AGREEMENT FOR PROFESSIONAL SERVICES

THIS AGREEMENT is made as of the _____ day of _____, in the year _____, between the City of Leesburg, a Florida Municipal Corporation, whose address is 501 West Meadow Street, Post Office Box 490630, Leesburg, Florida 34749-0630 (hereinafter referred to as the "CITY"), and Jones Edmunds & Associates, Inc., whose address is 730 NE Waldo Road, Gainesville, Florida 32601, (hereinafter referred to as the "PROFESSIONAL").

WITNESSETH:

WHEREAS, on October 27, 2008, the CITY and the PROFESSIONAL previously entered into an agreement for Professional Services on a Continuing Basis (hereinafter referred to as the "Agreement"). The Agreement is referenced herein as though set forth in full.

WHEREAS, the CITY and the PROFESSIONAL desire to enter into a Written Amendment for "Stormwater Data Inventory".

NOW THEREFORE, for and in consideration of the mutual covenants and promises contained in this Agreement, the CITY and the PROFESSIONAL do hereby agree as set forth below:

1. The above recitals are true and correct and are incorporated herein.
2. The Parties agree to the scope of work and budget pursuant to the terms and conditions set forth in Exhibits "A" – Proposed Scope of Work dated April 27, 2009.

"JONES EDMUNDS & ASSOCIATES, INC."

By: Stanley F. Ferreira, Jr., P.E.

Its: Chief Operating Officer

_____ June 23, 2009

The City of Leesburg, Florida

By: _____

Mayor / Commissioner

APPROVED AS TO FORM:

