

City of Bellaire Community Rating System (CRS)

FLOOD HAZARD MITIGATION TASK FORCE: SEP-28-2021

CRS and the FHMTF

- Resolution No. 17-08

WHEREAS, the Citizens Advisory Task Force on Drainage Issues, in carrying out its charge, determined that it is in the best interests of the City of Bellaire, Texas, to continue participation in the Community Rating System of the National Flood Insurance Program in order to provide flood insurance premium discounts for its residents;

- CRS Credit for Planning Committees

- *Activity 330 (Outreach Projects)* credits a committee that helps develops and evaluates a Program for Public Information (PPI).
- *Activity 370 (Flood Insurance Promotion)* credits a committee that helps develop and evaluate a flood insurance coverage improvement plan (CI).
- *Activity 510 (Floodplain Management Planning)* has two credits for a committee that helps draft a floodplain management or a hazard mitigation plan.

Bellaire's CRS

- CRS Class 10 (OCT-01-2021 to APR-01-2022).
- Application for **CRS Class 9** (effective APR-01-2022).
 - NFIP Draft Verification Report shows the community exceeds requirements for class 9.
- To apply for CRS mod for **CRS Class 7 (or better)** (effective OCT-01-2022).
 - Addressing / documenting processes associated with various CRS Activities.

Bellaire's CRS

	<u>Class</u>	<u>Points</u>	<u>Any Policy</u>
	1	4,500	45%
	2	4,000	40%
	3	3,500	35%
	4	3,000	30%
	5	2,500	25%
OCT-01-2022	6*	2,000	20%
	7	1,500	15%
	8	1,000	10%
APR-01-2022	9	500	5%
	10	< 500	0

*There are additional prerequisites for Class 6 or better (BCEGS of 5/5).

Bellaire's CRS

PUBLIC INFORMATION

Activities

- 310 – Elevation Certificates
- 320 – Map Information
- 330 – Outreach projects
- 340 – Hazard Disclosure
- 350 – Flood Protection Library
- 360 – Flood Protection Assistance
- 370 – Flood Insurance Promotion

FLOOD DAMAGE REDUCTION

Activities

- 510 – Floodplain Mgmt. Planning
- 520 – Acquisition and Relocation
- 530 – Flood Protection
- 540 – Drainage System Maintenance

MAPPING & REGULATIONS

Activities

- 410 – Mapping
- 420 – Open Space
- 430 – Higher Regulatory Standards
- 440 – Flood Data Maintenance
- 450 – Stormwater Management

FLOOD PREPAREDNESS

Activities

- 610 – Flood Warning
- 620 – Levee Safety
- 630 – Dam Safety

Points Secured

Going for Points

Bellaire's CRS

Phase	Activity	Start	End	Status
Phase 1: Reapply to the CRS Program for a Class 9		AUG-2021	AUG-2021	Complete
Class 9 Prerequisites		AUG-2021	AUG-2021	Complete
Phase 2: Program Redevelopment & CAV/NFIP Compliance		AUG-2021	SEP-2021	Complete
FEMA Correspondence / FEMA letter allowing participation	AUG-2021	AUG-2021	Complete	
Provide ECs for all new buildings and additions in SFHA	AUG-2021	SEP-2021	Complete	
Preliminary CRS Classification Improvement Activities	AUG-2021	SEP-2021	Complete	
330 Outreach Activities				
CRS Letter	AUG-2021	AUG-2021	Complete	
CRS Open House	AUG-2021	SEP-2021	Complete	
Phase 3: CRS Classification Improvements		OCT-2021	DEC-2021	On Schedule
320 Map Information (MI)				
MI1 FIRM Zones	OCT-2021	NOV-2021	On Schedule	
MI3 Poor drainage areas (public works)	OCT-2021	NOV-2021	On Schedule	
MI4 Flood depth data	OCT-2021	NOV-2021	On Schedule	
MI6 Historical Flood (RL)	OCT-2021	NOV-2021	On Schedule	
350 Flood Protection Information				
Update COB CRS webpage	OCT-2021	NOV-2021	On Schedule	
Work with library for documentation	OCT-2021	DEC-2021	On Schedule	
410 Flood Hazard Mapping				
Review New Study (possible)	OCT-2021	DEC-2021	On Schedule	
420 Open Space Preservation				
Identify Open Space Areas	OCT-2021	NOV-2021	On Schedule	
Calculate Points (per CRS Manual)	OCT-2021	NOV-2021	On Schedule	
510 Floodplain Management Planning				
RL Properties review, map, analysis	OCT-2021	DEC-2021	On Schedule	
Phase 4: Review/Revise Related Processes & Procedures				Pending

- Phase 1: Reapply to CRS Program**
- Phase 2: Program Redevelopment**
 - Provide evidence of CAV/NFIP compliance
- Phase 3: CRS Classification Improvements**
 - Improve class for effective date Oct-22
- Phase 4: CRS Continuous Improvement**
 - Further improvements and support

City of Bellaire Community Rating System (CRS)

