

Appendix K

ALTERNATIVE COSTS

HNC DEEPENING FEASIBILITY STUDY - PRELIMINARY SCHEDULE FOR CONSTRUCTION CONTRACT AWARD

HOUMA NAVIGATION CANAL DEEPENING FEASIBILITY STUDY												
CONTRACT AWARD SCHEDULE - CONSTRUCTION ALTERNATIVE ADJACENT DISPOSAL (-15) FEET												
CONSTRUCTION YEAR/CONTRACT NO.	CONTRACT NAME	CONTRACT START DATE	CONTRACT END DATE	CHANNEL IMPROVEMENT COST	RELOCATIONS COST*	SUBTOTAL	ENGINEERING & DESIGN**	SUPERVISION & ADMINISTRATION***	CONTINGENCY****	REAL ESTATE	Environmental Mitigation	ANNUAL TOTAL
1	Mile 36.3 to Mile 26.5	September 2017	May 2020	\$0	\$0	\$0	\$0	\$0	\$0			\$0
2	Mile 26.5 to Mile 11.9	May 2019	December 2021	\$0	\$0	\$0	\$0	\$0	\$0			\$0
3	Mile 11.9 to Mile 6.4	December 2020	August 2023	\$0	\$0	\$0	\$0	\$0	\$0			\$0
4	Mile 36.3 to Mile 22	August 2022	April 2024	\$0	\$0	\$0	\$0	\$0	\$0			\$0
5	Mile 22 to Mile 11.5	April 2023	December 2024	\$0	\$0	\$0	\$0	\$0	\$0			\$0
6	Mile 11.5 to Mile 6.0	December 2023	April 2025	\$0	\$0	\$0	\$0	\$0	\$0			\$0
7	Mile 6.0 to Mile 0.0	April 2024	August 2025	\$0	\$0	\$0	\$0	\$0	\$0			\$0
8	Mile 0 to Mile -3.5	August 2024	June 2026	\$0	\$0	\$0	\$0	\$0	\$0			\$0
TOTAL				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

HOUMA NAVIGATION CANAL DEEPENING FEASIBILITY STUDY												
CONTRACT AWARD SCHEDULE - CONSTRUCTION ALTERNATIVE 1A ADJACENT DISPOSAL (-18) FEET												
CONSTRUCTION YEAR/CONTRACT NO.	CONTRACT NAME	CONTRACT START DATE	CONTRACT END DATE	CHANNEL IMPROVEMENT COST	RELOCATIONS COST*	SUBTOTAL	ENGINEERING & DESIGN**	SUPERVISION & ADMINISTRATION***	CONTINGENCY****	REAL ESTATE	Environmental Mitigation	ANNUAL TOTAL
1	Mile 36.3 to Mile 26.5	September 2017	May 2020	\$0	\$5,333,764	\$5,333,764	\$640,052	\$480,039	\$1,493,454	\$10,628,890	\$428,000	\$19,004,198
2	Mile 26.5 to Mile 11.9	May 2019	December 2021	\$0	\$5,245,740	\$5,245,740	\$629,489	\$472,117	\$1,468,807			\$7,816,152
3	Mile 11.9 to Mile 6.4	December 2020	August 2023	\$0	\$5,933,768	\$5,933,768	\$712,052	\$534,039	\$1,661,455			\$8,841,315
4	Mile 36.3 to Mile 22	August 2022	April 2024	\$20,862,739	\$0	\$20,862,739	\$2,503,529	\$1,877,647	\$5,841,567			\$31,085,481
5	Mile 22 to Mile 11.5	April 2023	December 2024	\$49,838,092	\$0	\$49,838,092	\$5,980,571	\$2,491,905	\$13,954,666			\$72,265,233
6	Mile 11.5 to Mile 6.0	December 2023	April 2025	\$5,506,660	\$0	\$5,506,660	\$660,799	\$495,599	\$1,541,865			\$8,204,923
7	Mile 6.0 to Mile 0.0	April 2024	August 2025	\$4,845,147	\$0	\$4,845,147	\$581,418	\$581,418	\$1,356,641			\$7,364,623
8	Mile 0 to Mile -3.5	August 2024	June 2026	\$6,086,489	\$0	\$6,086,489	\$730,379	\$547,784	\$1,704,217			\$9,068,869
TOTAL				\$87,139,127	\$16,513,272	\$103,652,399	\$12,438,288	\$7,480,547	\$29,022,672	\$10,628,890	\$428,000	\$163,650,795

HOUMA NAVIGATION CANAL DEEPENING FEASIBILITY STUDY												
CONTRACT AWARD SCHEDULE - CONSTRUCTION ALTERNATIVE 1B Earthen Retention in Terrebonne Bay & Isle Deniers (-18) FEET												
CONSTRUCTION YEAR/CONTRACT NO.	CONTRACT NAME	CONTRACT START DATE	CONTRACT END DATE	CHANNEL IMPROVEMENT COST	RELOCATIONS COST*	SUBTOTAL	ENGINEERING & DESIGN**	SUPERVISION & ADMINISTRATION***	CONTINGENCY****	REAL ESTATE	Environmental Mitigation	ANNUAL TOTAL
1	Mile 36.3 to Mile 26.5	September 2017	May 2020	\$0	\$5,333,764	\$5,333,764	\$640,052	\$480,039	\$1,546,791	\$10,628,890	\$428,000	\$19,057,535
2	Mile 26.5 to Mile 11.9	May 2019	December 2021	\$0	\$5,245,740	\$5,245,740	\$629,489	\$472,117	\$1,521,264			\$7,868,609
3	Mile 11.9 to Mile 6.4	December 2020	August 2023	\$0	\$5,933,768	\$5,933,768	\$712,052	\$534,039	\$1,720,793			\$8,906,653
4	Mile 36.3 to Mile 22	August 2022	April 2024	\$20,862,739	\$0	\$20,862,739	\$2,503,529	\$1,877,647	\$6,050,194			\$31,294,109
5	Mile 22 to Mile 11.5	April 2023	December 2024	\$49,838,092	\$0	\$49,838,092	\$5,980,571	\$2,491,905	\$14,453,047			\$72,763,614
6	Mile 11.5 to Mile 5.0	December 2023	April 2025	\$10,793,224	\$0	\$10,793,224	\$1,295,187	\$971,390	\$3,130,035			\$16,189,836
7	Mile 5.0 to Mile 0	April 2024	August 2025	\$12,088,230	\$0	\$12,088,230	\$1,450,588	\$1,087,941	\$3,505,587			\$18,132,345
8	Mile 0 to Mile -3.5	August 2024	June 2026	\$8,590,697	\$0	\$8,590,697	\$1,030,884	\$773,163	\$2,491,302			\$12,886,046
TOTAL				\$102,172,982	\$16,513,272	\$118,686,254	\$14,242,350	\$8,688,239	\$34,419,014	\$10,628,890	\$428,000	\$187,092,747

228,608,435

HOUMA NAVIGATION CANAL DEEPENING FEASIBILITY STUDY												
CONTRACT AWARD SCHEDULE - CONSTRUCTION ALTERNATIVE 1C Rock Retention in Terrebonne Bay & Isle Deniers (-18) FEET												
CONSTRUCTION YEAR/CONTRACT NO.	CONTRACT NAME	CONTRACT START DATE	CONTRACT END DATE	CHANNEL IMPROVEMENT COST	RELOCATIONS COST*	SUBTOTAL	ENGINEERING & DESIGN**	SUPERVISION & ADMINISTRATION***	CONTINGENCY****	REAL ESTATE	Environmental Mitigation	ANNUAL TOTAL
1	Mile 36.3 to Mile 26.5	September 2017	May 2020	\$0	\$5,333,764	\$5,333,764	\$640,052	\$480,039	\$1,546,791	\$10,628,890	\$428,000	\$19,057,535
2	Mile 26.5 to Mile 11.9	May 2019	December 2021	\$0	\$5,245,740	\$5,245,740	\$629,489	\$472,117	\$1,521,264			\$7,868,609
3	Mile 11.9 to Mile 6.4	December 2020	August 2023	\$0	\$5,933,768	\$5,933,768	\$712,052	\$534,039	\$1,720,793			\$8,906,653
4	Mile 36.3 to Mile 22	August 2022	April 2024	\$20,862,739	\$0	\$20,862,739	\$2,503,529	\$1,877,647	\$6,050,194			\$31,294,109
5	Mile 22 to Mile 11.5	April 2023	December 2024	\$49,838,092	\$0	\$49,838,092	\$5,980,571	\$2,491,905	\$14,453,047			\$72,763,614
6	Mile 11.5 to Mile 5.0	December 2023	April 2025	\$12,207,872	\$0	\$12,207,872	\$1,464,945	\$1,098,708	\$3,540,283			\$18,311,808
7	Mile 5.0 to Mile 0	April 2024	August 2025	\$35,756,074	\$0	\$35,756,074	\$4,290,729	\$2,502,925	\$10,369,261			\$52,918,990
8	Mile 0 to Mile -3.5	August 2024	June 2026	\$8,590,697	\$0	\$8,590,697	\$1,030,884	\$773,163	\$2,491,302			\$12,886,046
TOTAL				\$127,255,474	\$16,513,272	\$143,768,746	\$17,252,249	\$10,230,542	\$41,692,936	\$10,628,890	\$428,000	\$224,001,363

NOTES:

*Responsible party for relocations will be determined by Determination of Compensability completed by MVN's Real Estate Division

Relocation cost totals are rolled up totals that include 35% contingency, 10% E&D, and 8% S&A

**Engineering & Design Cost assumed to be a flat 12% of construction costs

***Supervision & Administration assumed to be based on the following

<15M - 15%

\$1-5M - 12%

\$5-25M - 9%

\$25M - 40M - 7%

>\$40M - 5%

**** Contingency Calculated using Abbreviated Risk Analysis (Appendix O). TSP contingency will be calculated using Crystal Ball Risk Analysis.

HNC DEEPENING FEASIBILITY STUDY - PRELIMINARY SCHEDULE FOR CONSTRUCTION CONTRACT AWARD

HOUMA NAVIGATION CANAL DEEPENING FEASIBILITY STUDY												
CONTRACT AWARD SCHEDULE - CONSTRUCTION ALTERNATIVE 2A ADJACENT DISPOSAL (-20) FEET												
CONSTRUCTION YEAR/CONTRACT NO.	CONTRACT NAME	CONTRACT START DATE	CONTRACT END DATE	CHANNEL IMPROVEMENT COST	RELOCATIONS COST*	SUBTOTAL	ENGINEERING & DESIGN**	SUPERVISION & ADMINISTRATION***	CONTINGENCY****	REAL ESTATE	Environmental Mitigation	ANNUAL TOTAL
1	Mile 36.3 to Mile 26.5	September 2017	May 2020	\$0	\$6,700,751	\$6,700,751	\$804,090	\$603,068	\$1,943,218	\$10,628,890	\$917,000	\$21,597,017
2	Mile 26.5 to Mile 11.9	May 2019	December 2021	\$0	\$6,458,249	\$6,458,249	\$774,990	\$581,242	\$1,872,892			\$9,687,374
3	Mile 11.9 to Mile 6.4	December 2020	August 2023	\$0	\$6,568,657	\$6,568,657	\$788,239	\$591,179	\$1,904,911			\$9,852,986
4	Mile 36.3 to Mile 22	August 2022	April 2024	\$22,139,113	\$0	\$22,139,113	\$2,656,694	\$1,992,520	\$6,420,343			\$33,208,670
5	Mile 22 to Mile 11.5	April 2023	December 2024	\$50,987,368	\$0	\$50,987,368	\$6,118,484	\$2,549,368	\$14,786,337			\$74,441,557
6	Mile 11.5 to Mile 6.0	December 2023	April 2025	\$5,911,929	\$0	\$5,911,929	\$709,431	\$532,074	\$1,714,459			\$8,867,894
7	Mile 6.0 to Mile 0	April 2024	August 2025	\$5,670,409	\$0	\$5,670,409	\$680,449	\$510,337	\$1,644,419			\$8,505,614
8	Mile 0 to Mile -3.7	August 2024	June 2026	\$6,273,990	\$0	\$6,273,990	\$752,879	\$564,659	\$1,819,457			\$9,410,985
TOTAL				\$90,982,809	\$19,727,658	\$110,710,467	\$13,285,256	\$7,924,447	\$32,106,035	\$10,628,890	\$917,000	\$175,572,096

HOUMA NAVIGATION CANAL DEEPENING FEASIBILITY STUDY												
CONTRACT AWARD SCHEDULE - CONSTRUCTION ALTERNATIVE 2B Earthen Retention in Terrebonne Bay & Isle Deniers (-20) FEET												
CONSTRUCTION YEAR/CONTRACT NO.	CONTRACT NAME	CONTRACT START DATE	CONTRACT END DATE	CHANNEL IMPROVEMENT COST	RELOCATIONS COST*	SUBTOTAL	ENGINEERING & DESIGN**	SUPERVISION & ADMINISTRATION***	CONTINGENCY****	REAL ESTATE	Environmental Mitigation	ANNUAL TOTAL
1	Mile 36.3 to Mile 26.5	September 2017	May 2020	\$0	\$6,700,751	\$6,700,751	\$804,090	\$603,068	\$1,943,218	\$10,628,890	\$917,000	\$21,597,017
2	Mile 26.5 to Mile 11.9	May 2019	December 2021	\$0	\$6,458,249	\$6,458,249	\$774,990	\$581,242	\$1,872,892			\$9,687,374
3	Mile 11.9 to Mile 6.4	December 2020	August 2023	\$0	\$6,568,657	\$6,568,657	\$788,239	\$591,179	\$1,904,911			\$9,852,986
4	Mile 36.3 to Mile 22	August 2022	April 2024	\$22,060,185	\$0	\$22,060,185	\$2,647,222	\$1,985,417	\$6,397,454			\$33,090,278
5	Mile 22 to Mile 11.5	April 2023	December 2024	\$50,619,866	\$0	\$50,619,866	\$6,074,384	\$2,530,993	\$14,679,761			\$73,905,004
6	Mile 11.5 to Mile 5.0	December 2023	April 2025	\$12,613,258	\$0	\$12,613,258	\$1,513,591	\$1,135,193	\$3,657,845			\$18,919,887
7	Mile 5.0 to Mile 0	April 2024	August 2025	\$12,735,884	\$0	\$12,735,884	\$1,528,306	\$1,146,230	\$3,693,406			\$19,103,826
8	Mile 0 to Mile -3.7	August 2024	June 2026	\$14,203,620	\$0	\$14,203,620	\$1,704,434	\$1,278,326	\$4,119,050			\$21,305,430
TOTAL				\$112,232,813	\$19,727,658	\$131,960,471	\$15,835,256	\$9,851,648	\$38,268,537	\$10,628,890	\$917,000	\$207,461,802

HOUMA NAVIGATION CANAL DEEPENING FEASIBILITY STUDY												
CONTRACT AWARD SCHEDULE - CONSTRUCTION ALTERNATIVE 2C Rock Retention in Terrebonne Bay & Isle Deniers (-20) FEET												
CONSTRUCTION YEAR/CONTRACT NO.	CONTRACT NAME	CONTRACT START DATE	CONTRACT END DATE	CHANNEL IMPROVEMENT COST	RELOCATIONS COST*	SUBTOTAL	ENGINEERING & DESIGN**	SUPERVISION & ADMINISTRATION***	CONTINGENCY****	REAL ESTATE	Environmental Mitigation	ANNUAL TOTAL
1	Mile 36.3 to Mile 26.5	September 2017	May 2020	\$0	\$6,700,751	\$6,700,751	\$804,090	\$603,068	\$1,943,218	\$10,628,890	\$917,000	\$21,597,017
2	Mile 26.5 to Mile 11.9	May 2019	December 2021	\$0	\$6,458,249	\$6,458,249	\$774,990	\$581,242	\$1,872,892			\$9,687,374
3	Mile 11.9 to Mile 6.4	December 2020	August 2023	\$0	\$6,568,657	\$6,568,657	\$788,239	\$591,179	\$1,904,911			\$9,852,986
4	Mile 36.3 to Mile 22	August 2022	April 2024	\$22,139,113	\$0	\$22,139,113	\$2,656,694	\$1,992,520	\$6,420,343			\$33,208,670
5	Mile 22 to Mile 11.5	April 2023	December 2024	\$50,987,368	\$0	\$50,987,368	\$6,118,484	\$2,549,368	\$14,786,337			\$74,441,557
6	Mile 11.5 to Mile 5.0	December 2023	April 2025	\$13,798,723	\$0	\$13,798,723	\$1,655,847	\$1,241,885	\$4,001,630			\$20,698,085
7	Mile 5.0 to Mile 0	April 2024	August 2025	\$38,200,966	\$0	\$38,200,966	\$4,584,116	\$2,674,068	\$11,078,280			\$56,537,430
8	Mile 0 to Mile -3.7	August 2024	June 2026	\$14,203,620	\$0	\$14,203,620	\$1,704,434	\$1,278,326	\$4,119,050			\$21,305,430
TOTAL				\$139,329,790	\$19,727,658	\$159,057,448	\$19,086,894	\$11,511,656	\$46,126,660	\$10,628,890	\$917,000	\$247,328,548

NOTES:

*Responsible party for relocations will be determined by Determination of Compensability completed by MVN's Real Estate Division

Relocation cost totals are rolled up totals that include 35% contingency, 10% E&D, and 8% S&A

**Engineering & Design Cost assumed to be a flat 12% of construction costs

***Supervision & Administration assumed to be based on the following

<1\$M - 15%

\$1-5M - 12%

\$5-25M - 9%

\$25M - 40M - 7%

>\$40M - 5%

**** Contingency Calculated using Abbreviated Risk Analysis (Appendix O). TSP contingency will be calculated using Crystal Ball Risk Analysis.

