

**TASK ORDER NO. SMO08-002
JONES EDMUNDS & ASSOCIATES, INC.**

**DESIGN AND START UP OF THE PASCO COUNTY STORMWATER SYSTEM
INVENTORY MASTER PLAN**

THIS TASK ORDER describes services to be performed under the Agreement for Professional Engineering Services for RSQ No. 07-140 between Pasco County and Jones, Edmunds & Associates, Inc. dated _____.

1. **SCOPE OF SERVICES**

The scope of services to be rendered by the CONSULTANT for the Design and Start Up of the Pasco County Stormwater System Inventory Master Plan is described in EXHIBIT "A" of this task order.

2. **TIME FOR COMPLETION**

The time for completion of these services is two hundred and ten (210) days beginning on the date of approval by the Pasco County Board of County Commissioners. The work schedule for the execution of this Task Order has been presented in Appendix "B" of the Scope of Services.

3. **COMPENSATION AND METHOD OF PAYMENT**

The CONSULTANT will be compensated and paid for these services according to the provision presented in Section 4 – COMPENSATION of the Agreement for Professional Engineering Services. The method of payment for the services rendered by the CONSULTANT will be the Lump Sum Method. The established Lump Sum amounts per subtask are presented in Appendix "A" of the Scope of Services to be paid upon satisfactory execution. The maximum amount of compensation under this Task Order is Two Hundred Forty Thousand Six Hundred Eighty Three and 00/100 Dollars (\$240,683.00).

4. **ACCEPTANCE**

By signature hereon, the parties each accept the provisions of Task Order No. SMO08-002 and authorize the CONSULTANT to proceed at the direction of the COUNTY'S representative in accordance with the Scope of Services.

IN WITNESS WHEREOF, the parties hereto have executed the foregoing agreement on this _____ day of _____, _____.

(SEAL)

ATTEST:

BOARD OF COUNTY COMMISSIONERS
OF PASCO COUNTY, FLORIDA

JED PITTMAN, CLERK

TED SCHRADER, CHAIRMAN

WITNESSES:

JONES EDMUNDS & ASSOCIATES, INC.

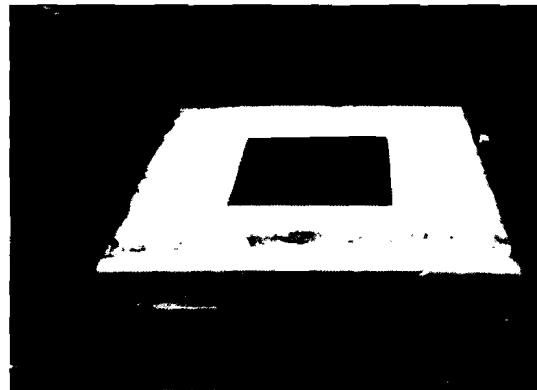
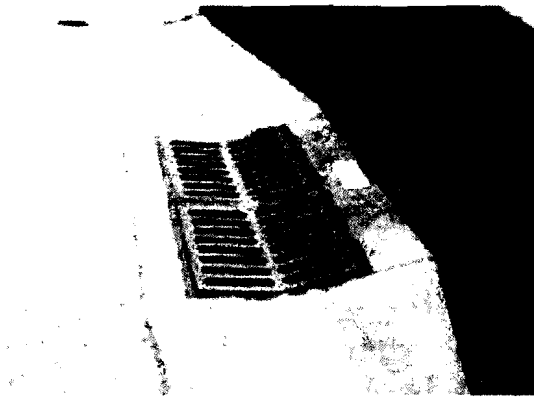
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BY: _____

Stanley F. Ferreira, Jr.
STANLEY F. FERREIRA, JR., P.E.
CHIEF OPERATING OFFICER

Luisa P. Quana

TASK ORDER SMO08-002
Exhibit "A" – SCOPE OF SERVICES
Pasco County Stormwater Inventory
Master Plan
November 27, 2007



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JONES
EDMUNDS

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**PASCO COUNTY
STORMWATER INVENTORY MASTER PLAN
SCOPE OF SERVICES**

TASK 1—PROJECT PLANNING/MANAGEMENT

Project Management is the process by which Jones Edmunds will define and meet Pasco County's project requirements. Jones Edmunds' Project Management goals for the Stormwater Inventory Master Plan include the following:

1. Satisfy the County's Task Assignment
2. Complete the project within budget
3. Complete the project on-time within the required time frame(s)
4. Create a product that is technically sound or even technically superior, meeting or exceeding project specifications
5. The final inventory will be stored as a GIS spatial database in the County's ESRI ArcMap application.

The Jones Edmunds project manager and project team will work closely with County staff to ensure that these goals are met.

TASK 1.1—PROJECT PREPARATION AND PLANNING

Jones Edmunds will compile project information previously developed for another client (Sarasota County) that could be used as a starting point for developing Pasco County's standards. This information includes Sarasota County's Standard Operating Procedures and its geodatabase design. In addition, Jones Edmunds will develop an agenda for the kickoff meeting.

