# CITY COUNCIL MEETING AGENDA

**Notice is hereby given of a regular meeting of the La Porte City Council to be held July 27, 2020 , beginning at 6:00 PM in the City Hall Council Chambers, 604 West Fairmont Parkway, La Porte, Texas , for the purpose of considering the following agenda items. All agenda items are subject to action.**

**Social distancing protocols will be in effect in the Council Chambers. Remote participation is available, also. Attend via a screen using this link: https://us02web.zoom.us/j/82093998398?pwd=K1dBNFlMbVFJRFlwc2lzZHJUQWNXdz09. Join by phone at 877.853.5257 or 888.475.4499.The meeting ID is 820 9399 8398. The password is 042979.**

**1. CALL TO ORDER**

**2. CITY COUNCIL RULES OF PROCEDURE AMENDMENT**

**(a)** Presentation, discussion, and possible action to adopt Ordinance 2020-3796, amending the City Council Rules of Procedure and Ethics Policy, in reference to face masks and face coverings by the City Council. [Mayor Rigby]

**3. INVOCATION** – The invocation will be given by Reverend Jackie King, Victory Tabernacle Church.

**PLEDGES** – Will be led by Councilperson Chuck Engelken.

U.S. Flag

Texas Flag: Honor the Texas Flag. I pledge allegiance to thee, Texas, one state, under God, one, and indivisible.

**4. PRESENTATIONS, PROCLAMATIONS, AND RECOGNITIONS**

**(a)** Recognition of Employee of the Second Quarter 2020 - Kayla Baez, Recreation Specialist [Mayor Rigby]

**5. CITIZEN COMMENT** *(Generally limited to five minutes per person; in accordance with state law, the time may be reduced if there is a high number of speakers or other considerations.)*

**6. CONSENT AGENDA** *(Approval of Consent Agenda items authorizes each to be implemented in accordance with staff recommendations provided. An item may be removed from the consent agenda and added to the Statutory Agenda for full discussion upon request by a member of the Council present at this meeting.)*

**(a)** Approve the minutes of the July 13, 2020, City Council meeting. [Mayor Rigby]

**(b)** Approve the purchase of library flooring from Continental Flooring, utilizing the US Communities/National IPA Cooperative Contract #R171701, in the amount of $107,204 and approve a project contingency of $10,720, for a total authorization of $117,924. [Rosalyn Epting, Director of Parks & Recreation]

**(c)** Award Bid No. 20019 for Roseberry Cure in Place Pipe Sewer Rehab Project, authorize the City Manager to execute a contract with Insituform Technologies, LLC in the amount of $78,950.00, and approve a project contingency of $7,850.00, for a total authorization of $86,845.00. [Ray Mayo, Public Works Director]

**(d)** Authorize the City Manager to execute a professional services agreement with Lockwood, Andrews, & Newnam, Inc. for the Northside Neighborhood Drainage Improvement Project, for a total authorization of $394,983.00. [Ray Mayo, Public Works Director]

**7. ELECTION MATTERS**

**(a)** Presentation, discussion, and possible action to approve an election services contract/joint election agreement between Harris County and the City of La Porte, relating to the City's postponed 2020 general election to be held on November 3, 2020. [Mayor Rigby]

**8. STATUTORY AGENDA**

**(a)** Presentation, discussion, and possible action to direct staff on desired approach to evaluate safety options at Pecan Park. [Ray Mayo, Public Works Director]

**(b)** Presentation, discussion, and possible action regarding appointments and re-appointments to various boards, committees and commissions. [Mayor Rigby]

**9. ADMINISTRATIVE REPORTS**

- Drainage and Flooding Committee meeting, August 10
- City Council meeting, August 10
- Planning and Zoning Commission meeting, August 20
- City Council meeting, August 24

**10. COUNCIL COMMENT** *Hear announcements concerning matters appearing on the agenda; items of community interest; and/or inquiries of staff regarding specific factual information or existing policy from the Mayor, Councilmembers, and City staff, for which no formal action will be discussed or taken.*

**11. EXECUTIVE SESSION**

**(a).** City Council will meet in closed session pursuant to Texas Government Code Section 551.074 - personnel matters regarding the appointment, employment, evaluation, reassignment, duties, discipline, or dismissal of a public officer or employee - concerning City Secretary Lee Woodward.

**12. RECONVENE** into regular session and consider action, if any, on item(s) discussed in executive session.

**13. ADJOURN**

**If, during the course of the meeting and discussion of any items covered by this notice, City Council determines that a Closed or Executive Session of the Council is required, then such closed meeting will be held as authorized by Texas Government Code, Chapter 551, Section 551.071 - consultation with counsel on legal matters; Section 551.072 - deliberation regarding purchase, exchange, lease or value of real property; Section 551.073 - deliberation regarding a prospective gift; Section 551.074 - personnel matters regarding the appointment, employment, evaluation, reassignment, duties, discipline, or dismissal of a public officer or employee; Section 551.076 - implementation of security personnel or devices; Section 551.087 - deliberation regarding economic development negotiation; Section 551.089 - deliberation regarding security devices or security audits, and/or other matters as authorized under the Texas Government Code. If a Closed or Executive Session is held in accordance with the Texas Government Code as set out above, the City Council will reconvene in Open Session in order to take action, if necessary, on the items addressed during Executive Session.**

**Persons with disabilities who plan to attend this meeting and who may need auxiliary aids or services are requested to contact the City Secretary's office (281-470-5019), two working days prior to the meeting for appropriate arrangements.**

**Pursuant to Texas Government Code Sec. 551.127, on a regular, non-emergency basis, members may attend and participate in the meeting remotely by video conference.Should that occur, a quorum of the members will be physically present at the location noted above on this agenda.**

## CERTIFICATE

I, Lee Woodward, City Secretary, do hereby certify that a copy of the July 27, 2020, City Council agenda was posted on the City Hall bulletin board, a place convenient and readily accessible to the general public at all times, and to the City's website, www.LaPorteTX.gov, in compliance with Chapter 551, Texas Government Code.

DATE OF POSTING _____

TIME OF POSTING _____

TAKEN DOWN _____

*Lee Woodward*

Lee Woodward, City Secretary

# REQUEST FOR CITY COUNCIL AGENDA ITEM

Agenda Date Requested: July 27, 2020
Requested By: Mayor Rigby
Department: City Council

○ Report ○ Resolution ◉ Ordinance

**Exhibits**: Ord. 2020-3796

| Appropriation | |
|---|---|
| Source of Funds: | N/A |
| Account Number: | N/A |
| Amount Budgeted: | N/A |
| Amount Requested: | N/A |
| Budgeted Item: | ○ Yes ◉ No |

## SUMMARY

For consideration is an amendment to the *City Council Rules of Procedure and Ethics Policy* concerning responsible public health measures. Proposed is an addition to Section 6.09. Decorum. for a second paragraph to be inserted in item (A) to read *During any period in which face masks or face coverings are required in public by a local disaster declaration or other law, all Councilpersons in the Council chamber must wear an appropriate face mask or face covering during City Council meetings.*

## RECOMMENDED MOTION

**I move to adopt Ordinance 2020-3796 amending the City Council Rules of Procedure by inserting new language in Section 6.09. Decorum. for a second paragraph to be inserted in item (A) to provide that, during any period in which face masks or face coverings are required in public by a local disaster declaration or other law, all Councilpersons in the Council chamber must wear an appropriate face mask or face covering during City Council meetings.**

# ORDINANCE NO. 2020-3796

**AN ORDINANCE AMENDING THE CITY COUNCIL'S ADOPTED RULES OF PROCEDURE FOR CITY COUNCIL MEETINGS; FINDING COMPLIANCE WITH THE TEXAS OPEN MEETINGS ACT; CONTAINING A REPEALING CLAUSE; AND PROVIDING AN EFFECTIVE DATE HEREOF.**

**WHEREAS,** Section 2.07. Meetings. b. *Rules.* of the City Charter of the City of La Porte provides that "City council shall determine its own rules and order of business."; and

**WHEREAS,** Section 6.09. Decorum. A. By Councilpersons. of the City Charter of the City of La Porte provides that "6.09. Decorum.

(A) By Councilpersons. While the Council is in session, the members must preserve order and decorum, and a member shall neither, by conversation or otherwise, delay or interrupt the proceedings or the peace of the Council nor disturb any member while speaking or refuse to obey the orders of the Council or its Presiding Officer, except as otherwise herein provided."; and

**WHEREAS,** considering issues related to the spread of COVID-19 and the ensuing local, county, state, and national disaster declarations and the State of Texas and Harris County restrictions concerning face masks and face coverings and the protection of those participating in Council meetings; and

**WHEREAS,** the passage of time has allowed for additional review of legislation and consideration of suitable rules and guidelines for the procedures of City Council meetings and the conduct of members of Council at all times;

**NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF LA PORTE:**

**Section 1.** The *Rules of Procedure for the City Council of the City of La Porte* are hereby amended as attached, to provide for the addition of a second paragraph to Section 6.09. A. During any period in which face masks or face coverings are required in public by a local disaster declaration or other law, all Councilpersons in the Council chamber must wear an appropriate face mask or face covering during City Council meetings.

**Section 2.** Open Meetings Act Notice. The City Council officially finds, determines, recites, and declares that a sufficient written notice of the date, hour, place and subject of this meeting of the City Council was posted at a place convenient to the public at the City Hall of the City for the time required by law preceding this meeting, as required by the Open Meetings Act, Chapter 551, Texas Government Code; and that this meeting has been open to the public as required by law at all times during which this ordinance and the subject matter thereof has been discussed, considered and formally acted upon. The City Council further ratifies, approves and confirms such written notice and the contents and posting thereof.

**Section 3.** Repeal. All ordinances or parts of ordinances in conflict herewith are hereby repealed to the extent of such conflict only.

**Section 4.** Effective Date. This ordinance shall take effect immediately upon its passage and approval.

**PASSED AND APPROVED, this _____ day of _____, 2020.**

**CITY OF LA PORTE, TEXAS**

_____
Louis R. Rigby, Mayor

ATTEST:

_____
Lee Woodward, City Secretary

APPROVED AS TO FORM:

_____
Clark T. Askins, Assistant City Attorney

# Exhibit A

| Current wording | Proposed amendment | Wording if adopted |
|---|---|---|
| 6.09. Decorum.<br><br>(A) By Councilpersons. While the Council is in session, the members must preserve order and decorum, and a member shall neither, by conversation or otherwise, delay or interrupt the proceedings or the peace of the Council nor disturb any member while speaking or refuse to obey the orders of the Council or its Presiding Officer, except as otherwise herein provided. | 6.09. Decorum.<br><br>(A) By Councilpersons. While the Council is in session, the members must preserve order and decorum, and a member shall neither, by conversation or otherwise, delay or interrupt the proceedings or the peace of the Council nor disturb any member while speaking or refuse to obey the orders of the Council or its Presiding Officer, except as otherwise herein provided.<br><br>During any period in which face masks or face coverings are required in public by a local disaster declaration or other law, all Councilpersons in the Council chamber must wear an appropriate face mask or face covering during City Council meetings. | 6.09. Decorum.<br><br>(A) By Councilpersons. While the Council is in session, the members must preserve order and decorum, and a member shall neither, by conversation or otherwise, delay or interrupt the proceedings or the peace of the Council nor disturb any member while speaking or refuse to obey the orders of the Council or its Presiding Officer, except as otherwise herein provided.<br><br>During any period in which face masks or face coverings are required in public by a local disaster declaration or other law, all Councilpersons in the Council chamber must wear an appropriate face mask or face covering during City Council meetings. |

**Employee of the 2nd Quarter for 2020**
**Kayla Baez – Recreation Specialist**

In the summer of 2018, Kayla Baez worked with our Parks and Rec team as a part time Senior Recreation Leader. We were very fortunate to add her to the team full time in October of that year, and we are very pleased to honor her this evening as our Employee of the Quarter.

In her role as a Recreation Specialist, Kayla wears many hats. Her main responsibility is planning and delivering camp and other programming over the summer and holiday seasons. This includes program development, marketing, registration administration, staff oversight, and all of the other countless details that go into providing camps and programs to the community.

Typically Kayla spends the bulk of the 2nd quarter preparing for and running two Summer camps (Breeze and Voyage). This task was uniquely complicated this year due to COVID-19. Some of the specific innovations and extra steps Kayla took this year include:

- Created 10 weeks of LP Rec At Home activities that were shared via social media. These activities were well received by the community, looking for ways to stay engaged and active during the pandemic.
- COVID-19 meant no field trips for the camps. Kayla had to adjust schedules on the fly and maintain communication with campers and parents. She reallocated field trip funds towards other resources and equipment like individualized camper art supplies to keep the kids entertained and safe.
- Kayla created a safe and secure non-entry check-in/check-out process called KidCheck. This process allowed parents to remain in their vehicles for drop off and pick up which reduced groups gathering in the building.
- She also implemented new training and sanitization process for all summer camp staff.

Even with the unexpected and complex challenges of leading summer camps this year, Kayla maintained her typical positive attitude. Her camp staff love working with her and campers and parents include many “repeat customers” who know that Kayla’s camps will be a great experience. Described by her supervisor as driven, extremely creative, and unsatisfied with the status quo, Kayla is a fantastic asset to the Parks and Rec department and the La Porte community. Please join me in congratulating her as our Employee of the Quarter.

# MINUTES OF THE REGULAR MEETING OF THE CITY COUNCIL OF THE CITY OF LA PORTE, JULY 13, 2020

**The City Council of the City of La Porte met in a regular meeting on Monday, July 13, 2020, at the City Hall Council Chambers, 604 West Fairmont Parkway, La Porte, Texas, at 6:00 p.m., with the following in attendance:**

**Councilpersons present:** Louis Rigby, Steve Gillett, Danny Earp, Bill Bentley, Thomas Garza *(until 6;24 p.m)*, Jay Martin
**Councilpersons attending remotely:** Chuck Engelken, Nancy Ojeda
**Councilpersons absent**: Brandon Lunsford
**Council-appointed officers present:** Corby Alexander, City Manager; Lee Woodward, City Secretary; Clark T. Askins, Assistant City Attorney

**CALL TO ORDER** – Mayor Rigby called the meeting to order at 6:00 p.m.

**2. INVOCATION AND PLEDGES** - The invocation was given by Pastor Walter Brumley, La Porte River of God Church, and the pledges were led by Mayor Pro Tem Bill Bentley.

Mayor Rigby moved that everyone at the dais and in the audience be required to wear a mask; the motion was adopted, 7-1, Councilperson Garza voting against. The Mayor asked the Sergeant-at-Arms to escort Councilperson Garza from the room. Councilperson Garza moved that the Sergeant-at-Arms be directed otherwise by the Council. The motion was not seconded and was not considered by the Council.

**3. PRESENTATIONS, PROCLAMATIONS, AND RECOGNITIONS**
**a.** Proclamation in recognition of Parks and Recreation Month. [Mayor Rigby]

**4. CITIZEN COMMENT *(Generally limited to five minutes per person; in accordance with state law, the time may be reduced if there is a high number of speakers or other considerations.)***

Mark Follis spoke about items 6 a and b, suggesting an amendment be made to the development. William Conroy said he was the closest resident and supported the project. Scott A. Boyle asked how the Council could vote on item 6 without the Planning and Zoning Commission minutes. Steve Surofchek also offered the same concerns about the Council considering the items after denial from the Planning and Zoning Commission.

**5. CONSENT AGENDA *(Approval of Consent Agenda items authorizes each to be implemented in accordance with staff recommendations provided. An item may be removed from the consent agenda and added to the Statutory Agenda for full discussion upon request by a member of the Council present at this meeting.)***

a. **Approve the minutes of the June 22, 2020, City Council meeting. [Mayor Louis R. Rigby]**
b. **Award Bid #20017 to Android Construction, LLC, authorize the City Manager to execute a contract in the amount of $59,286.00, and approve a project contingency of $5,928.00, for a total authorization of $65,214.00. [Ray Mayo, Public Works Director]**
c. **Award Bid #20015 to Android Construction, LLC, authorize the City Manager to execute a contract in the amount of $84,500.00, and approve a project contingency of $8,450.00, for a total authorization of $92,950.00. [Ray Mayo, Public Works Director]**
d. **Adopt Ordinances 2020-IDA-139 through 2020-IDA-142, authorizing the execution of Industrial District Agreements with companies in the Battleground and Bayport Industrial Districts, for a twelve- (12-) year term beginning January 1, 2020. [Corby Alexander, City Manager]**
e. **Adopt Resolution 2020-16 authorizing the resale of tax delinquent property described as Lots 25 and 26, Block 252 of the Town of La Porte. [Shelley Wolny, Treasurer]**
f. **Adopt Resolution 2020-17 authorizing the resale of tax delinquent property described as Lots 21 and 22, Block 73, Bay Front Addition to the City of La Porte. [Shelley Wolny, Treasurer]**
g. **Adopt Resolution 2020-18 authorizing the resale of tax delinquent property described as Lot 1, 2, & 3, Block 10~~1~~5, of the Town of La Porte. [Shelley Wolny, Treasurer]**
h. **Adopt Resolution 2020-19 authorizing the resale of tax delinquent property described as Lots 3 and 4, Block 67, Bay Front Addition to the Town of La Porte. [Shelley Wolny, Treasurer]**
i. **Adopt Resolution 2020-20 authorizing the resale of tax delinquent property described as Lots 17 and 18, Block 73, Bay Front Addition to the Town of La Porte. [Shelley Wolny, Treasurer]**

Councilperson Ojeda asked that the minutes be amended to note that she said she "did not feel like the taxpayers of La Porte should have to pay for an HOA pool." The addition was accepted without objection. Councilperson Engelken moved to approve the consent agenda, including the amended minutes, less item d (to be voted on separately); the motion was adopted, 7-0. Councilperson Engelken moved to approve item d; the motion was adopted 6-0 *(Councilperson Earp had previously signed a Conflict of Interest affidavit and did not participate in the discussion or vote on the item).*

**6. PUBLIC HEARINGS AND ASSOCIATED ORDINANCES**

a **The City Council will hold a public hearing to receive comments regarding a recommendation by the Planning and Zoning Commission to adopt Ordinance 2020-3793 amending the Code of Ordinances of the City of La Porte, Chapter 106 "Zoning" by granting Zone Change #20-92000001, a change from High Density Residential (R-3) to Planned Unit Development (PUD) for a 5.798-acre tract of land located at the 1300 Blocks of South Broadway and Oregon Streets and legally described as the E 115' of Lots 1-16, Lots 17-32, and abandoned alley, Block 1159, Lots 4-29 and Tracts 3A and 30A, Block 1160, La Porte Subdivision, Lot 5, Block 19, Sylvan Beach Subdivisions and a portion of the East L St. and Texas Ave. rights-of-way; followed by discussion and possible action to consider adopting Ordinance 2020-3793 amending the Code of Ordinances of the City of La Porte, Chapter 106 "Zoning" by granting Zone Change #20-92000001, a change from High Density Residential (R-3) to Planned Unit Development (PUD) for a 5.798-acre tract of land located at the 1300 Blocks of South Broadway and Oregon Streets and legally described as R the E 115' of Lots 1-16, Lots 17-32, and abandoned alley, Block 1159, Lots 4-29 and Tracts 3A and 30A, Block 1160, La Porte Subdivision, Lot 5, Block 19, Sylvan Beach Subdivisions and a portion of the East L St. and Texas Ave. rights-of-way [Ian Clowes, City Planner]**

Mayor Rigby opened the public hearing at 6:45 p.m. Ian Clowes, City Planner gave a presentation. Scott A. Boyle and Steve Surofchek asked the Council postpone consideration of the item. Charles Anders and Jon Skeele, of Bayway Homes, offered clarification on the project and their process. Chuck Rosa spoke Mayor Rigby closed the public hearing at 7:15 p.m. Councilperson Martin moved to uphold the Planning and Zoning Commission's denial of the application for Zone Change request #20-92000001, for a 5.498-

acre tract of land located at the 1300 Blocks of South Broadway and Oregon Streets, and legally described as the E 115' of Lots 1-16, Lots 17-32, and an abandoned alley, Block 1159, Lots 4-29 and Tracts 3A and 30A, Block 1160, La Porte Subdivision, Lot 5, Block 19, Sylvan Beach Subdivisions and a portion of the East L Street and Texas Avenue rights-of-way; the motion was adopted; the motion was adopted, 7-0.

**b. The City Council will hold a public hearing to receive comments regarding a recommendation by the Planning and Zoning Commission to adopt Ordinance 2020-3794 amending the Code of Ordinances of the City of La Porte, Chapter 106 "Zoning" by granting Special Conditional Use Permit #20-91000001, to allow for a zero lot line single family residential development on a 5.798-acre tract of land, located at the 1300 Blocks of South Broadway and Oregon Streets and legally described as the E 115' of Lots 1-16, Lots 17-32, and Abandoned alley, Block 1159, Lots 4-29 & Tracts 3A and 30A, Block 1160, La Porte Subdivision, Lot 5, Block 19, Sylvan Beach Subdivisions and a portion of the East L St. and Texas Ave. rights-of-way in the Planned Unit Development (PUD) zoning district; followed by discussion and possible action to consider adopting Ordinance 2020-3794 amending the Code of Ordinances of the City of La Porte, Chapter 106 "Zoning" by granting Special Conditional Use Permit #20-91000001 to allow for a zero lot line single family residential development on a 5.798-acre tract of land, located at the 1300 Blocks of South Broadway and Oregon Streets and legally described as the E 115' of Lots 1-16, Lots 17-32, and abandoned alley, Block 1159, Lots 4-29 and Tracts 3A and 30A, Block 1160, La Porte Subdivision, Lot 5, Block 19, Sylvan Beach Subdivisions and a portion of the East L St. and Texas Ave. rights-of-way in the Planned Unit Development (PUD) zoning district. [Ian Clowes, City Planner]**

*The item was made moot due to the vote on item 6a and was not considered.*

## 7. STATUTORY AGENDA

**a. Presentation, discussion and possible action to adopt Ordinance 2020-3791~~1~~2 electing a Mayor Pro Tem. [Mayor Rigby]**

Councilperson Bentley nominated Councilperson Lunsford. Councilperson Earp nominated Councilperson Engelken. Councilperson Lunsford was voted for by Councilperson Bentley. Councilperson Engelken received a majority vote to be selected as the Mayor Pro Tem. Councilperson Bentley moved to adopt Ordinance 2020-3792 electing Councilperson Engelken as the Mayor Pro Tem.; the motion was adopted, 7-0.

**b. Presentation, discussion, and possible action to approve Ordinance 2020-3795 to dedicate the City-owned property at 9801 Rustic Gate as a public park and amend Chapter 50 of the City Code of Ordinances to add said property to the City park system and set hours of operation. [Mayor Pro Tem Bentley and Councilpersons Ojeda and Lunsford]**

Councilperson Bentley moved to approve Ordinance 2020-3795 to dedicate the City-owned property at 9801 Rustic Gate as a public park and amend Chapter 50 of the City Code of Ordinances to add said property to the City park system and set hours of operation; the motion was adopted, 7-0.

**c. Presentation, discussion, and possible action to approve a policy and procedures related to mandatory mask covering requirements for employees, elected officials, board and commission members, and public guests in City-owned buildings and facilities. [Corby Alexander, City Manager]**

Councilperson Earp moved to approve a policy regarding the use of facial coverings for individuals in City buildings and facilities; the motion was adopted, 6-1, Mayor Rigby voting against.

**d. Presentation, discussion, and possible action regarding a recommended date for holding the public hearing on the City of La Porte's Fiscal Year 2020-2021 Proposed Budget. [Shelley Wolny, Treasurer]**

Mayor Pro Tem Engelken moved to approve September 14, 2020, as the recommended date to hold the public hearing on the City of La Porte's Fiscal Year 2020-2021 Proposed Budget; the motion was adopted, 7-0

**8. REPORTS**

**(a) Receive a report on the Drainage and Flooding Committee meeting. [Councilperson Martin]**
Councilperson Martin reported the Committee received updates on projects and potential grant funding and set the date of the next meeting for August 10.

**9. ADMINISTRATIVE REPORTS**

- Planning and Zoning Commission meeting, July 16
- La Porte Development Corporation Board meeting, July 27
- City Council meeting, July 27

City Manager Corby Alexander said there was no report.

**10. COUNCIL COMMENT Hear announcements concerning matters appearing on the agenda; items of community interest; and/or inquiries of staff regarding specific factual information or existing policy from the Mayor, Councilmembers, and City staff, for which no formal action will be discussed or taken.**

Councilpersons thanked the Council for approving the designation of the public park; congratulated the Parks and Recreation Department for their proclamation and thanked them for all they do; suggested conducting meetings remotely; wished that everyone stay safe; thanked the staff for making changes to ensure board and commission volunteers are treated with respect; expressed hope for resolution for the Bayway Homes project; noted mixed feelings felt over the park designation; apologized for speaking out of turn; Councilperson Gillett said he would not attend another meeting until COVID was over or he was replaced; and expressed concern on the face covering policy.

**11. EXECUTIVE SESSION – The City Council will meet in closed session pursuant to Texas Government Code Section 551.074 - personnel matters regarding the appointment, employment, evaluation, reassignment, duties, discipline, or dismissal of a public officer or employee - regarding City Manager Corby Alexander.**

The Council adjourned into executive session at 8:25 p.m.

**12. RECONVENE into regular session and consider action, if any, on item(s) discussed in executive session.**

The Council reconvened into open session at 9:45 p.m. Mayor Pro Tem Engelken moved to give the City Manager a 2% raise and a 2% lump sum payment; the motion was adopted, 7-0.

**13. ADJOURN –** Without objection, Mayor Rigby adjourned the meeting at 9:46 p.m.

_____
Lee Woodward, City Secretary

## REQUEST FOR CITY COUNCIL AGENDA ITEM

Agenda Date Requested: July 27, 2020
Requested By: Rosalyn Epting, Director
Department: Parks & Recreation

(•) Report ( ) Resolution ( ) Ordinance

**Exhibits**: Continental Flooring Proposal, Cooperative Award Letter to Continental Flooring

| Appropriation | |
|---|---|
| Source of Funds: | 015 – General CIP |
| Account Number: | 015-8080-552 |
| Amount Budgeted: | $120,000 |
| Amount Requested: | $117,924 |
| Budgeted Item: | (•) Yes ( ) No |

### SUMMARY

The Harris County Branch Library flooring replacement was approved by City Council at the March 23, 2019 Budget Retreat for the 2019-20 Fiscal Year. The current Library flooring was installed in 2001. Staff requested a quote from Continental Flooring for the removal of all carpet, which will be replaced with carpet tiles that can be changed out when needed. The requested quote also contained the removal of all vinyl composition tile from high occupancy rooms (Children's Activity Room, Meeting Room, Staff Conference Room, and Staff Break Room) to be replaced with vinyl tile. The proposal for both carpet and vinyl tile totals $107,204. Recently, Continental Flooring removed and installed the flooring at City Hall. Their installers were very professional and did a good job staying on schedule.

Continental Flooring has been awarded a contract (Contract # R171701) for commercial floor coverings through US Communities/National IPA Cooperative. The City is a member of this cooperative. Per the Inter-Local Cooperation ACT. V.C.T.A Government Code, Chapter 791, government entities may enter into joint contract and agreements for the performance of governmental functions and services including administrative function normally associated with the operation of government, such as purchasing supplies and services.

The approved budget for the Library flooring project is $120,000. The remaining funds, after the flooring is complete, will be used for minor interior painting and wall repair. Staff recommends approving the purchase of library flooring from Continental Flooring in the amount of $107,204 and allow a 10% contingency of $10,720, for a total of $117,924. This purchase would utilize the US Communities/National IPA Cooperative Contract #R171701.

**RECOMMENDED MOTION**

**I move to approve for the purchase of library flooring from Continental Flooring, utilizing the US Communities/National IPA Cooperative Contract #R171701, in the amount of $107,204 and approve a project contingency of $10,720, for a total authorization of $117,924.**

**Approved for the City Council meeting agenda**

**Corby D. Alexander, City Manager** **Date**

CONTINENTAL FLOORING COMPANY

9319 N. 94th Way • Suite 1000 • Scottsdale, AZ 85258
Phone: (480) 949-8509 • Toll Free: (800) 825-1221
Fax: (480) 945-2603 • Website: www.cfc4u.com

April 6, 2020

Via: e-mail hefnerd@laportetx.gov

Mr. David Hefner
Facilities Maintenance Supervisor
City of La Porte, TX
1322 S. Broadway
La Porte, TX 77571

Re: Harris County Branch Library
New Flooring
Revised Proposal

Dear David:

We propose to furnish all materials and to provide all the labor necessary to completely install the following flooring products per the drawings provided and your Scope of Work within subject Library.

This includes a decrease of 315 square yards of carpet tile in the carpet areas and an increase of 2,620 square feet of Luxury Vinyl Tile in rooms/areas.

All Carpet areas—Aladdin's "Go Forward" carpet tile----------$76,004.00

All Luxury Vinyl Tile Rms. /areas—Karndean Loose-Lay Stone----------$31,200.00

Included is a provision to provide and install Roppe 4" 700 Series Base.

Exclusions are: Any excessive floor preparation
A Moisture correction system

If you have any questions please contact us.

Sincerely;

CONTINENTAL FLOORING COMPANY

Peter J. Coleman
Sr. Estimator

NATIONALIPA™
EXPERIENCED ★ FOCUSED ★ TRUSTED

2555 Meridian Blvd., Suite 300 Franklin, TN 37067

March 7, 2018

Mr. Christopher L. Coleman
President
Continental Flooring Company
9319 N. 94th Way
Suite 1000
Scottsdale, AZ 85258

Re: Award of Contract #R171701

Dear Mr. Coleman:

Per official action taken by the Board of Directors of Region 4 Education Service Center, on February 27, 2018, National IPA is pleased to announce that Continental Flooring Company has been awarded an annual contract for the following, based on the sealed proposal (RFP #17-17) submitted on October 12, 2017:

| **Commodity/Service** | **Supplier** |
|---|---|
| Commercial Floor Coverings | Continental Flooring Company |

This contract is effective July 1, 2018 and will expire on June 30, 2021. As indicated above, your Contract # is R171701. This contract may be renewed annually for an additional two (2) years if mutually agreed by Region 4 ESC/National IPA and Continental Flooring Company.

Your participation in the proposal process is appreciated and we look forward to a successful partnership. Please feel free to provide copies of this letter to your sales representative(s) to assist in their daily course of business.

If you have any questions, please contact Michael Lasley, Director, Contracting, assigned to your contract at phone #615-236-9072 or michael.lasley@nationalipa.org

Sincerely,

*Michael Lasley*

Michael Lasley, CPPB
Director, Contracting – Public Sector

## REQUEST FOR CITY COUNCIL AGENDA ITEM

Agenda Date Requested: July 27, 2020
Requested By: Ray Mayo, Director
Department: Public Works
(•) Report ( ) Resolution ( ) Ordinance

**Exhibits**: Bid #20019 Bid Notification and Access Report; Tabulation; Project Area Map

| Appropriation | |
|---|---|
| Source of Funds: | 018 – Sewer Rehab |
| Account Number: | 018-9881-669-5120 |
| Amount Budgeted: | $210,000 (budgeted)<br>$100,000 (available) |
| Amount Requested: | $86,845 |
| Budgeted Item: | (•) Yes ( ) No |

### SUMMARY

Bids were opened on Thursday, June 25, 2020 for Bid #20019 - Roseberry Cure In Place Pipe Sewer Rehabilitation project. The general scope of work consists of rehabilitating approximately 1042 feet of deteriorating vitrified clay pipe 18" sanitary sewer pipe. There were fifty-seven (57) bidders notified of the bid opportunity, with thirty-two (32) accessing the bid and five (5) bidders responding.

The low bid was submitted by Insituform Technologies, LLC in the amount of $78,950.00. This bid is secured by a bid bond. Staff recommends approval of this bid with an added project contingency of $7,895.00 (10%) for a total authorization of $86,845.00.

**Benefits:**

- Rehabilitation of the aging sanitary sewer main will eliminate future leaks and potential pipe failure. Structural pipe integrity will be improved by a 'Cure in Place' process. A resin-coated tube is inserted and once cured, strengthens the host pipe. A cure-in-place trenchless process is chosen for this rehabilitation due to the depth of the sewer line.

**Liabilities:**

- The potential for pipe failure will likely increase if work is deferred for an extended period of time.

### RECOMMENDED MOTION

**I move to award Bid #20019 to Insituform Technologies, LLC and authorize the City Manager to execute a contract with Insituform Technologies, LLC in the amount of $78,950.00, and approve a project contingency of $7,850.00, for a total authorization of $86,845.00.**

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**Approved for the City Council meeting agenda**

| | |
|---|---|
| **Corby D. Alexander, City Manager** | **Date** |

## Nofitications and Access Report to Sealed Bid #20019 - 8th Street Aerial Crossing Water Line Replacement

**Notifications Report:**

| Vendor Name | Reason |
|---|---|
| AAA Asphalt Paving Inc. | Bid Notification |
| AAA Flexible Pipe Cleaning Co. Inc | Bid Notification |
| All Pro General Construction, Inc. | Bid Notification |
| Anderson Pollution Control, Inc. | Bid Notification |
| Android Construction Services LLC | Bid Notification |
| Angel Brothers Enterprises, Ltd. | Bid Notification |
| AR TurnKee Construction Company, Inc. | Bid Notification |
| Baukus Electric | Bid Notification |
| Blastco Texas, Inc. | Bid Notification |
| Boyer, Inc. | Bid Notification |
| Calco Contracting, Ltd. | Bid Notification |
| CDC News | Bid Notification |
| Chief Solutions, Inc. | Bid Notification |
| Crescent Engineering Co Inc | Bid Notification |
| D Davila | Bid Notification |
| F&L Coatings and Concrete, LLC | Bid Notification |
| Florida Traffic Control Devices, Inc. | Bid Notification |
| Forde Construction Company, Inc. | Bid Notification |
| Granite Inliner | Bid Notification |
| Greenlee Plumbing Services, Inc. | Bid Notification |
| GRZ Mechanical LLC | Bid Notification |
| GW Phillips Construction, INC. | Bid Notification |
| HDR Engineering, Inc. | Bid Notification |
| Horseshoe Construction, Inc | Bid Notification |
| HR Green, Inc. | Bid Notification |
| HVJ Associates, Inc. | Bid Notification |
| inCon-trol Water Systems | Bid Notification |
| IPR South Central LLC | Bid Notification |
| ISI Contracting, Inc. | Bid Notification |
| J&G Concrete Products | Bid Notification |
| K2 Services, LLC | Bid Notification |
| KING SOLUTION SERVICES LLC | Bid Notification |
| L&L Supplies | Bid Notification |
| NEC Construction, Ltd | Bid Notification |
| Paskey Incorporated | Bid Notification |
| Paskey Incorporated | Bid Notification |
| Pfeiffer & Son, Ltd. | Bid Notification |
| PLW Waterworks, LLC | Bid Notification |
| Polston Applied Technologies CA-TX | Bid Notification |
| R J Construction Company, Inc | Bid Notification |
| R. L. Utilities | Bid Notification |
| R.H. Shackelford, Inc. | Bid Notification |
| RAC Industries, LLC | Bid Notification |
| Royal Media Network Inc. | Bid Notification |
| Sabre Communications Corporation | Bid Notification |
| SAK Construction, LLC | Bid Notification |
| SJ&J CONSTRUCTION, LLC | Bid Notification |
| Southern Road & Bridge | Bid Notification |
| TCH Directional Drilling | Bid Notification |

| | |
|---|---|
| texas pride utilities, llc | Bid Notification |
| TLC Trucking & Contracting, Inc. | Bid Notification |
| TMI Coatings, Inc. | Bid Notification |
| Trigon Associates, llc | Bid Notification |
| Utility Service Co Inc | Bid Notification |
| W.W. Payton Corportion | Bid Notification |
| Webber, LLC | Bid Notification |
| Windrose Land Services | Bid Notification |



## ACCESS REPORT:

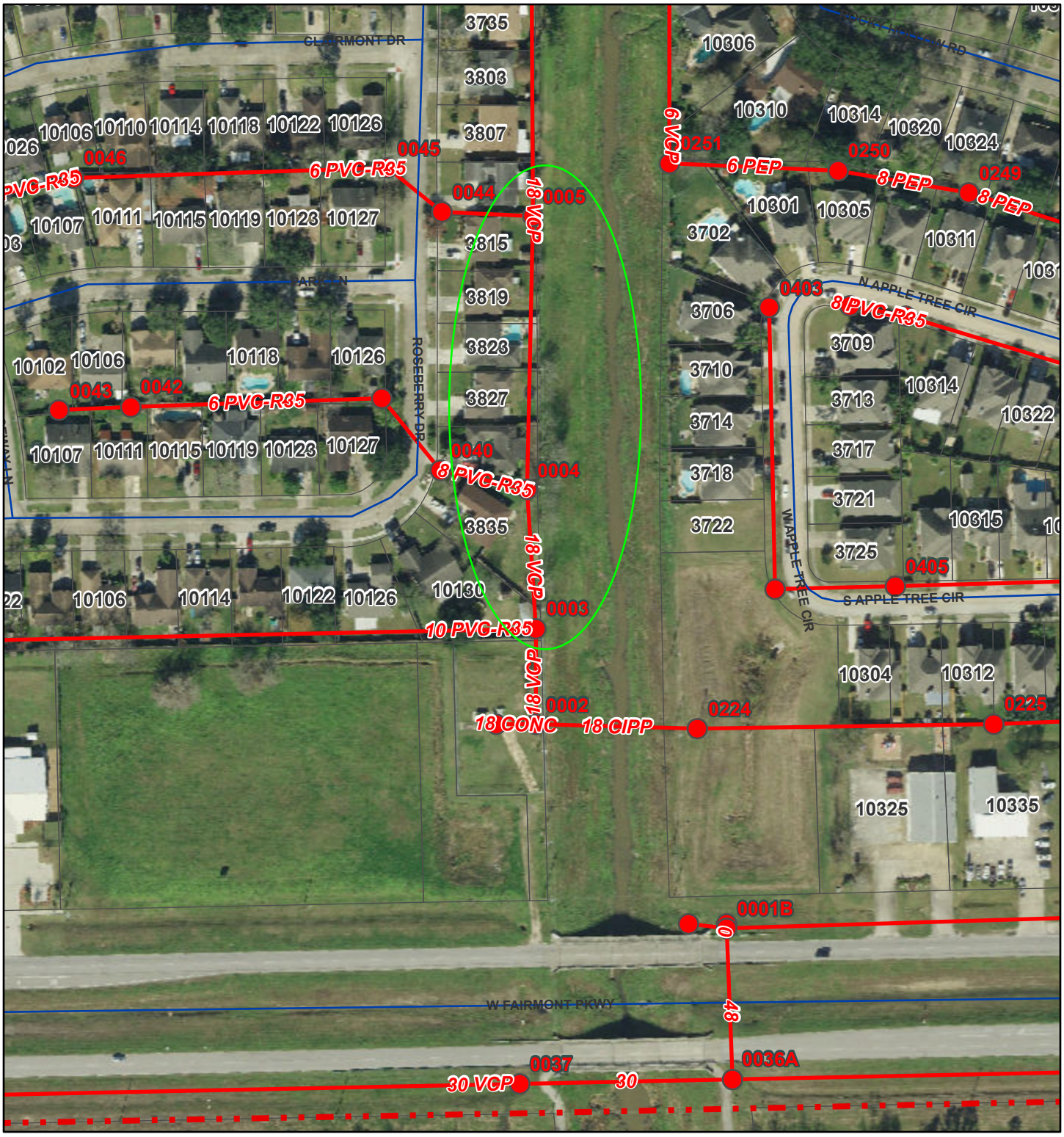
| Vendor Name | Documents |
|---|---|
| Dale Dobbins | #20017 8th Street Aerial Waterline Crossing Replacemen |
| Tukmol General Contractor | |
| Perkens WS Corporation | #20017 8th Street Aerial Waterline Crossing Replacemen |
| BidClerk | #20017 8th Street Aerial Waterline Crossing Replacemen |
| HVJ Associates, Inc. | #20017 8th Street Aerial Waterline Crossing |
| CMS | |
| Wayne Enterprises | |
| Engineering Consultatnt Services, Ltd. | |
| Android Construction Services LLC | #20017 8th Street Aerial Waterline Crossing |
| Odyssey Engineering Group | |
| ConstructConnect | |
| Lindsay Circle, LLC | |
| HR Green, Inc. | #20017 8th Street Aerial Waterline Crossing Replacemen |
| WadeCon, LLC | #20017 8th Street Aerial Waterline Crossing |
| SO | |
| AR TurnKee Construction Company, Inc. | #20017 8th Street Aerial Waterline Crossing |
| CMD | |
| Hearn Company | #20017 8th Street Aerial Waterline Crossing |
| TCH Directional Drilling | #20017 8th Street Aerial Waterline Crossing Replacemen |
| Dodge Data & Analytics | #20017 8th Street Aerial Waterline Crossing |
| Construction Bid Source | #20017 8th Street Aerial Waterline Crossing Replacemen |
| Construction Software Technologies | #20017 8th Street Aerial Waterline Crossing |
| Construction Journal | #20017 8th Street Aerial Waterline Crossing |
| G&A Boring | #20017 8th Street Aerial Waterline Crossing |
| IMS | #20017 8th Street Aerial Waterline Crossing Replacemen |
| Granite Inliner | #20017 8th Street Aerial Waterline Crossing Replacemen |
| Onvia | #20017 8th Street Aerial Waterline Crossing |
| The Blue Book Building & Construction Network | #20017 8th Street Aerial Waterline Crossing Replacemen |
| School Wholesale Supplies LLC | |
| Paradigm Consultants | #20017 8th Street Aerial Watereline Crossing Replaceme |
| North America Procurement Council | #20017 8th Street Aerial Waterline Crossing Replacemen |
| SmartProcure | #20017 8th Street Aerial Waterline Crossing |
| Alpha Testing, Inc. | #20017 8th Street Aerial Waterline Crossing Replacemen |

# Bid Tabulation to Sealed Bid #20019 - Roseberry CIPP

| | | | Texas Pride Utilities | Cruz Tec | Insituform Technologies | T Gray Utility | Vortex |
|---|---|---|---|---|---|---|---|
| Item | Description | | | | | | |
| 1 | Labor to complete CIPP piping project, as specified | | 250000 | 46890 | 49700 | 47499 | 53572 |
| 2 | Materials to complete CIPP piping project, as specified | | 265000 | 40685 | 29250 | 42500 | 54286 |
| TOTAL | (Item 1 + Item 2) | | **$ 515,000.00** | **$ 87,575.00** | **$ 78,950.00** | **$ 89,999.00** | **$ 107,858.00** |

Bid results are preliminary only and are not indicitive of any type of award. Other factors may apply

# Web AppBuilder for ArcGIS

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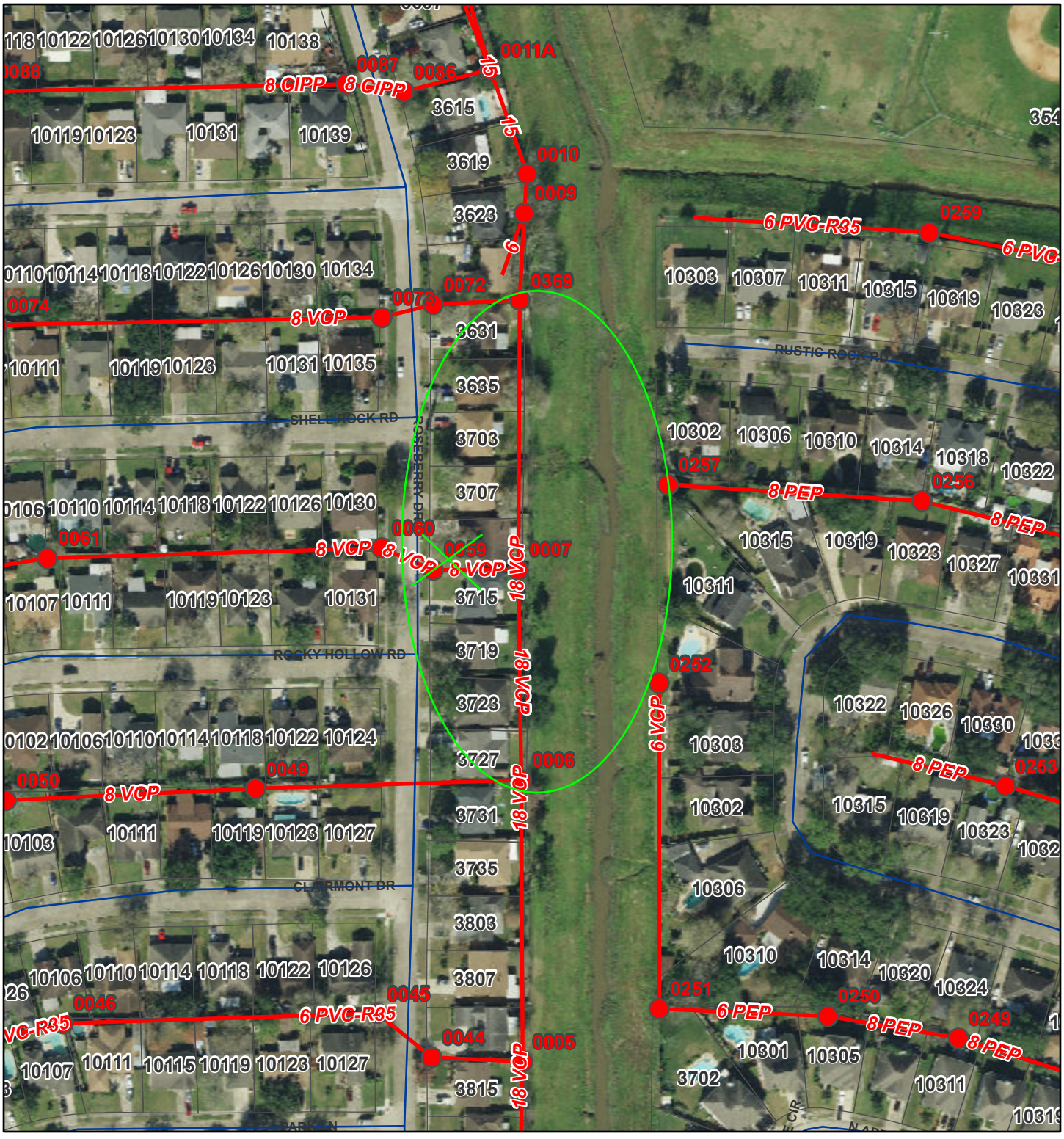
0 0.03 0.05 0.1 km

- Base Map Layer - Streets
- Base Map Layer - City Limits
- Sanitary Sewer - Manholes
- Sanitary Sewer - Sewer Mains
- Parcel Layer - Address Parcels

Houston Galveston Area Council (HGAC), City of La Porte, TX

# Web AppBuilder for ArcGIS

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0 0.03 0.05 0.1 km

- Base Map Layer - Streets
- Base Map Layer - City Limits
- Sanitary Sewer - Manholes
- Sanitary Sewer - Sewer Mains
- Parcel Layer - Address Parcels

Houston Galveston Area Council (HGAC), City of La Porte, TX

# REQUEST FOR CITY COUNCIL AGENDA ITEM

Agenda Date Requested: July 27, 2020

Requested By: Ray Mayo, Director

Department: Public Works

◯ Report ◯ Resolution ◯ Ordinance

**Exhibits**: Project Area Map; Consultant Proposal; Preliminary Engineering Analysis

| Appropriation | |
|---|---|
| Source of Funds: | 051; 050 |
| Account Number: | 051-7071-531-1100<br>050-7071-531-1100 |
| Amount Budgeted: | 051 $150,000 (budgeted)<br>051 $42,339 (available)<br>050 $950,000 (budgeted)<br>050 $950,000 (available) |
| Amount Requested: | $394,983 |
| Budgeted Item: | ◉ Yes ◯ No |

## SUMMARY

The City of La Porte entered into an agreement with Harris County on December 9, 2019, awarding the City of La Porte $3,472,757.00 for the Northside Neighborhood Drainage Improvements Project. The award is funded through the Texas General Land Office's (TXGLO) 2017 Community Development Block Grant Disaster Recovery Program (CDBG-DR). The entirety of this grant award will be utilized towards construction costs for the Northside Neighborhood Drainage Improvements Project, which will be completed in phases to maximize awarded grant funds. Also, this project was awarded $325,775.30 as part of 2015 CDBG-DR Program. Prior to receiving notification of grant award, this project was funded within the fiscal year 2016-17 budget. The FY 2016-17 budgeted amount will be utilized to cover engineering related costs.