HNC CHANNEL DEEPENING - PROJECT COST SUMMARY

Alternative	No Action	1A - 18' Adjacent	1B - 18' Earthen	1C - 18' Rock	2A - 20' Adjacent	2B - 20' Earthen	2C - 20' Rock
Construction	\$0	\$163,650,795	\$187,092,747	\$224,001,363	\$175,572,096	\$207,461,802	\$247,328,548
Incremental Maintenance	\$0	\$99,731,862	\$435,099,122	\$567,182,287	\$125,191,064	\$460,444,659	\$620,921,902
TOTALS	\$0	\$263,382,657	\$622,191,869	\$791,183,650	\$300,763,160	\$667,906,461	\$868,250,449

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Quantities & Line Items - Puls - Aug 2015
 Houma, Terrebonne Parish, Louisiana Costs - Ramos - Aug 2015

Maintenance Cost Adjacent Disposal -15ft MLG

Costs for 10-Year Cycle to be Repeated 5 Times Over 50 Years

Multiple Disposal Sites

Mile 36.3 to Mile (-3.5) to -15 Foot Elevation w/ Advanced Maintenance Included
 Summary Page

Contract No.	Description	Cycle Frequency (Years)	Units	Quantity	Estimated Unit Price Per Cycle	Estimated Cycle Cost	Estimated Total Cost (50-Year)
1	Mobilization/Demobilization	10	LS	1		\$871,046	\$4,355,230
	Mile 36.3 to Mile 34.0	10	CY	99,650	\$7.52	\$749,198	\$3,745,991
	Mile 24.0 to Mile 22.0	10	CY	99,650	\$10.91	\$1,086,876	\$5,434,378
	Mile 22.0 to Mile 20.0	10	CY	99,650	\$7.14	\$711,557	\$3,557,787
	Mobilization/Demobilization	2	LS	1		\$857,241	\$21,431,025
	Mile 11.0 to Mile 0.0	2	CY	1,269,100	\$4.50	\$5,706,754	\$142,668,852
2	Mobilization/Demobilization	2	LS	1		\$1,060,480	\$26,512,000
	Mile 0.0 to Mile (-3.5)	2	CY	500,000	\$11.56	\$5,781,650	\$144,541,250
3	Mobilization/Demobilization	2	LS	1		\$857,241	
	Mile 11.0 to Mile 0.0	2	CY	1,269,100	\$4.50	\$5,706,754	
4	Mobilization/Demobilization	2	LS	1		\$1,060,480	
	Mile 0.0 to Mile (-3.5)	2	CY	500,000	\$11.56	\$5,781,650	
5	Mobilization/Demobilization	2	LS	1		\$857,241	
	Mile 11.0 to Mile 0.0	2	CY	1,269,100	\$4.50	\$5,706,754	
6	Mobilization/Demobilization	10	LS	1		\$939,307	\$4,696,535
	Mile 36.3 to Mile 34.0	10	CY	99,650	\$7.52	\$749,198	\$3,745,991
	Mile 34.0 to Mile 32.0	10	CY	199,600	\$7.64	\$1,525,298	\$7,626,491
	Mile 32.0 to Mile 29.5	10	CY	150,700	\$10.76	\$1,620,880	\$8,104,400
	Mile 29.5 to Mile 28.0	10	CY	150,700	\$5.75	\$867,156	\$4,335,778
	Mile 28.0 to Mile 26.0	10	CY	199,600	\$8.49	\$1,694,418	\$8,472,092
	Mile 26.0 to Mile 24.0	10	CY	199,600	\$18.52	\$3,696,075	\$18,480,376
	Mile 24.0 to Mile 22.0	10	CY	99,650	\$10.91	\$1,086,876	\$5,434,378
	Mile 22.0 to Mile 20.0	10	CY	99,650	\$8.29	\$826,102	\$4,130,508
	Mobilization/Demobilization	2	LS	1		\$1,060,480	
Mile 0.0 to Mile (-3.5)	2	CY	500,000	\$11.56	\$5,781,650		
7	Mobilization/Demobilization	10	LS	1		\$939,307	\$4,696,535
	Mile 20.0 to Mile 18.0	10	CY	199,600	\$4.30	\$859,065	\$4,295,324
	Mile 18.0 to Mile 16.0	10	CY	199,600	\$4.04	\$805,430	\$4,027,149
	Mile 16.0 to Mile 13.0	10	CY	301,300	\$4.78	\$1,441,417	\$7,207,083
	Mile 13.0 to Mile 11.0	10	CY	231,400	\$4.93	\$1,141,091	\$5,705,454
	Mobilization/Demobilization	2	LS	1		\$857,241	
Mile 11.0 to Mile 0.0	2	CY	1,269,100	\$4.50	\$5,706,754		
8	Mobilization/Demobilization	2	LS	1		\$1,060,480	
	Mile 0.0 to Mile (-3.5)	2	CY	500,000	\$11.56	\$5,781,650	
9	Mobilization/Demobilization	2	LS	1		\$857,241	
	Mile 11.0 to Mile 0.0	2	CY	1,269,100	\$4.50	\$5,706,754	
10	Mobilization/Demobilization	2	LS	1		\$1,060,480	
	Mile 0.0 to Mile (-3.5)	2	CY	500,000	\$11.56	\$5,781,650	
Total:				11,275,500	\$7.86	\$88,640,922	\$443,204,608

Note: Unit costs reflected on summary sheet include all disposal area dike refurbishment within each specified reach, if necessary
 * Three reaches specified in Contract 1 require a maintenance cycle every 5 years. 5 years after maintenance Contract 1 reaches at 36.3, 24.0, and 22.0 will undergo maintenance under Contract 6 (10-Year cycle). 5 Years after maintenance Contract 6 those reaches will be maintained under a new 5-year cycle (Contract 11). Following this sequence, contract 6 will be required four additional times over the 50 year project life after Contract 6 is completed.

Feasibility Level Cost Estimate

Project:	Houma Navigation Canal Deepening	<i>Quantities & Line Items - Puls - Aug 2015</i>			
	Houma, Terrebonne Parish, Louisiana	<i>Costs - Ramos - Aug 2014</i>			
	Maintenance Cost Adjacent Disposal -15ft MLG				
	Mile 36.3 to 34.0 & Mile 24 to 22.0 & Mile 22.0 to 20.0 & 11.0 to 0.0 to -15 Foot Elevation				
	w/ 2 and 3 Feet of Advanced				
	Maintenance Included	Multiple Disposal Sites			
	Contract No. 1	Channel Maintenance - 2 and 5 year frequency			
Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1A	Mobilization and Demobilization	LS	1	\$871,046	\$871,046
	Dredging and Disposal (Mile 36.3 to Mile 20.0)				
	Channel to be excavated to -18 NAVD88; 1v/2h side slope/150-foot bottom width				
1B	HNC Mile 36.3 to HNC Mile 34.0 (Year 5 through 25)	CY	99,650	\$5.77	\$575,260
	Material to be placed within confined upland Site 1 (Port Commission site) opposite Short Cut Canal. No height restriction. Dike construction/maintenance not required.				
1C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.29	\$505,000	\$146,450
1B	HNC Mile 36.3 to HNC Mile 34.0 (Year 30 through 50)	CY	99,650	\$6.13	\$610,974
	Material to be placed within confined upland Site 3 opposite HNC Mile 35.5 No height restriction. Dike construction/maintenance not required.				
1C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
1D	HNC Mile 24.0 to HNC Mile 22.0	CY	99,650	\$8.01	\$798,476
	Material to be placed semi-confined within Wetland Site 15 between HNC Mile 23.0 and 22.5 along the west bank of the HNC WW. The initial buildup of mtl. shall begin in the north east corner, and to proceed outward in a west-southwesterly direction. Earthen closures will be required along the west side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).				
1E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.28	\$505,000	\$141,400
1F	Earthen Retention Dike Refurbishment	LF	2,450	\$60.00	\$147,000

Feasibility Level Cost Estimate

Project:	Houma Navigation Canal Deepening	<i>Quantities & Line Items - Puls - Aug 2015</i>			
	Houma, Terrebonne Parish, Louisiana	<i>Costs - Ramos - Aug 2014</i>			
	Maintenance Cost Adjacent Disposal -15ft MLG				
	Mile 36.3 to 34.0 & Mile 24 to 22.0 & Mile 22.0 to 20.0 & 11.0 to 0.0 to -15 Foot Elevation				
	w/ 2 and 3 Feet of Advanced				
	Maintenance Included	Multiple Disposal Sites			
	Contract No. 1	Channel Maintenance - 2 and 5 year frequency			
Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1G	HNC Mile 22.0 to HNC Mile 20.0	CY	99,650	\$5.72	\$570,157
	Material to be placed unconfined within Wetland Site 16 opposite and adjacent to HNC Mile 21.4 along the west bank of the HNC WW. The discharge will be positioned to the west and placed a minimum 1,500 ft beyond the bank rim or erosion control structure at the front of the disposal area. Elevation of material placed within the open water area(s) NTE +3.0' NAVD 88 (See dwgs for details).				
1H	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.28	\$505,000	\$141,400
1I	Mobilization and Demobilization	LS	1	\$857,241	\$857,241
	Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -18' NAVD88; 1v/2h side slopes by 150' bottom width				
1J	HNC Mile 11 to HNC Mile 8.0	CY	331,000	\$3.62	\$1,199,014
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 8.8 a minimum 1000' west of the channel centerline (See dwgs for details).				
1K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.45	\$505,000	\$227,250
1L	HNC Mile 8.0 to HNC Mile 6.0	CY	228,300	\$4.15	\$946,806
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 7.0 a minimum 1000' west of the channel centerline (See dwgs for details).				
1M	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
1N	HNC Mile 6.0 to HNC Mile 4.0	CY	236,600	\$3.75	\$887,345
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 5.0 a minimum 1000-feet west of the channel centerline (See dwgs for details).				

Feasibility Level Cost Estimate

Project:	Houma Navigation Canal Deepening	<i>Quantities & Line Items - Puls - Aug 2015</i>			
	Houma, Terrebonne Parish, Louisiana	<i>Costs - Ramos - Aug 2014</i>			
	Maintenance Cost Adjacent Disposal -15ft MLG				
	Mile 36.3 to 34.0 & Mile 24 to 22.0 & Mile 22.0 to 20.0 & 11.0 to 0.0 to -15 Foot Elevation				
	w/ 2 and 3 Feet of Advanced				
	Maintenance Included	Multiple Disposal Sites			
	Contract No. 1	Channel Maintenance - 2 and 5 year frequency			
Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1O	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700
1P	HNC Mile 4.0 to HNC Mile 2.0	CY	236,600	\$3.75	\$887,345
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 3.0 a minimum 1000-feet west of the channel centerline (See dwgs for details).				
1Q	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700
1R	HNC Mile 2.0 to HNC Mile 0.0	CY	236,600	\$3.75	\$887,345
	Material to be placed at the single point discharge location oppsie HNC Mile 1.0 a minimum 1000' west of the channel centerline (See dwgs for details).				
1S	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700
				Total:	\$8,362,428
	Contract Duration	DY	93		
	Notes:				
	Channel Quantities do not reflect overdepth.				
	Dredging:		1,568,050 CY		
	Survey/Crew/Boat:		2.9 MO		

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Maintenance Cost Adjacent Disposal -15ft MLG

Mile 0.0 to (-3.5) to -15 Foot Elevation w/ 4 Feet of Advanced Maintenance Included

Contract No. 2

Channel Maintenance - 2 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2A	Mobilization and Demobilization	LS	1	\$1,060,480	\$1,060,480
	Dredging and Disposal Mile 0.0 to Mile (-3.5) Channel to be excavated to -19' NAVD88; 1v/2h side slopes by 300' bottom width				
2B	Dredging and Disposal Mile 0.0 to Mile (-3.5)	CY	500,000	\$9.28	\$4,640,000
	Material to be placed at the SPD Mile -1.7 and Mile -2.5				
2C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.77	\$645,000	\$1,141,650
Total:					\$6,842,130
	Contract Duration	DY	58		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging: 500,000 CY

Survey/Crew/Boat: 1.8 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -15ft MLG Mile 11.0 to 0.0 to -15 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 3	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
3A	Mobilization and Demobilization Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -18' NAVD88; 1v/2h side slopes by 150' bottom width	LS	1	\$857,241	\$857,241
3B	HNC Mile 11 to HNC Mile 8.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 8.8 a minimum 1000' west of the channel centerline (See dwgs for details).	CY	331,000	\$3.62	\$1,199,014
3C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.45	\$505,000	\$227,250
3D	HNC Mile 8.0 to HNC Mile 6.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 7.0 a minimum 1000' west of the channel centerline (See dwgs for details).	CY	228,300	\$4.15	\$946,806
3E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
3F	HNC Mile 6.0 to HNC Mile 4.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 5.0 a minimum 1000-foot west of the channel centerline (See dwgs for details).	CY	236,600	\$3.75	\$887,345
3G	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700
3H	HNC Mile 4.0 to HNC Mile 2.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 3.0 a minimum 1000-foot west of the channel centerline (See dwgs for details).	CY	236,600	\$3.75	\$887,345
3I	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700
3J	HNC Mile 2.0 to HNC Mile 0.0 Material to be placed at the single point discharge location opposite HNC Mile 1.0 a minimum 1000' west of the channel centerline (See dwgs for details).	CY	236,600	\$3.75	\$887,345

Feasibility Level Cost Estimate

Project:	Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -15ft MLG Mile 11.0 to 0.0 to -15 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 3	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
3K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700
Total:					\$6,563,995

Contract Duration	DY	58	
Note:			
Channel Quantities do not reflect overdepth.			

Dredging: 1,269,100 CY

Survey/Crew/Boat: 1.8 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Maintenance Cost Adjacent Disposal -15ft MLG

Mile 0.0 to (-3.5) to -15 Foot Elevation w/ 4 Feet of Advanced Maintenance Included

Contract No. 4

Channel Maintenance - 2 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
4A	Mobilization and Demobilization	LS	1	\$1,060,480	\$1,060,480
	Dredging and Disposal Mile 0.0 to Mile (-3.5) Channel to be excavated to -19' NAVD88; 1v/2h side slopes by 300' bottom width				
4B	Dredging and Disposal Mile 0.0 to Mile (-3.5)	CY	500,000	\$9.28	\$4,640,000
	Material to be placed at the SPD Mile -1.7 and Mile -2.5				
4C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.77	\$645,000	\$1,141,650
Total:					\$6,842,130
	Contract Duration	DY	58		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging: 500,000 CY

Survey/Crew/Boat: 1.8 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -15ft MLG Mile 11.0 to 0.0 to -15 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 5	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
5A	Mobilization and Demobilization	LS	1	\$857,241	\$857,241
	Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -18' NAVD88; 1v/2h side slopes by 150' bottom width				
5B	HNC Mile 11 to HNC Mile 8.0	CY	331,000	\$3.62	\$1,199,014
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 8.8 a minimum 1000' west of the channel centerline (See dwgs for details).				
5C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.45	\$505,000	\$227,250
5D	HNC Mile 8.0 to HNC Mile 6.0	CY	228,300	\$4.15	\$946,806
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 7.0 a minimum 1000' west of the channel centerline (See dwgs for details).				
5E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
5F	HNC Mile 6.0 to HNC Mile 4.0	CY	236,600	\$3.75	\$887,345
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 5.0 a minimum 1000-feet west of the channel centerline (See dwgs for details).				
5G	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700
5H	HNC Mile 4.0 to HNC Mile 2.0	CY	236,600	\$3.75	\$887,345
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 3.0 a minimum 1000-feet west of the channel centerline (See dwgs for details).				
5I	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700
5J	HNC Mile 2.0 to HNC Mile 0.0	CY	236,600	\$3.75	\$887,345
	Material to be placed at the single point discharge location opposie HNC Mile 1.0 a minimum 1000' west of the channel centerline (See dwgs for details).				