TASK 1.2—KICKOFF MEETING

Jones Edmunds will hold a 1-day kickoff meeting at the beginning of the project to bring key participants together and to define the common goals of the project. Jones Edmunds will meet with the County to become familiar with the stormwater conveyance system and the nature of the County's in-house store of equipment, software, data, and staff expertise. After this meeting, Jones Edmunds shall recommend software and hardware platforms to be used for field data collection.

The kickoff meeting will accomplish the following:

- Introduce project objectives
- Introduce project team
- Explain project approach and schedule
- Define incremental project deliverables
- Submit previously developed SOPs and GDB design for review

- Discuss in detail all project tasks

DELIVERABLES—TASK 1

- Existing stormwater data collection Standard Operating Procedures
- Existing stormwater infrastructure geodatabase designs
- Meeting minutes

CLIENT RESPONSIBILITIES—TASK 1

To ensure successful completion of Task 1, Pasco County will need to do the following:

- Identify key staff and make contact information available to Jones Edmunds
- Coordinate the kickoff meeting with participating individuals

TASK 2—DATA EVALUATION AND MIGRATION PLAN

Our general approach to the data evaluation phase will consist of reviewing the County's record (as-built) drawings, SWFWMD Watershed Management Program data, and other sources of stormwater data for potential inclusion in the final infrastructure geodatabase. We will look at each source of data and, with the County's input, determine whether to include the source in the geodatabase. The County has mentioned that it has as-built drawings that must be included in the dataset. Jones Edmunds will develop a plan for migrating the as-built information as well as other stormwater sources considered reliable into GIS.

TASK 2.1—EVALUATION OF EXISTING DATA

Jones Edmunds is aware the County has numerous as-built drawings of stormwater infrastructure. In addition, the County has other GIS stormwater data including SWFWMD Watershed Management Plan (WMP) information. Within this task, the available data will be evaluated for potential inclusion within the stormwater infrastructure geodatabase.

We anticipate a 1-day meeting with the County to identify potential sources of stormwater information. Ideally, the County will need to provide the data in full. If that is not possible, it will need to provide a sample of the dataset.

Each set of data will be evaluated by identifying the following:

- Geographic completeness
- Attribute completeness
- History of the data
- Value of the data (County input)

DELIVERABLES—TASK 2.1

- One-day meeting with County Staff
- Meeting Minutes describing what data will be evaluated

TASK 2.2—DATA EVALUATION AND MIGRATION PLAN REPORT

As part of the stormwater inventory master plan, Jones Edmunds will document the data evaluation in a report. Each dataset will be evaluated using the criteria described above. Jones Edmunds will then recommend whether the data should be included in the stormwater infrastructure geodatabase. Data that is already in the SWFWMD GIS database will be integrated with the new database created for Pasco County.

Jones Edmunds will then develop a data-migration plan for any datasets identified as being important enough to include in the stormwater geodatabase. The migration plan will detail how the County can incorporate the data into the final infrastructure geodatabase. The plan will identify the process for migration, the number of staff required for migration, and the amount of time estimated to complete the migration. We are aware all as-built data capture is to be in the form of vector GIS data; scanning and registering of images is not desired. The final data evaluation and migration plan report will include the following:

- Data evaluation summary
- Migration plan

DELIVERABLES—TASK 2.2

- Data Evaluation and Migration Plan Report

TASK 3—GEODATABASE DESIGN

Geodatabase design is a key element of the stormwater inventory master plan. There is no standard ESRI stormwater data model, as is common with other utilities such as water/wastewater, gas, or electric. Some stormwater programs/departments are using portions of the ESRI wastewater model, although this is cumbersome and will not completely support their needs. Jones Edmunds has developed numerous stormwater data models or geodatabases that support a broad range of needs for water management districts, counties, and municipalities. These data models or geodatabase designs can be used as a starting point for the Pasco County geodatabase.

Jones Edmunds will hold a 1-day workshop with County key staff to introduce and demonstrate how typical stormwater concepts (connectivity, flow, etc.) and infrastructure (i.e. RCP, HDPE, and CMP culvert materials) are addressed within the geodatabase. This workshop will initiate the design changes required to refine the existing model and develop the final Pasco County Stormwater Infrastructure Geodatabase. In addition, Jones Edmunds will evaluate information

required to support the SWFWMD Watershed Management Plan projects, modeling software (SWIM, CHAN, ICPR), and Arc Hydro.

TASK 3.1—GEODATABASE PRESENTATION AND WORKSHOP

Jones Edmunds will hold a 1-day workshop with Pasco County staff to review and comment on the existing Sarasota County geodatabase design. The first half of the meeting will review the geodatabase design and provide an example of the geodatabase containing data. Jones Edmunds will also discuss the geodatabases impact on the County's work flow and operating procedures.

The second half of the meeting will help refine the preliminary design to include the nomenclature, practices, and institutional knowledge of key Pasco County staff. Key staff are expected to participate so that the development of the geodatabase can be finalized in a timely manner.