The Request for Qualifications #19601 for Engineering Services for Grant Projects was advertised on October 25, 2018, with a closing date of November 20, 2018. A total of seventeen (17) firms submitted responses. The top four (4) firms, 5Engineering, LLC, AECOM Technical Services Inc., Halff Associates, Inc., and Lockwood Andrews & Newnam, Inc. were short-listed by the evaluation committee and are considered to be the most qualified respondents for drainage related grant projects. At the July 8, 2019 City Council meeting, Council authorized the City Manager to execute a contract with Lockwood Andrews & Newnam, Inc. (LAN) to provide preliminary engineering services for the Northside Neighborhood Drainage Improvement Project.

The goal of the Northside Neighborhood Drainage Improvement Project is to improve the functionality of the storm sewer system and increase the level of service in the region. Lockwood, Andrews, & Newnam, Inc. prepared a preliminary engineering report which evaluated design options and determined the most efficient flood reduction approach. The preliminary engineering report was finalized on March 20, 2020, providing design recommendations for the Northside Neighborhood Drainage Improvement Project. Realizing the potential delays associated with TXGLO and Harris County procurement requirements, the City requested to move all funding into construction and opted to pay for soft costs using budgeted City funds. Thus, all awarded funding will be utilized to pay for construction phase services. The Authorization to Proceed with Phase 1 design was approved at the June 8, 2020 City Council meeting.

As recommended by LAN within the preliminary engineering report, this project will be completed in phases. Phase 1 is anticipated to provide for the construction of an outfall structure and approximately 186 linear feet of dual 4' x 3' reinforced concrete storm sewer boxes for a total estimated Phase 1 cost of $312,000.00. Phase 2 will include the construction of a detention facility, in addition to the continuation of the dual 4' x 3' storm sewer boxes, for a total estimated cost of $3,060,000.00 of Phase 2 improvements. The $325,775.30 and $3,472,757.00 grant allocations will be utilize on the construction of Phase 1 and Phase 2 improvements, respectively.

The preliminary engineering report also includes a recommendation for Phase 3 for supplemental future improvements, allowing for the installation of an additional 4'x3' reinforced concrete storm sewer system to reroute flows further downstream in effort to expand the benefit area. However, at an estimated cost of $5,360,000, supplemental Phase 3 improvements exceed the current project budget.

Staff has negotiated the attached scope of work for engineering service with Lockwood, Andrews, & Newnam, Inc. The proposal includes: basic services for engineering design, bidding, and construction phase services in the amount of $258,865.00; additional services of surveying, geotechnical investigation, and subsurface utility engineering for $111,698.00; and optional additional environmental services for $24,420.00; for a total project cost of $394,983.00. This project obtained several environmental clearances as part of the grant application process, if the environmental clearances are acceptable to the permitting entities during design, there is a potential that the optional environmental services are not utilized.

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**RECOMMENDED MOTION**

**I move to authorize the City Manager to execute a professional services agreement with Lockwood, Andrews, & Newnam, Inc. for the Northside Neighborhood Drainage Improvement Project, for a total authorization of $394,983.00.**

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**Approved for the City Council meeting agenda**

**Corby D. Alexander, City Manager**

**Date**


Survey limit
Survey limit
N-11th-St
N-10th-St
N-9th-St
N-8th-St
Adams-St
-St-&-W-Polk-St
W-Polk-St
State-Hwy-146-S
146
W-Main-St

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

June 29, 2020

City of La Porte
2693 N 23rd Street
La Porte, Texas 77571

Attention: Lorenzo Wingate, PE, CFM

**Re: Northside Neighborhood Drainage Improvement Project – Phase 2 Design**

Dear Mr. Wingate,

Per your request, Lockwood, Andrews & Newnam, Inc. has prepared a general scope and fee schedule for the Northside Neighborhood Drainage Improvement Project Phase 2 Design. The effort described in Exhibit A will include the proposed scope of services to complete the design for Phase 2, which includes constructing approximately 1,000 feet of storm sewer improvements along W. Polk St from 11th St. to 8th St., including approximately 400 feet of tunneling under SH 146, as well as a detention basin. In general, the tasks include developing construction plans and specifications, impact analysis, topographic survey, geotechnical investigation, and subsurface utility engineering (SUE). Environmental services are included as an optional service if needed.

The goal of the Northside Neighborhood Drainage Improvement Project is to improve the functionality of the stormwater system and increase the storm water level of service in the region.

We propose to complete the total contract for Basic and Additional Services for an amount of $370,563.00. Optional environmental services total $24,420 and are in addition to the Basic and Additional Services. Exhibit B provides a detailed man hour estimate of the fees associated with the basic services tasks. This project will utilize grants awarded to the City as part of the 2015 Floods CDBG-DR Allocation. It is anticipated that the Phase 2 Design can be completed within 11 months of notice-to-proceed. A preliminary schedule showing the major tasks of the project is included with Exhibit A.

We are prepared to begin this task immediately and look forward to supporting the City of La Porte on this important project. Please feel free to contact me at 713-821-0372 or by email at dmbarton@lan-inc.com if you have any additional questions.

Sincerely,

David M. Barton, PE, CFM
Senior Project Manager

Attachments:
Exhibit A – Scope of Services
Exhibit B – Fee Schedule

# EXHIBIT A

## Scope of Services

## City of La Porte

## Northside Neighborhood Drainage Improvement Project – Phase 2 Design

The goal of the Northside Neighborhood Drainage Improvement Project – Phase 2 Design is to support the City in their efforts to improve drainage within the region. Phase 2 consists of approximately 1,000 feet of storm sewer improvements along W. Polk St from 11th St. to 8th St., including approximately 400 feet of tunneling under SH 146. The roads will be reconstructed as necessary to match the existing cross section. A detention basin will also be designed and constructed to mitigate impacts from the storm sewer improvements. The site for the detention basin has not been identified. This project will utilize grants awarded to the City as part of the 2015 Floods CDBG-DR Allocation.

## SCOPE OF ENGINEERING 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. Drainage Design for Phase 2

1. Existing Conditions Drainage Area Map
   An existing conditions drainage area map for the project limits at a scale of 1 inch equals 40 feet will be developed.

2. Proposed Conditions Drainage Area Map
   A proposed conditions drainage area map for the project limits at a scale of 1 inch equals 40 feet will be developed.

3. Storm Sewer Standard and Custom Details
   The consultant will include relevant standard details. The consultant will develop non-standard or custom details. Additional custom details may include the design of custom equalizing structures for various types of line tie-ins, and outfall structures.

4. Detention Basin – Plan and Profiles Sheets
   The plan and profile sheets will include existing topography and utilities, proposed flowlines, side slopes, outfall structures. Existing and Proposed 1% and 10% Exceedance Probability water surface elevations will be shown.

5. Detention Basin – Cross Sections
   The cross sections will include existing topography, side slopes, bottom slopes, maintenance berm width, and right-of-way limits. Existing and Proposed 1% and 10% Exceedance Probability water surface elevations will be shown.

**B. Roadway and Drainage Plan Production for Phase 2**

1. Cover Sheet
   The cover sheet will be prepared in accordance to City of La Porte's Public Improvement Criteria Manual drawing requirements. Cover sheet will include area key map and vicinity map to identify project location.

2. Index of Drawings, Legends, and Abbreviations
   The index, legends, and abbreviations sheet will be prepared in accordance to City of La Porte's Public Improvement Criteria Manual drawing requirements. Index sheet will include a list of all sheets within the plan set.

3. Keyed Notes
   The keyed notes sheet will be prepared in accordance to City of La Porte Public Improvement Criteria Manual drawing requirements. The keyed notes sheet will include a list of all numbered and keyed notes to be used within the plan set.

4. General Notes & Private Utility Notes
   General construction notes will be prepared for the project including the City of La Porte's Public Improvement Criteria Manual standard notes for roadway, traffic, storm sewer, water line, and sanitary sewer construction. Notes from private utility notes will also be included.

5. Survey Control Map
   Survey subcontractor shall provide survey control map sheets in accordance with the City of La Porte's Public Improvement Criteria Manual drawing requirements.

6. Existing and Proposed Typical Sections
   Existing and proposed horizontal dimensions, pavement structure makeup and thickness, typical locations of existing buried utilities, right-of-way and easements, sidewalks, shoulders, and drainage ditches will be shown.

7. Overall Site Plan Map
   An overall site plan map will be developed to show the major project features, boundaries and limits, as well as any other important information and data beneficial for construction.

8. Plan and Profile Sheets – Drainage and Roadway – Improvement Corridor
   The plan and profile sheets, which will follow the City of La Porte's Public Improvement Criteria Manual drawing requirements, will include existing topography and utilities, proposed alignment and proposed pavement footprint in plan view. The profile will include natural ground at the limits of the existing right-of-way and at the centerline of the existing roadway. The plan and profile sheets will indicate the approximate location, size per available data, age of service lines, and capacity of all public utilities and will indicate approximate location and size per available data for private utilities. The storm sewer profile will be shown on combined roadway and storm sewer profile sheets.

9. Driveway Schedule
   A driveway schedule showing the location, size and type of proposed driveways to be reconstructed as part of the project will be developed. Driveways shall typically be reconstructed to the ROW line using standard La Porte details.

10. Storm Sewer Lateral Sheets
    Storm sewer lateral sheets will be prepared for the purpose of illustrating the profile

view of storm sewer components that cannot easily be displayed on the roadway plan and profile sheets.

11. Utility Relocation Sheets
    Separate plan & profiles will be developed to show any necessary relocations of water, sanitary sewer, or other utilities.

12. Standard and Non-Standard Details
    City of La Porte Standard Details will be included where applicable and edited if necessary, to suit the intended use for this project. Additional nonstandard details will be prepared for bidding and construction of the project.

13. Storm Water Pollution Prevention Plan
    SWPPP drawings and specifications will be prepared in compliance with the Environmental Protection Agency (EPA) as part of the construction documents.

14. Traffic Control and Detour Plans
    Traffic Control Plans will be prepared in accordance with the Texas Manual on Uniform Traffic Control Devices, 2011 Edition.

15. Subsurface Data / Boring Logs
    Subsurface data and boring logs will be presented in accordance with City of La Porte's Public Improvement Criteria Manual drawing requirements.

**C. Project Management, Coordination & Deliverables**

1. Project Management and Project Controls
   Project management activities are ongoing through the period of the contract and will include items such as participation in the crafting of the Project Management Plan, preparing contract correspondence, transmitting deliverables, preparing invoices, documenting the quality control process, and other project oversight activities.

2. Agency Coordination, Approvals & Signatures
   a. Throughout the project, coordination meetings will be organized as necessary with the City of La Porte and others as necessary.
   b. It is anticipated that up to four meetings will be required with representatives from the City of La Porte. The product of this effort will be recommendations for drainage and roadway improvements.
   c. All required signatures will be obtained from governmental agencies and public utilities, which may influence the project design.

3. Public Utility Conflict Investigation
   During the design process, a detailed investigation will be conducted to determine if there are any public utility conflicts and if there is a need to relocate or adjust existing public utilities.

4. Private Utility Coordination
   a. Utility signatures will be obtained from AT&T, CenterPoint Energy Gas and Electric, and potentially other companies such as Comcast.
   b. Utility Conflict Resolution
      a. Utility companies will be notified of all potential conflicts with proposed work. Meetings will be arranged with utility companies and the City of La Porte in effort to resolve conflicts and relocate private utilities in a timely manner.

b. City of La Porte Preliminary and Final Utility Conflict Notification Letters will be prepared and forwarded to the City of La Porte Utility Coordinator for distribution.

5. Specifications
   a. Specifications will be prepared in accordance with the City of La Porte Technical Specifications. Each Technical Specification will be reviewed and supplemented as necessary to suit Project-specific requirements and to meet the design intent of the Project. LAN will prepare additional nonstandard specifications necessary for bidding and construction of the project.
   b. Front-end documents for the project specifications will be prepared by the City of La Porte with the assistance from LAN.

6. Estimate of Construction Cost and Quantities
   Construction quantities and cost estimates will be prepared for each review submittal of the Detailed Design (60%, 90%, 100% submittals).

7. Quality Assurance / Quality Control
   A thorough Quality Assurance/Quality Control (QA/QC) Plan will be implemented to ensure overall project constructability, cost estimate accuracy, and design conformance with industry standards and client-specific requirements and preferences. The LAN QA/QC Plan mandates an extensive review process that will occur at multiple design milestones throughout the duration of the project and includes the specific procedures to be followed by third-party technical reviewers, itemized review checklists, and guidelines for incorporating reviewer comments. The multi-staged review process will result in the early identification of design concerns and allow the designer ample opportunity to seek resolution and/or clarification from the client.

8. Deliverable Preparation
   Provide submittals for interim progress reviews to the City at the 60%, 90% and final (100% completion) stages.
   a. 60% submittal shall include two (2) sets of 11”x17” legible black-line construction drawings, a list of governing specifications and special provisions, and a construction cost estimate.
   b. 90% submittal shall include two (2) sets of 11”x17” legible black-line construction drawings, governing specifications and special provisions book, and a construction cost estimate.
   c. The final (100% completion) submittal to the City will be reviewed prior to preparing the contract documents for the bid advertisement process. The final submittal shall include two (2) sets of 11”x17” and two (2) sets of 22”x34” legible black-line construction drawings, governing specifications and special provisions book, and a final construction cost estimate. All previous comments must be addressed before the bid advertisement process can commence.
   d. Electronic files and drawings will be submitted to the City at the final submittal (2 CDs or DVDs) and/or upon request from the City during the interim submittals.

**D. Limited Bidding Services**

LAN will assist City of La Porte in conducting the pre-bid conference, preparing contract amendments, review of bid tabulation provided by the City, and awarding the contract.

## E. Limited Construction Phase Services

LAN will assist City of La Porte in construction phase services including:

1. Attend the pre-construction meeting with selected contractor prior to construction start date.
2. Make periodic visits to the site to observe work progress and quality of executed work and to determine in general if work is proceeding in accordance to Contract Documents. In performing this service, design team will not be responsible for the techniques and sequences of construction or the safety precautions incidental thereto and will not be responsible or liable in any degree for the contractor's failure to perform the construction work in accordance with the Contract Documents, except to the extent that the design team fails to exercise the usual degree of care and judgment of an ordinarily prudent engineer in the same or similar circumstances and conditions.
3. If necessary, the design team will assist the City with the review of schedules, submittals, laboratory test results, RFI's, and other data which the Contractor submits. This review is for the benefit of the City and requires only general conformance with the design concept of the Project and general compliance with the information given in the Contract Documents. It does not relieve Contractor of any responsibilities, such as dimensions to be confirmed and correlated at the job site, appropriate safety measures to protect workers and the public, or the necessity of constructing a complete and workable facility in accordance with the construction Contract Documents.
4. The design team shall assist the City's Construction Management (CM) team as necessary with change order development.
5. Conduct, in company with the City, a final inspection of the project to determine general conformance of work performed by Contractor with the construction Contract Documents.
6. Assist the City CM team in issuing a punch list of deficient items to be corrected by Contractor.
7. Incorporate field changes and information from the Contractor's as-built "red-line" drawings into the Record Drawings.

## F. Drainage Impact Analysis

LAN will perform an impact analysis for the proposed project to determine the magnitude and extent of hydrologic and hydraulic impacts to Harris County Flood Control District (HCFCD) Unit No. F216-00-00 (Little Cedar Bayou) for the 100-year, 10-year, and 2-year storm events, per current HCFCD criteria. LAN will submit the Impact Analysis to the City and HCFCD for review and will respond to 2 rounds of comments.

## G. Reimbursable Expenses

Reimbursable expenses such as reproduction and mileage will be billed to the City of La Porte at cost plus 10% markup.

## II. ADDITIONAL ENGINEERING SERVICES

The Additional Services are summarized below. The tasks are designated as lump sum (LS), unless noted otherwise.

### A. Surveying Services

The proposed topographic survey required for the design effort will be performed by Kuo & Associates, Inc. The effort is divided into two tasks, the survey for the storm sewer and roadway improvements and the survey for the detention basin:

1. Storm Sewer and Roadway Improvements: Includes the topographic survey, basemap plan and profile, survey control map, picking up geotechnical boring locations, and picking up markings from the subsurface utility engineering consultant. This work will be completed for the lump sum amount of $19,844, including markup.

2. Detention Basin: At this time, the site for the proposed detention basin has not been chosen from the options available. The effort and fee for this task depend on the size and condition of the chosen site. For budgetary purposes, it is assumed the site will be a wooded 4-acre site and a tree survey will be required. In addition, 4 cross sections of Little Cedar Bayou (HCFCD Unit No. F216-00-00) adjacent to the basin will be obtained. Using the preceding assumptions, the work will be completed for a lump sum amount of $56,375, including markup. This fee is approximate and subject to change based on the actual size and condition of the site.

### B. Geotechnical Investigation

The proposed geotechnical investigation required for the design effort will be provided by Ninyo & Moore and includes drilling borings, performing laboratory testing, and preparing a report. There will be 3 borings for the storm sewer improvements, 2 borings to a depth of 30 feet each and 1 boring to a depth of 15 feet. There will be 3 borings for the detention basin, each one to a depth of 15 feet. This work will be completed for the lump sum amount of $10,890, including markup.

### C. Subsurface Utility Engineering (SUE)

The proposed SUE work required for the design effort will be provided by RODS SUE and includes Quality Level B utility designation services and Quality Level A test holes, as needed. This work will be completed for the lump sum amount of $24,589, including markup.

## III. OPTIONAL SERVICES

### A. Environmental Investigation and Permitting

The proposed environmental permitting required for the design effort will be provided by BIO-WEST and includes waters of the U.S. delineation, cultural resource desktop assessment, threatened and endangered species assessment, and USACE Clean Water Act compliance. To assist the City in selecting a suitable site for the detention basin, delineation of wetlands and waters of the U.S. for all of the potential detention basin sites shown on the attached Exhibit titled “Parcels Evaluated for Potential Detention” can also be accomplished. These optional tasks can be completed for the lump sum amount of $24,420, including markup.

## IV. SERVICES EXCLUDED FROM PROPOSED SERVICES

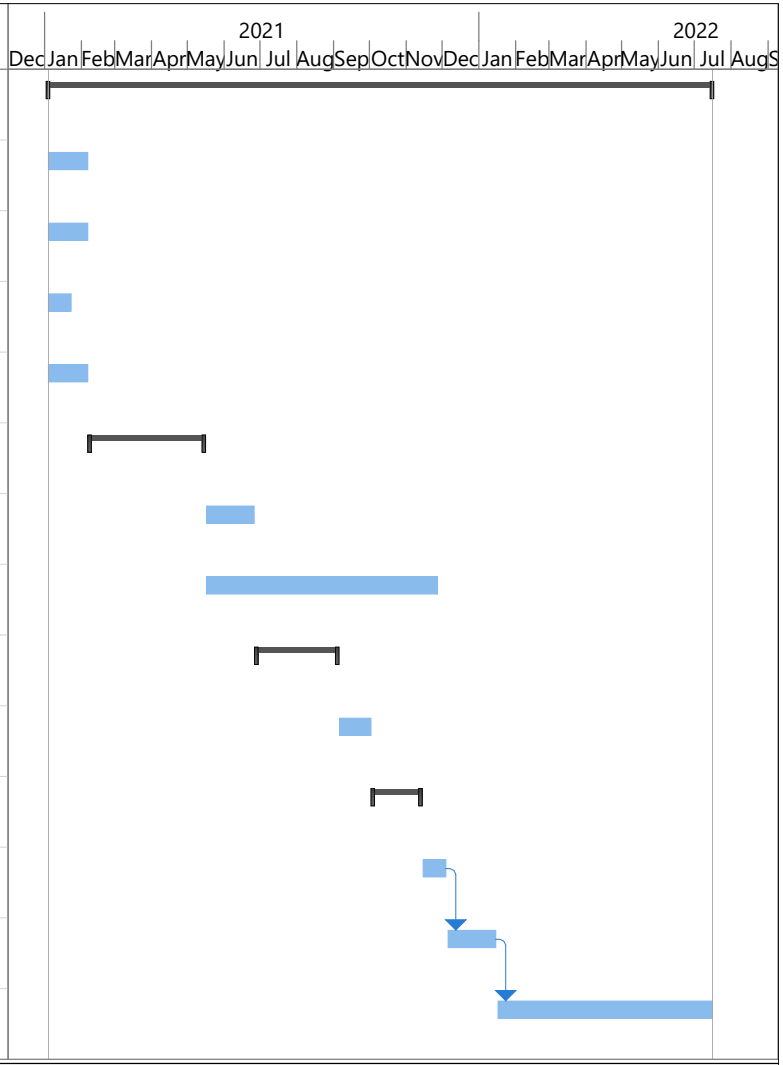
City of La Porte and LAN agree that the following services are beyond the Scope of Services described in the tasks above. However, LAN can provide these services, if needed, upon the City’s written request. Any additional amounts paid to LAN as a result of any material change to the Scope of the Project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

- Construction Management Services
- Construction Inspection Services
- CCTV Inspection
- TDLR Inspection
- FEMA modeling and submittals
- Services related to right-of-way delineation or acquisition
- Water quality analysis or design

## V. SCHEDULE

The attached preliminary schedule shows the durations of the major tasks of the project through construction. The schedule assumes that land acquisition for the detention basin site has progressed to the point where we can access the site.

| ID | Task Mode | Task Name | Duration |
|---|---|---|---|
| 1 | | **La Porte Northside Drainage Improvements - Phase 2** | **80 wks** |
| 2 | | Survey Services | 5 wks |
| 3 | | Geotechnical Investigation | 5 wks |
| 4 | | Environmental Services - Delineation and Assessments | 3 wks |
| 5 | | Subsurface Utility Engineering (SUE) | 5 wks |
| 6 | | **60% Design Submittal** | **14 wks** |
| 10 | | Agency Review | 6 wks |
| 11 | | Environmental Services - USACE Permitting | 28 wks |
| 12 | | **90% Design Submittal** | **10 wks** |
| 16 | | Agency Review | 4 wks |
| 17 | | **100% Design Submittal** | **6 wks** |
| 21 | | Final Review and Approval | 3 wks |
| 22 | | Bidding Phase | 6 wks |
| 23 | | Construction Phase | 26 wks |




Project: Northside Drainage Improvements - Phase 2
Date: Wed 6/3/20

| | | |
|---|---|---|
| Task | Inactive Summary | External Tasks |
| Split | Manual Task | External Milestone |
| Milestone | Duration-only | Deadline |
| Summary | Manual Summary Rollup | Progress |
| Project Summary | Manual Summary | Manual Progress |
| Inactive Task | Start-only | |
| Inactive Milestone | Finish-only | |

Lockwood, Andrews & Newnam, Inc.
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# EXHIBIT B
## Fee Schedule
## City of La Porte - Northside Neighborhood Drainage Improvement Project - Phase 2 Design

| Task | Task Description | PRINCIPAL | PROJ MGR | SR PROF ENG | PROJECT ENGINEER | GRADUATE ENGINEER | DESIGNER | PROJ ADMIN | TOTAL HOURS | TOTAL LABOR COSTS | TOTAL SUBCONSULTANT & EXPENSES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **I.** | **BASIC ENGINEERING SERVICES** | | | | | | | | | | |
| **A** | **Drainage Design for Phase 2** | | | | | | | | | | |
| 1 | Existing Conditions Drainage Area Map | | 4 | | 12 | | 8 | | 24 | $3,160 | |
| 2 | Proposed Conditions Drainage Area Map | | 16 | | 24 | | 8 | | 48 | $7,240 | |
| 3 | Storm Sewer Standard and Custom Details | | 4 | | 8 | | 16 | | 28 | $3,460 | |
| 4 | Detention Basin Plan & Profiles | | 20 | | 40 | | 120 | | 180 | $21,300 | |
| 5 | Detention Basin Cross Sections | | 16 | | 30 | | 80 | | 126 | $15,190 | |
| | ***Task A Total*** | ***0*** | ***60*** | ***0*** | ***114*** | ***0*** | ***232*** | ***0*** | ***406*** | ***$50,350*** | |
| **B** | **Roadway and Drainage Plan Production for Phase 2** | | | | | | | | | | |
| 1 | Cover Sheet | | 1 | | 1 | | 2 | | 4 | $540 | |
| 2 | Index of Drawings, Legends, and Abbreviations | | 1 | | 1 | | 4 | | 6 | $740 | |
| 3 | Keyed Notes | | 1 | | 2 | | 4 | | 7 | $865 | |
| 4 | General & Private Utility Notes | | 1 | | 2 | | 6 | | 9 | $1,065 | |
| 5 | Survey Control Map | | 1 | | 2 | | 2 | | 5 | $665 | |
| 6 | Existing and Proposed Typical Sections | | 6 | | 8 | | 40 | | 54 | $6,290 | |
| 7 | Overall Site Plan Map | | 4 | | 4 | | 8 | | 16 | $2,160 | |
| 8 | Plan and Profile Sheets - Drainage and Roadway - Improvement Corridor | | 20 | | 40 | | 120 | | 180 | $21,300 | |
| 9 | Driveway Schedule | | 20 | | 30 | | 60 | | 110 | $14,050 | |
| 10 | Storm Sewer Lateral Sheets | | 4 | | 8 | | 16 | | 28 | $3,460 | |
| 11 | Utility Relocation Sheets | | 4 | | 10 | | 20 | | 34 | $4,110 | |
| 12 | Standard and Non-Standard Details | | 4 | | 8 | | 16 | | 28 | $3,460 | |
| 13 | Storm Water Pollution Prevention Plan | | 4 | | 4 | | 8 | | 16 | $2,160 | |
| 14 | Traffic Control and Detour Plans | | 8 | | 16 | | 30 | | 54 | $6,720 | |
| 15 | Subsurface Data / Boring Logs | | 2 | | 4 | | 4 | | 10 | $1,330 | |
| | ***Task B Total*** | ***0*** | ***81*** | ***0*** | ***140*** | ***0*** | ***340*** | ***0*** | ***561*** | ***$68,915*** | |
| **C** | **Project Management, Coordination & Deliverables** | | | | | | | | | | |
| 1 | Project Management and Project Controls | 12 | 80 | | | | | 20 | 112 | $22,040 | |
| 2 | Agency Coordination, Approvals & Signatures | | 20 | | 60 | | | | 80 | $11,800 | |
| 3 | Public Utility Conflict Investigation | | 10 | | 24 | | | | 34 | $5,150 | |
| 4 | Private Utility Coordination | | 16 | | 40 | | | | 56 | $8,440 | |
| 5 | Specifications | | 16 | | 40 | | | | 56 | $8,440 | |
| 6 | Estimate of Construction Cost and Quantities | | 16 | | 40 | | | | 56 | $8,440 | |
| 7 | Quality Assurance / Quality Control | 8 | 20 | | | | | | 28 | $6,460 | |
| 8 | Deliverable Preparation | | 8 | | 30 | | | 8 | 46 | $6,110 | |
| | ***Task C Total*** | ***20*** | ***186*** | ***0*** | ***234*** | ***0*** | ***0*** | ***28*** | ***468*** | ***$76,880*** | |
| **D** | **Limited Bidding Services** | | **$39,990** | | **$29,250** | | | | | | |
| | Assist La Porte with Bidding | | 16 | | 24 | | | | 40 | $6,440 | |
| | ***Task D Total*** | ***0*** | ***16*** | ***0*** | ***24*** | ***0*** | ***0*** | ***0*** | ***40*** | ***$6,440*** | |

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# EXHIBIT B
## Fee Schedule
## City of La Porte - Northside Neighborhood Drainage Improvement Project - Phase 2 Design

| Task | | Task Description | PRINCIPAL | PROJ MGR | SR PROF ENG | PROJECT ENGINEER | GRADUATE ENGINEER | DESIGNER | PROJ ADMIN | TOTAL HOURS | TOTAL LABOR COSTS | TOTAL SUBCONSULTANT & EXPENSES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **E** | **Limited Construction Phase Services** | | | | | | | | | | |
| | 1 | Pre-Construction Meeting | | 4 | | 4 | | | 2 | | $1,520 | |
| | 2 | Site Visits (6) | | 18 | | 18 | | | | | $6,120 | |
| | 3 | Assist with Review of Schedules, Submittals, Lab Tests, & RFIs | | 24 | | 40 | | | 8 | | $10,800 | |
| | 4 | Assist with Change Orders | | 24 | | 40 | | | 8 | | $10,800 | |
| | 5 | Final Inspection | | 4 | | 4 | | | | | $1,360 | |
| | 6 | Assist with Punch List | | 4 | | 4 | | | 2 | | $1,520 | |
| | 7 | Produce Record Drawings | | 8 | | 16 | | 40 | | | $7,720 | |
| | | ***Task E Total*** | ***0*** | ***86*** | ***0*** | ***126*** | ***0*** | ***40*** | ***20*** | ***0*** | ***$39,840*** | |
| | **F** | **Drainage Impact Analysis** | | | | | | | | | | |
| | | Impact Analysis & Report per HCFCD criteria | | 20 | | 80 | | | 8 | 108 | $14,940 | |
| | | ***Task F Total*** | ***0*** | ***20*** | ***0*** | ***80*** | ***0*** | ***0*** | ***8*** | ***108*** | ***$14,940*** | |
| | **G** | **Reimbursable Expenses** | | | | | | | | | | |
| | | Expenses, including mileage, printing, and deliveries | | | | | | | | | | $1,500 |
| | | ***Task G Total*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***$0*** | ***$1,500*** |
| | | **TOTAL HOURS** | **20** | **429** | **0** | **638** | **0** | **612** | **48** | **1475** | | |
| | | Contract Labor Rate | $270 | $215 | $150 | $125 | $110 | $100 | $80 | | | |
| | | **TOTAL COSTS** | **$5,400** | **$92,235** | **$0** | **$79,750** | **$0** | **$61,200** | **$3,840** | | **$257,365** | **$1,500** |

**TOTAL BASIC SERVICES** **$258,865**

Lockwood, Andrews & Newnam, Inc.
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# EXHIBIT B
## Fee Schedule
## City of La Porte - Northside Neighborhood Drainage Improvement Project - Phase 2 Design

| Task | Task Description | PRINCIPAL | PROJ MGR | SR PROF ENG | PROJECT ENGINEER | GRADUATE ENGINEER | DESIGNER | PROJ ADMIN | TOTAL HOURS | TOTAL LABOR COSTS | TOTAL SUBCONSULTANT & EXPENSES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **II. ADDITIONAL SERVICES** | | | | | | | | | | | |
| **A** | **Surveying Services - Kuo & Associates** | | | | | | | | | | |
| | Surveying Services for Storm Sewer / Roadway | | | | | | | | | | $19,844 |
| | Surveying Services for Detention Basin (*Site is not selected; fee for these services will depend on actual size and conditions of the site*) | | | | | | | | | | |
| | Topographic Survey of Detention Basin Site (*assumes a wooded 4-acre site with a tree survey*) | | | | | | | | | | *$41,580* |
| | Boundary Survey of Detention Basin Site (*assumes a 4-acre site*) | | | | | | | | | | *$13,200* |
| | Channel Cross Sections (4) | | | | | | | | | | $1,595 |
| | ***Task A Total*** | | | | | | | | | | ***$76,219*** |
| **B** | **Geotechnical Investigation - Ninyo & Moore** | | | | | | | | | | |
| | Geotechnical Investigation - Ninyo & Moore | | | | | | | | | | $10,890 |
| | ***Task B Total*** | | | | | | | | | | ***$10,890*** |
| **C** | **Subsurface Utility Engineering (SUE) - RODS** | | | | | | | | | | |
| | Subsurface Utility Engineering (SUE) - RODS | | | | | | | | | | $24,589 |
| | ***Task C Total*** | | | | | | | | | | ***$24,589*** |

| | |
|---|---|
| **TOTAL ADDITIONAL SERVICES** | **$111,698** |
| **TOTAL BASIC & ADDITIONAL SERVICES** | **$370,563** |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **OPTIONAL ADDITIONAL SERVICES** | | | | | | | | | | | |
| | **Environmental Services - BioWest** | | | | | | | | | | |
| | Waters of the U.S. Delineation (Up to 3 acres) | | | | | | | | | | $5,720 |
| | Cultural Resource Desktop Assessment | | | | | | | | | | $1,375 |
| | Threatened and Endangered Species Assessment | | | | | | | | | | $220 |
| | USACE Clean Water Act Compliance Letter | | | | | | | | | | $13,530 |
| | Delineate all Potential Detention Sites | | | | | | | | | | $3,575 |
| | ***Optional Additional Services Total*** | | | | | | | | | | ***$24,420*** |

KUO & associates, Inc.
Consulting Engineers & Surveyors

**10300 Westoffice Drive, Ste. 800**
**Houston, TX 77042**
**Phone: (713) 975-8769**
**Fax: (713) 975-0920**
**Engineering Firm Reg. No. F-4578**
**Surveying Firm Reg. No. 10075600**
**www.kuoassociates.com**

April 22, 2020

David M. Barton, P.E., CFM
Senior Project Manager
Lockwood, Andrews & Newnam, Inc.
2925 Briarpark Drive, Suite 400
Houston, TX 77042

Re: Northside Drainage Improvement, La Porte
Topographic Surveying and Basemap Plan-profile, Phase 2

Dear Mr. Barton:

Kuo & Associates, Inc. is pleased to submit this proposal to perform the following for the above referenced project.

| BASIC SERVICES | |
|---|---|
| **Item** | **Description** |
| Item 1 | Topographic Surveying |
| Item 2 | Basemap Plan & Profile |
| Item 3 | Survey Control Maps |
| Item 4 | Establishing Design Center Line |
| **ADDITIOINAL SERVICES** | |
| Item 1 | Topographic Surveying of Detention Pond |
| Item 2 | Boundary Surveying of Detention Pond |
| Item 3 | Channel Cross Section Survey (4) |

The scope of work and fee will be as follows:

## SCOPE OF WORK

### BASIC SERVICES

A number of items under basis services will be done along W. Polk Street and side streets for the following limits as shown in the table below:

| Streets | From | To | Quantity (LF) |
|---|---|---|---|
| **W. Polk** | SH 146 east edge of outer main lane | 100' east of N 8th | 550 |
| W. Polk | SH 146 west edge of outer main lane | West ROW of N 11th | 450 |
| N 8th | 100' north of W. Polk | 100' south of W. Polk | 200 |
| N 11th | 100' north of W. Polk | 100' south of W. Polk | 200 |
| SH 146 NB Feeder | 100' north of W. Polk | 100' south of W. Polk | 200 |
| SH 146 NB Feeder | 100' north of W. Polk | 100' south of W. Polk | 200 |
| **Total** | | | **1,800** |

In general, the scope for work will be including the following items and tasks:

Item 1: Topographic Survey:

- Horizontal and vertical controls will be established and tied to the Texas State Plane Coordinate System, South Central Zone NAD 83 and datum NAVD 88. Survey will be tied to the City of La Porte monument (if available) or nearby NGS monument. Survey will also be tied to the nearby TSARP monument.
- Cross sections will be surveyed at every 100 feet interval along the project route.
- All planimetric features will be surveyed along the corridor for a width of ROW+10'.
- All visible existing utilities (i.e. manholes, culverts, power poles, etc.) will be located and pipe size and flow line measure downs in the manholes, inlets (as available and that can be opened) will be obtained.
- Texas one-call system will be notified, and pipeline companies will be contacted to probe and mark their pipeline (if any) locations to be tied to the survey.
- All level A & B SUE findings (explored by SUE surveyor) will be surveyed
- Attempt will be made to recover and verify enough monumentation along the existing roadway to establish estimated right-of-way lines for topographic surveying scope. Task of establishing estimated ROW may involve some limited abstracting and deed research, however, detail boundary category survey is excluded in determination.
- Signed and sealed field books containing notes as well as ASCII files of point numbers, coordinates, and descriptions will be provided.
- Boreholes will be located in the field and will be shown in the AutoCAD plan drawing

Item 1: Basemap Plan & Profile

- Coordinate with private utility companies and City of La Porte for record drawings
- Perform utility research and delineation of underground utility lines from available record drawing and surveyed information
- Prepare profile for ground lines corresponding to the center line of the street, center line of the ditch/curb lines, right-of-way lines for the streets as shown in the attached table.
- Prepare profile view of existing utilities for the same streets from available record and field information
- All deliverables will be as long strip in the AutoCAD format with side text on the top and bottom boundary of the drawing.

Item 3: Survey Control Map

- A survey control map will be prepared showing swing ties to traverse and baseline points as well as TBM's. The survey control map will be signed and sealed by a Registered Professional Land Surveyor in charge of the project.

Item 4: Surveying SUE Findings

- Recover controls and reestablish as necessary
- Survey Level A & B SUE findings as marked by SUE Surveyor
- Incorporate surveyed information in the topo and utility drawing

To our understanding the following **are excluded** from the scope of this proposal

- Boundary level survey for determining of right of way of the street
- Any Level A and B SUE category survey
- Construction phase survey (including staking design centerline)
- Accessing/opening electric and communication manholes (if any)
- Surveying any confined space of large manhole structure (if any)
- Surveying main lanes of SH 146

**ADDITIONAL SERVICES**

**Item-1: Topographic Surveying for Detention Pond**

Topographic survey will be performed for a proposed detention pond area (size to be determined). Location of the detention pond is not selected yet. Some conceptual options are shown in the attached exhibit.

Survey shall conform to all requirements of City of La Porte and Category 6 survey, Condition 2 of TSPS Manual as applicable. In general, the scope for survey will be including the following tasks:

1. Horizontal and vertical controls will be established and tied to the Texas State Plane Coordinate System, South Central Zone NAD 83 and datum NAVD 88. The nearby TSARP monument will also be tied to the survey as benchmark.
2. Limited site clearing of brushes as applicable (if wooded)
3. Survey elevations in a 50'x50' grid
4. Survey all topographic (with or without trees within wooded area) and utility features.
5. Prepare a plan drawing with DTM/contour in AutoCAD.

The deliverables will be signed and sealed topographic survey map.

**Item-2: Boundary Surveying for Detention Pond**

Boundary Survey will be done for the proposed detention pond area. Survey will comply with Category 1A, Condition 2 survey of the latest TSPS Manual and City of La Porte survey requirements as applicable/feasible. Horizontal and vertical controls will be established and tied to the Texas State Plane Coordinate System, South Central Zone NAD 83 (CORS 96) and datum NAVD 88. In conformance, the scope of work will include the following:

1. Searching and surveying monuments for establishing boundary of the site.
2. Abstracting and deed research for the pond site and adjoining properties.
3. Preparing plat map drawing for boundary of the site.
4. Preparing metes and bound description for the boundary of the site.
5. Map check closure for the boundary.
6. Setting the boundary on the ground.

The deliverables will be signed and sealed boundary plat map and metes and bounds.

**Item-3: Channel Cross Section Survey**

Four cross sections will be surveyed along Little Cedar Bayou in the vicinity of the detention pond area.
In general, the scope for survey will be including the following tasks:

1. Horizontal and vertical controls will be established and tied to the Texas State Plane Coordinate System, South Central Zone NAD 83 and datum NAVD 88. The nearby TSARP monument will also be tied to the survey as benchmark.
2. Limited site clearing of brushes as applicable.
3. Survey four channel cross sections including elevations at flowline, toe, high bank, water level, estimated ROW line, etc.
4. Prepare a plan drawing with surveyed cross sections in AutoCAD.

**FEE AND SCHEDULE:**

Estimated fees and schedule for the above referenced works will be as follows:

| **BASIC SERVICE:** | | | |
|---|---|---|---|
| **Item** | **Services** | **Fee (lump sum) *** | **Schedule** |
| Item-1 | Topographic Surveying | $9,688.00 | 4 weeks |
| Item-2 | Basemap Plan & Profile | $3,656.00 | |
| Item-3 | Survey Control Maps | $2,252.00 | |
| Item-4 | Establishing Design Center Line | $2,444.00 | |
| **Total (Basic Services)** | | **$18,040.00** | 4 weeks |
| **ADDITIONAL SERVICE:** | | | |
| Item-1 | Topographic Surveying for Detention Pond | **$2,600/acre** for clear area | TBD |
| | | **$4,900/acre** for wooded area without tree survey | TBD |
| | | **$9,450/acre** for wooded area with tree survey | TBD |
| Item-2 | Boundary Surveying for Detention Pond | **$3,000/acre** | TBD |
| Item-3 | Channel Cross Section Survey (4) | **$1,450.00** | TBD |

* See detail breakdown in the attached pages

We appreciate this opportunity to submit this proposal. If you need further information, please do not hesitate to contact me.

Sincerely,

Shaheen Chowdhury

Shaheen Chowdhury, P.E., R.P.L.S.

| **Item 1: Level of Efforts for** Topographic Survey | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Survey Tasks | sub tasks | Principal $180.00 | RPLS $140.00 | SIT $90.00 | CADD $81.00 | Crew $150.00 | Hrs | Cost | Total |
| **Survey Controls** | Setting controls | | | | | 1 | 1 | $150.00 | |
| | Tie to project benchmark | | | 0.5 | | 1 | 1.5 | $195.00 | |
| | Horizontal control work | | | 1 | | 2 | 3 | $390.00 | |
| | Vertical control work | | | 1 | | 4 | 5 | $690.00 | $1,425.00 |
| **Topo Survey** | One Call & Private utility coordination | | | 2 | | | 2 | $180.00 | |
| | Limited Abstracting for ROW | | | | | | | $500.00 | |
| | Estimated ROW | | 3 | 6 | | 4 | 13 | $1,560.00 | |
| | Surveying roadway & topo features | | | 2 | 8 | 20 | 30 | $3,828.00 | |
| | Borehole survey | | | 0.5 | | 2 | 2.5 | $345.00 | |
| | Manhole inverts | | | 1 | | 4 | 5 | $690.00 | |
| | QC/QA | | 4 | | | 4 | 8 | $1,160.00 | **$8,263.00** |
| **Project Management** | Proj Management | | | | | | | $0.00 | **$0.00** |
| **Total** | | | | | | | | | **$9,688.00** |

| **Item 2: Level of Efforts for Basemap Plan & Profile** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Tasks | sub tasks | Principal $180.00 | RPLS $140.00 | SIT $90.00 | CADD $81.00 | Crew $150.00 | Hrs | Cost | Total |
| Plan & Profile | Utility research | | | 2 | | | 2 | $180.00 | |
| | Topo & Utility Plan | | | | 16 | | 16 | $1,296.00 | |
| | Ground & utility profile | | | | 16 | | 16 | $1,296.00 | |
| | QC/QA | | 4 | | 4 | | 8 | $884.00 | $3,656.00 |

| **item 3: Level of Efforts for Survey Control Maps** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Survey Tasks | sub tasks | Principal $180.00 | RPLS $140.00 | SIT $90.00 | CADD $81.00 | Crew $150.00 | Hrs | Cost | Total |
| Survey Control Map | Preparing Survey control map | | 4 | 8 | 12 | | 24 | $2,252.00 | $2,252.00 |

| **Item 4: Level of Efforts for Surveying SUE Findings** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Survey Tasks | sub tasks | Principal $180.00 | RPLS $140.00 | SIT $90.00 | CADD $81.00 | Crew $150.00 | Hrs | Cost | Total |
| Establish design center line | Recover/establish survey controls | | | 2 | | 4 | 6 | $780.00 | |
| | Survey SUE findings | | 1 | | 4 | 8 | 13 | $1,664.00 | **$2,444.00** |

**Level of Efforts Topographic Survey- Detention Pond Site (not wooded)/ Each Acre**

| Survey Tasks | sub tasks | RPLS $140.00 | Survey Tech $90.00 | CADD $81.00 | Crew $150.00 | Hrs | Cost | Total |
|---|---|---|---|---|---|---|---|---|
| **Detention Pond Site (Not a part of Wooded Area)** | Establish survey controls | | 0.5 | | 2 | 2.5 | $345.00 | |
| | Survey grid elevations (50'x50') | | 0.5 | | 6 | 6.5 | $945.00 | |
| | Survey all topo and utility features | | | | 2 | 2 | $300.00 | |
| | Prepare a plan drawing with DTM | | 3 | 6 | | 9 | $756.00 | |
| | QA/QC | 2 | | | | 2 | $280.00 | **$2,626.00** |
| **Total** | | | | | | | | **$2,626.00** |
| | | | | | | | | **say, $2,600.00/acre** |

**Level of Efforts Topographic Survey- Detention Pond Site (wooded area without tree survey)/ Each Acre**

| Survey Tasks | sub tasks | RPLS $140.00 | Survey Tech $90.00 | CADD $81.00 | Crew $150.00 | Hrs | Cost | Total |
|---|---|---|---|---|---|---|---|---|
| **Detention Pond Site (Wooded area without Tree Survey)** | Establish survey controls | | 0.5 | | 2 | 2.5 | $345.00 | |
| | Limited site clearing | | 0.5 | | 12 | 13 | $1,845.00 | |
| | Survey grid elevations | | 0.5 | | 6 | 6.5 | $945.00 | |
| | Survey topo and utility features (without trees) | | | | 4 | 4 | $600.00 | |
| | Prepare a plan drawing with DTM | | 3 | 8 | | 11 | $918.00 | |
| | QA/QC | 2 | | | | 2 | $280.00 | **$4,933.00** |
| **Total** | | | | | | | | **$4,933.00** |
| | | | | | | | | **say, $4,900.00/acre** |

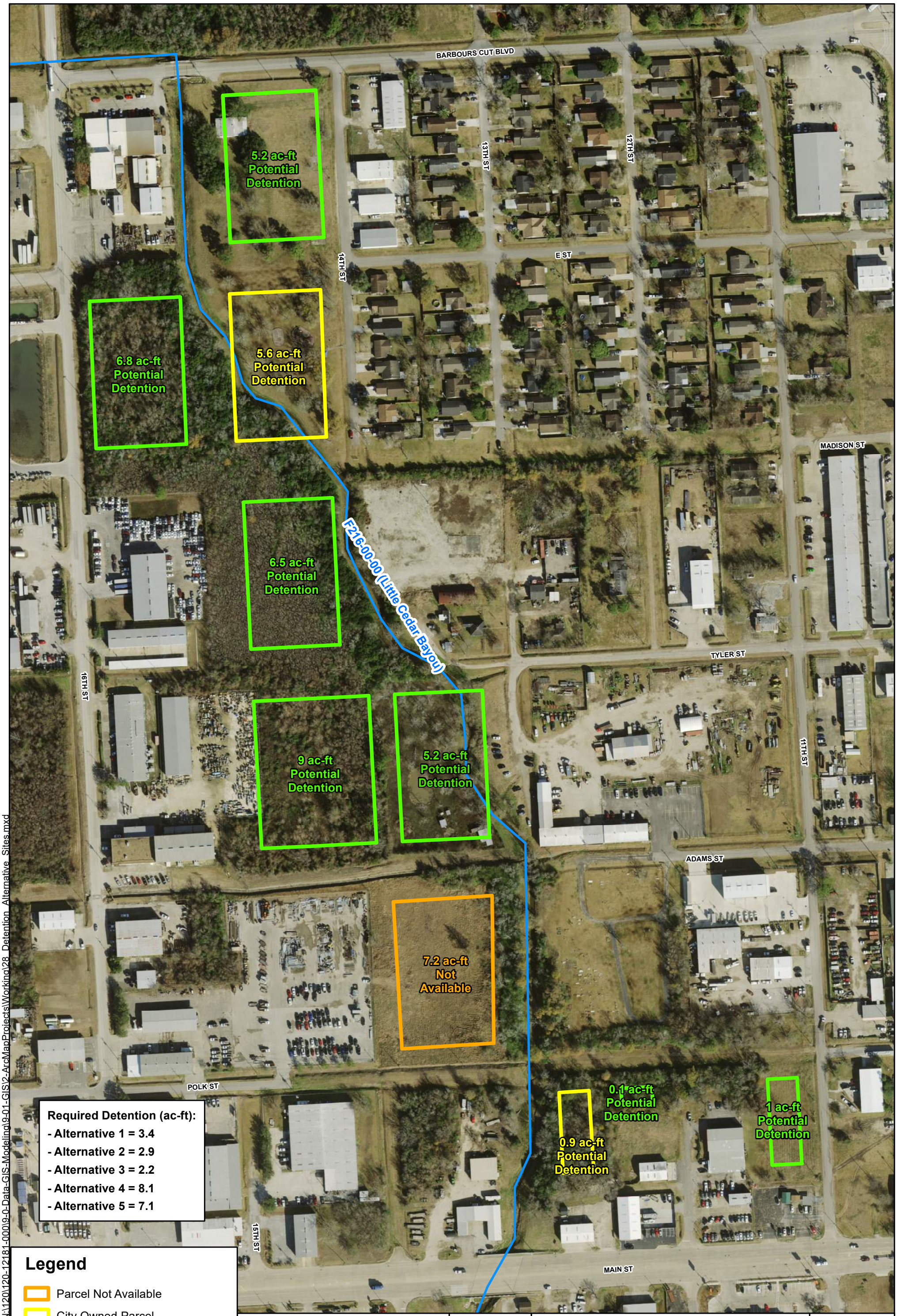
**Level of Efforts Topographic Survey- Detention Pond Site (wooded area with tree survey)/Each Acre**

| Survey Tasks | sub tasks | RPLS $140.00 | Survey Tech $90.00 | CADD $81.00 | Crew $150.00 | Hrs | Cost | Total |
|---|---|---|---|---|---|---|---|---|
| **Detention Pond Site (Wooded area with Tree Survey)** | Establish survey controls | | 0.5 | | 4 | 4.5 | $645.00 | |
| | Limited site clearing | | 0.5 | | 20 | 21 | $3,045.00 | |
| | Survey grid elevations | | 0.5 | | 8 | 8.5 | $1,245.00 | |
| | Survey topo and utility features | | | | 4 | 4 | $600.00 | |
| | Survey trees (6" and larger) | | | | 16 | 16 | $2,400.00 | |
| | Prepare a plan drawing with DTM | | 3 | 12 | | 15 | $1,242.00 | |
| | QA/QC | 2 | | | | 2 | $280.00 | **$9,457.00** |
| **Total** | | | | | | | | **$9,457.00** |
| | | | | | | | | **say, $9,450.00/acre** |

**Level of Efforts- Channel Cross Section Survey**

| Survey Tasks | sub tasks | RPLS $140.00 | Survey Tech $90.00 | CADD $81.00 | Crew $150.00 | Hrs | Cost | Total |
|---|---|---|---|---|---|---|---|---|
| **Channel Cross Section Survey (4)** | Establish survey controls | | 1 | | 2 | 3 | $390.00 | |
| | Limited brush clearing | | | | 1 | 1 | $150.00 | |
| | Survey channel cross sections | | | | 3 | 3 | $450.00 | |
| | Prepare a plan drawing with cross section | | 1 | 3 | | 4 | $333.00 | |
| | QA/QC | 1 | | | | 1 | $140.00 | **$1,463.00** |
| **Total** | | | | | | | | **$1,463.00** |
| | | | | | | | | **say, $1,450.00** |


Survey limit
Survey limit
N-11th-St
N-10th-St
N-9th-St
N-8th-St
Adams-St
-St-&-W-Polk-St
W-Polk-St
State-Hwy-146-S
146
W-Main-St




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

CITY OF LA PORTE TEXAS

# PARCELS EVALUATED FOR POTENTIAL DETENTION

NORTHSIDE NEIGHBORHOOD DRAINAGE IMPROVEMENT AND RELIEF PROJECT

EXHIBIT 28

DATE: MAR 2020
SCALE: AS NOTED

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

April 15, 2020
Proposal No. 16-00894 P2

David Barton, PE, CFM
Lockwood, Andrews & Newnam, Inc.
2925 Briarpark Drive, Suite 400
Houston, Texas 77042

Subject: Proposal to Perform Geotechnical Evaluation
Northside Drainage Improvements – Phase 2
West Polk Street and North 8th Street
La Porte, Texas

Dear Mr. Barton:

We are pleased to present this proposal to perform a geotechnical evaluation for the subject project. This proposal was prepared based on the information that we received from your office and it outlines our scope of services, anticipated schedule, and lump sum fee for this phase of work.