FLOOD HAZARD MITIGATION TASK FORCE: SEP-28-2021

Master Drainage Concept Plan Results and Next Steps

PUBLIC WORKS DEPARTMENT

Overview

1. Project Background
2. Findings and Results
3. Funding and Partnership Opportunities
4. Next Steps

Project Background

Cooperative study of regional drainage issues (~\$750k)

- Financial Partners
 - Harris County (HCFCD) \$351,000
 - Bellaire \$221,750
 - TxDOT - \$129,250
- Area Planning Partners
 - City of Houston
 - West University Place
 - Union Pacific Railroad
 - CenterPoint Energy

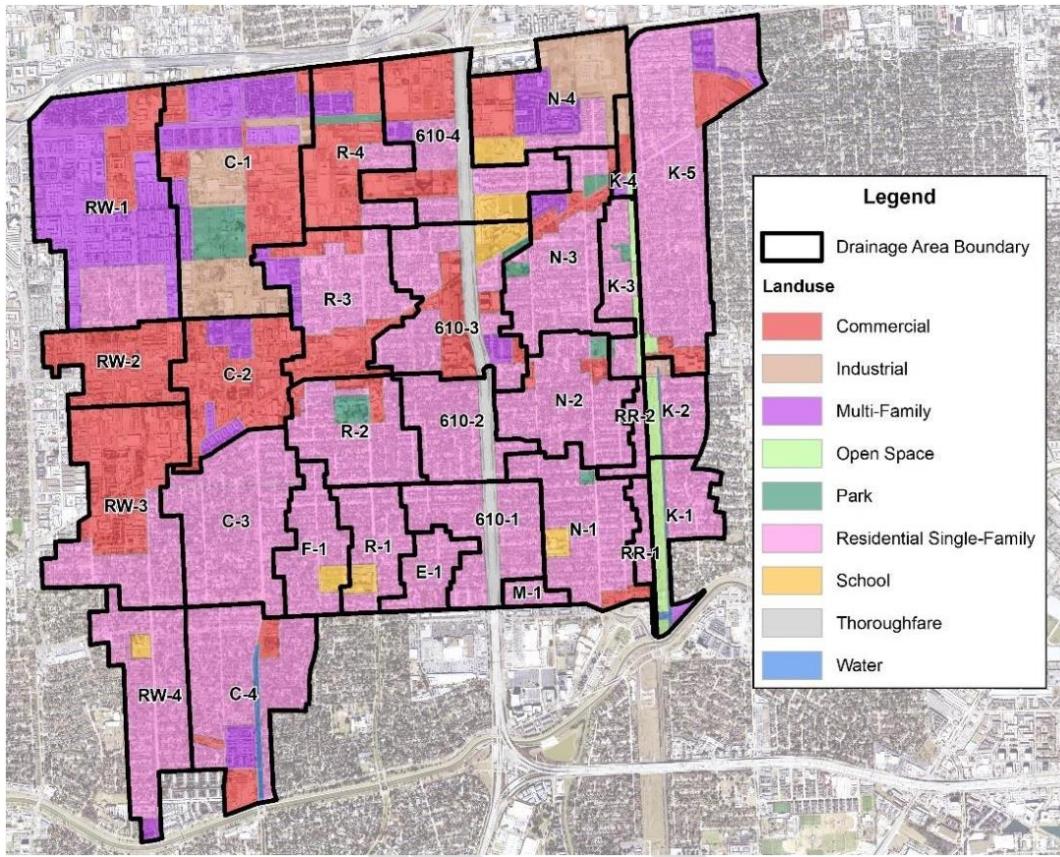
Need for study – model existing conditions under variety of storm conditions

Modeling is common language and scientifically identifies issues via standard methodologies

