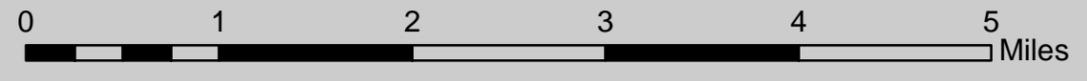


-  Alignment
-  Outfalls
-  Major Rivers
-  Watersheds

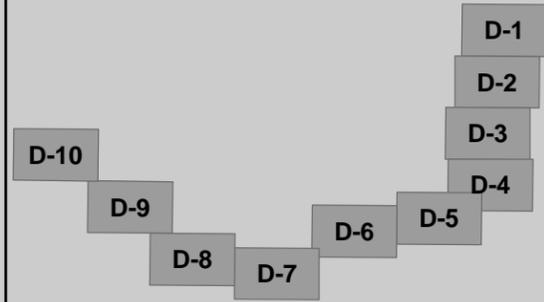
Sabine Pass to Galveston Bay Drainage Area

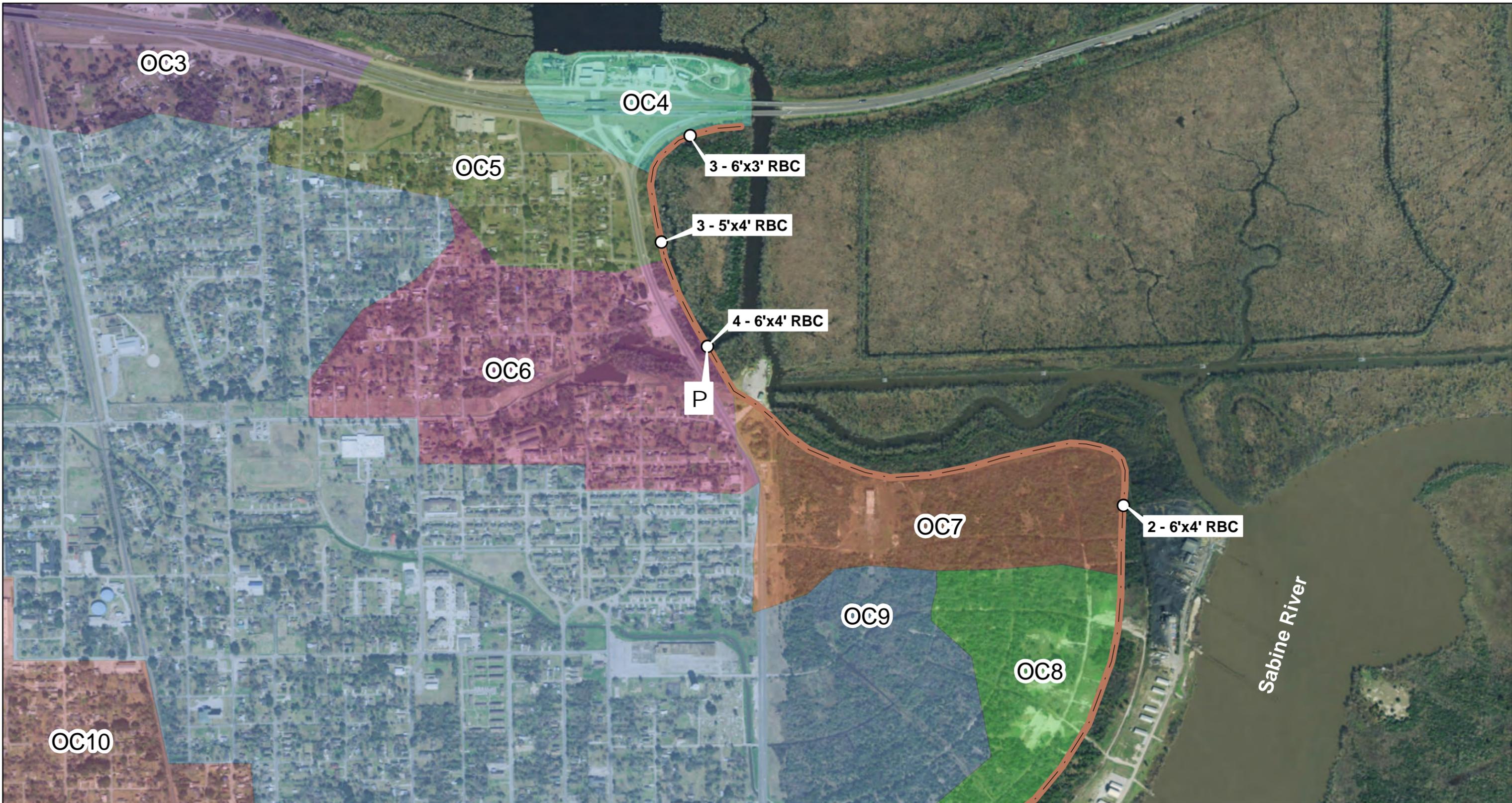


1 : 60,000



D - Overview



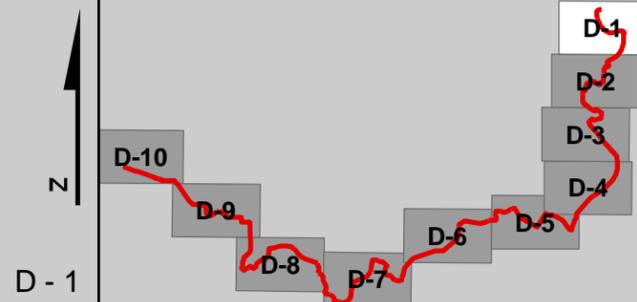


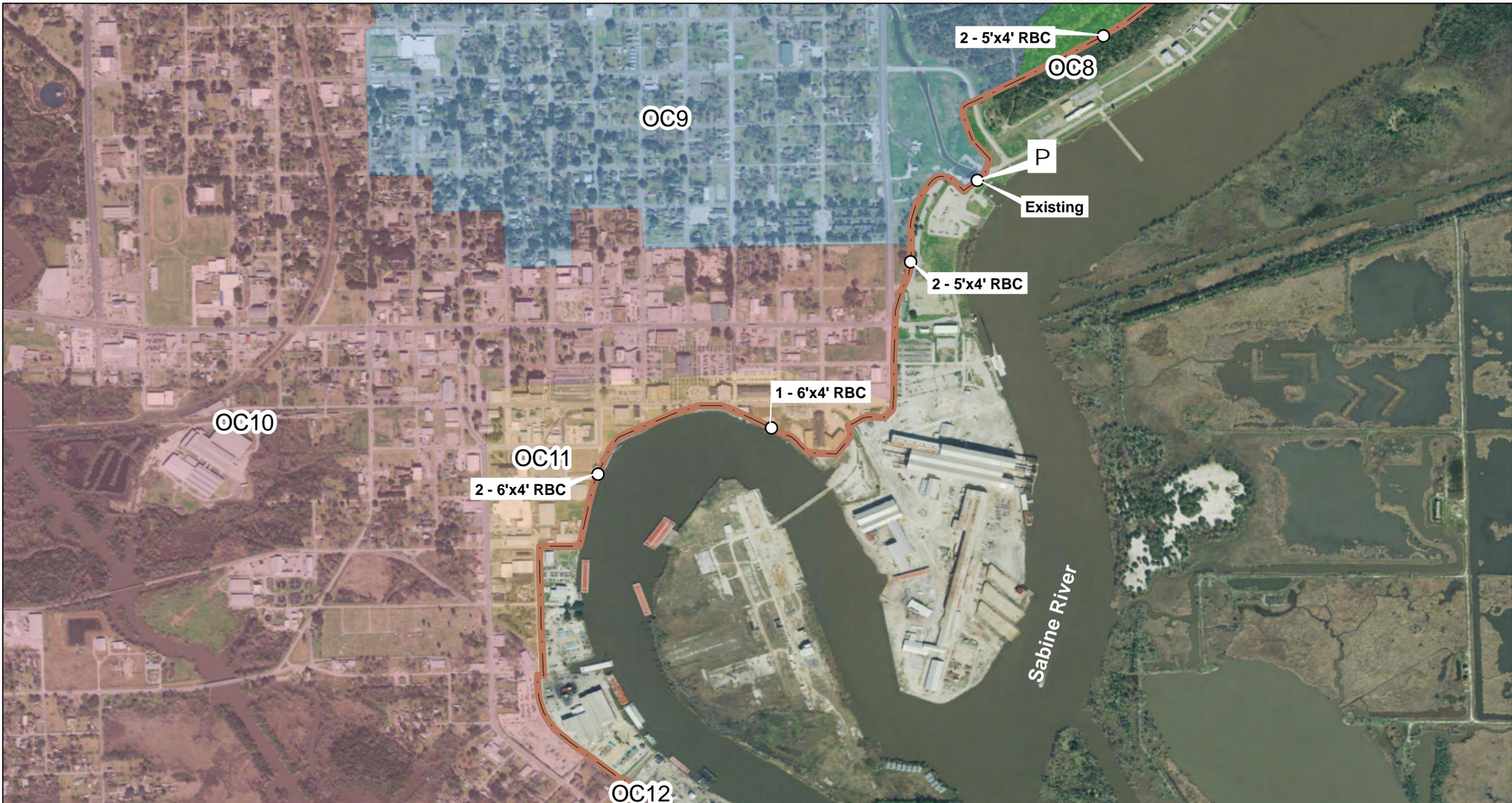
-  Alignment
-  Outfalls
-  Pump Locations
-  Major Rivers
-  Watershed