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -15ft MLG Mile 11.0 to 0.0 to -15 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 5	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
5K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700
Total:					\$6,563,995

Contract Duration	DY	58	
Note:			
Channel Quantities do not reflect overdepth.			

Dredging: 1,269,101 CY

Survey/Crew/Boat: 1.8 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana
Maintenance Cost Adjacent Disposal -15ft MLG
 Mile 36.3 to 20.0 & Mile 0.0 to (-3.5) to -15 Foot
 Elevation w/ 2 Feet of Advanced Maintenance Included
 Contract No. 6

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Multiple Disposal Sites
Channel Maintenance - 2, 5, and 10 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6A	Mobilization and Demobilization	LS	1	\$939,307	\$939,307
	Dredging and Disposal (Mile 36.3 to Mile 20.0) Channel to be excavated to -17 NAVD88; 1v/2h side slope/150-foot bottom width				
6B	HNC Mile 36.3 to HNC Mile 34.0 (Year 5 through 25)	CY	99,650	\$5.77	\$575,260
	Material to be placed within confined upland Site 1 (Port Commission site) opposite Short Cut Canal. No height restriction. Dike construction/maintenance not required.				
6C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.29	\$505,000	\$146,450
6B	HNC Mile 36.3 to HNC Mile 34.0 (Year 30 through 50)	CY	99,650	\$6.13	\$610,974
	Material to be placed within confined upland Site 3 opposite HNC Mile 35.5 No height restriction. Dike construction/maintenance not required.				
6C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
6D	NHC Mile 34.0 to HNC Mile 32.0	CY	199,600	\$4.45	\$889,098
	Material to be placed semi-confined within designated Wetland Site 7E opposite HNC Mile 31. Material to be placed within the open water area(s), a minimum 12,500 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).				
6E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.44	\$505,000	\$222,200
6F	Earthen Retention Dike Refurbishment	LF	6,900	\$60.00	\$414,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana
Maintenance Cost Adjacent Disposal -15ft MLG
 Mile 36.3 to 20.0 & Mile 0.0 to (-3.5) to -15 Foot
 Elevation w/ 2 Feet of Advanced Maintenance Included
 Contract No. 6

Quantities & Line Items - Puls - Aug 2015
 Costs - Ramos - Aug 2015

Multiple Disposal Sites
Channel Maintenance - 2, 5, and 10 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6G	HNC Mile 32.0 to HNC Mile 29.5 Material to be placed semi-confined within designated Wetland Site 7E opposite HNC Mile 31. Material to be placed within the open water area(s), a minimum 12,500 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	150,700	\$6.40	\$964,480
6H	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.48	\$505,000	\$242,400
6I	Earthen Retention Dike Refurbishment	LF	6,900	\$60.00	\$414,000
6J	HNC Mile 29.5 to HNC Mile 28.0 (Year 10 through 20) Material to be placed unconfined within designated Wetland Site 12B opposite approximate HNC Mile 27.0. Mtl. shall be discharged within the open water areas, a minimum 4,500 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	150,700	\$4.35	\$655,846
6K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
6L	Earthen Retention Dike Refurbishment	LF	1,600	\$60.00	\$96,000
6J	HNC Mile 29.5 to HNC Mile 28.0 (Year 30 through 50) Material to be placed unconfined within designated Wetland Site 12 opposite approximate HNC Mile 27.0. Mtl. shall be discharged within the open water areas, a minimum 1,950 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	150,700	\$3.92	\$590,262
6K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.28	\$505,000	\$141,400
6L	Earthen Retention Dike Refurbishment	LF	1,800	\$60.00	\$108,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Quantities & Line Items - Puls - Aug 2015
 Houma, Terrebonne Parish, Louisiana Costs - Ramos - Aug 2015
Maintenance Cost Adjacent Disposal -15ft MLG
 Mile 36.3 to 20.0 & Mile 0.0 to (-3.5) to -15 Foot
 Elevation w/ 2 Feet of Advanced Maintenance Included **Multiple Disposal Sites**
 Contract No. 6 **Channel Maintenance - 2, 5, and 10 year frequency**

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6M	HNC Mile 28.0 to HNC Mile 26.0 Material to be placed unconfined within designated Wetland Site A-07-A opposite approximate HNC Mile 26.5. Mtl. shall be discharged within the open water areas, a minimum 5,700 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	199,600	\$3.71	\$740,915
6N	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.37	\$505,000	\$186,850
6O	Earthen Retention Dike Refurbishment	LF	9,300	\$60.00	\$558,000
6P	HNC Mile 27.6 to HNC Mile 27.4 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	1,900	\$61.46	\$116,774
6Q	Mechanical Dredging Flotation Channel Excavation Mile 27.6 to Mile 27.4. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,260	\$72.92	\$91,879
6R	HNC Mile 26.0 to HNC Mile 24.0 (Year 10 through 40) Material to be placed unconfined within designated Wetland Site A-07-A opposite approximate HNC Mile 26.5. Mtl. shall be discharged within the open water areas, a minimum 5,750 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	199,600	\$4.11	\$820,116
6S	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.39	\$505,000	\$196,950
6T	Earthen Retention Dike Refurbishment	LF	13,000	\$60.00	\$780,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Quantities & Line Items - Puls - Aug 2015
 Houma, Terrebonne Parish, Louisiana Costs - Ramos - Aug 2015
Maintenance Cost Adjacent Disposal -15ft MLG
 Mile 36.3 to 20.0 & Mile 0.0 to (-3.5) to -15 Foot
 Elevation w/ 2 Feet of Advanced Maintenance Included **Multiple Disposal Sites**
 Contract No. 6 **Channel Maintenance - 2, 5, and 10 year frequency**

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6R	HNC Mile 26.0 to HNC Mile 24.0 (Year 50) Material to be placed unconfined within designated Wetland Site 14A opposite approximate HNC Mile 27. Mtl. shall be discharged within the open water areas, a minimum 3,360 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	199,600	\$3.89	\$776,684
6S	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.37	\$505,000	\$186,850
6T	Earthen Retention Dike Refurbishment	LF	9,000	\$60.00	\$540,000
6U	HNC Mile 25.9 to HNC Mile 24.1 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	21,300	\$61.46	\$1,309,098
6V	Mechanical Dredging Flotation Channel Excavation Mile 25.9 to Mile 24.1 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	9,700	\$72.92	\$707,324
6W	HNC Mile 24.0 to HNC Mile 22.0 Material to be placed semi-confined within Wetland Site 15 between HNC Mile 23.0 and 22.5 along the west bank of the HNC WW. The initial buildup of mtl. shall begin in the north east corner, and to proceed outward in a west-southwesterly direction. Earthen closures will be required along the west side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	99,650	\$8.01	\$798,476
6X	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.28	\$505,000	\$141,400
6Y	Earthen Retention Dike Refurbishment	LF	2,450	\$60.00	\$147,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Quantities & Line Items - Puls - Aug 2015
 Houma, Terrebonne Parish, Louisiana Costs - Ramos - Aug 2015
Maintenance Cost Adjacent Disposal -15ft MLG
 Mile 36.3 to 20.0 & Mile 0.0 to (-3.5) to -15 Foot
 Elevation w/ 2 Feet of Advanced Maintenance Included **Multiple Disposal Sites**
 Contract No. 6 **Channel Maintenance - 2, 5, and 10 year frequency**

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6Z	HNC Mile 22.0 to HNC Mile 20.0 Material to be placed unconfined within Wetland Site 16 opposite and adjacent to HNC Mile 21.4 along the west bank of the HNC WW. The discharge will be positioned to the west and placed a minimum 1,550 ft beyond the bank rim or erosion control structure at the front of the disposal area. Elevation of material placed within the open water area(s) NTE +3.0' NAVD 88 (See dwgs for details).	CY	99,650	\$5.72	\$570,157
6AA	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.28	\$505,000	\$141,400
6Z	HNC Mile 22.0 to HNC Mile 20.0 Material to be placed semi-confined within Wetland Site 15A between HNC Mile 23.0 and 22.5 along the west bank of the HNC WW. The initial buildup of mtl. shall begin in the north east corner, and to proceed outward in a west-southwesterly direction. Earthen closures will be required along the west side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	99,650	\$7.92	\$789,228
6AA	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.41	\$505,000	\$207,050
6BB	Earthen Retention Dike Refurbishment	LF	4,800	\$60.00	\$288,000
6CC	Mobilization and Demobilization Dredging and Disposal Mile 0.0 to Mile (-3.5) Channel to be excavated to -19' NAVD88; 1v/2h side slopes by 300' bottom width	LS	1	\$1,060,480	\$1,060,480
6DD	Dredging and Disposal Mile 0.0 to Mile (-3.5) Material to be placed at the SPD Mile -1.7 and Mile -2.5	CY	500,000	\$9.28	\$4,640,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -15ft MLG Mile 36.3 to 20.0 & Mile 0.0 to (-3.5) to -15 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 6	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 <div style="border: 1px solid black; background-color: #e0e0e0; padding: 2px; display: inline-block;">Multiple Disposal Sites</div> Channel Maintenance - 2, 5, and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6EE	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.77	\$645,000	\$1,141,650
					Total: \$15,300,748
	Contract Duration	DY	143		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging: 1,699,150 CY

Rock: 23,200 TON

Flotation Channel: 10,960 LF

Earthen Dike: 45,150 LF

Survey/Crew/Boat: 4.6 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -15ft MLG Mile 20.0 to 11.0 & Mile 11.0 to 0.0 to -15 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 7	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2 and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7A	Mobilization and Demobilization Dredging and Disposal (Mile 20.0 to Mile 11.0) Channel to be excavated to -17 NAVD88; 1v/2h side slope/150-foot bottom width	LS	1	\$939,307	\$939,307
7B	HNC Mile 20.0 to HNC Mile 18.0 (Year 11 through 31) Material to be placed unconfined within Wetland Site 19C oppsite and adjacent to HNC Mile 19.3 along the east bank of the HNC WW. The discharge will be positioned to the east and placed a minimum 500-ft beyond the bank rim/ridge or erosion control structure at the front of the disposal area. Elevation of material placed within the open water area(s) of Site 19C NTE +3.0' NAVD88 (See dwgs for details).	CY	199,600	\$3.23	\$643,830
7C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.32	\$505,000	\$161,600
7B	HNC Mile 20.0 to HNC Mile 18.0 (Year 41 through 51) Material to be placed semi-confined within the open water portions of Wetland Site 19D between HNC Mile 20.2 and 19.6, located beyond the west bank of the HNC WW. The initial buildup of mtl. shall begin in the north east corner, and to proceed outward in a westerly direction a minimum distance of 2,350 ft beyond the channel centerline. Earthen closures will be required along the south side of the disposal area adjacent to the open water. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors at the northeast and south east portions of the disposal site. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	199,600	\$3.46	\$689,818
7C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700
7D	Earthen Retention Dike Refurbishment	LF	1,300	\$60.00	\$78,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -15ft MLG Mile 20.0 to 11.0 & Mile 11.0 to 0.0 to -15 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 7	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2 and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7E	HNC Mile 18.0 HNC Mile 16.0 Material to be placed unconfined within Wetland Site 20C oppsoite HNC Mile 16.8 along the west bank of the HNC WW. A construction access corriodr, 200 feet in width, will be provided for the Contractors use at the intersection of Four Pt. Bayou with the HNC WW. The intial buildup shall occur in the east corner of the DA and to proceed outward in a westerly direction. Elevation of Mtl. NTE +3.0' NAVD88 (See dwgs for details).	CY	199,600	\$3.23	\$643,830
7F	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.32	\$505,000	\$161,600
7G	HNC Mile 16.0 to HNC Mile 13.0 Material to be placed within Wetland Site 21 opposite HNC Mile 15.0. To prevent material runback, the discharge pipe will be postioned to the SW and placed approximately 600-feet west of HNC Mile 15.0. The material will be placed in a west south-westerly direction within the open water areas or tributaries along the back side of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs f/details).	CY	301,300	\$3.21	\$968,017
7H	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.48	\$505,000	\$242,400
7I	Earthen Retention Dike Re-fubishment	LF	3,850	\$60.00	\$231,000
7J	HNC Mile 13.0 to HNC Mile 11.0 (Year 11 through 21) Material to be placed within Wetland Site 24 opposite HNC Mile 12.0 along the west bank of the HNC WW. A construction access corrdior, 200 ft in width, will be provided for the Contractors use at the entrance of the WW. The initial buildup will occur in the east corner of the DA and proceed outward in a west, south-westerly direction. Elevation of material placed within the open water area(s) NTE +3.0' NAVD88 (See dwgs for details).	CY	231,400	\$2.96	\$684,204
7K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700
7L	Earthen Retention Dike Refurbishment	LF	4,100	\$60.00	\$246,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -15ft MLG Mile 20.0 to 11.0 & Mile 11.0 to 0.0 to -15 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 7	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 <div style="border: 1px solid black; padding: 2px; display: inline-block;">Multiple Disposal Sites</div> Channel Maintenance - 2 and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7J	HNC Mile 13.0 to HNC Mile 11.0 (Year 31 through 51) Material to be placed within Wetland Site 21 opposite HNC Mile 15.0. To prevent material runback, the discharge pipe will be positioned to the SW and placed approximately 600 feet west of HNC Mile 15.0. The material will be placed in a west south-westerly direction within the open water areas or tributaries along the back side of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs f/details).	CY	231,400	\$3.24	\$749,366
7K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.37	\$505,000	\$186,850
7L	Earthen Retention Dike Re-fubishment	LF	3,850	\$60.00	\$231,000
7M	Mobilization and Demobilization Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -18' NAVD88; 1v/2h side slopes by 150' bottom width	LS	1	\$857,241	\$857,241
7N	HNC Mile 11 to HNC Mile 8.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 8.8 a minimum 1000' west of the channel centerline (See dwgs for details).	CY	331,000	\$3.62	\$1,199,014
7O	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.45	\$505,000	\$227,250
7P	HNC Mile 8.0 to HNC Mile 6.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 7.0 a minimum 1000' west of the channel centerline (See dwgs for details).	CY	228,300	\$4.15	\$946,806
7Q	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
7R	HNC Mile 6.0 to HNC Mile 4.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 5.0 a minimum 1000-foot west of the channel centerline (See dwgs for details).	CY	236,600	\$3.75	\$887,345
7S	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -15ft MLG Mile 20.0 to 11.0 & Mile 11.0 to 0.0 to -15 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 7	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 <div style="border: 1px solid black; background-color: #e0e0e0; padding: 2px; display: inline-block;"> Multiple Disposal Sites </div> Channel Maintenance - 2 and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7T	HNC Mile 4.0 to HNC Mile 2.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 3.0 a minimum 1000-foot west of the channel centerline (See dwgs for details).	CY	236,600	\$3.75	\$887,345
7U	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700
7V	HNC Mile 2.0 to HNC Mile 0.0 Material to be placed at the single point discharge location opposite HNC Mile 1.0 a minimum 1000' west of the channel centerline (See dwgs for details).	CY	236,600	\$3.75	\$887,345
7W	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700
Total:					\$10,839,575

Contract Duration	DY	102	
Note:			
Channel Quantities do not reflect overdepth.			