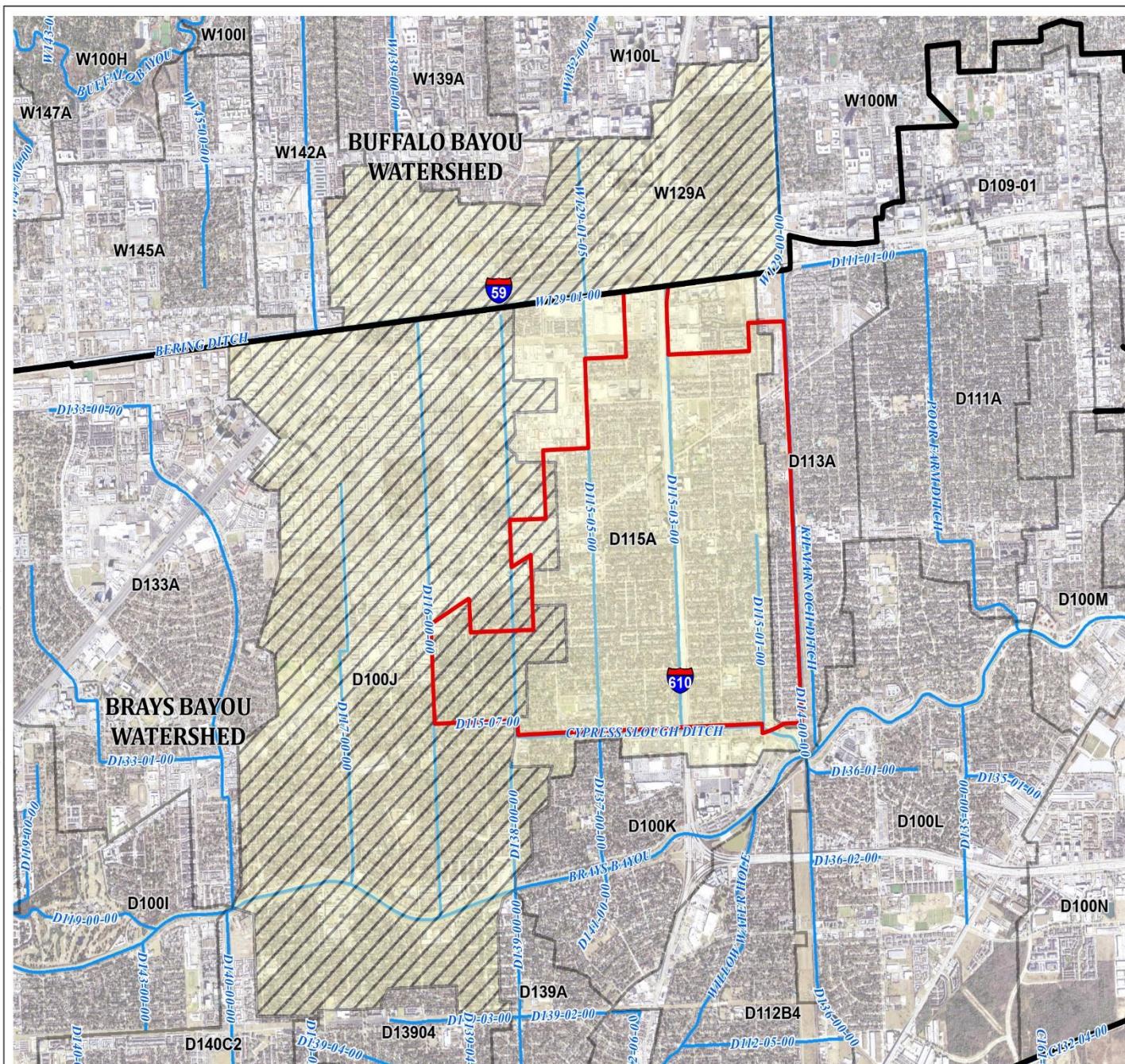
Modeling is critical in the identification of solutions

This is a planning tool needed to compete for funding (Federal, State, etc.)

Project Background



- Study area beyond Bellaire City Limits
- Purpose – Identify stormwater issues impacting Bellaire from outside the City limits
- Assess stormwater flow under certain storm event conditions from COH into Bellaire and into Brays Bayou



0 3,000

Feet

1 in = 3,000 ft

Legend

Stream Centerline (Blue line)

City of Bellaire (Red box)

Watershed Boundary (Black box)

Subbasin (Dashed box)

Onsite Subbasin (Yellow box)

Offsite Subbasin (Diagonal hatching)