Sabine Pass to Galveston Bay Drainage Area



1 : 10,000



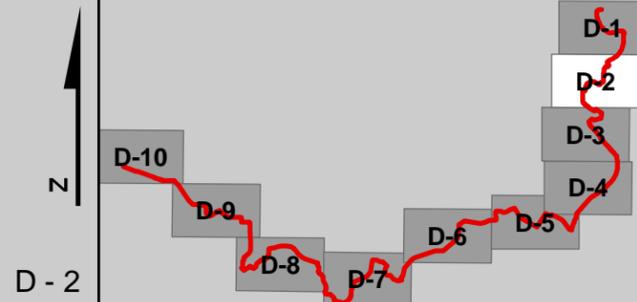


-  Alignment
-  Outfalls
-  Pump Locations
-  Major Rivers
-  Watershed

Sabine Pass to Galveston Bay Drainage Area



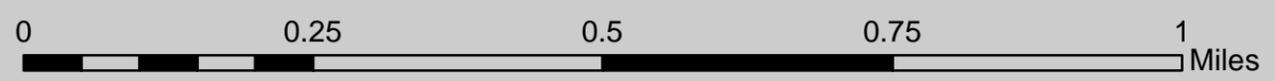
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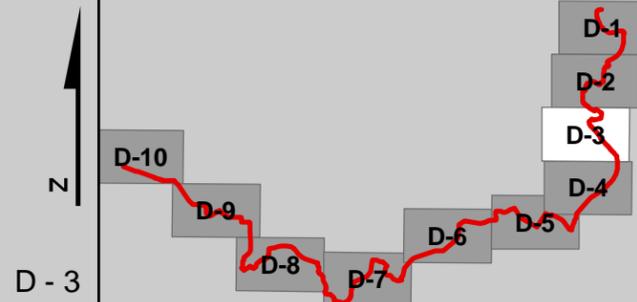


-  Alignment
-  Outfalls
-  Pump Locations
-  Major Rivers
-  Watershed

Sabine Pass to Galveston Bay Drainage Area



1 : 10,000





OC13

OC10

GATE

P

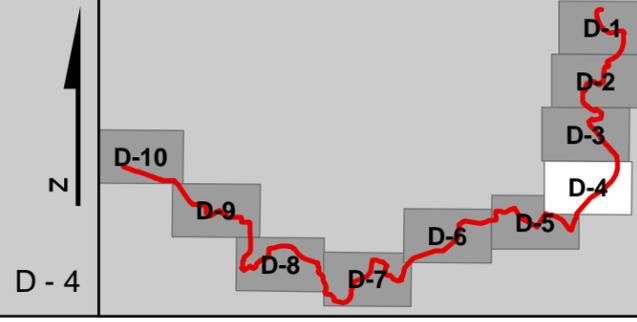
Sabine River

-  Alignment
-  Outfalls
-  Pump Locations
-  Major Rivers
-  Watershed

Sabine Pass to Galveston Bay Drainage Area



1 : 10,000



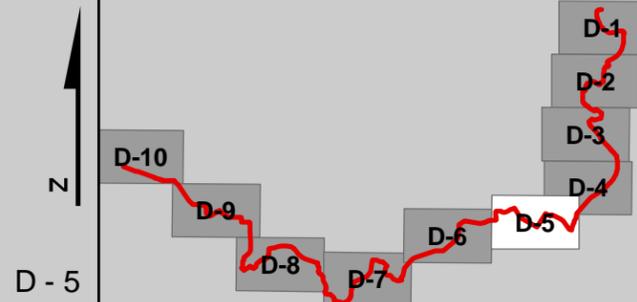


-  Alignment
-  Outfalls
-  Pump Locations
-  Major Rivers
-  Watershed

Sabine Pass to Galveston Bay Drainage Area



1 : 10,000



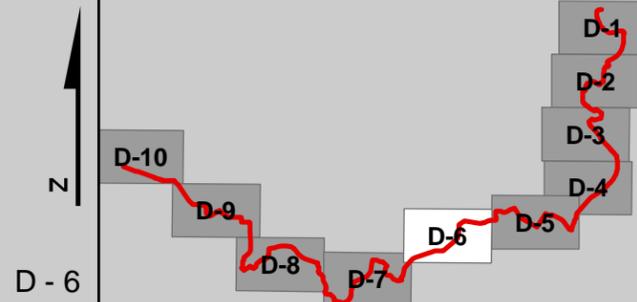


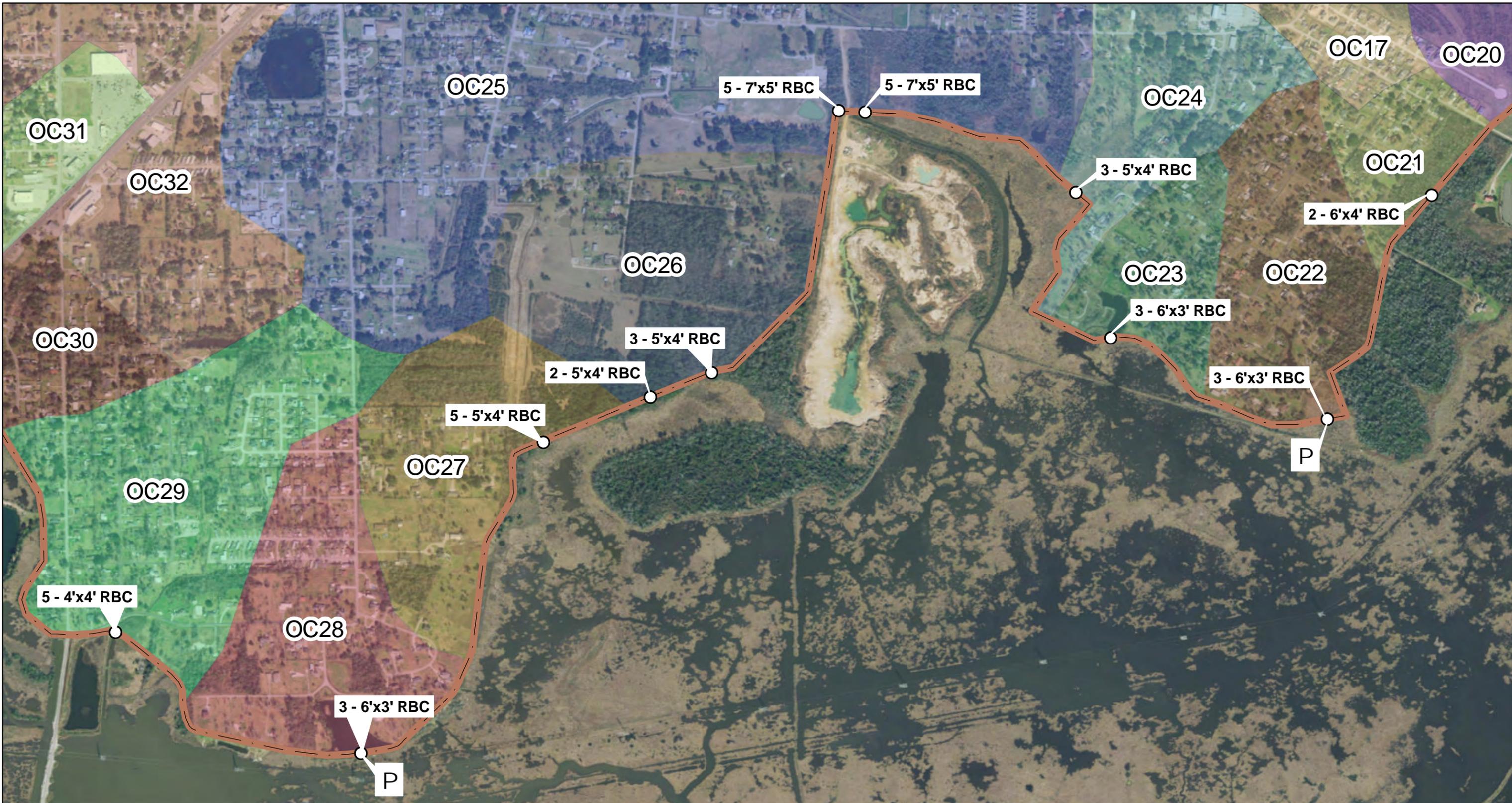
-  Alignment
-  Outfalls
-  Pump Locations
-  Major Rivers
-  Watershed