DELIVERABLES—TASK 3.1

- Geodatabase design workshop at Pasco County
- Meeting minutes illustrating the changes to be made to the geodatabase design

TASK 3.2—GEODATABASE REFINEMENT

Jones Edmunds will refine the preliminary geodatabase design based on comments from staff during the workshop. The geodatabase design will be refined to meet (where possible) the various requirements of Pasco County. These requirements may include geometric networks, application development, database relationships, stormwater modeling etc. Location data will be accurate (x, y, z) GPS points (or plan coordinates adjusted to the base map for archive data).

DELIVERABLES—TASK 3.2

- Preliminary geodatabase design based on staff comments from workshop

TASK 3.3—FINAL GEODATABASE GENERATION

After County staff review, comment on, and accept the preliminary geodatabase design, Jones Edmunds will generate the final geodatabase for deployment at Pasco County. A complete metadata template will be provided for the final geodatabase model. The template will conform to Federal Geographic Data Commission (FGDC) guidelines. Sample completed metadata forms for all asset types will be provided.

DELIVERABLES—TASK 3.3

- Final geodatabase design (once preliminary design is accepted by the County)
- Sample personal geodatabase generated from the final geodatabase design

CLIENT RESPONSIBILITIES—TASK 3

To ensure successful completion of Task 3, Pasco County will need to do the following:

- Make key staff available for Jones Edmunds' Stormwater GIS Presentation and Geodatabase Database Design Workshop held by Jones Edmunds
- Sign-off on final geodatabase design within 5 days of submission to County

TASK 4—HARDWARE/SOFTWARE EVALUATION AND RECOMMENDATIONS

Jones Edmunds will develop protocols and middleware applications to receive data from the field collection devices, and process it into a form compatible with the final GIS database. It is anticipated that this will include processing of some points into line vertices, application of symbology to some features, and addition of some attributes carried from the GIS County map base.

TASK 4.1—HARDWARE/SOFTWARE CONFIGURATIONS AND RECOMMENDATIONS

Jones Edmunds will provide the County with options for the field data collection hardware/software. The County anticipates that field data will be collected using a combination of digital photography, GPS readings, and GIS data entry. Various choices are available for the framework of the field data collection application. The County could choose ArcPad, the more robust ArcEngine, or some other customized or commercial-off-the-shelf field data-collection application. The selection of the software configuration will be determined by the complexity of the data to be collected, the tools/hardware available to the field data collectors (County staff), and the amount of time to be devoted to incorporating the field data into the main geodatabase. ArcPad will allow data to be collected in the field and brought back into the office with minimal data transfer time. ArcEngine, on the other hand, can collect more complex forms of data and automate much of the transition from the field to the office.

As with the software, there are various choices for hardware. The County may prefer ruggedized laptops or pen tablets as opposed to the more traditional GPS units. The software choices will drive the hardware choices and vice-versa.

As part of the hardware/software recommendations we will also evaluate the feasibility of applications designed to help the County become more efficient in their business practices within the Stormwater department. One application that will be evaluated is our Cad loader application. This application will streamline the maintenance of the County's GIS data by loading new CAD data into the geodatabase. This application will greatly reduce time staff spends performing repetitive data-migration tasks. This is ordinarily a multiple-step routine of exporting individual layers from the CAD drawings and importing them one at a time into the Geodatabase-associated feature classes. The application will allow the quick, accurate, and efficient migration of data directly from CAD drawings into the County's Geodatabase.

Another application that will be evaluated is a Computerized Maintenance Management System (CMMS). A CMMS is a set of software tools used to manage and analyze information pertaining to asset, or facility, characteristics and the work associated with maintaining those assets. The CMMS will enable the County to become more proactive as opposed to reactive in their stormwater maintenance.

Jones Edmunds will produce a document explaining the selected hardware-software configuration, and discussing the strengths and weaknesses of the various alternatives. Costs of the various options shall be a consideration, but the primary criteria should be accuracy, reliability, ease of use, and suitability for the County's specific requirements.

DELIVERABLES—TASK 4.1

- Hardware/software options draft and final report

TASK 4.2—CUSTOMIZED DATA-COLLECTION FORMS

Task 4.1 will produce a report with recommendations on hardware/software configurations. Related to these choices will be the application to collect attributes and locations (x,y,z) of stormwater infrastructure and ensure the data are easily checked in and out of the enterprise stormwater infrastructure geodatabase. Our customized data-collection forms will work on PDAs, Trimble units, laptops and other data collectors and are an efficient and relatively inexpensive solution for the County. The forms will be customized to work directly with the geodatabase design developed in Task 3. The forms will have drop-down lists to lessen the chances for mistakes and to uphold data integrity.

Jones Edmunds will review the forms with Pasco County and identify any changes desired within the forms. In addition, the procedures for checking in and checking out data from the infrastructure geodatabase will be outlined in the Data Management Standard Operating Procedures.