Costello

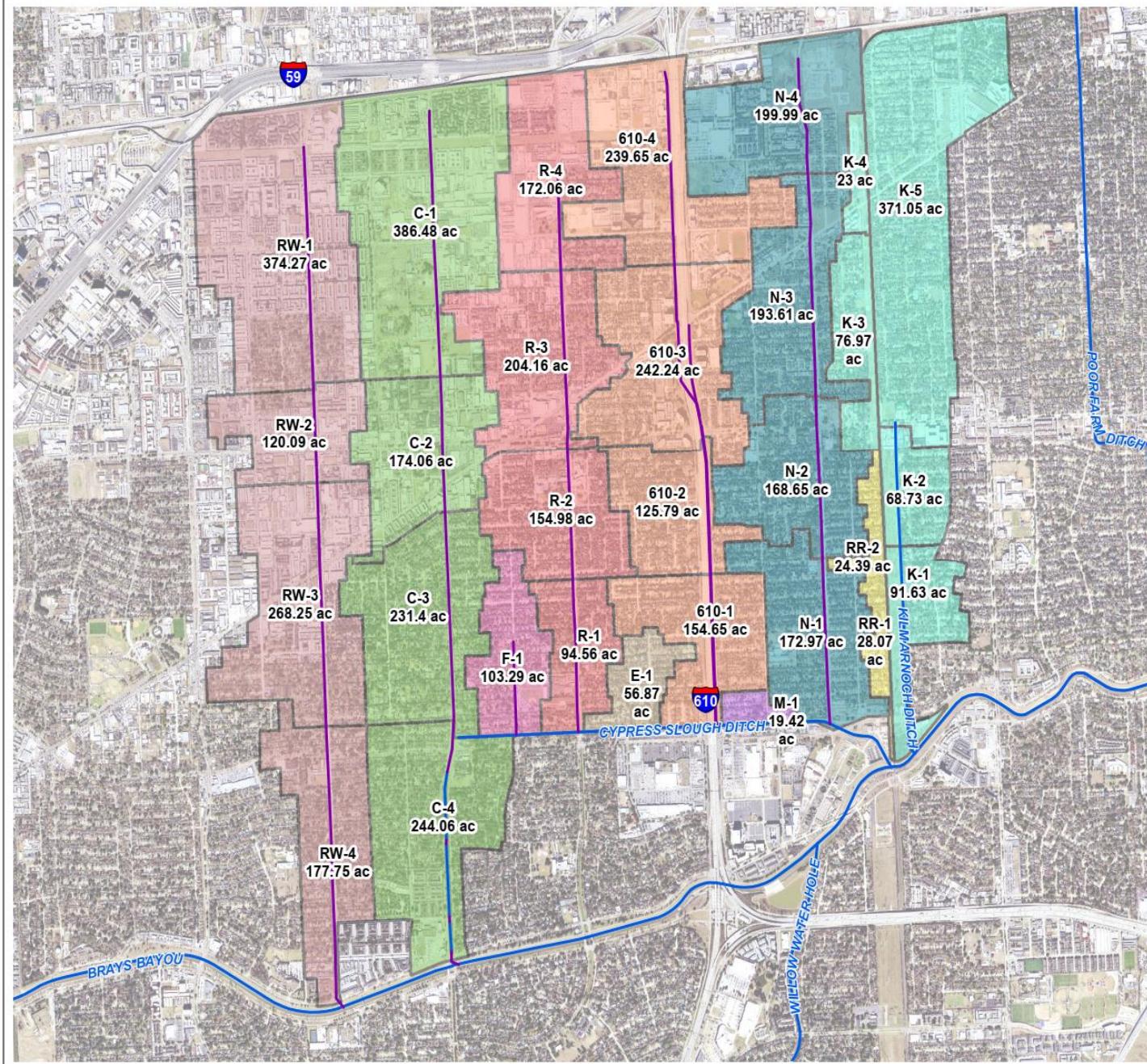
Costello, Inc.
Engineering and Surveying
TBPE Firm Registration No. 280

CITY OF BELLAIRE
MASTER DRAINAGE CONCEPT PLAN

WATERSHED MAP

JOB NO : 2013219-001 DS-002

EXHIBIT 1



0 2,000
Feet
1 in = 2,000 ft

Legend

- Stream Centerline
- Storm Sewer Trunk Line
- Drainage Area Boundary**
- Chimney Rock
- Englewood
- Ferris
- I-610
- Kilmarnoch Ditch
- Mimoso
- Newcastle
- Union Pacific Railroad
- Renwick
- Rice



