

CHAIRMAN
JAY MARTIN
VICE-CHAIRMAN



CHUCK ENGELKEN
MEMBER
DANNY EARP
MEMBER
VACANT
ALTERNATE

CITY OF LA PORTE DRAINAGE AND FLOODING COMMITTEE MEETING AGENDA

Notice is hereby given of a meeting of the Drainage and Flooding Committee of the City Council of the City of La Porte, to be held June 11, 2018, in the City Hall Council Chambers, 604 W. Fairmont Parkway, La Porte, Texas, beginning at 5:00 PM to consider the following items of business.

1. **Call to order**
2. **Authorizations**
 - (a) Consider approval or other action regarding minutes of the Drainage and Flooding Committee Meeting held on June 29, 2015 - S. Harris
 - (b) Consider approval or other action appointing a Chairman and/or Vice-Chairman of the Drainage and Flooding Committee - S. Harris
3. **Staff Reports**
 - (a) S. Shady Ln. Outfall Rehabilitation - L. Wingate/D. Pennell
 - (b) Bayside Terrace Drainage Improvements - L. Wingate/D. Pennell
 - (c) Pine Bluff Subdivision Improvements - L. Wingate/D. Pennell
 - (d) Drainage Interconnect Project at Lakes at Fairmont Green - L. Wingate/D. Pennell
 - (e) Bob's Gully - L. Wingate/D. Pennell
 - (f) 6th St. from Madison to W. Main Drainage Analysis - L. Wingate/D. Pennell
 - (g) 8th Street & D Storm Water Conveyance Improvements - L. Wingate/D. Pennell
 - (h) Little Cedar Bayou F216 Phase II Improvements - L. Wingate/D. Pennell
 - (i) Little Cedar Bayou F216 Phase III Improvements - L. Wingate/D. Pennell
 - (j) Browning & Golden Drainage Improvements - L. Wingate/D. Pennell
 - (k) Airport On-site Drainage Improvements - L. Wingate/D. Pennell
 - (l) Airport Off-site Drainage Improvements - L. Wingate/D. Pennell
 - (m) Regrading/Desilting H., L., & P. Streets - L. Wingate/D. Pennell
 - (n) Lomax/F101-03-00 Drainage Channel Feasibility Study - L. Wingate/D. Pennell

- (o) North P Street Culvert Improvement - L. Wingate/D. Pennell
- (p) Battleground Estates Improvements - L. Wingate/D. Pennell
- (q) Coupland Drive Drainage Improvements - L. Wingate/D. Pennell
- (r) Brookglen Flooding Mitigation Analysis - L. Wingate/D. Pennell
- (s) City-wide Drainage Model - L. Wingate/D. Pennell

4. Set date for next Drainage and Flooding Committee Meeting - L. Wingate/D. Pennell

5. Committee Member Comments - Matters appearing on agenda; Recognition of community members, city employees, and upcoming events; Inquiry of staff regarding specific factual information or existing policy

6. Executive Session - The City of La Porte Drainage and Flooding Committee reserves the right to meet in executive session on any agenda item should the need arise and if authorized by the Texas Open Meetings Act, Title 5, Chapter 551, of the Texas Government Code.

7. Adjourn

In compliance with the Americans with Disabilities Act, the City of La Porte will provide for reasonable accommodations for persons attending public meetings. To better serve attendees, requests should be received 24 hours prior to the meetings. Please contact Patrice Fogarty, City Secretary, at 281.470.5019.

Councilmembers may attend in numbers constituting a quorum. This is a Drainage and Flooding Committee Meeting at which there will be no deliberation or formal action taken by City Council as a governmental body.

CERTIFICATION

I certify that a copy of the June 11, 2018 , agenda of items to be considered by the Drainage and Flooding Committee was placed on the City Hall Bulletin Board on June 5, 2018.