## SITE AND PROJECT DESCRIPTION

We understand the City of La Porte plans to construct dual 4-foot by 3-foot reinforced concrete box (RCB) culverts along West Polk Street from North 8th Street west tunneling under State Highway 146 to about 150 feet west of 11th Street. The work is to be completed in two phases. Phase 1 of the project will consist of installing the RCBs from 11th Street west to an existing channel. Phase 2 will consist of the remaining RCBs from 8th Street and will connect at 11th Street. The maximum depth of the storm sewer will be about 8 feet. An approximately 2½- to 3-acre detention basin on the order of about 6 feet deep is also planned for Phase 2.

As requested, this proposal is for Phase 2 only. A proposal for Phase 1 will be submitted under separate cover.

## SCOPE OF SERVICES

- Perform a reconnaissance of the project site and mark out proposed boring locations. We will also contact Texas811 prior to exploration.
- Drill, log, and sample six exploratory borings at the site. Two borings will be performed along the RCB alignment on either side of SH 146 to depths of 30 feet below the ground surface (bgs), one boring will be performed to 15 feet near the eastern end of the alignment (North 8th

Street), and the remaining three borings will be performed to depths of about 15 feet in the area of the proposed detention basin.

- Collect geotechnical soil samples continuously through any fill or to a depth of 10 feet (whichever is greater). Samples will be taken using conventional split-spoon and/or thin-wall tube sampling techniques for laboratory testing and analysis.

- Perform laboratory testing that will generally consist of moisture content, No. 200 Wash, Atterberg limits, and strength testing.

- Prepare a geotechnical report presenting the results of our evaluation. The report will include a cover letter sealed by a Professional Engineer licensed in the State of Texas. The report will include the following:

    - Description of work scope, laboratory, and field procedures;

    - Maps and boring plans;

    - Subsurface soil and groundwater conditions;

    - Open-cut utility installation guidelines;

    - Pipe bedding and trench backfill recommendations;

    - Trenchless installation (jack-and-bore and/or directional drilling) guidelines; and

    - Detention pond recommendations, including liner recommendations (if needed) and allowable slopes; and

    - Pavement recommendations as needed.

## ASSUMPTIONS

- The site is accessible to truck-mounted drilling equipment and site access will be granted.

- Fieldwork can be accomplished during normal business hours (Monday through Friday, 8:00 AM to 5:00 PM).

- Clearing will not be needed to access the boring locations for the pond.

- Traffic control will not be needed.

- The boreholes can be backfilled with soil cuttings from the drilling operations and patched with like materials.

- Some ground disturbance should be expected as a result of our fieldwork.

- Ninyo & Moore will contact Texas811 prior to performing our subsurface evaluation. We will not be responsible for damage to utilities encountered during subsurface exploration that have not been marked out or shown on the plans.

- Ninyo & Moore will not need to obtain any permits or environmental clearance as a part of this project.

- Our field exploration does not include any sampling, testing, or chemical analysis of soil, groundwater, surface water, or other materials for the purpose of evaluating possible environmental hazards or risks. These services can be provided, if requested, as an additional scope of work.

## SCHEDULE

We are prepared to initiate this project immediately upon receiving your authorization to proceed. Assuming that there are no delays due to inclement weather or site access restrictions, we anticipate that our fieldwork will be performed within about two weeks after receipt of the notice to proceed. We anticipate issuing a report within about three weeks after fieldwork is completed.

## FEE

We propose to provide our services for a lump sum fee of $9,900 (Nine Thousand Nine Hundred Dollars). Any additional services, not included in the aforementioned scope, will be charged on a time-and-materials basis in accordance with our current fee schedule.

To authorize our services, please provide a Work Authorization in accordance with our Master Agreement. We look forward to working with you.

Respectfully submitted,
**NINYO & MOORE**

Scott Snow

Scott Snow, PE
Senior Staff Engineer

Jay Sunderwala

Jay Sunderwala, PE
Managing Principal Engineer

SKS/JTS/ls

Distribution: (1) Addressee (via email)

April, 16, 2020

David Barton, PE, CFM
Lockwood, Andrews & Newman, Inc.
2925 Briarpark Drive
Suite 400
Houston, TX 77042
713-821-0372
dmbarton@lan-inc.com

**RE: Northside Drainage Improvements, LaPorte, TX**
**SUE Quality Level- D, B & A Investigation**
**Phase II**

Dear Mr. Barton:

RODS Subsurface Utility Engineering (RODS SUE) is pleased to submit this proposal for Subsurface Utility Engineering services for the Northside Drainage Improvements project for the City of La Porte, Texas.

Scope & Limits

We understand the scope of work to consist of providing Subsurface Utility Engineering (SUE) Quality Level-D, B & A services. This includes:

- SUE Quality Level D (QL-D) involves performing utility research, including contacting the utility companies to request the existing utility records, and drawing the information obtained into a utility base map.
- SUE Quality Level B (QL-B) involves the designation, recording, and marking of the horizontal location of the existing utility facilities using non-destructive surface geophysical techniques, per APWA color standards. When data is reliable, cover shots indicating top of utility will be included at every 100 feet. Limitations of designation include signal bleed over due to congested utilities or utilities made of non-conductive material such as PVC or concrete. Survey of QL-B Utility Designation will be performed by others. RODS SUE will perform final QA/QC of QL-B deliverable to incorporate information from QL-D Records Research and ensure completeness & accuracy of surveyed data.
- SUE Quality Level-A (QL-A) Test Holes: Excavation of 8 QL-A Test Holes via non-destructive vacuum excavation. In order to perform the field work, the following will also be completed: contact Texas One Call agency to notify of digging intent and perform on-site field inspection and designate the desired utility to determine exact location. Air-vacuum excavation will be utilized to determine orientation, depth, material and general condition of the intended utility. Survey of QL-A Test Holes location and elevation will be performed by others.

Phase II is as depicted on Attachment-B Project Vicinity Map.

Schedule

Fieldwork will begin within 15 business days of notice to proceed and deliverables will be submitted within 7 business days of completed fieldwork.

Deliverables

- Digital depiction of approximate location of buried utilities as determined during the QL-B Utility Designation
- CADD depiction of Test Hole Data Sheet

Estimated Cost

Quality Level-B Services will be invoiced Lump Sum and QL-A Test Hole Services will be invoiced per test hole and actual depth of excavation, see Attachment C for the estimated fees.

**Total Estimated Cost for SUE Services: $ 22,354.00**

Should you have any questions or require additional information, please feel free to contact me. We look forward to working with you on this project.

Sincerely,

Sincerely,

Hilda S. Obregón Lease. P.E.
President
RODS Subsurface Utility Engineering

LAN, Inc.

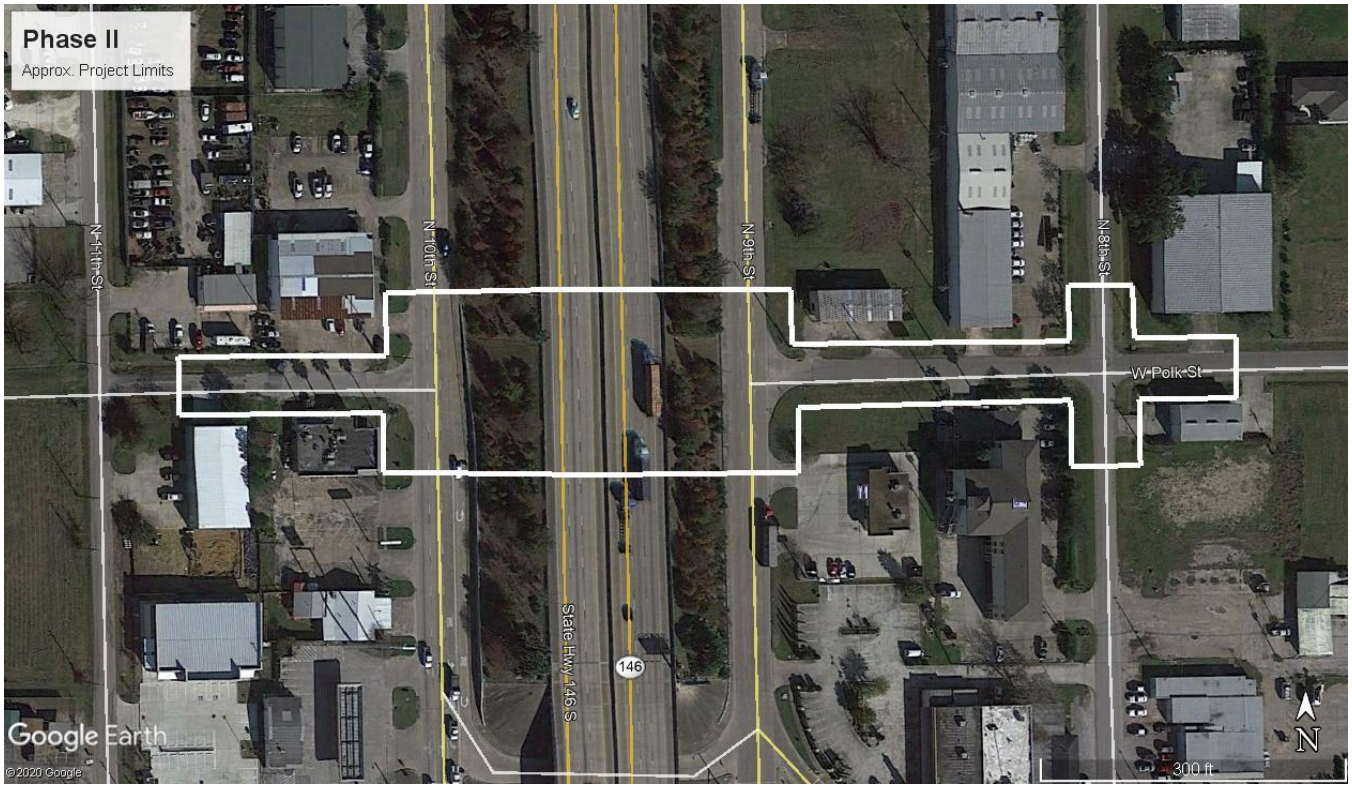
Approved By: _____

Title: _____

Date: _____

Signature: _____

Attachment-B




6810 Lee Road -- Suite 300 -- Spring, TX 77379
Phone: 281.257.5248 Fax: 713.758.0368
www.rodssue.cc

Attachment-C

**ATTACHMENT C- FEE SCHEDULE- City of La Porte, TX- Northside Drainage Improvements**
**QL-B & A SUE INVESTIGATION Phase II**

**PRIME PROVIDER NAME:**
**Lockwood Andrews & Newman, Inc. (LAN)**
**SUBCONSULTANT NAME: RODS Subsurface Utility Engineering, Inc.**

April 16, 2020

| TASK DESCRIPTION | SUE PROJECT MANAGER | SUE PROJECT ENGINEER | SUE ENGINEER IN TRAINING | SUE ENGINEERING TECHNICIAN | SUE DESIGNATION 2-MAN CREW | CLERICAL | TOTAL LABOR HOURS & COSTS |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| **SUE Quality Level-B Utility Designation Services** | | | | | | | |
| 1. SUE QL-D Records Research, One Call and Site Visit | 2 | 4 | | | | | 6 |
| 2. SUE QL-B Utility Designation | 1 | 4 | 2 | | 40 | | 47 |
| 3. Creation of CADD Utility Base Map | | | | 8 | | | 8 |
| 4. QA/QC | 4 | 2 | 6 | 2 | | 2 | 16 |
| | | | | | | | |
| HOUR SUBTOTALS | 4 | 10 | 8 | 10 | 40 | 2 | 74 |
| LABOR RATE PER HOUR | $145.00 | $126.00 | $110.00 | $100.00 | $190.00 | $67.00 | |
| TOTAL LABOR COSTS | $580.00 | $1,260.00 | $880.00 | $1,000.00 | $7,600.00 | $134.00 | $11,454.00 |
| | | | | | | | |
| **SUBTOTAL QL-B SERVICES** | | | | | | | **$11,454.00** |
| **SUE Quality Level-A Test Holes Services** | | | | | | | |
| Non-Destructive Test Holes (per vertical depth) | | Rate/ Hole | Estimated | | | | |
| 0.00-4.99 FT. | | $1,250.00 | 4 | | | | $5,000.00 |
| 5.00-7.99 FT. | | $1,475.00 | 4 | | | | $5,900.00 |
| 8.00-12.99 FT. | | $1,750.00 | 0 | | | | $0.00 |
| 13.00-19.99 FT. | | $2,100.00 | 0 | | | | $0.00 |
| **SUBTOTAL QL-A SERVICES** | | | | | | | **$10,900.00** |
| **TOTAL** | | | | | | | **$22,354.00** |

April 21, 2020

Mr. David Barton, P.E.
Lockwood, Andrews, and Newnam, Inc.
2925 Briarpark Drive, Suite 400
Houston, TX 77042-3720

**RE: Cost Estimate and Scope of Services**
**Environmental Review and Permitting Compliance Support**
**Proposed City of La Porte Phase II Northside Drainage Improvement Project**
**La Porte, Harris County, Texas**

Dear Mr. Barton:

BIO-WEST, Inc. (BIO-WEST) is pleased to submit this scope of work and cost estimate to Lockwood, Andrews, and Newnam, Inc. (LAN) to provide environmental support services related to proposed storm sewer detention basin proposed by the City of La Porte (the City) near 11th Street and 12th Street, north of the intersection of Main Street and State Highway (SH) 146 in southeastern Harris County, Texas. BIO-WEST understands that LAN will be the Engineer of Record for this project and represents the City as the end client.

A review of site maps and surveys provided to BIO-WEST on April 16, 2020 (attached) indicates that any proposed detention basin may potentially impact either the ordinary high water mark (OHWM) of Harris County Flood Control District (HCFCD) Drainage Unit #F216-00-00 (Little Cedar Bayou), a potentially perennial tributary, or other waters of the U.S., including wetlands in the project area, which may be subject to regulation by the United States Army Corps of Engineers (USACE) under the Clean Water Act (CWA). For the purposes of this cost estimate, BIO-WEST assumes that the project site will be limited to all impacts directly related to one potential detention basin; therefore, BIO-WEST will assess up to three acres for one detention basis site to aid in siting and constructing the proposed outfall structure to comply with current USACE guidelines.

For efficiency, BIO-WEST has included an optional subtask to delineate all 10 detention basin locations (totaling 27 additional acres) in order to assist the City and LAN in citing a detention basin location that potentially avoids all permitting requirements.

## SCOPE OF WORK

To facilitate the understanding of the proposed services, the project has been divided into four tasks:

- Waters of the U.S. Delineation
- Cultural Resource Desktop Assessment
- Threatened and Endangered Species Assessment
- Permitting and Coordination

**Task 1: Waters of the U.S. Delineation**

BIO-WEST proposes to evaluate one detention basin location (as directed by LAN and the City) for the presence of potential jurisdictional waters of the U.S., including wetlands, and other waterbodies as defined in Section 404 of the CWA and Section 10 of the Rivers and Harbors Act (RHA). Our evaluation will be designed to identify the presence or absence of potentially jurisdictional waters of the U.S., document site conditions, and where possible, provide guidance for avoidance of jurisdictional waters at one detention basin location. Our methods will include:

- Review of recent aerial photography and U.S. Geological Survey (USGS) 7.5-minute Topographic Quadrangle maps of the property to evaluate the potential for waters of the U.S.
- Review of Natural Resources Conservation Service (NRCS) soil survey maps and hydric soils lists
- Field reconnaissance of the property for identification of wetlands and other water bodies
- Use of a Trimble® Global Positioning System (GPS) device with sub-meter accuracy to mark each sampling location and the extent of any waters of the U.S., including wetland, within the proposed property boundaries per USACE Galveston District Standards

Our delineation will identify and document the presence of waters of the U.S. and include a delineation of these resources as specified in the 1987 Corps of Engineers Wetlands Delineation Manual (Manual), the 2010 Regional Supplement to the USACE Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region – Version 2.0 (Supplement), Regulatory Guidance Letter 05-05 – Ordinary High Water Mark (OHWM) Identification, and other applicable industry guidance and standards. BIO-WEST will draft a delineation report that includes the following:

- Brief introduction, methodology, and results
- BIO-WEST's professional opinion regarding jurisdiction of any delineated features
- A waters of the U.S. delineation map
- A USGS topographic map
- A Federal Emergency Management Agency (FEMA) map
- A National Wetland inventory (NWI) map
- A Natural Resources Conservation Service (NRCS) soil maps
- Historical aerial photographs and topographic maps
- Property photographs documenting site conditions
- Geographic Information System (GIS)-based dataset for client's use

All findings would be preliminary and would be based on BIO-WEST's professional experience with similar projects under similar circumstances. Only the USACE can make the final jurisdictional determination of the property. This effort is not intended to act as a forensic or atypical delineation.

BIO-WEST will submit the delineation report to LAN for review and comment. Once comments are incorporated, BIO-WEST will draft a final version for LAN. Once the report is complete and the dataset is received by LAN, BIO-WEST will coordinate with LAN during one in-person meeting at LAN's offices to discuss the results and potential options.

**Task 2: Cultural Resource Desktop Assessment**

BIO-WEST will contract with a qualified archeological consulting firm to conduct a detailed cultural resources background research and prepare documentation for compliance with Section 106 of the National Historic Preservation Act (NRHP) and Texas State Historic Preservation Office (SPHO) standards for the entire 30-acre site that includes all 10 detention basin locations. All phases of this work will be supervised by an archaeologist that meets Secretary of the Interior's Professional Qualification Standards for Archeology as set forth in 36 CFR 61. Background research will include a file search at the Texas Historical Commission (THC) and review of historic references, documents, and maps.
BIO-WEST and our subconsultant will conduct a site file review and desktop-level geoarchaeological assessment prior to any fieldwork mobilization in an effort to determine whether or not an archaeological field/pedestrian survey is required for the project. BIO-WEST and our subconsultant will the prepare a coordination letter with a background and literature review, a site file search, appropriate mapping, historic aerial photographs, project plans, and relevant exhibits to support a recommendation that field survey not be required. Upon approval by LAN, the coordination letter will be submitted to the THC. If the THC concurs with this recommendation, no further cultural resources management consulting needs should be required for the project unless design changes warrant additional assessment, saving time and budget.

If the THC determines that pedestrian surveys are required, BIO-WEST can complete this scope of work under a separate cost proposal.

**Task 3: Threatened and Endangered Species Assessment**

BIO-WEST will assess the entire 30-acre site that includes all 10 detention basin locations with regard to T&E species and their potential habitat. BIO-WEST will provide effects determinations for both state and federally-listed species based on background research, including, but not limited to, the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) tool, USFWS Environmental Conservation Online System (ECOS) mapper, and Texas Parks and Wildlife (TPWD) Natural Diversity Database (NDD). BIO-WEST will also assess and provide recommendations with regard to the Bald and Golden Eagle Protection Act (BGEPA), the Migratory Bird Treaty Act (MBTA), and Magnuson-Stevens Fishery Conservation. Representative photographs will be taken to document existing T&E habitats within the project area.

Based on BIO-WEST's extensive experience, existing relationships with regional TPWD and USFWS staff, and past experience with similar projects on similar landscapes, it is our opinion that the property has an extremely low probability of affected federally or state-listed threatened or endangered species. BIO-WEST proposes informal, verbal coordination with USFWS and/or TPWD, only if required based on the results of field surveys. If formal consultations, a Biological Assessment (BA), and/or Biological Opinion (BO) are required from the USFWS, BIO-WEST can provide this scope under a separate proposal and cost estimate.

**Task 4: USACE Permitting**

Based on project descriptions as of the date of this proposal, the project may fall under a Nationwide Permit (NWP). BIO-WEST proposes to draft a permit application pursuant of USACE guidelines and Section 404 of the CWA and Section 10 of the RHA for all proposed impacts to potentially jurisdictional waters of the U.S., including wetlands. If the project impacts are below certain impact thresholds, the project can be permitted under an NWP.

BIO-WEST will prepare a permit application for submittal to the USACE. Prior to preparing the application, BIO-WEST will coordinate with LAN to obtain all engineering information in order to create figures depicting proposed layouts and impacts. **BIO-WEST cannot complete the permit application without this information**. Anticipated timelines for the completion of the project are contingent on project plans and engineering drawings being relayed to BIO-WEST in a timely manner. BIO-WEST will utilize ENG Form 6082 and attach the following to the permit application:

- Applicant and Applicant's Agent Name and Contact Information
- Detailed Project Description
- Detailed Project Location Information
- Detailed Description of Proposed Impacts
- Request for an Approved Jurisdictional Determination (AJD)
- Threatened and Endangered Species Assessment
- Cultural Resources Assessments
- Figures and Exhibits Depicting All Proposed Impacts

Once the permit application is complete, BIO-WEST will forward an electronic copy to LAN and the end client for review and comment. Following incorporation of comments, BIO-WEST will submit a completed application to the USACE for review. BIO-WEST understands that LAN will be named an additional agent. BIO-WEST will act as the primary agent and advocate for the end client throughout the permitting process and keep LAN "in the loop" during all coordination with the USACE.

BIO-WEST will coordinate the application through the permitting process. While BIO-WEST cannot guarantee approval of the application, BIO-WEST will utilize its best professional judgement and the standard and care utilized by similar companies completing similar work in the USACE Galveston District. BIO-WEST maintains an excellent reputation with the USACE Galveston District and will utilize this reputation to further each application to the desired outcome. The project permitting schedule will be based on the following factors that are outside of BIO-WEST's control:

- Manpower and workload allocation at the USACE
- Morale, leadership changes, or employee retention at the USACE
- Force Majeure or other Acts of God
- Financial, personnel, and/or political instabilities at the USACE

Should any of these factors influence the permit schedule, BIO-WEST will notify LAN in writing and coordinate a plan of action. BIO-WEST shall not be held liable or at fault if any of these factors, or any other factor outside of BIO-WEST's direct control, adversely affects the project schedule.

## COST ESTIMATE AND SCHEDULE

BIO-WEST will complete this project on a fixed fee basis as identified In Table 1:

**Table 1: Cost Breakdown by Task**

| Task | Total |
|---|---|
| Task 1: Water of the U.S. Delineation (up to 3 Acres) | $5,200.00 |
| Task 2: Cultural Resource Desktop Assessment* | $1,250.00 |
| Task 3: Threatened and Endangered Species Assessment | $200.00 |
| Task 4: USACE Permitting | $12,300.00 |
| **TOTAL** | **$18,950.00** |
| OPTIONAL: Delineate Remaining 27 acres** | $3,250.00 |

*Assumes no cultural resource pedestrian surveys are necessary
**Conducted simultaneously with Task 1

This fixed fee cost includes all expenses incurred by BIO-WEST during the performance of this scope of work. Project costs will not exceed the proposed budget without prior approval from LAN. For project budgeting purposes, BIO-WEST will bill LAN monthly for work completed prior to the billing date.

BIO-WEST can complete Tasks 1-3 of this scope of work within three weeks of receiving notice to proceed and a signed work order. Task 4 of this scope of work will require an additional two weeks to complete.

The permitting timeline is at the discretion of the USACE Galveston District. BIO-WEST estimates that an NWP will take approximately 3 to 6 months for approval.

## ASSUMPTIONS

This proposal was completed under the following assumptions:

- BIO-WEST will utilize the project site exhibits provided via email by LAN on April 17, 2020.
- Project site access will be provided during normal business hours.
- No weather-related delay days are assumed. Any delays due to weather or lack of access may result in additional mobilization costs or field days.
- If any results and findings indicate the need for further study beyond the scope of work specifically enumerated herein, BIO-WEST will notify LAN of the conditions of concern and recommendations for revised services, and additional costs and request a change order.
- Since it includes field surveys, Task 1 is limited to one, three-acre detention site.
- BIO-WEST has provided an optional subtask to delineate an additional 27 acres during the same field survey effort to assist LAN and the City in citing a detention basin that potentially avoi
- Tasks 2 and 3 do not include any field surveys.
- Since they are desktop only level reviews, Tasks 2 and 3 include up to 30 acres in the project area to account for all 10 potential sites.
- If the project description should change or be altered in such a way as to meet different permitting requirements (Regional General Permit, Standard Individual Permit, etc.), BIO-WEST reserves the right to alter this proposal as deemed necessary to meet the changing demands of the project.

## CONDITIONS OF ENGAGEMENT

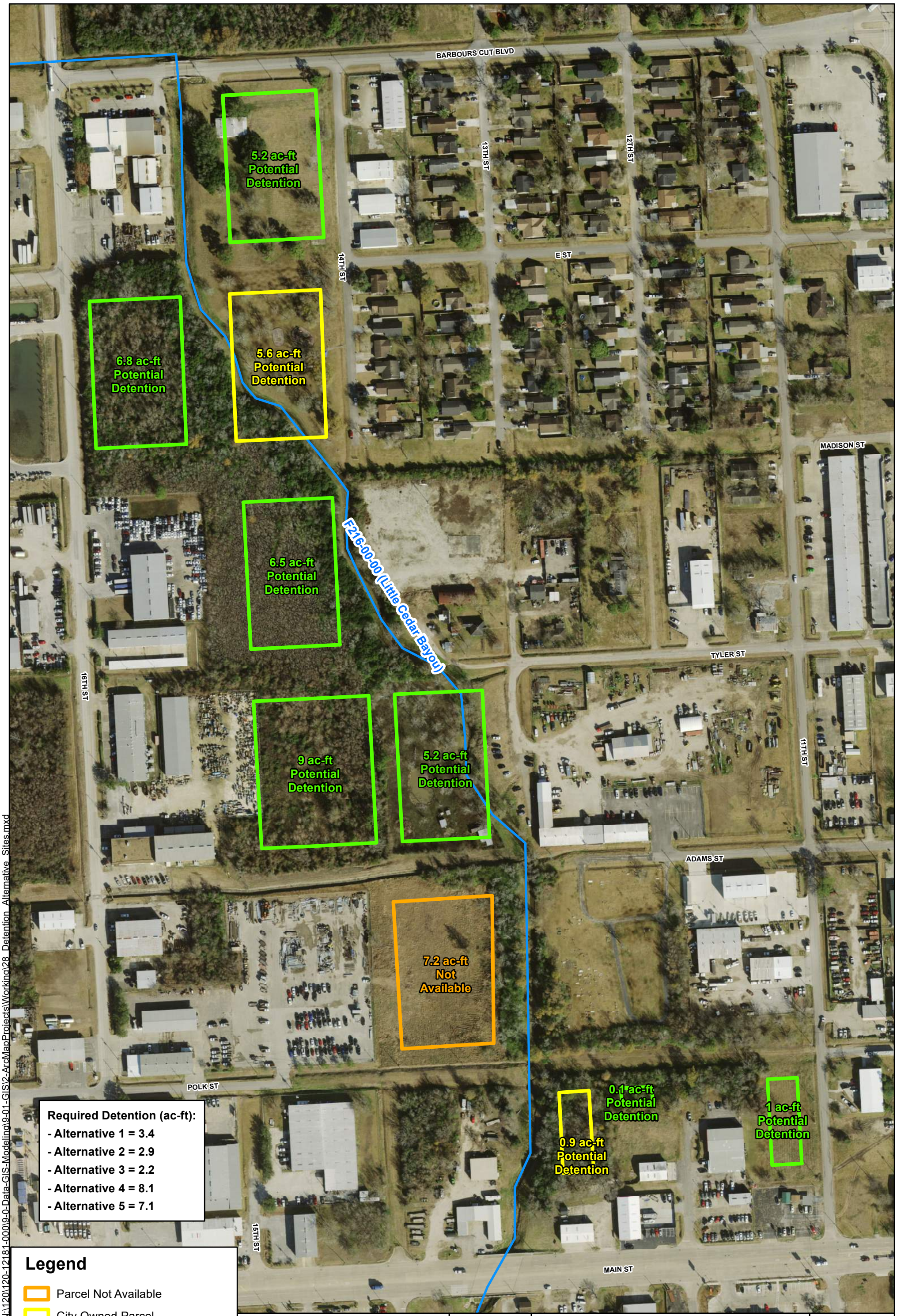
To accept this cost estimate, please sign and date the attached BIO-WEST Agreement for Consulting Services, and return an electronic copy to BIO-WEST. Acceptance of this proposal, in whole or part, entails acceptance of BIO-WEST's attached Standard Terms and Conditions. This proposal is valid for 60 days from the date above.

BIO-WEST greatly appreciates the opportunity to provide this scope of services and cost estimate. If you have any questions or would like any additional information, please feel free to contact me at (832) 595-9064 or mchastain@bio-west.com.

Sincerely,

Matthew Chastain, PWS
Senior Project Manager

Colleen Moss
Environmental Scientist




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

CITY OF LA PORTE TEXAS

# PARCELS EVALUATED FOR POTENTIAL DETENTION

NORTHSIDE NEIGHBORHOOD DRAINAGE IMPROVEMENT AND RELIEF PROJECT

EXHIBIT 28

DATE: MAR 2020
SCALE: AS NOTED

# Northside Drainage Improvement & Relief Project

## City of La Porte, Texas

Prepared by:


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

PLANNING • ENGINEERING • PROGRAM MANAGEMENT
TBPE FIRM NO. 2614

2925 Briarpark Drive, Suite 400 • Houston, Texas 77042
Phone: 713.266.6900 • Fax: 713.266.2089
http://www.lan-inc.com


STATE OF TEXAS
DAVID M. BARTON
103416
LICENSED PROFESSIONAL ENGINEER

3/20/2020

**March 2020**

# Executive Summary

The Northside Neighborhood in the City of La Porte is currently subject to severe flooding in the vicinity of 6th Street and the eastern SH-146 Frontage Road during extreme events, as well as frequent storm events.

For this study, XP Storm Water Management Model (XPSWMM) was used to simulate existing and proposed conditions within the Northside Neighborhood study area. The results of extensive modeling efforts formed the basis for recommended drainage improvement alternatives, which were evaluated based on their ability to generate the greatest reduction in ponding depths and extents at the lowest project cost possible and without generating adverse downstream impacts.

The existing drainage network is composed of three separate systems, referred to as Systems A, B, and C throughout this report. Systems A and B are made up of a combination of roadside ditches, culverts, reinforced concrete pipes (RCP) and reinforced concrete boxes (RCB), while System C is composed entirely of subterranean RCP and RCB. Analysis of the network revealed substantial deficiencies within Systems A and B, which do not currently meet City of La Porte (City) criteria and underutilization of the capacity of System C.

Based on the insights provided by analysis of the existing conditions model, numerous improvement alternatives were designed and modeled. Five of these were selected and are presented in detail within this report. Phasing recommendations are outlined to allow the City to plan the construction budget accordingly. Initial phases can be constructed with readily available funds, while future phases could be constructed at a time when additional funds become accessible and a comprehensive drainage solution can be fully realized.

Alternative 1 was designed with the purpose of providing an additional conveyance and outfall route to System B at the intersection of SH-146 and Polk Street, where the current storm sewer infrastructure is overly restrictive, resulting in stormwater surcharging onto the surface of the SH-146 Frontage Road and 6th Street. It includes the addition of a newly constructed detention basin and dual 4’x3’ RCB storm sewer improvements. Alternative 2 was designed with the purpose of relieving all of System A and the portion of existing System B along the SH-146 Frontage Road by redirecting flow collected near 6th Street, Polk Street, and Main Street southward along 8th Street. It includes the addition of 6’x6’ and dual 4’x3’ RCB’s. Like Alternative 1, Alternative 3 was designed with the purpose of providing an additional conveyance and outfall route to System B at the intersection of SH-146 and Polk Street as well. It includes the additional of 4’x4’ and dual 4’x3’ RCB’s, which terminates at an existing outfall location. Alternative 4 targets a service area that is a combination of Alternative 1 and Alternative 2 by improving multiple outfall routes along 8th Street and Polk Street. This improvement includes dual 4’x3’ and single 6’x6’ RCB’s. Alternative 5 was designed with the purpose of fully reducing ponding depths below 6 inches along 6th Street by further upsizing the improvements evaluated in Alternative 4. This improvement includes dual 5’x5’ and dual 4’x3’ RCB’s.

Founded in client feedback and budgetary forecasting, the two projects recommended by LAN to the City are Alternative 4 and Alternative 5. Alternative 4 provides widespread flooding reduction in the study area and specifically along 6th Street. Alternative 5 is recommended primarily due to client feedback requesting an improvement capable of reducing ponding along 6th Street to at, or below, 6 inches for mobility purposes. In order to fully realize the benefits of either of these projects, it is highly recommended that the proposed “future” phases (Phase 3) eventually be constructed.

To ensure the proposed drainage improvements conform to Harris County Flood Control District Policy III standards, an impact analysis was performed. The 5-, 10-, and 100-year storm events were analyzed for all alternatives and phases. From the adopted methodologies, it was determined that to prevent adverse downstream impacts, Alternative 1 requires 3.4 acre-feet of detention, Alternative 2 requires 2.9 acre-feet of detention, Alternative 3 requires 2.2 acre-feet, Alternative 4 requires 8.1 acre-feet and Alternative 5 requires 7.1 acre-feet of detention, assuming all phases will eventually be constructed.

The total estimated cost to construct Alternative 1, 2, 3, 4 and 5 were calculated to be $4.5M, $5.8M, $4.2M, $8.7M and $10.3M. Because the construction of all phases of any improvement alternative is needed to provide the desired level of service to the study area – which possesses a significantly undersized drainage network and challenging topography – it is recommended that additional funding sources be acquired.

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# List of Acronyms

**1D**: One-Dimensional

**2D**: Two-Dimensional

**Cfs**: Cubic Feet Per Second

**DTM**: Digital Terrain Model

**FEMA**: Federal Emergency Management Agency

**LAN**: Lockwood, Andrews, and Newnam Inc.

**LOS**: Level of Service

**GIS**: Geographic Information System

**H&H**: Hydraulics and Hydrology

**HCAD**: Harris County Appraisal District

**HEC-HMS**: Hydrologic Engineering Center – Hydrologic Modeling System

**HEC-RAS**: Hydrologic Engineering Center – River Analysis System

**HGAC**: Houston-Galveston Area Council

**HGL**: Hydraulic Grade Line

**HCFCD**: Harris County Flood Control District

**LiDAR**: Light Detection and Ranging

**M3**: Model and Map Management System

**PCPM**: Policy Criteria and Procedure Manual

**RCB**: Reinforced Concrete Box

**RCP**: Reinforced Concrete Pipe

**ROW**: Right-of-Way

**TSARP**: Tropical Storm Allison Recovery Project

**TxDOT**: Texas Department of Transportation

**WSEL**: Water Surface Elevation

**XPSWMM**: XP Storm Water Management Model

**Yr**: Year

# List of Definitions

**1D Model –** A model that incorporates a system in one dimension. Examples of a one-dimensional system include storm sewers, manholes and inlets.

**1D/2D Coupled Models** – A model that incorporates 1D networks and 2D surface into a single, integrated model. In these models, two-dimensional flow enters one-dimensional pipe networks and vice versa.

**100-Year Exceedance Probability** – An event that has a 1% chance of being equaled or exceeded in any one year at a given location. This can refer to both rainfall and flood events. It is shortened to 1% exceedance in this document. Below is a table showing the comparison of the more commonly used exceedance probabilities and frequencies:

| Frequency | Annual Exceedance Probability |
|---|---|
| 500-year | 0.2% chance |
| 100-year | 1% chance |
| 50-year | 2% chance |
| 25-year | 4% chance |
| 10-year | 10% chance |
| 5-year | 20% chance |
| 3-year | 33% chance |
| 2-year | 50% chance |

**2D Model –** A model that incorporates two-dimensional surface flow. A grid is developed to approximate the model's topography and calculate overland flow characteristics.

**Acre-Feet** – Unit of measurement used to express storage volume, usually for a detention basin. One Acre-Foot is equal to one acre multiplied by one-foot of depth, or 43,560 cubic feet (325,851 gallons).

**Channel** – A course or passage through which stormwater may move or be directed. It is a generic term used in reference to ditches, bayous, creeks or other smaller tributaries. A channel can vary in shape and size and can be either natural or man-made.

**Channel Modification** – A man-made change to a channel's characteristics, typically for the purposes of reducing flood damages by increasing its overall conveyance. This can be accomplished by widening and/or deepening the channel, reducing the friction by removing woody vegetation or by lining the channel with various materials.

**Confluence** – The intersection of two or more streams, or where one flows into another.

**Conveyance** – The ability of a channel or other drainage element to move stormwater.

**Detention** – The temporary storage of stormwater.

**Detention Basin** – An area of land, usually adjacent to a channel, that is designed to receive and hold above-normal stormwater volumes. Most stormwater detention basins in Jefferson County are excavated. The detained stormwater then slowly drains, over time, out of the detention basin as the flow in the channel and associated water surface elevations recede.

**Drainage** – Runoff which flows over land as a result of precipitation. This includes sheet flow, flow in streets, and flows which concentrate in local drainage systems with or without defined channels.

**Existing Conditions** – Current conditions in a watershed, channel, or detention basin.

**Federal Emergency Management Agency (FEMA)** – The federal agency responsible for providing leadership and support to reduce loss of life and property and to protect our institutions from all types of hazards. This is accomplished through a comprehensive, risk based, all hazards emergency management program consisting of mitigation, preparedness, response, and recovery. In relation to flooding hazards, FEMA is the federal agency responsible for administering the National Flood Insurance Program (NFIP).

**Flood Damage Reduction or Flood Reduction** – Due to practical limitations, structural and nonstructural measures can only reduce flood damages by lowering flood levels or removing houses and businesses from flood prone areas. Floods can neither be prevented nor controlled.

**Flood Insurance Rate Maps (FIRM)** – Prepared by FEMA, Flood Insurance Rate Maps, or FIRMs, show areas that have the highest probability of flooding and illustrate the extent of flood hazards in a flood-prone community. These maps are used to determine flood insurance rates for communities participating in the National Flood Insurance Program (NFIP). Properties located in mapped zones AE, AO, A, or VE are required to have flood insurance if the owner has a federally backed mortgage on the property.

**Flood Insurance Study (FIS)** – A study FEMA initiates to undertake a new hydraulic and/or hydrologic analysis for streams within a community. Often, these studies incorporate the new information into the FEMA Flood Insurance Rate Maps (FIRMs).

**Floodplain** – From time to time, bayous and creeks naturally come out of their banks due to heavy rainfall and inundate the adjacent land. This area that is inundated is referred to as a floodplain. Residences and businesses within the floodplain are considered to be at risk of being damaged by flooding. The floodplain is typically expressed by stating its frequency of occurrence. For example, the 1% (100-year) floodplain represents an area of inundation having a 1% chance of being equaled or exceeded in any given year, whereas the 2% (50-year) flood plain has a 2% chance of being equaled or exceeded in any given year. FEMA Flood Insurance Rate Maps (FIRMs) show the 1% (100-year) and 0.2% (500-year) floodplains.

**Flowline** – A line formed representing the lowest point in the bottom of and along a specified length of a channel or storm sewer.

**Hydraulics** – The study of moving fluid. In this case, hydraulics refers to analyzing the movement of stormwater flows in channels, pipes and detention basins to determine certain properties like stormwater depths and stormwater velocities.

**Hydrology** – The study of the rainfall-stormwater runoff process. Hydrological procedures are used to estimate the expected amount of stormwater entering a drainage system from a certain amount of rain falling over a certain watershed area.

**Light Detection and Ranging (LiDAR)** – A surveying method that measures distance to a target by illuminating the target with laser light and measuring the reflected light with a sensor. Usually, a LiDAR system is mounted on the fuselage of a fixed or rotary wing aircraft.

**Model and Map Management (M3) System** – An interactive tool designed to manage changes to the FEMA effective floodplain models for Harris County.

**Outfall** – An outfall is simply the pipe, channel, or opening where water is expelled into another body of water, typically a drainage channel. In a standard stormwater detention site, the outfall is at or connected to the lowest point of the basin so that the detained water drains completely.

**Peak Flow** – The maximum flow of stormwater flowing through a channel at a given location, based on a certain amount of rainfall falling in that area.

**Ponding** – Occurring during and after rainfall, it is the process of water gathering in low lying areas throughout a watershed. This frequently refers to standing water stored within streets when the capacity of the storm sewer is exceeded.

**Right-of-Way** – Land used by a public agency for public purposes, such as building roads or improving channels. An interest in real property, either in fee or easement.

**Runoff** – The stormwater from rainfall not absorbed by the ground that flows in to the local drainage system, and ultimately, streams and bayous.

**Structures at Risk** – Structures at risk of structural flooding. A slab height of 0.5 feet was assumed for finished floor elevations. Therefore, any structural footprint that contained greater than 0.5 feet was assumed to be a structure at risk for the evaluated storm event.

**Tailwater** – The water surface elevation in the outfall channel at the outflow structure, which varies with time. The tailwater affects both the outflow structure design and the stage-outflow relationship of the detention basin.

**Tropical Storm Allison Recovery Project** – A multi-year comprehensive assessment of flood risks within Harris County, conducted by FEMA and HCFCD.

**Watershed** – A geographical region of land or "drainage area" that drains to a common channel or outlet, mostly creeks and bayous in Jefferson County. Drainage of the land can occur directly into a

bayou or creek, or through a series of systems that may include storm sewers, roadside ditches, and/or tributary channels.

**Water Surface Elevation** – The vertical distance the water surface in a creek or bayou is in relation to a specified datum, measured at a given location along a creek or bayou

# 1. Introduction

## 1.1. Purpose

This report presents the results of preliminary engineering analyses carried out by Lockwood, Andrews, and Newman Inc. (LAN) for the City of La Porte (City) regarding the Northside Drainage Improvement and Relief Project. The goal of this project is to improve storm sewer system functionality within the study area and increase the drainage system's level of service. LAN was authorized to conduct Hydrologic & Hydraulic (H&H) analyses for both existing and proposed conditions and submit recommended improvement options.

The improvements proposed herein were designed to increase the efficiency and level of service of the area's drainage system, ultimately resulting in a decrease of flooding during extreme events without producing adverse downstream impacts.

## 1.2. Study Area

The full area of interest of the study is generally bounded by 16th Street to the west; West E Street to the south; portions of South 4th, South 5th, and South 7th Streets to the east, and West Barbours Cut Boulevard to the north. The primary focus of LAN's detailed analysis, modeling, and improvement efforts is bounded by SH-146 to the west, Main Street to the south, 4th Street to the east, and Barbours Cut Boulevard to the north. These areas lie within The City of La Porte, the fourth largest city in Harris County (County). An overview of the study area is presented as **Exhibit 1** in **Appendix A**. Projects within the study area are subject to City, County, and Harris County Flood Control District (HCFCD) drainage regulations.

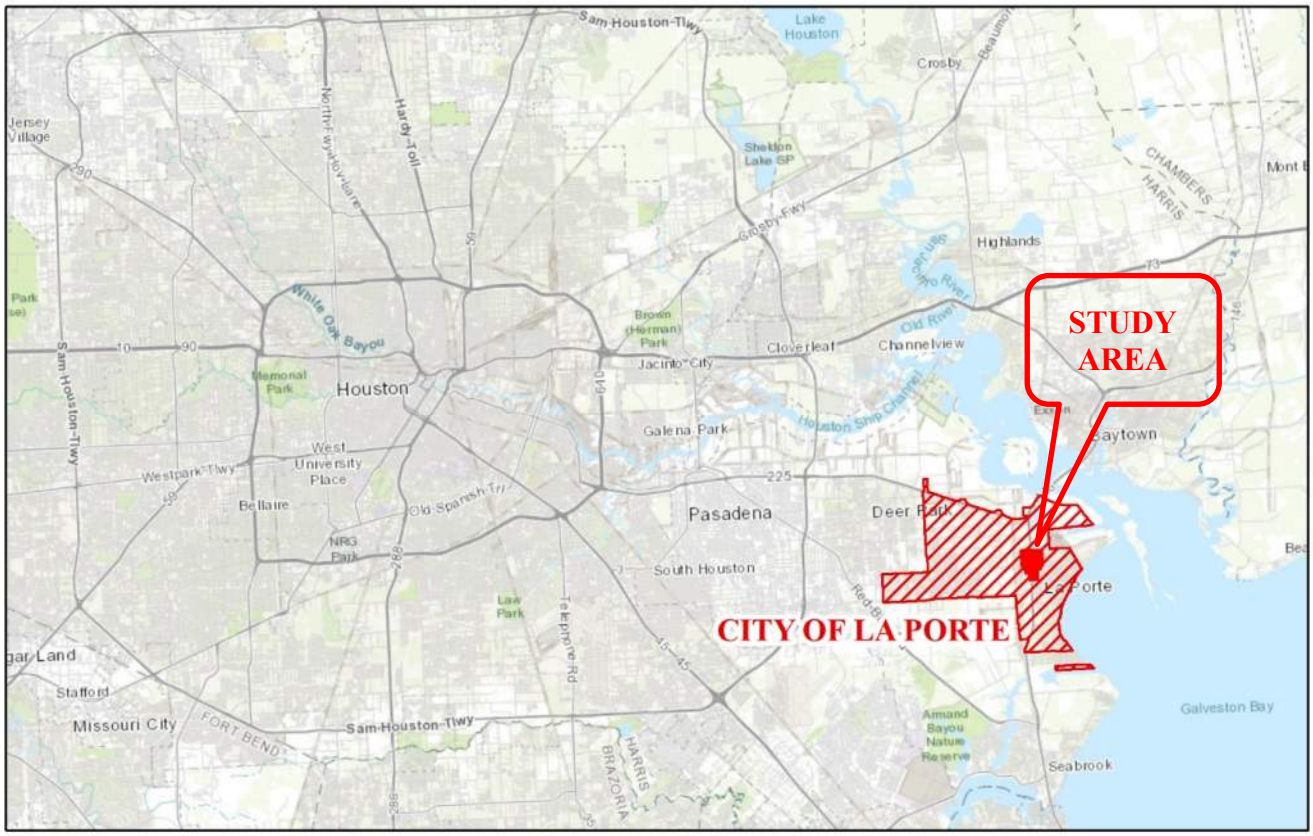



**Figure 1: Study Area Location**

Land use is composed of 37.1% commercial, 40.6% residential, 11.1% open land, and 11.2% other, according to October 2018 Harris County Appraisal District (HCAD) parcel data.