Dredging: 2,201,000 CY

Earthen Dike: 9,250 LF

Survey/Crew/Boat: 3.2 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Maintenance Cost Adjacent Disposal -15ft MLG

Mile 0.0 to (-3.5) to -15 Foot Elevation w/ 4 Feet of Advanced Maintenance Included

Contract No. 8

Channel Maintenance - 2 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
8A	Mobilization and Demobilization	LS	1	\$1,060,480	\$1,060,480
	Dredging and Disposal Mile 0.0 to Mile (-3.5) Channel to be excavated to -19' NAVD88; 1v/2h side slopes by 300' bottom width				
8B	Dredging and Disposal Mile 0.0 to Mile (-3.5)	CY	500,000	\$9.28	\$4,640,000
	Material to be placed at the SPD Mile -1.7 and Mile -2.5				
8C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.77	\$645,000	\$1,141,650
Total:					\$6,842,130
	Contract Duration	DY	58		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging: 500,000 CY

Survey/Crew/Boat: 1.8 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -15ft MLG Mile 11.0 to 0.0 to -15 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 9	<i>Quantities & Line Items - Puls - Aug 2015</i> <i>Costs - Ramos - Aug 2015</i> Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
9A	Mobilization and Demobilization Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -18' NAVD88; 1v/2h side slopes by 150' bottom width	LS	1	\$857,241	\$857,241
9B	HNC Mile 11 to HNC Mile 8.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 8.8 a minimum 1000' west of the channel centerline (See dwgs for details).	CY	331,000	\$3.62	\$1,199,014
9C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.45	\$505,000	\$227,250
9D	HNC Mile 8.0 to HNC Mile 6.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 7.0 a minimum 1000' west of the channel centerline (See dwgs for details).	CY	228,300	\$4.15	\$946,806
9E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
9F	HNC Mile 6.0 to HNC Mile 4.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 5.0 a minimum 1000-foot west of the channel centerline (See dwgs for details).	CY	236,600	\$3.75	\$887,345
9G	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700
9H	HNC Mile 4.0 to HNC Mile 2.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 3.0 a minimum 1000-foot west of the channel centerline (See dwgs for details).	CY	236,600	\$3.75	\$887,345
9I	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700
9J	HNC Mile 2.0 to HNC Mile 0.0 Material to be placed at the single point discharge location opposite HNC Mile 1.0 a minimum 1000' west of the channel centerline (See dwgs for details).	CY	236,600	\$3.75	\$887,345

Feasibility Level Cost Estimate

Project:	Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -15ft MLG Mile 11.0 to 0.0 to -15 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 9	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
9K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700
Total:					\$6,563,995

Contract Duration		DY	58		
Note:	Channel Quantities do not reflect overdepth.				

Dredging: 1,269,101 CY

Survey/Crew/Boat: 1.8 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Maintenance Cost Adjacent Disposal -15ft MLG

Mile 0.0 to (-3.5) to -15 Foot Elevation w/ 4 Feet of Advanced Maintenance Included

Contract No. 10

Channel Maintenance - 2 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
10A	Mobilization and Demobilization	LS	1	\$1,060,480	\$1,060,480
	Dredging and Disposal Mile 0.0 to Mile (-3.5) Channel to be excavated to -19' NAVD88; 1v/2h side slopes by 300' bottom width				
10B	Dredging and Disposal Mile 0.0 to Mile (-3.5)	CY	500,000	\$9.28	\$4,640,000
	Material to be placed at the SPD Mile -1.7 and Mile -2.5				
10C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.77	\$645,000	\$1,141,650
Total:					\$6,842,130
	Contract Duration	DY	58		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging: 500,000 CY

Survey/Crew/Boat: 1.8 MO

Reach	15-foot (No Action Plan)				15-foot (No Action Plan)				
	Site 1				Site 2				Crew/Equipment Costs
	Unit Cost	CY	Duration (months)	Mob/Demob (Per Reach)	Unit Cost	CY	Duration (months)	Mob/Demob (Per Reach)	
Mob/Demob	\$871,046								\$505,000
36.3 to 34.5 (5-year)	\$5.77	99,650	0.29	\$315,563	\$6.13	99,650	0.31	\$315,563	\$505,000
24.0 to 22.0 (5-year)	\$8.01	99,650	0.28	\$366,046					\$505,000
22.0 to 19.7 (5-year)	\$5.72	99,650	0.28	\$323,123					\$505,000
		1,943,892				\$610,974			
Mob/Demob (36.3 to 22.0)	\$939,307								\$505,000
36.3 to 34.0	\$5.77	99,650	0.29	\$315,563	\$6.13	99,650	0.31	\$315,563	\$505,000
34.0 to 32.0	\$4.45	199,600	0.44	\$434,307					\$505,000
32.0 to 29.5	\$6.40	150,700	0.48	\$434,307					\$505,000
29.5 to 28.0	\$4.35	150,700	0.31	\$330,985	\$3.92	150,700	0.28	\$330,985	\$505,000
28.0 to 26.0	\$3.71	199,600	0.37	\$317,075					\$505,000
26.0 to 24.0	\$4.11	199,600	0.39	\$330,985	\$3.89	199,600	0.37	\$330,985	\$505,000
24.0 to 22.0	\$8.01	99,650	0.28	\$366,046					\$505,000
		5,444,191				\$1,977,919			
Mob/Demob (22.0 to 11.0)	\$828,123								\$505,000
22.0 to 20.0	\$5.72	99,650	0.28	\$323,123	\$7.92	99,650	0.41	\$323,123	\$505,000
20.0 to 18.0	\$3.23	199,600	0.32	\$320,704	\$3.46	199,600	0.34	\$320,704	\$505,000
18.0 to 16.0	\$3.23	199,600	0.32	\$320,704					\$505,000
16.0 to 13.0	\$3.21	301,300	0.48	\$320,704					\$505,000
13.0 to 11.0	\$2.96	231,400	0.34	\$320,704	\$3.24	231,400	0.37	\$320,704	\$505,000
		3,510,037				\$2,228,411			
Mob/Demob (0 to 11.0)	\$857,241								\$505,000
11.0 to 8.0	\$3.62	331,000	0.45	\$352,241					\$505,000
8.0 to 6.0	\$4.15	228,300	0.31	\$352,241					\$505,000
6.0 to 4.0	\$3.75	236,600	0.34	\$352,241					\$505,000
4.0 to 2.0	\$3.75	236,600	0.34	\$352,241					\$505,000
2.0 to 0.0	\$3.75	236,600	0.34	\$352,241					\$505,000
		4,807,854							
Mob/Demob (0 to -3.5)	\$1,060,480								\$645,000
0 to -3.5	\$9.28	500,000	1.77	\$415,480					\$645,000
		4,640,000							

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana
Consturction Cost Alternative 1A Adjacent Disposal -18
 Mile 36.3 to Mile (-3.5) to -18 Foot Elevation w/ Advanced Maintenance Included
 Summary Page

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2014

Contract No.	Description	Units	Estimated Quantity	Unit Price	Estimated Construction Cost
1	Mobilization/Demobilization Mile 36.3 to Mile 22.0	LS CY	1 890,000	\$939,307 \$22.39	\$939,307 \$19,923,432
2	Mobilization/Demobilization Mile 22.0 to Mile 11.5	LS CY	1 571,200	\$825,704 \$85.81	\$825,704 \$49,012,388
3	Mobilization/Demobilization Mile 11.5 to Mile 6.0	LS CY	1 1,641,600	\$857,241 \$2.83	\$857,241 \$4,649,419
4	Mobilization/Demobilization Mile 6.0 to Mile 0.0	LS CY	1 1,033,400	\$857,241 \$3.86	\$857,241 \$3,987,906
5	Mobilization/Demobilization Mile 0.0 to Mile (-3.5)	LS CY	1 668,000	\$1,308,950 \$7.15	\$1,308,950 \$4,777,539
Total:			4,804,200	\$18.14	\$87,139,127

Note:

Unit costs reflected on summary sheet include earthen dike construction, rock dike construction, geotextile fabric, floatation channel excavation within each specified reach, crews, surveying, and boats, if applicable.

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Consturction Cost Alternative 1A Adjacent Disposal -18

Mile 36.3 to 22.0 to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included
 Contract No. 1

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1A	Mobilization and Demobilization	LS	1	\$939,307	\$939,307
	Dredging and Disposal (Mile 36.3 to Mile 22.0) Channel to be excavated to -20 NAVD88; 1v/2h side slope/150-foot bottom width				
1B	HNC Mile 36.3 to HNC Mile 34.0	CY	170,000	\$6.09	\$1,035,776
	Material to be placed within confined upland Site 1 (Port Commision Site) opposite Short Cut Canal. No height restriction. Dike construction/maintenance not required.				
1C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.53	\$505,000	\$267,650
1D	NHC Mile 34.0 to HNC Mile 32.0	CY	77,500	\$14.35	\$1,112,032
	Material to be placed semi-confined within designated Wetland Site 7E east of HNC Mile 31. Material to be placed within the open water area(s), a minimum 12,500 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).				
1E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.58	\$505,000	\$292,900
1F	Earthen Retention Dike Refurbishment	LF	6,900	\$60.00	\$414,000
1G	HNC Mile 32.0 to HNC Mile 29.5	CY	95,500	\$7.22	\$689,434
	Material to be placed semi-confined within designated Wetland Site 7E east of HNC Mile 31. Material to be placed within the open water area(s), a minimum 12,500 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).				
1H	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.36	\$505,000	\$181,800
1I	Earthen Retention Dike Refurbishment	LF	6,900	\$60.00	\$414,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Consturction Cost Alternative 1A Adjacent Disposal -18

Mile 36.3 to 22.0 to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included
 Contract No. 1

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1J	HNC Mile 29.5 to HNC Mile 28.0 Material to be placed unconfined within designated Wetland Site 12B east of HNC Mile 27.0. Material shall be discharged within the open water areas, a minimum 4,500 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	88,000	\$8.79	\$773,837
1K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.39	\$505,000	\$196,950
1L	Earthen Retention Dike Refurbishment	LF	1,600	\$60.00	\$96,000
1M	HNC Mile 28.0 to HNC Mile 26.0 Material to be placed unconfined within designated Wetland Site A-07-A west of HNC Mile 26.5. Material shall be discharged within the open water areas, a minimum 5,700 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	117,000	\$8.24	\$964,454
1N	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.49	\$505,000	\$247,450
1O	Earthen Retention Dike Refurbishment	LF	9,300	\$60.00	\$558,000
1P	HNC Mile 27.6 to HNC Mile 27.4 (West Bank) Foreshore Protection Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	1,900	\$61.46	\$116,774
1Q	Mechanical Dredging Flotation Channel Excavation Mile 27.6 to Mile 27.4. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,260	\$72.92	\$91,879
1R	HNC Mile 26.4 to HNC Mile 25.9 (West Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN SY	26,600 12,800	\$61.46 \$9.78	\$1,634,836 \$125,184
1S	Mechanical Dredging Flotation Channel Excavation Mile 26.4 to Mile 25.9 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	2,840	\$72.92	\$207,093

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Consturction Cost Alternative 1A Adjacent Disposal -18

Mile 36.3 to 22.0 to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included
 Contract No. 1

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1T	HNC Mile 26.0 to HNC Mile 24.0 Material to be placed unconfined within designated Wetland Site A-07-A west of HNC Mile 26.5. Material shall be discharged within the open water areas, a minimum 5,700 -feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	171,000	\$6.22	\$1,063,757
1U	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.54	\$505,000	\$272,700
1V	Earthen Retention Dike Refurbishment	LF	13,000	\$60.00	\$780,000
1W	HNC Mile 25.9 to HNC Mile 24.1 (West Bank) Foreshore Protection Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	21,300	\$61.46	\$1,309,098
1X	Mechanical Dredging Flotation Channel Excavation Mile 25.9 to Mile 24.1 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	9,700	\$72.92	\$707,324
1Y	HNC Mile 24.0 to HNC Mile 22.0 Material to be placed semi-confined within designated Wetland Site 15 west of HNC Mile 23.5. Material to be placed within the open water area(s), a minimum 1,270 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	171,000	\$5.27	\$901,786
1Z	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.46	\$505,000	\$232,300
1AA	Earthen Retention Dike Refurbishment	LF	2,450	\$60.00	\$147,000
1BB	HNC Mile 23.7 to HNC Mile 22.4 (East Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN SY	59,100 28,500	\$61.46 \$9.78	\$3,632,286 \$278,730
1CC	Mechanical Dredging Flotation Channel Excavation Mile 23.7 to Mile 22.4. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	6,540	\$72.92	\$476,897

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Consturction Cost Alternative 1A Adjacent Disposal -18

Mile 36.3 to 22.0 to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included
 Contract No. 1

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1DD	HNC Mile 22.2 to HNC Mile 22.1 (East Bank)	TN	9,800	\$61.46	\$602,308
	Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	SY	4,700	\$9.78	\$45,966
1EE	Mechanical Dredging Flotation Channel Excavation Mile 22.2 to Mile 22.1. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	730	\$72.92	\$53,232
Total:					\$20,862,739
Contract Duration		DY	106		
Notes:					
Dredging quantity does not reflect overdepth.					

Dredging: 890,000 CY

Rock: 118,700 TON

Geotextile: 46,000 SY

Flotation Channel: 21,070 LF

Earthen Dike: 40,150 LF

Survey/Crew/Boat: 3.4 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Consturction Cost Alternative 1A Adjacent Disposal -18 Mile 22.0 to 11.5 to -18 Foot Elevation w/ 2 Feet Advanced Maintenance Included Contract No. 2	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2A	Mobilization and Demobilization	LS	1	\$825,704	\$825,704
	Dredging and Disposal (Mile 22.0 to Mile 11.5) Channel to be excavated to -20 NAVD88; 1v/2h side slope/150-foot bottom width				
2B	HNC Mile 22.0 to HNC Mile 20.0	CY	225,000	\$4.15	\$933,120
	Material to be placed unconfined within designated Wetland Site 16 west of HNC Mile 22. Material shall be discharged within the open water areas, a minimum 1,550 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).				
2C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.49	\$505,000	\$247,450
2D	HNC Mile 20.0 to HNC Mile 18.0	CY	21,000	\$25.51	\$535,718
	Material to be placed unconfined within Wetland Site 19C east of and adjacent to HNC Mile 19.5. The discharge will be positioned to the east and placed a minimum 500 ft beyond the bank rim/ridge or erosion control structure at the front of the disposal area. Elevation of material placed within the open water area(s) of Site 19C NTE +3.0' NAVD88 (See dwgs for details).				
2E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.28	\$505,000	\$141,400
2F	HNC Mile 19.2 to HNC Mile 17.5 (East Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN SY	99,500 47,900	\$61.46 \$9.78	\$6,115,270 \$468,462
2G	Mechanical Dredging Flotation Channel Excavation Mile 19.2 to Mile 17.5 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	8,120	\$72.92	\$592,110
2H	HNC Mile 19.1 to HNC Mile 17.8 (West Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN SY	18,200 8,750	\$61.46 \$9.78	\$1,118,572 \$85,575
2I	Mechanical Dredging Flotation Channel Excavation Mile 19.1 to Mile 17.8 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,790	\$72.92	\$130,527

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Consturction Cost Alternative 1A Adjacent Disposal -18 Mile 22.0 to 11.5 to -18 Foot Elevation w/ 2 Feet Advanced Maintenance Included Contract No. 2	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2J	HNC Mile 18.0 HNC Mile 16.0 Material to be placed unconfined within designated Wetland Site 20C west of HNC Mile 17. Material shall be discharged within the open water areas, a minimum 900 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	77,200	\$10.85	\$837,960
2K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.44	\$505,000	\$222,200
2L	HNC Mile 17.7 to HNC Mile 16.7 (West Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN	67,400	\$61.46	\$4,142,404
		SY	32,500	\$9.78	\$317,850
2M	Mechanical Dredging Flotation Channel Excavation Mile 17.7 to Mile 16.7 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	5,480	\$72.92	\$399,602
2N	HNC Mile 16.9 to HNC Mile 13.3 (East Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN	213,000	\$61.46	\$13,090,980
		SY	102,600	\$9.78	\$1,003,428
2O	Mechanical Dredging Flotation Channel Excavation Mile 16.9 to Mile 13.3 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	19,200	\$72.92	\$1,400,064
2P	HNC Mile 16.0 to HNC Mile 13.0 Material to be placed semi-confined within designated Wetland Site 21 west of HNC Mile 15. Material to be placed within the open water area(s), a minimum 600 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	153,000	\$8.86	\$1,355,213
2Q	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.71	\$505,000	\$358,550
2R	Earthen Retention Dike Refurbishment	LF	3,850	\$60.00	\$231,000
2S	HNC Mile 15.6 to HNC Mile 14.0 (West Bank) Rock Retention Structure (site 21) (Dk ht. +6' NAVD88) Geotextile	TN	94,500	\$61.46	\$5,807,970
		SY	45,500	\$9.78	\$444,990

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Consturction Cost Alternative 1A Adjacent Disposal -18 Mile 22.0 to 11.5 to -18 Foot Elevation w/ 2 Feet Advanced Maintenance Included Contract No. 2	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2T	Mechanical Dredging Flotation Channel Excavation Mile 15.6 to Mile 14.0 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	8,650	\$72.92	\$630,758
2U	HNC Mile 13.2 to HNC Mile 11.9 (West Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN	75,900	\$61.46	\$4,664,814
		SY	36,600	\$9.78	\$357,948
2V	Mechanical Dredging Flotation Channel Excavation Mile 13.1 to Mile 11.9 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	5,340	\$72.92	\$389,393
2W	HNC Mile 13.0 to HNC Mile 11.5 Material to be placed semi-confined within designated Wetland Site 24 west of HNC Mile 12.1. Material to be placed within the open water area(s), a minimum 900 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	95,000	\$6.82	\$648,128
2X	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700
2Y	Earthen Retention Dike Refurbishment	LF	4,100	\$60.00	\$246,000
2Z	HNC Mile 12.7 to HNC Mile 12.3 (East Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN	27,100	\$61.46	\$1,665,566
		SY	13,000	\$9.78	\$127,140

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Consturction Cost Alternative 1A Adjacent Disposal -18 Mile 22.0 to 11.5 to -18 Foot Elevation w/ 2 Feet Advanced Maintenance Included Contract No. 2	<i>Quantities & Line Items - Puls - Aug 2015</i> <i>Costs - Ramos - Aug 2015</i>
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2AA	Mechanical Dredging Flotation Channel Excavation Mile 12.6 to Mile 12.3 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,790	\$72.92	\$130,527
					Total: \$49,838,092

CONTRACT DURATION	DY	73	
Note: Dredging quantity does not reflect overdepth.			