Sharon Harris, Deputy City Secretary

MIKE CLAUSEN
Chairman

JAY MARTIN
Vice-Chairman

CHUCK ENGELKEN
Member



DARYL LEONARD
Member

DANNY EARP
Alternate Member

MINUTES OF DRAINAGE AND FLOODING COMMITTEE JUNE 29, 2015

The Drainage and Flooding Committee of the City of La Porte met on **Monday, June 29, 2015**, at the City Hall Council Chambers, 604 West Fairmont Parkway, La Porte, Texas, at **5:00 p.m.** to consider the following items of business:

1. Call to Order

Chairman Mike Clausen called the meeting to order at 5:05 p.m. The following members of the Drainage and Flooding Committee were present: Vice-Chairman Jay Martin, Committee members Chuck Engelken, Daryl Leonard, and Alternate member Danny Earp. Staff Present: Traci Leach, Tim Tietjens, Sharon Harris and Bob Eng.

2. Authorizations

(a) Consider approval or other action regarding minutes of the Drainage and Flooding Committee Meeting held on March 30, 2015 – S. Harris

Committee Member Engelken moved to approve the minutes of the Drainage and Flooding Committee Meeting held on March 30, 2015 as presented. Committee Member Leonard seconded. **MOTION PASSED.**

| | |
|---------|---|
| Ayes: | Chairman Clausen, Vice Chairman Jay Martin and Committee members Engelken and Leonard |
| Nays: | None |
| Absent: | None |

3. Staff Reports

(a) Discussion of Drainage Projects in the City of La Porte – B. Eng

Planning and Development Director Tim Tietjens presented a synopsis on the recent heavy rain events.

City Engineer/Inspection Service Manager Bob Eng provided a summary for discussion of Drainage Projects and Administrative Drainage Projects in the City of La Porte for the following projects.

F216 Phase II – Watershed Improvements (W. Madison St. to 450' South of W. Main St.)

City Engineer/Inspection Services Manager Bob Eng provided an update on the F216 Phase II – Watershed Improvements (W. Madison St. to 450' South of W. Main St.).

Alternate Member Earp asked if trees will be replanted after environmental clearance is obtained. Public Works Director Dave Mick responded yes and Planning and Development Director Tim Tietjens provide the location where the trees are to be located.

N. P Street Culvert Replacement Project

City Engineer/Inspection Service Manager Bob Eng provided an update on the N. P Street Culvert Replacement Project. There were no questions from Committee Members

N. D Street to Sens Road Ditch De-Silting Project

City Engineer/Inspection Service Manager Bob Eng provided an update on the N. D Street to Sens Road Ditch De-Silting project. There were no questions from Committee Members.

Browning/Golden Drainage Improvements Project

City Engineer/Inspection Service Manager Bob Eng provided an update on the Browning/Golden Drainage Improvements Project. There were no questions from Committee Members

D Street Ultimate Outfall Project

City Engineer/Inspection Service Manager Bob Eng provided an update on the D Street Ultimate Outfall Project. There were no questions from Committee Members

TX Dot/Broadway Remote Maintenance Contract

City Engineer/Inspection Service Manager Bob Eng provided an update on the TX Dot/Broadway Remote Maintenance Contract. Vice-Chairman Martin asked what the overlay project consist of. Mr. Eng responded at least two inches or more of hot mix at Wharton Weems south of Broadway.

CLP Bulkhead

City Engineer/Inspection Service Manager Bob Eng provided an update on the CLP Bulkhead at Happy Harbor. Vice-Chairman Martin questioned the ultimate objective of the project. Planning and Development Director Tim Tietjens informed an existing bulkhead washed out and there is a risk of literally losing the bulkhead and permanently losing property line.

S. 3rd Street Project (Fairmont to Main)

City Engineer/Inspection Service Manager Bob Eng provided an update on the S. 3rd Street (Fairmont to Main) Project. Vice-Chairman Martin asked the expected completion date for the project. Public Works Director Dave Mick responded approximately another 30 days. Committee member Leonard asked if the budget is being maintained well. Mr. Mick responded yes, well with a couple of issues that need to be negotiated.

W. D Street Channel Improvements.

City Engineer/Inspection Service Manager Bob Eng provided an update on the W. D Street Channel Improvements Project. There were no questions from Committee Members.

W. D Street Channel Protection

City Engineer/Inspection Service Manager Bob Eng provided an update on the W. D Street Channel Protection Project. There were no questions from Committee Members.