The area is currently served by three separate storm sewer systems that outfall to the west at Little Cedar Bayou, designated "System A", System "B", and "System C". These systems are composed of a combination of reinforced concrete pipes (RCP), reinforced concrete boxes (RCB), and roadside ditches. Systems A and B are undersized and do not effectively capture and convey runoff during extreme events. Due to the topographic characteristics of the area, excess rainfall not captured by the existing storm sewer at the peak of a storm north of Main Street collects along 6th Street and the SH-146 frontage road until capacity becomes available. South of Main Street, it moves southward as overland flow toward the lower-lying region of the study area. The 2018 LiDAR-generated topography of the area is presented in **Exhibit 2**.

## 1.3. Data Collection

Data was collected from several sources, listed in **Table 1**, below.

**Table 1: Collected Data Sources and Purposes for Study**

| Data Item | Source | Purpose |
|---|---|---|
| **Rainfall Data** | Tropical Storm Allison Recovery Project (TSARP) | XPSWMM model development |
| **Parcel Data (2018)** | Harris County Appraisal District (HCAD) | Land use determinations |
| **Structural Inventory** | Microsoft Corporation | Benefit determinations |
| **LiDAR (2008)** | RPS Group/City of La Porte | Previous XPSWMM Digital Terrain Model |
| **LiDAR (2018)** | Houston-Galveston Area Council (HGAC) | Updated XPSWMM Digital Terrain Model |
| **Aerial Imagery (2018)** | Houston-Galveston Area Council (HGAC) | Exhibit development |
| **City of La Porte Drainage Improvements PER for 6th Street (2018)** | RPS Group/City of La Porte | Existing conditions model validation, reference |

## 1.4. Previous Studies in the Area

### 1.4.1. City of La Porte Drainage Improvements PER 6th Street (2018)

During May 2017, RPS Group was authorized by the City to develop a PER based on an analysis that evaluated the area's existing storm sewer system, identified problem areas within project limits, and provided recommendations for improvements along 6th Street and in the surrounding area. Using HGAC 2008 LiDAR and field survey data along with HEC-Geo HMS delineated drainage areas, an XP Storm Water Management Model (XPSWMM) was developed.

After conducting a tailwater sensitivity analysis, it was decided that XPSWMM modeling would be conducted under normal depth conditions within Little Cedar Bayou. Additionally, inlet and sheet flow analyses were performed to determine whether inlet size was impacting the drainage system's ability to effectively capture runoff.

It was recommended that 3,100 feet of 36" RCP/HDPE be installed along portions of Madison Street and 6th Street and that 985 feet of 24" HDPE be installed along Main Street to improve storm water conveyance. The estimated cost of these improvements totaled $2.04M and provided ponding reductions of 1 to 3 inches in certain areas during the 10- and 100-year storm events. RPS stated that these improvements removed all ponding during the 5-year event, however, this is not supported by proposed condition exhibits.

## 1.5. Modeling Methodology

For this study, a previously constructed XPSWMM model was validated and used as the base scenario for all modeling efforts. XPSWMM is a coupled 1D-2D, hydraulics and hydrology modeling program that simulates real storm events based on rainfall (hyetograph) and other meteorological inputs and systems (characterization, catchment, conveyance, storage/treatment) to predict outcomes in the form of quantity and quality values.

To begin creating the 1D-2D model, boundaries that specify the domain where 1D and 2D flow exist were defined with a polygon. A grid cell size of 10'x10' was used for the model to ensure sufficient reproduction of physical hydraulic behavior. Topographic data was then imported to create the digital terrain model (DTM). In this case, LiDAR information was used to generate the DTM as a triangular irregular network (TIN), which assigns elevation values to grid cells based on topographic information.

The study area's existing drainage system was then imported. Storm sewer conduits and open channels were modeled as one-dimensional links and inlets were model as nodes, which are connected to a two-dimensional ground surface mesh. This provided the ability to model the complete natural and engineered above- and below-ground drainage system.

To validate the existing conditions model, simulations were performed for all storm events documented in the previous reference report mentioned in **Section 1.3**. The results of these simulations were compared to the documented results. Because previous modeling had been conducted without tailwater conditions, scenarios with and without tailwaters were considered. A comparison of the results generated by these two boundary conditions is made in **Section 3**.

## 1.6. Evaluation Criteria for Proposed Alternatives

Alternatives were evaluated based on their ability to generate the greatest reduction in ponding depths and extents at the lowest project cost possible and without generating adverse downstream impacts. Adverse impacts were considered to be excessive increases in discharge to Little Cedar Bayou and occurrences of increased flooding not observed under existing conditions.

## 1.7. Risks and Assumptions

XPSWMM is designed to model free-surface flow in coastal waters, estuaries, rivers, creeks, floodplains and urban drainage systems. Flow regimes through structures are handled by adaptation of the 1D St Venant Equations and the 2D Shallow Water Equations using standard structure equations. Supercritical flow areas can be represented.

Limitations and recommendations to note are:

1. In areas of super-critical flow through the 2D and 1D domains, the results should be treated with caution, particularly if they are in key areas of interest. Hydraulic jumps and surcharging against obstructions may occur in reality – these highly 3D localized effects are not modeled.

2. Where the 2D cell size is less than the water depth, the Smagorinsky viscosity formulation is preferred over the default constant viscosity formulation to model sub-cell turbulence (Barton 2001).
3. Caution should be used when using 2D cell sizes less than 2m, particularly when the flow depth exceeds the cell width (Barton 2001).
4. All 1D and 2D schemes are only an approximation to the complex flows that can occur through a structure, and regardless of the software used should be checked for their performance (Syme 1998, Syme 2001).
5. There is no momentum transfer between 1D and 2D connections. Although in most situations this is not of concern, it does influence results where a large structure (relative to the 2D cell size) is modelled as a 1D element.

A standard structural slab height of 6 inches above ground was assumed for all structures within the study area.

Atlas 14 rainfall intensities were not used because the original existing conditions model was developed prior to their publication.

# 2. Existing Conditions Model Analysis

To form a comprehensive understanding of existing conditions and form a basis for future improvements, a combined 1D/2D stormwater model was developed for the study area using XPSWMM. Coupled 1D/2D models incorporate storm sewer networks that include inlets, pipes, and open channels, which are represented as one-dimensional links and nodes. Once the capacity of the 1D subsurface network is exceeded, stormwater spills onto the 2D surface. The 2D surface is composed of overland topography, generated using 2008 LiDAR data, which allows for the realization of realistic overland flow propagation.

## 2.1. Existing Conditions Hydrology

LAN evaluated current development conditions within the study area using aerial imagery and determined that no changes to the FEMA Effective HEC-HMS model were necessary for percent impervious, land use, and watershed parameters. Using the effective models, rainfall hyetographs for the TSARP 5-, 10-, and 100-year storms were developed and applied to the model's pre-defined subcatchments. As mentioned in **Section 1.7**, Atlas 14 intensities were not used because the original existing conditions model was developed prior to their publication.

The DTM used to create the previous study's XPSWMM model's 2D surface was generated from 2008 LiDAR. For this analysis, the ground model was updated to the new 2018 LiDAR. To properly represent the area's overland flow characteristics, land use zones were specified, and corresponding Manning's n values were assigned. Depending on the land use type, the zones were classified as either residential, impervious, open space, or roadway with Manning's n values of 0.03, 0.015, 0.05, or 0.025, respectively.

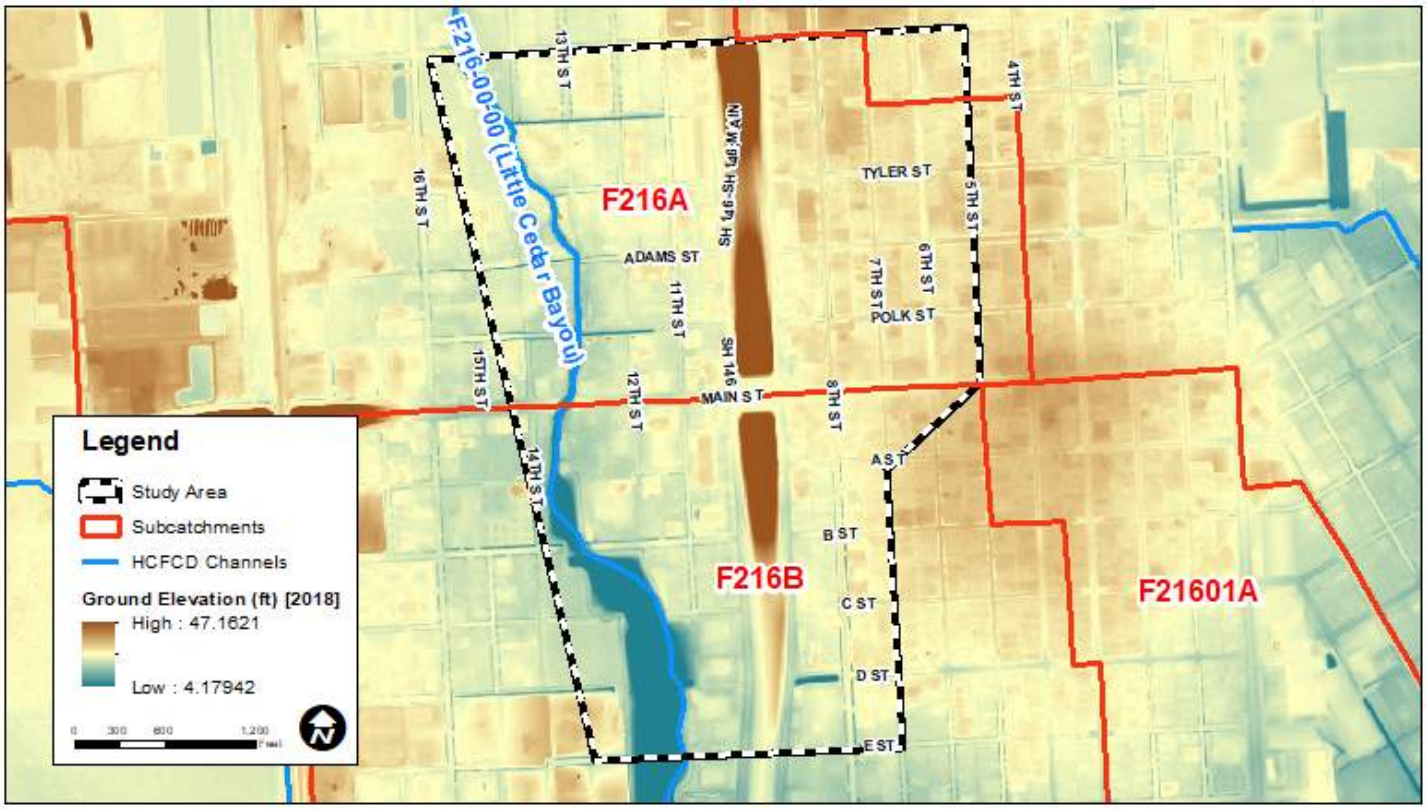



Figure 2: 2018 LiDAR Topography and Subcatchment Overview

**Figure 2** illustrates the overland topography and subcatchment boundaries of the study area. These subcatchments were delineated by HCFCD during the creation of their M3 effective models and the boundaries appear reasonably aligned with topographically high points. As can be seen in **Figure 2**, a large portion of the study area is bounded by the portion of subcatchment F216A east of SH-146 and the highway itself. Because the drainage system is significantly undersized, it is unable to convey runoff generated during extreme events. This causes stormwater to collect in low spots, especially within the SH-146 access road and 6th Street right-of-way. Once the capacity of these streets is exceeded, structural flooding results.

## 2.2. Existing Conditions Hydraulics

The digital drainage infrastructure incorporated into the existing conditions model as System A and System B was provided by RPS via the City of La Porte and includes existing subsurface storm sewers as well as above-ground drainage ditches. System C was added by LAN to expand the model and accommodate additional drainage alternatives. Ditches near the Little Cedar Bayou outfalls are represented as 1D natural channel links while roadside ditches/culverts are combined and represented as 1D closed conduit links. All inlets are modeled as 1D nodes, connecting the 1D drainage system to the 2D surface. An overview of the existing system's layout is presented as **Exhibit 3** in **Appendix A**.

System A is composed of 18" to 30" RCP storm sewer, open drainage channels and roadside ditches. System B, to the south of System A, is composed 18" RCP to 6'x6' RCB storm sewer, open drainage channels, and roadside ditches. System C serves the portion of the study are to the west of SH-146 and is made up of 24" to 72" RCP.

The City of La Porte specifies a 5-year level of service for storm sewers, roadside ditches, and culverts.

### 2.2.1. 1-D Boundary Conditions

Little Cedar Bayou was not directly incorporated into the XPSWMM model. Instead, tailwater boundary conditions were applied to the network's 1D outfall nodes at the model boundary for the 5-, 10-, and 100-year storm event simulations to represent the influences of the waterbody. These conditions were created using the outflows at the HEC-HMS defined subcatchment boundaries, which were converted into stage levels using the HEC-RAS rating curves from the HCFCD Little Cedar Bayou effective hydraulics model.

Outflows for the 10-year, 24-hour storm event were taken directly from the results of the effective model, which contains pre-defined meteorological information for the 0.2%, 1.0%, 2%, and 10% (24-hour) exceedance probabilities. In order to generate outflows for the 5-year, 24-hour event, a new meteorological model was created within the effective model using appropriate rainfall intensities taken from the HCFCD H&H Manual. The same approach was used to generate appropriate flows corresponding to the 100-year event. In accordance with the City of La Porte Public Improvement Criterial Manual, flows generated by the 25-year storm were used to create tailwater conditions for the 100-year storm. Using the effective model's rating curve, tailwater conditions were created with these outflow time series for the 5-, 10-, and 100-year storm events.

It should be noted that this approach was different than the one taken by RPS in their report *City of La Porte: Drainage Improvements Preliminary Engineering Report for 6th Street*. Previously, an assumption was made that the 1D boundaries could be modeled as free outfalls after a sensitivity analysis revealed that tailwater conditions did little to influence ponding levels within the focus area of the study along 6th Street. Although this was confirmed (**Exhibit 4**), free outfalls disregard the influence of tailwaters on drainage system capacity by adding artificial storage and does not contribute toward an accurate representation of physical realities.

## 2.3. Existing Conditions Results

The resultant ponding observed during the 5-, 10-, and 100-year storm events under existing conditions is presented in **Exhibits 5-7** in Appendix A. Detailed modeling reveals that the portions of the drainage system along 6th Street and the eastern SH-146 access road north of Polk Street do not meet City criteria.

During the 5-year event, ponding is primarily confined to the roadway along 6th Street and the eastern SH-146 access road. Along 6th Street, depths range from 0.25 feet in areas of higher elevation to over 1 foot within roadway intersections. No structural flooding occurs during this event. Analysis of hydraulic grade lines (HGL) along System B storm sewers indicates that the large, downstream RCB's located from the intersection of W Main Street and SH-146 to the drainage system's southern outfall have available capacity. Flooding throughout the central and southern portion of the model is primarily caused by a lack of conveyance ability in the undersized laterals along W Main Street and W Polk Street and in the portion of the trunk line north of Adams Street. System A becomes fully utilized during the 5-year storm, causing water to surcharge the inlets along 6th Street, however, the HGL remains below ground along W Madison Street.

During the 10-year event, flooding within the roadway along the eastern SH-146 access road and 6th Street increases in both depth and extent as additional demand is placed on the drainage infrastructure. Only one structure, located at a topographical low point in the northeastern portion of the modeled area, is observed as becoming inundated, assuming a 6-inch slab height. A review of the HGL along the System B trunk line and laterals reveals that available capacity still exists within the large southern RCB's from the intersection of W Main Street and SH-146. Inlets north and east of the confluence at W Main Street and SH-146 surcharge after the drainage system north of this point reaches capacity near the peak of the event. System A, already fully utilized during the 5-year event, quickly reaches capacity and surcharges during the 10-year event as well.

The additional capacity of System B's large downstream RCB's is eliminated during the 100-year storm event, as all drainage system components are fully utilized. All inlets surcharge, and overflow inundates all roadways in addition to 16 structures within the study area, assuming a 6-inch slab height. Many of these structures are located within one block of SH-146 and along 5th and 6th Street.

# 3. Improvement Alternatives

Many modeling iterations were conducted to determine the most cost-effective and feasible drainage improvement alternatives for the study area. The primary gage of improvement effectiveness and efficiency was reductions in ponding during the 100-year storm event while the 5- and 10-year storms were used to identify major drainage system deficiencies. Analyses of the existing conditions models revealed that the primary shortcomings of the drainage network are the under-sizing of System A as a whole, excessive restriction of System B cause by the confluence at W Main Street and SH-146, and the lack of capacity in System B along 6th Street and Polk Street.

## 3.1. Improvements Not Recommended

Previously recommended improvements have included the addition of 24" and 36" RCP storm sewers along 6th Street and Main Street to supplement the conveyance ability of the study area's drainage system. It was proposed that these alignments tie into the existing storm sewer trunk lines of Systems A and B at points surpassing the overly restricted portions of the existing system. Ponding depth reductions of 3-4" were observed within some intersections during simulation of the 5-year event, but very little benefit exists for the more extreme, 100-year storm event. The total cost of this layout was estimated to be approximately $2.04M. Considering the predicted benefits and cost of this project, constructing these improvements is not recommended.

## 3.2. Improvement Alternatives and Phasing

Based on extensive modeling and analysis by LAN, several alternatives are presented as storm sewer improvements to enhance drainage throughout the area. The selected improvements could be implemented simultaneously, or in various phases. Based on funding presently available to the City, phasing recommendations are outlined in the following sections. Initial phases can be constructed with readily available funds, while future phases could be constructed at a time when additional funds become accessible and a comprehensive drainage solution can be fully realized. Within some of these phases, the included detention basin sites are recommended to prevent adverse impacts downstream of the study area.

### 3.2.1. Alternative 1

The alignment of **Alternative 1** is presented in **Exhibit 8** of **Appendix A**. It was designed with the purpose of relieving the confluence at the intersection of Polk Street and the SH-146 Frontage Road and includes the addition of a detention basin and dual 4'x3' RCB storm sewer improvements. Dual 4'x3' RCB's continue approximately 1,650' east from the eastern extent of the outfall at 11th Street and Polk Street to the intersection of Polk Street and 6th Street. The remainder of the improvement consists of additional dual 4'x3' RCB's extending from this point north 450' to the intersection of Adams Street and 6th Street.

#### 3.2.1.1. Phase 1

The City has obtained $325,000 in Community Development Block Grant (CDBG) funds from the U.S. Department of Housing and Urban Development (HUD), which is to be used during Phase 1 of the proposed drainage improvement project. In compliance with this budgetary allocation, Phase 1 improvements focus on the construction of the proposed system outfall and a brief segment of contributing storm sewer. Approximately 186' of dual 4'x3' RCB's extends from the intersection of 11th Street and Polk Street to the west until it

terminates into the existing tributary open channel for Little Cedar Bayou. The proposed Phase 1 improvement would connect to existing infrastructure to provide immediate, limited relief to the area in lieu of future phases.

The total cost of Phase 1 is estimated to be $312k.


**Figure 3: Alternative 1, Phase 1**

## 3.2.1.2. Phase 2

The primary goal of this phase is to provide relief to the SH-146/Main Street confluence of System B. Phase 2 incorporates approximately 652’ of dual barrel 4’x3’ RCB storm sewer improvements along Polk Street, passing under the SH-146 TXDOT right-of-way. A conduit slope of 0.03% is recommended to ensure necessary flushing velocities will be achieved while maintaining appropriate ground cover for the storm sewer. In accordance with City of La Porte infrastructure design manual, it is recommended that these improvements be constructed at least 5 feet inside of the public ROW.

To mitigate downstream impacts and prevent an overall increase in cumulative peak outflow, the construction of an on-site detention basin will be required for the proposed improvements. The primary goal of detention is to compensate for increase peak outflow by temporarily storing stormwater and releasing it at a controlled rate matching existing conditions.

It is recommended that Phase 2 consist of the acquisition of property needed for the construction of a proposed detention basin. This basin would allow for the temporary storage of additional stormwater conveyed by the storm sewer improvements and prevent adverse downstream impacts. Based on an assumed full acquisition forced buyout scenario of sample parcels that possess open area along Little Cedar Bayou, the estimated cost of a parcel to be acquired for detention was calculated to be three times the Harris County Appraisal District (HCAD) market value of the property. By converting this estimation to dollars per square footage, assuming a

uniform basin depth of 6', and assuming the basin can fully mitigate the increased flow, an acreage of land area acquisition was approximated for Alternative 1.


Figure 4: Alternative 1, Phase 2

Locations were identified that possess the open area and ground elevation needed to provide the storage volume required for Alternative 1. The detention volume required for this alternative is 3.4 acre-feet, with potential basin locations identified along Little Cedar Bayou in **Exhibit 28**. Basin design and required storage volume calculations and details are presented in **Section 5**.

The total cost of Phase 2 is estimated to be $2.51M.

## 3.2.1.3. Phase 3 (Future Phases)


Figure 5: Alternative 1, Phases 1-3

Phase 3 extends the Phase 2 improvements by implementing an additional 2,900' of dual barrel 4'x3' RCB from the intersection of Polk Street and the SH-146 Frontage Road, east to the intersection of Polk Street and 6th Street, and north to the intersection of 6th Street and Adams Street. These improvements were designed to increase the ability of System B to convey stormwater to the relieved confluence at the intersection of Polk Street and the SH-146 Frontage Road.

A conduit slope of 0.05% is recommended to ensure necessary flushing velocities will be achieved while maintaining appropriate ground cover for the storm sewer and it is recommended that these improvements be constructed at least 5 feet inside of the public ROW.

The total cost of Phase 3 is estimated to be $1.69M. An overview of Phases 1-3 is presented in **Exhibit 8**.

## 3.2.2. Alternative 2

The alignment of **Alternative 2** is presented in **Exhibit 9**. It was designed with the purpose of relieving all of System A and the portion of existing System B along the SH-146 Frontage Road by redirecting flow collected near 6th Street, Polk Street, and Main Street southward. Approximately 1600' of dual 4'x3' RCB conduits, which connect System A to System B, extend from the intersection of 6th Street and Tyler Street south to Polk Street, then west to the intersection of Polk Street and 8th Street. In addition, 630' of single 4'x3' RCB extends from the intersection of Main Street and 8th Street west to 6th Street. Instead of continuing west, a 2,430' long section of 6'x6' RCB is proposed that extends from the western termination of the dual 4'x3' RCB's to the intersection of 8th Street and D Street. The improvement then outfalls into the existing channel west of D Street. A detention site to mitigate increases to flowrates downstream were considered and estimated for Alternative 2.

### 3.2.2.1. Phase 1

The City has obtained $325,000 in Community Development Block Grant (CDBG) funds from the U.S. Department of Housing and Urban Development (HUD), which is to be used during Phase 1 of the proposed drainage improvement project. In compliance with this budgetary allocation, Phase 1 improvements focus on the construction of the proposed system outfall and a brief segment of contributing storm sewer. Approximately 100' of 6'x 6' RCB extends from the intersection of 8th Street and D Street to the west until it terminates into the existing tributary open channel for Little Cedar Bayou. The proposed Phase 1 improvement would connect to existing infrastructure to provide immediate, limited relief to the area in lieu of future phases.

The total cost of Phase 1 is estimated to be $222k.


Figure 6: Alternative 2, Phase 1

## 3.2.2.2. Phase 2

The purpose of Phase 2 is to provide additional conveyance in System B to allow for improved drainage along 6th Street. Approximately 2,300' of 6'x6' RCB extends from the channel located to the west of the 8th Street and D Street intersection to the intersection of Polk Street and 8th Street.

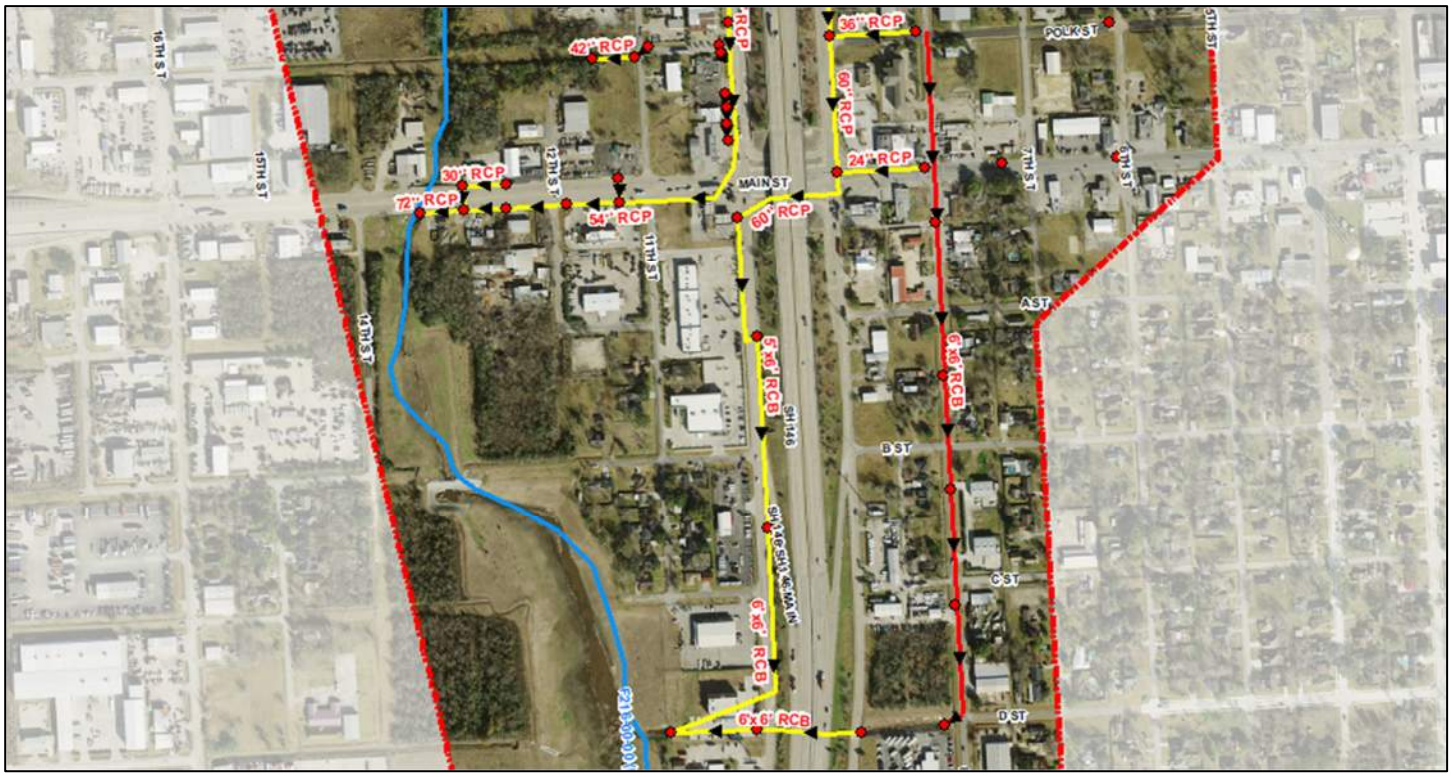



Figure 7: Alternative 2, Phase 2

A conduit slope of 0.05% is recommended to ensure necessary flushing velocities will be achieved while maintaining appropriate ground cover for the storm sewer. In accordance with City of La Porte infrastructure design manual, it is recommended that these improvements be constructed at least 5 feet inside of the public ROW.

To mitigate downstream impacts and prevent an overall increase in cumulative peak outflow, the construction of an on-site detention basin will be required for the proposed improvements. The primary goal of detention is to compensate for increase peak outflow by temporarily storing stormwater and releasing it at a controlled rate matching existing conditions.

It is recommended that Phase 2 consist of the acquisition of property needed for the construction of a proposed detention basin. This basin would allow for the temporary storage of additional stormwater conveyed by the storm sewer improvements and prevent adverse downstream impacts. Based on an assumed full acquisition forced buyout scenario of sample parcels that possess open area along Little Cedar Bayou, the estimated cost of a parcel to be acquired for detention was calculated to be three times the Harris County Appraisal District (HCAD) market value of the property. By converting this estimation to dollars per square footage, assuming a uniform basin depth of 6', and assuming the basin can fully mitigate the increased flow, an acreage of land area acquisition was approximated for Alternative 2.

Locations were identified that possess the open area and ground elevation needed to provide the storage volume required for Alternative 2. The detention volume required for this alternative is 2.9 acre-feet, with potential basin locations identified along Little Cedar Bayou in **Exhibit 28**. Basin design and required storage volume calculations and details are presented in **Section 5**.

The total cost of Phase 2 is estimated to be $2.72M.

### 3.2.2.3. Phase 3 (Future Phases)

Phase 3 continues the drainage improvements outlined in Phase 2. Its primary purpose is to provide relief to the trunk line of System B by redirecting storm water collected along 6$^{th}$ Street, Polk Street, and Main Street southward. From the termination of Phase 2 at the intersection of Polk Street and 8$^{th}$ Street, dual 4'x3' RCB's are proposed along Polk Street from 8$^{th}$ Street to 6$^{th}$ Street and along 6$^{th}$ Street from Polk Street to Madison Street. This dual 4'x3' RCB system is to provide additional conveyance and act as a connection between the undersized System A and the proposed improvements to System B. An additional improvement included in Phase 3 is improving Main Street by constructing a 4'x3' RCB along Main Street from 8$^{th}$ Street to 6$^{th}$ Street. The improvement along Main Street extends approximately 630 feet to provide additional conveyance to the existing undersized system.


Figure 8: Alternative 2, Phases 1-3

The configuration of the 6th Street proposed system was implemented with the intent that it will backflow during extreme events, allowing positive flow in System A during smaller events and, more importantly, providing the ground cover required north of Tyler Street. A conduit slope of 0.05% is recommended to ensure necessary flushing velocities will be achieved while maintaining appropriate ground cover for the storm sewer and it is recommended that these improvements be constructed at least 5 feet inside of the public ROW.

The total cost of Phase 3 is estimated to be $2.86M.

## 3.2.3. Alternative 3

The alignment of **Alternative 3** is presented in **Exhibit 10**. It was designed with the purpose of relieving the confluence at the intersection of Polk Street and the SH-146 Frontage Road without tunneling installation of storm sewer beneath SH-146.

It is proposed that additional storm sewer improvements be constructed along portions of 6th Street, Polk Street, the SH-146 Frontage Road, and Main Street west of SH-146. The confluence at the intersection of Polk Street and the SH-146 Frontage Road is disconnected and the southward flowline extending from the northern portion of the System B trunk line is redirected to the existing System C via the SH-146 underpass along Main Street. To prevent restriction of the downstream portion of System C, it is recommended that an improvement be constructed along Main Street to the Little Cedar Bayou outfall in parallel with the existing system.

Approximately 1,500’ of dual 4’x3’ RCB extends from the intersection of 6th Street and Adams Street south along 6th Street to Polk Street, then west along Polk Street to the SH-146 Frontage Road where it intersects with

the existing System B trunk line. From the disconnection at Polk Street and SH-146, a 4'x4' RCB redirects the flow from the existing System B to existing System C under the SH-146 underpass. The total length of 4'x4' RCB proposed is approximately 770'. In addition to the improvement to System C, improvements include upsizing 900' of storm sewer to 6'x5' RCB's along the portion of System B from the intersection of Polk and the eastern SH-146 Frontage Road to the Main Street and the western SH-146 Frontage Road. Two existing 24" RCP lateral inlets existing beneath the underpass would likely need to be reconstructed to convey storm water to the proposed improvement. To complete the Alternative 3 improvements, 1,120' of additional 4'x4' RCB extends from the disconnection at the intersection of Main Street and the western SH-146 Frontage Road to Little Cedar Bayou. The two lateral storm sewers along the portion of Main Street would need to be reconstructed to tie into this improvement. A detention site to mitigate increases to flowrates downstream were considered and estimated for Alternative 3.

### 3.2.3.1. Phase 1

The City has obtained $325,000 in Community Development Block Grant (CDBG) funds from the U.S. Department of Housing and Urban Development (HUD), which is to be used during Phase 1 of the proposed drainage improvement project. In compliance with this budgetary allocation, Phase 1 improvements focus on the construction of the proposed system outfall and a brief segment of contributing storm sewer. Approximately 250' of 4'x 4' RCB extends from the intersection of Main Street and the outfall into Little Cedar Bayou to the east. The proposed Phase 1 improvement would connect to existing infrastructure to provide immediate, limited relief to the area in lieu of future phases.

The total cost of Phase 1 is estimated to be $305k.


Figure 9: Alternative 3, Phase 1

### 3.2.3.2. Phase 2


Figure 10: Alternative 3, Phase 2

The Phase 2 drainage improvements have two primary purposes: 1) to provide relief to the trunk line of System B by redirecting storm water from the northern section of the existing system to System C 2) to provide additional conveyance capacity along the trunk line of System B to assist in flooding relief to the east of SH-146.

The approximately 750-foot section of 4'x4' RCB extends from the outfall of System C to the intersection of Main Street and the western SH-146 Frontage Road. From this intersection, where existing System C is disconnected, 770 feet of 4'x4' RCB extends east beneath the SH-146 underpass and north along the Frontage Road until it connects with the northern portion of System B. In addition to the improvement to System C, Phase 2 improvements include upsizing to 6'x5' RCB's along the portion of System B from the intersection of Polk and the eastern SH-146 Frontage Road to the Main Street and the western SH-146 Frontage Road. This approximately 900' of 6'x5' RCB provides additional conveyance to System B and to provide relief to contributing systems to the east of SH-146.

A conduit slope of 0.05% is recommended to ensure necessary flushing velocities will be achieved while maintaining appropriate ground cover for the storm sewer. In accordance with City of La Porte infrastructure design manual, it is recommended that these improvements be constructed at least 5 feet inside of the public ROW.

To mitigate downstream impacts and prevent an overall increase in cumulative peak outflow, the construction of an on-site detention basin will be required for the proposed improvements. The primary goal of detention is to compensate for increase peak outflow by temporarily storing stormwater and releasing it at a controlled rate matching existing conditions.

It is recommended that Phase 2 consist of the acquisition of property needed for the construction of a proposed detention basin. This basin would allow for the temporary storage of additional stormwater conveyed by the storm sewer improvements and prevent adverse downstream impacts. Based on an assumed full acquisition

forced buyout scenario of sample parcels that possess open area along Little Cedar Bayou, the estimated cost of a parcel to be acquired for detention was calculated to be three times the Harris County Appraisal District (HCAD) market value of the property. By converting this estimation to dollars per square footage, assuming a uniform basin depth of 6', and assuming the basin can fully mitigate the increased flow, an acreage of land area acquisition was approximated for Alternative 3.

Locations were identified that possess the open area and ground elevation needed to provide the storage volume required for Alternative 3. The detention volume required for this alternative is 2.2 acre-feet, with potential basin locations identified along Little Cedar Bayou in **Exhibit 28**. Basin design and required storage volume calculations and details are presented in **Section 5**.

The total cost of Phase 2 is estimated to be $2.15M.

### 3.2.3.1. Phase 3 (Future Phases)

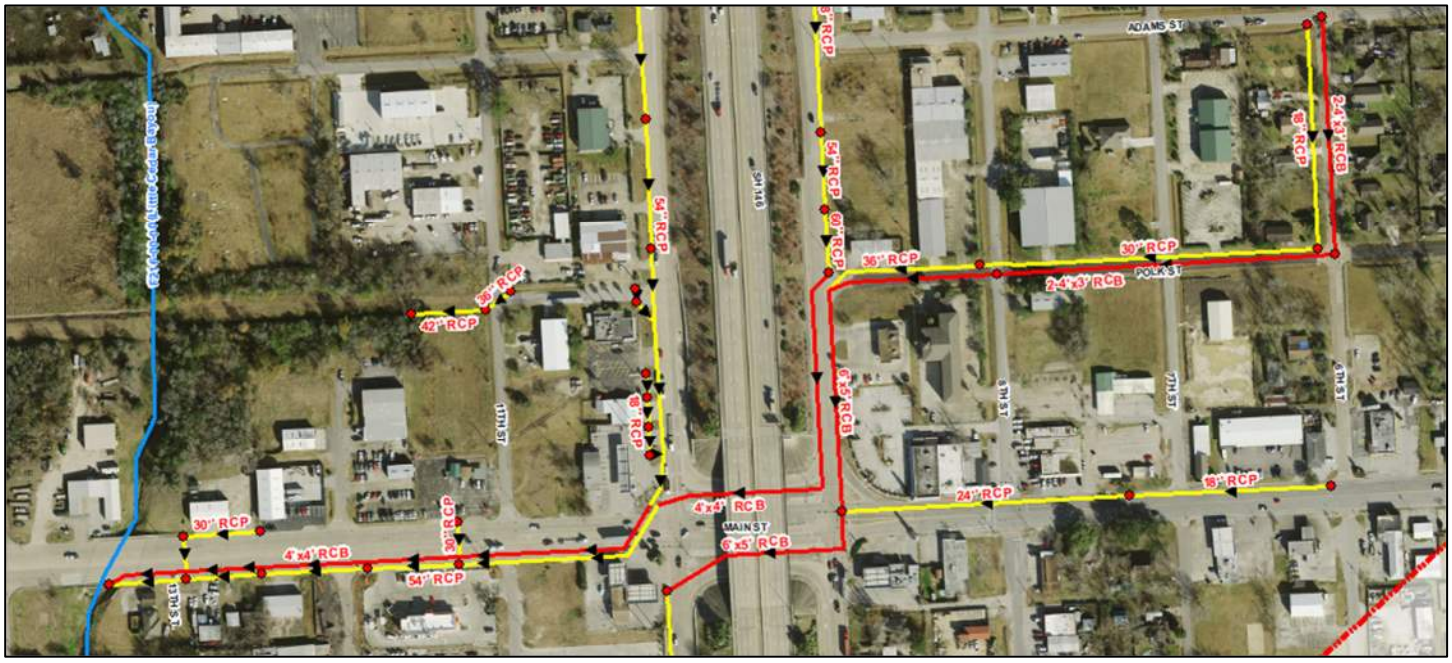



**Figure 11: Alternative 3, Phases 1-3**

The purpose of the Phase 3 improvement is to provide additional conveyance capacity along 6th Street and Polk Street. Phase 3 improvements extend from the disconnected confluence at the intersection of Polk Street and the SH-146 Frontage Road (termination of Phase 2), 1,500 feet of dual 4'x3' RCB extends east along Polk Street and north along 6th Street to the intersection of 6th Street and Adams Street.

A conduit slope of 0.05% is recommended to ensure necessary flushing velocities will be achieved while maintaining appropriate ground cover for the storm sewer and it is recommended that these improvements be constructed at least 5 feet inside of the public ROW.

The total cost of Phase 3 is estimated to be $1.79M.

## 3.2.4. Alternative 4

The alignment of **Alternative 4** is presented in **Exhibit 11** of **Appendix A**. It was designed as a combination of Alternative 1 and Alternative 2 with the purpose of relieving the confluence at the intersection of Polk Street

and the SH-146 Frontage Road and the span of 6th Street from Polk Street to Madison Street. These improvements include the addition of multiple detention basins, dual 4'x3' RCB storm sewer improvements along Polk and 6th Street, 6'x6' RCB along 8th Street and single 4'x3' RCB along Main Street. Dual 4'x3' RCB's continue approximately 1,650' east from the eastern extent of the outfall at 11th Street and Polk Street to the intersection of Polk Street and 6th Street. The remainder of the improvement consists of additional dual 4'x3' RCB's extending from this point north 1400' to the intersection of Madison Street and 6th Street. An improvement to Main Street from 8th Street to 6th Street includes constructing 630' of 4'x3' RCB.

### 3.2.4.1. Phase 1

The City has obtained $325,000 in Community Development Block Grant (CDBG) funds from the U.S. Department of Housing and Urban Development (HUD), which is to be used during Phase 1 of the proposed drainage improvement project. In compliance with this budgetary allocation, Phase 1 improvements focus on the construction of the proposed system outfall and a brief segment of contributing storm sewer. Approximately 186' of dual 4'x3' RCB's extends from the intersection of 11th Street and Polk Street to the west until it terminates into the existing tributary open channel for Little Cedar Bayou. The proposed Phase 1 improvement would connect to existing infrastructure to provide immediate, limited relief to the area in lieu of future phases.

The total cost of Phase 1 is estimated to be $312k.


Figure 12: Alternative 4, Phase 1

### 3.2.4.2. Phase 2

The primary goal of this phase is to provide relief to the SH-146/Main Street confluence of System B. Phase 2 incorporates approximately 900' of dual barrel 4'x3' RCB storm sewer improvements along Polk Street, passing under the SH-146 TXDOT right-of-way and terminating at the intersection of 8th Street and Polk Street.

A conduit slope of 0.05% is recommended to ensure necessary flushing velocities will be achieved while maintaining appropriate ground cover for the storm sewer. In accordance with City of La Porte infrastructure design manual, it is recommended that these improvements be constructed at least 5 feet inside of the public ROW.


Figure 13: Alternative 4, Phase 2

To mitigate downstream impacts and prevent an overall increase in cumulative peak outflow, the construction of an on-site detention basin will be required for the proposed improvements. The primary goal of detention is to compensate for increase peak outflow by temporarily storing stormwater and releasing it at a controlled rate matching existing conditions.

It is recommended that Phase 2 consist of the acquisition of property needed for the construction of a proposed detention basin. This basin would allow for the temporary storage of additional stormwater conveyed by the storm sewer improvements and prevent adverse downstream impacts. Based on an assumed full acquisition forced buyout scenario of sample parcels that possess open area along Little Cedar Bayou, the estimated cost of a parcel to be acquired for detention was calculated to be three times the Harris County Appraisal District (HCAD) market value of the property. By converting this estimation to dollars per square footage, assuming a uniform basin depth of 6', and assuming the basin can fully mitigate the increased flow, an acreage of land area acquisition was approximated for Alternative 4.

Locations were identified that possess the open area and ground elevation needed to provide the storage volume required for Alternative 4. The detention volume required for this alternative is 8.1 acre-feet, with potential basin locations identified along Little Cedar Bayou in **Exhibit 28**. Basin design and required storage volume calculations and details are presented in **Section 5**.

The total cost of Phase 2 is estimated to be $3.06M.

### 3.2.4.3. Phase 3 (Future Phases)

Phase 3 continues the drainage improvements outlined in Phase 2. Its primary purpose is to provide relief to the trunk line of System B by redirecting storm water collected along 6th Street, Polk Street, and Main Street southward.

Figure 14: Alternative 4, Phases 1-3

Approximately 2,400’ of 6’x6’ RCB extends from the channel located to the west of the 8th Street and D Street intersection to the intersection of Polk Street and 8th Street. From the termination of Phase 2 at the intersection of Polk Street and 8th Street, 650’ of dual 4’x3’ RCB’s are proposed along Polk Street from 8th Street to 6th Street and along 6th Street from Polk Street to Madison Street. This dual 4’x3’ RCB system is to provide additional conveyance and act as a connection between the undersized System A and the proposed improvements to System B. An additional improvement included in Phase 3 is improving Main Street by constructing a 4’x3’ RCB along Main Street from 8th Street to 6th Street. The improvement along Main Street extends approximately 630 feet to provide additional conveyance to the existing undersized system.

A conduit slope of 0.05% is recommended to ensure necessary flushing velocities will be achieved while maintaining appropriate ground cover for the storm sewer. In accordance with City of La Porte infrastructure design manual, it is recommended that these improvements be constructed at least 5 feet inside of the public ROW.

The total cost of Phase 3 is estimated to be $5.36M.

## 3.2.5. Alternative 5

The alignment of **Alternative 5** is presented in **Exhibit 12** of **Appendix A**. Like Alternative 4, Alternative 5 was designed with the purpose of relieving the confluence at the intersection of Polk Street and the SH-146 Frontage Road and the span of 6th Street from Polk Street to Madison Street. However, the primary goal of Alternative 5 is to provide improvements that lower ponding depths along 6th Street to 6 inches or lower for the 100-year storm event. These improvements include the addition of a detention basin, dual 6'x6' RCB or dual 4'x3' RCB storm sewer improvements along Polk Street, dual 5'x5' RCB along 6th Street and 8th Street, and single 4'x3' RCB along Main Street. Dual 4'x3' RCB's continue approximately 1,000' east from the eastern extent of the outfall at 11th Street and Polk Street to the intersection of Polk Street and 8th Street. Along Polk from 8th Street to 6th Street, improvements include 650' of dual 6'x6' RCB. The remainder of the improvement consists of additional dual 4'x3' RCB's extending from this point north 1400' to the intersection of Madison Street and 6th Street. An improvement to Main Street from 8th Street to 6th Street includes constructing 630' of 4'x3' RCB.

### 3.2.5.1. Phase 1

The City has obtained $325,000 in Community Development Block Grant (CDBG) funds from the U.S. Department of Housing and Urban Development (HUD), which is to be used during Phase 1 of the proposed drainage improvement project. In compliance with this budgetary allocation, Phase 1 improvements focus on the construction of the proposed system outfall and a brief segment of contributing storm sewer. Approximately 186' of dual 4'x3' RCB's extends from the intersection of 11th Street and Polk Street to the west until it terminates into the existing tributary open channel for Little Cedar Bayou. The proposed Phase 1 improvement would connect to existing infrastructure to provide immediate, limited relief to the area in lieu of future phases.

The total cost of Phase 1 is estimated to be $312k.


Figure 15: Alternative 5, Phase 1

### 3.2.5.2. Phase 2

The primary goal of this phase is to provide relief to the SH-146/Main Street confluence of System B. Phase 2 incorporates approximately 900' of dual barrel 4'x3' RCB storm sewer improvements along Polk Street, passing under the SH-146 TXDOT right-of-way and terminating at the intersection of 8th Street and Polk Street.

A conduit slope of 0.05% is recommended to ensure necessary flushing velocities will be achieved while maintaining appropriate ground cover for the storm sewer. In accordance with City of La Porte infrastructure design manual, it is recommended that these improvements be constructed at least 5 feet inside of the public ROW.


Figure 16: Alternative 5, Phase 2

To mitigate downstream impacts and prevent an overall increase in cumulative peak outflow, the construction of an on-site detention basin will be required for the proposed improvements. The primary goal of detention is to compensate for increase peak outflow by temporarily storing stormwater and releasing it at a controlled rate matching existing conditions.