If the County chooses a different software configuration than ArcPad after reviewing the Task 4.1 report, Jones Edmunds will determine whether the recommended solution is possible within the budget allocated for this task. Depending on the complexity of the software chosen, Jones Edmunds may require additional funding which could be acquired out of the additional support services in Task 10.

DELIVERABLES—TASK 4.2

- Customized ArcPad forms for data collection

TASK 5—WORKFLOW ANALYSIS

Numerous sources of stormwater data are available throughout Pasco County, including but not limited to the following:

- Surveys
- As-built drawings (CIP and other)
- SWFWMD Watershed Management Plan data

As part of the stormwater inventory master plan, it is essential to map out the information flow of each of these datasets within the County's standard operating procedures. The County's future stormwater infrastructure geodatabase will only be a snapshot in time. Identifying, revising, and/or creating the County's standard operating procedures to address these various data sources will enable the County to capture, centrally manage, and continuously update the stormwater infrastructure database.

TASK 5.1—INTERVIEWS

Jones Edmunds will interview key staff at Pasco County to determine their roles and responsibilities within the County before implementing the stormwater infrastructure geodatabase. Our goal is to understand the data and work flow processes within the County from request to end product. Jones Edmunds will identify responsibilities, what information is used, how it is used, who uses it, and the purpose for which it is used. From each interview, Jones Edmunds will piece together the work and data flow at the County and identify areas where a GIS may play a support role. Jones Edmunds will document the current maintenance and workflow procedures used by County staff. If necessary, Jones Edmunds will recommend changes to these procedures required by the enterprise GIS in a report to County staff. These procedures will outline operations relative to maintaining and updating the new enterprise GIS data structure.

We anticipate the interviews to be completed in 1 to 2 days at the County offices.

DELIVERABLES—TASK 5.1

- Staff Interviews

TASK 5.2—REPORT DEVELOPMENT

Jones Edmunds will produce a report detailing the information learned during the interviews. The report will cover the following:

- Existing information flow
- Proposed information flow

The existing information flow will be identified from information gathered by County staff and during the department interviews. The proposed information or work flow development will be illustrated in a flowchart. We will identify how the information should be entered into the

stormwater infrastructure database. In addition, we will detail a plan for implementing the proposed information or work flow. This proposed information or work flow (if followed) will enable the County to keep the stormwater infrastructure database as the most up-to-date reflection of stormwater infrastructure in the County.

DELIVERABLES—TASK 5.2

- Report outlining the existing and proposed information flow

CLIENT RESPONSIBILITIES—TASK 5

- The County will need to coordinate the staff interviews internally and ensure that required staff attend.

TASK 6—STANDARD OPERATING PROCEDURES

Jones Edmunds will work with the County to develop standard operating procedures (SOPs) for stormwater field-data-collection and data-management efforts. The County wishes to download data from field collection devices into its central GIS with a minimum of intervention by GIS analysts. The SOPs will cover the field protocol for the actual collection of infrastructure and the office processing protocol for incorporating the data into the database or other systems. Jones Edmunds will describe protocols to timestamp data and photographs, implement connectivity of GPS, GIS feature creation, and imagery collection without error, produce fail-safe backups of field data, and perform error trapping on location and attribute data collected. SOPs for stormwater field-data-collection and data-management efforts will greatly improve the data integrity and standardize the methods for collecting and classifying the data once County staff begins developing the stormwater inventory. In addition, the SOPs will include QA/QC procedures.

TASK 6.1—FIELD DATA COLLECTION STANDARD OPERATING PROCEDURE

The Field Data Collection SOP will include the following:

- Photo identification of stormwater structures
- GPS collection standards (required GPS signal, collection location, etc.)
- Stormwater geodatabase (GDB) attribute descriptions to help field personnel understand how they should be collecting information
- Instruction for field data collection application (ArcPad, Terrasync, etc.)
- QA/QC

DELIVERABLES—TASK 6.1

- Field Data SOP

TASK 6.2—DATA MANAGEMENT STANDARD OPERATING PROCEDURE

Data that have been collected in the field will need to be incorporated into the stormwater infrastructure geodatabase. This process will require a standard methodology. Jones Edmunds will work with the County to standardize this process and create a data-management SOP. The Data Management SOP will include protocol for incorporating the field data in the infrastructure database. This will include connectivity establishment, QA/QC procedures (duplication, topology, connectivity issues), and instructions for any office data management tools developed in Task 4. QA/QC procedures will include the following:

- The SOP will detail QC checking to ensure that there are no conflicts between collected data and the GIS base or other SWFWMD data. It is anticipated that intervention will be required to resolve flagged conflicts.
- Field data will be QC checked to ensure continuity with existing data and internal engineering consistency. Invert and slope disjunctions, and connectivity issues will be flagged. A standard data download and QC report will be produced by the consultant middleware for each data append operation
- Data that is part of a drainage collection network (pipes, swales, manholes, etc.) shall be processed in a manner that lends itself to incorporation into computer simulation of system hydraulics, as with USEPA SWMM, InfoWorks, SewerGEMS, DHI-MIKE, etc.