F101 Drainage Channel (at Pipeline Corridor)

City Engineer/Inspection Service Manager Bob Eng provided an update on the F101 Drainage Channel (at Pipeline Corridor) Project. There were no questions from Committee Members.

Brookglen Detention Basins

City Engineer/Inspection Service Manager Bob Eng provided an update on the Brookglen Detention Basins Project. There were no questions from Committee Members.

Sens Road Reconstruction

City Engineer/Inspection Service Manager Bob Eng provided an update on the Sens Road Reconstruction. There were no questions from Committee Members.

Pedestrian Bridge at Lakes at Fairmont Greens

City Engineer/Inspection Service Manager Bob Eng provided an update on the Pedestrian Bridge at Lakes at Fairmont Greens Project. There were no questions from Committee Members.

MS4 Permit

City Engineer/Inspection Service Manager Bob Eng provided an update on the MS4 Permit. There were no questions from Committee Members.

(b) Discussion of Drainage Concerns in the City of La Porte – B. Eng

Committee member Leonard commented during the recent rain events he noticed considerable retention of water in the ditches on Fairmont Parkway and asked if Harris County Flood Control District has plans on repairing elevation for better drainage. Mr. Eng responded he will contact Harris County Flood Control District and inquire about the drainage concern. In addition, Mr. Eng advised if water remains more than seventy-two hours, Harris County Flood Control District will consider it to be a problem. Public Works Director Dave Mick advised Harris County Flood Control District has been contacted to work various ditches on County roads; work has been performed on S. 16th Street for a number of weeks; and work is complete on N. 11th and N. 12th Streets. In addition, Mr. Mick advised a prioritized list of projects for ditches will be sent to the County as per their request.

Vice-Chairman Martin asked if rainfall can be measured around the City of La Porte. Planning and Development Director Tim Tietjens responded yes, there is a website for Harris County with transducers that measures rainfall on fifteen minute increments. Vice Chairman Martin asked if there are any other major projects need to be continued in the City of La Porte after the S. 3rd Street Project. Planning and Development Director Tim Tietjens responded yes, F216 Phase II and F101.

Alternate Member Earp requested the F216 Phase II and F101 Projects remain priority and to have Harris County Flood Control District provide some type of relief for drainage in Lomax.

Chairman Clausen asked when the Pasadena Land Swap Project will begin. Planning and Development Director Tim Tietjens informed, the City of Pasadena Public Works Director advised they are 8 months away from bidding construction. Committee member Engelken asked when the entrance to Brookwood will be moved farther east as per the agreement with the City of Pasadena, and commented on the amount of dirt on the roadway from dump trucks of contractors. Mr. Tietjens responded he will research and confirm when the entrance will be moved farther east and contact the contractors regarding the dirt in the roadway. Committee member Engelken then asked if the City of Pasadena will build a detention pond with the upcoming HEB grocery store. City Engineer/Inspection Service Manager Bob Eng responded yes there are two detention ponds that exist and Harris County Flood Control District has approved the drainage plans.

4. Set date for next Drainage and Flooding Committee Meeting

The Committee members set the next meeting date tentatively for September 21, 2015 at 5:00 p.m.

5. Committee Comments

Alternate Member Earp thanked Public Works Director Dave Mick for assistance with debris in one of the ditches before a rain event and Chairman Clause commented the drainage improvements on Farrington Blvd., and Fleetwood Dr. have worked wonders during rain events.

6. Adjourn

There being no further business the meeting was adjourned at 5:55 p.m.

Respectfully submitted,

Sharon Harris, Deputy City Secretary

Passed and approved on this 13th day of June 2018.

Chairman of Drainage and Flooding Committee

REQUEST FOR DRAINAGE COMMITTEE AGENDA ITEM

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| <p>Agenda Date Requested: <u>June 11, 2018</u></p> <p>Requested By: <u>Sharon Harris</u></p> <p>Department: <u>City Secretary's Office</u></p> <p>Report: <input checked="" type="radio"/> Resolution: <input type="radio"/> Ordinance: <input type="radio"/></p> <p>Exhibits:</p> | <p style="text-align: center;"><u>Appropriation</u></p> <p>Source of Funds: <u>N/A</u></p> <p>Account Number: _____</p> <p>Amount Budgeted: _____</p> <p>Amount Requested: _____</p> <p>Budgeted Item: <input checked="" type="radio"/> YES <input type="radio"/> NO</p> |
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SUMMARY

The Drainage and Flooding Committee consist of three members and one alternate.