Attest: _____

City Clerk

_____

CITY ATTORNEY

Date: _____

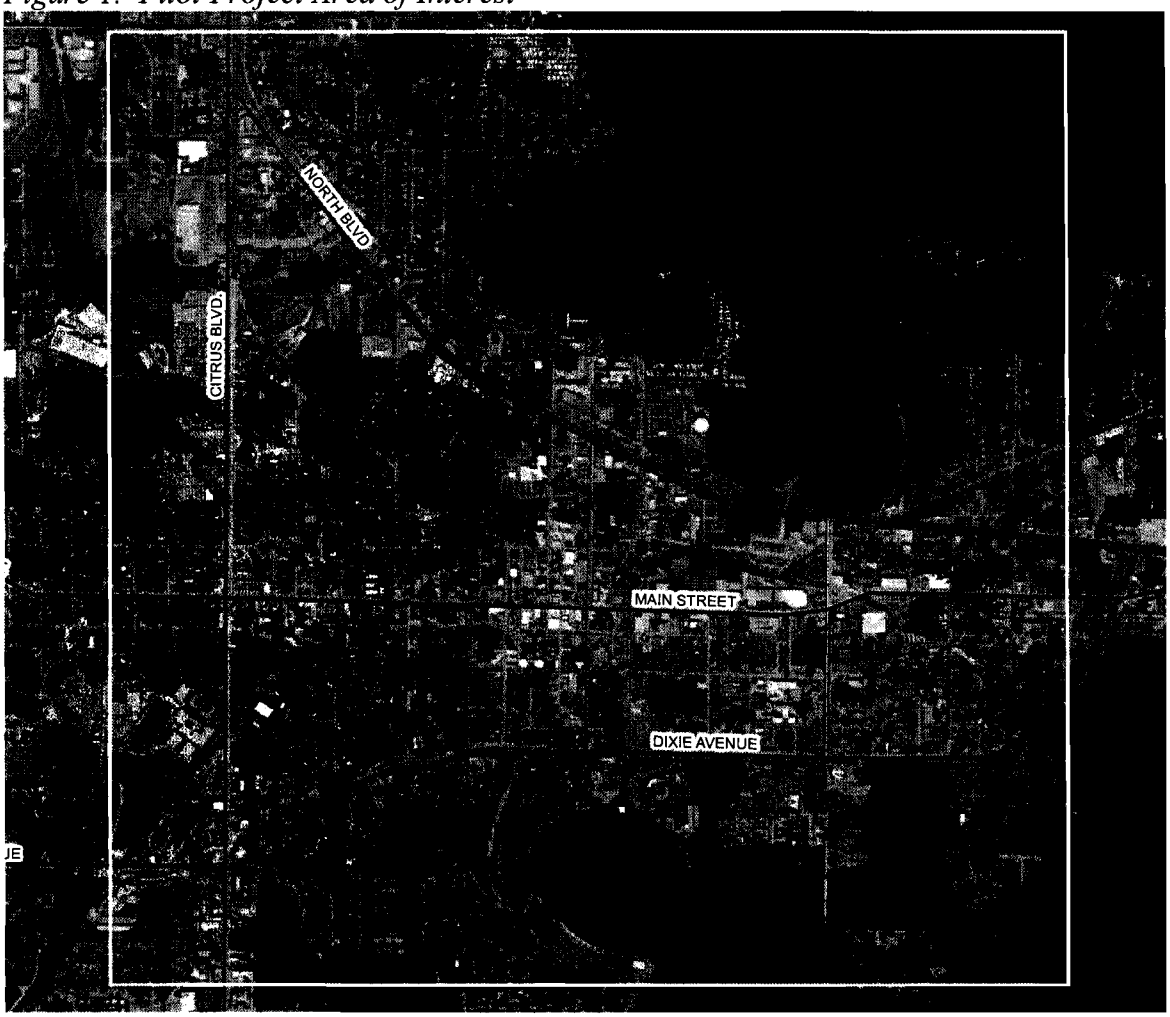
010711

City of Leesburg
Stormwater Data Inventory

Introduction

Through GPS field data collection, Jones Edmunds will help the City of Leesburg complete the development of its Stormwater Geodatabase (GDB) by developing a more complete and connected stormwater network for the City with potential for asset management and modeling functions. We will conduct this project for a 4-square-mile Pilot Area defined in Figure 1. This approach will more quickly provide the City with a tangible product, allowing the City to demonstrate the utility and value of obtaining a complete stormwater network. Once the Pilot Area project is completed, Jones Edmunds will provide the City with a proposal to complete the system-wide stormwater inventory.

Figure 1. Pilot Project Area of Interest



JONES EDMUNDS
ENGINEERS | ARCHITECTS | SCIENTISTS

The following Scope of Services outlines the procedures required to inventory stormwater assets in the Pilot Area and the process of loading these data to a stormwater GDB.

SCOPE OF SERVICES

Jones Edmunds will perform the following tasks to inventory stormwater assets in the Pilot Area and subsequently develop the stormwater GDB:

Task 1: Develop Stormwater Data Model

Jones Edmunds will create an initial stormwater GDB based on our current and past experience developing stormwater networks. We will then conduct a workshop with the City to review the GDB design and incorporate any changes identified by City staff. Jones Edmunds will load the approved GDB schema to its Enterprise system for use during the project.

Task 2: Collect Field Data

Introduction

Due to the questionable viability of the City's existing GIS stormwater data, Jones Edmunds will perform a full field data collection to ensure that spatial and attribute data are current and accurate. This approach will be more cost effective for the City due to the efficiencies gained by avoiding the integration of older data with newer data and the additional editing required for this integration. Where possible, we may use some specific attribution from the original GIS stormwater data. The GPS data will be post-processed to ensure sub-meter accuracy. As part of the field effort, we will develop a site-specific Health and Safety plan to ensure the greatest possible safety for our field staff. We expect to use a two-person crew for collecting field data (e.g., traffic, lifting manhole lids and stormwater grates). The field crew will work together as well as independently, depending on the stormwater data being collected (Appendix). The team will use ArcPad for field data collection, which allows for efficient collection of infrastructure attributes. Digital photographs of each facility will be taken, when appropriate, and will later be hyperlinked to the asset within the GDB.

Field staff will spend up to 2 minutes attempting to locate facilities. If a facility cannot be located within this time frame, it will be attributed as "not found." With the exception of performing "measure downs" to obtain manhole depths, we will not collect vertical data during this project.

Field staff will transfer data collected each day to a Jones Edmunds server via an internet connection. Jones Edmunds office staff will then perform some basic quality assurance and notify the field staff daily of any issues identified.