Dredging:	571,200 CY
Rock:	595,600 TON
Geotextile:	286,850 SY
Flotation Channel:	50,370 LF
Earthen Dike:	7,950 LF
Survey/Crew/Boat:	2.3 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Consturction Cost Alternative 1A Adjacent Disposal -18 Mile 11.5 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 3	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
3A	Mobilization and Demobilization	LS	1	\$857,241	\$857,241
	Dredging and Disposal (Mile 11.5 to Mile 6.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width				
3B	HNC Mile 11.5 to Mile 10	CY	125,000	\$5.56	\$694,400
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 8.8 a minimum 1000' west of the channel centerline (See dwgs for details).				
3C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.26	\$505,000	\$131,300
3D	HNC Mile 10 to HNC Mile 8.0	CY	765,800	\$2.11	\$1,617,370
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 8.8 a minimum 1000' west of the channel centerline (See dwgs for details).				
3E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.61	\$505,000	\$308,050
3F	HNC Mile 8.0 to HNC Mile 6.0	CY	750,800	\$2.12	\$1,595,300
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 7.0 a minimum 1000' west of the channel centerline (See dwgs for details).				
3G	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.60	\$505,000	\$303,000
Total:					\$5,506,660
	CONTRACT DURATION	DY	49		
	Note: Dredging quantity does not reflect overdepth.				

Dredging: 1,641,600 CY

Survey/Crew/Boat: 1.5 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Consturction Cost Alternative 1A Adjacent Disposal -18 Mile 6.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 3	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
4A	Mobilization and Demobilization	LS	1	\$857,241	\$857,241
	Dredging and Disposal (Mile 6.0 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width				
4B	HNC Mile 6.0 to HNC Mile 4.0	CY	373,800	\$3.06	\$1,143,529
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 5.0 a minimum 1000' west of the channel centerline (See dwgs for details).				
4C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.43	\$505,000	\$217,150
4D	HNC Mile 4.0 to HNC Mile 2.0	CY	373,800	\$3.06	\$1,143,529
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 3.0 a minimum 1000' west of the channel centerline (See dwgs for details).				
4E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.43	\$505,000	\$217,150
4F	HNC Mile 2.0 to HNC Mile 0.0	CY	285,800	\$3.72	\$1,064,548
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 1.0 a minimum 1000' west of the channel centerline (See dwgs for details).				
4G	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.40	\$505,000	\$202,000
Total:					\$4,845,147
	CONTRACT DURATION	DY	43		
	Note: Dredging quantity does not reflect overdepth.				

Dredging: 1,033,400 CY

Survey/Crew/Boat: 1.3 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Consturction Cost Alternative 1A Adjacent Disposal -18 Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 4 Feet Advanced Maintenance Included Contract No. 4	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
5A	Mobilization and Demobilization	LS	1	\$1,308,950	\$1,308,950
	Dredging and Disposal (Mile 0.0 to Mile (-3.5) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width				
5B	Material to be placed at the single point discharge location(s) within Cat Island Pass at approximate HNC Mile (-1.7) and Mile (-2.5) (See plans for details).	CY	668,000	\$6.04	\$4,035,789
5C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.15	\$645,000	\$741,750
Total:					\$6,086,489
	CONTRACT DURATION	DY	40		
	Note: Dredging quantity does not reflect overdepth.				

Dredging: 668,000 CY

Survey/Crew/Boat: 1.2 MO

Reach	18 foot depth		Duration (months)	Mob/Demob (Per Reach)	Crew/Equipment Costs
	Unit Cost	CY			
Mob/Demob (36.3 to 22.0)	\$939,307				\$505,000
36.3 to 34.0	\$6.09	170,000	0.53	\$327,961	\$505,000
34.0 to 32.0	\$14.35	77,500	0.58	\$434,307	\$505,000
32.0 to 29.5	\$7.22	95,500	0.36	\$434,307	\$505,000
29.5 to 28.0	\$8.79	88,000	0.39	\$327,961	\$505,000
28.0 to 26.0	\$8.24	117,000	0.49	\$327,961	\$505,000
26.0 to 24.0	\$6.22	171,000	0.54	\$327,961	\$505,000
24.0 to 22.0	\$5.27	171,000	0.46	\$327,961	\$505,000
		\$6,541,075			
Mob/Demob (22.0 to 11.5)	\$825,704				\$505,000
22.0 to 20.0	\$4.15	225,000	0.49	\$320,704	\$505,000
20.0 to 18.0	\$25.51	21,000	0.28	\$320,704	\$505,000
18.0 to 16.0	\$10.85	77,200	0.44	\$320,704	\$505,000
16.0 to 13.0	\$8.86	153,000	0.71	\$320,704	\$505,000
13.0 to 11.5	\$6.82	95,000	0.34	\$320,704	\$505,000
		\$4,310,139			
Mob/Demob (11.5 to 0.0)	\$857,241				\$505,000
11.5 to 10.0	\$5.56	125,000	0.26	\$352,241	\$505,000
10.0 to 8.0	\$2.11	765,800	0.61	\$352,241	\$505,000
8.0 to 6.0	\$2.12	750,800	0.60	\$352,241	\$505,000
6.0 to 4.0	\$3.06	373,800	0.43	\$352,241	\$505,000
4.0 to 2.0	\$3.06	373,800	0.43	\$352,241	\$505,000
2.0 to 0.0	\$3.72	285,800	0.40	\$352,241	\$505,000
		\$7,258,675			
Mob/Demob (0.0 to -3.5)	\$1,308,950				\$645,000
0.0 to -3.5	\$6.04	668,000	1.15	\$663,950	\$645,000
		\$4,035,789			

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Maintenance Cost Adjacent Disposal -18ft MLG

Costs for 10-Year Cycle to be Repeated 5 Times Over 50 Years

Multiple Disposal Sites

Mile 36.3 to Mile (-3.5) to -18 Foot Elevation w/ Advanced Maintenance Included
 Summary Page

Contract No.	Description	Cycle Frequency (Years)	Units	Quantity	Estimated Unit Price Per Cycle	Estimated Cycle Cost	Estimated Total Cost (50-Year)
1*	Mobilization/Demobilization	10	LS	1		\$871,046	\$4,355,230
	Mile 36.3 to Mile 34.0	10	CY	101,600	\$7.23	\$734,254	\$3,671,268
	Mile 24.0 to Mile 22.0	10	CY	101,600	\$10.94	\$1,111,300	\$5,556,500
	Mile 22.0 to Mile 20.0	10	CY	101,600	\$8.32	\$845,221	\$4,226,103
	Mobilization/Demobilization	2	LS	1		\$857,241	\$21,431,025
	Mile 11.0 to Mile 0.0	2	CY	1,383,300	\$4.27	\$5,906,380	\$147,659,502
2	Mobilization/Demobilization	2		1		\$1,060,480	\$26,512,000
	Mile 0.0 to Mile (-3.5)	2	CY	500,000	\$11.56	\$5,781,650	\$144,541,250
3	Mobilization/Demobilization	2		1		\$857,241	
	Mile 11.0 to Mile 0.0	2	CY	1,383,300	\$4.27	\$5,906,380	
4	Mobilization/Demobilization	2		1		\$1,060,480	
	Mile 0.0 to Mile (-3.5)	2	CY	500,000	\$11.56	\$5,781,650	
5	Mobilization/Demobilization	2		1		\$857,241	
	Mile 11.0 to Mile 0.0	2	CY	1,383,300	\$4.27	\$5,906,380	
6	Mobilization/Demobilization	10		1		\$939,307	\$4,696,535
	Mile 36.3 to Mile 34.0	10	CY	101,600	\$7.36	\$747,687	\$3,738,437
	Mile 34.0 to Mile 32.0	10	CY	203,600	\$7.40	\$1,506,469	\$7,532,343
	Mile 32.0 to Mile 29.5	10	CY	153,700	\$10.07	\$1,548,466	\$7,742,331
	Mile 29.5 to Mile 28.0	10	CY	153,700	\$5.60	\$860,476	\$4,302,382
	Mile 28.0 to Mile 26.0	10	CY	203,600	\$10.65	\$2,167,912	\$10,839,561
	Mile 26.0 to Mile 24.0	10	CY	203,600	\$17.72	\$3,606,829	\$18,034,143
	Mile 24.0 to Mile 22.0	10	CY	101,600	\$24.49	\$2,488,347	\$12,441,736
	Mile 22.0 to Mile 20.0	10	CY	101,600	\$9.44	\$958,927	\$4,794,636
	Mobilization/Demobilization	2		1		\$1,060,480	
	Mile 0.0 to Mile (-3.5)	2	CY	500,000	\$11.56	\$5,781,650	
7	Mobilization/Demobilization	10		1		\$939,307	\$4,696,535
	Mile 20.0 to Mile 18.0	10	CY	203,600	\$14.89	\$3,030,630	\$15,153,149
	Mile 18.0 to Mile 16.0	10	CY	203,600	\$29.90	\$6,088,383	\$30,441,913
	Mile 16.0 to Mile 13.0	10	CY	307,300	\$14.75	\$4,533,250	\$22,666,249
	Mile 13.0 to Mile 11.0	10	CY	236,000	\$6.71	\$1,582,869	\$7,914,345
	Mobilization/Demobilization	2		1		\$857,241	
	Mile 11.0 to Mile 0.0	2	CY	1,383,300	\$4.27	\$5,906,380	
8	Mobilization/Demobilization	2		1		\$1,060,480	
	Mile 0.0 to Mile (-3.5)	2	CY	500,000	\$11.56	\$5,781,650	
9	Mobilization/Demobilization	2		1		\$857,241	
	Mile 11.0 to Mile 0.0	2	CY	1,383,301	\$4.27	\$5,906,380	
10	Mobilization/Demobilization	2		1		\$1,060,480	
	Mile 0.0 to Mile (-3.5)	2	CY	500,000	\$11.56	\$5,781,650	
Total:				11,894,801	\$8.62	\$102,589,435	\$512,947,174

Note: Unit costs reflected on summary sheet include all disposal area dike refurbishment within each specified reach, if necessary

* Three reaches specified in Contract 1 require a maintenance cycle every 5 years. 5 years after maintenance Contract 1 reaches at 36.3, 24.0, and 22.0 will undergo maintenance under Contract 6 (10-Year cycle). 5 Years after maintenance Contract 6 those reaches will be maintained under a new 5-year cycle (Contract 11). Following this sequence, contract 6 will be required four additional times over the 50 year project life after Contract 6 is completed.

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Quantities & Line Items - Puls - Aug 2015
 Houma, Terrebonne Parish, Louisiana Costs - Ramos - Aug 2015
Maintenance Cost Adjacent Disposal -18ft MLG
 Mile 36.3 to 34.0 & Mile 24 to 22.0 & Mile 22.0 to 20.0 & Mile 11.0 to 0.0 to -18 Foot Elevation
 w/ 2 and 3 Feet of Advanced
 Maintenance Included **Multiple Disposal Sites**
 Contract No. 1 **Channel Maintenance - 2 and 5 year frequency**

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1A	Mobilization and Demobilization	LS	1	\$871,046	\$871,046
	Dredging and Disposal (Mile 36.3 to Mile 20.0) Channel to be excavated to -20 NAVD88; 1v/2h side slope/150-foot bottom width				
1B	HNC Mile 36.3 to HNC Mile 34.0	CY	101,600	\$5.39	\$547,502
	Material to be placed within confined upland Site 1 (Port Commission site) opposite Short Cut Canal. No height restriction. Dike construction/maintenance not required.				
1C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.29	\$505,000	\$146,450
1B	HNC Mile 36.3 to HNC Mile 34.0	CY	101,600	\$5.90	\$599,521
	Material to be placed within confined upland Site 3 opposite HNC Mile 35.5 No height restriction. Dike construction/maintenance not required.				
1C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.32	\$505,000	\$161,600
1D	HNC Mile 24.0 to HNC Mile 22.0	CY	101,600	\$8.00	\$812,800
	Material to be placed semi-confined within designated Wetland Site 15 west of HNC Mile 23.5. Material to be placed within the open water area(s), a minimum 1,270 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).				
1E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
1F	Earthen Retention Dike Refurbishment	LF	2,450	\$60.00	\$147,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Quantities & Line Items - Puls - Aug 2015
 Houma, Terrebonne Parish, Louisiana Costs - Ramos - Aug 2015
Maintenance Cost Adjacent Disposal -18ft MLG
 Mile 36.3 to 34.0 & Mile 24 to 22.0 & Mile 22.0 to 20.0 & Mile 11.0 to 0.0 to -18 Foot Elevation
 w/ 2 and 3 Feet of Advanced
 Maintenance Included **Multiple Disposal Sites**
 Contract No. 1 **Channel Maintenance - 2 and 5 year frequency**

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1G	HNC Mile 22.0 to HNC Mile 20.0 Material to be placed unconfined within Wetland Site 16 opposite and adjacent to HNC Mile 21.4 along the west bank of the HNC WW. The discharge will be positioned to the west and placed a minimum 1,550 ft beyond the bank rim or erosion control structure at the front of the disposal area. Elevation of material placed within the open water area(s) NTE +3.0' NAVD 88 (See dwgs for details).	CY	101,600	\$5.71	\$580,014
1H	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
1G	HNC Mile 22.0 to HNC Mile 20.0 Material to be placed semi-confined within Wetland Site 15 between HNC Mile 23.0 and 22.5 along the west bank of the HNC WW. The initial buildup of mtl. shall begin in the north east corner, and to proceed outward in a west-southwesterly direction. Earthen closures will be required along the west side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	101,600	\$7.92	\$804,997
1H	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.41	\$505,000	\$207,050
1I	Earthen Retention Dike Refurbishment	LF	4,800	\$60.00	\$288,000
1J	Mobilization and Demobilization Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width	LS	1	\$857,241	\$857,241
1K	HNC Mile 11 to HNC Mile 8.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 8.8 a minimum 1000' west of the channel centerline (See dwgs for details).	CY	360,800	\$3.47	\$1,251,543
1L	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.47	\$505,000	\$237,350

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Quantities & Line Items - Puls - Aug 2015
 Houma, Terrebonne Parish, Louisiana Costs - Ramos - Aug 2015
Maintenance Cost Adjacent Disposal -18ft MLG
 Mile 36.3 to 34.0 & Mile 24 to 22.0 & Mile 22.0 to 20.0 & Mile 11.0 to 0.0 to -18 Foot Elevation
 w/ 2 and 3 Feet of Advanced
 Maintenance Included **Multiple Disposal Sites**
 Contract No. 1 **Channel Maintenance - 2 and 5 year frequency**

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1M	HNC Mile 8.0 to HNC Mile 6.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 7.0 a minimum 1000' west of the channel centerline (See dwgs for details).	CY	248,800	\$3.81	\$949,023
1N	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
1O	HNC Mile 6.0 to HNC Mile 4.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 5.0 a minimum 1000-feet west of the channel centerline (See dwgs for details).	CY	257,900	\$3.67	\$947,421
1P	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
1Q	HNC Mile 4.0 to HNC Mile 2.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 3.0 a minimum 1000-feet west of the channel centerline (See dwgs for details).	CY	257,900	\$3.67	\$947,421
1R	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
1S	HNC Mile 2.0 to HNC Mile 0.0 Material to be placed at the single point discharge location opposite HNC Mile 1.0 a minimum 1000' west of the channel centerline (See dwgs for details).	CY	257,900	\$3.67	\$947,421
1T	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
Total:					\$10,372,135

Contract Duration

DY 82

Notes:

Channel Quantities do not reflect overdepth.