The current members are Councilmembers Jay Martin, Chuck Engelken and Danny Earp. The alternate will be appointed by City Council at a later date.

The Committee is being asked to fill the Chairman and/or Vice-Chairman positions.

Action Required:

Consider appointing a Chairman and/or Vice-Chairman of the Drainage and Flooding Committee.

Approved for Drainage Committee Agenda

Corby D. Alexander, City Manager

Date

REQUEST FOR DRAINAGE COMMITTEE AGENDA ITEM

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| <p>Agenda Date Requested: <u>June 11, 2018</u></p> <p>Requested By: <u>L. Wingate/D. Pennell</u></p> <p>Department: <u>Public Works</u></p> <p>Report: <input checked="" type="radio"/> Resolution: <input type="radio"/> Ordinance: <input type="radio"/></p> | <p style="text-align: center;"><u>Appropriation</u></p> <p>Source of Funds: _____</p> <p>Account Number: _____</p> <p>Amount Budgeted: _____</p> <p>Amount Requested: _____</p> <p>Budgeted Item: <input checked="" type="radio"/> YES <input type="radio"/> NO</p> |
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Exhibits:

SUMMARY

Approximately 400 LF of 24" corrugated metal pipe (two parallel 200 LF segments), serving as the ultimate outfall for half of the Shady Oaks subdivision, was inspected after Hurricane Harvey. Approximately half of the 24" diameter pipe was filled with sedimentation due to severe pipe deterioration along the entire span of the line segment(s). Sedimentation was removed to restore full functionality. In-house crews completed the replacement of the 400 LF of deteriorated pipe in late May.

Action Required:

Approved for Drainage Committee Agenda

Corby D. Alexander, City Manager

Date

REQUEST FOR DRAINAGE COMMITTEE AGENDA ITEM

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SUMMARY

Approximately 800 linear feet of RCP pipe, ranging in size from 15" to 24", exists within the Bayside Terrance Subdivision, which has not been properly maintained due to access issues attributed to limited access to infrastructure, provided within a five foot utility easement. Portions of Hamilton Street and Fondren Street utilize this system to convey stormwater to its outfall point of Galveston Bay. The system fails to function properly, causing flooding within the adjacent portion(s) of the subdivision. A proposed drainage study would discuss feasibility of rerouting this flows from the 800 feet of RCP, towards Bayside Dr. and utilizing the existing system within Bayside Dr. to convey the storm water within the existing system.

Action Required:

Approved for Drainage Committee Agenda

Corby D. Alexander, City Manager

Date

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SUMMARY

Pine Bluff Subdivision Improvements project includes the reconstruction of streets and storm facilities along Bay Shore Drive, Pine Bluff Street and the lettered streets (A thru F) within the Pine Bluff Subdivision. Drainage design accommodates the 5-year and 100-year rain event within the underground collection system. Roadway elevations were lowered to allow adjacent properties to drain towards the street and reduce structural flooding. Improvements are currently under construction and expected to be completed by March 2019.

Action Required:

Approved for Drainage Committee Agenda

Corby D. Alexander, City Manager

Date

REQUEST FOR DRAINAGE COMMITTEE AGENDA ITEM

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SUMMARY

Project intended to prepare drainage analysis to address outstanding comments from LFG Drainage report, submitted to HCFCD in 2009, and design drainage infrastructure improvements to convey storm water runoff from the currently undeveloped land north of Wharton Weems Boulevard (approximately 96 acres) to its ultimate outfall location within Taylor Bayou.

Developer has committed to making coordinating with HCFCD and construct necessary improvements. Drainage Report expected to be submitted mid-June.