It is recommended that Phase 2 consist of the acquisition of property needed for the construction of a proposed detention basin. This basin would allow for the temporary storage of additional stormwater conveyed by the storm sewer improvements and prevent adverse downstream impacts. Based on an assumed full acquisition forced buyout scenario of sample parcels that possess open area along Little Cedar Bayou, the estimated cost of a parcel to be acquired for detention was calculated to be three times the Harris County Appraisal District (HCAD) market value of the property. By converting this estimation to dollars per square footage, assuming a uniform basin depth of 6', and assuming the basin can fully mitigate the increased flow, an acreage of land area acquisition was approximated for Alternative 5.

Locations were identified that possess the open area and ground elevation needed to provide the storage volume required for Alternative 5. The detention volume required for this alternative is 7.2 acre-feet, with potential basin locations identified along Little Cedar Bayou in **Exhibit 28**. Basin design and required storage volume calculations and details are presented in **Section 5**.

The total cost of Phase 2 is estimated to be $2.54M.

### 3.2.5.3. Phase 3 (Future Phases)

Phase 3 continues the drainage improvements outlined in Phase 2. Its primary purpose is to provide relief to the trunk line of System B by redirecting storm water collected along 6th Street, Polk Street, and Main Street southward. However, the primary reasoning behind the sizing in Alternative 5 is to alleviate any ponding along 6th Street that exceeds 6 inches between Polk Street and Madison Street.


Figure 17: Alternative 5, Phases 1-3

Approximately 2,400’ of dual 5’x5’ RCB extends from the channel located to the west of the 8th Street and D Street intersection to the intersection of Polk Street and 8th Street. From the termination of Phase 2 at the intersection of Polk Street and 8th Street, 650’ of dual 6’x6’ RCB’s are proposed along Polk Street from 8th Street to 6th Street and dual 5’x5’ RCB’s along 6th Street from Polk Street to Tyler Street. Dual 4’x3’ RCB’s are proposed between Tyler Street and Madison Street. This dual 4’x3’ RCB system is to provide additional conveyance and act as a connection between the undersized System A and the proposed improvements to System B. An additional improvement included in Phase 3 is improving Main Street by constructing a 4’x3’ RCB along Main Street from 8th Street to 6th Street. The improvement along Main Street extends approximately 630 feet to provide additional conveyance to the existing undersized system.

A conduit slope of 0.05% is recommended to ensure necessary flushing velocities will be achieved while maintaining appropriate ground cover for the storm sewer. In accordance with City of La Porte infrastructure design manual, it is recommended that these improvements be constructed at least 5 feet inside of the public ROW.

The total cost of Phase 3 is estimated to be $7.02M.

# 4. Proposed Conditions Model Analysis

## 4.1. Proposed Conditions Hydrology

During the creation of the proposed conditions models, subcatchments were disconnected from the existing system's nodes and applied to the proposed system's nodes in cases where the proposed system extended alongside an existing alignment. Aside from this, no additional changes were made to the hydrologic parameters for proposed conditions. Rainfall rates, land use, and LiDAR information was kept the same as described in **Section 2.1 Existing Conditions Hydrology**.

## 4.2. Proposed Conditions Hydraulics

Changes made to the drainage network's hydraulics consist of those outlined in **Sections 3.2.1-3.2.5**.

## 4.3. Proposed Conditions Results

The following **Sections 4.3.1-4.3.5** detail the primary locations that were targeted by the proposed improvement alternatives and their respective benefits. **Tables 2** through **4** provide a summary of the total acreage of ponding reductions for each alternative during the evaluated 5-, 10-, and 100-year storm events.

**Table 2: 5-Year Storm Event – Acreage of Inundation Reductions**

| Alternative: | Existing (Acres) | Proposed (Acres) | Reduction (Acres) | Reduction (%) |
|---|---|---|---|---|
| 1 | 5.4 | 2.2 | 3.2 | 59% |
| 2 | 5.4 | 1.5 | 3.8 | 72% |
| 3 | 5.4 | 3.1 | 2.2 | 42% |
| 4 | 5.4 | 0.8 | 4.5 | 84% |
| 5 | 5.4 | 0.8 | 4.5 | 84% |

**Table 3: 10-Year Storm Event – Acreage of Inundation Reductions**

| Alternative: | Existing (Acres) | Proposed (Acres) | Reduction (Acres) | Reduction (%) |
|---|---|---|---|---|
| 1 | 11.5 | 4.3 | 7.2 | 63% |
| 2 | 11.5 | 3.3 | 8.2 | 71% |
| 3 | 11.5 | 6.3 | 5.2 | 45% |
| 4 | 11.5 | 1.6 | 9.9 | 86% |
| 5 | 11.5 | 1.6 | 9.9 | 86% |

Table 4: 100-Year Storm Event – Acreage of Inundation Reductions

| Alternative: | Existing (Acres) | Proposed (Acres) | Reduction (Acres) | Reduction (%) |
|---|---|---|---|---|
| 1 | 42.1 | 20.9 | 21.2 | 50% |
| 2 | 42.1 | 16.1 | 26.0 | 62% |
| 3 | 42.1 | 24.0 | 18.2 | 43% |
| 4 | 42.1 | 7.8 | 34.4 | 82% |
| 5 | 42.1 | 6.6 | 35.5 | 84% |

### 4.3.1. Alternative 1

The resultant reductions in maximum ponding depths and extents for the 5-, 10-, and 100-year storms with all three phases of Alternative 1 implemented are presented in **Exhibits 13-15** in **Appendix A**. Total acreage of inundation within the study area for Alternative 1 was reduced by approximately 59%, 63%, and 50% for the 5-, 10-, and 100-year storm events, respectively. Of the 20.9 acres of ponding that continues to occur during the 100-year storm event for Alternative 1, approximately 13 acres of the ponding is reduced by less than 6 inches, and 1.8 acres of ponding is reduced by 6 to 12 inches.

The HGLs of the existing and proposed portions of System B along 6th Street and Polk Street are reduced and remain below the ground surface during the 5-year storm event. The trunk line of System B is relieved and remains below ground everywhere except the northern-most 345 feet of conduit, reducing the length of the portion of the HGL above ground by 1,060 feet compared to existing conditions. System A remains relatively unchanged between existing and proposed conditions. Due to the proposed connection between Systems B and C at the intersection of Polk Street and the western SH-146 Frontage Road, the southern portion of the System C trunk line is more fully utilized. However, the HGL always remains below the ground surface during the 5-year storm event.

The proposed conveyance improvements provide relief to the restricted confluence at the intersection of Polk Street and the eastern SH-146 Frontage Road result in a substantial reduction of ponding along 6th Street and the SH-146 Frontage Road during the 5-year event. Along 6th Street, ponding is eliminated south of Tyler Street and along the frontage road in all areas except for the northern-most corner. The study area meets City of La Porte criteria everywhere except the intersections of Tyler Street and 6th Street, Madison Street and 6th Street, and Madison Street and SH-146.

During the 10-year storm event, the HGLs of the existing and proposed portions of System B along 6th Street and Polk Street continue to be reduced and remain below the ground surface. As with the 5-year event, the trunk line of System B is significantly relieved and the HGL remains below the ground surface south of Tyler Street. System C is more fully utilized, but its HGL still remains well below the ground surface.

Along 6th Street and the SH-146 Frontage Road, south of Tyler Street, ponding depths larger than 6 inches are nearly eliminated during the 10-year event. North of Tyler Street, ponding remains below 1 foot of depth everywhere except for the low-lying intersections.

During the 100-year storm event, the capacity of both the existing and proposed storm sewers along 6th Street are exceeded. Along Polk Street, the HGLs of both systems remain below the ground surface everywhere except

the intersections at 6th Street and the SH-146 Frontage Road. Although HGL elevations are reduced along the System B trunk line, the capacity of the existing storm sewer is still exceeded under the proposed conditions and water surcharges onto the 2-dimensional ground surface. The HGL of System C remains at least 1.5 feet below the ground surface.

Ponding depths and extents continue to be significantly reduced along the SH-146 Frontage Road during the 100-year event, as they were during smaller storms. At the intersection of the frontage road and Main Street, the peak water surface is reduced by approximately 0.6 feet and between Adams Street and Main Street ponding greater than 6 inches is almost eliminated. No change in peak water surface elevation occurs at the intersection of Madison Street and SH-146. Along 6th Street, minimal benefit is observed under the Alternative 1 proposed conditions.

### 4.3.2. Alternative 2

The resultant reductions in maximum ponding depths and extents for the 5-, 10-, and 100-year storms with all three phases of Alternative 2 implemented are presented in **Exhibits 16-18** in **Appendix A**. Total acreage of inundation within the study area for Alternative 2 was reduced by approximately 72%, 71%, and 62% for the 5-, 10-, and 100-year storm events, respectively. Of the 16.1 acres of ponding that continues to occur during the 100-year storm event for Alternative 2, approximately 1 acres of the ponding is reduced by less than 6 inches, and 2 acres of ponding is reduced by 6 to 12 inches.

The HGLs of the existing and proposed portions of System B along 6th Street and Polk Street are reduced and remain below the ground surface during the 5-year storm event. The portion of the proposed storm sewer along 8th Street maintains reserve capacity during this storm. South of Adams Street, the HGL of the System B trunk line remains below the ground surface.

Ponding along 6th Street is eliminated during the 5-year storm event and remains below 6 inches everywhere except along the SH-146 Frontage Road north of Tyler Street. The proposed conveyance improvements provide relief to the restricted confluence at the intersection of Polk Street and the eastern SH-146 Frontage Road and to System A by redirecting storm water south along 8th Street.

During the 10-year storm event, 6th Street continues to be significantly benefitted. The HGL of the existing and proposed improvements along 6th Street and Main Street remain below ground everywhere except within low-lying intersections. Additionally, the proposed connection between Systems A and B provide relief to System A along Madison Street.

Ponding along 6th Street that exceeds a depth of 6 inches is eliminated everywhere except the intersections at Madison Street and Tyler Street, although it remains below 1 foot. Ponding between 1 and 2 feet continues to occur along the eastern SH-146 Frontage Road but is reduced south of Tyler Street.

During the 100-year storm event, peak ponding is reduced by about 1/10th of a foot at the intersections of 6th Street at Madison Street and Adams Street. Notably, the duration of ponding greater than 6 inches is reduced by approximately 6 hours at the intersection of 6th Street and Madison Street and is reduced by over 3 hours at the intersection of 6th Street and Adams Street. The HGL of the proposed improvement along 8th Street remains below the ground surface. Ponding depths and extents along 8th Street and the SH-146 Frontage Road are significantly reduced south of Main Street.

### 4.3.3. Alternative 3

The resultant reductions in maximum ponding depths and extents for the 5-, 10-, and 100-year storms with all three phases of Alternative 3 implemented are presented **in Exhibits 19-21** in **Appendix A**. Total acreage of inundation within the study area for Alternative 3 was reduced by approximately 42%, 45%, and 43% for the 5-, 10-, and 100-year storm events, respectively. Of the 24 acres of ponding that continues to occur during the 100-year storm event for Alternative 3, approximately 15.5 acres of the ponding is reduced by less than 6 inches.

During the 5-year storm event, the HGL of the System B trunk line is slightly reduced. Along 6th Street and Polk Street, the existing and proposed drainage systems maintain reserve capacity throughout the event. The existing and proposed trunk lines of System C along Main Street become fully utilized due to the redirection of flow. However, the HGL of the system remains well below the ground surface. Along the portion of 6th Street south of Tyler Street, ponding is reduced below a depth of 6 inches. The intersections of 6th Street at Tyler Street and Madison Street continue to experience ponding depths greater than 1 foot.

During the 10-year storm event, the portion of 6th Street south of Tyler Street continues to be benefitted. HGLs along 6th Street, Polk Street, and the SH-146 Frontage Road are significantly reduced and remain below the ground surface. The HGL elevation of the existing system along Main Street is reduced slightly. The existing and proposed portions of System C along Main Street continue to be fully utilized while maintaining HGLs well below the ground surface.

During the 100-year storm event, some reductions in ponding extents and small reductions in HGL elevations are observed throughout the study area. However, the majority of benefits are observed during smaller storms.

### 4.3.4. Alternative 4

The resultant reductions in maximum ponding depths and extents for the 5-, 10-, and 100-year storms with all three phases of Alternative 4 implemented are presented in **Exhibits 22-24** in **Appendix A**. Total acreage of inundation within the study area for Alternative 4 was reduced by approximately 84%, 86%, and 82% for the 5-, 10-, and 100-year storm events, respectively. Of the 7.8 acres of ponding that continues to occur during the 100-year storm event for Alternative 4, approximately 1.7 acres of the ponding is reduced by less than 6 inches, and 1.6 acres of ponding is reduced by 6 to 12 inches.

The HGLs of the existing and proposed portions of System B along 8th Street, Polk Street, and 6th Street are reduced and remain below the ground surface during the 5-year storm event. The proposed storm sewer along 8th Street has excess capacity during the 5-year storm.

Ponding along 6th Street is eliminated during the 5-year storm event and remains below 6 inches everywhere except along the SH-146 Frontage Road between Madison Street and Tyler Street. The proposed conveyance improvements provide relief to System A and System B by splitting flow coming from 6th Street across multiple outfall paths along Polk Street and 8th Street.

During the 10-year storm event, 6th Street continues to be significantly benefitted. The HGL of the existing and proposed improvements along 6th Street and Main Street remain below ground everywhere, including within low-lying intersections. Additionally, the proposed connection between Systems A and B provide relief to System A along Madison Street, resulting in a reduction in ponding depths and extents at the low point of SH-146 Frontage Road and Madison Street.

During the 100-year storm event, peak ponding is reduced by approximately 0.8’ within low-lying 6th Street at the intersections with Madison Street, Tyler Street, Adams Street, and Polk Street. Notably, the duration of

ponding greater than 6 inches is reduced by approximately 7 hours at the intersection of 6th Street and Madison Street and is reduced by over 4 hours at the intersection of 6th Street and Adams Street. The HGL of the proposed improvement along 8th Street remains just below the ground surface. Ponding depths in the study area only exceed 6 inches at the intersections along 6th Street, and the SH-146 Frontage Road from Adams Street to E Street.

This improvement provides widespread street ponding benefits in the target area in terms of the reductions to ponding depths and ponding durations for all evaluated storm events.

### 4.3.5. Alternative 5

The resultant reductions in maximum ponding depths and extents for the 5-, 10-, and 100-year storms with all three phases of Alternative 5 implemented are presented in **Exhibits 25-27** in **Appendix A**. Total acreage of inundation within the study area for Alternative 5 was reduced by approximately 84%, 86%, and 84% for the 5-, 10-, and 100-year storm events, respectively. Of the 6.6 acres of ponding that continues to occur during the 100-year storm event for Alternative 5, approximately 1.8 acres of the ponding is reduced by less than 6 inches, and 0.5 acres of ponding is reduced by 6 to 12 inches.

The HGLs of the existing and proposed portions of System B along 8th Street, Polk Street, and 6th Street are reduced and remain below the ground surface during the 5-year storm event. The proposed storm sewer along 8th Street has excess capacity during the 5-year storm.

Ponding along 6th Street is eliminated during the 5-year storm event and remains below 6 inches everywhere except along the SH-146 Frontage Road between Madison Street and Tyler Street where minimal street ponding occurs. The proposed conveyance improvements provide relief to System A and System B by splitting flow coming from 6th Street across multiple outfall paths along Polk Street and 8th Street.

During the 10-year storm event, 6th Street continues to be significantly benefitted. The HGL of the existing and proposed improvements along 6th Street and Main Street remain below ground everywhere, including within low-lying intersections. Additionally, the proposed connection between Systems A and B provide relief to System A along Madison Street, resulting in a reduction in ponding depths and extents at the low point of SH-146 Frontage Road and Madison Street.

During the 100-year storm event, peak ponding is reduced by approximately 1.0’-1.5’ within the intersections of low-lying 6th Street at the intersections with Madison Street, Tyler Street, Adams Street, and Polk Street. Notably, all ponding along 6th Street is at, or below, 6 inches in depths for Alternative 5 during the 100-year storm event. The HGL of the entire storm sewer system is maintained below ground level along 8th Street, Polk Street and all of 6th Street with the exception of the low-lying intersections. The System A and System B areas located at the SH-146 Frontage Road between Tyler Street and E Street are minimally benefitted by the improvements in Alternative 5.

This improvement provides significant benefit across the entire target area, especially along 6th Street where ponding depths are at, or below, 6 inches and are maintained at the intersections only. Outside of the intersections along 6th Street, the ponding duration is reduced to zero for all evaluated storm events by maintaining an HGL below the ground surface.

# 5. Adverse Impact Evaluation

## 5.1. Impact Evaluation Methodology

The Harris County Flood Control District Policy Criteria and Procedure Manual (PCPM) was used as the primary source of guidance for adverse impact evaluation criteria. Policy III of the PCPM states that drainage projects must not adversely impact the community by increasing flood risks/hazards, erosion, or siltation. It is possible for one or many of these to occur at a drainage system's outfall when increasing the size of existing storm sewer or constructing entirely new improvements.

To ensure the proposed drainage improvements conform to Policy III standards, an impact analysis was performed. The 5-, 10-, and 100-year storm events were analyzed for all phases. Because it is assumed that project phases would be constructed consecutively, impacts and detention needs were calculated cumulatively, i.e. Phase 2 impacts were calculated as if Phases 1 and 2 has both been constructed and Phase 3 impacts were calculated as if all phases had been constructed.

Cumulative outflows entering Little Cedar Bayou were exported from XPSWMM as multiple time series for existing and proposed conditions for Phases 1-3. The increase in outflow at each timestep, $\Delta Q_i$, was calculated as

$$\Delta Q_i = \begin{cases} 0 & if\ Q_i^p \le Q_i^{e,peak} \\ Q_i^p - Q_i^{e,peak} & if\ Q_i^p > Q_i^{e,peak} \end{cases} \quad (1)$$

where $Q_i^p$ is the proposed flow rate and $Q_i^{e,peak}$ is the existing peak flow rate at timestep $i$. These flowrates were used to calculate required detention basin dimensions, presented in **Section 6**.

## 5.2. Impact Evaluation Results

Although all storm-phase combinations were analyzed, the 100-year storm event produced the highest increases in cumulative outflow for all alternatives. Hydrograph plots showing the differences in existing and proposed outflows are presented in **Figures 13** through **17**.

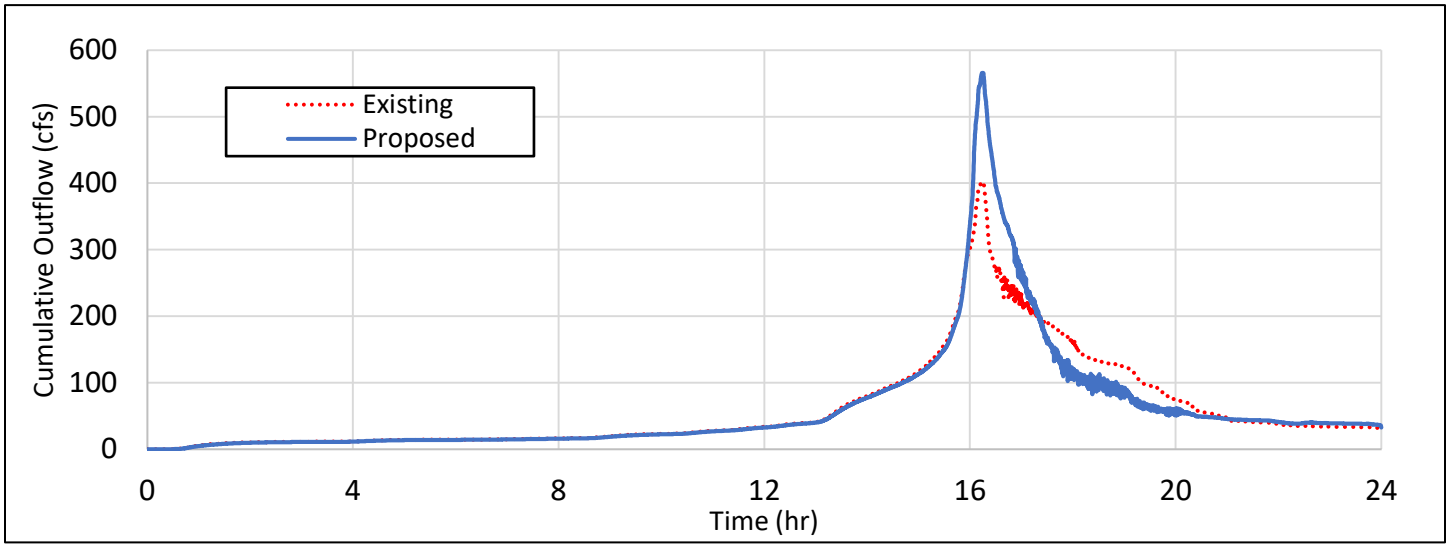



Figure 18: Existing and Proposed Outflow Hydrographs, Alternative 1, Phases 1-3

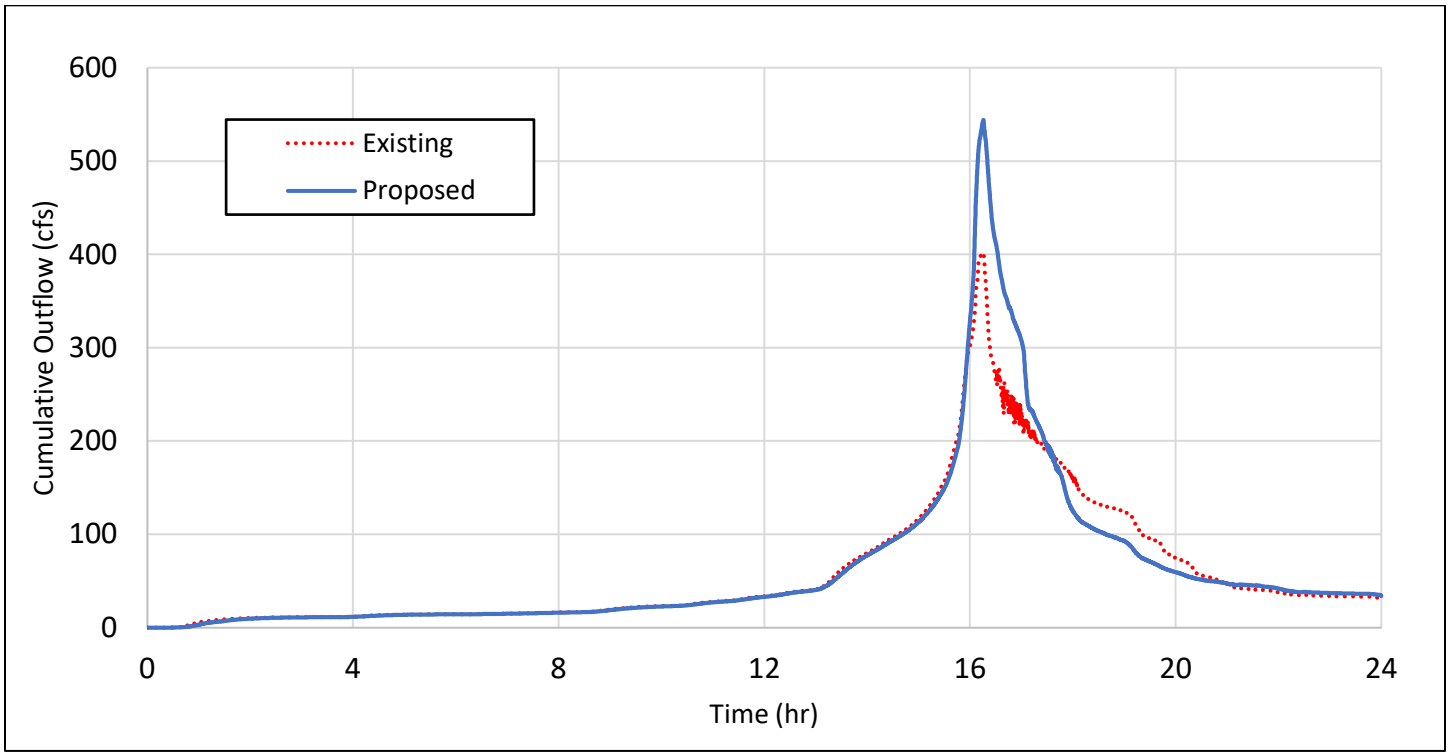



Figure 19: Existing and Proposed Outflow Hydrographs, Alternative 2, Phases 1-3

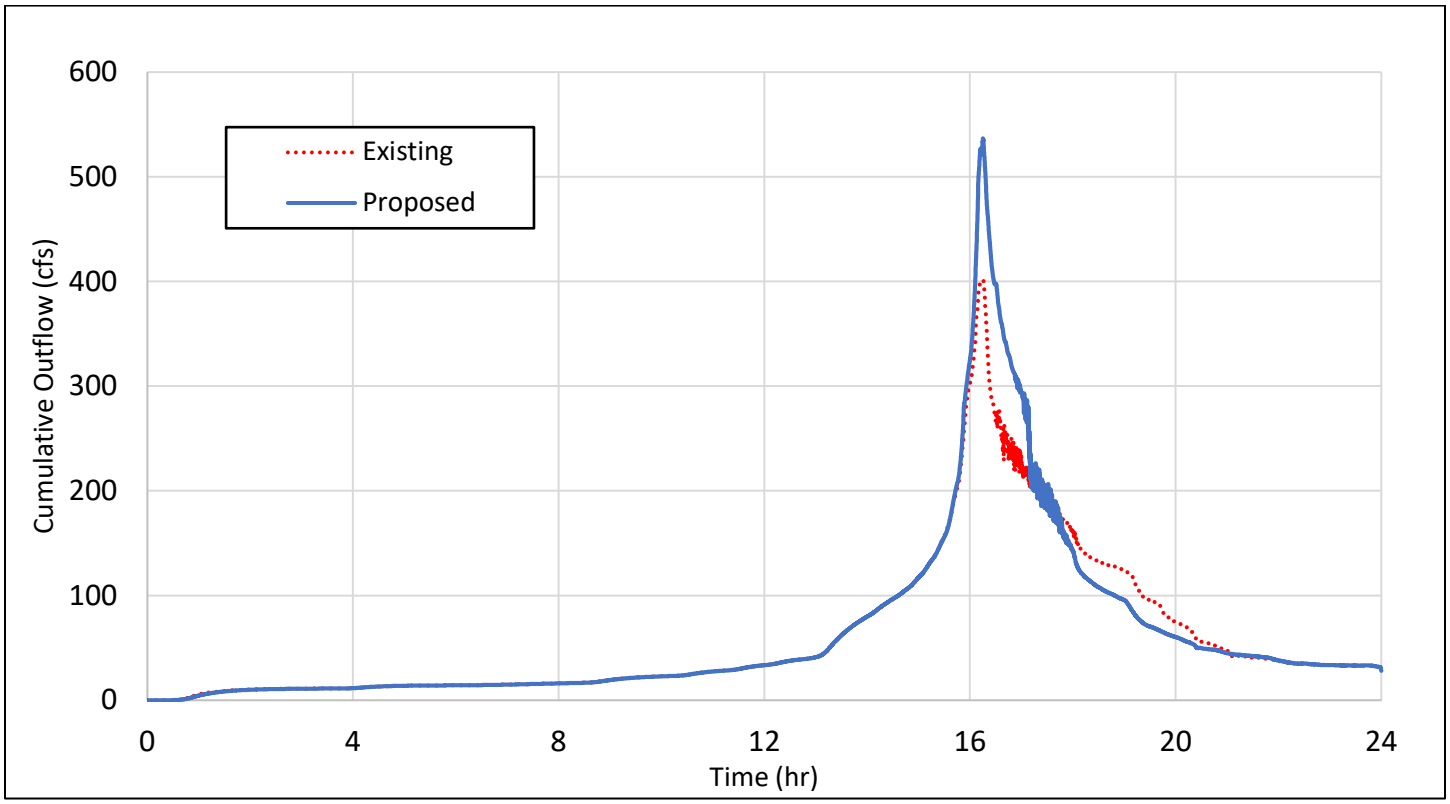



Figure 20: Existing and Proposed Outflow Hydrographs, Alternative 3, Phases 1-3

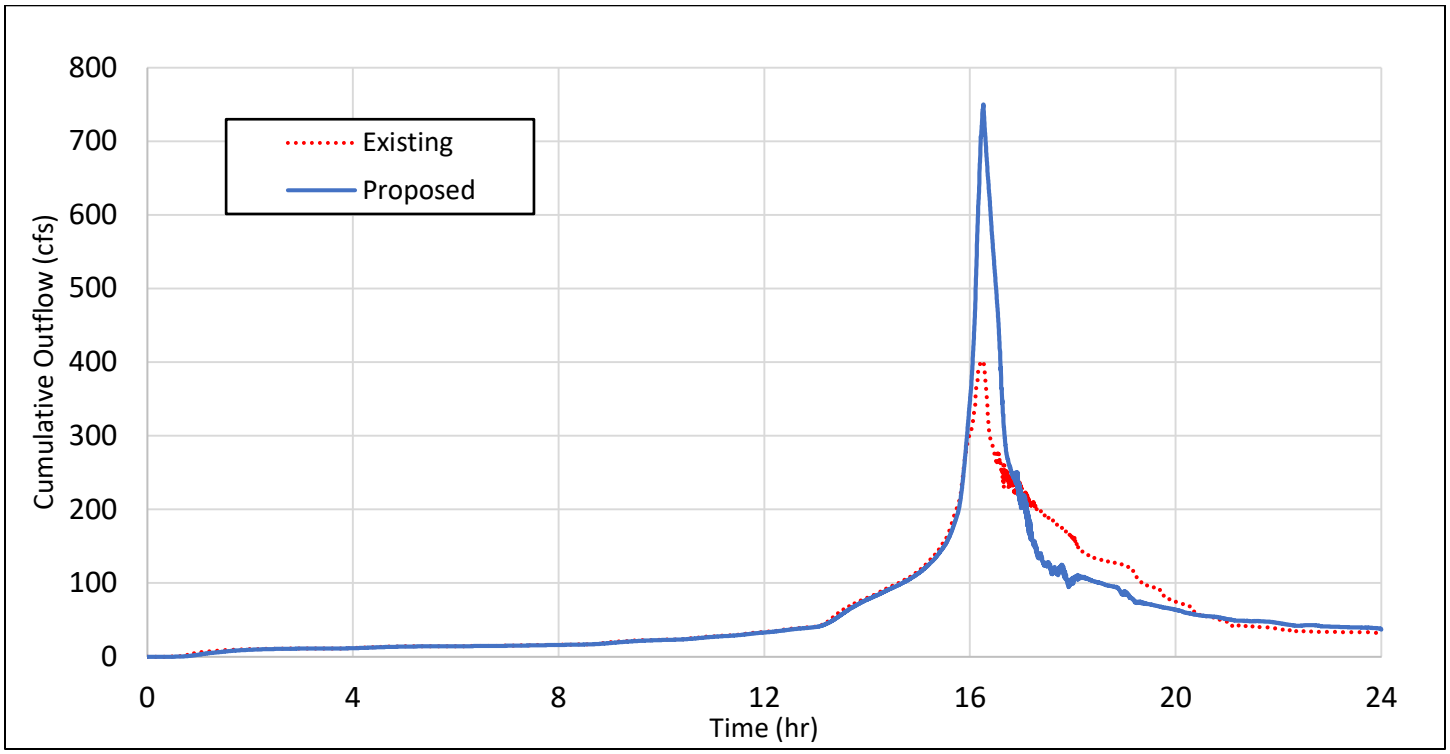



Figure 21: Existing and Proposed Outflow Hydrographs, Alternative 4, Phases 1-3

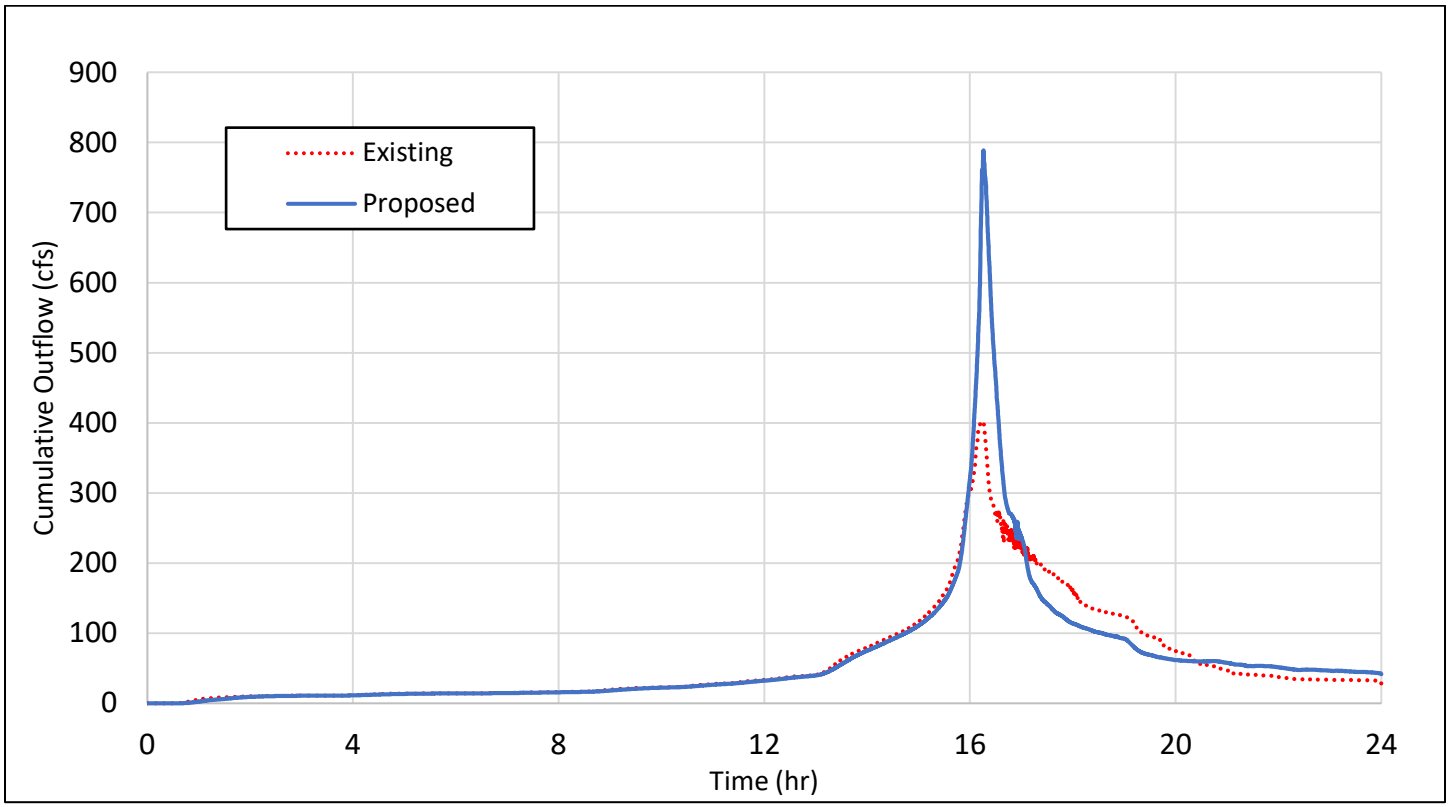



Figure 22: Existing and Proposed Outflow Hydrographs, Alternative 5, Phases 1-3

The existing peak cumulative outflow into Little Cedar Bayou was observed to be 402 cfs during simulation of the 100-year storm event. The proposed peak cumulative outflows of Alternatives 1, 2, 3, 4 and 5 were observed to be 566 cfs, 544 cfs, 536 cfs, 750 cfs, and 789 cfs, respectively. **Equation 1** was used to calculate increases to outflow caused by the improvements at each timestep when the proposed conditions outflows were higher than existing.

Based on the observed impacts, detention volume requirements were calculated. The methodology and results of these efforts are presented in **Section 6**.

# 6. Detention Requirements

## 6.1. Detention Basin Sizing Methodology

To mitigate possible downstream impacts caused by an addition of outflow from the study area, storm water detention must be provided. Using the results of calculations performed with **Equation 1**, the detention volumes required to retain excessive storm water produced by all phases during the 100-year storm event were calculated as

$$V_r = \sum \Delta Q_i \Delta t_i \quad (2)$$

where $\Delta Q_i$ was calculated at each timestep using **Equation 1** and $\Delta t_i$ is the time step increment of the hydrograph. Using the results of calculations performed with **Equation 2** and having identified possible sites for Alternatives 1-5 (**Exhibit 28**), detention basin sizes were estimated. The following calculations were performed sequentially in ArcMap 10.3.1 to determine the available capacity of each site based on HCAD parcel and City of La Porte LiDAR data. Maintenance berm widths of 30 feet, freeboards of 1 foot, and 4:1 side slopes were assumed.

**Table 5: Detention Basin Sizing Equations**

| Calculated Value | Units | Equation |
|---|---|---|
| Freeboard elevation, $FB$ | ft | $FB = El_{site} - (1ft)$ (3) |
| Basin invert elevation, $I_{basin}$ | ft | $I_{basin} = El_{outfall} + (1ft)$ (4) |
| Usable height, $h$ | ft | $h = FB - I_{basin}$ (5) |
| Excavation height, $h_{excav}$ | | $h_{excav} = El_{site} - I_{basin}$ |
| Area of the top of the basin, calculated with ArcMap buffer, $A_{basin\ top}$ | ft$^2$ | $A_{top} = A_{parcel} - (30ft\ Buffer)$ (6) |
| Buffer distance used to determine the area of the bottom of the basin, $Buffer_1$ | ft | $Buffer_1 = \frac{4}{1} \times h_{excav}$ (7) |
| Buffer distance used to determine the area of the basin at the freeboard elevation, $Buffer_2$ | ft | $Buffer_2 = \frac{4}{1} \times (1ft)$ (8) |
| Area of the bottom of the basin, calculated with ArcMap buffer, $A_{basin\ bottom}$ | ft$^2$ | $A_{bottom} = A_{top} - Buffer_1$ (9) |
| Area of the basin at freeboard elevation, calculated with ArcMap buffer, $A_{FB}$ | ft$^2$ | $A_{FB} = A_{basin\ top} - Buffer_2$ (10) |
| Average available area for detention, $A_a$ | ft$^2$ | $A_a = \frac{A_{FB} + A_{bottom}}{2}$ (11) |
| Available detention volume, $V_a$ | ft$^3$ | $V_a = h \times A_a$ (12) |

Using site and outfall elevations ($El_{site}$ and $El_{outfall}$) extracted from LiDAR data, parcel areas ($A_{parcel}$), and **Equations 3-12**, basins were dimensioned and total available detention volumes for each were calculated. The results of these calculations are presented in **Section 6.2**.

## 6.2. Detention Basin Sizing Results

The required detention volumes, $V_r$, for all five alternatives were calculated cumulatively using **Equation 2**. In order to prevent adverse downstream impacts, Alternative 1 requires 3.4 acre-feet of detention, Alternative 2 requires 2.9 acre-feet of detention, Alternative 3 requires 2.2 acre-feet, Alternative 4 requires 8.1 acre-feet and Alternative 5 requires 7.1 acre-feet of detention, assuming all phases will eventually be constructed. Based on location and available open area, preferred detention site parcels have been identified. An overview of the proposed detention sites is presented in **Exhibit 28**.

Using **Equations 3-12**, the available detention volumes of the selected sites were calculated to determine what location, or combination of locations, could fully mitigate each alternative solution. Therefore, based on preliminary high-level calculations, these sites would provide the necessary volume with the required freeboard. A summary is presented in **Table 6**, below.

**Table 6: Required Detention Volumes Summary**

| Alternative | Detention Required (ac-ft) |
|---|---|
| 1 | 3.4 |
| 2 | 2.9 |
| 3 | 2.2 |
| 4 | 8.1 |
| 5 | 7.1 |

# 7. Opinion of Probable Construction Cost

High-level cost estimates for the proposed alternatives are summarized in **Tables 7** through **11**. A detailed itemization of these costs may be found in **Appendix B**. Construction costs include estimates for detention site excavations; storm sewer, manhole and inlet materials and installation; and roadway reconstruction. Soft costs include engineering, geotechnical, survey, construction management, and material testing fees.

**Table 7: Alternative 1, High-Level Cost Estimate**

| **Phase 1** | |
|---|---|
| Soft Cost Total | $ 47,520 |
| Construction Subtotal | $ 203,000 |
| Construction Contingency (30%) | $ 61,000 |
| Construction Total | $ 264,000 |
| **Phase 1 – Subtotal Cost** | **$ 312,000** |
| **Phase 2** | |
| Soft Cost Total | $ 382,860 |
| Construction Subtotal | $ 1,636,000 |
| Construction Contingency (30%) | $ 491,000 |
| Construction Total | $ 2,127,000 |
| **Phase 2 – Subtotal Cost** | **$ 2,510,000** |
| **Phase 3** | |
| Soft Cost Total | $ 257,760 |
| Construction Subtotal | $ 1,101,000 |
| Construction Contingency (30%) | $ 331,000 |
| Construction Total | $ 1,432,000 |
| **Phase 3 – Subtotal Cost** | **$ 1,690,000** |
| **Alternative 1 – Total Cost** | **$ 4,512,000** |

Table 8: Alternative 2, High-Level Cost Estimate

| Phase 1 | |
|---|---|
| Soft Cost Total | $ 33,840 |
| Construction Subtotal | $ 144,000 |
| Construction Contingency (30%) | $ 44,000 |
| Construction Total | $ 188,000 |
| **Phase 1 – Subtotal Cost** | **$ 222,000** |
| **Phase 2** | |
| Soft Cost Total | $ 415,440 |
| Construction Subtotal | $ 1,775,000 |
| Construction Contingency (30%) | $ 533,000 |
| Construction Total | $ 2,308,000 |
| **Phase 2 – Subtotal Cost** | **$ 2,724,000** |
| **Phase 3** | |
| Soft Cost Total | $ 435,960 |
| Construction Subtotal | $ 1,863,000 |
| Construction Contingency (30%) | $ 559,000 |
| Construction Total | $ 2,422,000 |
| **Phase 3 – Subtotal Cost** | **$ 2,858,000** |
| **Alternative 2 – Total Cost** | **$ 5,804,000** |

Table 9: Alternative 3, High-Level Cost Estimates

| Phase 1 | |
|---|---|
| Soft Cost Total | $ 46,440 |
| Construction Subtotal | $ 198,000 |
| Construction Contingency (30%) | $ 60,000 |
| Construction Total | $ 258,000 |
| **Phase 1 – Subtotal Cost** | **$ 305,000** |
| **Phase 2** | |
| Soft Cost Total | $ 327,600 |
| Construction Subtotal | $ 1,400,000 |
| Construction Contingency (30%) | $ 420,000 |
| Construction Total | $ 1,820,000 |
| **Phase 2 – Subtotal Cost** | **$ 2,148,000** |
| **Phase 3** | |
| Soft Cost Total | $ 273,240 |
| Construction Subtotal | $ 1,167,000 |
| Construction Contingency (30%) | $ 351,000 |
| Construction Total | $ 1,518,000 |
| **Phase 3 – Subtotal Cost** | **$ 1,792,000** |
| **Alternative 3 – Total Cost** | **$ 4,245,000** |

Table 10: Alternative 4, High-Level Cost Estimates

| Phase 1 | |
|---|---|
| Soft Cost Total | $ 47,520 |
| Construction Subtotal | $ 203,000 |
| Construction Contingency (30%) | $ 61,000 |
| Construction Total | $ 264,000 |
| **Phase 1 – Subtotal Cost** | **$ 312,000** |
| **Phase 2** | |
| Soft Cost Total | $ 466,020 |
| Construction Subtotal | $ 1,991,000 |
| Construction Contingency (30%) | $ 598,000 |
| Construction Total | $ 2,589,000 |
| **Phase 2 – Subtotal Cost** | **$ 3,056,000** |
| **Phase 3** | |
| Soft Cost Total | $ 817,020 |
| Construction Subtotal | $ 3,491,000 |
| Construction Contingency (30%) | $ 1,048,000 |
| Construction Total | $ 4,539,000 |
| **Phase 3 – Subtotal Cost** | **$ 5,357,000** |
| **Alternative 4 – Total Cost** | **$ 8,725,000** |

Table 11: Alternative 5, High-Level Cost Estimates

| Phase 1 | |
|---|---|
| Soft Cost Total | $ 47,520 |
| Construction Subtotal | $ 203,000 |
| Construction Contingency (30%) | $ 61,000 |
| Construction Total | $ 264,000 |
| **Phase 1 – Subtotal Cost** | **$ 312,000** |
| **Phase 2** | |
| Soft Cost Total | $ 457,560 |
| Construction Subtotal | $ 1,955,000 |
| Construction Contingency (30%) | $ 587,000 |
| Construction Total | $ 2,542,000 |
| **Phase 2 – Subtotal Cost** | **$ 3,000,000** |
| **Phase 3** | |
| Soft Cost Total | $ 1,071,360 |
| Construction Subtotal | $ 4,578,000 |
| Construction Contingency (30%) | $ 1,374,000 |
| Construction Total | $ 5,952,000 |
| **Phase 3 – Subtotal Cost** | **$ 7,024,000** |
| **Alternative 5 – Total Cost** | **$ 10,336,000** |

# 8. Summary of Recommendations

The Northside Neighborhood study area is currently served by a drainage network composed of three separate systems, all of which ultimately outfall into Little Cedar Bayou (F216-00-00). **Exhibit 3** presents an overview of the components of the existing infrastructure, referred to as Systems A, B, and C throughout this report. In an effort to fully understand the area's subsurface flow characteristics, overland flow patterns, and stormwater infrastructure deficiencies, it was evaluated using XPSWMM 2018.2.2. An existing conditions model was reviewed and validated against City feedback and descriptions of flooding. The performance of the stormwater infrastructure was evaluated for the 5-, 10-, and 100-year, 25-hour storm events.

Ponding depths along 6th Street and the northeastern portion of the SH-146 Frontage Road were found to be substantial, even during more frequent storm events, as shown in **Exhibits 5-7.**

Due to the area's proximity to Little Cedar Bayou and challenging overland topography, it does not appear that a drainage solution can be fully realized without additional funding sources. If additional sources of funding can be obtained, it is recommended that the City construct all phases of the selected alternative, which has the capability of solving the majority of the area's drainage issues and meeting City of La Porte drainage criteria.

Based on an existing understanding of the study area's hydrology and hydraulics, three high-level alternative concepts have been selected from numerous modeled scenarios. These alternatives were formulated with the goal of reducing flooding along 6th Street, the eastern SH-146 Frontage Road, and surrounding area.

Alternative 1 was designed with the purpose of providing an additional conveyance and outfall route to System B at the intersection of SH-146 and Polk Street, where the current storm sewer infrastructure is overly restrictive, resulting in stormwater surcharging onto the surface of the SH-146 Frontage Road and 6th Street. It includes the addition of a newly constructed detention basin and dual 4'x3' RCB storm sewer improvements. Alternative 2 was designed with the purpose of relieving all of System A and the portion of existing System B along the SH-146 Frontage Road by redirecting flow collected near 6th Street, Polk Street, and Main Street southward along 8th Street. It includes the addition of 6'x6' and dual 4'x3' RCB's. Like Alternative 1, Alternative 3 was designed with the purpose of providing an additional conveyance and outfall route to System B at the intersection of SH-146 and Polk Street as well. It includes the additional of 4'x4' and dual 4'x3' RCB's, which terminates at an existing outfall location. Alternative 4 targets a service area that is a combination of Alternative 1 and Alternative 2 by improving multiple outfall routes along 8th Street and Polk Street. This improvement includes dual 4'x3' and single 6'x6' RCB's. Alternative 5 was designed with the purpose of fully reducing ponding depths below 6 inches along 6th Street by further upsizing the improvements evaluated in Alternative 4. This improvement includes dual 5'x5' and dual 4'x3' RCB's.

Founded in client feedback and budgetary forecasting, the two projects recommended by LAN to the City are Alternative 4 and Alternative 5. Alternative 4 provides widespread flooding reduction in the study area and specifically along 6th Street. Alternative 5 is recommended primarily due to client feedback requesting an improvement capable of reducing ponding along 6th Street to at, or below, 6 inches for mobility purposes. In order to fully realize the benefits of either of these projects, it is highly recommended that the proposed "future" phases (Phase 3) eventually be constructed. An overview of these alignments is presented in **Exhibits 11** for Alternative 4 and **Exhibit 12** for Alternative 5.

Construction of all three phases of either recommended alternative offers the potential for substantial benefit and a higher level of service for the study area.

