



## Legislation Details (With Text)

<b>File #:</b>	19-0652	<b>Version:</b>	1	<b>Name:</b>	City-Wide 2-D Drainage Model PSA DR2007
<b>Type:</b>	Agenda Item	<b>Status:</b>		<b>Status:</b>	Approved
<b>File created:</b>	11/20/2019	<b>In control:</b>		<b>In control:</b>	Engineering
<b>On agenda:</b>	12/3/2019	<b>Final action:</b>		<b>Final action:</b>	12/3/2019
<b>Title:</b>	Consider and take action on a resolution authorizing a professional services agreement with LJA Engineering, Inc. (LJA) for design work related to the City-Wide 2-D Drainage Model (DR2007) in an amount not to exceed \$772,588 (Director of Engineering)				

### Sponsors:

### Indexes:

### Code sections:

**Attachments:** 1. Data Sheet, 2. Proposed Resolution, 3. Exhibit A - Agreement with LJA Engineering, 4. TDEM Notices, 5. Clear Creek Watershed Aerial Map, 6. Dickinson Bayou Watershed Aerial Map

Date	Ver.	Action By	Action	Result
12/3/2019	1	City Council	Approved	Pass

Consider and take action on a resolution authorizing a professional services agreement with LJA Engineering, Inc. (LJA) for design work related to the City-Wide 2-D Drainage Model (DR2007) in an amount not to exceed \$772,588 (Director of Engineering)

Approval of this resolution will authorize the City Manager to enter into an agreement with LJA design work related to the City-Wide 2-D Drainage Model for an amount not to exceed \$772,588.

In 2010, the City commissioned a Master Drainage Plan. The first phase of this plan was completed by Dannenbaum Engineering in December 2010 and concentrated primarily on updating the previous 1990 City Master Drainage Plan's hydrologic and hydraulic models, aeriels, drainage areas within the City, Tributary Model updates, and incorporating the most current FEMA floodplains. A second phase of the Master Drainage Plan was completed in April 2014 by LAN Engineering. This second phase primarily established drainage projects and prioritized them into a five (5) to seven (7) year implementation plan.

Since the 2010 model updates, the City's population has grown by approximately 20,000 people and we have seen new development in previously undeveloped areas on the western side of the City and the eastern side of the City is almost fully developed at this time. In 2019, FEMA updated the flood plain maps for this area and NOAA released their Atlas 14 Paper which showed that the industry standard rainfall intensities that engineers had been using for years to aid in the design of stormwater systems was inaccurate. The Atlas 14 paper provided new rainfall intensities for our area.

In the aftermath of the Hurricane Harvey flooding, City Staff began working towards securing grant funding to assist with an update to the City's Master Drainage Plan. In May 2018, Staff submitted a Notice of Intent (NOI) for a City-Wide 2-D Drainage Model project to the Texas Hazard Mitigation Grant Program (HMGP). This NOI was accepted and a full application was submitted in October 2018. In December 2018, Staff received notice that the Grant Application would be funded, and we received the actual funding notice on May 16, 2019. This grant funding provides the City a 75% Federal Cost Match up to a maximum of \$540,619.50. Staff representatives met with the grant administrators, Texas Department of Emergency Management (TDEM), in June 2019 to discuss the requirements of this grant and in July 2019, Staff released RFQ 19-ENG-003 for Professional Engineering Services for this project. Staff received response packages back from six (6) qualified firms. After a review by City Staff, LJA was selected as the most qualified for this project.

For this agreement, LJA will create a high-level Master Drainage Plan that (1) identifies strategies for mitigation of flooding problems and (2) addresses improved drainage infrastructure required for future development. To complete the project, LJA will:

1. Define the existing baseline conditions for the drainage infrastructure and identify existing and potential future flooding problems in the City.
2. Evaluate the severity and complexity of the problems and potential solutions using criteria provided by the City (new floodplain maps, updated rainfall intensities, etc.).
3. Identify opportunities and constraints for the proposed solutions and develop a strategy for the watersheds that provide appropriate improvements for future drainage infrastructure.
4. Create a comprehensive Master Drainage Plan to document recommendations for required improved projects.
5. Develop more detailed cost and implementation information for identified immediate and future improvement projects.

The LJA work will be divided into two (2) phases:

Phase 1 Clear Creek Watershed. Looking specifically at Clear Creek, Corum Ditch, Interurban Ditch, Newport Ditch, Landing Ditch, Robinson Bayou and Jarbo Bayou.

Phase 2 Dickinson Bayou Watershed. Looking specifically at Magnolia Bayou, Bordens Gully, West Dickinson Bayou, Prairie Estates Ditch, and Benson Bayou.

The scope of this agreement also allows for the following:

- surveying as needed throughout the City
- a specific review of the drainage systems of the Tallow Forest/Mary Lane area, Bayou Brae Subdivision, Autumn Lakes area and the greater Bay Colony area.
- since the City currently has studies under way along Gum Bayou, Magnolia Creek, Cedar Gully, and portions of Benson Bayou with other engineering professionals, these studies will be incorporated into the final drainage plan/report by LJA
- up to 4 presentations to the City's Transportation and Infrastructure Committee
- 17 monthly project status meetings
- up to 6 Public Meetings

The total Cost for this project is estimated as a not to exceed amount of \$772,588 with the Federal Cost Share covering \$540,619.50 and the City covering the remain \$231,698.50. As per the requirement of the grant, the project is to be completed by May 2022. If the City wished to move forward with any additional services, such as Letters of Map Revisions (LOMR) for a studied stream, then that work would fall outside of the contract May 2022 timeframe and would not be eligible for any type of cost share by TDEM.

This project was included as part of a list of drainage projects outlined on the City's recently passed May 2019 General Obligation Bond Referendum.

Staff recommends executing the attached agreement with LJA in the amount of \$772,588 at this time.

**Attachments:**

1. Data Sheet
2. Proposed Resolution
3. Exhibit A - Agreement with LJA Engineering
4. TDEM Notices
5. Clear Creek Watershed Aerial Map
6. Dickinson Bayou Watershed Aerial Map

**CONTRACT ORIGINATION:** The agreement has been reviewed and approved by the City Attorney's Office.

#### FUNDING

{X} Total funds in the amount of \$772,588 are available from 2019 Proposition A - Authorized GO Bonds (\$231,969) with expenses charged to project expense string DR2007-PLAN DESIGN-DESIGN- 19 PROP A; and a reimbursement grant with the Texas Division of Emergency Management (\$540,619) with expenses charged to project expense string DR2007-PLAN DESIGN-DESIGN-TS CASH. Misc Capital Project Fund 5015 (TS CASH) will be reimbursed (\$540,619) once funds are received from TDEM.

#### STRATEGIC PLANNING

{X} Addresses Strategic Planning Critical Success Factor #1 - Develop & Maintain our Infrastructure