Action Required:

Approved for Drainage Committee Agenda

Corby D. Alexander, City Manager

Date

REQUEST FOR DRAINAGE COMMITTEE AGENDA ITEM

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Exhibits:

SUMMARY

CiviTech Engineering prepared a drainage study, in 2006, for the reconstruction of Crestlane Street (also referred to as Barbours Cut Boulevard) from State Highway 146 to Barbours Cut Terminal, a project length of approximately 12,700 linear feet or 2.4 miles.

Drainage improvements were evaluated along Harris County Flood Control District (HCFCD) Unit F210-00-00 (Bob's Gully) to improve outfall drainage from Barbours Cut Blvd. Flooding problems exist(ed) between Barbours Cut Blvd and West Main Street due to insufficient channel capacity and a flow restriction at the culvert crossing at East Main Street.

The impact analysis concluded that the additional flow capacity provided through East Main Street would increase downstream water surface elevations. It is noted in the study that "the increases in the water surface elevations are maintained within the existing channel banks. Therefore, no adverse impacts would occur along HCFC Unit F210-00-00 in terms of out of bank flooding."

HCFCD Unit F210-00-00 is under the jurisdiction of the City of Morgan's Point, Texas, and the HCFCD. The HCFCD has a 60-foot drainage easement along the channel from Bayridge Street to East Main Street. The City of Morgan's Point has indicated that HCFC Unit F210-00-00 has channel slope failures and erosion problems which have jeopardized private property and utilities. They have expressed their concerns to the Harris County Flood Control District and have requested a channel maintenance project to correct the channel erosion problems.

Action Required:

Approved for Drainage Committee Agenda

Corby D. Alexander, City Manager

Date

REQUEST FOR DRAINAGE COMMITTEE AGENDA ITEM

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SUMMARY

The segment of 6th St from W. Madison St to W. Main St is considered part of Old La Porte, which was generally noted in the City-Wide Drainage Study as not having sufficient storm sewer capacity due to undersized storm sewer, undersized storm inlets, and/or not enough storm inlets. RPS-Klotz provided an analysis of the existing storm sewer system to identify problem areas within the project limits and provide recommendations for improvements on 6th St and surrounding areas.

The results proved that 6th St from W. Madison St to W. Main St has significant ponding in storm events as low as 5-year event. Recommendations for improvements were provided, however, areas would still experience ponding depths of approximate 6" to 2'.

Thus, additional efforts are required to understand the root cause of flooding in the area and to recommend improvements to reduce flood risk within the area. To accomplish this goal requires an understanding of the limitations and deficiencies of the drainage systems that serve the region, hence the need to proceed with further evaluation of the most downstream section of the storm sewer system to determine the impact that improvements may have on the area upstream, which has been analyzed previously, and allow for objective prioritization of improvement recommendations in the form of Capital Improvement Plan (CIP) projects that are both functionally efficient and financially effective.

Action Required:

Approved for Drainage Committee Agenda

Corby D. Alexander, City Manager

Date

REQUEST FOR DRAINAGE COMMITTEE AGENDA ITEM

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SUMMARY

The City retained Civil Concepts in 2017 to perform a “Topographic Survey” of the project area to include the topography of the intersections of the described area and the S 8th Street centerline right-of-way including ditches, drainage structures, and pavement from W Main to W D Street.

Topographic survey determined the drainage flow and capacity of the drainage structures in the study area. Civil Concepts provided recommendations and plan views for improvements in the study area.

Proposed improvements include enclosing the existing roadside ditches and installing approximately 634 linear feet of 48-inch reinforced concrete pipe (RCP); 1,264 linear feet of 42-inch RCP; 484 linear feet 36-inch RCP; and 144 linear feet of 30" RCP; to provide conveyance capacity for at least a 5-year rain event.

Action Required:

Approved for Drainage Committee Agenda

Corby D. Alexander, City Manager

Date

REQUEST FOR DRAINAGE COMMITTEE AGENDA ITEM

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Exhibits:

SUMMARY

Improvements to Little Cedar Bayou, from Madison Street to 450 feet south of Spencer Highway. Work of the Contract includes, but is not limited to, excavating and disposing off- site approximately 25,984 CY of soil as required for the new channel alignment. Clearing and grubbing, demolition of existing structures, erosion control, and site restoration for approximately 7 acres and planting approximately 400 3-gallon trees. Construction to be completed by December 31, 2018.