Costello, Inc.
Engineering and Surveying
TBPE Firm Registration No. 280

CITY OF BELLAIRE
MASTER DRAINAGE CONCEPT PLAN

DRAINAGE AREA MAP

JOB NO.: 2013219-001-DS-002 DATE: AUG 2021 BY: MTW

EXHIBIT 3

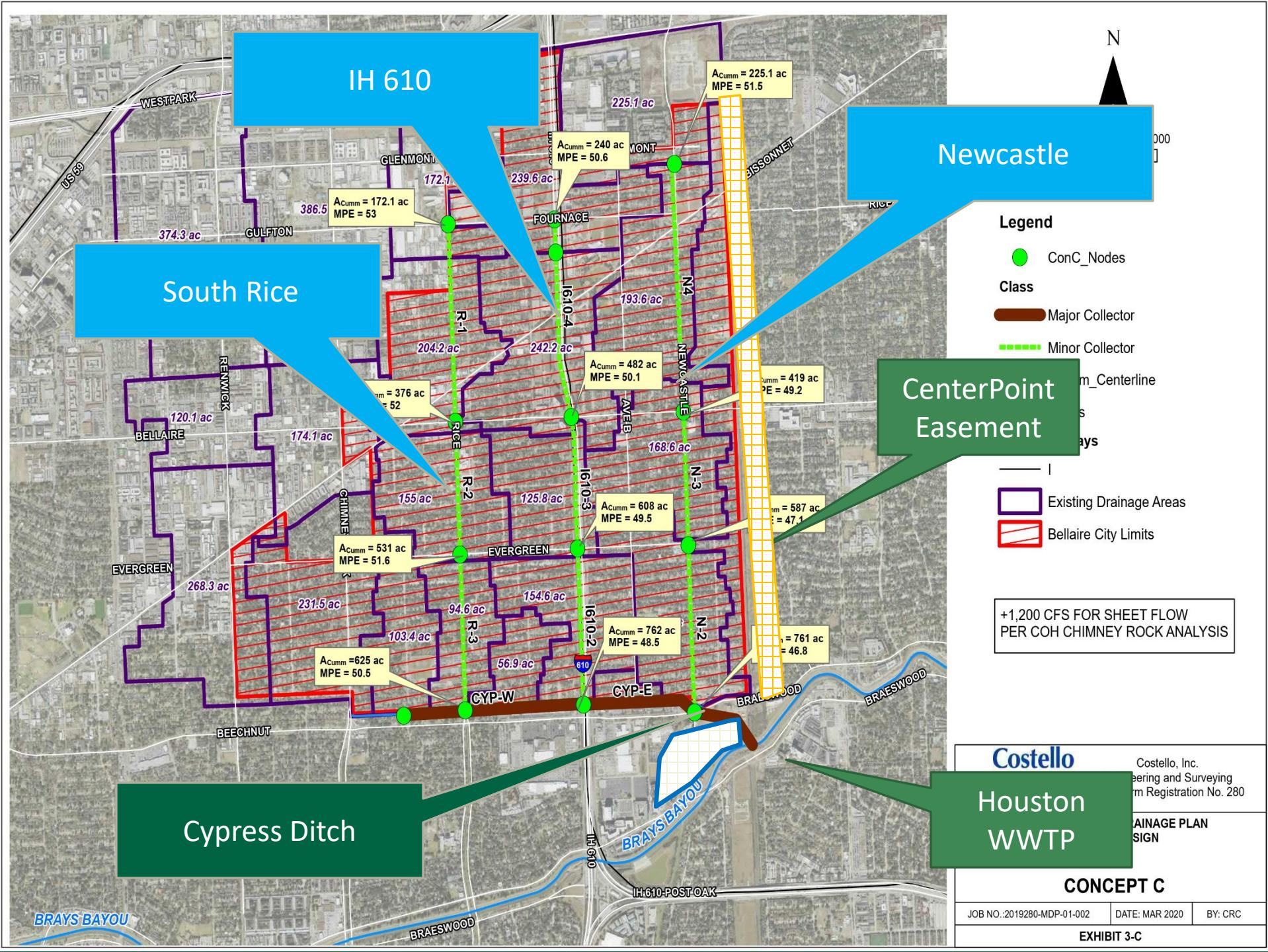
Finding and Results

Preliminary Findings

- The northern portions of Bellaire flood irrespective of Brays Bayou due to stormwater system inadequacies
- Improvements to the north-south stormwater conveyance facilities are needed to address these issues
- These needs will require a continuation of capital improvements for local streets and drainage to maximize benefit of MDCP
 - May continue to include drainage improvements to 100-year design standard
 - PCI results would be utilized to focus on opportunities where drainage and pavement needs align
- Recommendations will allow for opportunities to pursue projects with both an immediate and long-term, system-wide benefit
- Solutions will require exploration of strategic options for partnerships and approaches to funding solutions and project delivery options
 - Detention potentially available: COH -WWTP and CenterPoint Easement

Finding and Results

- Three Concepts solutions developed
 - Results of study indicate Concept "C" is best approach
- These are not designs, not preliminary engineering
 - Both will be required to move forward
- Cost estimates along with project scopes and phasing are preliminary and will be refined through PER and Design phases
- Concept **C** Incorporates Council and Flood Hazard Mitigation Taskforce input
 - Benefit Southdale and most impacted areas with focus on Cypress Ditch
 - Project should be scalable with benefit in each phase.
 - No acquisition of private lots



Finding and Results Concept “C”

- Lower cost projects with immediate benefit
- Identified Preliminary Phasing
 - 610 – TxDOT Improvements - \$80.5 MM
 - Would provide most initial benefit
 - Most challenging portion due to funding and coordination challenges
 - Cypress Ditch - \$35 MM
 - Funding opportunities (HCFD & COH) for Cypress Ditch
 - Cypress Ditch (D115) is **not** a COB facility
 - Not located within the city limits of Bellaire

Finding and Results Concept “C”

- South Rice
 - Could be done with S. Rice future reconstruction – \$76 MM
- Newcastle -
 - Storm sewer or traditional tunneling \$59.7MM
 - *Through PER alternative methods for tunnel system will be explored that could provide lower cost. \$24MM - \$59.7MM
- Actual approaches for design and construction are **not finalized**
 - To be refined based on priorities, available funding, partnership opportunities, and PER guidance

Partnership Opportunities

COH-HCFCD Cypress Ditch Improvements

Proposed Regional Interagency CDBG-MIT Projects
 Harris County Flood Control District / Harris County / City of Houston
 Revised 10/21/2019



Project Totals by Agency			
	Total	CDBG-MIT	Local
HCFCD	\$ 784,100,000.00	\$ 633,590,000.00	\$ 150,510,000.00
HC	\$ 277,858,000.00	\$ 222,286,400.00	\$ 55,571,600.00
COH	\$ 2,089,191,073.00	\$ 1,920,386,629.00	\$ 168,804,444.00
Total	\$ 3,151,149,073.00	\$ 2,776,263,029.00	\$ 374,886,044.00