Dredging: 1,688,100 CY

Survey/Crew/Boat: 2.7 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -18ft MLG Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 4 Feet of Advanced Maintenance Included Contract No. 2	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2A	Mobilization and Demobilization	LS	1	\$1,060,480	\$1,060,480
	Dredging and Disposal Mile 0.0 to Mile (-3.5) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width				
2B	Dredging and Disposal Mile 0.0 to Mile (-3.5)	CY	500,000	\$9.28	\$4,640,000
	Material to be placed at the SPD Mile -1.7 and Mile -2.5				
2C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.77	\$645,000	\$1,141,650
Total:					\$6,842,130
	Contract Duration	DY	53		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging: 500,000 CY

Survey/Crew/Boat: 1.8 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -18ft MLG Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 3	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
3A	Mobilization and Demobilization	LS	1	\$857,241	\$857,241
	Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width				
3B	HNC Mile 11 to HNC Mile 8.0	CY	360,800	\$3.47	\$1,251,543
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 8.8 a minimum 1000' west of the channel centerline (See dwgs for details).				
3C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.47	\$505,000	\$237,350
3D	HNC Mile 8.0 to HNC Mile 6.0	CY	248,800	\$3.81	\$949,023
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 7.0 a minimum 1000' west of the channel centerline (See dwgs for details).				
3E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
3F	HNC Mile 6.0 to HNC Mile 4.0	CY	257,900	\$3.67	\$947,421
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 5.0 a minimum 1000-foot west of the channel centerline (See dwgs for details).				
3G	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
3H	HNC Mile 4.0 to HNC Mile 2.0	CY	257,900	\$3.67	\$947,421
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 3.0 a minimum 1000-foot west of the channel centerline (See dwgs for details).				
3I	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
3J	HNC Mile 2.0 to HNC Mile 0.0	CY	257,900	\$3.67	\$947,421
	Material to be placed at the single point discharge location opposite HNC Mile 1.0 a minimum 1000' west of the channel centerline (See dwgs for details).				

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -18ft MLG Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 3	<i>Quantities & Line Items - Puls - Aug 2015</i> <i>Costs - Ramos - Aug 2015</i> Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
3K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
Total:					\$6,763,621

Contract Duration	DY	51
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Note:

Channel Quantities do not reflect overdepth.

Dredging: 1,383,300 CY

Survey/Crew/Boat: 1.7 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Maintenance Cost Adjacent Disposal -18ft MLG

Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 4 Feet of Advanced Maintenance Included

Contract No. 4

Channel Maintenance - 2 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
4A	Mobilization and Demobilization	LS	1	\$1,060,480	\$1,060,480
	Dredging and Disposal Mile 0.0 to Mile (-3.5) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width				
4B	Dredging and Disposal Mile 0.0 to Mile (-3.5)	CY	500,000	\$9.28	\$4,640,000
	Material to be placed at the SPD Mile -1.7 and Mile -2.5				
4C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.77	\$645,000	\$1,141,650
Total:					\$6,842,130
	Contract Duration	DY	53		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging: 500,000 CY

Survey/Crew/Boat: 1.8 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -18ft MLG Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 5	<i>Quantities & Line Items - Puls - Aug 2015</i> <i>Costs - Ramos - Aug 2015</i> Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
5A	Mobilization and Demobilization Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width	LS	1	\$857,241	\$857,241
5B	HNC Mile 11 to HNC Mile 8.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 8.8 a minimum 1000' west of the channel centerline (See dwgs for details).	CY	360,800	\$3.47	\$1,251,543
5C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.47	\$505,000	\$237,350
5D	HNC Mile 8.0 to HNC Mile 6.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 7.0 a minimum 1000' west of the channel centerline (See dwgs for details).	CY	248,800	\$3.81	\$949,023
5E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
5F	HNC Mile 6.0 to HNC Mile 4.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 5.0 a minimum 1000-foot west of the channel centerline (See dwgs for details).	CY	257,900	\$3.67	\$947,421
5G	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
5H	HNC Mile 4.0 to HNC Mile 2.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 3.0 a minimum 1000-foot west of the channel centerline (See dwgs for details).	CY	257,900	\$3.67	\$947,421
5I	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
5J	HNC Mile 2.0 to HNC Mile 0.0 Material to be placed at the single point discharge location opposite HNC Mile 1.0 a minimum 1000' west of the channel centerline (See dwgs for details).	CY	257,900	\$3.67	\$947,421

Feasibility Level Cost Estimate

Project:	Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -18ft MLG Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 5	<i>Quantities & Line Items - Puls - Aug 2015</i> <i>Costs - Ramos - Aug 2015</i> Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
5K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
Total:					\$6,763,621

Contract Duration	DY	51	
Note:			
Channel Quantities do not reflect overdepth.			

Dredging: 1,383,300 CY

Survey/Crew/Boat: 1.7 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -18ft MLG Mile 36.3 to 20.0 & Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 6	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2, 5, and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6A	Mobilization and Demobilization Dredging and Disposal (Mile 36.3 to Mile 20.0) Channel to be excavated to -20 NAVD88; 1v/2h side slope/150-foot bottom width	LS	1	\$939,307	\$939,307
6B	HNC Mile 36.3 to HNC Mile 34.0 Material to be placed within confined upland Site 1 (Port Commission site) opposite Short Cut Canal. No height restriction. Dike construction/maintenance not required.	CY	101,600	\$5.39	\$547,502
6C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.29	\$505,000	\$146,450
6B	HNC Mile 36.3 to HNC Mile 34.0 Material to be placed within confined upland Site 3 opposite HNC Mile 35.5 No height restriction. Dike construction/maintenance not required.	CY	101,600	\$5.90	\$599,521
6C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.32	\$505,000	\$161,600
6D	NHC Mile 34.0 to HNC Mile 32.0 Material to be placed semi-confined within designated Wetland Site 7E opposite HNC Mile 31. Material to be placed within the open water area(s), a minimum 12,500 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	203,600	\$4.25	\$865,219
6E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.45	\$505,000	\$227,250
6F	Earthen Retention Dike Refurbishment	LF	6,900	\$60.00	\$414,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -18ft MLG Mile 36.3 to 20.0 & Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 6	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites
Channel Maintenance - 2, 5, and 10 year frequency	

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6G	HNC Mile 32.0 to HNC Mile 29.5 Material to be placed semi-confined within designated Wetland Site 7E opposite HNC Mile 31. Material to be placed within the open water area(s), a minimum 12,500 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	153,700	\$5.84	\$897,116
6H	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.47	\$505,000	\$237,350
6I	Earthen Retention Dike Refurbishment	LF	6,900	\$60.00	\$414,000
6J	HNC Mile 29.5 to HNC Mile 28.0 Material to be placed unconfined within designated Wetland Site 12B opposite approximate HNC Mile 27.0. Mtl. shall be discharged within the open water areas, a minimum 4,500 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	153,700	\$4.17	\$641,359
6K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.32	\$505,000	\$161,600
6L	Earthen Retention Dike Refurbishment	LF	1,600	\$60.00	\$96,000
6J	HNC Mile 29.5 to HNC Mile 28.0 Material to be placed unconfined within designated Wetland Site 12 opposite approximate HNC Mile 27.0. Mtl. shall be discharged within the open water areas, a minimum 1,950 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	153,700	\$3.78	\$580,371
6K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.29	\$505,000	\$146,450
6L	Earthen Retention Dike Refurbishment	LF	1,800	\$60.00	\$108,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -18ft MLG Mile 36.3 to 20.0 & Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 6	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2, 5, and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6M	HNC Mile 28.0 to HNC Mile 26.0 Material to be placed unconfined within designated Wetland Site A-07-A opposite approximate HNC Mile 26.5. Mtl. shall be discharged within the open water areas, a minimum 5,700 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	203,600	\$3.37	\$685,399
6N	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.36	\$505,000	\$181,800
6O	Earthen Retention Dike Refurbishment	LF	9,300	\$60.00	\$558,000
6P	HNC Mile 27.6 to HNC Mile 27.4 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	1,900	\$61.46	\$116,774
6Q	Mechanical Dredging Flotation Channel Excavation Mile 27.6 to Mile 27.4. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,260	\$72.92	\$91,879
6R	HNC Mile 26.4 to HNC Mile 25.9 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	5,320	\$61.46	\$326,967
6S	Mechanical Dredging Flotation Channel Excavation Mile 26.4 to Mile 25.9 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	2,840	\$72.92	\$207,093
6T	HNC Mile 26.0 to HNC Mile 24.0 Material to be placed unconfined within designated Wetland Site A-07-A opposite approximate HNC Mile 26.5. Mtl. shall be discharged within the open water areas, a minimum 5,700 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	203,600	\$3.92	\$797,460
6U	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.40	\$505,000	\$202,000
6V	Earthen Retention Dike Refurbishment	LF	13,000	\$60.00	\$780,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -18ft MLG Mile 36.3 to 20.0 & Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 6	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2, 5, and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6T	HNC Mile 26.0 to HNC Mile 24.0	CY	203,600	\$3.62	\$737,521
	Material to be placed unconfined within designated Wetland Site 14A opposite approximate HNC Mile 27. Mtl. shall be discharged within the open water areas, a minimum 3,360 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).				
6U	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.37	\$505,000	\$186,850
6V	Earthen Retention Dike Refurbishment	LF	9,000	\$60.00	\$540,000
6W	HNC Mile 25.9 to HNC Mile 24.1 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	21,300	\$61.46	\$1,309,098
6X	Mechanical Dredging Flotation Channel Excavation Mile 25.9 to Mile 24.1 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	9,700	\$72.92	\$707,324
6Y	HNC Mile 24.0 to HNC Mile 22.0	CY	101,600	\$8.00	\$812,800
	Material to be placed semi-confined within Wetland Site 15A between HNC Mile 24.0 and 22.9 west of Site 15 'beyond the west bank of the HNC WW. The initial buildup of mtl. shall begin in the south east corner, and to proceed outward in a westerly direction. Earthen closures will be required along the east side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).				
6Z	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
6AA	Earthen Retention Dike Refurbishment	LF	2,450	\$60.00	\$147,000
6BB	HNC Mile 23.7 to HNC Mile 22.4 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	11,820	\$61.46	\$726,457

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -18ft MLG Mile 36.3 to 20.0 & Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 6	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2, 5, and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6CC	Mechanical Dredging Flotation Channel Excavation Mile 23.7 to Mile 22.4. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	6,540	\$72.92	\$476,897
6DD	HNC Mile 22.2 to HNC Mile 22.1 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	1,960	\$61.46	\$120,462
6EE	Mechanical Dredging Flotation Channel Excavation Mile 22.2 to Mile 22.1. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	730	\$72.92	\$53,232
6FF	HNC Mile 22.0 to HNC Mile 20.0 Material to be placed unconfined within Wetland Site 16 opposite and adjacent to HNC Mile 21.4 along the west bank of the HNC WW. The discharge will be positioned to the west and placed a minimum 1,550 ft beyond the bank rim or erosion control structure at the front of the disposal area. Elevation of material placed within the open water area(s) NTE +3.0' NAVD 88 (See dwgs for details).	CY	101,600	\$5.71	\$580,014
6GG	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
6FF	HNC Mile 22.0 to HNC Mile 20.0 Material to be placed semi-confined within Wetland Site 15A between HNC Mile 23.0 and 22.5 along the west bank of the HNC WW. The initial buildup of mtl. shall begin in the north east corner, and to proceed outward in a west-southwesterly direction. Earthen closures will be required along the west side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	101,600	\$7.92	\$804,997
6GG	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.41	\$505,000	\$207,050
6HH	Earthen Retention Dike Re-fubishment	LF	4,800	\$60.00	\$288,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -18ft MLG Mile 36.3 to 20.0 & Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 6	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2, 5, and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6II	Mobilization and Demobilization	LS	1	\$1,060,480	\$1,060,480
	Dredging and Disposal Mile 0.0 to Mile (-3.5) Channel to be excavated to -19' NAVD88; 1v/2h side slopes by 300' bottom width				
6JJ	Dredging and Disposal Mile 0.0 to Mile (-3.5)	CY	500,000	\$9.28	\$4,640,000
	Material to be placed at the SPD Mile -1.7 and Mile -2.5				
6KK	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.77	\$645,000	\$1,141,650
					Total: \$22,020,641

Contract Duration	DY	144
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Notes:

Channel Quantities do not reflect overdepth.

Dredging: 1,723,000 CY

Rock: 42,300 TON

Flotation Channel: 21,070 LF

Earthen Dike: 31,850 LF

Survey/Crew/Boat: 4.8 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -18ft MLG Mile 22.0 to 11.0 & Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 7	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2 and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7A	Mobilization and Demobilization	LS	1	\$939,307	\$939,307
	Dredging and Disposal (Mile 20.0 to Mile 11.0) Channel to be excavated to -20 NAVD88; 1v/2h side slope/150-foot bottom width				
7B	HNC Mile 20.0 to HNC Mile 18.0	CY	203,600	\$3.10	\$630,671
	Material to be placed unconfined within Wetland Site 19C oppsite and adjacent to HNC Mile 19.3 along the east bank of the HNC WW. The discharge will be positioned to the east and placed a minimum 500-ft beyond the bank rim/ridge or erosion control structure at the front of the disposal area. Elevation of material placed within the open water area(s) of Site 19C NTE +3.0' NAVD88 (See dwgs for details).				
7C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.33	\$505,000	\$166,650
7B	HNC Mile 20.0 to HNC Mile 18.0	CY	203,600	\$3.21	\$654,126
	Material to be placed semi-confined within the open water portions of Wetland Site 19D between HNC Mile 20.2 and 19.6, located beyond the west bank of the HNC WW. The initial buildup of mtl. shall begin in the north east corner, and to proceed outward in a westerly direction a minimum distance of 12,350 ft beyond the channel center line. Earthen closures will be required along the south side of the disposal area adjacent to the open water. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors at the northeast and south east portions of the disposal site. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).				
7C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700
7D	Earthen Retention Dike Re-furbishment	LF	1,300	\$60.00	\$78,000
7E	HNC Mile 19.2 to HNC Mile 17.5 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	19,900	\$61.46	\$1,223,054
7F	Mechanical Dredging Flotation Channel Excavation Mile 19.2 to Mile 17.5 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	8,120	\$72.92	\$592,110

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana
Maintenance Cost Adjacent Disposal -18ft MLG
 Mile 22.0 to 11.0 & Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included
 Contract No. 7

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015
Multiple Disposal Sites
Channel Maintenance - 2 and 10 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7G	HNC Mile 19.1 to HNC Mile 17.8 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	3,640	\$61.46	\$223,714
7H	Mechanical Dredging Flotation Channel Excavation Mile 19.1 to Mile 17.8 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,790	\$72.92	\$130,527
7I	HNC Mile 18.0 HNC Mile 16.0 Material to be placed unconfined within Wetland Site 20C oppoite HNC Mile 16.8 along the west bank of the HNC WW. A construction access corriodr, 200 feet in width, will be provided for the Contractors use at the intersection of Four Pt. Bayou with the HNC WW. The intial buildup shall occur in the east corner of the DA and to proceed outward in a westerly direction. Elevation of Mtl. NTE +3.0' NAVD88 (See dwgs for details).	CY	203,600	\$3.10	\$630,671
7J	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.33	\$505,000	\$166,650
7I	HNC Mile 18.0 HNC Mile 16.0 Material to be placed within Wetland Site 21 opposite HNC Mile 15.0. To prevent material runback, the discharge pipe will be postioned to the SW and placed approximately 600 feet west of HNC Mile 15.0. The material will be placed in a west south-westerly direction within the open water areas or tributaries along the back side of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs f/details).	CY	203,600	\$3.51	\$714,066
7J	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.37	\$505,000	\$186,850
7K	Earthen Retention Dike Re-fubishment	LF	2,000	\$60.00	\$120,000
7L	HNC Mile 17.7 to HNC Mile 16.7 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	13,480	\$61.46	\$828,481
7M	Mechanical Dredging Flotation Channel Excavation Mile 17.7 to Mile 16.7 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	5,480	\$72.92	\$399,602
7N	HNC Mile 16.9 to HNC Mile 13.3 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	42,600	\$61.46	\$2,618,196