Action Required:

Approved for Drainage Committee Agenda

Corby D. Alexander, City Manager

Date

REQUEST FOR DRAINAGE COMMITTEE AGENDA ITEM

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Exhibits:

SUMMARY

Little Cedar Bayou exists as a narrow, winding, earthen channel between SH 146 and West Barbours Cut Boulevard. Downstream of SH 146, parts of the channel have been straightened and improved with concrete slope paving. Upstream of W Barbours Cut Boulevard, the bayou exists as a relatively straight earthen channel, resembling an oversized roadside ditch.

Improvements to Little Cedar Bayou, from Hwy 146 to Madison, have either been completed or are currently awarded for construction. Improvements include, but are not limited to, excavating and disposing off- site soil as required for the new channel alignment. Clearing and grubbing, demolition of existing structures, erosion control, and site restoration for approximately 5,533 LF of channel. Approximately 4,680 LF of channel remains unimproved upstream, with those improvements slated to be included within Phase III. HCFCFCD has collected survey data on this most upstream section. in effort to prepared construction drawings to provide direction for routine maintenance and clearing overgrowth, trees, and obstructions; minor erosion control and slope stabilization; and desilting. Those maintenance operations are projected to begin late 4th quarter 2018 or early 1st quarter 2019 (calendar year).

Action Required:

Approved for Drainage Committee Agenda

Corby D. Alexander, City Manager

Date

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SUMMARY

This approximate 1,400 LF segment of the Harris County Flood Control's B106-06-00 Channel serves as drainage conveyance for a portion of the northwestern portion of Lomax. The existing upstream end of the channel is open channel for approximately 1,000 linear feet, then converges to a small diameter pipe, causing a restriction. There are repetitive loss properties adjacent to the restriction. Improvements consist of replacing the existing undersized pipe with approximately 630 LF of '8x3' and '6'3' box culverts and installation of inlets. Construction is substantially complete.

Action Required:

Approved for Drainage Committee Agenda

Corby D. Alexander, City Manager

Date

REQUEST FOR DRAINAGE COMMITTEE AGENDA ITEM

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| <p>Agenda Date Requested: <u>June 11, 2018</u></p> <p>Requested By: <u>L. Wingate/D. Pennell</u></p> <p>Department: <u>Public Works</u></p> <p>Report: <input checked="" type="radio"/> Resolution: <input type="radio"/> Ordinance: <input type="radio"/></p> <p>Exhibits:</p> | <p style="text-align: center;"><u>Appropriation</u></p> <p>Source of Funds: _____</p> <p>Account Number: _____</p> <p>Amount Budgeted: _____</p> <p>Amount Requested: _____</p> <p>Budgeted Item: <input checked="" type="radio"/> YES <input type="radio"/> NO</p> |
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SUMMARY

On-site and offsite study determined there is no impact from airport drainage run off to the area north(Lomax) of the airport. The on-site study determined that there is impact to the Glen Meadows Subdivision. Onsite detention and increased capacity will be designed to mitigate the impact on Glen Meadows.

Action Required:

Approved for Drainage Committee Agenda

Corby D. Alexander, City Manager

Date

REQUEST FOR DRAINAGE COMMITTEE AGENDA ITEM

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| <p>Agenda Date Requested: <u>June 11, 2018</u></p> <p>Requested By: <u>L. Wingate/D. Pennell</u></p> <p>Department: <u>Public Works</u></p> <p>Report: <input checked="" type="radio"/> Resolution: <input type="radio"/> Ordinance: <input type="radio"/></p> | <p style="text-align: center;"><u>Appropriation</u></p> <p>Source of Funds: _____</p> <p>Account Number: _____</p> <p>Amount Budgeted: _____</p> <p>Amount Requested: _____</p> <p>Budgeted Item: <input checked="" type="radio"/> YES <input type="radio"/> NO</p> |
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Exhibits:

SUMMARY

Report consisted of an evaluation of the performance of airport drainage system at the west and north boundaries of the airport to address concerns that the airport drainage system may be overwhelmed, in extreme events, leading to stormwater flowing into neighborhoods adjacent to the airport.

