

**FIRST AMENDMENT TO AGREEMENT BETWEEN THE CITY OF LEAGUE CITY
AND LOCKWOOD, ANDREWS, & NEWNAM, INC.**

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This First Amendment (“Amendment”) is entered into between the City of League City (“City”) and Lockwood, Andrews, & Newnam, Inc. (“Contractor”) on the date set forth below.

RECITALS

WHEREAS, the City and Contractor entered into an Agreement (“Agreement”) on or about November 6, 2019 whereby Contractor agreed to provide engineering services related to the Benson Bayou Detention Project, Phase 1; and

WHEREAS, the City and Contractor wish to expand upon the previously agreed Hydrologic and Hydraulic Modeling Analysis provided by Contractor; and

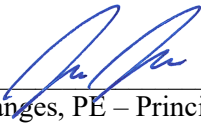
NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereto hereby agree to the following terms:

TERMS:

1. The above-listed recitals are true and correct and hereby incorporated into this Amendment.
2. The added analysis by Contractor shall follow the scope and fee schedule in Exhibit A, which is attached and incorporated into this Amendment.
3. Except as expressly provided in this Amendment, all other terms, conditions and provisions of the Agreement shall continue in full force and effect as provided therein.

Executed on _____. (date to be filled in by City Secretary)

LOCKWOOD, ANDREWS, & NEWNAM, INC.



Matt Manges, PE – Principal for Lockwood, Andrews, & Newnam, Inc.

CITY OF LEAGUE CITY

John Baumgartner, City Manager

ATTEST:

APPROVED AS TO FORM:

Diana Stapp, City Secretary

Office of the City Attorney



**Lockwood, Andrews
& Newnam, Inc.**
A LEO A DALY COMPANY

June 26, 2020

City of League City
500 W Walker St
League City, Texas 77573

Attention: Christopher Sims, PE

Re: Benson Bayou Additional Detention Basins Analysis

Dear Mr. Sims,

Per your request, Lockwood, Andrews & Newnam, Inc. has prepared a general scope and fee schedule for the Benson Bayou Additional Detention Basins Analysis. The effort described in Exhibit A will include the proposed scope of services to complete the analysis. In general, the tasks include revised existing conditions development, drainage analysis, improvement concept development, impact evaluation and reporting.

The goal of the Benson Bayou Additional Detention Basins Analysis is to provide critical detention improvements along advantageous open tracts of land to reduce water surface elevations and benefit the area while ensuring no adverse impact.

We propose to complete the project for a total of \$64,440.00. Exhibit B provides a detailed man hour estimate of the fees associated with the basic and additional services tasks. We propose to complete the analysis within 120 days of Notice-To-Proceed.

We look forward to supporting the City of League City on this important project. Please feel free to contact me at 713-821-0366 or by email at mjmanges@lan-inc.com if you have any additional questions.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Matt Manges'.

Matt Manges, P.E., CFM
Vice President, Practice Leader, Stormwater

Attachments:

Exhibit A – Scope of Services
Exhibit B – Fee Schedule

EXHIBIT A

Scope of Services

City of League City

Benson Bayou Additional Detention Basins Analysis

The goal of the Benson Bayou Additional Detention Basins Analysis is to support the City in their efforts to provide critical detention improvements along advantageous open tracts of land. To accomplish this goal, requires an understanding of the limitations of the existing drainage systems that serve the area and the appropriate mitigation of potential impacts related to drainage improvements.

In the 2019 Benson Bayou Detention Analysis, two basins were evaluated in detail for benefit to the area. While, the analysis showed slight reductions in water surface elevations in Benson Bayou, it was identified that additional detention was needed for greater benefit and mitigation. The purpose of this study is to identify such basins and reduce water surface elevations to benefit the area while ensuring no adverse impact.

SCOPE OF SERVICES:

The scope of work shall consist of Basic Engineering Services and Additional Engineering Services. Basic Engineering Services are those with a defined effort to complete the services. Additional Engineering Services include direct expenses and sub consultants.

I. BASIC ENGINEERING SERVICES

A. General Project Management

1. General Project Management
General project management will be ongoing through the efforts and include items such as participation in the development of a Project Management Plan, developing and updating the project schedule, preparing contract correspondence, transmitting deliverables, documenting the quality control process, and other project oversight activities.
2. Working Meetings with City Staff
Working meetings with City staff shall be held to discuss study related issues, review the progress of the work effort, or to address issues which may arise. The Engineer shall prepare and deliver meeting minutes to the City within five (5) working days after each meeting. The total anticipated number of meetings is four.
3. Quality Assurance/ Quality Control
Quality Assurance/Quality Control (QA/QC) Plan: data will be reviewed by the Engineer for consistency with City requirements and methodology.

B. Analysis – Existing Hydrologic and Hydraulic Analysis

For the purposes of the hydrologic and hydraulic modeling, existing conditions will utilize previously developed HEC-HMS and unsteady HEC-RAS developed in the 2019 Benson Bayou Detention Analysis. Models will be modified minimally but appropriately based on

updated information if applicable. The intent of the potential existing conditions update is necessary only if an additional basin analysis is required or channel improvements outside of the previous study area is included. The existing high-level simulation for the study area will be utilized that drapes a rainfall hyetograph directly on a 2D surface in InfoWorks ICM for the 2-, 10-, 100-year Atlas 14 storm frequencies for the purpose of showing flood extents. Additionally, the dynamic HEC-RAS model will be utilized and updated if necessary, to better understand the benefits of the proposed basin. Updates to the existing conditions models may be necessary if potential basin locations are identified at the watershed boundary fringes or require additional higher level of detail for baseline benefit comparisons.