DELIVERABLES—TASK 6.2

- Data Management SOP

TASK 7—PILOT PROJECT

Jones Edmunds will conduct a pilot project with the County to evaluate the SOPs, field application, and any office-processing applications. Jones Edmunds is responsible for the start up of the Master Plan in order to verify in the field and at the office the proposed protocols and prepare necessary adjustments. The County anticipates its staff to continue carrying out the stormwater inventory once all protocols are proof to work properly. The County will provide input to Jones Edmunds for final review and revision. Jones Edmunds will collaborate with the County to determine the location of the pilot area. There will be three phases to the pilot project: Jones Edmunds' Pilot Field Data Collection, the County/Jones Edmunds' Data Collection, and the County's Data Collection. Each phase is detailed below.

The collected stormwater features will be snapped together and stored in a geodatabase format. Areas that discharge into ponds/wetlands/canals will be connected by flow lines which are representations of the flow of water through the system. These flow lines do not represent actual structures but are a way of maintaining the system as a network. Adding the flow lines will

create a geometric network, which allows for building a connected system. Most GIS systems store culverts which appear to be connected but which, in reality, have no logical relationship or link. The geometric network creates the rules and relationships between features. For example, it can allow a user—in this case, the County—to perform a trace to see which culverts are connected to each other. By designating a “source” and a “sink,” the County can see which direction stormwater could potentially take through the network. Once the network is established, connectivity is maintained when the GDB is edited in the future.

Jones Edmunds will train Pasco County personnel involved in this inventory and field train the Stormwater crew responsible for obtaining field information. A complete training manual shall be prepared for reference and for new field crews.

TASK 7.1—PHASE 1—JONES EDMUNDS’ PILOT FIELD DATA COLLECTION

Adhering to the Field Data Collection SOPs, Jones Edmunds staff will perform the first phase of the pilot project and test the methodology needed for field collection to ensure efficiency of the process as well as data quality. Based on the initial testing, Jones Edmunds will recommend any necessary changes and present a final process for the County to follow. Jones Edmunds will remedy any software bugs or equipment interface problems that are identified during the testing phase. Jones Edmunds anticipates collecting in a representative area to be determined through input from the County. The same area will be used for all three field collection phases.

DELIVERABLES—TASK 7.1

- Document listing potential changes to SOPs.
- Geodatabase of the field collected data.

TASK 7.2—PHASE 2—COUNTY/JONES EDMUNDS’ DATA COLLECTION

In the second phase of the pilot project, Jones Edmunds will assist County staff in the field, train them in the data-collection process, and troubleshoot any issues, thus making sure that County staff understands the process. Jones Edmunds will provide two staff to work with County personnel in collecting the stormwater infrastructure over the period of a week

DELIVERABLES—TASK 7.2

- Updated geodatabase of the field-collected data (including information collected by the County).

TASK 7.3—PHASE 3—COUNTY’S DATA—COUNTY COLLECTION

In the third phase, County staff will collect data independently. Jones Edmunds will be responsible for QA/QC of the procedures and collected data once the collection effort is complete.

DELIVERABLES—TASK 7.3

- Updated geodatabase of the field-collected data (including County-collected information)
- Meeting and notes to discuss any issues or changes to procedures identified during QA/QC.

TASK 8—TRAINING

Training will consist of GPS theory (if needed), hardware/software configurations, and any applications developed to help transfer field data to the office. In addition, training will include standard field protocols, such as structure identification and GPS settings, outlined in the SOPs.

TASK 8.1—OFFICE TRAINING

The first phase of the training will be held at Pasco County offices to ensure the field crews are prepared before attending the field training. Jones Edmunds will prepare an exam given at the end of the training session to determine how well County staff learned the information presented. The office training will consist of the following:

- GPS theory – basics.
- Safety and General Field Preparation.
- Structure Identification.
- Standard Operating Procedures.
- Introduction to ArcPad.
- Walkthrough of the Customized Forms.
- Exam

DELIVERABLES—TASK 8.1

- 8-hour office training session at Pasco County.

TASK 8.2—FIELD TRAINING

The field training will be held at a location to be determined later by the County and Jones Edmunds. We will provide two GPS units for the training and will work in groups. Jones Edmunds will prepare an exam given at the end of the training session to determine how well County staff learned the recommended procedures. *The field training will include the following:

- Field collection protocol (SOPs)
- Proper field techniques
- Customized ArcPad forms
- Structure identification
- Unique field issues and how to handle them (buried manholes, unknown pipe locations, etc.)
- Exam

DELIVERABLES—TASK 8.2

- 8-hour field training session at Pasco County

TASK 9—IMPLEMENTATION PLAN

Based on the Tasks above, Jones Edmunds will design and develop the Master Plan for the implementation of the County’s Stormwater System Inventory including field data collection and information that could be imported from other sources.

