

Meeting Date: 11/10/09

Agenda Item 6

REQUESTED COMMISSION ACTION:

Consent       Ordinance       Resolution       Consideration       Workshop

SHORT TITLE OR MOTION: A RESOLUTION APPROVING AND AUTHORIZING PROPER CITY OFFICIALS TO EXECUTE WORK AUTHORIZATION NO 2 WITH CHEN AND ASSOCIATES CONSULTING ENGINEERS, INC FOR PROFESSIONAL SERVICES FOR STORMWATER MASTER PLAN UPDATE FOR BASINS 41-60 IN THE AMOUNT OF \$58,275.00

Summary of Purpose and Why:

The City of Pompano Beach's Stormwater Master Plan, prepared in 1998, prioritized each basin with regard to its ability to relieve drainage. For the top 20 basins, improvement alternatives were developed, and then the City initiated the final design processes. In 2002 a second report was developed for basins 21-40 and the City has initiated the final design processes. In fiscal year 2013 the 40<sup>th</sup> basin will be programmed for implementation. This study will analyze basins 41-60 for development of alternatives, conceptual design, and cost estimates to qualify projects beyond the current planning horizon.

Approval of the Work Authorization has an associated cost of \$ 58,275.00.

QUESTIONS TO BE ANSWERED BY ORIGINATING DEPARTMENT:

- (1) Origin of request for this action: Staff
- (2) Primary staff contact: Helen Gray, PE / Alessandra Delfico, PE Ext. 4738/ 4144
- (3) Expiration of contract, if applicable: \_\_\_\_\_
- (4) Fiscal impact and source of funding: Funds will be available in CIP project number 10-990

DEPARTMENTAL COORDINATION	DATE	DEPARTMENTAL RECOMMENDATION	DEPARTMENTAL HEAD SIGNATURE OR ATTACHED MEMO NUMBER
Engineering	<u>10/29/09</u>	<u>APPROVE</u>	<u>[Signature]</u>
Utilities	<u>11/2/09</u>	<u>APPROVE</u>	<u>[Signature]</u>
Budget	<u>11/2/09</u>	<u>APPROVE</u>	<u>[Signature]</u>
Finance	<u>11/3/09</u>	<u>Approved</u>	<u>[Signature]</u>

- Advisory Board
- Development Services Director
- Interim City Manager

[Signature]

ACTION TAKEN BY COMMISSION:

<u>Ordinance</u>	<u>Resolution</u>	<u>Consideration</u>	<u>Workshop</u>
1st Reading _____	1st Reading _____	Results: _____	Results: _____
2nd Reading _____	_____	_____	_____

RESOLUTION NO. 2010- \_\_\_\_\_

**CITY OF POMPANO BEACH**  
**Broward County, Florida**

**A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF POMPANO BEACH, FLORIDA, APPROVING AND AUTHORIZING THE PROPER CITY OFFICIALS TO EXECUTE WORK AUTHORIZATION NO. 2 FOR ENGINEERING SERVICES BETWEEN THE CITY OF POMPANO BEACH AND CHEN AND ASSOCIATES CONSULTING ENGINEERS, INC. FOR A STORMWATER MASTER PLAN UPDATE FOR BASINS 41-60; PROVIDING AN EFFECTIVE DATE.**

**BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF POMPANO BEACH, FLORIDA:**

**SECTION 1.** That a Work Authorization between the City of Pompano Beach and Chen and Associates Consulting Engineers, Inc. for Engineering Services related to a Stormwater Master Plan Update for Basins 41-60, which is attached hereto and incorporated by reference as if set forth in full, is hereby approved.

**SECTION 2.** That the proper City officials are hereby authorized to execute said Work Authorization between the City of Pompano Beach and Chen and Associates Consulting Engineers, Inc.