Sabine Pass to Galveston Bay Drainage Area



1 : 10,000



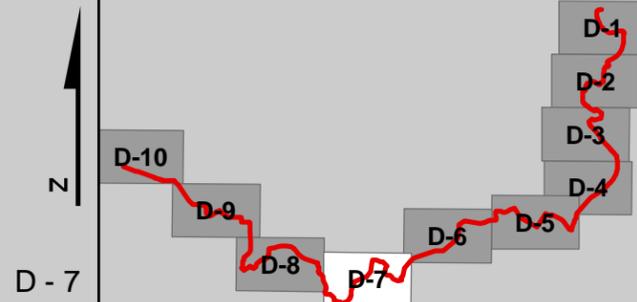


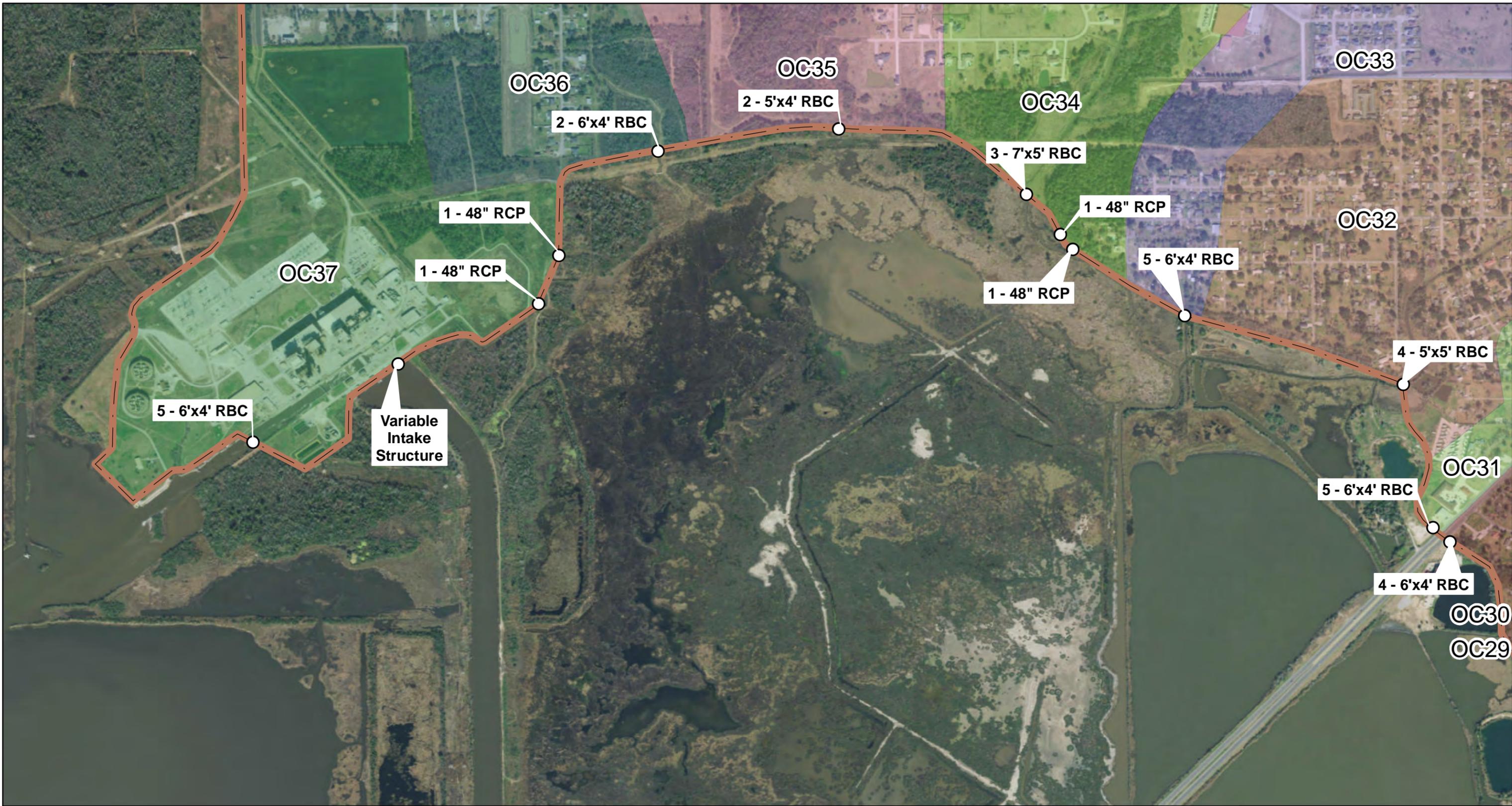
-  Alignment
-  Outfalls
-  Pump Locations
-  Major Rivers
-  Watershed

Sabine Pass to Galveston Bay Drainage Area



1 : 10,000

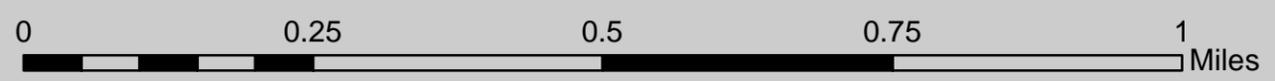




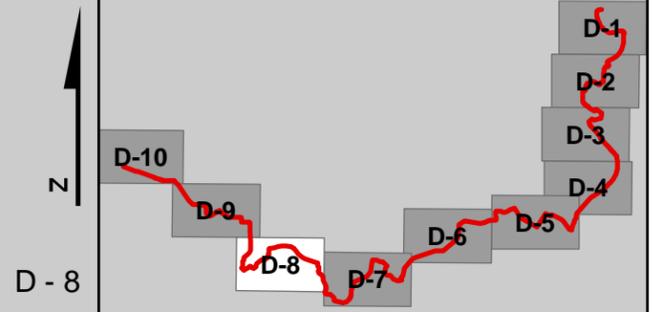
-  Alignment
-  Outfalls
-  Pump Locations
-  Major Rivers
-  Watershed

** Variable Intake Structure is used during normal conditions with a variable intake system to be used during surge events.

Sabine Pass to Galveston Bay Drainage Area



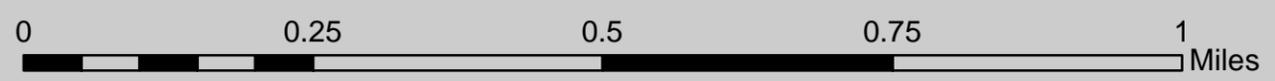
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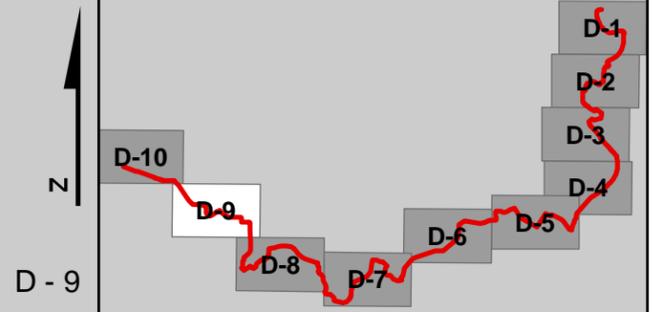


-  Alignment
-  Outfalls
-  Pump Locations
-  Major Rivers
-  Watershed

Sabine Pass to Galveston Bay Drainage Area



1 : 10,000



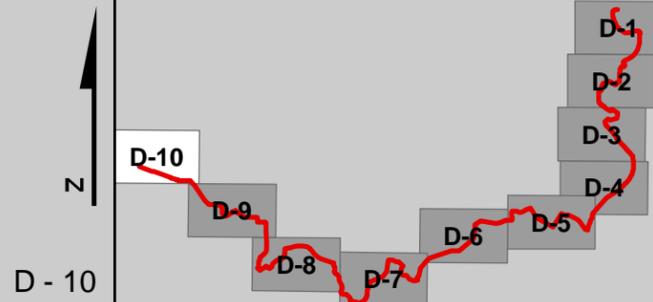


-  Alignment
-  Outfalls
-  Pump Locations
-  Major Rivers
-  Watershed

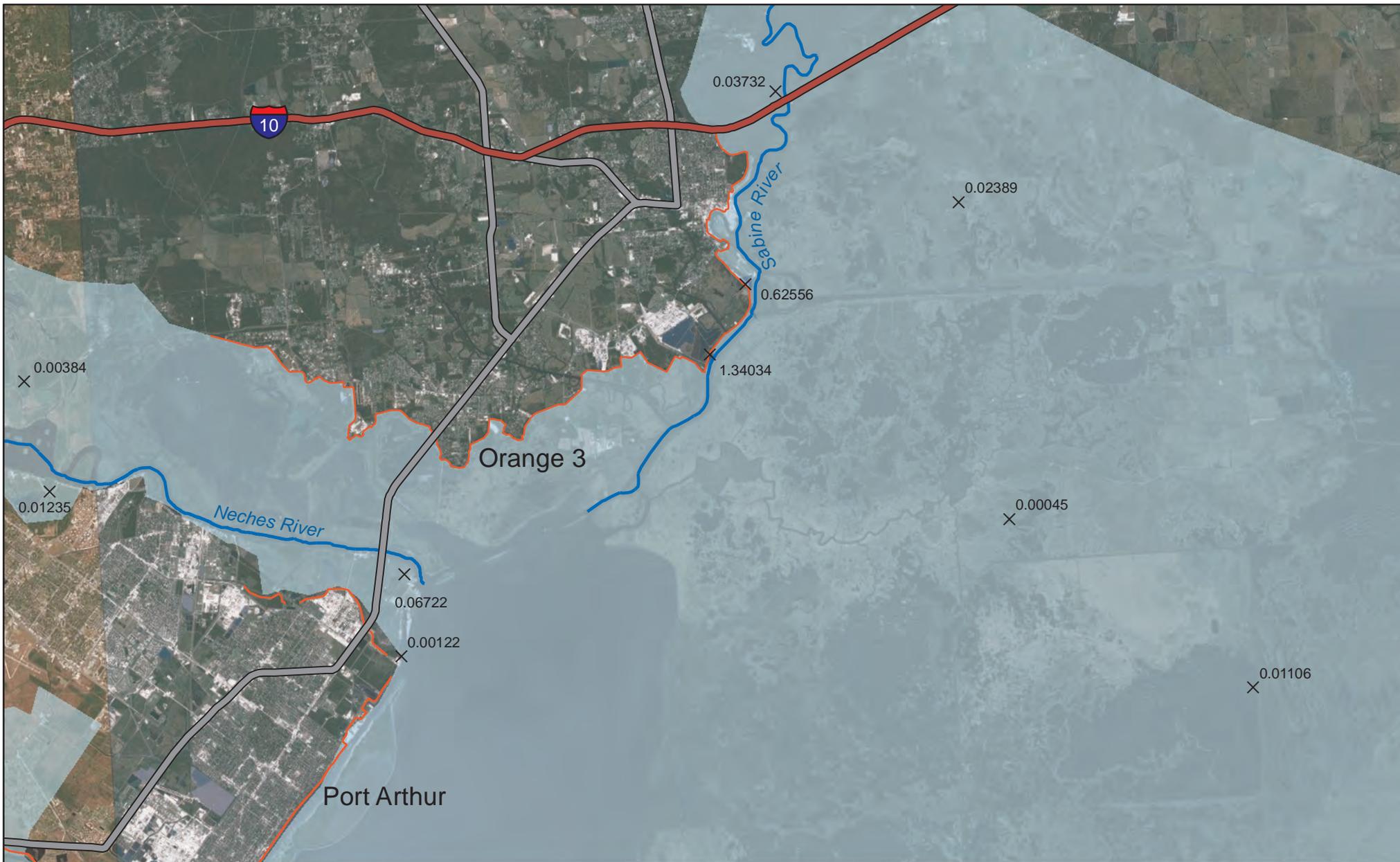
Sabine Pass to Galveston Bay Drainage Area