TASK 9.1—PLANNING MEETING

Jones Edmunds will meet with the County to establish “priority areas,” which may include areas where data are needed the fastest, such as future modeling efforts or known problem areas. In addition, Jones Edmunds will recommend the County the needs (human resources, equipment, financial resources) for the implementation of this project in a reasonable period of time.

DELIVERABLES—TASK 9.1

- 1 day meeting at Pasco County
- Meeting Minutes

TASK 9.2—IMPLEMENTATION PLAN REPORT

Jones Edmunds will produce a Master Plan implementation plan report with the information garnered in the planning meeting. Using the County’s existing digital photographic base, Jones Edmunds will create a grid system for scheduling field work, maintaining data tracking, supporting quality control (QC), and analyzing progress. The implementation plan will include the following:

- Costs and schedule
- Grid with planned dates for collection
- Resources needed for the field effort
- Hardware/software requirements based upon staffing and schedule

This plan will enable the County to identify resources needed and schedule for completion of a County-wide stormwater inventory.

DELIVERABLES—TASK 9.2

- Master Plan Implementation Plan Report

TASK 9.3—FINAL STORMWATER MASTER PLAN DOCUMENT

Jones Edmunds will meet with the County and describe all deliverables outlined above. A complete report shall be submitted, including user manuals for any software and forms developed by the consultant. All custom code listings will be provided to the County with documentation. Jones Edmunds will compile all reports, applications, and user manuals within the project to produce the Master Plan Report. . We will provide the County with a digital .pdf version of the document as well as 5 hardcopies.

DELIVERABLES—TASK 9.3

- Five hardcopies and one digital .pdf version of the Stormwater Inventory Master Plan Document

TASK 10—ONGOING ASSISTANCE

TASK 10.1—MISCELLANEOUS SUPPORT SERVICES

Jones Edmunds will provide Pasco County with ongoing assistance as County staff implement the project. Our assistance may include future geodatabase, application development, or SOP revisions. This effort will be limited to no more than 120 hours of effort in the labor categories defined in the attached Fee Proposal (Appendix A).

APPENDIX A
Draft Fee Proposal

**DESIGN AND START UP OF THE PASCO COUNTY STORMWATER SYSTEM INVENTORY MASTER PLAN
TASK ORDER SM08-002 - APPENDIX A - SCHEDULE OF VALUES**

JONES EDMUNDS 2007 STANDARD HOURLY RATES

SUBTASK DESCRIPTION	Project Officer	Project Manager	Database Adm. \$85	Progr. Analyst \$105	GIS Analyst \$85	GIS Techn. \$60	Engineer Intern \$95	Admiton	Total Labor	Direct Cost	Total Cost
Subtask 1 - Project Planning/ Kickoff											
1.1 Project Preparation and Planning	0	16	4	0	24	0	0	0	\$4,380	\$132	\$4,500
2.2 Kickoff Meeting	10	8	10	0	8	0	8	4	\$5,680	\$484	\$6,120
TOTAL SUBTASK No. 1	10	24	14	0	32	0	8	4	\$10,060	\$618	\$10,820
Subtask 2 - Data Evaluation and Migration Plan											
2.1 Evaluation of Existing Data	0	16	0	8	80	0	16	0	\$11,080	\$532	\$11,612
2.2 Data Evaluation and Migration Plan Report	4	24	0	80	8	0	8	8	\$13,380	\$539	\$13,919
TOTAL SUBTASK No. 2	4	40	0	88	88	0	24	8	\$24,460	\$1,071	\$26,631
Subtask 3 - Geodatabase Design											
3.1 Geodatabase Presentation and Workshop	0	16	40	0	56	0	4	0	\$10,540	\$748	\$11,288
3.2 Geodatabase Refinement	0	4	24	0	24	0	4	0	\$4,960	\$132	\$5,092
3.3 Final Geodatabase Generation	4	16	24	0	40	0	4	0	\$8,680	\$220	\$8,900
TOTAL SUBTASK No. 3	4	36	88	0	120	0	12	0	\$24,180	\$1,100	\$26,280
Subtask 4 - Hardware/Software Evaluation and Recommendations											
4.1 Hardware/Software Evaluation and Recommendations	0	24	40	40	16	0	2	0	\$12,150	\$308	\$12,458
4.2 Customized ArcPad Forms	0	24	40	80	8	0	2	0	\$15,670	\$484	\$16,154
TOTAL SUBTASK No. 4	0	48	80	120	24	0	4	0	\$27,820	\$792	\$28,612
Subtask 5 - Workflow Analysis											
5.1 Interviews	0	16	8	0	40	0	4	0	\$6,860	\$660	\$7,520
5.2 Report Development	4	16	24	4	80	0	8	8	\$14,160	\$495	\$14,655
TOTAL SUBTASK No. 5	4	32	32	4	120	0	12	8	\$21,020	\$1,155	\$22,176
Subtask 6 - Standard Operating Procedures											
6.1 Field Data Collection SOP	4	24	0	80	16	0	16	0	\$14,340	\$583	\$14,923
6.2 Data Management SOP	4	24	0	80	16	0	16	8	\$14,820	\$583	\$15,403
TOTAL SUBTASK No. 6	8	48	0	160	32	0	32	8	\$29,160	\$1,166	\$30,326
Subtask 7 - Pilot Project											
7.1 Phase 1 - Jones Edmunds Collection	0	24	0	80	60	60	8	0	\$20,060	\$2,200	\$22,260
7.2 Phase 2 - County and Jones Edmunds Collection	0	16	0	40	48	48	0	8	\$13,240	\$1,276	\$14,516
7.3 Phase 3 - County Collection	0	24	0	24	40	40	8	8	\$9,440	\$572	\$10,012
TOTAL SUBTASK No. 7	0	64	0	144	148	108	16	8	\$42,740	\$4,048	\$46,788
Subtask 8 - Training											
8.1 Office Training	0	24	0	40	0	8	4	0	\$7,660	\$374	\$8,034
8.2 Field Training	0	24	0	40	0	8	4	8	\$8,140	\$374	\$8,514
TOTAL SUBTASK No. 8	0	48	0	80	0	16	8	8	\$15,800	\$748	\$16,548
Subtask 9 - Implementation Plan											
9.1 Planning Meeting	4	16	0	16	0	0	4	0	\$4,760	\$528	\$5,288
9.2 Implementation Plan Report	8	24	0	56	0	0	8	8	\$11,280	\$363	\$11,643
9.3 Final Stormwater Master Plan Document	4	4	0	8	0	0	16	24	\$5,080	\$264	\$5,344
TOTAL SUBTASK No. 9	16	44	0	80	0	0	28	32	\$21,120	\$1,155	\$22,275
Subtask 10 - Ongoing Assistance											
10.1 Miscellaneous Services (As needed)	4	16	0	16	80	0	4	0	\$11,560	\$988	\$12,528
TOTAL SUBTASK No. 10	4	16	0	16	80	0	4	0	\$11,560	\$988	\$12,528
Total	50	400	214	124	688	524	148	76	\$227,920	\$12,819	\$240,683