Watershed	Total	Partner	Local
Brays Bayou	\$ 1,381,775,590.00	\$ 1,258,215,326.00	\$ 123,560,264.00
Greens Bayou	\$ 253,843,000.00	\$ 209,684,400.00	\$ 44,158,600.00
Halls Bayou	\$ 541,389,756.00	\$ 462,633,030.00	\$ 78,756,726.00
Hunting Bayou	\$ 192,496,747.00	\$ 192,496,747.00	\$ -
Sims Bayou	\$ 561,364,599.00	\$ 481,616,607.00	\$ 79,747,992.00
White Oak Bayou	\$ 220,279,381.00	\$ 171,616,919.00	\$ 48,662,462.00
Total	\$ 3,151,149,073.00	\$ 2,776,263,029.00	\$ 374,886,044.00

Brays Bayou			
	Total	CDBG-MIT	Local
HCFCD	\$ 123,000,000.00	\$ 100,500,000.00	\$ 22,500,000.00
HC	\$ -	\$ -	\$ -
COH	\$ 1,258,775,590.00	\$ 1,157,715,326.00	\$ 101,060,264.00
Total	\$ 1,381,775,590.00	\$ 1,258,215,326.00	\$ 123,560,264.00

Agency	ID	Watershed	Project Title		
HCFCD	CI-038	Brays Bayou	Restore Channel Conveyance Capacity Along D115-00-00		
		Political Jurisdiction	Total Cost	CDBG-MIT	Local Share
2	\$ 30,000,000.00	\$ 15,000,000.00	\$ 15,000,000.00	\$ 15,000,000.00	\$ 15,000,000.00



Harris County, Texas

1001 Preston St., Suite 934
Houston, Texas 77002

Legislation Details (With Text)

File #:	21-3949	Version:	1	Name:
Type:	Recommendation for authorization	Status:	Agenda Ready	
File created:	8/2/2021	In control:	Commissioners Court	
On agenda:	8/10/2021	Final action:		
Title:	Recommendation to initiate and proceed with a project to restore channel conveyance capacity along Cypress Slough Ditch. (Brays Bayou Watershed, Bond ID CI-038, HCFCD Unit D115-00-00, Precinct 3).			

To: Harris County Commissioners Court

Through: Alan R. Black, P.E., Interim Executive Director, Harris County Flood Control District
Prepared By: Matthew K. Zeve, P.E., Deputy Executive Director, Harris County Flood Control District

Subject: New Bond Project Authorization

Project ID (If applicable): N/A

Purpose and Request:

Recommendation to initiate and proceed with a project to restore channel conveyance capacity along Cypress Slough Ditch. (Brays Bayou Watershed, Bond ID CI-038, HCFCD Unit D115-00-00, Precinct 3).

Background and Discussion:

This project scores in the 4th quartile under the Bond Prioritization Framework approved by Commissioners Court in 2019. This will be a partnership project with the City of Houston and the City of Bellaire.

Alternatives:

The alternative is not to proceed with the project.

Alignment with Strategic Objective:

SO1.1 - Continuously plan CIP projects to improve conveyance capabilities of Harris County through addition of assets to FCD infrastructure and improving existing assets within FCD's existing infrastructure.

SO2.1 Reducing flooding risks across Harris County by completing projects in the 2018 Harris County Flood Control District Bond Program by 2030.

Attachments: Vicinity map



Project ID: D115-00-00 (CI-038)
Watershed: Brays Bayou
Precinct: 3

On 8/10, Project CI-038 was confirmed to proceed by a unanimous vote of the Commissioners Court