To ensure the proposed drainage improvements conform to Harris County Flood Control District Policy III standards, an impact analysis was performed. The 5-, 10-, and 100-year storm events were analyzed for all alternatives and phases. From the adopted methodologies, it was determined that to prevent adverse downstream impacts, Alternative 1 requires 3.4 acre-feet of detention, Alternative 2 requires 2.9 acre-feet of detention, Alternative 3 requires 2.2 acre-feet, Alternative 4 requires 8.1 acre-feet and Alternative 5 requires 7.1 acre-feet of detention, assuming all phases will eventually be constructed.

The total estimated cost to construct Alternative 1, 2, 3, 4 and 5 were calculated to be $4.5M, $5.8M, $4.2M, $8.7M and $10.3M. Because the construction of all phases of any improvement alternative is needed to provide the desired level of service to the study area – which possesses a significantly undersized drainage network and challenging topography – it is recommended that additional funding sources be acquired. A detailed breakdown of the cost estimate for each alternative can be found in **Appendix B.**

# 9. References

City of La Porte, Texas (n.d.). "Public Improvement Criterial Manual". Chapter 5: Storm Water Design Criteria.

Harris County (1988). "Harris County Design Guidelines – 1988". Section 6: Drainage and Storm Sewer Design Requirements. Retrieved from http://www.eng.hctx.net/Consultants/CIP-Resources/Guidelines

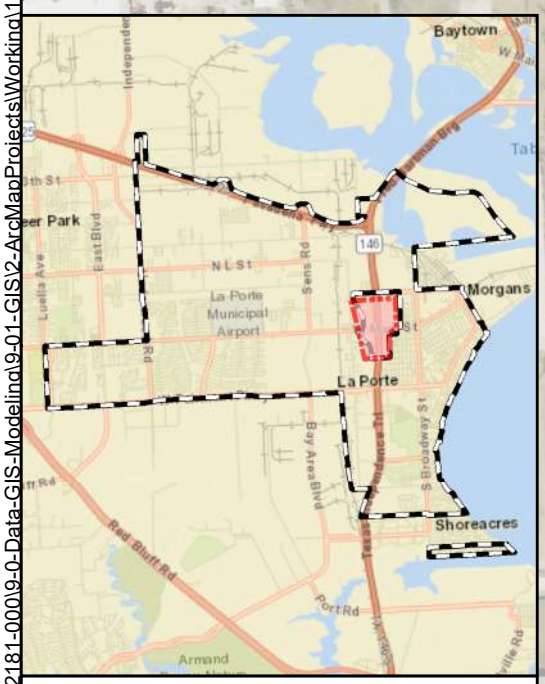
Harris County Flood Control District (2009). "Hydrology & Hydraulics Guidance Manual". Updated December 2009.

Harris County Flood Control District (2018). "Policy Criteria & Procedure Manual". Updated October 2018.

RPS Engineering (2018). "City of La Porte: Drainage Improvements Preliminary Engineering Report for 6th Street". 1160 Dairy Ashford, Suite 500, Houston, Texas, 77079.

# APPENDIX A

BARBOURS CUT BLVD
13TH ST
12TH ST
4TH ST
E ST
MADISON ST
F216-00-00 (Little Cedar Bayou)
SH 146;SH 146;MAIN
TYLER ST
5TH ST
16TH ST
ADAMS ST
6TH ST
7TH ST
11TH ST
POLK ST
8TH ST
15TH ST
MAIN ST
A ST
14TH ST
SH 146
B ST
C ST
D ST




## Legend

- Focus Area of Study
- Study Area
- City Boundary
- HCFCD Channels

0 200 400 800 Feet

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

CITY OF LA PORTE TEXAS

# STUDY AREA

EXHIBIT 1

NORTHSIDE NEIGHBORHOOD DRAINAGE IMPROVEMENT AND RELIEF PROJECT

DATE: MAR 2020
SCALE: AS NOTED

Document Path: N:\120\120-12181-000\9-0-Data-GIS-Modeling\9-01-GIS\2-ArcMapProjects\Working\1_Study_Area.mxd

BARBOURS CUT BLVD
13TH ST
12TH ST
E ST
4TH ST
MADISON ST
F216-00-00 (Little Cedar Bayou)
F216A
SH 146-SH 146;MAIN
TYLER ST
5TH ST
16TH ST
11TH ST
ADAMS ST
6TH ST
SH 146
7TH ST
POLK ST
15TH ST
MAIN ST
8TH ST
F21601A
14TH ST
A ST
B ST
C ST
D ST
F216B

## Legend

- Study Area
- Subcatchments
- HCFCD Channels

**2018 LiDAR Elevation (ft)**

High : 43.046

Low : 3.34462

0 200 400 800 Feet

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

# 2018 LiDAR OVERVIEW

NORTHSIDE NEIGHBORHOOD DRAINAGE IMPROVEMENT AND RELIEF PROJECT

EXHIBIT 2

DATE: MAR 2020
SCALE: AS NOTED

Document Path: N:\120\120-12181-00019-0-Data-GIS-Modeling\9-01-GIS\2-ArcMapProjects\Working\2_LiDAR.mxd

BARBOURS CUT BLVD
13TH ST
12TH ST
4TH ST
E ST
MADISON ST
TYLER ST
5TH ST
16TH ST
F24-00-00 (Little Cedar Bayou)
24" RCP
42" RCP
30" RCP
18" RCP
24" RCP
36" RCP
42" RCP
SH 146-SH 146; MAIN
42" RCP
48" RCP
11TH ST
48" RCP
54" RCP
ADAMS ST
6TH ST
18" RCP
7TH ST
SH146
54" RCP
36" RCP
30" RCP
POLK ST
36" RCP
42" RCP
60" RCP
18" RCP
18" RCP
8TH ST
15TH ST
30" RCP
MAIN ST
72" RCP
54" RCP
60" RCP
A ST
6'x5' RCB
14TH ST
B ST
C ST
6'x6' RCB
6'x6' RCB
D ST

## Legend

- Study Area
- HCFCD Channels
- Existing Inlets

**Existing Drainage Network**

- System A
- System B
- System C

0 200 400 800 Feet

Document Path: N:\120\120-12181-0001\9-0-Data-GIS-Modeling\9-01-GIS\2-ArcMapProjects\Working\3_Existing_Infrastructure.mxd

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

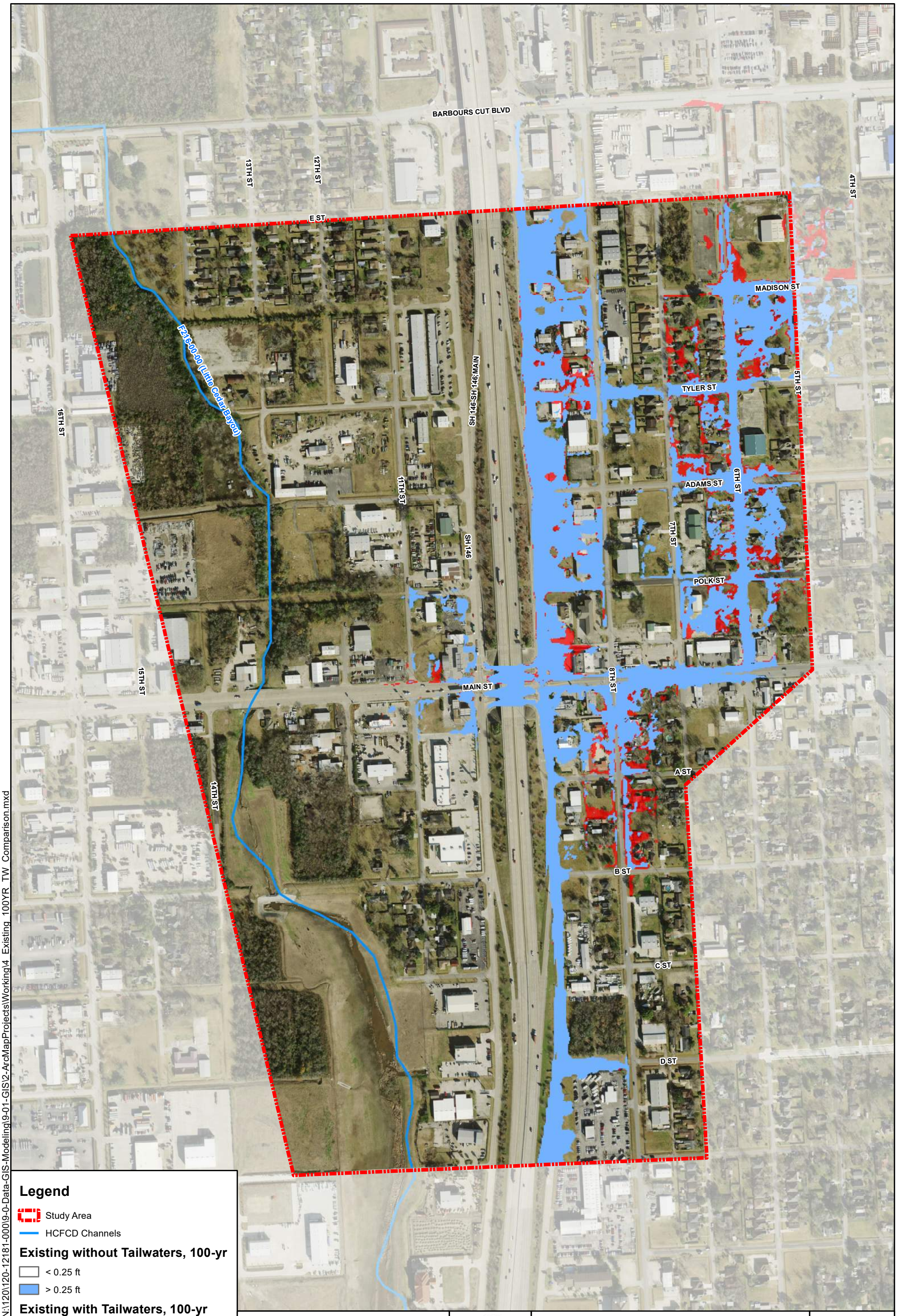
CITY OF LA PORTE TEXAS

# EXISTING INFRASTRUCTURE

EXHIBIT 3

NORTHSIDE NEIGHBORHOOD DRAINAGE IMPROVEMENT AND RELIEF PROJECT

DATE: MAR 2020
SCALE: AS NOTED




NORTHSIDE NEIGHBORHOOD DRAINAGE IMPROVEMENT AND RELIEF PROJECT

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

CITY OF LA PORTE, TEXAS

EXISTING PONDING DEPTHS
WITH AND WITHOUT TAILWATERS
100-YR (1.0% AEP), 24-HR STORM EVENT
25-YR (4.0% AEP) TAILWATERS

EXHIBIT
4

DATE: MAR 2020
SCALE: AS NOTED

BARBOURS CUT BLVD
13TH ST
12TH ST
4TH ST
E ST
MADISON ST
F216-00-00 (Little Cedar Bayou)
16TH ST
11TH ST
SH 146-SH 146; MAIN
TYLER ST
15TH ST
6TH ST
ADAMS ST
7TH ST
SH 146
POLK ST
8TH ST
15TH ST
MAIN ST
14TH ST
A ST
B ST
C ST
D ST

## Legend

- Study Area
- HCFCD Channels

**Existing Drainage Network**

- System A
- System B
- System C

**Existing Ponding, 5-yr**

- < 0.25 ft
- 0.25 - 0.50 ft
- 0.5 - 1.0 ft
- 1.0 - 2.0
- > 2.0 ft

0 200 400 800 Feet

NORTHSIDE NEIGHBORHOOD DRAINAGE IMPROVEMENT AND RELIEF PROJECT

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

CITY OF LA PORTE TEXAS

EXISTING PONDING DEPTHS
5-YR (20% AEP), 24-HR STORM EVENT
5-YR (20% AEP) TAILWATERS

EXHIBIT
5

DATE: MAR 2020
SCALE: AS NOTED

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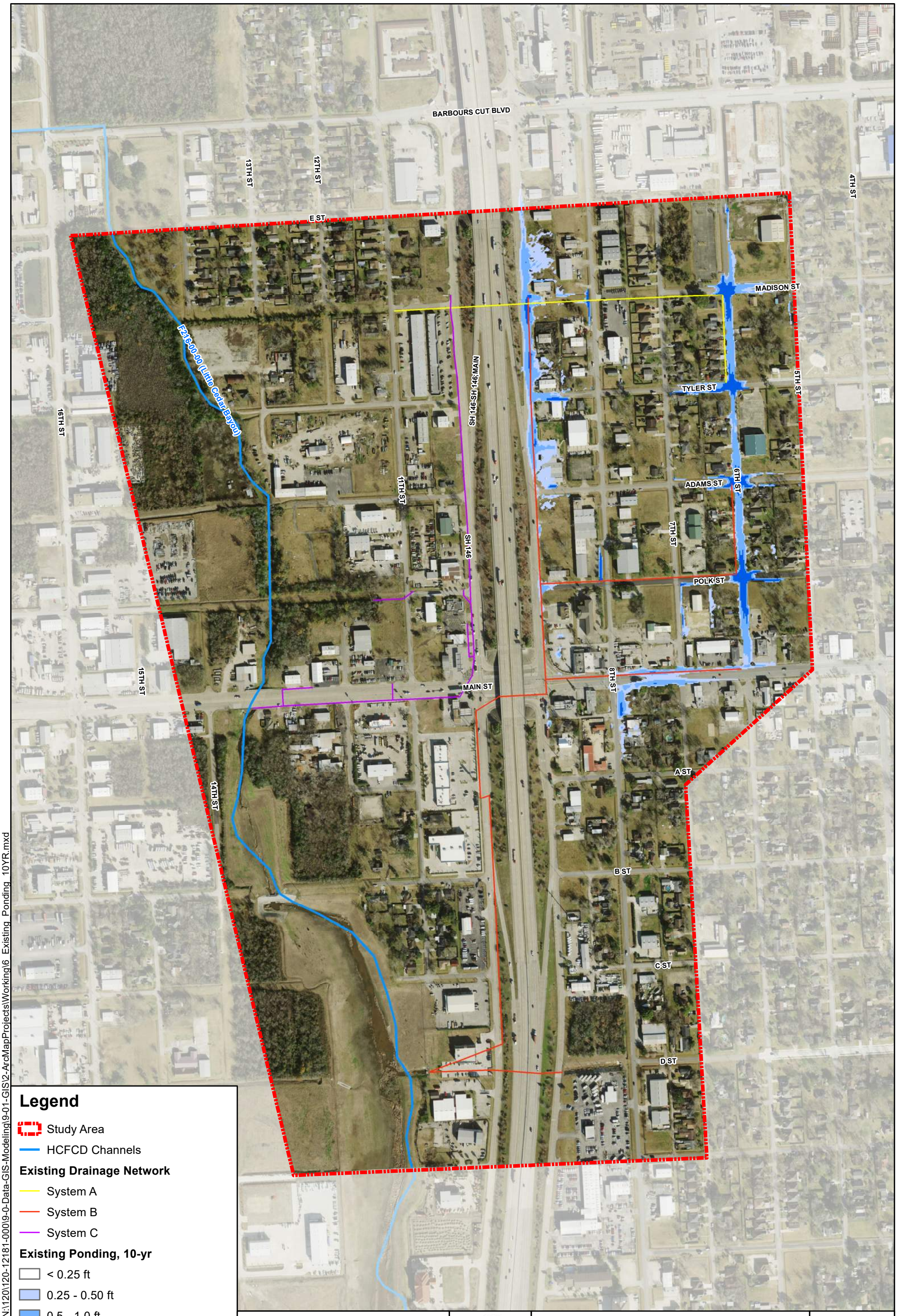


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NORTHSIDE NEIGHBORHOOD DRAINAGE IMPROVEMENT AND RELIEF PROJECT

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

CITY OF LA PORTE, TEXAS

# EXISTING PONDING DEPTHS
# 10-YR (10% AEP), 24-HR STORM EVENT
# 10-YR (10% AEP) TAILWATERS

EXHIBIT
6

DATE: MAR 2020
SCALE: AS NOTED

BARBOURS CUT BLVD
13TH ST
12TH ST
4TH ST
E ST
MADISON ST
F24-00-00 (Little Cedar Bayou)
SH 146-SH 146; MAIN
TYLER ST
5TH ST
16TH ST
11TH ST
6TH ST
ADAMS ST
7TH ST
SH 146
POLK ST
15TH ST
8TH ST
MAIN ST
A ST
14TH ST
B ST
C ST
D ST

## Legend

- Study Area
- HCFCD Channels

**Existing Drainage Network**

- System A
- System B
- System C

**Existing Ponding, 100-yr**

- < 0.25 ft
- 0.25 - 0.50 ft
- 0.5 - 1.0 ft
- 1.0 - 2.0
- > 2.0 ft

0 200 400 800 Feet

N

NORTHSIDE NEIGHBORHOOD DRAINAGE IMPROVEMENT AND RELIEF PROJECT

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

CITY OF LA PORTE TEXAS

EXISTING PONDING DEPTHS
100-YR (1.0% AEP), 24-HR STORM EVENT
25-YR (4.0% AEP) TAILWATERS

EXHIBIT
7

DATE: MAR 2020
SCALE: AS NOTED

Document Path: N:\120\120-12181-000\9-0-Data-GIS-Modeling\9-01-GIS\2-ArcMapProjects\Working\7_Existing_Ponding_100YR.mxd


BARBOURS CUT BLVD
13TH ST
12TH ST
4TH ST
E ST
MADISON ST
5TH ST
TYLER ST
6TH ST
ADAMS ST
7TH ST
POLK ST
16TH ST
15TH ST
14TH ST
11TH ST
8TH ST
A ST
B ST
C ST
D ST
SH 146-SH 146-MAIN
SH 146
F216-00-00 (Little Cedar Bayou)
42" RCP
30" RCP
18" RCP
36" RCP
42" RCP
48" RCP
54" RCP
2-4'x3' RCB
36" RCP
30" RCP
2-4'x3' RCB
18" RCP
54" RCP
18" RCP
60" RCP
24" RCP
18" RCP
30" RCP
72" RCP
54" RCP
60" RCP
5'x6' RCB
6'x6' RCB
6'x6' RCB
Legend
Study Area
HCFCD Channels
Existing Infrastructure
Proposed Infrastructure
Inlets
0
200
400
800
Feet
Lockwood, Andrews & Newnam, Inc.
A LEO A DALY COMPANY
CITY OF LA PORTE TEXAS
PROPOSED INFRASTRUCTURE ALTERNATIVE 1
EXHIBIT 8
NORTHSIDE NEIGHBORHOOD DRAINAGE IMPROVEMENT AND RELIEF PROJECT
DATE: MAR 2020
SCALE: AS NOTED
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BARBOURS CUT BLVD
13TH ST
12TH ST
4TH ST
E ST
MADISON ST
5TH ST
TYLER ST
ADAMS ST
6TH ST
7TH ST
8TH ST
POLK ST
A ST
B ST
C ST
D ST
11TH ST
16TH ST
15TH ST
14TH ST
SH 146
F216-00-00 (Little Cedar Bayou)
42" RCP
30" RCP
2-4'x3' RCB, 18" RCP
36" RCP
42" RCP
48" RCP
54" RCP
42" RCP
48" RCP
2-4'x3' RCB
36" RCP
2-4'x3' RCB, 30" RCP
60" RCP
18" RCP
4'x3' RCB, 18" RCP
30" RCP
72" RCP
54" RCP
60" RCP
24" RCP
5'x6' RCB
6'x6' RCB
6'x6' RCB
6'x6' RCB
Legend
Study Area
HCFCD Channels
Existing Infrastructure
Proposed Infrastructure
Inlets
0
200
400
800
Feet
Lockwood, Andrews & Newnam, Inc.
A LEO A DALY COMPANY
CITY OF LA PORTE TEXAS
PROPOSED INFRASTRUCTURE ALTERNATIVE 2
EXHIBIT 9
NORTHSIDE NEIGHBORHOOD DRAINAGE IMPROVEMENT AND RELIEF PROJECT
DATE: MAR 2020
SCALE: AS NOTED
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BARBOURS CUT BLVD
13TH ST
12TH ST
4TH ST
E ST
MADISON ST
5TH ST
TYLER ST
6TH ST
ADAMS ST
7TH ST
POLK ST
16TH ST
15TH ST
14TH ST
11TH ST
8TH ST
MAIN ST
A ST
B ST
C ST
D ST
SH 146
SH 146-SH 146-MAIN
F216-00-00 (Little Cedar Bayou)
42" RCP
30" RCP
18" RCP
36" RCP
42" RCP
48" RCP
54" RCP
42" RCP
48" RCP
18" RCP
2-4'x3' RCB
36" RCP
30" RCP
2-4'x3' RCB
6'x5' RCB
4'x4' RCB
18" RCP
24" RCP
18" RCP
30" RCP
4'x4' RCB
72" RCP
6'x5' RCB
5'x6' RCB
6'x6' RCB
6'x6' RCB

## Legend

- Study Area
- HCFCD Channels
- Existing Infrastructure
- Proposed Infrastructure
- Inlets

0 200 400 800 Feet

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

CITY OF LA PORTE TEXAS

# PROPOSED INFRASTRUCTURE ALTERNATIVE 3

EXHIBIT 10

NORTHSIDE NEIGHBORHOOD DRAINAGE IMPROVEMENT AND RELIEF PROJECT

DATE: MAR 2020
SCALE: AS NOTED

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BARBOURS CUT BLVD
13TH ST
12TH ST
4TH ST
E ST
16TH ST
11TH ST
SH 146-SH 146;MAIN
5TH ST
MADISON ST
TYLER ST
ADAMS ST
8TH ST
7TH ST
POLK ST
6TH ST
15TH ST
MAIN ST
SH 146
14TH ST
A ST
B ST
C ST
D ST
F216-00-00 (Little Cedar Bayou)
42" RCP
30" RCP
2-4'x3' RCB, 18" RCP
36" RCP
48" RCP
54" RCP
2-4'x3' RCB
2-4'x3' RCB, 30" RCP
60" RCP
6'x6' RCB
18" RCP
24" RCP
4'x3' RCB, 18" RCP
72" RCP
5'x6' RCB
Legend
Study Area
HCFCD Channels
Existing Infrastructure
Proposed Infrastructure
Inlets
0
200
400
800
Feet
Lockwood, Andrews & Newnam, Inc.
A LEO A DALY COMPANY
CITY OF LA PORTE TEXAS
PROPOSED INFRASTRUCTURE ALTERNATIVE 4
EXHIBIT 11
NORTHSIDE NEIGHBORHOOD DRAINAGE IMPROVEMENT AND RELIEF PROJECT
DATE: MAR 2020
SCALE: AS NOTED
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BARBOURS CUT BLVD

13TH ST

12TH ST

4TH ST

E ST

MADISON ST

5TH ST

16TH ST

11TH ST

8TH ST

7TH ST

6TH ST

TYLER ST

ADAMS ST

POLK ST

15TH ST

14TH ST

A ST

B ST

C ST

D ST

SH 146-SH 146-MAIN

SH 146

F216-00-00 (Little Cedar Bayou)

42" RCP

30" RCP

2-4'x3' RCB, 18" RCP

36" RCP

42" RCP

48" RCP

2-5'x5' RCB

48" RCP

54" RCP

2-4'x3' RCB

36" RCP

2-6'x6' RCB, 30" RCP

2-5'x5' RCB

2-4'x3' RCB

18" RCP

60" RCP

4'x3' RCB, 18" RCP

30" RCP

24" RCP

72" RCP

54" RCP

60" RCP

5'x6' RCB

2-5'x5' RCB

6'x6' RCB

6'x6' RCB

## Legend

- Study Area
- HCFCD Channels
- Existing Infrastructure
- Proposed Infrastructure
- Inlets

0 200 400 800 Feet

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

CITY OF LA PORTE TEXAS

# PROPOSED INFRASTRUCTURE ALTERNATIVE 5

NORTHSIDE NEIGHBORHOOD DRAINAGE IMPROVEMENT AND RELIEF PROJECT

EXHIBIT 12

DATE: MAR 2020
SCALE: AS NOTED

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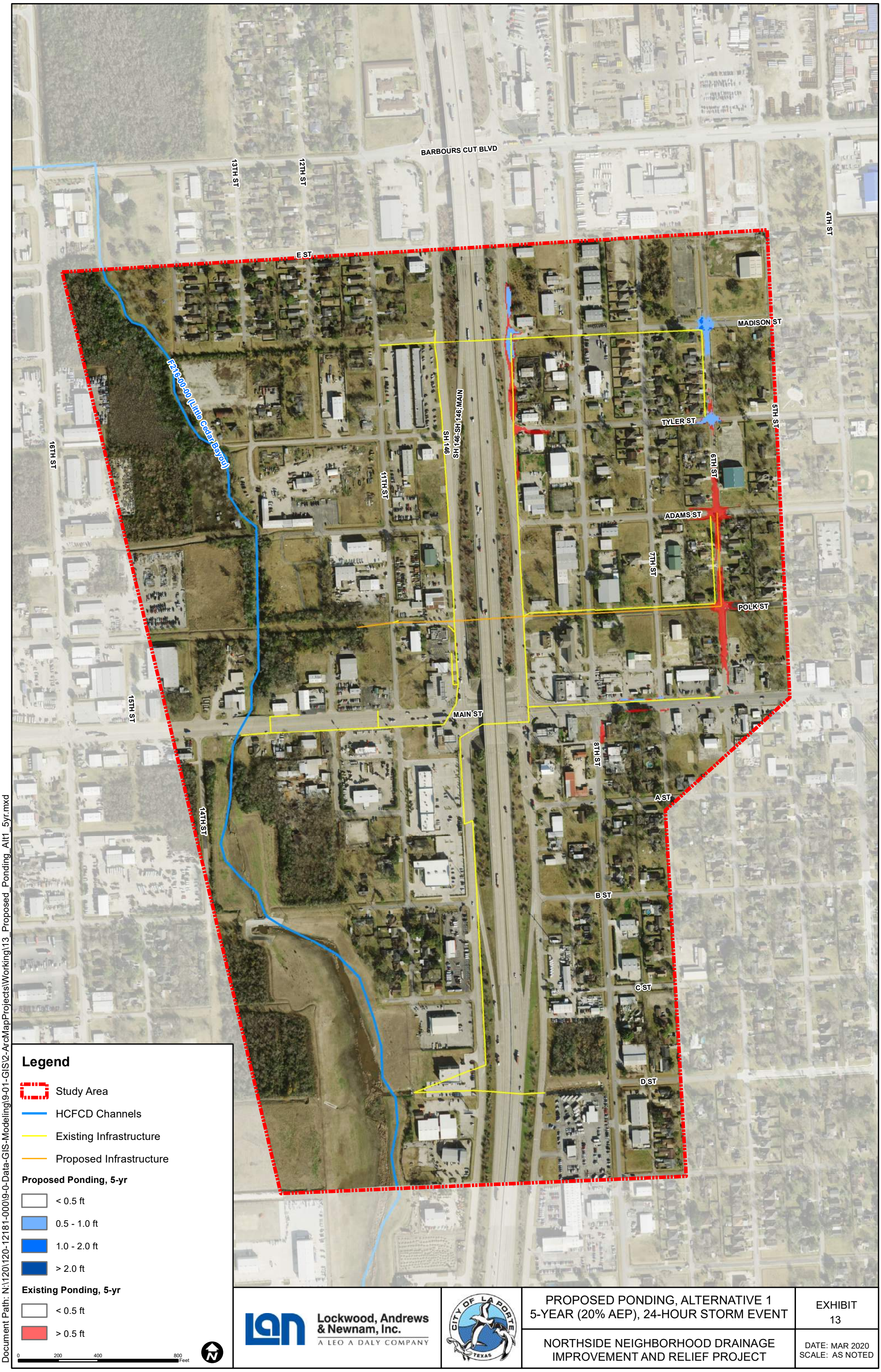
BARBOURS CUT BLVD
13TH ST
12TH ST
4TH ST
E ST
MADISON ST
F216-00-00 (Little Cedar Bayou)
SH 146-SH 146-MAIN
SH 146
11TH ST
5TH ST
TYLER ST
6TH ST
16TH ST
ADAMS ST
7TH ST
POLK ST
15TH ST
MAIN ST
8TH ST
A ST
14TH ST
B ST
C ST
D ST
Legend
Study Area
HCFCD Channels
Existing Infrastructure
Proposed Infrastructure
Proposed Ponding, 5-yr
< 0.5 ft
0.5 - 1.0 ft
1.0 - 2.0 ft
> 2.0 ft
Existing Ponding, 5-yr
< 0.5 ft
> 0.5 ft
0
200
400
800
Feet
Lockwood, Andrews & Newnam, Inc.
A LEO A DALY COMPANY
CITY OF LA PORTE TEXAS
PROPOSED PONDING, ALTERNATIVE 1
5-YEAR (20% AEP), 24-HOUR STORM EVENT
EXHIBIT
13
NORTHSIDE NEIGHBORHOOD DRAINAGE
IMPROVEMENT AND RELIEF PROJECT
DATE: MAR 2020
SCALE: AS NOTED
Document Path: N:\120\120-12181-00019-0-Data-GIS-Modeling\9-01-GIS\2-ArcMapProjects\Working\13_Proposed_Ponding_Alt1_5yr.mxd

BARBOURS CUT BLVD
13TH ST
12TH ST
4TH ST
E ST
MADISON ST
F216-00-00 (Little Cedar Bayou)
SH 146-SH 146-MAIN
SH 146
11TH ST
TYLER ST
5TH ST
6TH ST
16TH ST
ADAMS ST
7TH ST
POLK ST
15TH ST
MAIN ST
8TH ST
A ST
14TH ST
B ST
C ST
D ST

## Legend

- Study Area
- HCFCD Channels
- Existing Infrastructure
- Proposed Infrastructure

**Proposed Ponding, 10-yr**

- < 0.5 ft
- 0.5 - 1.0 ft
- 1.0 - 2.0 ft
- > 2.0 ft

**Existing Ponding, 10-yr**

- < 0.5 ft
- > 0.5 ft

0 200 400 800 Feet

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

CITY OF LA PORTE TEXAS

PROPOSED PONDING, ALTERNATIVE 1
10-YEAR (10% AEP), 24-HOUR STORM EVENT

EXHIBIT
14

NORTHSIDE NEIGHBORHOOD DRAINAGE
IMPROVEMENT AND RELIEF PROJECT

DATE: MAR 2020
SCALE: AS NOTED

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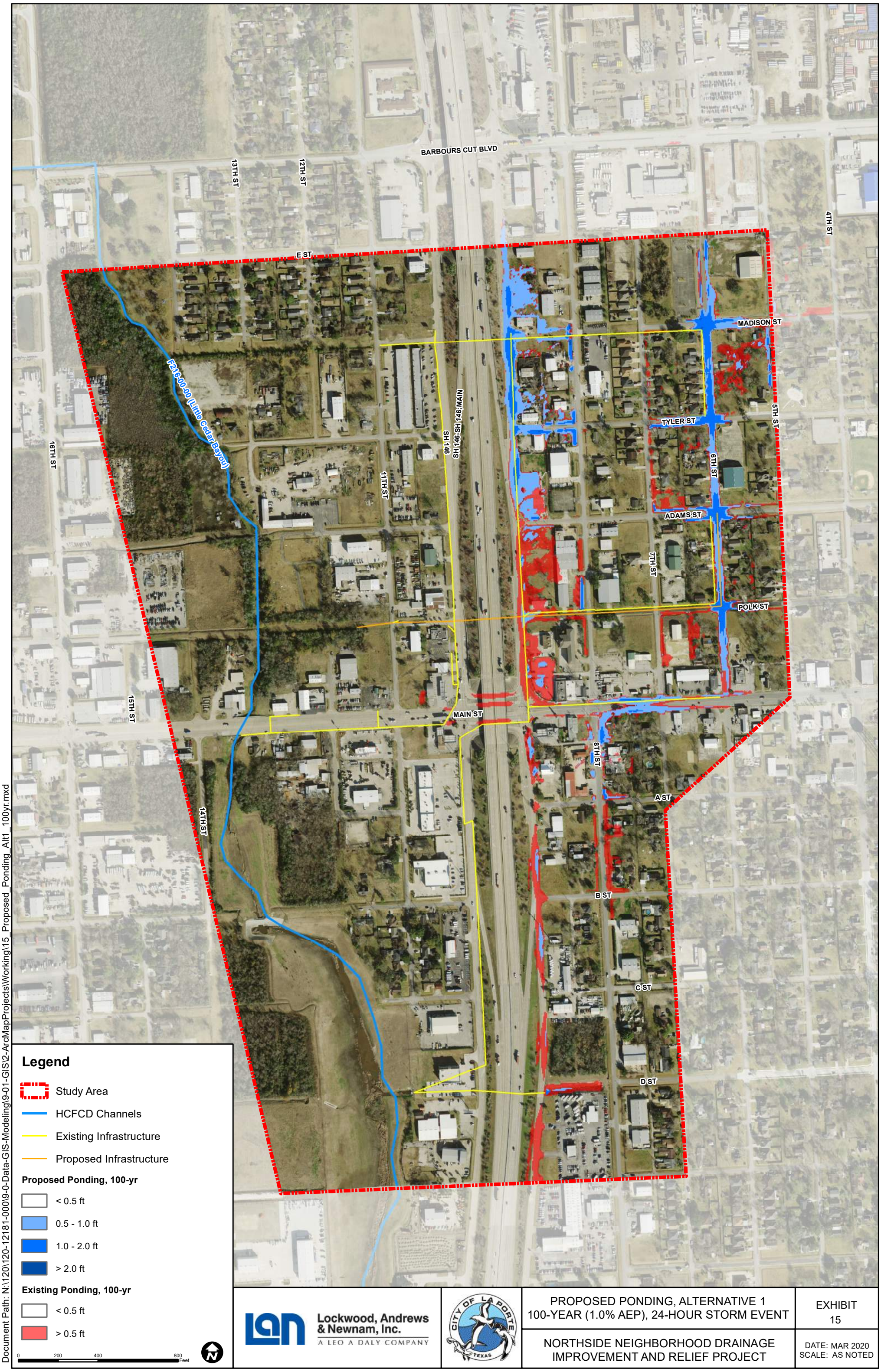

BARBOURS CUT BLVD
13TH ST
12TH ST
4TH ST
E ST
MADISON ST
F216-00-00 (Little Cedar Bayou)
SH 146-SH 146-MAIN
SH 146
11TH ST
5TH ST
TYLER ST
16TH ST
6TH ST
ADAMS ST
7TH ST
POLK ST
15TH ST
MAIN ST
8TH ST
A ST
14TH ST
B ST
C ST
D ST
Legend
Study Area
HCFCD Channels
Existing Infrastructure
Proposed Infrastructure
Proposed Ponding, 100-yr
< 0.5 ft
0.5 - 1.0 ft
1.0 - 2.0 ft
> 2.0 ft
Existing Ponding, 100-yr
< 0.5 ft
> 0.5 ft
0
200
400
800
Feet
Lockwood, Andrews & Newnam, Inc.
A LEO A DALY COMPANY
CITY OF LA PORTE
TEXAS
PROPOSED PONDING, ALTERNATIVE 1
100-YEAR (1.0% AEP), 24-HOUR STORM EVENT
EXHIBIT
15
NORTHSIDE NEIGHBORHOOD DRAINAGE
IMPROVEMENT AND RELIEF PROJECT
DATE: MAR 2020
SCALE: AS NOTED
Document Path: N:\120\120-12181-000\9-0-Data-GIS-Modeling\9-01-GIS\2-ArcMapProjects\Working\15_Proposed_Ponding_Alt1_100yr.mxd

BARBOURS CUT BLVD
13TH ST
12TH ST
4TH ST
E ST
MADISON ST
F216-00-00 (Little Cedar Bayou)
SH 146-SH 146-MAIN
SH 146
11TH ST
TYLER ST
5TH ST
16TH ST
ADAMS ST
8TH ST
7TH ST
6TH ST
POLK ST
15TH ST
MAIN ST
A ST
14TH ST
B ST
C ST
D ST

## Legend

- Study Area
- HCFCD Channels
- Existing Infrastructure
- Proposed Infrastructure

**Proposed Ponding, 5-yr**

- < 0.5 ft
- 0.5 - 1.0 ft
- 1.0 - 2.0 ft
- > 2.0 ft

**Existing Ponding, 5-yr**

- < 0.5 ft
- > 0.5 ft

0 200 400 800 Feet

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

CITY OF LA PORTE TEXAS

PROPOSED PONDING, ALTERNATIVE 2
5-YEAR (20% AEP), 24-HOUR STORM EVENT

EXHIBIT
16

NORTHSIDE NEIGHBORHOOD DRAINAGE
IMPROVEMENT AND RELIEF PROJECT

DATE: MAR 2020
SCALE: AS NOTED

Document Path: N:\120\120-12181-00\9-0-Data-GIS-Modeling\9-01-GIS\2-ArcMapProjects\Working\16_Proposed_Ponding_Alt2_5yr.mxd

BARBOURS CUT BLVD
13TH ST
12TH ST
4TH ST
E ST
MADISON ST
F216-00-00 (Little Cedar Bayou)
SH 146-SH 146-MAIN
SH 146
11TH ST
TYLER ST
5TH ST
16TH ST
ADAMS ST
8TH ST
7TH ST
6TH ST
POLK ST
15TH ST
MAIN ST
A ST
14TH ST
B ST
C ST
D ST

## Legend

- Study Area
- HCFCD Channels
- Existing Infrastructure
- Proposed Infrastructure

**Proposed Ponding, 10-yr**

- < 0.5 ft
- 0.5 - 1.0 ft
- 1.0 - 2.0 ft
- > 2.0 ft

**Existing Ponding, 10-yr**

- < 0.5 ft
- > 0.5 ft

0 200 400 800 Feet

Document Path: N:\120\120-12181-00\9-0-Data-GIS-Modeling\9-01-GIS\2-ArcMapProjects\Working\17_Proposed_Ponding_Alt2_10yr.mxd

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

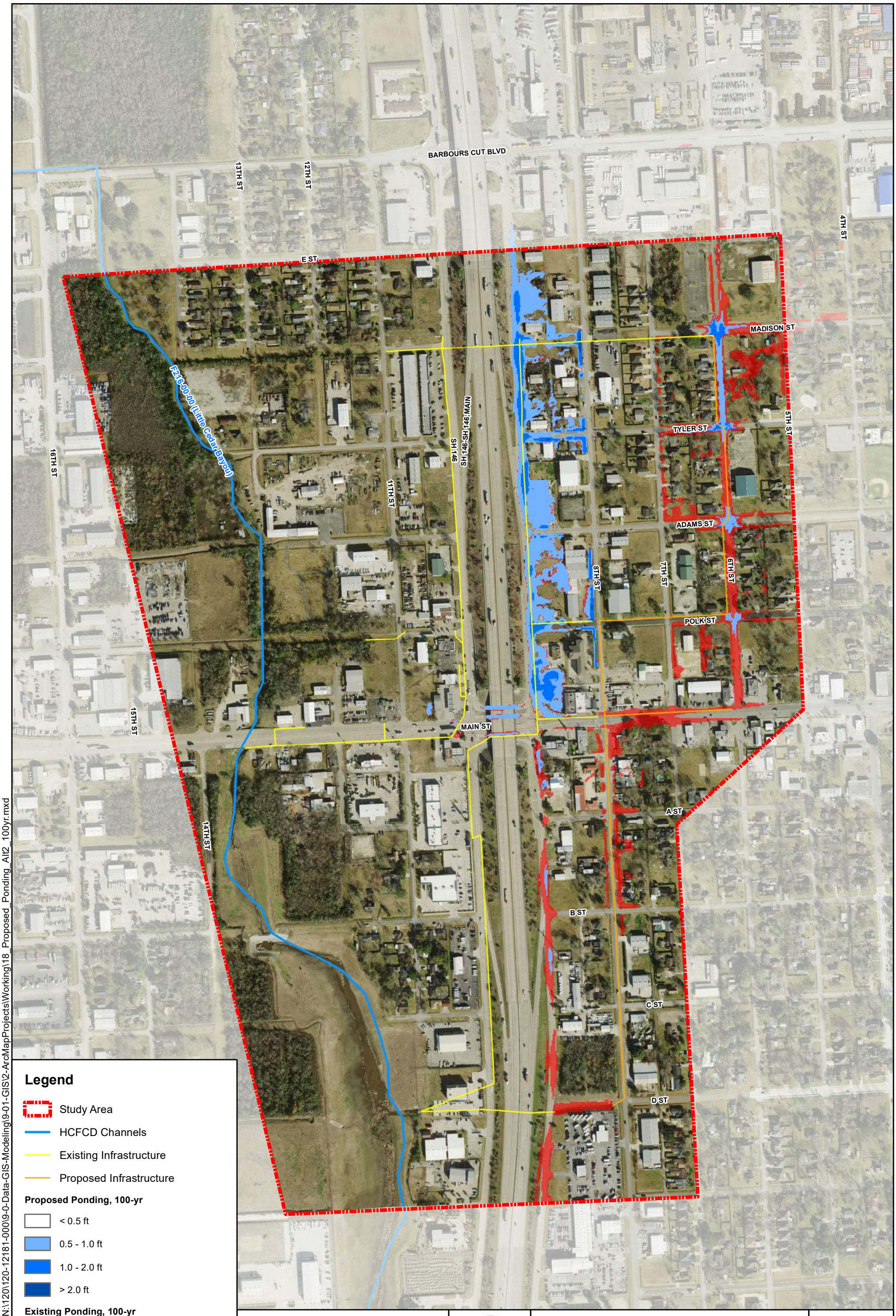
CITY OF LA PORTE TEXAS

PROPOSED PONDING, ALTERNATIVE 2
10-YEAR (10% AEP), 24-HOUR STORM EVENT

EXHIBIT
17

NORTHSIDE NEIGHBORHOOD DRAINAGE
IMPROVEMENT AND RELIEF PROJECT

DATE: MAR 2020
SCALE: AS NOTED


BARBOURS CUT BLVD
13TH ST
12TH ST
4TH ST
E ST
MADISON ST
F216-00-00 (Little Cedar Bayou)
SH 146;SH 146;MAIN
SH 146
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Legend
Study Area
HCFCD Channels
Existing Infrastructure
Proposed Infrastructure
Proposed Ponding, 100-yr
< 0.5 ft
0.5 - 1.0 ft
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> 2.0 ft
Existing Ponding, 100-yr
< 0.5 ft
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0 200 400 800 Feet
Lockwood, Andrews & Newnam, Inc.
A LEO A DALY COMPANY
CITY OF LA PORTE TEXAS
PROPOSED PONDING, ALTERNATIVE 2
100-YEAR (1.0% AEP), 24-HOUR STORM EVENT
EXHIBIT 18
NORTHSIDE NEIGHBORHOOD DRAINAGE IMPROVEMENT AND RELIEF PROJECT
DATE: MAR 2020
SCALE: AS NOTED
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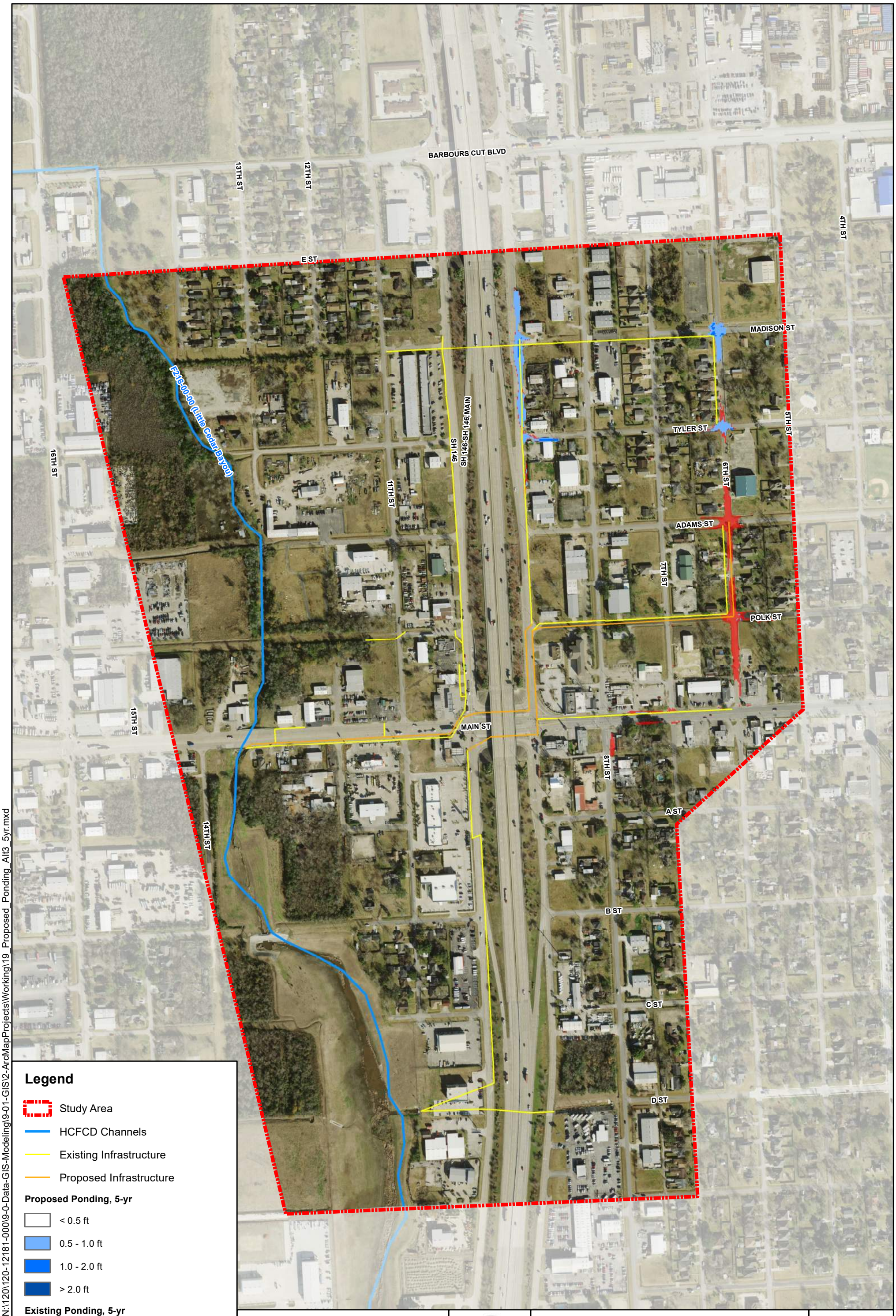
BARBOURS CUT BLVD
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Study Area
HCFCD Channels
Existing Infrastructure
Proposed Infrastructure
Proposed Ponding, 5-yr
< 0.5 ft
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Existing Ponding, 5-yr
< 0.5 ft
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Feet
Lockwood, Andrews & Newnam, Inc.
A LEO A DALY COMPANY
CITY OF LA PORTE TEXAS
PROPOSED PONDING, ALTERNATIVE 3
5-YEAR (20% AEP), 24-HOUR STORM EVENT
EXHIBIT 19
NORTHSIDE NEIGHBORHOOD DRAINAGE IMPROVEMENT AND RELIEF PROJECT
DATE: MAR 2020
SCALE: AS NOTED
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BARBOURS CUT BLVD
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16TH ST
F216-00-00 (Little Cedar Bayou)
SH 146
SH 146-SH 146-MAIN
11TH ST
15TH ST
MAIN ST
8TH ST
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14TH ST
B ST
C ST
D ST

## Legend

- Study Area
- HCFCD Channels
- Existing Infrastructure
- Proposed Infrastructure

**Proposed Ponding, 10-yr**

- < 0.5 ft
- 0.5 - 1.0 ft
- 1.0 - 2.0 ft
- > 2.0 ft

**Existing Ponding, 10-yr**

- < 0.5 ft
- > 0.5 ft

0 200 400 800 Feet

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

CITY OF LA PORTE TEXAS

PROPOSED PONDING, ALTERNATIVE 3
10-YEAR (10% AEP), 24-HOUR STORM EVENT

EXHIBIT 20

NORTHSIDE NEIGHBORHOOD DRAINAGE IMPROVEMENT AND RELIEF PROJECT

DATE: MAR 2020
SCALE: AS NOTED

Document Path: N:\120\120-12181-00\9-0-Data-GIS-Modeling\9-01-GIS\2-ArcMapProjects\Working\20_Proposed_Ponding_Alt3_10yr.mxd