APPENDIX B
Draft Schedule

**DESIGN AND START UP OF THE PASCO COUNTY STORMWATER SYSTEM INVENTORY MASTER PLAN
TASK ORDER SM08-002 - APPENDIX B - WORK SCHEDULE**

ID	Task Name	Duration	Start	Finish	Predecessors	December	January	February	March	April	May	June	July	August
						12/9 2/1 2/2 2/3	1/6 1/13 1/20 1/27	2/3 2/10 2/17 2/24	3/2 3/9 3/16 3/23 3/30	4/6 4/13 4/20 4/27	5/4 5/11 5/18 5/25	6/1 6/8 6/15 6/22 6/29	7/6 7/13 7/20 7/27	8/3
1														
2	Task 1 - Project Planning/ Kickoff	1 day	Tue 1/8/08	Tue 1/8/08										
3	1.1 Project Preparation and Planning	1 day	Tue 1/8/08	Tue 1/8/08										
4	2.2 Kickoff Meeting	1 day	Tue 1/8/08	Tue 1/8/08										
5	Task 2 - Data Evaluation and Migration Plan	29 days	Wed 1/9/08	Mon 2/18/08										
6	2.1 Evaluation of Existing Data	13 days	Wed 1/9/08	Fri 1/25/08	4									
7	2.2 Data Evaluation and Migration Plan Report	16 days	Mon 1/28/08	Mon 2/18/08	6									
8	Task 3 - Geodatabase Design	25 days	Mon 1/28/08	Fri 2/29/08										
9	3.1 Geodatabase Presentation and Workshop	10 days	Mon 1/28/08	Fri 2/6/08	6									
10	3.2 Geodatabase Refinement	5 days	Mon 2/11/08	Fri 2/15/08	9									
11	County Review and Acceptance	5 days	Mon 2/18/08	Fri 2/22/08	10									
12	3.3 Final Geodatabase Generation	5 days	Mon 2/25/08	Fri 2/29/08	11									
13	Task 4 - Hardware/Software Evaluation and Recommendations	35 days	Mon 3/3/08	Fri 4/18/08										
14	4.1 Hardware/Software Evaluation and Recommendations	15 days	Mon 3/3/08	Fri 3/21/08	12									
15	County Review and Choose Software Configuration	5 days	Mon 3/24/08	Fri 3/28/08	14									
16	4.2 Customized ArcPad Forms	15 days	Mon 3/31/08	Fri 4/18/08	15									
17	Task 5 - Workflow Analysis	30 days	Wed 1/9/08	Tue 2/19/08										
18	5.1 Interviews	10 days	Wed 1/9/08	Tue 1/22/08	4									
19	5.2 Report Development	20 days	Wed 1/23/08	Tue 2/19/08	18									
20	Task 6 - Standard Operating Procedures	20 days	Mon 4/21/08	Fri 5/16/08										
21	6.1 Field Data Collection SOP	15 days	Mon 4/21/08	Fri 5/9/08	16									
22	County Review and Comment	5 days	Mon 5/12/08	Fri 5/16/08	21									
23	6.2 Data Management SOP	15 days	Mon 4/21/08	Fri 5/9/08	16									
24	County Review and Comment	5 days	Mon 5/12/08	Fri 5/18/08	23									
25	Task 7 - Pilot Project	30 days	Mon 5/19/08	Fri 6/27/08										
26	7.1 Phase 1 - Jones Edmunds Collection	15 days	Mon 5/19/08	Fri 6/6/08	24									
27	7.2 Phase 2 - County and Jones Edmunds Collection	5 days	Mon 6/9/08	Fri 6/13/08	26									
28	7.3 Phase 3 - County Collection	10 days	Mon 6/16/08	Fri 6/27/08	27									
29	Task 8 - Training	5 days	Mon 6/30/08	Fri 7/4/08										
30	8.1 Office Training	5 days	Mon 6/30/08	Fri 7/4/08	28									
31	8.2 Field Training	5 days	Mon 6/30/08	Fri 7/4/08	28									
32	Task 9 - Implementation Plan	20 days	Mon 7/7/08	Fri 8/1/08										
33	9.1 Planning Meeting	1 day	Mon 7/7/08	Mon 7/7/08	31									
34	9.2 Implementation Plan Report	14 days	Tue 7/8/08	Fri 7/25/08	33									
35	County Review and Comment	3 days	Wed 7/16/08	Fri 7/18/08	34FS-8 days									
36	9.3 Final Stormwater Master Plan Document	5 days	Mon 7/28/08	Fri 8/1/08	34									

