

**RESOLUTION NO. 105-12-17**

**A RESOLUTION OF THE TOWN COMMISSION OF THE TOWN OF LAKE PARK, FLORIDA; AUTHORIZING AND DIRECTING THE MAYOR TO EXECUTE AN AGREEMENT WITH CALVIN, GIORDANO & ASSOCIATES, INC. FOR PROFESSIONAL ENGINEERING SERVICES TO PREPARE A DRAINAGE STUDY OF THE LAKE SHORE DRIVE DRAINAGE SYSTEM TO DETERMINE THE OPTIMAL PIPE SIZES TO COLLECT AND DIRECT STORM WATER RUNOFF TO ONE LOCATION; AND PROVIDING FOR AN EFFECTIVE DATE.**

**WHEREAS**, the Town of Lake Park, Florida ("Town") is a municipal corporation of the State of Florida with such power and authority as has been conferred upon it by the Florida Constitution and Chapter 166, Florida Statutes; and

**WHEREAS**, the Town is empowered to enter into contractual arrangements with public agencies, private corporations or other persons, pursuant to Florida Statutes; and

**WHEREAS**, in December 2008 and in October 2009, the Town Commission approved agreements with Calvin, Giordano & Associates, Inc. to design and prepare construction plans for Lake Shore Drive Drainage Improvements; and

**WHEREAS**, the construction plans authorized in December 2008 and October 2009 were completed but the project was not constructed due to lack of funding; and

**WHEREAS**, between the completion of the design plans and 2017, drainage issues on Lake Shore Drive have contributed to an increase in flooding; and

**WHEREAS**, the Town Commission has directed the Town Manager to investigate the feasibility of redesigning Lake Shore Drive to include a pump station to increase drainage capacity; and

**WHEREAS**, as part of this investigation, Calvin, Giordano & Associates, Inc has proposed a drainage study to determine the optimal pipe sizes to collect and direct storm water runoff to one location, which would result in the elimination of three existing storm water outfall pipes and constructing one new storm water outfall downstream of a pump station; and

**WHEREAS**, the cost to perform such drainage study is \$28,220.00

**NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COMMISSION OF THE TOWN OF LAKE PARK, FLORIDA AS FOLLOWS:**

**Section 1.** The whereas clauses are true and correct and are incorporated herein.

**Section 2.** The Commission hereby authorizes an agreement with Calvin, Giordano & Associates, Inc. to provide Professional Engineering Services associated with the redesign of the Lake Shore Drive Drainage Single Storm Water Outfall/Pump Station. The Mayor is hereby authorized and directed to execute the agreement between the Town and CGA, which is attached hereto and incorporated herein as Exhibit "A".


**Section 3.** This Resolution shall become effective immediately upon execution.

The foregoing Resolution was offered by Vice-Mayor Glas-Castro, who moved its adoption. The motion was seconded by Commissioner Lynch and upon being put to a roll call vote, the vote was as follows:

	AYE	NAY
MAYOR MICHAEL O'ROURKE	<u>  /  </u>	<u>  —  </u>
VICE-MAYOR KIMBERLY GLAS-CASTRO	<u>  /  </u>	<u>  —  </u>
COMMISSIONER ERIN FLAHERTY	<u>  /  </u>	<u>  —  </u>
COMMISSIONER ANNE LYNCH	<u>  /  </u>	<u>  —  </u>
COMMISSIONER ROGER MICHAUD	<u>  /  </u>	<u>  —  </u>

The Town Commission thereupon declared the foregoing Resolution NO. 105-12-17 duly passed and adopted this 20 day of December, 2017.

TOWN OF LAKE PARK, FLORIDA

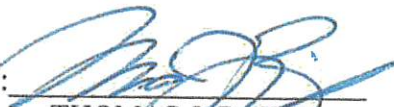
BY:   
MICHAEL O'ROURKE  
MAYOR

ATTEST:

  
VIVIAN MENDEZ  
TOWN CLERK



Approved as to form and legal sufficiency:

BY:   
THOMAS J. BAIRD  
TOWN ATTORNEY

## EXHIBIT "A"



Calvin, Giordano & Associates, Inc.  
EXCEPTIONAL SOLUTIONS™

### Additional Services Agreement

**DATE:** November 28, 2017  
**RE:** Lake Park Lakeshore Drive Drainage Calculations  
**CLIENT:** Town of Lake Park  
535 Park Avenue  
Lake Park, FL 33403  
**ATTENTION:** Ms. Nadia Di Tommaso  
**CGA NO.:** 15-2748.51

CGA HAS BEEN ADVISED TO PROCEED WITH THE FOLLOWING ADDITIONAL SERVICES:

Due to the client's request for work outside the original scope of services, Calvin, Giordano & Associates, Inc. will provide the following additional services:

#### I. Professional Engineering Services

##### A. Civil Engineering

##### 1. Revised Drainage Study

- CGA shall develop a drainage study based on the removal of (4) four existing outfall structures and utilizing a single outfall connection. A computerized model of each sub-basin discharging into Lake Shore Drive Drainage Basin will be developed and analyzed for the optimal size outfall pipe to alleviate the existing flooding problem due to tidal changes and rainfall events. The hydrologic computer program models theoretical rainfall events, as specified by SFWMD, will provide a calculated storm water runoff quantity from the study area. Pre and post stage conditions will be evaluated for hydraulic performance of the conveyance system to determine size of the new outfall system. The study will also determine the required performance of a stormwater pumping station to ensure the system will function in a high tail-water event such as rainfall during king tides. The following guideline items shall be utilized in the modelling process:

Building Code Services  
Civil Engineering / Roadway  
& Highway Design  
Coastal Engineering  
Code Enforcement  
Construction Engineering &  
Inspection (CEI)  
Construction Services  
Data Technologies &  
Development  
Electrical Engineering  
Engineering  
Environmental Services  
Facilities Management  
Geographic Information  
Systems (GIS)  
Governmental Services  
Indoor Air Quality  
Landscape Architecture  
Planning  
Project Management  
Redevelopment  
& Urban Design  
Surveying & Mapping  
Traffic Engineering  
Transportation Planning  
Water / Utilities Engineering  
Website Development

1800 Eller Drive  
Suite 600  
Fort Lauderdale, FL  
33316  
954.921.7781 phone  
954.921.8807 fax

[www.cgasolutions.com](http://www.cgasolutions.com)

- Utilization of the computer program Cascade to develop hydrologic models to compare existing drainage model and proposed single outfall.
  
- Simulations of different outfall pipe sizes for the SFWMD 3-year 1 day, 10-year 1 day, and 25-year 3 day storm events to determine the required pipe size and capacity of future stormwater pump station that will meet the SFWMD permitting requirements for a single outfall. Proposed hours are as follows: Jr. Engineer-10 hours @ \$100/hour , Project Engineer-50 hours @ \$130/hour, Project Manager IV- 30 hours @ \$150/hour, Director Engineering V- 3 hours @ \$175/hour = \$12,525.
  
- Proposed drainage system model review and calibration. Proposed hours are as follows: Jr. Engineer-10 hours @ \$100/hour , Project Engineer-20 hours @ \$130/hour, Eng. Sr CADD Tech Manager - 24 hours @ \$115/hour, Project Manager IV, - 10 hours @ \$150/hour, Director Engineering V- 3 hours @ \$175/hour = \$8,385.
  
- Determine the optimum pipe size of the single outfall system using iterative calculations. Proposed hours are as follows: Project Engineer-10 hours @ \$130/hour, Director Engineering V- 2 hours @ \$175/hour = \$1,650.
  
- Drainage study will provide an order of magnitude of design, construction administration, and construction costs for the future drainage system, stormwater pumping station, and new outfall as well order of magnitude of operation and maintenance costs for the pump station. Jr. Engineer-10 hours @ \$100/hour , Project Engineer-20 hours @ \$130/hour,, Project Manager IV, - 10 hours @ \$150/hour = \$5,100.
  
- CGA shall attend one (1) meeting with Client to discuss the results of the Drainage Study. Proposed hours are as follows: Project Engineer 2 hours @ \$130/hour, Project Manager IV- 2 hours @ \$150/hour = \$560.

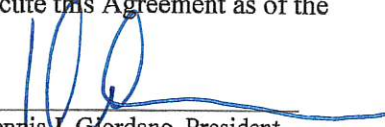
- No engineering plan preparation or permitting are included in the proposal. Implementation of the recommended improvements will be under a separate proposal.

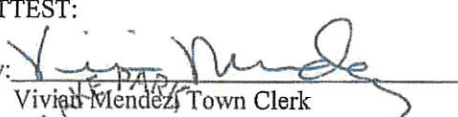
COST OF THESE SERVICES (Lump Sum )		
<b>I</b>	<b>Professional Engineering Services</b>	
	<b>A Professional Civil Engineering Services</b>	<b>\$28,220.00</b>
<b>II</b>	<b>Meetings not included in I thru I</b>	<b>Hourly</b>
	<b>TOTAL (Plus Hourly Services)</b>	<b>\$28,220.00</b>

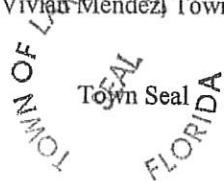
**AUTHORIZATION**


Kindly sign and return this authorization at your earliest convenience.  
**Calvin, Giordano & Associates, Inc.**  
 will proceed upon receipt of authorization.