**SECTION 3.** This Resolution shall become effective upon passage.

**PASSED AND ADOPTED** this \_\_\_\_\_ day of \_\_\_\_\_, 2009.

\_\_\_\_\_  
**LAMAR FISHER, MAYOR**

**ATTEST:**

\_\_\_\_\_  
**MARY L. CHAMBERS, CITY CLERK**

GBL/ds  
10/16/09  
l:reso/2010-39

**WORK AUTHORIZATION PURSUANT TO THE AGREEMENT  
FOR PROFESSIONAL SERVICES BETWEEN  
THE CITY OF POMPAÑO BEACH  
AND CHEN AND ASSOCIATES CONSULTING ENGINEERS, INC.**

**DATE:**

**WORK AUTHORIZATION NO.   2   FOR ENGINEERING SERVICES**

**PROJECT NO.   10-990**

**TITLE: Stormwater Master Plan Update for Basins 41-60**

**I. PROJECT BACKGROUND**

In August 1999, a Stormwater Management Master Plan was prepared that identified and ranked over 100 separate stormwater sub-basins throughout the City of Pompano Beach. The original report included development of conceptual design and preliminary cost estimates for the 20 highest ranked sub-basins. An update to the Stormwater Management Master Plan was completed in 2002 for the next 20 sub-basins, which were ranked 21-40 in the original document. The preparation of another Stormwater Management Master Plan Update is necessary to act as a reference guide for the implementation of future improvements to the stormwater management system within sub-basins which were ranked 41-60 in the original document. Chen and Associates has prepared this proposal to prepare another update to the Stormwater Management Master Plan for these next 20 sub-basins, which were ranked 41-60 in the original document. Chen and Associates will analyze these 20 sub-basins for the purpose of developing design alternatives and conceptual design along with the associated construction cost estimates.

**II. SCOPE OF SERVICES**

**Task 1: Stormwater Master Plan Update**

**1.1 Reconstruct Topographic Base Map**

ENGINEER shall obtain LIDAR data to develop the updated topographic data for Basins 41-60. ENGINEER shall create a TIN model (Triangulated Irregular Network) of the ground surface elevation for Basins 41-60 using this LIDAR data. The TIN model will be used to calculate stage-storage information for Basins 41-60 as needed for the drainage modeling. ENGINEER will prepare a topographic contour map for Basins 41-60 based on the TIN model.

**1.2 Recreate Basin Data**

ENGINEER shall recreate the hydrologic parameters for Basins 41-60 to be used within the drainage model. ENGINEER will estimate the following hydrologic parameters for Basin 41-60 based recent aerial photographs of the area along with the TIN model: Directly Connected Impervious Area (DCIA), Time of Concentration (TOC), and Curve Number (CN). ENGINEER will estimate the soil parameters, such as soil permeability and soil percolation rates, for each basin based on assumptions from the original master plan. Additional soil

testing will not be conducted under this project but is recommended during the detailed design phase for each basin.

### 1.3 Import Drainage Atlas Information

ENGINEER shall import the drainage information from the City's GIS atlas into the base maps to be used for the drainage modeling. ENGINEER will develop the schematic layout based on the existing drainage pipe network within each basin, which will be incorporated into the drainage model. This PSMS schematic will show the locations of all hydraulic features to be incorporated into the computer model. The hydraulic structures will be linked to databases using GIS that show specific geometric features to be incorporated into the computer model.

### 1.4 Prepare Computer Model

ENGINEER shall prepare a hydraulic computer model for Basins 41-60 based on the updated topographic data, hydrologic parameters, and drainage atlas information compiled for this project. The software to be used for this model update will be Interconnected Pond Routing (ICPR) software by Streamline Technologies. ENGINEER will use the computer model to analyze each basin for meeting both water quantity and water quality requirements. ENGINEER will simulate the 100-year/72-hour; 25-year/72-hour; 5-year/24-hour; and a 5-year/1-hour design storms as defined by SFWMD using the model parameter values compiled during this project. The results of the computer model will be used to verify whether each basin meets level of service criteria for flood control and water quality, as established by the City and regulatory agencies.

### 1.5 Review Compliant Data

ENGINEER shall review compliant data received by the City for Basins 41-60, which will be used for prioritizing the improvements for each basin.

### 1.6 Interview Staff

ENGINEER shall interview City staff about problem areas within Basins 41-60, which will be used for prioritizing the improvements for each basin.

### 1.7 Basin Comparison

ENGINEER shall prioritize the need for drainage improvements within Basins 41-60 based on the information developed during this project. The prioritization formula used during the 1999 Stormwater Management Master Plan will be revised since more accurate information for these basins can be compiled at this time. This prioritization formula will still be based on a combination of computer modeling results, number of complaints per area, costs per area served, permitting issues, water quality, and aesthetics. The revised formula will place a heavier emphasis on the computer modeling results since more accurate data is now available for this analysis.