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F216-00-00 (Little Cedar Bayou)
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11TH ST
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MAIN ST
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A ST
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D ST

## Legend

- Study Area
- HCFCD Channels
- Existing Infrastructure
- Proposed Infrastructure

**Proposed Ponding, 100-yr**

- < 0.5 ft
- 0.5 - 1.0 ft
- 1.0 - 2.0 ft
- > 2.0 ft

**Existing Ponding, 100-yr**

- < 0.5 ft
- > 0.5 ft

0 200 400 800 Feet

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

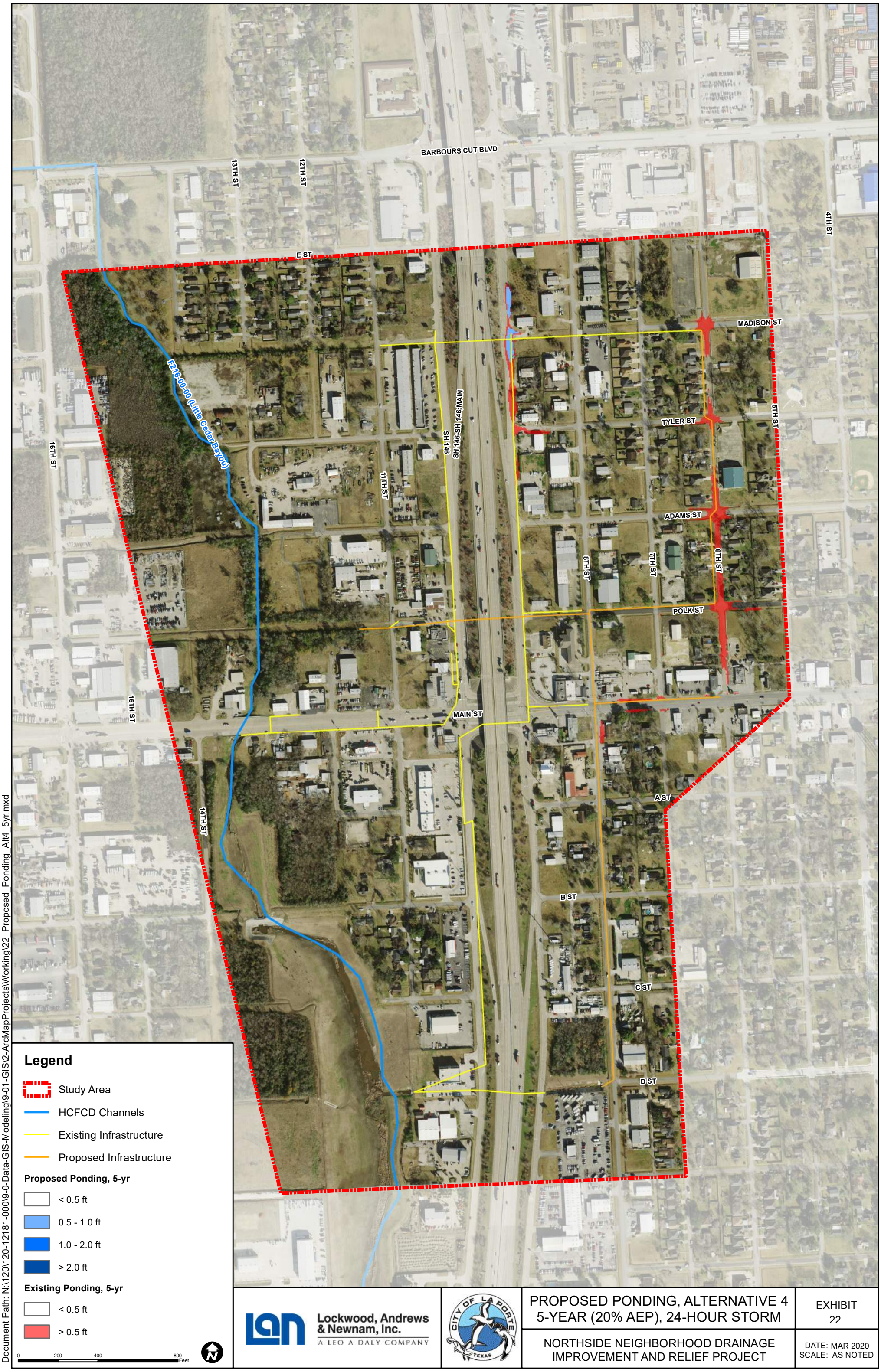
CITY OF LA PORTE TEXAS

PROPOSED PONDING, ALTERNATIVE 3
100-YEAR (1.0% AEP), 24-HOUR STORM EVENT

EXHIBIT
21

NORTHSIDE NEIGHBORHOOD DRAINAGE
IMPROVEMENT AND RELIEF PROJECT

DATE: MAR 2020
SCALE: AS NOTED


BARBOURS CUT BLVD
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F216-00-00 (Little Cedar Bayou)
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Study Area
HCFCD Channels
Existing Infrastructure
Proposed Infrastructure
Proposed Ponding, 5-yr
< 0.5 ft
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> 2.0 ft
Existing Ponding, 5-yr
< 0.5 ft
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0 200 400 800 Feet
Lockwood, Andrews & Newnam, Inc.
A LEO A DALY COMPANY
CITY OF LA PORTE TEXAS
PROPOSED PONDING, ALTERNATIVE 4
5-YEAR (20% AEP), 24-HOUR STORM
NORTHSIDE NEIGHBORHOOD DRAINAGE IMPROVEMENT AND RELIEF PROJECT
EXHIBIT 22
DATE: MAR 2020
SCALE: AS NOTED
Document Path: N:\120\120-12181-00019-0-Data-GIS-Modeling\9-01-GIS\2-ArcMapProjects\Working\22_Proposed_Ponding_Alt4_5yr.mxd


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Study Area
HCFCD Channels
Existing Infrastructure
Proposed Infrastructure
Proposed Ponding, 10-yr
< 0.5 ft
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1.0 - 2.0 ft
> 2.0 ft
Existing Ponding, 10-yr
< 0.5 ft
> 0.5 ft
0 200 400 800 Feet
Lockwood, Andrews & Newnam, Inc.
A LEO A DALY COMPANY
CITY OF LA PORTE TEXAS
PROPOSED PONDING, ALTERNATIVE 4
10-YEAR (10% AEP), 24-HOUR STORM
EXHIBIT 23
NORTHSIDE NEIGHBORHOOD DRAINAGE IMPROVEMENT AND RELIEF PROJECT
DATE: MAR 2020
SCALE: AS NOTED
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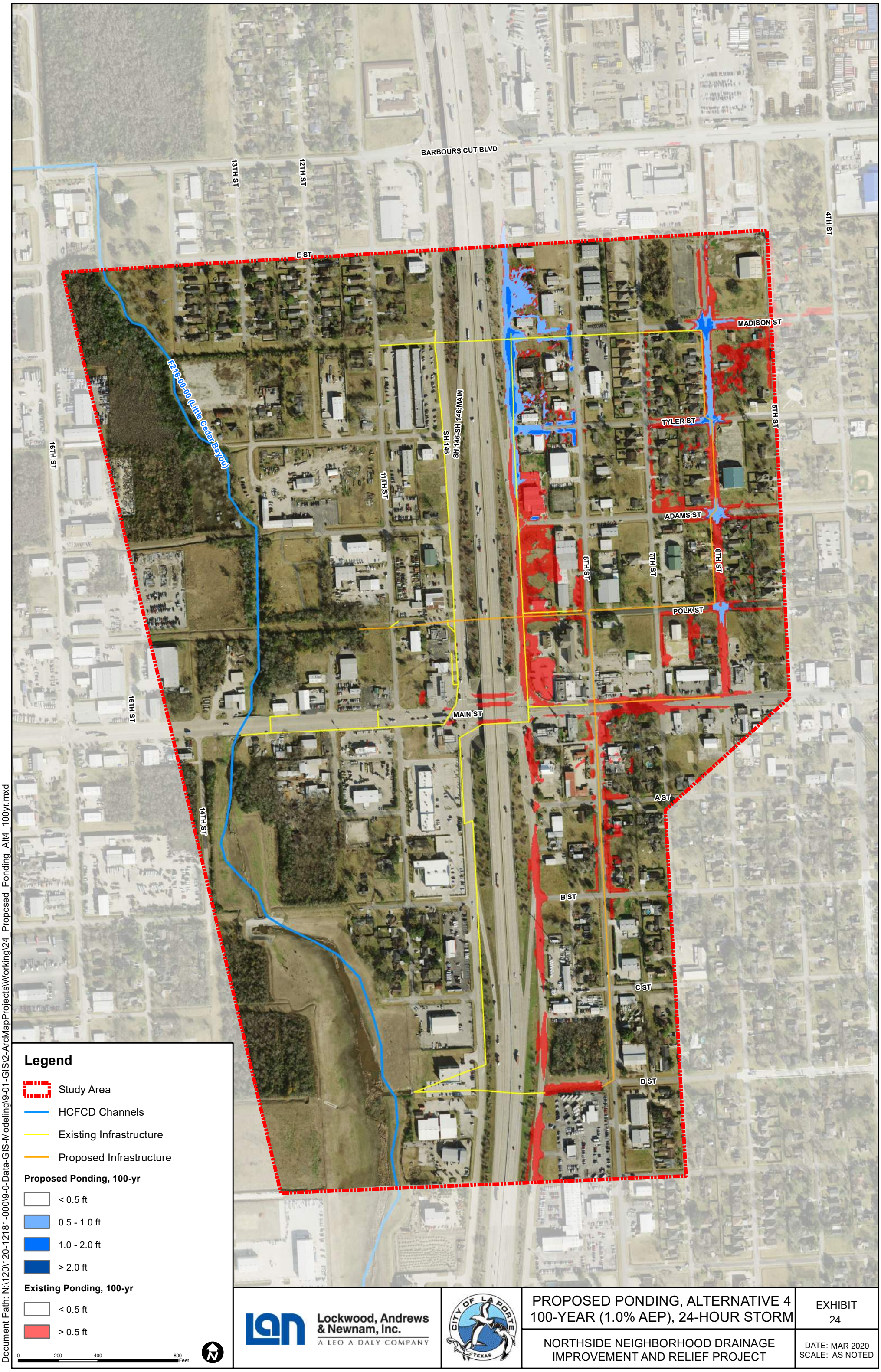
BARBOURS CUT BLVD
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Legend
Study Area
HCFCD Channels
Existing Infrastructure
Proposed Infrastructure
Proposed Ponding, 100-yr
< 0.5 ft
0.5 - 1.0 ft
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Existing Ponding, 100-yr
< 0.5 ft
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0 200 400 800 Feet
Lockwood, Andrews & Newnam, Inc.
A LEO A DALY COMPANY
CITY OF LA PORTE TEXAS
PROPOSED PONDING, ALTERNATIVE 4
100-YEAR (1.0% AEP), 24-HOUR STORM
EXHIBIT 24
NORTHSIDE NEIGHBORHOOD DRAINAGE IMPROVEMENT AND RELIEF PROJECT
DATE: MAR 2020
SCALE: AS NOTED


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

CITY OF LA PORTE TEXAS

PROPOSED PONDING, ALTERNATIVE 5
5-YEAR (20% AEP), 24-HOUR STORM

NORTHSIDE NEIGHBORHOOD DRAINAGE IMPROVEMENT AND RELIEF PROJECT

EXHIBIT 25

DATE: MAR 2020
SCALE: AS NOTED


BARBOURS CUT BLVD
13TH ST
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MADISON ST
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F216-00-00 (Little Cedar Bayou)
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ADAMS ST
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Legend
Study Area
HCFCD Channels
Existing Infrastructure
Proposed Infrastructure
Proposed Ponding, 10-yr
< 0.5 ft
0.5 - 1.0 ft
1.0 - 2.0 ft
> 2.0 ft
Existing Ponding, 10-yr
< 0.5 ft
> 0.5 ft
0 200 400 800 Feet
Lockwood, Andrews & Newnam, Inc.
A LEO A DALY COMPANY
CITY OF LA PORTE TEXAS
PROPOSED PONDING, ALTERNATIVE 5
10-YEAR (10% AEP), 24-HOUR STORM
EXHIBIT 26
NORTHSIDE NEIGHBORHOOD DRAINAGE IMPROVEMENT AND RELIEF PROJECT
DATE: MAR 2020
SCALE: AS NOTED
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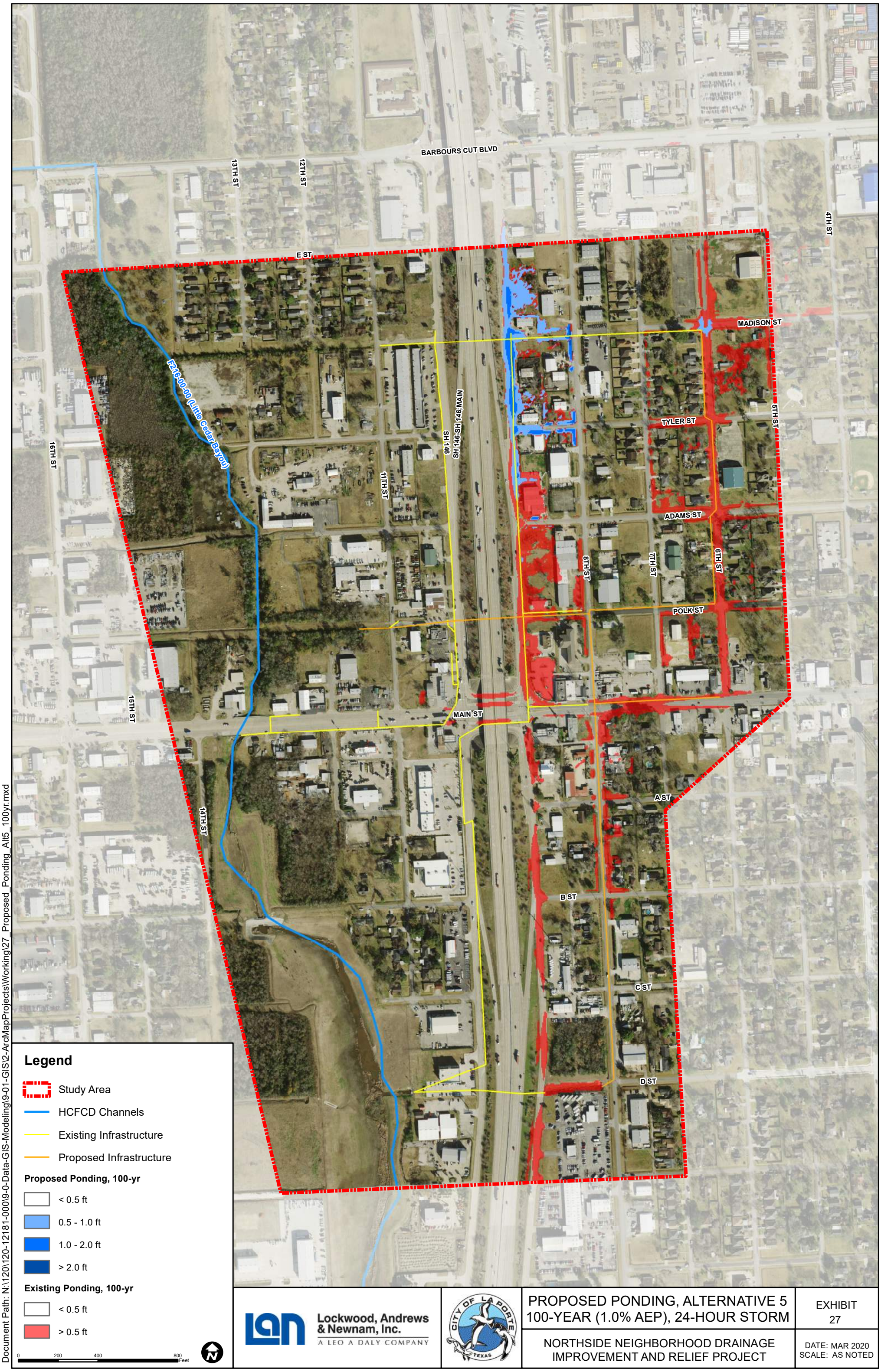
BARBOURS CUT BLVD
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ADAMS ST
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Legend
Study Area
HCFCD Channels
Existing Infrastructure
Proposed Infrastructure
Proposed Ponding, 100-yr
< 0.5 ft
0.5 - 1.0 ft
1.0 - 2.0 ft
> 2.0 ft
Existing Ponding, 100-yr
< 0.5 ft
> 0.5 ft
0 200 400 800 Feet
Lockwood, Andrews & Newnam, Inc.
A LEO A DALY COMPANY
CITY OF LA PORTE TEXAS
PROPOSED PONDING, ALTERNATIVE 5
100-YEAR (1.0% AEP), 24-HOUR STORM
EXHIBIT 27
NORTHSIDE NEIGHBORHOOD DRAINAGE IMPROVEMENT AND RELIEF PROJECT
DATE: MAR 2020
SCALE: AS NOTED
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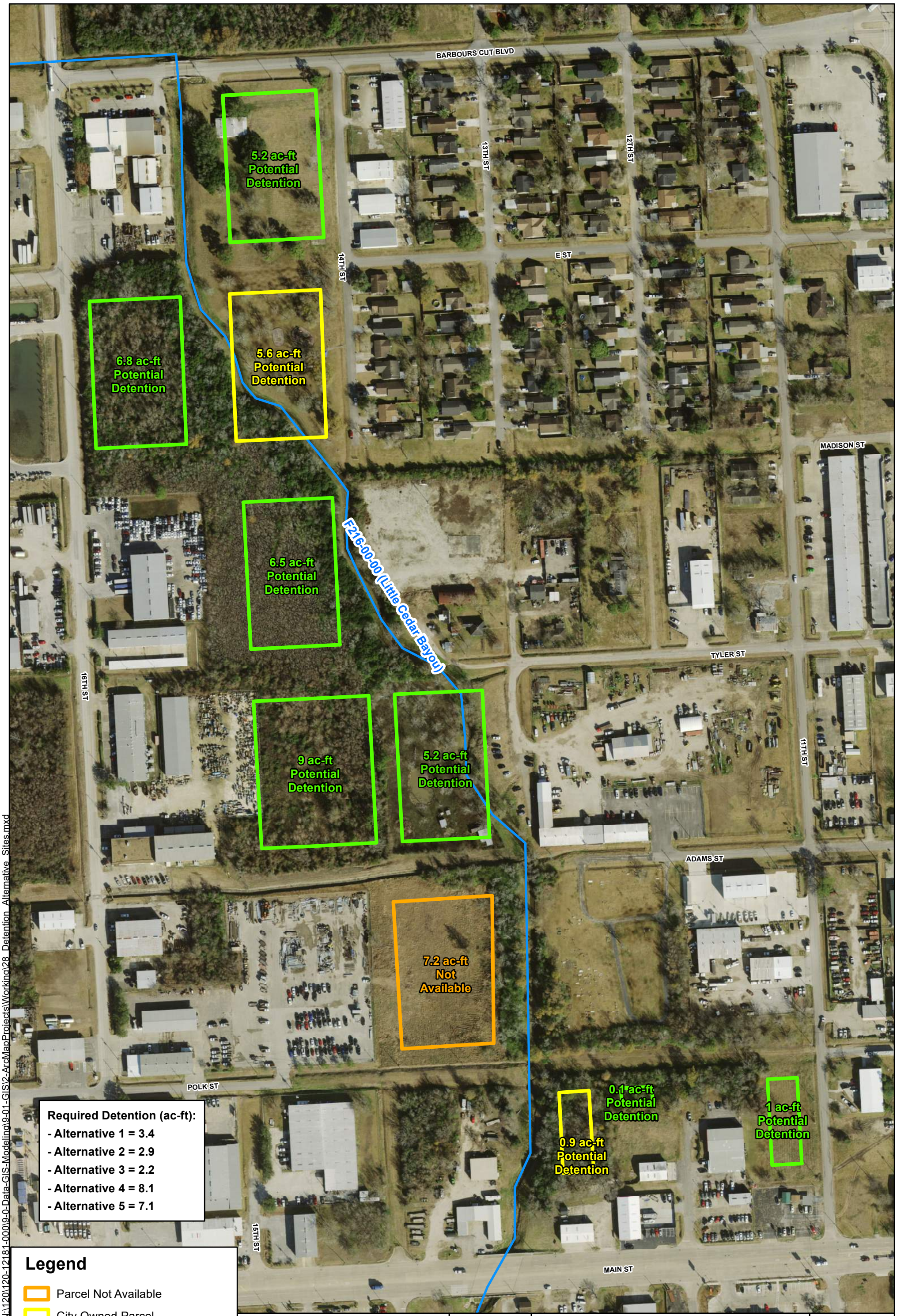


Lockwood, Andrews & Newnam, Inc.
A LEO A DALY COMPANY

CITY OF LA PORTE TEXAS

# PARCELS EVALUATED FOR POTENTIAL DETENTION

NORTHSIDE NEIGHBORHOOD DRAINAGE IMPROVEMENT AND RELIEF PROJECT

EXHIBIT 28

DATE: MAR 2020
SCALE: AS NOTED

# APPENDIX B

# City of La Porte
## Northside Drainage Improvement & Relief Project - Alternative 1, Phase 1
## Cost Estimate

| Item # | Description | Unit | Quantity | Unit Price | Amount |
|---|---|---|---|---|---|
| 1 | ENGINEER FEE | LS | 1 | $26,400 | $26,400 |
| 2 | GEOTECHNICAL AND SURVEYING FEE | LS | 1 | $5,280 | $5,280 |
| 3 | CONSTRUCTION MANAGEMENT FEE | LS | 1 | $13,200 | $13,200 |
| 4 | MATERIAL TESTING | LS | 1 | $2,640 | $2,640 |
| **Soft Cost Total** | | | | | **$47,520** |
| 5 | MOBILIZATION AND DEMOBILIZATION | LS | 1 | $7,805 | $7,805 |
| 6 | STORMWATER POLLUTION PREVENTION | LS | 1 | $1,189 | $1,189 |
| 7 | TRAFFIC CONTROL AND SIGNAGE | EA | 1 | $35,000 | $35,000 |
| 8 | UTILITY RELOCATION FEE | EA | 1 | $40,000 | $40,000 |
| 9 | EXCAVATION (ROADWAY) | CY | 277 | $12 | $3,327 |
| 10 | REMOVING STAB BASE/ASPH PAV (6"-12") | SY | 33 | $4 | $126 |
| 11 | CONC PVMT (CONT REINF - CRCP) (7") | SY | 33 | $70 | $2,333 |
| 12 | CONC BOX CULV (4 FT X 3 FT) | LF | 372 | $280 | $104,160 |
| 13 | INLET (COMPL)(TY A) | EA | 1 | $4,000 | $4,000 |
| 14 | MANHOLE (COMPL)(SPECIAL) | EA | 1 | $5,000 | $5,000 |
| **Construction Subtotal** | | | | | **$203,000** |
| **Construction Contingency (30%)** | | | | | **$61,000** |
| | | | | | |
| **Construction Total** | | | | | **$264,000** |
| | | | | | |
| **Total Cost** | | | | | **$312,000** |

Any and all estimates provided by Consultant are opinions of probable costs based on information that is reasonably available to Consultant. Client acknowledges and agrees that Consultant has no control over the cost of labor, materials, equipment or services, or the means and methods used by others in determining prices, competitive bidding, or market conditions. Client further acknowledges and understands that proposals, bids, and/or actual project costs may, and probably will vary from the estimates and opinions of probable costs provided by Consultant under the Agreement.

# City of La Porte
## Northside Drainage Improvement & Relief Project - Alternative 1, Phase 2
## Cost Estimate

| Item # | Description | Unit | Quantity | Unit Price | Amount |
|---|---|---|---|---|---|
| 1 | ENGINEER FEE | LS | 1 | $212,700 | $212,700 |
| 2 | GEOTECHNICAL AND SURVEYING FEE | LS | 1 | $42,540 | $42,540 |
| 3 | CONSTRUCTION MANAGEMENT FEE | LS | 1 | $106,350 | $106,350 |
| 4 | MATERIAL TESTING | LS | 1 | $21,270 | $21,270 |
| **Soft Cost Total** | | | | | **$382,860** |
| 5 | LAND ACQUISITION, DETENTION SITE | EA | 1 | $84,552 | $84,552 |
| 6 | MOBILIZATION AND DEMOBILIZATION | LS | 1 | $59,669 | $59,669 |
| 7 | STORMWATER POLLUTION PREVENTION | LS | 1 | $14,027 | $14,027 |
| 8 | TRAFFIC CONTROL AND SIGNAGE | EA | 1 | $35,000 | $35,000 |
| 9 | UTILITY RELOCATION FEE | EA | 1 | $40,000 | $40,000 |
| 10 | EXCAVATION (ROADWAY) | CY | 450 | $12 | $5,402 |
| 11 | REMOVING STAB BASE/ASPH PAV (6"-12") | SY | 403 | $4 | $1,522 |
| 12 | CONC PVMT (CONT REINF - CRCP) (7") | SY | 403 | $70 | $28,187 |
| 13 | BORING/INSTALLATION OF 4 FT X 3 FT RCB | LF | 700 | $1,300 | $910,000 |
| 14 | CONC BOX CULV (4 FT X 3 FT) | LF | 1,304 | $280 | $365,120 |
| 15 | INLET (COMPL)(TY A) | EA | 2 | $4,000 | $8,000 |
| 16 | MANHOLE (COMPL)(SPECIAL) | EA | 1 | $5,000 | $5,000 |
| 17 | EXCAVATION, DETENTION SITE | CY | 6,622 | $12 | $79,467 |
| **Construction Subtotal** | | | | | **$1,636,000** |
| **Construction Contingency (30%)** | | | | | **$491,000** |
| | | | | | |
| **Construction Total** | | | | | **$2,127,000** |
| | | | | | |
| **Total Cost** | | | | | **$2,510,000** |

Cost of land acquisition was calculated as three times the current HCAD market value of a nearby, open parcel of land.

Any and all estimates provided by Consultant are opinions of probable costs based on information that is reasonably available to Consultant. Client acknowledges and agrees that Consultant has no control over the cost of labor, materials, equipment or services, or the means and methods used by others in determining prices, competitive bidding, or market conditions. Client further acknowledges and understands that proposals, bids, and/or actual project costs may, and probably will vary from the estimates and opinions of probable costs provided by Consultant under the Agreement.

# City of La Porte
## Northside Drainage Improvement & Relief Project - Alternative 1, Phase 3
## Cost Estimate

| Item # | Description | Unit | Quantity | Unit Price | Amount |
|---|---|---|---|---|---|
| 1 | ENGINEER FEE | LS | 1 | $143,200 | $143,200 |
| 2 | GEOTECHNICAL AND SURVEYING FEE | LS | 1 | $28,640 | $28,640 |
| 3 | CONSTRUCTION MANAGEMENT FEE | LS | 1 | $71,600 | $71,600 |
| 4 | MATERIAL TESTING | LS | 1 | $14,320 | $14,320 |
| **Soft Cost Total** | | | | | **$257,760** |
| 5 | MOBILIZATION AND DEMOBILIZATION | LS | 1 | $42,332 | $42,332 |
| 6 | STORMWATER POLLUTION PREVENTION | LS | 1 | $9,736 | $9,736 |
| 7 | TRAFFIC CONTROL AND SIGNAGE | EA | 1 | $35,000 | $35,000 |
| 8 | UTILITY RELOCATION FEE | EA | 1 | $40,000 | $40,000 |
| 9 | EXCAVATION (ROADWAY) | CY | 2,050 | $12 | $24,597 |
| 10 | REMOVING CONC (PAV) | SY | 595 | $10 | $5,947 |
| 11 | REMOVING STAB BASE/ASPH PAV (6"-12") | SY | 1,239 | $4 | $4,682 |
| 12 | CONC PVMT (CONT REINF - CRCP) (7") | SY | 1,833 | $70 | $128,333 |
| 13 | CONC BOX CULV (4 FT X 3 FT) | LF | 2,750 | $280 | $770,000 |
| 14 | INLET (COMPL)(TY A) | EA | 5 | $4,000 | $20,000 |
| 15 | MANHOLE (COMPL)(SPECIAL) | EA | 4 | $5,000 | $20,000 |
| **Construction Subtotal** | | | | | **$1,101,000** |
| **Construction Contingency (30%)** | | | | | **$331,000** |
| | | | | | |
| **Construction Total** | | | | | **$1,432,000** |
| | | | | | |
| **Total Cost** | | | | | **$1,690,000** |

Any and all estimates provided by Consultant are opinions of probable costs based on information that is reasonably available to Consultant. Client acknowledges and agrees that Consultant has no control over the cost of labor, materials, equipment or services, or the means and methods used by others in determining prices, competitive bidding, or market conditions. Client further acknowledges and understands that proposals, bids, and/or actual project costs may, and probably will vary from the estimates and opinions of probable costs provided by Consultant under the Agreement.

# City of La Porte
## Northside Drainage Improvement & Relief Project - Alternative 2, Phase 1
## Cost Estimate

| Item # | Description | Unit | Quantity | Unit Price | Amount |
|---|---|---|---|---|---|
| 1 | ENGINEER FEE | LS | 1 | $18,800 | $18,800 |
| 2 | GEOTECHNICAL AND SURVEYING FEE | LS | 1 | $3,760 | $3,760 |
| 3 | CONSTRUCTION MANAGEMENT FEE | LS | 1 | $9,400 | $9,400 |
| 4 | MATERIAL TESTING | LS | 1 | $1,880 | $1,880 |
| **Soft Cost Total** | | | | | **$33,840** |
| 5 | MOBILIZATION AND DEMOBILIZATION | LS | 1 | $5,533 | $5,533 |
| 6 | STORMWATER POLLUTION PREVENTION | LS | 1 | $1,370 | $1,370 |
| 7 | TRAFFIC CONTROL AND SIGNAGE | EA | 1 | $35,000 | $35,000 |
| 8 | UTILITY RELOCATION FEE | EA | 1 | $40,000 | $40,000 |
| 9 | EXCAVATION (ROADWAY) | CY | 167 | $12 | $2,000 |
| 10 | REMOVING STAB BASE/ASPH PAV (6"-12") | SY | 27 | $4 | $101 |
| 11 | CONC PVMT (CONT REINF - CRCP) (7") | SY | 27 | $70 | $1,867 |
| 12 | CONC BOX CULV (6 FT X 6 FT) | LF | 100 | $490 | $49,000 |
| 13 | INLET (COMPL)(TY A) | EA | 1 | $4,000 | $4,000 |
| 14 | MANHOLE (COMPL)(SPECIAL) | EA | 1 | $5,000 | $5,000 |
| **Construction Subtotal** | | | | | **$144,000** |
| **Construction Contingency (30%)** | | | | | **$44,000** |
| | | | | | |
| **Construction Total** | | | | | **$188,000** |
| | | | | | |
| **Total Cost** | | | | | **$222,000** |

Any and all estimates provided by Consultant are opinions of probable costs based on information that is reasonably available to Consultant. Client acknowledges and agrees that Consultant has no control over the cost of labor, materials, equipment or services, or the means and methods used by others in determining prices, competitive bidding, or market conditions. Client further acknowledges and understands that proposals, bids, and/or actual project costs may, and probably will vary from the estimates and opinions of probable costs provided by Consultant under the Agreement.

# City of La Porte
## Northside Drainage Improvement & Relief Project - Alternative 2, Phase 2
## Cost Estimate

| Item # | Description | Unit | Quantity | Unit Price | Amount |
|---|---|---|---|---|---|
| 1 | ENGINEER FEE | LS | 1 | $230,800 | $230,800 |
| 2 | GEOTECHNICAL AND SURVEYING FEE | LS | 1 | $46,160 | $46,160 |
| 3 | CONSTRUCTION MANAGEMENT FEE | LS | 1 | $115,400 | $115,400 |
| 4 | MATERIAL TESTING | LS | 1 | $23,080 | $23,080 |
| **Soft Cost Total** | | | | | **$415,440** |
| 5 | LAND ACQUISITION, DETENTION SITE | EA | 1 | $73,071 | $73,071 |
| 5 | MOBILIZATION AND DEMOBILIZATION | LS | 1 | $62,802 | $62,802 |
| 6 | STORMWATER POLLUTION PREVENTION | LS | 1 | $15,545 | $15,545 |
| 7 | TRAFFIC CONTROL AND SIGNAGE | EA | 1 | $35,000 | $35,000 |
| 8 | UTILITY RELOCATION FEE | EA | 1 | $40,000 | $40,000 |
| 9 | EXCAVATION (ROADWAY) | CY | 3,883 | $12 | $46,600 |
| 10 | REMOVING STAB BASE/ASPH PAV (6"-12") | SY | 3,107 | $4 | $11,743 |
| 11 | CONC PVMT (CONT REINF - CRCP) (7") | SY | 3,107 | $70 | $217,467 |
| 12 | CONC BOX CULV (6 FT X 6 FT) | LF | 2,330 | $490 | $1,141,700 |
| 13 | INLET (COMPL)(TY A) | EA | 8 | $4,000 | $32,000 |
| 14 | MANHOLE (COMPL)(SPECIAL) | EA | 6 | $5,000 | $30,000 |
| 15 | EXCAVATION, DETENTION SITE | CY | 5,723 | $12 | $68,677 |
| **Construction Subtotal** | | | | | **$1,775,000** |
| **Construction Contingency (30%)** | | | | | **$533,000** |
| | | | | | |
| **Construction Total** | | | | | **$2,308,000** |
| | | | | | |
| **Total Cost** | | | | | **$2,724,000** |

Cost of land acquisition was calculated as three times the current HCAD market value of a nearby, open parcel of land.

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# City of La Porte
## Northside Drainage Improvement & Relief Project - Alternative 2, Phase 3
## Cost Estimate

| Item # | Description | Unit | Quantity | Unit Price | Amount |
|---|---|---|---|---|---|
| 1 | ENGINEER FEE | LS | 1 | $242,200 | $242,200 |
| 2 | GEOTECHNICAL AND SURVEYING FEE | LS | 1 | $48,440 | $48,440 |
| 3 | CONSTRUCTION MANAGEMENT FEE | LS | 1 | $121,100 | $121,100 |
| 4 | MATERIAL TESTING | LS | 1 | $24,220 | $24,220 |
| **Soft Cost Total** | | | | | **$435,960** |
| 5 | MOBILIZATION AND DEMOBILIZATION | LS | 1 | $71,643 | $71,643 |
| 6 | STORMWATER POLLUTION PREVENTION | LS | 1 | $17,733 | $17,733 |
| 7 | TRAFFIC CONTROL AND SIGNAGE | EA | 1 | $35,000 | $35,000 |
| 8 | UTILITY RELOCATION FEE | EA | 1 | $40,000 | $40,000 |
| 9 | EXCAVATION (ROADWAY) | CY | 3,462 | $12 | $41,548 |
| 10 | REMOVING CONC (PAV) | SY | 1,863 | $10 | $18,627 |
| 11 | REMOVING STAB BASE/ASPH PAV (6"-12") | SY | 1,683 | $4 | $6,360 |
| 12 | CONC PVMT (CONT REINF - CRCP) (7") | SY | 3,545 | $70 | $248,173 |
| 13 | CONC BOX CULV (4 FT X 3 FT) | LF | 4,688 | $280 | $1,312,640 |
| 14 | INLET (COMPL)(TY A) | EA | 9 | $4,000 | $36,000 |
| 15 | MANHOLE (COMPL)(SPECIAL) | EA | 7 | $5,000 | $35,000 |
| **Construction Subtotal** | | | | | **$1,863,000** |
| **Construction Contingency (30%)** | | | | | **$559,000** |
| | | | | | |
| **Construction Total** | | | | | **$2,422,000** |
| | | | | | |
| **Total Cost** | | | | | **$2,858,000** |

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# City of La Porte
## Northside Drainage Improvement & Relief Project - Alternative 3, Phase 1
## Cost Estimate

| Item # | Description | Unit | Quantity | Unit Price | Amount |
|---|---|---|---|---|---|
| 1 | ENGINEER FEE | LS | 1 | $25,800 | $25,800 |
| 2 | GEOTECHNICAL AND SURVEYING FEE | LS | 1 | $5,160 | $5,160 |
| 3 | CONSTRUCTION MANAGEMENT FEE | LS | 1 | $12,900 | $12,900 |
| 4 | MATERIAL TESTING | LS | 1 | $2,580 | $2,580 |
| **Soft Cost Total** | | | | | **$46,440** |
| 5 | MOBILIZATION AND DEMOBILIZATION | LS | 1 | $7,605 | $7,605 |
| 6 | STORMWATER POLLUTION PREVENTION | LS | 1 | $1,140 | $1,140 |
| 7 | TRAFFIC CONTROL AND SIGNAGE | EA | 1 | $35,000 | $35,000 |
| 8 | UTILITY RELOCATION FEE | EA | 1 | $40,000 | $40,000 |
| 9 | EXCAVATION (ROADWAY) | CY | 278 | $12 | $3,333 |
| 10 | REMOVING CONC (PAV) | SY | 333 | $10 | $3,333 |
| 11 | CONC PVMT (CONT REINF - CRCP) (7") | SY | 333 | $70 | $23,333 |
| 12 | CONC BOX CULV (4 FT X 4 FT) | LF | 250 | $307 | $76,873 |
| 13 | INLET (COMPL)(TY A) | EA | 1 | $4,000 | $4,000 |
| 14 | MANHOLE (COMPL)(SPECIAL) | EA | 1 | $5,000 | $3,125 |
| **Construction Subtotal** | | | | | **$198,000** |
| **Construction Contingency (30%)** | | | | | **$60,000** |
| | | | | | |
| **Construction Total** | | | | | **$258,000** |
| | | | | | |
| **Total Cost** | | | | | **$305,000** |

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# City of La Porte
## Northside Drainage Improvement & Relief Project - Alternative 3, Phase 2
## Cost Estimate

| Item # | Description | Unit | Quantity | Unit Price | Amount |
|---|---|---|---|---|---|
| 1 | ENGINEER FEE | LS | 1 | $182,000 | $182,000 |
| 2 | GEOTECHNICAL AND SURVEYING FEE | LS | 1 | $36,400 | $36,400 |
| 3 | CONSTRUCTION MANAGEMENT FEE | LS | 1 | $91,000 | $91,000 |
| 4 | MATERIAL TESTING | LS | 1 | $18,200 | $18,200 |
| **Soft Cost Total** | | | | | **$327,600** |
| 5 | LAND ACQUISITION, DETENTION SITE | EA | 1 | $54,043 | $54,043 |
| 6 | MOBILIZATION AND DEMOBILIZATION | LS | 1 | $53,845 | $53,845 |
| 7 | STORMWATER POLLUTION PREVENTION | LS | 1 | $12,586 | $12,586 |
| 8 | TRAFFIC CONTROL AND SIGNAGE | EA | 1 | $35,000 | $35,000 |
| 9 | UTILITY RELOCATION FEE | EA | 1 | $40,000 | $40,000 |
| 10 | EXCAVATION (ROADWAY) | CY | 1,709 | $12 | $20,510 |
| 11 | REMOVING CONC (PAV) | SY | 3,216 | $10 | $32,164 |
| 12 | CONC PVMT (CONT REINF - CRCP) (7") | SY | 3,216 | $70 | $225,145 |
| 13 | CONC BOX CULV (4 FT X 4 FT) | LF | 1,538 | $307 | $473,003 |
| 14 | CONC BOX CULV (6 FT X 5 FT) | LF | 874 | $473 | $413,708 |
| 15 | INLET (COMPL)(TY A) | EA | 6 | $4,000 | $24,000 |
| 16 | MANHOLE (COMPL)(SPECIAL) | EA | 4 | $5,000 | $19,228 |
| 17 | EXCAVATION, DETENTION SITE | CY | 4,233 | $12 | $50,793 |
| **Construction Subtotal** | | | | | **$1,400,000** |
| **Construction Contingency (30%)** | | | | | **$420,000** |
| | | | | | |
| **Construction Total** | | | | | **$1,820,000** |
| | | | | | |
| **Total Cost** | | | | | **$2,148,000** |

Cost of land acquisition was calculated as three times the current HCAD market value of a nearby, open parcel of land.

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# City of La Porte
## Northside Drainage Improvement & Relief Project - Alternative 3, Phase 3
## Cost Estimate

| Item # | Description | Unit | Quantity | Unit Price | Amount |
|---|---|---|---|---|---|
| 1 | ENGINEER FEE | LS | 1 | $151,800 | $151,800 |
| 2 | GEOTECHNICAL AND SURVEYING FEE | LS | 1 | $30,360 | $30,360 |
| 3 | CONSTRUCTION MANAGEMENT FEE | LS | 1 | $75,900 | $75,900 |
| 4 | MATERIAL TESTING | LS | 1 | $15,180 | $15,180 |
| **Soft Cost Total** | | | | | **$273,240** |
| 5 | MOBILIZATION AND DEMOBILIZATION | LS | 1 | $44,853 | $44,853 |
| 6 | STORMWATER POLLUTION PREVENTION | LS | 1 | $10,360 | $10,360 |
| 7 | TRAFFIC CONTROL AND SIGNAGE | EA | 1 | $35,000 | $35,000 |
| 8 | UTILITY RELOCATION FEE | EA | 1 | $40,000 | $40,000 |
| 9 | EXCAVATION (ROADWAY) | CY | 2,187 | $12 | $26,243 |
| 10 | REMOVING CONC (PAV) | SY | 625 | $10 | $6,246 |
| 11 | REMOVING STAB BASE/ASPH PAV (6"-12") | SY | 1,331 | $4 | $5,033 |
| 12 | CONC PVMT (CONT REINF - CRCP) (7") | SY | 1,956 | $70 | $136,920 |
| 15 | CONC BOX CULV (4 FT X 3 FT) | LF | 2,934 | $280 | $821,520 |
| 16 | INLET (COMPL)(TY A) | EA | 5 | $4,000 | $20,000 |
| 17 | MANHOLE (COMPL)(SPECIAL) | EA | 4 | $5,000 | $20,000 |
| **Construction Subtotal** | | | | | **$1,167,000** |
| **Construction Contingency (30%)** | | | | | **$351,000** |
| | | | | | |
| **Construction Total** | | | | | **$1,518,000** |
| | | | | | |
| **Total Cost** | | | | | **$1,792,000** |

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# City of La Porte
## Northside Drainage Improvement & Relief Project - Alternative 4, Phase 1
## Cost Estimate

| Item # | Description | Unit | Quantity | Unit Price | Amount |
|---|---|---|---|---|---|
| 1 | ENGINEER FEE | LS | 1 | $26,400 | $26,400 |
| 2 | GEOTECHNICAL AND SURVEYING FEE | LS | 1 | $5,280 | $5,280 |
| 3 | CONSTRUCTION MANAGEMENT FEE | LS | 1 | $13,200 | $13,200 |
| 4 | MATERIAL TESTING | LS | 1 | $2,640 | $2,640 |
| **Soft Cost Total** | | | | | **$47,520** |
| 5 | MOBILIZATION AND DEMOBILIZATION | LS | 1 | $7,805 | $7,805 |
| 6 | STORMWATER POLLUTION PREVENTION | LS | 1 | $1,189 | $1,189 |
| 7 | TRAFFIC CONTROL AND SIGNAGE | EA | 1 | $35,000 | $35,000 |
| 8 | UTILITY RELOCATION FEE | EA | 1 | $40,000 | $40,000 |
| 9 | EXCAVATION (ROADWAY) | CY | 277 | $12 | $3,327 |
| 10 | REMOVING STAB BASE/ASPH PAV (6"-12") | SY | 33 | $4 | $126 |
| 11 | CONC PVMT (CONT REINF - CRCP) (7") | SY | 33 | $70 | $2,333 |
| 12 | CONC BOX CULV (4 FT X 3 FT) | LF | 372 | $280 | $104,160 |
| 13 | INLET (COMPL)(TY A) | EA | 1 | $4,000 | $4,000 |
| 14 | MANHOLE (COMPL)(SPECIAL) | EA | 1 | $5,000 | $5,000 |
| **Construction Subtotal** | | | | | **$203,000** |
| **Construction Contingency (30%)** | | | | | **$61,000** |
| | | | | | |
| **Construction Total** | | | | | **$264,000** |
| | | | | | |
| **Total Cost** | | | | | **$312,000** |

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# City of La Porte
## Northside Drainage Improvement & Relief Project - Alternative 4, Phase 2
## Cost Estimate

| Item # | Description | Unit | Quantity | Unit Price | Amount |
|---|---|---|---|---|---|
| 1 | ENGINEER FEE | LS | 1 | $258,900 | $258,900 |
| 2 | GEOTECHNICAL AND SURVEYING FEE | LS | 1 | $51,780 | $51,780 |
| 3 | CONSTRUCTION MANAGEMENT FEE | LS | 1 | $129,450 | $129,450 |
| 4 | MATERIAL TESTING | LS | 1 | $25,890 | $25,890 |
| **Soft Cost Total** | | | | | **$466,020** |
| 5 | LAND ACQUISITION, DETENTION SITE | EA | 1 | $166,246 | $166,246 |
| 6 | MOBILIZATION AND DEMOBILIZATION | LS | 1 | $70,153 | $70,153 |
| 7 | STORMWATER POLLUTION PREVENTION | LS | 1 | $16,622 | $16,622 |
| 8 | TRAFFIC CONTROL AND SIGNAGE | EA | 1 | $35,000 | $35,000 |
| 9 | UTILITY RELOCATION FEE | EA | 1 | $40,000 | $40,000 |
| 10 | EXCAVATION (ROADWAY) | CY | 820 | $12 | $9,839 |
| 11 | REMOVING STAB BASE/ASPH PAV (6"-12") | SY | 733 | $4 | $2,772 |
| 12 | CONC PVMT (CONT REINF - CRCP) (7") | SY | 733 | $70 | $51,333 |
| 13 | BORING/INSTALLATION OF 4 FT X 3 FT RCB | LF | 700 | $1,300 | $910,000 |
| 14 | CONC BOX CULV (4 FT X 3 FT) | LF | 1,800 | $280 | $504,000 |
| 15 | INLET (COMPL)(TY A) | EA | 2 | $4,000 | $8,000 |
| 16 | MANHOLE (COMPL)(SPECIAL) | EA | 4 | $5,000 | $20,000 |
| 17 | EXCAVATION, DETENTION SITE | CY | 13,021 | $12 | $156,248 |
| **Construction Subtotal** | | | | | **$1,991,000** |
| **Construction Contingency (30%)** | | | | | **$598,000** |
| | | | | | |
| **Construction Total** | | | | | **$2,589,000** |
| | | | | | |
| **Total Cost** | | | | | **$3,056,000** |

Cost of land acquisition was calculated as three times the current HCAD market value of a nearby, open parcel of land.
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# City of La Porte
## Northside Drainage Improvement & Relief Project - Alternative 4, Phase 3
## Cost Estimate

| Item # | Description | Unit | Quantity | Unit Price | Amount |
|---|---|---|---|---|---|
| 1 | ENGINEER FEE | LS | 1 | $453,900 | $453,900 |
| 2 | GEOTECHNICAL AND SURVEYING FEE | LS | 1 | $90,780 | $90,780 |
| 3 | CONSTRUCTION MANAGEMENT FEE | LS | 1 | $226,950 | $226,950 |
| 4 | MATERIAL TESTING | LS | 1 | $45,390 | $45,390 |
| **Soft Cost Total** | | | | | **$817,020** |
| 5 | MOBILIZATION AND DEMOBILIZATION | LS | 1 | $134,259 | $134,259 |
| 6 | STORMWATER POLLUTION PREVENTION | LS | 1 | $33,233 | $33,233 |
| 7 | TRAFFIC CONTROL AND SIGNAGE | EA | 1 | $35,000 | $35,000 |
| 8 | UTILITY RELOCATION FEE | EA | 1 | $40,000 | $40,000 |
| 9 | EXCAVATION (ROADWAY) | CY | 7,698 | $12 | $92,373 |
| 10 | REMOVING CONC (PAV) | SY | 1,877 | $10 | $18,773 |
| 11 | REMOVING STAB BASE/ASPH PAV (6"-12") | SY | 4,923 | $4 | $18,608 |
| 12 | CONC PVMT (CONT REINF - CRCP) (7") | SY | 6,800 | $70 | $476,000 |
| 13 | CONC BOX CULV (6 FT X 6 FT) | LF | 2,430 | $490 | $1,190,700 |
| 14 | CONC BOX CULV (4 FT X 3 FT) | LF | 4,710 | $280 | $1,318,800 |
| 15 | INLET (COMPL)(TY A) | EA | 17 | $4,000 | $68,000 |
| 16 | MANHOLE (COMPL)(SPECIAL) | EA | 13 | $5,000 | $65,000 |
| **Construction Subtotal** | | | | | **$3,491,000** |
| **Construction Contingency (30%)** | | | | | **$1,048,000** |
| | | | | | |
| **Construction Total** | | | | | **$4,539,000** |
| | | | | | |
| **Total Cost** | | | | | **$5,357,000** |