Field Equipment
Jones Edmunds will use Trimble GeoXHs and/or ProXHs with a PDA in the field. These units are capable of real-time sub-meter and post-processed sub-foot accuracies. Data collected in the field will be post-processed to ensure a minimum of sub-meter accuracy to the features. In some cases, heavy canopy could potentially limit the accuracy of the point location.

Weekly QA/QC
For the first week the data will have daily QA/QC to make sure attributes are being collected correctly. After this, we will QA/QC the data weekly to ensure that adequate data are being collected and to ensure data quality.

Task 3: Conduct Final GDB Review and Quality Assurance

We will update the stormwater GDB with the field-collected data and establish connectivity, including adding flow lines to create a continuous network, for the features as needed. A geometric network will be established and used as a final check for proper connectivity within the GDB.

Deliverables

Deliverables for this project will include a stormwater GDB containing a fully connected stormwater network for the Pilot Area. We will also provide metadata and digital photographs of the stormwater facilities.

Schedule

Jones Edmunds estimates that it will require 4 months to complete this project. Adverse weather that could prevent GPS data collection could affect this estimate.

Compensation

In accordance with our existing Contract for Consulting Engineering Services, Jones Edmunds proposes to perform the Scope of Services described in this proposal for the lump sum fee of **$75,170.00**. The basis of payment shall be an estimate of percent completion multiplied times the lump sum amount and invoiced monthly.

This cost estimate is based on a 4-square-mile Pilot Area containing approximately 59 miles of linear streets and a maximum of 3,500 stormwater assets being collected and/or developed.

APPENDIX

Stormwater Structure Attribution
For
GPS Field Data Collection

Drop Structures

Attributes:

• FDOT Type	feature specific
• Number of Pipes	0 through 9 domain (no fewer than 1)
• Has Skimmer	(true/false)
• Has Drop Basket	(true/false)
• PhotoID	
• Has Sub Structure	(true/false)
• Field Comments	

Manholes

Type P – *Type 1 cover 2ft – 3ft diameter*
Type J - *Type 1 cover 2ft – 3ft diameter*

Gutter Inlets

Type S – Located only in the shoulder of roads.

Type V – May be located in places other than the shoulder, can be used in ditches and swales as well, but the structure is similar to Type S.

Curb Inlets

Type 1 – Measures 10 feet from the centerline to the long edge of the structure.

Type 2 – Measures 10 feet from the centerline to the long edge of the structure

Type 3 – Measures 6 feet from the centerline to the long edge of the structure.

Type 4 – Measures 6 feet from the centerline to the long edge of the structure.

Type 5 – The measurement from the centerline of the structure is evidently skewed to favor one side or the other. May have grate.

Type 6 – Same structure as Type 5; however the measurement from the centerline is equal on both sides of the structure. This structure may have a grate.

Type 7 - This inlet is to be used only in Traffic Separators.

Type 8 - This inlet is to be used only in Traffic Separators wider than Type 7.

Type 9 - Primarily used in locations with moderate flows where the right-of-way does not permit the use of other curb inlets. The grate on this inlet is usually greater than 33 inches wide.

Type 10 - Primarily used in locations with moderate flows where the right-of-way does not permit the use of other curb inlets. The grate on this inlet is usually less than 24 inches wide.

Flume Inlets

There are only two types of Flume Inlets (Type I and Type II); the type is further delineated with the number of barrels within the inlet (1, 2, 3, or 4).

Sidewalk
Type I
Type I Double
Type I Triple
Type I Quad

No Sidewalk
Type II
Type II Double
Type II Triple
Type II Quad

Barrier Inlet

Type 1 – Single throat on one side of barrier wall.

Type 2 – Double throats on one side of barrier wall.

Type 3 – Two single throats on opposite sides of barrier wall.

Type 4 – Two double throats on opposite sides of barrier wall.

Type 5 – Double throats on one side of wall and single throat on the other side of wall.

Barrier Wall Inlet

Ditch Bottom Inlets

Modified
All types can be modified. The modification involves raising the grate out of the concrete slab to reduce litter accumulation.

Skimmers
Located on inlets such as a pond structures and ditch bottom inlets.

