall be in effect beginning July 1, 2016. The Table below shows the compensation amount for the various devices for fiscal years 2015-16 and 2016-17, and beyond.

Total Lump Sum (minus any retainage or forfeiture) Amount for each fiscal year is calculated by adding all of the individual intersection amounts.
Pedestrian Flashing Beacon: includes school zone beacons, pedestrian crossing beacons, and rectangular rapid flashing beacons (RRFB). School zones, crosswalks and warning sign locations shall be paid at a unit rate regardless of the number of individual beacons or poles.

Unit Compensation Rates per Intersection on the State Highway System

FY	Traffic Signals (TS)	Traffic Signal Interconnected & monitored (IMTS)	Intersection Control Beacon (ICB)	Pedestrian Flashing Beacon (PFB)	Emergency Fire Dept. Signal (FDS)	Speed Activated Warning Display (SAWD) or Blank Out Sign (BOS)	Traffic Warning Beacon (TWB)	Travel Time Detector	Uninterruptible Power Supplies (UPS)
2014-15'	$ 2,9S1		373g	sz 5	3738	sl48	3148		
2015-16	3,040		760	608	1,064	J04	304		
2016-17	3,131	4,500	783	626	1,096	313	313	100	100
2017-18	Based on the Consumer Price Index (CPI), the 2016-17 compensation amounts will be revised upwards.								
2018-19	Based on the CPI, the 2017-18 compensation amounts will be revised upwards.								
2019-20	based on the CPI, the 2016-19 compensation amounts wiil be revised upwards.								

"Compensation pro-rata based on intersection approaches or legs on State Highway System.

Based on the Consumer Price Index (CPI), the Unit Rate for the following fiscal year will be adjusted accordingly, unless otherwise specified in an amendment to this Agreement. However, if CPI is negative, there shall be no reduction from the previous year's compensation.

?.? .*AYMEI'?TPROCESSII\!I?«

The Maintaining Agency shall invoice the Department in a format acceptable to the Department, on an annual basis for the reimbursement costs incurred by the Maintaining Agency for the previous year prior to June 30fh each year . For example, the Maintaining Agency shall submit its invoice for the previous year beginning July 1, 2015 through June 30, 2016 no later than June 30, 2016.

7.1.1.1.1.1.1.14.8 TRA6PI6 6I6NAL MAIN9"BNAN6B AND 6OMP6N6ATION AGR6EM6N3"

Ebf1IBIT C

TR/tFFIC SIGN/tL MJtST /tRIVI CHECKLIST

Traffic Signal Mast Arm Checklist

- Foundation, including condition of grout pad if present e
  Anchor bolts and nuts
- Base plate
- Base plate connection to vertical member
- Hand hole and hand hole covers and inside of vertical i›ietvl»ei by ret ›oving hanJ hole covers
- Connections between vertical and horizontal members
- Any member splices
- Attachments
- e Member caps

U.S. Department of Transportation
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FHWA-JPO-16-319

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