The study concluded that there is no impact to the north from the airport. Improvements onsite will mitigate run off into Glen Meadows subdivision.

Action Required:

Approved for Drainage Committee Agenda

Corby D. Alexander, City Manager

Date

REQUEST FOR DRAINAGE COMMITTEE AGENDA ITEM

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SUMMARY

Staff has been coordinating with Harris County on regarding and desilting roadside ditches along "H", "L", & "P" Streets. Harris County Staff has communicated to City staff that this responsibility would be assigned to their contractor for completion.

Action Required:

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Corby D. Alexander, City Manager

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Exhibits:

SUMMARY

Harris County Flood Control District's (HCFCD) F101-06-00 Channel system conveys storm water runoff from the Lomax area and ultimately outfalls into Lower San Jacinto Bay. The downstream section of the channel has been improved to ultimate capacity. An existing pipeline corridor, containing several pipelines located at depths ranging from approximately 2' to 18', cross the channel, limiting the depth of potential channel improvements. Moderate/heavy rain events, compounded with backwater conditions from this section of the channel, contributes to wide-spread flooding within the Lomax Area.

Harris County Flood Control staff has informed Public Works staff that survey data has been collected on this most upstream section. Construction drawings are being prepared in-house, by HCFCD staff, to provide direction on clearing overgrowth, trees, and obstructions; minor erosion control and slope stabilization; and desilting. Construction is projected to begin late 4th quarter 2018 or early 1st quarter 2019 (calendar year).

A high level delineation by KSA found the watershed to be about 310 acres, versus the 583 acres used in the 1987 masterplan. Unit F101-06-00 has a capacity of less than 200 cfs, currently, before it rises out of its banks.

The following options were included within the preliminary draft of the feasibility study prepared by KSA:

- 1) Full excavation of existing 60-ft ROW to construct a concrete channel that will maximize capacity of current ROW, providing approximately 700 cfs, without deepening the channel.
- 2) Construct concrete channel from Valley View to the existing drop structure; widen the channel beyond the ROW to convey the 100-year event (1,326 cfs) by maintaining existing flow line of the channel.
- 3) Construct concrete channel from Valley View to the pipeline corridor and deepen the existing grass lined channel, by one foot, from the pipeline corridor to the existing drop structure.

Action Required:

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Exhibits:

SUMMARY

Klotz Associates, Inc. provided a report in 2011 analyzing flooding in the Battleground Estates, which indicated that flows within segments of the F101 Channel, north of N 'P' Street, rise to a level creating capacity limitations which produce frequent out of banks occurrences. The unimproved upstream channel flows into two forty-two inch (42") corrugated metal pipes (CMP), which feed into the improved two 8' x 10' reinforced concrete boxes downstream. LJA Engineering, Inc. provided Engineering Design Services for the recommended improvements of removing the two upstream forty-two inch (42") corrugated metal pipes and extending the dual 8' x 10' reinforced concrete boxes across N 'P' Street. Construction contract has been awarded and is expected to begin by the first week of June.

Action Required:

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Exhibits:

SUMMARY

A proposed conditions hydraulic model was developed during the preliminary design for the N P Street Culvert Improvement Project, which recommended replacing the upstream portion of the existing composite structure at N P Street, with structures matching the downstream portion of the composite structure. That project allows for full utilization of the structure's capacity, as well as protect the channel during rainfall events that produce higher amounts of runoff. Per the recommendations of the Phase 1 report, a more detailed Phase 2 engineering analysis of segments F101-00-00 and F101-08-00, that are upstream of N P Street, as well as an evaluation of the roadside ditch drainage conduits within Battleground Estates should be performed to identify necessary improvements to address structural flooding within the area. The more detailed study would evaluate the impacts of culverts located upstream of N P Street, along F-101-00-00 resulting from the 10-, 50-, and 100-year rain event. Channel improvements, and increasing culvert sizes to provide sufficient capacity within culverts along the roadside ditches are the anticipated mitigation efforts.