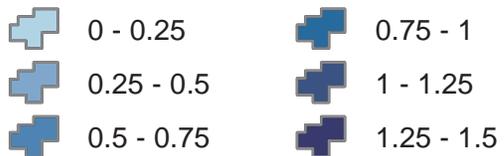
1 : 10,000



Adjacent Impacts



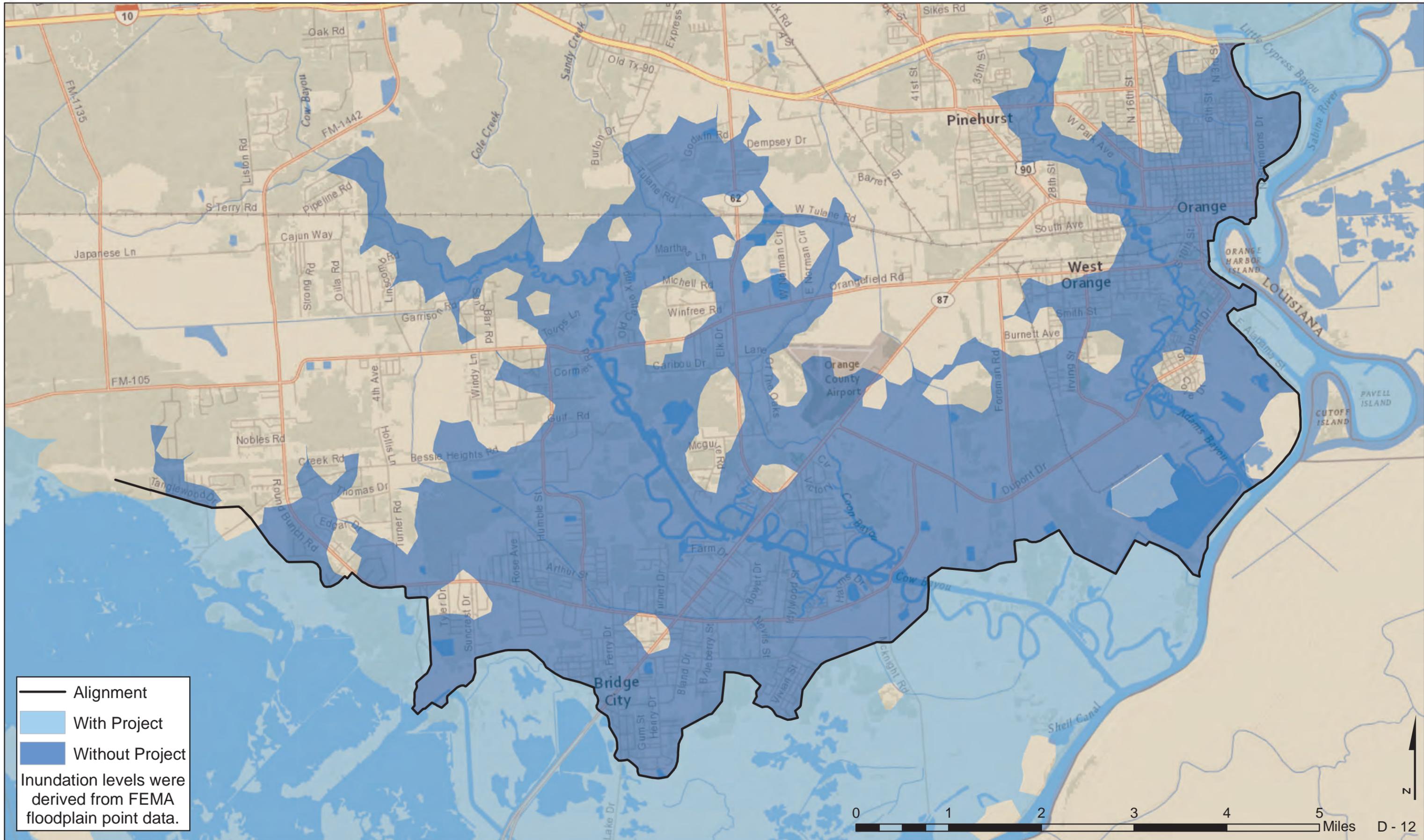
Surge Impact Change (WP-WOP)



The surge builds at the levee, but other than the levee area there is no significant impact to the surge height. In areas away from the levee line the change remains constant within -0.5 and 0.5 ft.