C. Analysis – Proposed Hydrologic and Hydraulic Analysis

1. Basin Concept Identification and Development

Additional stormwater detention basins will be identified and developed based off available land. High level volumetric calculations will be performed to identify potential basin capacity. The basins will be developed on Galveston County Standards, City of League City Standards and general best practices.

Hydraulic Analysis – Improvement Concept Evaluation

In HEC-RAS, improvement concepts for an additional basins along the Benson Bayou region will be developed to improve the functionality of the study area with the intention to meet City Criteria. Additionally, improvements to Bensons Bayou will be evaluated for effectiveness. Improvements will be detention/retention ponds with additional conveyance features including storm sewer improvements, open channel ditch improvements, or a combination of improvements. Proposed projects will be in one cohesive HEC-RAS model and not modeled independently. The existing conditions HEC-RAS model will be used to derive basin inflows.

When the impact evaluation is concluded, the recommended design for the proposed basin along Benson Bayou will be included in an InfoWorks ICM proposed conditions model and evaluated for the 2-, 10-, and 100-year storm frequencies. This evaluation will build on the existing conditions model and will validate no impacts to nearby systems.

2. Impact Evaluation

Improvement concepts will be evaluated for potential impacts to downstream receiving channels, such as Dickinson Bayou, and upstream contributing channels for 2-, 10-, and 100-year storm frequencies. The evaluation will include the analysis of pre-project and post-project conditions for flow discharge and water surface elevation at the model boundaries for Benson Bayou as well as critical locations along the improvement.

D. Reporting

1. Technical Report and Exhibits

The technical report will include a discussion of the work performed, general methodology, assumptions applied during the course of study, a discussion of the study goal, the reported drainage problems, a discussion of deviations from general methodology, a high level opinion of probable construction cost estimate, and a discussion of findings and recommendations. A draft report will be compiled to include text, exhibits, and appendices for the City's review. The final models, shapefiles, databases, and worksheets used will be included on a compact disc, DVD or FTP site. One (1) round of comments from the City will be used to revise and update draft memorandum and attached exhibits.

Model output and exhibits will be created after all modeling iterations have been completed and the technical memorandum has reached the draft phase.

II. SERVICES EXCLUDED FROM PROPOSED SERVICES

City of League City and LAN agree that the following services are beyond the Scope of Services described in the tasks above. However, LAN can provide these services, if needed, upon the City's written request. Any additional amounts paid to LAN as a result of any material change to the Scope of the Project shall be agreed upon in writing by both parties before the services are performed. These additional services include the following:

- Safe route analysis for first responders
- Detailed analysis of flooding extents for ponding width within streets
- Detailed Engineering Design and/or Construction Documents
- Preliminary and/or draft construction documents
- Detailed FEMA Zone A or Zone AE models and/or maps
- Construction management and inspection services
- Services related to easement delineation or acquisition
- Services related to SWPPP plans and details, erosion control plan, and traffic control plan.
- Water quality analysis or design

EXHIBIT B
Basic Services Fee Schedule
City of League City - Benson Bayou Detention Basin Analysis

I.

Task	Task Description	Principal	Senior Project Manager	Senior Engineer	Graduate Engineer	TOTAL HOURS	TOTAL LABOR COSTS
BASIC ENGINEERING SERVICES							
A	General Project Management						
1	General project management		4			4	\$900
2	Working Meetings with City Staff (4 meetings)		8	8		16	\$3,000
3	Quality assurance/quality control		10			10	\$2,250
	<i>Task A Total</i>	<i>0</i>	<i>22</i>	<i>8</i>	<i>0</i>	<i>30</i>	<i>\$6,150</i>
B	Analysis - Existing Hydrologic & Hydraulic Analysis						
1	Analysis - Existing Hydrologic & Hydraulic Analysis	3	6	16	40	65	\$9,360
	<i>Task B Total</i>	<i>3</i>	<i>6</i>	<i>16</i>	<i>40</i>	<i>65</i>	<i>\$9,360</i>
C	Proposed - Existing Hydrologic & Hydraulic Analysis						
1	Basin Concept Identification & Development	1	16	20	60	97	\$14,070
2	Hydraulic analysis - Improvement Concept Evaluation	1	12	20	80	113	\$15,570
3	Impact Evaluation	1	6	12	24	43	\$6,300
	<i>Task C Total</i>	<i>1</i>	<i>34</i>	<i>52</i>	<i>164</i>	<i>253</i>	<i>\$35,940</i>
D	Reporting						
1	Technical Report & Exhibits	1	16	32	36	85	\$12,990
	<i>Task D Total</i>	<i>1</i>	<i>16</i>	<i>32</i>	<i>36</i>	<i>85</i>	<i>\$12,990</i>
	BASIC ENGINEERING TOTAL HOURS	5	78	108	240	433	
	Contract Labor Rate	\$270	\$225	\$150	\$120		
	BASIC ENGINEERING TOTAL COSTS	\$1,350	\$17,550	\$16,200	\$28,800		\$64,440