Project is intended to improve conveyance capacity in Cypress Ditch

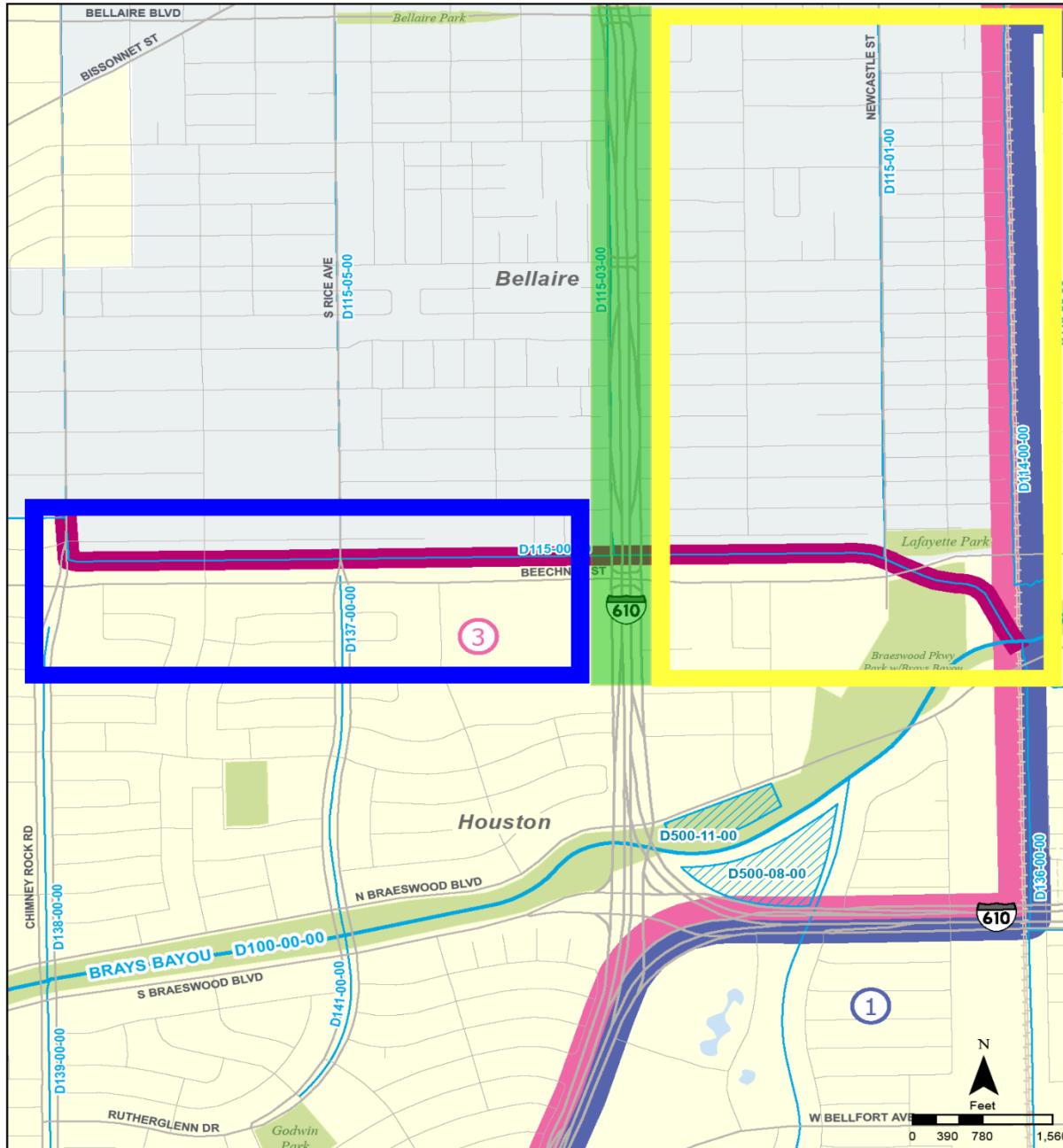
Discussions regarding scope and phasing are ongoing

City of Bellaire

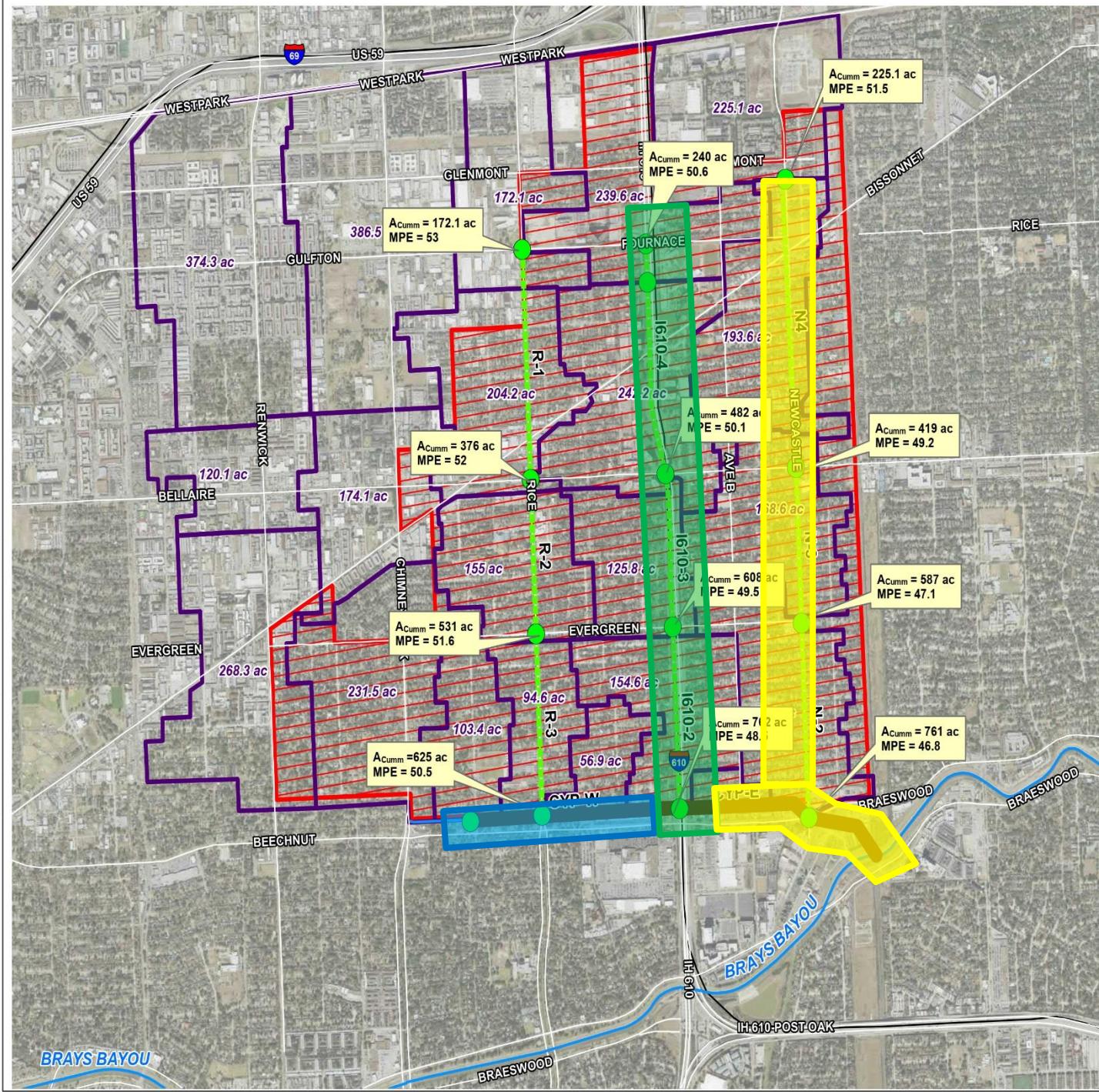
FY 2022 – 2026 ADOPTED CAPITAL IMPROVEMENT PLAN