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -18ft MLG Mile 22.0 to 11.0 & Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 7	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2 and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7O	Mechanical Dredging Flotation Channel Excavation Mile 16.9 to Mile 13.3 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	19,200	\$72.92	\$1,400,064
7P	HNC Mile 16.0 to HNC Mile 13.0 Material to be placed within Wetland Site 21 opposite HNC Mile 15.0. To prevent material runback, the discharge pipe will be positioned to the SW and placed approximately 600 feet west of HNC Mile 15.0. The material will be placed in a west south-westerly direction within the open water areas or tributaries along the back side of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs f/details).	CY	307,300	\$3.06	\$940,092
7Q	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.49	\$505,000	\$247,450
7R	Earthen Retention Dike Re-fubishment	LF	3,850	\$60.00	\$231,000
7S	HNC Mile 15.6 to HNC Mile 14.0 (West Bank) Rock Retention Structure Refurbishment (Dk ht. +6' NAVD88) Stone quantity 20% of construction quantity	TN	18,900	\$61.46	\$1,161,594
7T	Mechanical Dredging Flotation Channel Excavation Mile 15.6 to Mile 14.0 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	8,650	\$72.92	\$630,758
7U	HNC Mile 13.2 to HNC Mile 11.9 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +6' NAVD88) Stone quantity 20% of construction quantity	TN	15,180	\$61.46	\$932,963
7V	Mechanical Dredging Flotation Channel Excavation Mile 13.1 to Mile 11.9 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	5,340	\$72.92	\$389,393
7W	HNC Mile 13.0 to HNC Mile 11.0 Material to be placed within Wetland Site 24 opposite HNC Mile 12.0 along the west bank of the HNC WW. A construction access corrdior, 200 ft in width, will be provided for the Contractors use at the entrance of the WW. The initial buildup will occur in the east corner of the DA and proceed outward in a west, south-westerly direction. Elevation of material placed within the open water area(s) NTE +3.0' NAVD88 (See dwgs for details).	CY	236,000	\$2.75	\$649,472
7X	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -18ft MLG Mile 22.0 to 11.0 & Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 7	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites
Channel Maintenance - 2 and 10 year frequency	

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7Y	Earthen Retention Dike Re-fubishment	LF	4,100	\$60.00	\$246,000
7W	HNC Mile 13.0 to HNC Mile 11.0 Material to be placed within Wetland Site 21 opposite HNC Mile 15.0. To prevent material runback, the discharge pipe will be postioned to the SW and placed approximately 600 feet west of HNC Mile 15.0. The material will be placed in a west south-westerly direction within the open water areas or tributaries along the back side of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs f/details).	CY	236,000	\$3.10	\$731,034
7X	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.38	\$505,000	\$191,900
7Y	Earthen Retention Dike Re-fubishment	LF	3,850	\$60.00	\$231,000
7Z	HNC Mile 12.7 to HNC Mile 12.3 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	5,420	\$61.46	\$333,113
7AA	Mechanical Dredging Flotation Channel Excavation Mile 12.6 to Mile 12.3 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,790	\$72.92	\$130,527
7BB	Mobilization and Demobilization Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width	LS	1	\$857,241	\$857,241
7CC	HNC Mile 11 to HNC Mile 8.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 8.8 a minimum 1000' west of the channel centerline (See dwgs for details).	CY	360,800	\$3.47	\$1,251,543
7DD	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.47	\$505,000	\$237,350
7EE	HNC Mile 8.0 to HNC Mile 6.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 7.0 a minimum 1000' west of the channel centerline (See dwgs for details).	CY	248,800	\$3.81	\$949,023
7FF	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -18ft MLG Mile 22.0 to 11.0 & Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 7	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2 and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7GG	HNC Mile 6.0 to HNC Mile 4.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 5.0 a minimum 1000-feet west of the channel centerline (See dwgs for details).	CY	257,900	\$3.67	\$947,421
7HH	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
7II	HNC Mile 4.0 to HNC Mile 2.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 3.0 a minimum 1000-feet west of the channel centerline (See dwgs for details).	CY	257,900	\$3.67	\$947,421
7JJ	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
7KK	HNC Mile 2.0 to HNC Mile 0.0 Material to be placed at the single point discharge location opposite HNC Mile 1.0 a minimum 1000' west of the channel centerline (See dwgs for details).	CY	257,900	\$3.67	\$947,421
7LL	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
					Total: \$23,116,241
Contract Duration		DY	99		
Note:					
Channel Quantities do not reflect overdepth.					

Dredging: 2,333,800 CY

Rock: 119,120 TON

Flotation Channel: 50,370 LF

Earthen Dike: 9,700 LF

Survey/Crew/Boat: 3.3 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Maintenance Cost Adjacent Disposal -18ft MLG

Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 4 Feet of Advanced Maintenance Included

Contract No. 8

Channel Maintenance - 2 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
8A	Mobilization and Demobilization	LS	1	\$1,060,480	\$1,060,480
	Dredging and Disposal Mile 0.0 to Mile (-3.5) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width				
8B	Dredging and Disposal Mile 0.0 to Mile (-3.5)	CY	500,000	\$9.28	\$4,640,000
	Material to be placed at the SPD Mile -1.7 and Mile -2.5				
8C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.8	\$645,000	\$1,141,650
Total:					\$6,842,130
	Contract Duration	DY	53		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging: 500,000 CY

Survey/Crew/Boat: 1.8 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -18ft MLG Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 9	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
9A	Mobilization and Demobilization	LS	1	\$857,241	\$857,241
	Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width				
9B	HNC Mile 11 to HNC Mile 8.0	CY	360,800	\$3.47	\$1,251,543
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 8.8 a minimum 1000' west of the channel centerline (See dwgs for details).				
9C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.47	\$505,000	\$237,350
9D	HNC Mile 8.0 to HNC Mile 6.0	CY	248,800	\$3.81	\$949,023
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 7.0 a minimum 1000' west of the channel centerline (See dwgs for details).				
9E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
9F	HNC Mile 6.0 to HNC Mile 4.0	CY	257,900	\$3.67	\$947,421
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 5.0 a minimum 1000-foot west of the channel centerline (See dwgs for details).				
9G	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
9H	HNC Mile 4.0 to HNC Mile 2.0	CY	257,900	\$3.67	\$947,421
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 3.0 a minimum 1000-foot west of the channel centerline (See dwgs for details).				
9I	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
9J	HNC Mile 2.0 to HNC Mile 0.0	CY	257,900	\$3.67	\$947,421
	Material to be placed at the single point discharge location opposite HNC Mile 1.0 a minimum 1000' west of the channel centerline (See dwgs for details).				

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -18ft MLG Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 9	<i>Quantities & Line Items - Puls - Aug 2015</i> <i>Costs - Ramos - Aug 2015</i> Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
9K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
Total:					\$6,763,621

Contract Duration	DY	51	
Note: Channel Quantities do not reflect overdepth.			

Dredging: 1,383,301 CY

Survey/Crew/Boat: 1.7 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Maintenance Cost Adjacent Disposal -18ft MLG

Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 4 Feet of Advanced Maintenance Included

Contract No. 10

Channel Maintenance - 2 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
10A	Mobilization and Demobilization	LS	1	\$1,060,480	\$1,060,480
	Dredging and Disposal Mile 0.0 to Mile (-3.5) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width				
10B	Dredging and Disposal Mile 0.0 to Mile (-3.5)	CY	500,000	\$9.28	\$4,640,000
	Material to be placed at the SPD Mile -1.7 and Mile -2.5				
10C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.8	\$645,000	\$1,141,650
Total:					\$6,842,130
	Contract Duration	DY	53		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging: 500,000 CY

Survey/Crew/Boat: 1.8 MO

Reach	18 foot depth				18 foot depth				Crew/Equipment Costs
	Site 1		Site 2		Site 1		Site 2		
	Unit Cost	CY	Duration (months)	Mob/Demob (Per Reach)	Unit Cost	CY	Duration (months)	Mob/Demob (Per Reach)	
Mob/Demob	\$871,046								\$505,000
36.3 to 34.5 (5-year)	\$5.39	101,600	0.29	\$315,563	\$5.90	101,600	0.32	\$315,563	\$505,000
24.0 to 22.0 (5-year)	\$8.00	101,600	0.30	\$366,046					\$505,000
22.0 to 19.7 (5-year)	\$5.71	101,600	0.30	\$323,123					\$505,000
		\$1,940,316				\$599,521			
Mob/Demob (36.3 to 22.0)	\$939,307								\$505,000
36.3 to 34.0	\$5.39	101,600	0.29	\$315,563	\$5.90	101,600	0.32	\$315,563	\$505,000
34.0 to 32.0	\$4.25	203,600	0.45	\$434,307					\$505,000
32.0 to 29.5	\$5.84	153,700	0.47	\$434,307					\$505,000
29.5 to 28.0	\$4.17	153,700	0.32	\$330,985	\$3.78	153,700	0.29	\$330,985	\$505,000
28.0 to 26.0	\$3.37	203,600	0.36	\$317,075					\$505,000
26.0 to 24.0	\$3.92	203,600	0.40	\$330,985	\$3.62	203,600	0.37	\$330,985	\$505,000
24.0 to 22.0	\$8.00	101,600	0.30	\$366,046					\$505,000
		\$5,246,856				\$1,917,413			
Mob/Demob (22.0 to 11.0)	\$828,123								\$505,000
22.0 to 20.0	\$5.71	101,600	0.30	\$323,123	\$7.92	101,600	0.41	\$323,123	\$505,000
20.0 to 18.0	\$3.10	203,600	0.33	\$320,704	\$3.21	203,600	0.34	\$320,704	\$505,000
18.0 to 16.0	\$3.10	203,600	0.33	\$320,704	\$3.51	203,600	0.37	\$320,704	\$505,000
16.0 to 13.0	\$3.06	307,300	0.49	\$320,704					\$505,000
13.0 to 11.0	\$2.75	236,000	0.34	\$320,704	\$3.10	236,000	0.38	\$320,704	\$505,000
		\$3,430,921				\$2,904,223			
Mob/Demob (0.0 to 11.0)	\$857,241								\$505,000
11.0 to 8.0	\$3.47	360,800	0.47	\$352,241					\$505,000
8.0 to 6.0	\$3.81	248,800	0.31	\$352,241					\$505,000
6.0 to 4.0	\$3.67	257,900	0.31	\$352,241					\$505,000
4.0 to 2.0	\$3.67	257,900	0.31	\$352,241					\$505,000
2.0 to 0.0	\$3.67	257,900	0.31	\$352,241					\$505,000
		\$5,042,830							
Mob/Demob (0.0 to -3.5)	\$1,060,480								\$645,000
0.0 to -3.5	\$9.28	500,000	1.77	\$415,480					\$645,000
		\$4,640,000							

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
Houma, Terrebonne Parish, Louisiana
Construction Cost Alternative 1B Earthen Retention -18
Mile 36.3 to Mile (-3.5) to -18 Foot Elevation w/ Advanced Maintenance Included
Summary Page

Contract No.	Description	Units	Estimated Quantity	Unit Price	Estimated Construction Cost
1	Mobilization/Demobilization Mile 36.3 to Mile 22.0	LS CY	1 890,000	\$939,307 \$22.39	\$939,307 \$19,923,432
2	Mobilization/Demobilization Mile 22.0 to Mile 11.5	LS CY	1 571,200	\$825,704 \$85.81	\$825,704 \$49,012,388
3	Mobilization/Demobilization Mile 11.5 to Mile 5.0	LS CY	1 1,725,000	\$1,030,374 \$5.66	\$1,030,374 \$9,762,850
4	Mobilization/Demobilization Mile 5.0 to Mile 0.0	LS CY	1 950,000	\$1,308,950 \$11.35	\$1,308,950 \$10,779,280
5	Mobilization/Demobilization Mile 0.0 to Mile (-3.5)	LS CY	1 668,000	\$1,308,950 \$10.90	\$1,308,950 \$7,281,747
Total:			4,804,200	\$21.27	\$102,172,982

Note:

Unit costs reflected on summary sheet include earthen dike construction, rock dike construction, geotextile fabric, floatation channel excavation within each specified reach, crews, surveying, and boats, if applicable.

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Construction Cost Alternative 1B Earthen Retention -18 Mile 36.3 to 22.0 to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 1	<i>Quantities & Line Items - Puls - Aug 2015</i> <i>Costs - Ramos - Aug 2015</i>
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1A	Mobilization and Demobilization	LS	1	\$939,307	\$939,307
	Dredging and Disposal (Mile 36.3 to Mile 22.0) Channel to be excavated to -20 NAVD88; 1v/2h side slope/150-foot bottom width				
1B	HNC Mile 36.3 to HNC Mile 34.0	CY	170,000	\$6.09	\$1,035,776
	Material to be placed within confined upland Site 1 (Port Commission site) opposite Short Cut Canal. No height restriction. Dike construction/maintenance not required.				
1C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.53	\$505,000	\$267,650
1D	NHC Mile 34.0 to HNC Mile 32.0	CY	77,500	\$14.35	\$1,112,032
	Material to be placed semi-confined within designated Wetland Site 7E east of HNC Mile 31. Material to be placed within the open water area(s), a minimum 12,500 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).				
1E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.58	\$505,000	\$292,900
1F	Earthen Retention Dike Refurbishment	LF	6,900	\$60.00	\$414,000
1G	HNC Mile 32.0 to HNC Mile 29.5	CY	95,500	\$7.22	\$689,434
	Material to be placed semi-confined within designated Wetland Site 7E east of HNC Mile 31. Material to be placed within the open water area(s), a minimum 12,500 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).				
1H	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.36	\$505,000	\$181,800
1I	Earthen Retention Dike Refurbishment	LF	6,900	\$60.00	\$414,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Construction Cost Alternative 1B Earthen Retention -18 Mile 36.3 to 22.0 to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 1	<i>Quantities & Line Items - Puls - Aug 2015</i> <i>Costs - Ramos - Aug 2015</i>
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1J	HNC Mile 29.5 to HNC Mile 28.0 Material to be placed unconfined within designated Wetland Site 12B east of HNC Mile 27.0. Material shall be discharged within the open water areas, a minimum 4,500 -feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	88,000	\$8.79	\$773,837
1K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.39	\$505,000	\$196,950
1L	Earthen Retention Dike Refurbishment	LF	1,600	\$60.00	\$96,000
1M	HNC Mile 28.0 to HNC Mile 26.0 Material to be placed unconfined within designated Wetland Site A-07-A west of HNC Mile 26.5. Material shall be discharged within the open water areas, a minimum 5,700 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	117,000	\$8.24	\$964,454
1N	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.49	\$505,000	\$247,450
1O	Earthen Retention Dike Refurbishment	LF	9,300	\$60.00	\$558,000
1P	HNC Mile 27.6 to HNC Mile 27.4 (West Bank) Foreshore Protection Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	1,900	\$61.46	\$116,774
1Q	Mechanical Dredging Flotation Channel Excavation Mile 27.6 to Mile 27.4. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,260	\$72.92	\$91,879
1R	HNC Mile 26.4 to HNC Mile 25.9 (West Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN SY	26,600 12,800	\$61.46 \$9.78	\$1,634,836 \$125,184
1S	Mechanical Dredging Flotation Channel Excavation Mile 26.4 to Mile 25.9 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	2,840	\$72.92	\$207,093

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Construction Cost Alternative 1B Earthen Retention -18 Mile 36.3 to 22.0 to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 1	<i>Quantities & Line Items - Puls - Aug 2015</i> <i>Costs - Ramos - Aug 2015</i>
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1T	HNC Mile 26.0 to HNC Mile 24.0 Material to be placed unconfined within designated Wetland Site A-07-A west of HNC Mile 26.5. Material shall be discharged within the open water areas, a minimum 5,700 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	171,000	\$6.22	\$1,063,757
1U	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.54	\$505,000	\$272,700
1V	Earthen Retention Dike Refurbishment	LF	13,000	\$60.00	\$780,000
1W	HNC Mile 25.9 to HNC Mile 24.1 (West Bank) Foreshore Protection Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	21,300	\$61.46	\$1,309,098
1X	Mechanical Dredging Flotation Channel Excavation Mile 25.9 to Mile 24.1 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	9,700	\$72.92	\$707,324
1Y	HNC Mile 24.0 to HNC Mile 22.0 Material to be placed semi-confined within designated Wetland Site 15 west of HNC Mile 23.5. Material to be placed within the open water area(s), a minimum 1,270 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	171,000	\$5.27	\$901,786
1Z	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.46	\$505,000	\$232,300
1AA	Earthen Retention Dike Refurbishment	LF	2,450	\$60.00	\$147,000
1BB	HNC Mile 23.7 to HNC Mile 22.4 (East Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN SY	59,100 28,500	\$61.46 \$9.78	\$3,632,286 \$278,730
1CC	Mechanical Dredging Flotation Channel Excavation Mile 23.7 to Mile 22.4. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	6,540	\$72.92	\$476,897

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Construction Cost Alternative 1B Earthen Retention -18 Mile 36.3 to 22.0 to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 1	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1DD	HNC Mile 22.2 to HNC Mile 22.1 (East Bank)	TN	9,800	\$61.46	\$602,308
	Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	SY	4,700	\$9.78	\$45,966
1EE	Mechanical Dredging Flotation Channel Excavation Mile 22.2 to Mile 22.1. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	730	\$72.92	\$53,232
Total:					\$20,862,739
Contract Duration		DY	101		
Notes:					
Dredging quantity does not reflect overdepth.					