IN WITNESS WHEREOF, the parties hereto have made and execute this Agreement as of the day and year last execute below.

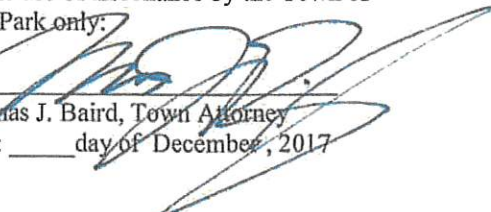
By:   
 Dennis J. Giordano, President  
 Calvin, Giordano & Associates, Inc.  
 Date: \_\_\_\_\_

ATTEST:  
 By:   
 Vivian Mendez, Town Clerk



TOWN OF LAKE PARK  
 By:   
 Michael O'Rourke, Mayor  
 Date: 20 day of December, 2017

Approved as to form and legal sufficiency.  
 For the use of an reliance by the Town of  
 Lake Park only:

By:   
 Thomas J. Baird, Town Attorney  
 Date: \_\_\_\_\_ day of December, 2017

## EXHIBIT "B"

### Lakeshore Drive Drainage System Study Executive Summary

**This study shall be the required Pre-Design Study from the DEP Grant LP50208** and shall not exceed the Grant's Budget Amount of \$30,000.00. The cost of this Pre-Design Study shall be reimbursed by the DEP Grant LP50208 and as such will be paid temporarily out of the Stormwater Utility funds, those will be returned when the reimbursement is received from the State.

The current drainage system on Lakeshore Drive has 4 outfalls into Lake Worth and is susceptible to high tidal condition flooding, in both rainy and dry conditions. The water elevations in Lake Worth Lagoon have increased since the road was originally designed decades ago.

The study will identify ways to insulate Lakeshore Drive from effects of tidal condition flooding. The study will look at options for improvements to the existing drainage system as well as the proposed roadway improvements.

Options that will be studied include various types backflow prevention devices that are being experimented with in other municipalities in Palm Beach County for the existing system and the proposed system. The addition of a stormwater pumping station to the proposed system will also be studied.

More specifically the items to be studied include:

Ways to restrict water in the Lake Worth Lagoon from backflowing into the existing drainage system during high tidal conditions and causing dry weather flooding on Lakeshore Drive. Flap gates at the outfalls or at the interior drainage structures or in-pipe valves will be studied.

For the proposed system the study will include the above listed items, will identify the size of the pipes needed to convey a rainfall event intensity of 5-year one-hour duration to one central location in the vicinity of Lake Shore Drive and Greenbrier Drive, and determine the pumpage rates required from a stormwater pumping station to ensure stormwater flows out of the drainage area even during times of high tidal conditions.

The area to be studied would generally be the east right-of way of Federal Highway from Palmetto Drive to the north property of the Lake Park Harbor Marina.

In current low tidal conditions, the stormwater is collected through a system of inlets and pipes and is discharged passively via 4 outfalls.

In current high tidal conditions stormwater is collected through a system of inlets and pipes and is unable to discharge passively via the 4 outfalls because the water elevation in the lagoon is too high.

In the proposed future low tidal condition, the stormwater will be collected through a system of inlets and pipes and is discharged passively via one outfall. Three of the existing outfalls will be disconnected from the Town's drainage system and the outfall currently in Lakeshore Park will be retained in an emergency backup capacity.

In the proposed future high tidal condition, the stormwater will be collected through a system of inlets and pipes and is discharged actively by stormwater pumping station via the one outfall.

The study will identify the capacity of a pump station to be located in the north end of Lake Shore Park, the size of the outfall pipe needed between the pump station and the Lake Worth Lagoon, and the size of the roadway drainage inter-connect pipes to allow the single outfall to work.

The study will provide a minimum elevation that redeveloped properties on the west side of Lake Shore Drive should be constructed in order that the Lake Shore Drive roadway and drainage system can be redesigned to reduce the number of rain events that will require operation of the pumping station and utilize passive flow as much as possible. Scenarios of sea level rise will be included to determine the future effects on the storm drainage system

The study will provide an order of magnitude of design and construction costs for the future drainage system, stormwater pumping station, and new outfall as well as order of magnitude of operation and maintenance costs for the pumping station. These estimates will not be based on any specific pump station design as that will happen after this study and therefore will be order of magnitude only. The costs of the pump station will be tightened up after the design of the pump station is complete.