### 1.8 Conceptual Design and Cost Estimate

ENGINEER shall develop a conceptual design for drainage improvements within Basins 41-

60 according to the results of the computer modeling. ENGINEER will develop an overall plan for drainage improvements within Basins 41-60 which will meet the City's level of service criteria and regulatory agency guidelines. ENGINEER will prepare maps using GIS to show the location of recommended stormwater improvements within Basins 41-60. ENGINEER will prepare a summary table of the probable capital costs of drainage improvements within each basin.

**Task 2: Reimbursables**

2.1 Document Reproduction

ENGINEER shall provide all document reproduction required for this project. All printing costs will be reimbursed.

**III. OWNER PROVIDED SERVICES**

- a. CITY will provide atlas maps and available as-built drawings for the drainage system within Basins 41-60.
- b. CITY will provide Complaint Data related to any flooding issues within Basins 41-60.
- c. CITY staff will be available for interviews in reference to any flooding issues within Basins 41-60.

**IV. FEE AND PAYMENT**

The fee for the above scope of service would be billed at a lump sum of **\$57,775**. The fees are listed by task within the table below. The fee included a budget of \$500 for documents reproduction, which shall be billed at cost. The CITY is to be billed monthly for the estimated percentage of completion.

<b>Task Description</b>	<b>Total</b>
Task 1.1: Reconstruct Topographic Base Map	\$ 6,060
Task 1.2: Recreate Basin Data	\$ 10,210
Task 1.3: Import Drainage Atlas Information	\$ 4,360
Task 1.4: Prepare Computer Model	\$ 16,275
Task 1.5: Review Complaint Data	\$ 730
Task 1.6: Interview Staff	\$ 730
Task 1.7: Basin Comparison	\$ 4,425
Task 1.8: Basin Comparison	\$ 14,985
Task 2.1: Document Reproduction	\$ 500
<b>Total</b>	<b>\$ 58,275</b>

**V. DELIVERABLES**

ENGINEER will provide the Stormwater Master Plan Update document for Basins 41-60 in hard copy and digital form as appropriate. Supplementary information such as detailed tables, computer printouts and detailed maps will be provided in separately bound appendices in hard copy and/or digital form as appropriate.

**"CITY":**

Witnesses:

**CITY OF POMPANO BEACH**

\_\_\_\_\_

By: \_\_\_\_\_  
LAMAR FISHER, MAYOR

\_\_\_\_\_

By: \_\_\_\_\_  
PHYLLIS A. KORAB  
INTERIM CITY MANAGER

Attest:

\_\_\_\_\_  
MARY L. CHAMBERS  
CITY CLERK

(SEAL)

Approved As To Form:

\_\_\_\_\_  
GORDON B. LINN  
CITY ATTORNEY

STATE OF FLORIDA  
COUNTY OF BROWARD

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 2009 by **LAMAR FISHER**, as Mayor, **PHYLLIS A. KORAB** as Interim City Manager and **MARY L. CHAMBERS**, as City Clerk of the City of Pompano Beach, Florida, a municipal corporation, on behalf of the municipal corporation, who are personally known to me.

NOTARY'S SEAL:

\_\_\_\_\_  
NOTARY PUBLIC, STATE OF FLORIDA

\_\_\_\_\_  
(Name of Acknowledger Typed, Printed or Stamped)

\_\_\_\_\_  
Commission Number

**"ENGINEER":**

Witnesses:

[Signature]  
PEIRA MOURK

[Signature]  
SAFIVA GONZALEZ

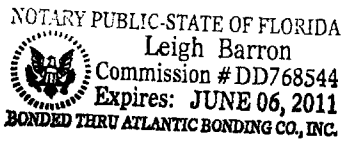
**CHEN AND ASSOCIATES CONSULTING ENGINEERS, INC.**

By: [Signature]  
Jason McClair P.E.,  
Treasurer  
500 West Cypress Creek Rd Suite 410  
Ft. Lauderdale FL 33309

STATE OF FLORIDA  
COUNTY OF BROWARD

The foregoing instrument was acknowledged before me this 20 day of October, 2009 by Jason McClair as Treasurer of Chen and Associates Florida corporation, on behalf of the corporation and who is personally know to me.

NOTARY'S SEAL



[Signature]  
NOTARY PUBLIC, STATE OF FLORIDA  
(Signature of Notary Taking Acknowledgment)

Leigh Barron  
(Name of Acknowledger Typed, Printed or (Stamped))

DD768544  
Commission Number