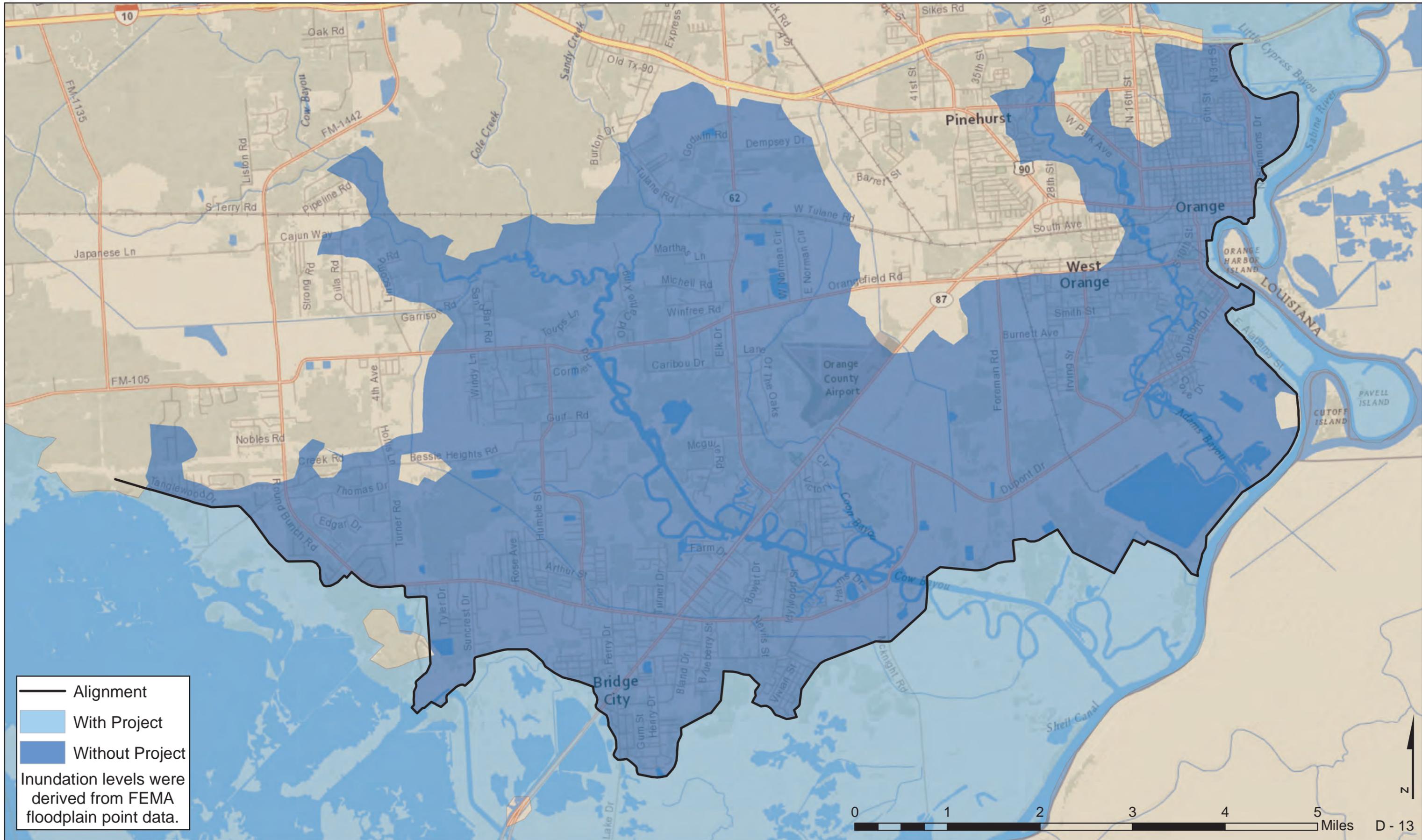


Orange 3 Inundation Change at the 100 Year Floodplain Level





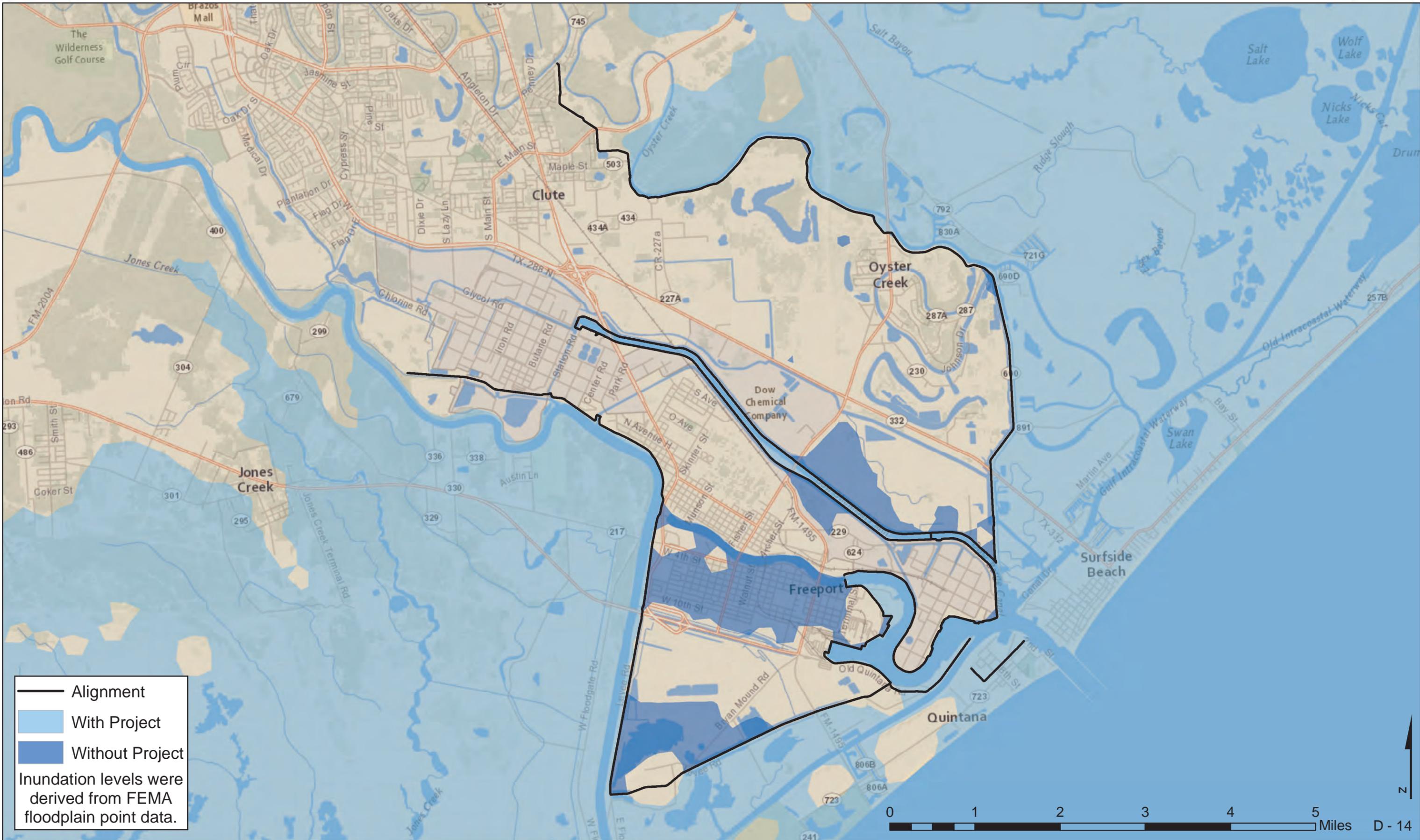
Orange 3 Inundation Change at the 500 Year Floodplain Level





Freeport Inundation Change

at the 100 Year Floodplain Level



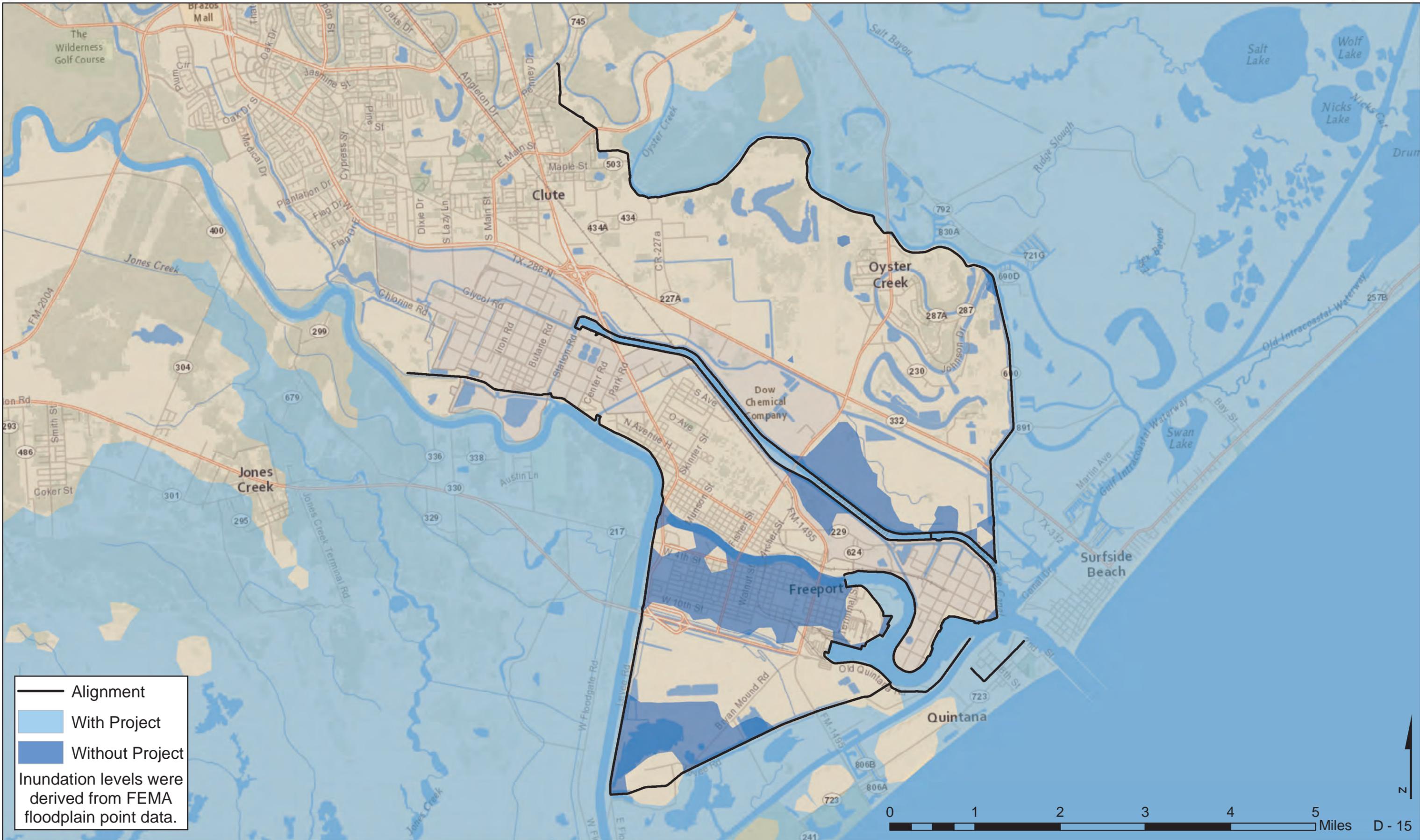
— Alignment
 Light Blue With Project
 Dark Blue Without Project
 Inundation levels were derived from FEMA floodplain point data.