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# City of La Porte
## Northside Drainage Improvement & Relief Project - Alternative 5, Phase 1
## Cost Estimate

| Item # | Description | Unit | Quantity | Unit Price | Amount |
|---|---|---|---|---|---|
| 1 | ENGINEER FEE | LS | 1 | $26,400 | $26,400 |
| 2 | GEOTECHNICAL AND SURVEYING FEE | LS | 1 | $5,280 | $5,280 |
| 3 | CONSTRUCTION MANAGEMENT FEE | LS | 1 | $13,200 | $13,200 |
| 4 | MATERIAL TESTING | LS | 1 | $2,640 | $2,640 |
| **Soft Cost Total** | | | | | **$47,520** |
| 5 | MOBILIZATION AND DEMOBILIZATION | LS | 1 | $7,805 | $7,805 |
| 6 | STORMWATER POLLUTION PREVENTION | LS | 1 | $1,189 | $1,189 |
| 7 | TRAFFIC CONTROL AND SIGNAGE | EA | 1 | $35,000 | $35,000 |
| 8 | UTILITY RELOCATION FEE | EA | 1 | $40,000 | $40,000 |
| 9 | EXCAVATION (ROADWAY) | CY | 277 | $12 | $3,327 |
| 10 | REMOVING STAB BASE/ASPH PAV (6"-12") | SY | 33 | $4 | $126 |
| 11 | CONC PVMT (CONT REINF - CRCP) (7") | SY | 33 | $70 | $2,333 |
| 12 | CONC BOX CULV (4 FT X 3 FT) | LF | 372 | $280 | $104,160 |
| 13 | INLET (COMPL)(TY A) | EA | 1 | $4,000 | $4,000 |
| 14 | MANHOLE (COMPL)(SPECIAL) | EA | 1 | $5,000 | $5,000 |
| **Construction Subtotal** | | | | | **$203,000** |
| **Construction Contingency (30%)** | | | | | **$61,000** |
| | | | | | |
| **Construction Total** | | | | | **$264,000** |
| | | | | | |
| **Total Cost** | | | | | **$312,000** |

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# City of La Porte
## Northside Drainage Improvement & Relief Project - Alternative 5, Phase 2
## Cost Estimate

| Item # | Description | Unit | Quantity | Unit Price | Amount |
|---|---|---|---|---|---|
| 1 | ENGINEER FEE | LS | 1 | $254,200 | $254,200 |
| 2 | GEOTECHNICAL AND SURVEYING FEE | LS | 1 | $50,840 | $50,840 |
| 3 | CONSTRUCTION MANAGEMENT FEE | LS | 1 | $127,100 | $127,100 |
| 4 | MATERIAL TESTING | LS | 1 | $25,420 | $25,420 |
| **Soft Cost Total** | | | | | **$457,560** |
| 5 | LAND ACQUISITION, DETENTION SITE | EA | 1 | $148,283 | $148,283 |
| 6 | MOBILIZATION AND DEMOBILIZATION | LS | 1 | $69,470 | $69,470 |
| 7 | STORMWATER POLLUTION PREVENTION | LS | 1 | $16,453 | $16,453 |
| 8 | TRAFFIC CONTROL AND SIGNAGE | EA | 1 | $35,000 | $35,000 |
| 9 | UTILITY RELOCATION FEE | EA | 1 | $40,000 | $40,000 |
| 10 | EXCAVATION (ROADWAY) | CY | 820 | $12 | $9,839 |
| 11 | REMOVING STAB BASE/ASPH PAV (6"-12") | SY | 733 | $4 | $2,772 |
| 12 | CONC PVMT (CONT REINF - CRCP) (7") | SY | 733 | $70 | $51,333 |
| 13 | BORING/INSTALLATION OF 4 FT X 3 FT RCB | LF | 700 | $1,300 | $910,000 |
| 14 | CONC BOX CULV (4 FT X 3 FT) | LF | 1,800 | $280 | $504,000 |
| 15 | INLET (COMPL)(TY A) | EA | 2 | $4,000 | $8,000 |
| 16 | MANHOLE (COMPL)(SPECIAL) | EA | 4 | $5,000 | $20,000 |
| 17 | EXCAVATION, DETENTION SITE | CY | 11,614 | $12 | $139,365 |
| **Construction Subtotal** | | | | | **$1,955,000** |
| **Construction Contingency (30%)** | | | | | **$587,000** |
| | | | | | |
| **Construction Total** | | | | | **$2,542,000** |
| | | | | | |
| **Total Cost** | | | | | **$3,000,000** |

Cost of land acquisition was calculated as three times the current HCAD market value of a nearby, open parcel of land.
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# City of La Porte
## Northside Drainage Improvement & Relief Project - Alternative 5, Phase 3
## Cost Estimate

| Item # | Description | Unit | Quantity | Unit Price | Amount |
|---|---|---|---|---|---|
| 1 | ENGINEER FEE | LS | 1 | $595,200 | $595,200 |
| 2 | GEOTECHNICAL AND SURVEYING FEE | LS | 1 | $119,040 | $119,040 |
| 3 | CONSTRUCTION MANAGEMENT FEE | LS | 1 | $297,600 | $297,600 |
| 4 | MATERIAL TESTING | LS | 1 | $59,520 | $59,520 |
| **Soft Cost Total** | | | | | **$1,071,360** |
| 5 | MOBILIZATION AND DEMOBILIZATION | LS | 1 | $176,049 | $176,049 |
| 6 | STORMWATER POLLUTION PREVENTION | LS | 1 | $43,576 | $43,576 |
| 7 | TRAFFIC CONTROL AND SIGNAGE | EA | 1 | $35,000 | $35,000 |
| 8 | UTILITY RELOCATION FEE | EA | 1 | $40,000 | $40,000 |
| 9 | EXCAVATION (ROADWAY) | CY | 10,726 | $12 | $128,710 |
| 10 | REMOVING CONC (PAV) | SY | 1,880 | $10 | $18,800 |
| 11 | REMOVING STAB BASE/ASPH PAV (6"-12") | SY | 4,916 | $4 | $18,582 |
| 12 | CONC PVMT (CONT REINF - CRCP) (7") | SY | 6,796 | $70 | $475,720 |
| 13 | CONC BOX CULV (4 FT X 3 FT) | LF | 1,498 | $280 | $419,440 |
| 14 | CONC BOX CULV (5 FT X 5 FT) | LF | 6,802 | $363 | $2,469,029 |
| 15 | CONC BOX CULV (6 FT X 6 FT) | LF | 1,264 | $490 | $619,360 |
| 16 | INLET (COMPL)(TY A) | EA | 17 | $4,000 | $68,000 |
| 17 | MANHOLE (COMPL)(SPECIAL) | EA | 13 | $5,000 | $65,000 |
| **Construction Subtotal** | | | | | **$4,578,000** |
| **Construction Contingency (30%)** | | | | | **$1,374,000** |
| | | | | | |
| **Construction Total** | | | | | **$5,952,000** |
| | | | | | |
| **Total Cost** | | | | | **$7,024,000** |

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# REQUEST FOR CITY COUNCIL AGENDA ITEM

Agenda Date Requested: July 27, 2020
Requested By: Mayor Rigby
Department: City Secretary's Office

(•) Report ( ) Resolution ( ) Ordinance

**Exhibits**: Proposed Joint Election Agreement/Election Services Contract with Harris County

| Appropriation | |
|---|---|
| Source of Funds: | N/A |
| Account Number: | N/A |
| Amount Budgeted: | N/A |
| Amount Requested: | N/A |
| Budgeted Item: | ( ) Yes (•) No |

## SUMMARY

On January 13, 2020, the City Council adopted Ordinance 2020-3771 to call the May 2020 general election. Due to the situation surrounding international response to the COVID-19 pandemic, the City Council considered options for the May 2, 2020, general election at their regular meeting on March 23, 2020 and special meeting on March 30, 2020. The Council, on March 30th, adopted Ordinance 2020-3787, to postpone the election to the November 3, 2020 uniform election date and to contract with Harris County to hold a joint election and for the County to provide election services.

Harris County held its first meeting with governmental entities interested in contracting on June 16, after which the City was able to access the draft contract. The contract has been reviewed by CSO and the Assistant City Attorney. Minor changes to the draft were approved by Assistant County Attorney Douglas Ray on July 8, 2002 and the contract was made ready for Council consideration.

## RECOMMENDED MOTION

**I move to approve the agreement with Harris County to provide election services and enter into a joint election.**

# ORDINANCE NO. 2020-3787

**AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF LA PORTE, TEXAS, AMENDING ORDINANCE 2020-3771 TO MOVE THE DATE OF THE 2020 REGULAR MUNICIPAL ELECTION FROM THE 2ND DAY OF MAY, 2020, TO NOVEMBER 3, 2020, OR A DATE MADE AVAILABLE BY THE STATE BEFORE THAT DATE, FOR THE PURPOSE OF ELECTING A COUNCILPERSON DISTRICT 1, COUNCILPERSON DISTRICT 6, AND A COUNCILPERSON-AT-LARGE POSITION B; DESIGNATING THE PLACES AND MANNER OF HOLDING THE ELECTION; AND PROVIDING FOR THE POSTING AND PUBLICATION OF NOTICE; PROVIDING A SAVINGS CLAUSE; PROVIDING AN OPEN MEETINGS CLAUSE; AND PROVIDING AN EFFECTIVE DATE.**

**WHEREAS,** on January 13, 2020, the City Council passed Ordinance 2020-3771, which ordered an election to be held on May 2, 2020, for the purpose of electing a Councilperson-District 1, a Councilperson-District 6, and a Councilperson-at-large–Position B; and

**WHEREAS,** on March 13, 2020, Texas Governor Greg Abbott issued a Disaster Declaration for the State of Texas related to the Covid-19 pandemic; and

**WHEREAS,** on March 13, 2020, the Mayor of La Porte issued a Disaster Declaration for the City of La Porte, which declaration was extended until April 3, 2020, by the City Council, on March 20, 2020; and

**WHEREAS,** on March 18, 2020, Texas Governor Greg Abbott issued a proclamation, attached hereto as Exhibit A (the "Proclamation") suspending Section 41.0052 (a) and (b) of the Texas Election Code, thereby allowing political subdivisions of the state to move their general and special elections set on May 2, 2020, to the November 3, 2020, uniform election date, without otherwise adjusting the term of office; and

**WHEREAS,** the City Council finds that it is in public health, safety, and interest to postpone the May 2, 2020, general municipal election for the election of Councilperson-District 1, a Councilperson-District 6, and a Councilperson-at-large–Position B, pursuant to the Proclamation; and

**WHEREAS,** the City Council seeks and will consider a date prior to the November 3, 2020, uniform election date, should one or more become available;

**NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF LA PORTE, TEXAS:**

**SECTION 1.** The findings and recitations contained in the preamble of this ordinance are true and correct and are hereby incorporated into the body of this ordinance by reference.

**SECTION 2.** Pursuant to authority extended to political subdivisions in the March 18, 2020, Proclamation of Texas Government Greg Abbott, City of La Porte Ordinance 2020-3771 is hereby amended to postpone the ordered election for the City of La Porte from May 2, 2020, to November 3, 2020. The regular municipal election of the City of La Porte, Texas, for election of members of the City Council prescribed by Section 2.03 of the City Charter, shall be held between seven o'clock (7:00) a.m. and seven o'clock (7:00) p.m. on the 3rd day of November, 2020, in the city, for the purpose of electing a Councilperson-District 1, a Councilperson-District 6, and a Councilperson-at-large–Position B. A run-off election, if necessary, will be ordered in accordance with law and will be

held, on a date determined by Harris County, on that day between seven o'clock (7:00) a.m. and seven o'clock (7:00) p.m.

**SECTION 3.** The City is hereby divided into six (6) election precincts, corresponding to the boundaries of the six City Council single-member districts. The boundaries of such districts are as established, defined, and outlined in Ordinance 2011-3384. The polling places for these election precincts shall be as determined by a joint election agreement and election services contract to be arranged with Harris County:

**SECTION 4.** This election shall be held in accordance with, and shall be governed by, the election laws of the State of Texas. The City Secretary and Mayor are hereby authorized to perform all duties and take all actions as required by any election services contract(s) and/or joint election agreement(s) that may be authorized by the City Council.

**SECTION 5.** Any eligible and qualified person may have his or her name upon the official ballot as an independent candidate by submitting an application, which, in accordance with Texas Election Code Section 141.031, must be in writing and be signed and sworn to by the candidate and indicate that the candidate swears to the application. Such application for the general election may be filed with the City Secretary beginning on January 15, 2020, and must be filed not later than 5:00 p.m. on February 14, 2020. The candidate filings for the election originally ordered for May 2, 2020, will remain valid for the election to be held on November 3, 2020, and the original filing period that ended on February 14, 2020, at 5:00 p.m. will not be reopened. The voter registration deadline is October 5, 2020.

**SECTION 6.** Each Councilperson—District 1, Councilperson—District 6, and Councilperson-at-large–Position B shall each be elected by majority vote of all the votes cast for the office for which he or she is a candidate and shall hold office for a period of three (3) years.

**SECTION 7.** Each candidate for the office of Councilperson-at-large—Position B must be a resident qualified voter of the City for twelve (12) months immediately preceding election day. Each candidate for the office of Councilperson-District 1 and Councilperson-District 6 must be a resident qualified voter of the City for twelve (12) months immediately preceding election day and must also be a resident of the district for which he or she files for twelve (12) months immediately preceding election day, in accordance with Section 2.02(a) of the City Charter.

**SECTION 8.** Harris County shall appoint the Early Voting Clerk and Deputy Early Voting Clerk for the joint early voting in person and voting by mail, and designate the Main Early Voting Location for early voting for the election.

Applications for ballot by mail may be mailed, faxed, emailed, or delivered by common or contract carrier to:

Lee Woodward, City Secretary
City of La Porte
604 West Fairmont Parkway
La Porte, Texas 77571
Phone: 281-470-5021 Fax: 281-842-3701 Email: CitySecretary@LaPorteTX.gov

who shall promptly provide them to the Early Voting Clerk, per the provisions of the Texas Election Code. The deadline to submit an application for a ballot by mail (ABBM) is October 23, 2020.

All ABBMs submitted based on the applicant being over the ages of 65 or due to disability will remain valid for the November 3, 2020, election; ABBMs for voters who submitted ABBMs based on expected absence from the city regarding the May 2, 2020, election will not be valid for the November 3, 2020 election.

The places at which Early Voting by personal appearance shall be conducted shall be designated by Harris County.

During the lawful early voting period, which will be from October 19, 2020, through October 30, 2020, such Early Voting Clerk shall keep such locations for early voting open for early voting as required by the Texas Election Code, at a minimum.

**SECTION 9.** Voting at said election, including early voting, shall be by the use of voting machines; and the ballots of said election shall conform to the Texas Election Code, as amended. The City Secretary is hereby authorized and directed to obtain, or cause to be obtained, the necessary electronic tabulating equipment, to arrange for the testing thereof as provided by law and to employ a duly qualified manager and a duly qualified tabulation supervisor to perform the duties respectively imposed on them by law with respect to the processing and tabulation of ballots at the Central Counting Station.

**SECTION 10.** The City Secretary of the City of La Porte shall forthwith issue Notice of said election to be published one time in the *Bay Area Observer*, which is hereby found and declared to be a newspaper of general circulation in said City, not less than ten (10) days nor more than thirty (30) days prior to the date of the said election; in addition, Notice of said election shall be posted on the bulletin board in City Hall not later than the twenty-first (21st) day before election day and remain posted thorough election day.

**SECTION 11.** The Mayor and/or the City Secretary of the City of La Porte are hereby authorized to execute and/or issue, for and on behalf of the City, such orders, documents, and forms as may, from time to time, be promulgated by the Secretary of State of the State of Texas in conjunction with the election herein ordained.

**SECTION 12.** Each and every provision, paragraph, sentence and clause of this ordinance has been separately considered and passed by the City Council of the City of La Porte, Texas, and each said provision would have been separately passed without any other provision; and if any provision hereof shall be ineffective, invalid or unconstitutional, for any cause, it shall not impair or affect the remaining portion, or any part thereof, but the valid portion shall be in force just as if it had been passed alone.

**SECTION 13.** The City Council officially finds, determines, recites, and declares that a sufficient written notice of the date, hour, place, and subject of this meeting of the City Council was posted at a place convenient to the public at the City Hall of the City for the time required by law preceding this meeting, as required by the Open Meetings Act, Chapter 551, Texas Government Code; and that this meeting has been open to the public as required by law at all times during which this ordinance and the subject matter thereof has been discussed, considered and formally acted upon. The City Council further ratifies, approves and confirms such written notice and the contents and posting thereof.

**SECTION 14.** All portions of Ordinance 2020-3771 not specifically amended as provided herein shall remain in full force and effect.

**SECTION 15.** This ordinance shall be in effect immediately upon its passage and approval.

**PASSED AND APPROVED, this, the 30th day of March, 2020.**

CITY OF LA PORTE, TEXAS

Louis R. Rigby, Mayor

ATTEST:

Lee Woodward, City Secretary

APPROVED AS TO FORM:

Clark T. Askins, Assistant City Attorney

# Exhibit A

GOVERNOR GREG ABBOTT

March 18, 2020

FILED IN THE OFFICE OF THE
SECRETARY OF STATE
10:00AM O'CLOCK
MAR 18 2020
Secretary of State

The Honorable Ruth R. Hughs
Secretary of State
State Capitol Room 1E.8
Austin, Texas 78701

Dear Secretary Hughs:

Pursuant to his powers as Governor of the State of Texas, Greg Abbott has issued the following:

> A proclamation suspending Sections 41.0052(a) and (b) of the Texas Election Code and Section 49.103 of the Texas Water Code to the extent necessary to allow political subdivisions that would otherwise hold elections on May 2, 2020, to move their general and special elections for 2020 only to the next uniform election date, occurring on November 3, 2020, without otherwise adjusting the term of office, and suspending Sections 31.093 and 42.0621(c) of the Texas Election Code to the extent necessary to require all county election officers, if requested by an affected political subdivision, to enter into a contract to furnish election services with any political subdivision who postponed their election to November 3, 2020, under the authority of this proclamation.

The original of this proclamation is attached to this letter of transmittal.

Respectfully submitted,

Gregory S. Davidson
Executive Clerk to the Governor

GSD/gsd

Attachment

**AGREEMENT BETWEEN HARRIS COUNTY AND CITY OF LA PORTE, TEXAS RELATING TO JOINT ELECTIONS TO BE HELD NOVEMBER 3, 2020**

THE STATE OF TEXAS §
§
COUNTY OF HARRIS §

THIS AGREEMENT is made and entered into by and between Harris County, a body corporate and politic under the laws of the State of Texas (hereinafter the "County"), and the City of La Porte, Texas, a body corporate and politic under the laws of the State of Texas (hereinafter referred to as the "Entity").

## RECITALS:

The County will be conducting a joint election on November 3, 2020 for multiple entities. The County will be using an electronic voting system, eSlate, (hereinafter "Voting System") that has been duly approved by the Secretary of State pursuant to Texas Election Code §§122.031-122.039, §122.061, §122.091, as amended, and duly approved by the United States Justice Department for use in Harris County pursuant to Voting Rights Act of 1965.

All parts of the Entity lie within the boundaries of Harris County.

The Entity desires to join the November 3, 2020 General and Special Elections (hereinafter referred to as the "November 3, 2020 Election") being conducted by the County.

The County desires to provide certain election services to the Entity for its election to be held on November 3, 2020.

## TERMS:

In consideration of the mutual covenants, agreements and benefits to the parties, IT IS AGREED as follows:

### I. Entity's Responsibilities

(a) The Entity agrees that it has furnished the County with a list of race titles and proposition titles and proposition language, if any, for the November 3, 2020 Election. All information must be provided in the following languages: English, Spanish, Vietnamese and Chinese.

(b) The Entity agrees that it provided the County with a list of candidates' names and ballot positions for the November 3, 2020 Election.

(c) Further, the Entity agrees that it has verified its current jurisdictional boundaries and the total number of Harris County precincts required by those jurisdictional boundaries by August 14, 2020. If the Entity failed to provide the County with this information by this stated deadline, then the County is hereby authorized to adopt the current jurisdictional boundaries and total number of Harris County precincts for the non-performing Entity

that are provided to the County by the Harris County Voter Registrar's Office, and the non-performing Entity hereby agrees to the County's use of that information to fulfill the requirements of this paragraph.

(d) The Entity will agree to appoint those individuals appointed by the Harris County Commissioners Court, Election Board and the Early Voting Clerk have appointed for positions such as all Election Day Presiding and Alternate Judges, Early Voting Judges and Clerks, Early Voting Ballot Board and Central Count Presiding and Alternate Judges, Central Count Manager and Tabulation Supervisor pursuant to the Texas Election Code. The Entity agrees to accept the Early Voting and Election Day polling places accepted by the Harris County Commissioners Court and the hours designated by Harris County for Early Voting.

(e) The Entity agrees to prepare, post and publish any and all notices required of the Entity by state law for the November 3, 2020 Election. Unless otherwise expressly provided herein, the Entity agrees to do all things that may be required of it in connection with the November 3, 2020 Election. The Entity is responsible for the preparation of election orders, resolutions, notices and other pertinent documents for adoption or execution by the appropriate officer of the Entity with regard to the November 3, 2020 Election. The County shall not have any responsibility or duty in connection with such preparations by the Entity. The Entity is responsible for making their own submissions, if any is required or desired, to the United States Justice Department and the County shall have no responsibility or duty in connection with such submission relating to the November 3, 2020 Election.

(f) If an entity is conducting a Bond/Debt Obligation Election, the entity is required to provide a copy of the Bond Order(s) for each polling location. The instruction for the Order(s) are set forth in **Exhibit C** "Instructions for Bond/Debt Obligation Orders" attached hereto and incorporated herein. The Entity accepts the responsibility to ensure that the order of the election is posted at each polling location where its precincts will be voting on Election Day. The Entity will provide packets to be used for Early Voting and Election Day to the County by **September 1, 2020**. Documents for the voters will be in four (4) languages: English, Spanish, Vietnamese and Chinese.

## II. County's Responsibilities

(a) The County agrees to follow the Texas Election Code in the conduct of the November 3, 2020 General and Special Elections. The County agrees to provide mail ballots to all voters who request a ballot in the Entity's jurisdictions. The County shall provide space on the ballot sufficient to encompass all candidate races and issues of the Entity.

(b) The County will provide the Entity with all dates and times for Early Voting no later than the 21st day before Election Day. The County agrees to provide polling locations for use during Early Voting. The County will arrange for the delivery of the Voting System equipment and other equipment and supplies for use in Early Voting by personal appearance in the November 3, 2020 Election. The County Clerk shall select election officers for the main Early Voting location, as well as any branch Early Voting location, pursuant to the Texas Election Code §85.009.

(c) The County agrees to provide all equipment and supplies for use in Early Voting by mail in the November 3, 2020 Election. The County is authorized to employ or use such personnel, as it deems necessary or desirable, to prepare and conduct Early Voting by mail.

(d) Further, the County agrees to provide all the Election Day polling places, Voting System equipment, and other equipment as it deems necessary or desirable for the holding of the November 3, 2020 Election and

cause same to be delivered to the polling places. The Joint Election shall be conducted utilizing county-wide polling places pursuant to Section 43.007(a) (5) of the Texas Election Code. The County agrees to provide the Voting System to all polling places at least one (1) hour before the time set for opening the polls. The County shall determine the amount of voting equipment available for the November 3, 2020 Election and its decision shall be final.

(e) The County will employ or use such personnel as it deems necessary to program and operate the automatic tabulating equipment in accordance with Texas Election Code.

(f) The Harris County Commissioners Court shall appoint the Presiding and Alternate Election Judges for each county election precinct and the Central Counting Station, the Early Voting Ballot Board, Central Count Manager and Tabulation Supervisor according the Texas Election Code. Necessary additional appointments shall be made under the Texas Election Code. The County agrees to pay the Presiding Judges of the County and their clerks, pursuant to Texas Election Code §§32.091-32.093 and §271.013, as amended, for their services in connection with the November 3, 2020 Election at the expense of the Entity. The County agrees to pay the Presiding Judge and clerks of the Early Voting Ballot Board to process Early Voting results pursuant to Texas Election Code §§87.001-87.025, §87.101, and §87.103, as amended at the expense of the Entity.

(g) The County agrees to perform its obligations under this Agreement in accordance with all applicable federal and state laws, rules and regulations.

(h) Regarding the posting of Debt Obligation Election Orders, Harris County, as a courtesy, will post a copy of all Debt Obligation Election Orders in four (4) languages in a notebook on the qualifying table of every Early Voting and Election Day location for this election. A notice, approved by the Secretary of State, will be posted on the wall stating that information regarding the Debt Obligation Election Orders is available. Harris County will train judges on the importance of making this information available. However, it is still the responsibility of the entity to ensure that the judge received the order and that the order was posted at each polling location within the jurisdiction.

## III. Compensation

The fair and reasonable compensation for use of the County's Voting System, equipment, supplies, and staff and for other services provided for administration of the election is detailed in the itemized list of estimated election expenses under **Exhibit A**, attached hereto and incorporated herein. The Entity agrees to pay its pro rata share of costs to the County for the Voting System, equipment, furniture, telephones, election kits, Early Voting Ballot by Mail, printing, supplies, delivery and transportation services, personnel, polling places, technical support, training, administrative costs and any other costs incurred by the Entity under this Agreement for the November 3, 2020 Election held by the County and the Entity and to share the cost of the November 3, 2020 Election in accordance with the terms of this Agreement.

The Entity's pro rata shares will be computed by attributing the total number of registered voters in each of the Entity's precincts that will be serviced by the County in the November 3, 2020 Election. The Voter Registry of the Entity, as of seventy (70) days before the November 3, 2020 Election, will be used to determine the total number of registered voters in each of the Entity's precincts. An estimate of the Entity's total cost is attached and incorporated herein as **Exhibit B**. The final determination of the Entity's pro rata share of the costs incurred by the County for November 3, 2020 Election necessary for the purposes contemplated by this Agreement shall be made by the County and its decision shall be final.

The fair and reasonable value of the general overall supervision and advisory services of the County in connection with decisions to be made and actions to be taken by officers of the Entity is ten percent (10%) of the total amount of the Agreement for the Entity, in accordance with the applicable provisions of Chapters 31 and 271 of the Texas Election Code, as amended. The Entity agrees to pay the County this ten percent (10%) fee for advisory services for its November 3, 2020 Election. It is understood that the fees paid for these advisory services shall be deposited in a separate fund in the County treasury, in accordance with Texas Election Code §31.100, as amended.

The Entity agrees to deliver sixty percent (60%) of their respective total estimated cost for its share of the November 3, 2020 Election to the County within ten (10) days of the execution of this Agreement. The County agrees to furnish a final accounting of the November 3, 2020 Election expenses actually incurred within ninety (90) days after the November 3, 2020 Election. The Entity agrees to pay the County's invoice for the balance of its November 3, 2020 Election expenses within thirty (30) days of receipt of the invoice. Payments, in the name of Harris County, must be submitted to Chris Hollins, Harris County Clerk, Attn: Elections Division, P.O. Box 1148, Houston, TX 77251-1148. Copies of all related invoices, records or documentation used in calculating the total cost of the elections will be made available as soon as practicable by the County upon written request to the County at the address above. Within ten (10) days of execution of this Agreement, the County will provide the Entity with a Personal Entity I.D. ("PEID") number assigned by the County Auditor. Each payment by the Entity to the County shall reference and include their respective PEID number.

If an entity has a proposition that is longer than 500 characters for one language or if there are more than five (5) contests, the entity may incur additional coding and supply fees to accommodate the additional costs. The additional amount will represent the additional time to code the ballot, the additional space on the sample ballot, additional costs for ballot by mail and postage, and any other associated costs.

Waiver of any penalty fees imposed upon the Entity under this Agreement is at the discretion of the County.

## IV. Additional Entities

It is understood that other political subdivisions may wish to participate in the November 3, 2020 Election and request the use of the above-mentioned election equipment, voting places and personnel, etc. It is agreed that the County may contract with other political subdivisions for such purposes. It is understood and agreed that the County will use the same formula for determining a pro rata share for each entity as described in this Agreement.

## V. Cancellation of Election

In the event the Entity's November 3, 2020 Election is enjoined or canceled, or if for any reason whatsoever the Entity shall decide not to proceed with its November 3, 2020 Election, the Entity agrees that it shall be responsible for its share of any costs and expenses incurred by the County up to the cancellation date.

## VI. Presiding Judges and Clerks

Presiding Judges and clerks shall be selected pursuant to the Texas Election Code Chapter 32. Regarding powers and duties, the Presiding Judge is in charge of and responsible for the conduct of the election at the polling place of the election precinct that the judge serves. See Texas Election Code §32.071.

## VII. Notice

Any notices permitted or required to be given under this Agreement must be made by certified mail, return receipt requested or hand-delivered to the parties at the following addresses:

Harris County:
Harris County Clerk
1001 Preston, 4th Floor
Houston, TX 77002
Attention: Maureen Fisbeck

Entity:
City of La Porte, Texas
604 West Fairmont Parkway
La Porte, Texas 77571
Attention: Lee Woodward

## VIII. Termination

Each party may terminate this agreement upon thirty days (30) notice as provided in this agreement. Should the Entity terminate this contract, the Entity shall be responsible for its pro rata share of expenses incurred up unto the time of termination or as described herein specifically.

## IX. Miscellaneous

Third Party Beneficiaries. The County is not obligated or liable to any party other than the Entity for the performance of this Agreement. Nothing in the Agreement is intended or shall be deemed or construed to create or increase any additional rights or remedies in any third party, or the duties or responsibilities of the County with respect to any third party.

Successors and Assigns. The County and Entity bind themselves and their successors, executors, administrators, and assigns to the other party of this Agreement and to the successors, executors, administrators and assigns of such other party, in respect to all covenants of this Agreement. Nothing herein shall be construed as creating any personal liability on the part of any officer or agent of any public body, which may be a Party hereto.

Applicable Law and Venue. This Agreement is governed by the laws of the State of Texas. The Agreement is subject to Texas state and federal laws, orders, rules, and regulations. Each Party shall comply with all applicable federal, state, and local laws, ordinances, rules, and regulations concerning the performance of this Agreement.

Entire Agreement. This instrument contains the entire agreement between the parties. Any oral or written representations or modifications concerning this instrument shall be of no force and effect excepting a subsequent modification in writing signed by both parties to this Agreement.

Severability. If any provision of this Agreement is construed to be illegal or invalid, this will not affect the legality or validity of any of the other provisions hereof. The illegal or invalid provisions will be deemed stricken and deleted here from to the same extent and effect as if never incorporated herein.

Subtitles. The subtitles in this Agreement are provided for organizational purposes only and do not provide substantive meaning to the Agreement.

Multiple Counterparts. This Agreement will be executed in several counterparts, each of which shall be an original and all of which shall constitute but one instrument.

EXECUTED on this, the _____ day of _____, 2020.

ATTEST:

Harris County

_____
Chris Hollins, County Clerk

APPROVED AS TO FORM:

Vince Ryan, County Attorney

_____
Douglas P. Ray, Assistant County Attorney

ATTEST/SEAL:

_____
Lee Woodward, City Secretary

CITY OF LA PORTE, TEXAS

_____
Louis R. Rigby, Mayor of La Porte

APPROVED AS TO FORM:

_____
Clark Askins, Assistant City Attorney

EXHIBIT A – Cost Estimate

EXHIBIT B – Cost Estimate

EXHIBIT C

# Instructions for Bond/Debt Obligation Orders
# For the November 2020 General and Special Elections

It is required that an Entity conducting a Bond/Debt Obligation Election must provide a copy of the Bond Order(s) for each polling location.

Please follow the guidelines below when preparing Bond Orders for distribution for the **Early Voting** and **Election Day** period:

- Supply our office with an electronic version of the Bond Orders in PDF or Microsoft Word by September 1st
    - Bond Order must be translated into all required languages (English, Spanish, Chinese & Vietnamese)
    - Do not include Early Voting or Election Day locations list(s).
- Bond Order format requirements:
    - 8 ½ X 11 in. page size
    - Page margins no larger than 0.75 inch
    - All text single spaced
    - All text 12 pt. font (excluding titles)
- Submissions will need to be transmitted via FTP
    - Confirmation of successful transmission and correct format will be provided by Maureen Fisbeck within 48 hours (excluding weekends).
    - Insert FTP instructions once IT sets up

Harris County Elections Division will print copies of the Bond/Debt Obligation Orders and prepare them for distribution to all Early Voting and Election Day locations. Copies will be printed on 8 ½ X 11 white copy paper, duplex, and 3 hole punched. A copy of all Early Voting and Election Day locations will be added to the binder for voter use.

In the event our office receives a call from a voter requesting more information regarding the Bond/Debt Obligation Orders on your ballot, **please provide a contact name and phone number for your Entity that we may share with the voter.**

# REQUEST FOR CITY COUNCIL AGENDA ITEM

Agenda Date Requested: July 27, 2020
Requested By: Ray Mayo, Director
Department: Public Works
(•) Report ( ) Resolution ( ) Ordinance

**Exhibits**: Pecan Park Proposal

| Appropriation | |
|---|---|
| Source of Funds: | 015 – General CIP |
| Account Number: | 015-7070-530-1100 |
| Amount Budgeted: | $350,000 (budgeted)<br>$36,551 (available) |
| Amount Requested: | N/A |
| Budgeted Item: | (•) Yes ( ) No |

## SUMMARY

Pecan Park is heavily used year-round for baseball and softball practice, games and tournaments. Currently, the parking lot provides 469 parking spaces. The traffic pattern for the parking lot was intended to be one-way from the inception of the parking plan.

During the May 9th Special Meeting of City Council (Pre-budget Retreat), Council expressed/discussed safety concerns related to vehicular and pedestrian accidents within the parking lot. Council directed staff to evaluate the existing park layout to determine feasible options to improve the park layout and safety within the park.

Staff has approached a traffic engineering consultant to assist with evaluating the layout and safety concerns expressed by Council. The consultant has provided the enclosed proposal, including options for improvements to mitigate pedestrian/vehicular accidents with minimal disruptions to the park, and/or a reorientation analysis of the park. Additionally, the consultant has provided costs associated with three (3) options – Option 1 $10,000, Option 2 $15,000 and Option 3 $22,500. Staff is seeking direction from Council to determine the preferred scope of work.

The latest parking lot addition at Pecan Park was funded within the fiscal year 2016-17 budget. The Pecan Park addition was constructed as part of the Somerton Rehabilitation Project and was recently completed in early 2020. Staff has identified funding available within the Pecan Park project to accommodate the expense of the proposed scope of work within the consultant's proposal.

## RECOMMENDED MOTION

**I move to direct staff to proceed with Option 1 at a cost of $10,000.00, as presented within the consultant's proposal.**

**OR**

**I move to direct staff to proceed with Option 2 at a cost of $15,000.00, as presented within the consultant's proposal.**

**OR**

**I move to direct staff to proceed with Option 3 at a cost of $22,500.00, as presented within the consultant's proposal.**

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**Approved for the City Council meeting agenda**

| | |
|---|---|
| **Corby D. Alexander, City Manager** | **Date** |

CONSOR

15310 Park Row
Houston, TX 77084
Telephone (281) 493-4140
Fax (281) 493-2211
E-Mail: kjuluru@consoreng.com

July 8, 2020

Lorenzo Wingate, P.E., C.F.M
Assistant Director of Public Works
2963 N 23rd Street
La Porte, Texas 77571

Re: Safety/Parking Lot Improvements at Pecan Park

Mr. Wingate,

Please find enclosed the scope for the Safety/Parking Lot Improvements at Pecan Park in the City of La Porte. The following are the design costs for each of the options mentioned in the scope:

- Option 1 - $10,000
- Option 2 - $15,000
- Option 3 - $22,500

It should be noted that fees for topographic survey are not included in the above costs.

Please let us know which option the City of La Porte prefers for CONSOR to design.

If you have any questions, please feel free to contact me by telephone at 281-493-4140 ext 4225, or by email at kjuluru@consoreng.com

Thanks for considering us

Sincerely,
Consor Engineers, LLC

Kishore Juluru, P.E.
Project Manager

# Scope of Work
# Engineering Services

CONSOR Engineers, LLC. (CONSOR) team will provide engineering services to the City of La Porte (City), Texas for proposed upgrades/improvements to the Pecan Park project.

CONSOR team will design plans in accordance with the City of La Porte Design Guidelines and industry's standard design procedures.

CONSOR team will provide plans showing necessary improvements at the specified location. Plans will typically include one 11x17 sheet with details required for construction including but not limited to curb returns, geometrics, transition lengths, stationing (based on a fixed object in the field) and offsets, signing and striping details and dimensions required to construct the proposed improvements with in-house City crews or an on-call City contractor.

CONSOR team will work closely with the City to provide a detailed, comprehensive, and sound technical product that addresses all listed objectives. CONSOR will demonstrate necessary technical expertise in analysis and to not only provide a high-quality product, but also to serve as a competent technical adviser for the City for this project.

**Design Standards**
Project design will be performed in accordance with the most recent editions of the following design standards:

- Americans with Disabilities Act (ADA) Standards
- Texas Accessibility Standards (TAS)
- Any applicable City of La Porte Code of Ordinances
- Texas Manual on Uniform Traffic Control Devices (TxMUTCD)
- City of La Porte Public Improvement Criteria Manual
- Any other applicable regional, state, and federal guidelines

**Deliverables**
Electronic copies of construction documents and reports.

**NOT within scope of work**

- Topographic Survey
- Traffic Control Plans
- Bid Phase Services

**Items to be provided by the City**

- Any previous plans, as-builts, surveys and crash data

Based on the information provided by City of La Porte, it is noted that below are some of the general issues at existing parking areas:

1. Vehicles disregarding the one-way traffic routes
2. Vehicles hitting parked vehicles when trying to back out of the parking lots
3. Vehicles speeding through the parking lots creating vehicle and pedestrian safety issues
4. Pedestrians crossing randomly across the parking lots creating safety issues
5. Pedestrians crossing randomly across the parking lots to access the concessions and the park creating unsafe conditions

The exhibit below shows the present location of the Pecan Park layout.

To address the issues following three options were discussed with City of La Porte:

**Option 1:**
This is a low-cost, quick improvement which includes the following:

- Traffic calming measures in terms of speed humps or speed tables to reduce vehicular speeds at multiple locations. This will eliminate some parking spots.
- High visibility crosswalks (pavement markings) along with pedestrian crossing signs at multiple designated locations. This will eliminate some parking spots.
- Shrubs along the periphery of parking to discourage pedestrian crossing at random locations.
- Any other improvements in coordination with City

**Option 2:**
This is a mid-cost and may include some of the improvements from Option 1 and additionally the following:

- Review the option to change the parking lot to angular parking and if necessary, provide guidance on additional parking lot
- Adjustment of ADA parking spaces and ramps.
- Install solar powered flashing beacons on pedestrian signs at cross walks

**Option 3:**
CONSOR team member Asakura Robinson will provide the items as mentioned in the following scope. This is a high-cost improvement and CONSOR will manage the coordination with City of La Porte and provide safety, feasibility, probable traffic concerns and general civil guidance for this and the total fee includes this additional effort.

Based on the option that City of La Porte directs CONSOR team to investigate, CONSOR will provide the following

**Deliverables**

- Exhibits showing the improvements on an approximate scale
- Approximate cost estimate for the improvements

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Planning | Urban Design | Landscape Architecture
P: (512) 351-9601
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ASAKURA ROBINSON

**7/8/2020**

*Proposal*

Kishore Juluru, PE
Lead, Traffic Design, Eastern Region
CONSOR Engineers, LLC

**Re: Landscape Architecture Proposal**
**Pecan Park Feasibility Study**

Asakura Robinson Company (AR) is pleased to submit this landscape architecture services proposal for the above-mentioned project. Our firm has built our reputation on our strength in working with owners, consultants and stakeholders and we welcome this opportunity to work with you and your team in creating a high-quality project.

## A. Scope of Work

1. The project site is located in the City of La Porte. It is approximately 33 acres in size and houses parking and facilities for baseball and softball.
2. AR shall provide landscape architecture services for conceptual design to update the park layout within the same footprint, to include the following:
    a. Similar or additional parking spaces
    b. Same number of baseball/softball fields
    c. Reduction in vehicle/pedestrian conflicts
    d. Improved safety and access for baseball/softball facilities
3. Project schedule is estimated at a total of six (6) weeks to final deliverable.

### Task I: Site Assessment

1. Kick-off meeting with the client to discuss the project expectations and general character of the project.*
2. Visit the site and note the general character of the site.
3. Conduct bi-weekly meetings with client and owner.
4. At the direction of the client and owner, meet with operational stakeholders for the park, such as operations & maintenance staff, facility programming, and third parties operating on the site, if any, under agreement with the owner.

### Task II: Concept Design

1. Develop overall landscape design concept.
2. Develop conceptual opinion of probable construction cost (OPCC) for client review.
3. Meet with client, owner and other consultants for one (1) interim review and revise per client requests.

4. Provide brief visual presentation based on interim review to provide to City stakeholders and/or City Council.
5. Provide final Concept Plan to client in pdf format, following revisions. Final deliverable will include the following:
    a. Illustrated site plan at scale showing existing and proposed layout conditions
    b. One (1) aerial rendering of proposed site condition, with up to two (2) modifications base on City and/or City Council feedback during interim review process
    c. Narrative of conceptual design recommendations
    d. Parking and circulation diagram
    e. Conceptual-level Opinion of Probable Construction Cost

* Note: as a result of the COVID-19 pandemic, AR is currently unable to provide staff for in-person meetings other than outdoor site visits with all parties utilizing protective face coverings. For the purpose of this proposal, all references to "meetings" are understood to be virtual meetings.

**B. Compensation**

| | | |
|---|---|---|
| Task I | Site Assessment | $ 4,000.00 |
| Task II | Concept Design | $ 14,000.00 |
| Reimbursable Expenses | | $ 500.00 |
| **Total** | | **$ 18,500.00** |

Fees and reimbursable costs shall be billed monthly as a percentage of work completed or actual costs for additional services and reimbursables as defined herein.

Reimbursable expenses are expenditures for the project made by AR and consultants in the interest of the project plus an administrative fee of **10%**. Reimbursable expenses include, but are not limited to travel expenses, costs of reproduction, postage, services of professional consultants which cannot be quantified at the time of contracting, and other, similar project – related expenditures. Reimbursable expenses shall not exceed **$ 500** without prior approval by Client.

**C. Exclusions to Scope of Services and Additional Services**

1. Client shall provide the following information as required for performance of the work. AR assumes no responsibility for the accuracy of such information or services and shall not be liable for errors or omissions therein. Should AR be required to provide services in obtaining or coordinating compilation of this information, such services shall be charged as Additional Services.
    a) Topography, boundary surveys and Legal descriptions of property.
    b) Existing site engineering and utility base information.
    c) Soils Engineering, Geo-technical, and other Consultant services if required.
    d) Application and Permit Fees
2. Detailed grading and stormwater engineering are excluded from scope.
3. Stakeholder engagement, other than engagement listed in Task 1 above, is excluded from scope.

4. Deliverables under this proposal shall be considered conceptual in nature and should not be used for permitting, bidding, or construction.
5. Additional Services include but are not limited to:
   a) Work and/or Meetings requested and or authorized by the Client not defined in the 'Scope of Work', revisions and changes to Client approved drawings, the preparation of alternatives or change orders requested by the Client, and the revision of a single delivery package into multiple delivery packages.
   b) Preparation of as-built drawings or of measured drawings or existing conditions.
   c) Models, special renderings, promotional photography, special printing, special equipment, special printed reports or publication, maps, and documents requested by the Client.

Hourly rates for Additional Services:

| | | |
|---|---|---|
| Margaret Robinson | Principal | $ 230/hr. |
| Jessica Krug | Principal | $ 174/hr. |
| Brendan Wittstruck | Principal | $ 153/hr. |
| Staff | 3.36 x direct personal expense (DPE) | |

**D. Jurisdiction and Termination**

JURISDICTION – The Texas Board of Architectural Examiners has jurisdiction over complaints regarding the professional practices of persons registered as landscape architects in Texas. The Board may be reached at the following address: Texas Board of Architectural Examiners, P.O. Box 12337 Austin, TX 78711-2337 Phone / (512) 305-8900 TERMINATION - If the Client should decide to terminate this Agreement, he or she shall give ARC seven (7) days written notice and shall pay for all services rendered to the date of termination. ARC reserves the right to terminate this contract upon fifteen (15) days' notice if any amount billed to client is 90 days past due.

We appreciate your consideration of our firm, and we look forward to working with you. If this proposal meets your approval, please sign and return one (1) copy to our office at your earliest convenience.

Yours truly

MRobinson

Margaret Robinson, Managing Principal
**Asakura Robinson Company, LLC**

8 July 2020

_____

Kishore Juluru
**CONSOR Engineers, LLC**

Date_____

# REQUEST FOR CITY COUNCIL AGENDA ITEM

Agenda Date Requested: July 27, 2020
Requested By: Annual Council item
Department: City Council
(•) Report ( ) Resolution ( ) Ordinance

**Exhibits**: None

| Appropriation | |
|---|---|
| Source of Funds: | |
| Account Number: | |
| Amount Budgeted: | |
| Amount Requested: | |
| Budgeted Item: | ( ) Yes ( ) No |

## SUMMARY

The majority of the City of La Porte board, commission, and committee positions have terms expiring on August 31, 2020, of their final year of the respective terms.

Staff liaisons have determined the individuals listed below seek reappointment *(all are reappointments unless noted otherwise)* and have not brought forward any concerns about their service for consideration.

The Fire Code Review Board and the Planning and Zoning Commission are the only positions that are appointed in accordance with specific City Councilmember seats and the respective Councilpersons have confirmed their nominations for those seats listed.

The positions that are alternates or involve the movement of alternates to regular positions, if any, are noted.

Building Codes Appeals Board – (3-year terms) – there is additionally one open position.

- Maisie Barringer
- Mark Follis

Ch. 172 Employee, Retiree Insurance and Benefits Board – (2-year terms) – there is additionally an open position for Alternate 2.

- Aaron Corrales, Retiree Representative

Civil Service Commission – (3-year terms)

- Les Bird

Fire Code Review Board – (3-year terms)

- Champ Dunham
- Chris Pettis

La Porte Area Water Authority (LPAWA) (2-year terms) – there is additionally one open position.

- Stephanie Bellew

La Porte Development Corporation Board – (2 year terms)

- Danny Earp
- Shelley Fuller
- Johnny Morales

La Porte Fire Control, Prevention, and Emergency Medical Services District Board of Directors – (2-year terms)

- Thomas Dye, III
- Johnny Jones

La Porte Tax Increment Reinvestment Zone Number One (TIRZ #1) Board of Directors – (2-year terms) – there is an additional open position.

- Barry Beasley
- Horace Leopard
- Mark Goodwin

La Porte Redevelopment Authority – (2-year terms) – *(This is the same membership as the TIRZ Board just above, but the Mayor is required to appoint the members to this board, including the LPISD and Harris County appointments to the TIRZ.)*

- Barry Beasley
- Horace Leopard
- Mark Goodwin

Planning and Zoning Commission – (3-year terms)

- Trey Kendrick
- Christina Tschappat

Zoning Board of Adjustment – (2-year terms)

- Phillip Hoot
- Thomas Deen
- Rod Rothermel
- Dennis Oian

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**RECOMMENDED MOTION**

**I move to approve the board, commission, and committee appointments and reappointments as presented.**

*Should there be a wish to handle a particular board or individual separately, the easiest way is* ***to*** **Move to approve the appointments as listed except for the (name of board/committee)*****.*** *That particular board can be moved separately or only certain members moved for appointment/reappointment.*

Open