Project Code & Name	Funding Source
DR2202 - Regional Drainage Project	Capital Bonds Interlocal Cooperation Grant Funding
FY22	FY23
\$16,000,000	\$19,000,000

MDCP Implementation/ Drainage Project Funding Options		
Entity	Source	Amount
COB	FY 2022 Authorization of Existing Bond Funds for DR2202	\$5,500,000
COB	Unappropriated bond/ CIP funds or matching grant funds	\$5,500,000
COB	Bond sale-Existing authority	\$6,000,000
COB	COB-ARP Funding	4,700,000
HCFCD	CI-038 Project Funding - Existing Bond Proceeds	\$15,000,000
HCFCD	Local Project Matching Funds	Unknown/TBD
COH	Unidentified funding for Cypress Ditch-Phase 2	\$15,000,000/TBD
TXDOT	Unidentified IH-610 Drainage Project Funds	Unknown/TBD



- **Phase 1 Project Approach**
Joint partnership opportunity with HCFCD for Newcastle and Phase 1 (610 to Brays) Cypress Ditch improvements
- **IH610 Improvements:**
Work with TXDOT on scope and approach, to include Cypress Ditch improvements within TXDOT ROW
- **COH-Cypress Ditch- Ph2**
COH project to improve Cypress Ditch with consideration of MDCP findings and COH goals



N

0 2,000

Feet
1 in = 1,800 ft

Legend

- ConC_Nodes (Green circle)
- Class
 - Major Collector (Dark Brown line)
 - Minor Collector (Dashed Green line)
 - Stream_Centerline (Blue line)
- Roads (Purple line)
- Major Highways (Purple line)
- Existing Drainage Areas (Purple outline)
- Bellaire City Limits (Red outline)

+1,200 CFS FOR SHEET FLOW
PER COH CHIMNEY ROCK ANALYSIS



Costello, Inc.
Engineering and Surveying
TBPE Firm Registration No. 280

BELLAIRE MASTER DRAINAGE PLAN
CONCEPT DESIGN

CONCEPT C

JOB NO.:2019280-MDP-01-002 DATE: MAR 2020 BY: CRC

EXHIBIT 3-C

Next Steps:

- Accept the findings of the MDCP Report as presented
 - Report becomes a “living document” that guides future activities and is modified to reflect phasing, funding, and other aspects of implementation
 - Focus shifts to implementation and ways to identify manageable near-term improvements with long-term goals in mind
- Engage a Technical Advisor to begin facilitating the following
 - Provide guidance regarding PER and project implementation options
 - Scope of Phase 1 improvements for Cypress Ditch/Newcastle improvements which would utilize HCFCD existing bond funds
 - Project scope and design parameters for Phase 2 of Cypress Ditch improvements to be completed by COH
 - Coordinate future phasing options and provide PER analysis for other phases

Next Steps:

- Finalize partnership terms with COH
 - COH utilization of Bellaire portion of Ruffino Hills
 - COB acquisition of Brays Bayou watershed detention credits from COH
 - Input on non-COB projects affecting area drainage (e.g. Chimney Rock improvements)
- Work with TXDOT regarding drainage improvements along IH610
 - Consideration of MDCP findings
 - Review options for project approach and funding
- Coordination with UPRR and CenterPoint to meet objectives
 - Explore options for utilization of and improvements within the ROW of both entities

Master Drainage Concept Plan Results and Next Steps

PUBLIC WORKS DEPARTMENT