Action Required:

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Corby D. Alexander, City Manager

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Exhibits:

SUMMARY

The proposed storm sewer improvements include re-sloping Coupland Drive to drain towards inlets located throughout the subdivision. The inlets will drain into proposed storm sewer ranging in size from 24" to 30" RCP. This storm sewer will then flow beneath the existing roadside ditch along L Street to a combined outfall with the existing roadside ditch to Big Island Slough. The proposed storm sewer beneath the existing ditch on L Street will be 42" RCP and the combined outfall will need to be a 60" RCP. These improvements will result in no net fill within the Big Island Slough 100-year floodplain. The proposed storm sewer was sized for the 5 year storm event, per the City of La Porte drainage criteria.

Action Required:

Approved for Drainage Committee Agenda

Corby D. Alexander, City Manager

Date

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| Exhibits: _____ | |

SUMMARY & RECOMMENDATION

The B112-02-00 channel segment of Willow Springs Bayou is a concrete lined trapezoidal channel that flows from east to west, where it merges with the B112-00-00 Channel (Willow Springs Bayou). Flooding in the Brookglen subdivision is due to backwater from B112-00-00 backing up into B112-02-00, per the 2009 Fairmont Park East & Brookglen Drainage Study, prepared by Klotz Associates. The B112-02-00 has about 200-acres of contributing drainage area and the channel is approximately 2,500 feet in length between B112-00-00 and Canada Rd. Willow Springs Bayou is a concrete lined trapezoidal channel with a 4' deep low flow section. Upstream of the confluence, the low flow section is 12' wide with 16' benches and concrete riprap side slopes from Deer Park, upstream of Spencer Hwy., to the confluence with B112-02-00, or 1,200-feet upstream. Downstream of the confluence the low flow section expands to 20' wide with 14' benches and concrete riprap side slopes between B112-02-00 and about 920' downstream where the channel transitions to an earthen trapezoidal section with a 30' bottom width and 4H:1V side slopes. The Willow Springs Bayou continues south of Fairmont Pkwy, into Pasadena and ultimately converges into Armand Bayou.

The City of La Porte is working closely with the City of Pasadena in the review of the pending Pasadena Convention Center Drainage & Detention Evaluation. RPS was recently retained by the City of Pasadena to perform a drainage and detention evaluation study for the ultimate development of the 198-acre Pasadena Convention Center (PCC site) along B112-00-00 (Willow Springs Bayou) between W. Fairmont Parkway and Red Bluff Road. There are two underlying objectives of this study: 1) provide recommendations for drainage improvements to the City of Pasadena in order to mitigate the adverse impact resulting from PCC development and 2) determine the benefit of adding 100 ac-ft of volume to the basin, 200 ac-ft of total volume, for the City of La Porte to decrease the risk of flooding along Willow Springs Bayou between Spencer Hwy and W. Fairmont Parkway.

As indicated in the City of La Porte's 2009 Citywide Drainage Study, mitigation of increased runoff due to drainage improvements within the City may be required to prevent adverse impacts upon downstream locations, beyond the City's boundaries. That being said, contingent upon the potential upstream benefits of the proposed additional 100 ac-ft of volume along Willow Springs Bayou, recommendations presented within the 2009 Citywide Drainage Study and the 2009 Fairmont Park East & Brookglen Drainage Study will need to be re-evaluated.

Proposed mitigations actions include:

- 1) B112-00-00 - Channel Improvements, Mitigation Pond, Diversion Pond.
- 2) B112-02-00 - Regional Detention Pond.
- 3) Brookglen subdivision - Sheet flow relief swales.
- 4) Brookglen subdivision - Replace existing storm sewer system to meet current design standards (contain the 5-year rain event and convey 100-year event).
- 5) Brookglen subdivision - Outfall improvements.

Action Required:

Approved for Drainage Committee Agenda

Corby D. Alexander, City Manager

Date

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Exhibits:

SUMMARY

The existing Citywide Drainage Study was undertaken in 2009 to identify, develop, and recommend improvements to address drainage problems and lessen flooding impacts across the City. However, detailed storm sewer network analysis was not included in this planning level study. Advancements in technology allow for: better evaluation of the city-wide drainage system performance through integrated system analysis of channels, storm sewer network, and overland sheet flow; and prioritization of projected improvements.

Action Required:

Approved for Drainage Committee Agenda

Corby D. Alexander, City Manager

Date