0 1 2 3 4 5 Miles D - 14



Freeport Inundation Change

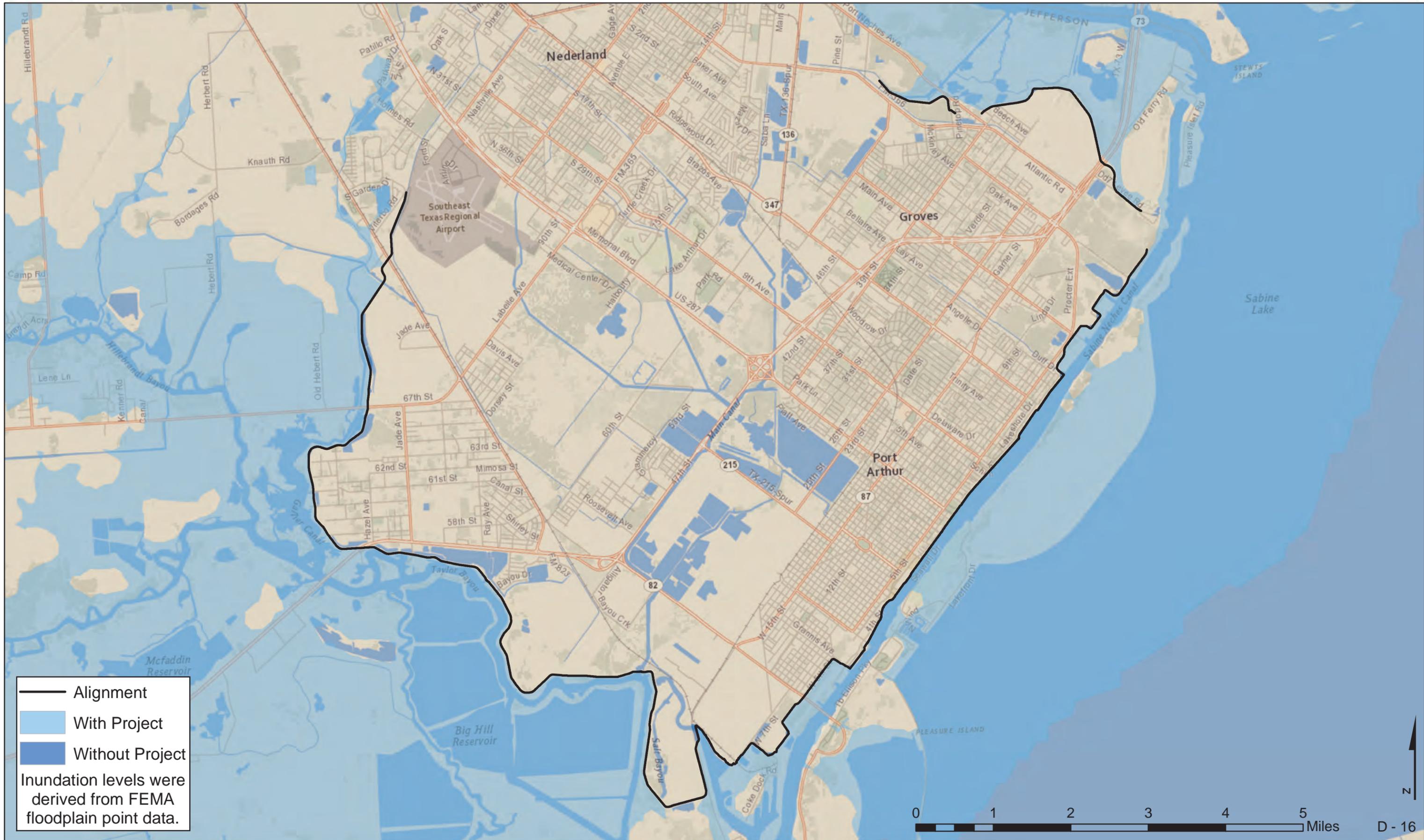
at the 500 Year Floodplain Level



— Alignment
 Light Blue With Project
 Dark Blue Without Project
 Inundation levels were derived from FEMA floodplain point data.



Port Arthur Inundation Change at the 100 Year Floodplain Level





Port Arthur Inundation Change at the 500 Year Floodplain Level



Sabine Pass to Galveston Bay, Texas

NOTE: The costs for work breakdown Accounts 01, 30, and 31 were developed and found in the TPCS only to prevent errors. The escalation percentage is developed from the construction schedule and included in the TPCS. Contingences were developed in the Risk Analysis and were included in the TPCS. Due to the breakout of Federal and Non-Federal Sponsor costs rounding errors do occur, but they tally correctly.

Estimated by CESWG-EC-PS
Designed by CESWG-E
Prepared by Jackie Lockhart

Preparation Date 12/28/2016
Effective Date of Pricing 12/28/2016
Estimated Construction Time Days

This report is not copyrighted, but the information contained herein is For Official Use Only.

<u>Description</u>	<u>Quantity</u>	<u>UOM</u>	<u>DirectCost</u>	<u>ContractCost</u>	<u>ProjectCost</u>
Project Cost Summary Report			1,671,991,257	2,021,658,113	2,021,658,113
01 Orange	1.00	LS	1,025,990,908	1,203,797,828	1,203,797,828
0101 Non-Fed	1.00	LS	36,685,912	48,361,492	48,361,492
010202 Relocations	1.00	LS	36,685,912	48,361,492	48,361,492
0102 Federal	1.00	LS	989,304,996	1,155,436,336	1,155,436,336
010206 Fish and Wildlife Facilities	1.00	LS	12,494,161	15,103,859	15,103,859
010211 Levees and Floodwalls	1.00	LS	535,324,062	672,362,226	672,362,226
010213 Pumping Plant based on 9/27/16 - 13,200 cfs numbers	1.00	LS	358,272,873	358,272,873	358,272,873
010215 Floodway Control-Diversion Struc	1.00	LS	83,213,900	109,697,378	109,697,378
05 Port Arthur	1.00	LS	358,746,306	450,825,461	450,825,461
0501 Non-Fed	1.00	LS	22,150,124	29,199,574	29,199,574
050102 Relocations	1.00	LS	22,150,124	29,199,574	29,199,574
0502 Federal	1.00	LS	336,596,183	421,625,886	421,625,886
050211 Levees and Floodwalls	1.00	LS	336,596,183	421,625,886	421,625,886
10 Freeport	1.00	LS	287,254,042	367,034,825	367,034,825
1001 Non-Fed	1.00	LS	15,860,613	20,908,378	20,908,378
100102 Relocations	1.00	LS	15,860,613	20,908,378	20,908,378
1002 Federal	1.00	LS	271,393,429	346,126,447	346,126,447
010211 Levees and Floodwalls	1.00	LS	227,134,468	287,781,723	287,781,723
010213 Pumping Plant	1.00	LS	10,775,029	14,204,267	14,204,267
100215 Floodway Control-Diversion Struc	1.00	LS	33,483,933	44,140,457	44,140,457

Description	Page
Project Cost Summary Report	1
01 Orange	1
0101 Non-Fed	1
010202 Relocations	1
0102 Federal	1
010206 Fish and Wildlife Facilities	1
010211 Levees and Floodwalls	1
010213 Pumping Plant based on 9/27/16 - 13,200 cfs numbers	1
010215 Floodway Control-Diversion Struc	1
05 Port Arthur	1
0501 Non-Fed	1
050102 Relocations	1
0502 Federal	1
050211 Levees and Floodwalls	1
10 Freeport	1
1001 Non-Fed	1
100102 Relocations	1
1002 Federal	1
010211 Levees and Floodwalls	1
010213 Pumping Plant	1
100215 Floodway Control-Diversion Struc	1

**WALLA WALLA COST ENGINEERING
MANDATORY CENTER OF EXPERTISE**

COST AGENCY TECHNICAL REVIEW

CERTIFICATION STATEMENT

For Project No. 375949

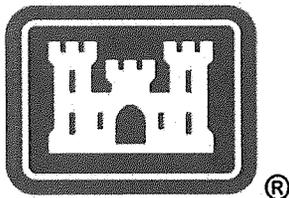
**SWG – Sabine Pass to Galveston Bay, TX
Coastal Storm Risk Management
Feasibility Study**

The Sabine Pass to Galveston Bay Feasibility Study, as presented by Galveston District, has undergone a successful Cost Agency Technical Review (Cost ATR), performed by the Walla Walla District Cost Engineering Mandatory Center of Expertise (Cost MCX) team. The Cost ATR included study of the project scope, report, cost estimates, schedules, escalation, and risk-based contingencies. This certification signifies the products meet the quality standards as prescribed in ER 1110-2-1150 Engineering and Design for Civil Works Projects and ER 1110-2-1302 Civil Works Cost Engineering.

As of December 30, 2016, the Cost MCX certifies the estimated total project cost:

FY17 Project First Cost: \$3,248,607,000
Fully Funded Amount: \$3,814,126,000

It remains the responsibility of the District to correctly reflect these cost values within the Final Report and to implement effective project management controls and implementation procedures including risk management throughout the life of the project.



**CALLAN.KIM.
C.1231558221**

Digitally signed by
CALLAN.KIM.C.1231558221
DN: c=US, o=U.S. Government,
ou=DoD, ou=PKI, ou=USA,
cn=CALLAN.KIM.C.1231558221
Date: 2017.01.03 08:27:15 -08'00'

**Kim C. Callan, PE, CCE, PM
Chief, Cost Engineering MCX
Walla Walla District**

**** TOTAL PROJECT COST SUMMARY ****

PROJECT: Sabine Pass to Galveston Bay, Texas Coastal Storm Risk Management and Ecosystem
PROJECT: P2 375949
LOCATION: Orange, Jefferson, and Brazoria Counties, Texas

DISTRICT: Galveston District
POC: CHIEF, COST ENGINEERING, Willie Joe Honza P.E.
PREPARED: 12/28/2016

This Estimate reflects the scope and schedule in report; Final Integrated Feasibility Report - EIS Oct 2016

Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)						TOTAL PROJECT COST (FULLY FUNDED)				
WBS NUMBER A	Civil Works Feature & Sub-Feature Description B	COST (\$K) C	CNTG (\$K) D	CNTG (%) E	TOTAL (\$K) F	ESC (%) G	COST (\$K) H	CNTG (\$K) I	TOTAL (\$K) J	Program Year (Budget EC): Effective Price Level Date: 2017 1 OCT 16		TOTAL FIRST COST (\$K) K	INFLATED (%) L	COST (\$K) M	CNTG (\$K) N	FULL (\$K) O
										Spent Thru: 10/1/2016 (\$K)						
02	RELOCATIONS	\$98,470	\$29,850	30.3%	\$128,320	0.0%	\$98,470	\$29,850	\$128,320	\$0	\$128,320	\$128,320	12.4%	\$110,751	\$33,545	\$144,296
06	FISH & WILDLIFE FACILITIES	\$15,104	\$4,380	29.0%	\$19,484	0.0%	\$15,104	\$4,380	\$19,484	\$0	\$19,484	\$19,484	10.3%	\$16,657	\$4,831	\$21,488
11	LEVEES & FLOODWALLS	\$1,381,770	\$419,118	30.3%	\$1,800,888	0.0%	\$1,381,770	\$419,118	\$1,800,888	\$0	\$1,800,888	\$1,800,888	14.7%	\$1,584,890	\$480,321	\$2,065,211
13	PUMPING PLANT	\$372,477	\$108,302	29.1%	\$480,779	0.0%	\$372,477	\$108,302	\$480,779	\$0	\$480,779	\$480,779	16.9%	\$435,279	\$126,551	\$561,830
15	FLOODWAY CONTROL & DIVERSION STRU	\$153,838	\$45,496	29.6%	\$199,334	0.0%	\$153,838	\$45,496	\$199,334	\$0	\$199,334	\$199,334	15.7%	\$178,035	\$52,623	\$230,658
CONSTRUCTION ESTIMATE TOTALS:		\$2,021,659	\$607,147		\$2,628,806	0.0%	\$2,021,659	\$607,147	\$2,628,806	\$0	\$2,628,806	\$2,628,806	15.0%	\$2,325,613	\$697,870	\$3,023,483
01	LANDS AND DAMAGES - Non-Fed	\$43,705	\$8,746	20.0%	\$52,451	0.0%	\$43,705	\$8,746	\$52,451	\$0	\$52,451	\$52,451	13.1%	\$49,432	\$9,892	\$59,324
01	LANDS AND DAMAGES - Federal	\$5,815	\$1,329	22.9%	\$7,144	0.0%	\$5,815	\$1,329	\$7,144	\$0	\$7,144	\$7,144	13.8%	\$6,620	\$1,512	\$8,133
30	PLANNING, ENGINEERING & DESIGN	\$259,034	\$77,723	30.0%	\$336,757	0.0%	\$259,034	\$77,723	\$336,757	\$0	\$336,757	\$336,757	27.3%	\$329,773	\$98,790	\$428,563
31	CONSTRUCTION MANAGEMENT	\$171,841	\$51,607	30.0%	\$223,448	0.0%	\$171,841	\$51,607	\$223,448	\$0	\$223,448	\$223,448	31.9%	\$226,662	\$67,961	\$294,623
PROJECT COST TOTALS:		\$2,502,054	\$746,553	29.8%	\$3,248,607		\$2,502,054	\$746,553	\$3,248,607	\$0	\$3,248,607	\$3,248,607	17.4%	\$2,938,100	\$876,026	\$3,814,126

 CHIEF, COST ENGINEERING, Willie Joe Honza P.E.
 PROJECT MANAGER, Sharon Tirpak
 CHIEF, REAL ESTATE, Timothy Nels

CHIEF, PLANNING, Eric Verwers

CHIEF, ENGINEERING, Joseph King R.A.

CHIEF, OPERATIONS, Joseph Hrametz, P.E.

CHIEF, CONSTRUCTION, Donald W Carelock P.E.

CHIEF, CONTRACTING, Kathrine Freeman

CHIEF, PM-G, Valerie Miller

CHIEF, DPM, Edmond J. Russo Jr., PhD, P.E., D.CE, D.NE.

ESTIMATED TOTAL PROJECT COST: **\$3,814,126**

**** TOTAL PROJECT COST SUMMARY ****

**** CONTRACT COST SUMMARY ****

PROJECT: Sabine Pass to Galveston Bay, Texas Coastal Storm Risk Management and Ecosystem Restoration
 LOCATION: Orange, Jefferson, and Brazoria Counties, Texas
 This Estimate reflects the scope and schedule in report; Final Integrated Feasibility Report - EIS Oct 2016

DISTRICT: Galveston District
 POC: CHIEF, COST ENGINEERING, Willie Joe Honza P.E.
 PREPARED: 12/28/2016

Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)				TOTAL PROJECT COST (FULLY FUNDED)				
WBS NUMBER	Civil Works Feature & Sub-Feature Description	Estimate Prepared:		6-Dec-16		Program Year (Budget EC):		2017		Mid-Point Date	INFLATED (%)	COST (\$K)	CNTG (\$K)	FULL (\$K)
		Effective Price Level:		1-Oct-16		Effective Price Level Date:		1 OCT 16						
A	B	COST (\$K)	CNTG (\$K)	RISK BASED CNTG (%)	TOTAL (\$K)	ESC (%)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)	P	L	M	N	O
	Orange													
02	RELOCATIONS	\$48,362	\$14,025	29.0%	\$62,387	0.0%	\$48,362	\$14,025	\$62,387	2024Q1	14.7%	\$55,490	\$16,092	\$71,582
06	FISH & WILDLIFE FACILITIES	\$15,104	\$4,380	29.0%	\$19,484	0.0%	\$15,104	\$4,380	\$19,484	2022Q1	10.3%	\$16,657	\$4,831	\$21,488
11	LEVEES & FLOODWALLS	\$672,362	\$194,985	29.0%	\$867,347	0.0%	\$672,362	\$194,985	\$867,347	2025Q1	17.0%	\$786,888	\$228,198	\$1,015,086
13	PUMPING PLANT	\$358,273	\$103,899	29.0%	\$462,172	0.0%	\$358,273	\$103,899	\$462,172	2025Q1	17.0%	\$419,301	\$121,597	\$540,899
15	FLOODWAY CONTROL & DIVERSION STRU	\$109,697	\$31,812	29.0%	\$141,509	0.0%	\$109,697	\$31,812	\$141,509	2025Q1	17.0%	\$128,381	\$37,231	\$165,612
CONSTRUCTION ESTIMATE TOTALS:		\$1,203,798	\$349,101	29.0%	\$1,552,899		\$1,203,798	\$349,101	\$1,552,899			\$1,406,718	\$407,948	\$1,814,667
01	LANDS AND DAMAGES- Non-Fed	\$27,666	\$5,533	20.0%	\$33,199	0.0%	\$27,666	\$5,533	\$33,199	2024Q1	14.7%	\$31,744	\$6,349	\$38,092
01	LANDS AND DAMAGES - Federal	\$4,654	\$1,052	22.6%	\$5,706	0.0%	\$4,654	\$1,052	\$5,706	2024Q1	14.7%	\$5,340	\$1,207	\$6,547
30	PLANNING, ENGINEERING & DESIGN													
0.5%	Project Management	\$6,019	\$1,746	29.0%	\$7,765	0.0%	\$6,019	\$1,746	\$7,765	2024Q1	30.8%	\$7,872	\$2,283	\$10,155
0.0%	Planning & Environmental Compliance	\$2,469	\$716	29.0%	\$3,185	0.0%	\$2,469	\$716	\$3,185	2024Q1	30.8%	\$3,229	\$936	\$4,165
9.8%	Engineering & Design	\$117,972	\$34,212	29.0%	\$152,184	0.0%	\$117,972	\$34,212	\$152,184	2024Q1	30.8%	\$154,285	\$44,743	\$199,028
0.7%	Reviews, ATRs, IEPRs, VE	\$7,825	\$2,269	29.0%	\$10,094	0.0%	\$7,825	\$2,269	\$10,094	2024Q1	30.8%	\$10,234	\$2,968	\$13,201
0.5%	Life Cycle Updates (cost, schedule, risks)	\$5,417	\$1,571	29.0%	\$6,988	0.0%	\$5,417	\$1,571	\$6,988	2024Q1	30.8%	\$7,084	\$2,054	\$9,139
0.0%	Contracting & Reprographics	\$361	\$105	29.0%	\$466	0.0%	\$361	\$105	\$466	2024Q1	30.8%	\$472	\$137	\$609
1.0%	Engineering During Construction	\$12,038	\$3,491	29.0%	\$15,529	0.0%	\$12,038	\$3,491	\$15,529	2025Q1	36.1%	\$16,389	\$4,753	\$21,142
0.2%	Planning During Construction	\$2,408	\$698	29.0%	\$3,106	0.0%	\$2,408	\$698	\$3,106	2025Q1	36.1%	\$3,278	\$951	\$4,229
0.2%	Project Operations	\$2,408	\$698	29.0%	\$3,106	0.0%	\$2,408	\$698	\$3,106	2024Q1	30.8%	\$3,149	\$913	\$4,062
31	CONSTRUCTION MANAGEMENT													
5.5%	Construction Management	\$66,209	\$19,201	29.0%	\$85,410	0.0%	\$66,209	\$19,201	\$85,410	2025Q1	36.1%	\$90,139	\$26,140	\$116,280
0.5%	Project Operation:	\$6,019	\$1,746	29.0%	\$7,765	0.0%	\$6,019	\$1,746	\$7,765	2025Q1	36.1%	\$8,194	\$2,376	\$10,571
2.5%	Project Management	\$30,095	\$8,728	29.0%	\$38,823	0.0%	\$30,095	\$8,728	\$38,823	2025Q1	36.1%	\$40,972	\$11,882	\$52,854
CONTRACT COST TOTALS:		\$1,495,358	\$430,866		\$1,926,224		\$1,495,358	\$430,866	\$1,926,224			\$1,789,101	\$515,641	\$2,304,741

**** TOTAL PROJECT COST SUMMARY ****

**** CONTRACT COST SUMMARY ****

PROJECT: Sabine Pass to Galveston Bay, Texas Coastal Storm Risk Management and Ecosystem Restoration
 LOCATION: Orange, Jefferson, and Brazoria Counties, Texas
 This Estimate reflects the scope and schedule in report; Final Integrated Feasibility Report - EIS Oct 2016

DISTRICT: Galveston District
 PO: CHIEF, COST ENGINEERING, Willie Joe Honza P.E.
 PREPARED: 12/28/2016

Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)				TOTAL PROJECT COST (FULLY FUNDED)				
WBS NUMBER A	Civil Works Feature & Sub-Feature Description B	Estimate Prepared: Effective Price Level:		6-Dec-16 1-Oct-16	Program Year (Budget EC): Effective Price Level Date:			2017 1 OCT 16	Mid-Point Date P	INFLATED (%) L	COST (\$K) M	CNTG (\$K) N	FULL (\$K) O	
		COST (\$K) C	CNTG (\$K) D	CNTG (%) E	TOTAL (\$K) F	ESC (%) G	COST (\$K) H	CNTG (\$K) I						TOTAL (\$K) J
02	Port Arthur RELOCATIONS	\$29,200	\$9,344	32.0%	\$38,544	0.0%	\$29,200	\$9,344	\$38,544	2022Q1	10.3%	\$32,203	\$10,305	\$42,508
11	LEVEES & FLOODWALLS	\$421,626	\$134,920	32.0%	\$556,546	0.0%	\$421,626	\$134,920	\$556,546	2023Q1	12.5%	\$474,280	\$151,770	\$626,050
CONSTRUCTION ESTIMATE TOTALS:		\$450,826	\$144,264	32.0%	\$595,090		\$450,826	\$144,264	\$595,090			\$506,463	\$162,075	\$668,538
01	LANDS AND DAMAGES - Non-Fed	\$6,980	\$1,396	20.0%	\$8,376	0.0%	\$6,980	\$1,396	\$8,376	2022Q1	10.3%	\$7,698	\$1,540	\$9,237
01	LANDS AND DAMAGES - Federal	\$760	\$177	23.3%	\$937	0.0%	\$760	\$177	\$937	2022Q1	10.3%	\$838	\$195	\$1,033
30	PLANNING, ENGINEERING & DESIGN													
0.5%	Project Management	\$2,254	\$721	32.0%	\$2,975	0.0%	\$2,254	\$721	\$2,975	2022Q1	20.8%	\$2,723	\$871	\$3,595
0.0%	Planning & Environmental Compliance	\$538	\$172	32.0%	\$710	0.0%	\$538	\$172	\$710	2022Q1	20.8%	\$650	\$208	\$858
9.5%	Engineering & Design	\$42,828	\$13,705	32.0%	\$56,533	0.0%	\$42,828	\$13,705	\$56,533	2022Q1	20.8%	\$51,748	\$16,559	\$68,307
0.7%	Reviews, ATRs, IEPs, VE	\$2,930	\$938	32.0%	\$3,868	0.0%	\$2,930	\$938	\$3,868	2022Q1	20.8%	\$3,540	\$1,133	\$4,673
0.5%	Life Cycle Updates (cost, schedule, risks)	\$2,029	\$649	32.0%	\$2,678	0.0%	\$2,029	\$649	\$2,678	2022Q1	20.8%	\$2,452	\$785	\$3,236
0.0%	Contracting & Reprographics	\$135	\$43	32.0%	\$178	0.0%	\$135	\$43	\$178	2022Q1	20.8%	\$163	\$52	\$215
1.0%	Engineering During Construction	\$4,508	\$1,443	32.0%	\$5,951	0.0%	\$4,508	\$1,443	\$5,951	2023Q1	25.7%	\$5,665	\$1,813	\$7,477
0.2%	Planning During Construction	\$0	\$0	32.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.2%	Project Operations	\$902	\$289	32.0%	\$1,191	0.0%	\$902	\$289	\$1,191	2022Q1	20.8%	\$1,090	\$349	\$1,439
31	CONSTRUCTION MANAGEMENT													
5.5%	Construction Management	\$24,795	\$7,934	32.0%	\$32,729	0.0%	\$24,795	\$7,934	\$32,729	2023Q1	25.7%	\$31,157	\$9,970	\$41,128
0.5%	Project Operation:	\$2,254	\$721	32.0%	\$2,975	0.0%	\$2,254	\$721	\$2,975	2023Q1	25.7%	\$2,832	\$906	\$3,739
2.5%	Project Management	\$11,271	\$3,607	32.0%	\$14,878	0.0%	\$11,271	\$3,607	\$14,878	2023Q1	25.7%	\$14,163	\$4,532	\$18,695
CONTRACT COST TOTALS:		\$553,010	\$176,059		\$729,069		\$553,010	\$176,059	\$729,069			\$631,203	\$200,988	\$832,191

**** TOTAL PROJECT COST SUMMARY ****

**** CONTRACT COST SUMMARY ****

PROJECT: Sabine Pass to Galveston Bay, Texas Coastal Storm Risk Management and Ecosystem Restoration
 LOCATION: Orange, Jefferson, and Brazoria Counties, Texas
 This Estimate reflects the scope and schedule in report; Final Integrated Feasibility Report - EIS Oct 2016

DISTRICT: Galveston District
 POC: CHIEF, COST ENGINEERING, Willie Joe Honza P.E.
 PREPARED: 12/28/2016

Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)				TOTAL PROJECT COST (FULLY FUNDED)				
WBS NUMBER	Civil Works Feature & Sub-Feature Description	Estimate Prepared: Effective Price Level:		6-Dec-16 1-Oct-16	TOTAL (\$K)	Program Year (Budget EC): Effective Price Level Date:		2017 1 OCT 16	TOTAL (\$K)	Mid-Point Date	INFLATED (%)	COST (\$K)	CNTG (\$K)	FULL (\$K)
		COST (\$K)	CNTG (\$K)	CNTG (%)		ESC (%)	COST (\$K)	CNTG (\$K)						
A	B	C	D	E	F	G	H	I	J	P	L	M	N	O
	Freeport													
02	RELOCATIONS	\$20,908	\$6,481	31.0%	\$27,389	0.0%	\$20,908	\$6,481	\$27,389	2022Q1	10.3%	\$23,058	\$7,148	\$30,206
11	LEVEES & FLOODWALLS	\$287,782	\$89,212	31.0%	\$376,994	0.0%	\$287,782	\$89,212	\$376,994	2023Q1	12.5%	\$323,721	\$100,354	\$424,075
13	PUMPING PLANT	\$14,204	\$4,403	31.0%	\$18,607	0.0%	\$14,204	\$4,403	\$18,607	2023Q1	12.5%	\$15,978	\$4,953	\$20,931
15	FLOODWAY CONTROL & DIVERSION STRU	\$44,141	\$13,684	31.0%	\$57,825	0.0%	\$44,141	\$13,684	\$57,825	2023Q1	12.5%	\$49,654	\$15,393	\$65,046
	CONSTRUCTION ESTIMATE TOTALS:	\$367,035	\$113,781	31.0%	\$480,816		\$367,035	\$113,781	\$480,816			\$412,411	\$127,847	\$540,259
01	LANDS AND DAMAGES - Non-Fed	\$9,059	\$1,817	20.1%	\$10,876	0.0%	\$9,059	\$1,817	\$10,876	2022Q1	10.3%	\$9,991	\$2,004	\$11,994
01	LANDS AND DAMAGES - Federal	\$401	\$100	24.9%	\$501	0.0%	\$401	\$100	\$501	2022Q1	10.3%	\$442	\$110	\$553
30	PLANNING, ENGINEERING & DESIGN													
0.5%	Project Management	\$1,835	\$569	31.0%	\$2,404	0.0%	\$1,835	\$569	\$2,404	2022Q1	20.8%	\$2,217	\$687	\$2,904
0.0%	Planning & Environmental Compliance	\$738	\$229	31.0%	\$967	0.0%	\$738	\$229	\$967	2022Q1	20.8%	\$892	\$276	\$1,168
9.5%	Engineering & Design	\$34,868	\$10,809	31.0%	\$45,677	0.0%	\$34,868	\$10,809	\$45,677	2022Q1	20.8%	\$42,130	\$13,060	\$55,190
0.7%	Reviews, ATRs, IEPs, VE	\$2,386	\$740	31.0%	\$3,126	0.0%	\$2,386	\$740	\$3,126	2022Q1	20.8%	\$2,883	\$894	\$3,777
0.5%	Life Cycle Updates (cost, schedule, risks)	\$1,652	\$512	31.0%	\$2,164	0.0%	\$1,652	\$512	\$2,164	2022Q1	20.8%	\$1,996	\$619	\$2,615
0.0%	Contracting & Reprographics	\$110	\$34	31.0%	\$144	0.0%	\$110	\$34	\$144	2022Q1	20.8%	\$133	\$41	\$174
1.0%	Engineering During Construction	\$3,670	\$1,138	31.0%	\$4,808	0.0%	\$3,670	\$1,138	\$4,808	2023Q1	25.7%	\$4,612	\$1,430	\$6,041
0.2%	Planning During Construction	\$0	\$0	31.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.2%	Project Operations	\$734	\$228	31.0%	\$962	0.0%	\$734	\$228	\$962	2022Q1	20.8%	\$887	\$275	\$1,162
31	CONSTRUCTION MANAGEMENT													
5.5%	Construction Management	\$20,187	\$6,258	31.0%	\$26,445	0.0%	\$20,187	\$6,258	\$26,445	2023Q1	25.7%	\$25,367	\$7,864	\$33,231
0.5%	Project Operation:	\$1,835	\$569	31.0%	\$2,404	0.0%	\$1,835	\$569	\$2,404	2023Q1	25.7%	\$2,306	\$715	\$3,021
2.5%	Project Management	\$9,176	\$2,845	31.0%	\$12,021	0.0%	\$9,176	\$2,845	\$12,021	2023Q1	25.7%	\$11,531	\$3,574	\$15,105
	CONTRACT COST TOTALS:	\$453,686	\$139,627		\$593,313		\$453,686	\$139,627	\$593,313			\$517,797	\$159,397	\$677,193