Ditch Bottom Inlets

Type A
Single cast iron grate ranging from 24" x 24"

Type B
Single steel grate approximately 44 " square

Type C
Single grate is 37" x 24"

Type D
Single grate is 49" x 37"

Type E
Two grates are 36" x 52" combined

Type H
Three CI grates or Two Steel grates are 36" x 79" combined

Type F
Single steel grate is 30" x 48"

Type G
Single steel grate is 60" x 58"

Type J
Two parallel 51" x 30" grates, may be sloped inward similar to a gutter inlet.

Type K
Used in locations having high flow rates; usually where an end wall could not be used. Often uses a fence enclosure and a large sloped concrete pad around the structure.

Pond Structures
Prevent stormwater retention ponds from overflowing.

Skimmers
Located on inlets such as a pond structures and ditch bottom inlets.
Drop Basket

Trench Drain

Trench drain is intended for use in gutters, sidewalks, and driveways.
One Structure = Two trenches separated by cleanout; if no cleanout, collect on center of grate.

Type I
Non-Removable Grate

Type II
Removable Grate

End Treatments

Attributes:

- End Material — concrete, brick, wood, etc…
- Is Upstream — (true/false)…
- Number Of Pipes — 0 through 9 domain (no fewer than 1)
- PhotoID

Flared End Section

Mitered End Section

For Cross Drain

For Side Drain

Weir

Identification:

- **Rectangular**
- **HorzEllipse**
- **Irregular**
- **VertEllipse**
- **Trapezodial**
- **Arch**
- **Circular**
- **Parabolic**

Attributes:

- Top W
- Bottom W

JONES EDMUNDS
ENGINEERS | ARCHITECTS | SCIENTISTS

- Diameter – for orifice
- Material
- Has Wings
- Num Notches
- PhotoID

Network Structures

Attributes:

- Name
- Location Description
- PhotoID
- Has Mechanical Gates (true/false)

Pump Station

Baffle Box

Used to trap sediment before discharging to waterway.

Open Channels

Identification:

- **Swale** Top Width <= 50 & Depth <= 3
- **Ditch** Top Width <= 50 & Depth > 3
- **Canal** Top Width > 50 & Depth >3
- **Flow Line** Create connectivity

Attributes:

- Top Width feet
- Depth feet
- Bank Material 1 Grass, Bare Earth, Rip Rap
- Bank Material 2 Grass, Bare Earth, Rip Rap
- Bottom Material Grass, Bare Earth, Rip Rap
- Dissipater (true/false)

Energy Dissipater

Found in ditch bottoms to slow water flow.

Pipes

Identification:

- **Collector** — Underground, networked pipes; has inlets
- **Culvert** — Small single pipes bridging open channels under driveways
- **Cross Drain** — Large pipes bridging open channels under (across) roads
- **Side Drain** — Large pipes bridging open channels parallel to roads
- **Outfall** — Pipe end at a location where safe, treated wastewater is discharged into a river, ocean, or other body of water.

Attributes:

- Cross-section shape — Round, Elliptical, U-shaped
- Measurement 1 — inches (elliptical) (Round)
- Measurement 2 — inches (elliptical)
- Material — RCP, CMP, PVC, etc.
- Has Liner — (true/false)

Structural and Functional Assessment

Structural Assessment Choices

- Crack Stress – Stress Crack in structure
- Crack Open – Stress Crack that goes all the way through the structure
- Crushed – structure is crushed (CMP)
- Collapsed – structure is collapsed
- Rusted Through – CMP
- Off Grade – structure has been titled (collapse, outside force)
- Erosion – erosion around structure – may cause future collapse
- Inaccessible – assessment could not be done – no access, submerged, etc.
- Not Applicable – should never use
- Corroded Concrete

Functional Assessment Choices

Veg – Vegetation that constricts the flow of water (woody vs floating):

- Veg 0 – Vegetation 0-33%
- Veg 33 – Vegetation 33%-66%
- Veg 66 – Vegetation 66%-100%
- Veg 100 – 100% packed with vegetation

Silt – Sand, soil, etc:

- Silt 0 – Silt 0-25%
- Silt 25 – Silt 25%-50%
- Silt 50 – Silt 50% - 100%

Debris – Garbage, Concrete blocks, etc:

- Debris 0 – Debris 0-25%
- Debris 25 – Debris 25%-50%
- Debris 50 – Debris 50%-100%

Submerged – Structure is submerged (cannot assess).