Project: ProjectSchedule.mpp Date: Tue 12/4/07

Task Split Progress Milestone Summary Project Summary External Tasks External Milestone Deadline

APPENDIX C
Project Team

JONES EDMUNDS

ENGINEERS | ARCHITECTS | SCIENTISTS

DESIGN AND START UP OF THE PASCO COUNTY STORMWATER SYSTEM INVENTORY MASTER PLAN TASK ORDER SM08-002 - APPENDIX C – JONES EDMUNDS PROJECT TEAM

Project Officer - Gainesville

Mark Nelson

Mark will be responsible for overseeing the entire project to ensure Pasco County's needs are being met. He will receive regular updates from Matt and will become involved where needed in the project. He will also be responsible for final QA/QC of the deliverables.

Project Manager - Tampa

Matt Terella

Matt will be responsible for managing the project. He will be the main point of contact both internally and externally to ensure the project is on track and is meeting the client needs. He will also be responsible for report writing and as a technical lead on many of the tasks.

SR GIS Analyst – Tampa and Gainesville

Brian Rosenfeld (Tampa) and Maria Martinez (Gainesville)

Brian will be the lead GIS analyst on the project and will be involved in all facets of the project. He will be the technical lead for the County. He will handle training County staff as well. Maria will help support Brian on advanced tasks where needed.

GIS Analyst – Tampa

Kristina Carter

Kristina, will support Brian on all tasks within the project. She will be responsible for working on all different tasks within the project and will be Brian's main staff support.

GIS Technician – Tampa

(to be determined)

This staff will be responsible for supporting elements of field collection phase. The staff member will be located in Tampa but has yet to be determined.

Database Administrator – Gainesville

David Jenkins

Dave Jenkins is responsible for geodatabase design with support from Brian. He is our GIS relational database (SDE) administrator and will work with the County to determine their existing and future GIS structure. Dave also is responsible to help determine the feasibility and cost of any proposed application development.

Programmer Analyst – Gainesville

Tim Conyers and Valentina Boycheva

Tim and Valentina will be responsible for any application development such as the ArcPad field data collection form creation.

Engineer Intern – Tampa

Kim Clayback, Lisa Foster, or Jeanette Kelson (Wtr Resources)

The water resources engineers will be responsible for QA/QC and for providing input on the different tasks within the project to ensure the engineering goals of the project are being met.

Admin – Tampa

Nancy Murphy

Nancy will be responsible for formatting and binding of all reports and documents. Nancy will also help to file the project materials to ensure the project stays organized.

QA/QC Team – Tampa and Gainesville

Hans Zarbock, P.E. - Tampa

Mr. Zarbock is Water Resources Manager for our Tampa Florida office. In that capacity he is responsible for surface water management, water resources planning, and watershed management activities. Mr. Zarbock has over 22 years experience in water resources engineering and environmental science, mainly in west-central Florida.

Tom Friedrich, P.E. - Tampa

Mr. Friedrich has extensive experience in water and wastewater systems evaluation, design, and large facility project management and construction administration. He also has experience in the evaluation, design, and construction phases of sanitary and environmental engineering projects

Brett Cunningham, P.E. - Gainesville

Brett Cunningham, P.E. is a highly qualified water resources engineer with 20 years of experience in stormwater management. He has a strong background in stormwater management and wastewater collection system management. He excels in the application of computer models and geographic information systems to assist in planning, problem solving, and developing cost-effective management strategies.