Dredging:	890,000 CY
Rock:	118,700 TON
Geotextile:	46,000 SY
Flotation Channel:	21,070 LF
Earthen Dike:	40,150 LF
Survey/Crew/Boat:	3.4 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening *Quantities & Line Items - Puls - Aug 2015*
 Houma, Terrebonne Parish, Louisiana *Costs - Ramos - Aug 2015*
Construction Cost Alternative 1B Earthen Retention -18
 Mile 22.0 to 11.5 to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included
 Contract No. 2

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2A	Mobilization and Demobilization	LS	1	\$825,704	\$825,704
	Dredging and Disposal (Mile 22.0 to Mile 11.5) Channel to be excavated to -20 NAVD88; 1v/2h side slope/150-foot bottom width				
2B	HNC Mile 22.0 to HNC Mile 20.0	CY	225,000	\$4.15	\$933,120
	Material to be placed unconfined within designated Wetland Site 16 west of HNC Mile 22. Material shall be discharged within the open water areas, a minimum 1,550 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).				
2C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.49	\$505,000	\$247,450
2D	HNC Mile 20.0 to HNC Mile 18.0	CY	21,000	\$25.51	\$535,718
	Material to be placed unconfined within Wetland Site 19C east of and adjacent to HNC Mile 19.5. The discharge will be positioned to the east and placed a minimum 500 ft beyond the bank rim/ridge or erosion control structure at the front of the disposal area. Elevation of material placed within the open water area(s) of Site 19C NTE +3.0' NAVD88 (See dwgs for details).				
2E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.28	\$505,000	\$141,400
2F	HNC Mile 19.2 to HNC Mile 17.5 (East Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN SY	99,500 47,900	\$61.46 \$9.78	\$6,115,270 \$468,462
2G	Mechanical Dredging Flotation Channel Excavation Mile 19.2 to Mile 17.5 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	8,120	\$72.92	\$592,110
2H	HNC Mile 19.1 to HNC Mile 17.8 (West Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN SY	18,200 8,750	\$61.46 \$9.78	\$1,118,572 \$85,575
2I	Mechanical Dredging Flotation Channel Excavation Mile 19.1 to Mile 17.8 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,790	\$72.92	\$130,527

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Construction Cost Alternative 1B Earthen Retention -18 Mile 22.0 to 11.5 to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 2	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2J	HNC Mile 18.0 HNC Mile 16.0 Material to be placed unconfined within designated Wetland Site 20C west of HNC Mile 17. Material shall be discharged within the open water areas, a minimum 900 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	77,200	\$10.85	\$837,960
2K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.44	\$505,000	\$222,200
2L	HNC Mile 17.7 to HNC Mile 16.7 (West Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN SY	67,400 32,500	\$61.46 \$9.78	\$4,142,404 \$317,850
2M	Mechanical Dredging Flotation Channel Excavation Mile 17.7 to Mile 16.7 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	5,480	\$72.92	\$399,602
2N	HNC Mile 16.9 to HNC Mile 13.3 (East Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN SY	213,000 102,600	\$61.46 \$9.78	\$13,090,980 \$1,003,428
2O	Mechanical Dredging Flotation Channel Excavation Mile 16.9 to Mile 13.3 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	19,200	\$72.92	\$1,400,064
2P	HNC Mile 16.0 to HNC Mile 13.0 Material to be placed semi-confined within designated Wetland Site 21 west of HNC Mile 15. Material to be placed within the open water area(s), a minimum 600 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	153,000	\$8.86	\$1,355,213
2Q	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.71	\$505,000	\$358,550
2R	Earthen Retention Dike Refurbishment	LF	3,850	\$60.00	\$231,000
2S	HNC Mile 15.6 to HNC Mile 14.0 (West Bank) Rock Retention Structure (site 21) (Dk ht. +6' NAVD88) Geotextile	TN SY	94,500 45,500	\$61.46 \$9.78	\$5,807,970 \$444,990

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Construction Cost Alternative 1B Earthen Retention -18 Mile 22.0 to 11.5 to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 2	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2T	Mechanical Dredging Flotation Channel Excavation Mile 15.6 to Mile 14.0 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	8,650	\$72.92	\$630,758
2U	HNC Mile 13.1 to HNC Mile 11.9 (West Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN SY	75,900 36,600	\$61.46 \$9.78	\$4,664,814 \$357,948
2V	Mechanical Dredging Flotation Channel Excavation Mile 13.1 to Mile 11.9 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	5,340	\$72.92	\$389,393
2W	HNC Mile 13.0 to HNC Mile 11.5 Material to be placed semi-confined within designated Wetland Site 24 west of HNC Mile 12.1. Material to be placed within the open water area(s), a minimum 900 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	95,000	\$6.82	\$648,128
2X	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700
2Y	Earthen Retension Dike Refurbishment	LF	4,100	\$60.00	\$246,000
2Z	HNC Mile 12.7 to HNC Mile 12.3 (East Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN SY	27,100 13,000	\$61.46 \$9.78	\$1,665,566 \$127,140

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Construction Cost Alternative 1B Earthen Retention -18 Mile 22.0 to 11.5 to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 2	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2AA	Mechanical Dredging Flotation Channel Excavation Mile 12.6 to Mile 12.3 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,790	\$72.92	\$130,527
					Total: \$49,838,092

Contract Duration	DY	68			
Note:					
Dredging quantity does not reflect overdepth.					

Dredging:	571,200 CY
Rock:	595,600 TON
Geotextile:	286,850 SY
Flotation Channel:	50,370 LF
Earthen Dike:	7,950 LF
Survey/Crew/Boat:	2.3 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Construction Cost Alternative 1B Earthen Retention -18

Mile 11.5 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included
 Contract No. 3

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
3A	Mobilization and Demobilization	LS	1	\$1,030,374	\$1,030,374
	Dredging and Disposal (Mile 11.5 to 0.0) Channel to be excavated to -21 NAVD88; 1v/3h side slope by 150' channel width				
3B	HNC Mile 11.5 to HNC Mile 10.0	CY	125,000	\$6.04	\$755,200
	Material to be placed rock semi-confined west of channel within "lung area". 715 Acres See plans for details.				
3C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.27	\$505,000	\$136,350
3D	Earthen Retention Dike Refurbishment	LF	12,700	\$60.00	\$762,000
3E	HNC Mile 10.0 to HNC Mile 5.0	CY	1,600,000	\$3.90	\$6,246,400
	Material to be placed earthen-confined west of channel within "lung area". 715 Acres See plans for details.				
3F	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.18	\$505,000	\$1,100,900
3G	Earthen Retention Dike Refurbishment	LF	12,700	\$60.00	\$762,000
				Total	\$10,793,224
	Contract Duration:	DY	74		
	Notes:				
	Dredging quantity does not reflect overdepth.				

Dredging: 1,725,000 CY

Earthen Dike: 25,400 LF

Survey/Crew/Boat: 2.5 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Construction Cost Alternative 1B Earthen Retention -18

Mile 11.5 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included
 Contract No. 3

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
4A	Mobilization and Demobilization	LS	1	\$1,030,374	\$1,030,374
	Dredging and Disposal (Mile 5.0 to 0.0) Channel to be excavated to -21 NAVD88; 1v/3h side slope by 150' channel width				
4B	HNC Mile 5.0 to HNC Mile 1.5	CY	760,000	\$9.31	\$7,072,256
	Material to be placed earthen confined on northeast end of Isle Denieres (East Island) @ 3' contour for marsh creation. 370 Acres. See plans for details.				
4C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.51	\$505,000	\$762,550
4D	Earthen Retention Dike Refurbishment	LF	6,500	\$60.00	\$390,000
4E	HNC Mile 1.5 to HNC Mile 0.0	CY	190,000	\$11.93	\$2,266,624
	Material to be placed earthen confined on northeast end of Isle Denieres (East Island) @ 3' contour for marsh creation. 370 Acres. See plans for details.				
4F	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.57	\$505,000	\$287,850
				Total	\$11,809,654
Contract Duration:		DY	62		
Notes:					
Dredging quantity does not reflect overdepth.					

Dredging: 950,000 CY

Earthen Dike: 6,500 LF

Survey/Crew/Boat: 2.1 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana
Construction Cost Alternative 1B Earthen Retention -18
 Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 4 Feet of Advanced Maintenance Included
 Contract No. 4

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos- Aug 2015

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
5A	Mobilization and Demobilization	LS	1	\$1,308,950	\$1,308,950
	Dredging and Disposal Mile 0.0 to Mile (-3.5) Channel to be excavated to -20' NAVD88; 1v/2h side slopes by 300' bottom width.				
5B	Dredging and Disposal Mile 0.0 to Mile (-3.5)	CY	668,000	\$9.51	\$6,352,947
	Material to be placed unconfined for Marsh Creation on the south side of East Island (Isle Deniers) outside of earthen confinement. (See plans for details). Material Quantity does not reflect overdepth. Contract Duration:				
5C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.44	\$645,000	\$928,800
					Total: \$8,590,697
	Contract Duration	DY	43		
	Note:				
	Material Quantity does not reflect overdepth.				

Dredging: 668,000 CY

Survey/Crew/Boat: 1.4 MO

Reach	18 foot depth		Duration (months)	Mob/Demob (Per Reach)	Crew/Equipment Costs
	Unit Cost	CY			
Mob/Demob (36.3 to 22.0)	\$939,307				\$505,000
36.3 to 34.0	\$6.09	170,000	0.53	\$327,961	\$505,000
34.0 to 32.0	\$14.35	77,500	0.58	\$434,307	\$505,000
32.0 to 29.5	\$7.22	95,500	0.36	\$434,307	\$505,000
29.5 to 28.0	\$8.79	88,000	0.39	\$327,961	\$505,000
28.0 to 26.0	\$8.24	117,000	0.49	\$327,961	\$505,000
26.0 to 24.0	\$6.22	171,000	0.54	\$327,961	\$505,000
24.0 to 22.0	\$5.27	171,000	0.46	\$327,961	\$505,000
		\$6,541,075			
Mob/Demob (22.0 to 11.0)	\$825,704				\$505,000
22.0 to 20.0	\$4.15	225,000	0.49	\$320,704	\$505,000
20.0 to 18.0	\$25.51	21,000	0.28	\$320,704	\$505,000
18.0 to 16.0	\$10.85	77,200	0.44	\$320,704	\$505,000
16.0 to 13.0	\$8.86	153,000	0.71	\$320,704	\$505,000
13.0 to 11.5	\$6.82	95,000	0.34	\$320,704	\$505,000
		\$4,310,139			
Mob/Demob (0.0 to 11.0)	\$1,030,374				\$505,000
11.5 to 10.0	\$6.04	125,000	0.27	\$372,299	\$505,000
10.0 to 5.0	\$3.90	1,600,000	2.18	\$372,299	\$505,000
5.0 to 1.5	\$9.31	760,000	1.51	\$525,374	\$505,000
1.5 to 0.0	\$11.93	190,000	0.57	\$526,109	\$505,000
		\$16,340,480			
Mob/Demob (0.0 to -3.5)	\$1,308,950				\$645,000
0.0 to -3.5	\$9.51	668,000	1.44	\$663,950	\$645,000
		\$6,352,947			

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Maintenance Cost Earthen Retention -18ft MLG

Costs for 10-Year Cycle to be Repeated 5 Times Over 50 Years

Multiple Disposal Sites

Mile 36.3 to Mile (-3.5) to -18 Foot Elevation w/ Advanced Maintenance Included
 Summary Page

Contract No.	Description	Cycle Frequency (Years)	Units	Quantity	Estimated Unit Price Per Cycle	Estimated Cycle Cost	Estimated Total Cost (50-Year)
1*	Mobilization/Demobilization	10	LS	1		\$871,046	\$4,355,230
	Mile 36.3 to Mile 34.0	10	CY	101,600	\$7.23	\$734,254	\$3,671,268
	Mile 24.0 to Mile 22.0	10	CY	101,600	\$10.94	\$1,111,300	\$5,556,500
	Mile 22.0 to Mile 20.0	10	CY	101,600	\$8.32	\$845,221	\$4,226,103
	Mobilization/Demobilization	2	LS	1		\$1,031,109	\$25,777,725
	Mile 11.0 to Mile 0.0	2	CY	1,383,300	\$6.84	\$9,467,363	\$236,684,068
2	Mobilization/Demobilization	2	LS	1		\$1,308,950	\$32,723,750
	Mile 0.0 to Mile (-3.5)	2	CY	500,000	\$22.24	\$11,121,400	\$278,035,000
3	Mobilization/Demobilization	2	LS	1		\$1,031,109	
	Mile 11.0 to Mile 0.0	2	CY	1,383,300	\$6.84	\$9,467,363	
4	Mobilization/Demobilization	2	LS	1		\$1,308,950	
	Mile 0.0 to Mile (-3.5)	2	CY	500,000	\$22.24	\$11,121,400	
5	Mobilization/Demobilization	2	LS	1		\$1,031,109	
	Mile 11.0 to Mile 0.0	2	CY	1,383,300	\$6.84	\$9,467,363	
6	Mobilization/Demobilization	10	LS	1		\$939,307	\$4,696,535
	Mile 36.3 to Mile 34.0	10	CY	101,600	\$7.36	\$747,687	\$3,738,437
	Mile 34.0 to Mile 32.0	10	CY	203,600	\$7.40	\$1,506,469	\$7,532,343
	Mile 32.0 to Mile 29.5	10	CY	153,700	\$10.07	\$1,548,466	\$7,742,331
	Mile 29.5 to Mile 28.0	10	CY	153,700	\$5.60	\$860,476	\$4,302,382
	Mile 28.0 to Mile 26.0	10	CY	203,600	\$10.65	\$2,167,912	\$10,839,561
	Mile 26.0 to Mile 24.0	10	CY	203,600	\$17.72	\$3,606,829	\$18,034,143
	Mile 24.0 to Mile 22.0	10	CY	101,600	\$24.49	\$2,488,347	\$12,441,736
	Mile 22.0 to Mile 20.0	10	CY	101,600	\$9.44	\$958,927	\$4,794,636
	Mobilization/Demobilization	2	LS	1		\$1,308,950	
	Mile 0.0 to Mile (-3.5)	2	CY	500,000	\$22.24	\$11,121,400	
7	Mobilization/Demobilization	10	LS	1		\$939,307	\$4,696,535
	Mile 20.0 to Mile 18.0	10	CY	203,600	\$14.89	\$3,030,630	\$15,153,149
	Mile 18.0 to Mile 16.0	10	CY	203,600	\$29.90	\$6,088,383	\$30,441,913
	Mile 16.0 to Mile 13.0	10	CY	307,300	\$14.75	\$4,533,250	\$22,666,249
	Mile 13.0 to Mile 11.0	10	CY	236,000	\$6.71	\$1,582,869	\$7,914,345
	Mobilization/Demobilization	2	LS	1		\$1,031,109	
	Mile 11.0 to Mile 0.0	2	CY	1,383,300	\$6.84	\$9,467,363	
8	Mobilization/Demobilization	2	LS	1		\$1,308,950	
	Mile 0.0 to Mile (-3.5)	2	CY	500,000	\$22.24	\$11,121,400	
9	Mobilization/Demobilization	2	LS	1		\$1,031,109	
	Mile 11.0 to Mile 0.0	2	CY	1,383,300	\$6.84	\$9,467,363	
10	Mobilization/Demobilization	2	LS	1		\$1,308,950	
	Mile 0.0 to Mile (-3.5)	2	CY	500,000	\$22.24	\$11,121,400	
Total:				11,894,800	\$12.54	\$149,204,788	\$746,023,940

Note: Unit costs reflected on summary sheet include all disposal area dike refurbishment within each specified reach, if necessary

* Three reaches specified in Contract 1 require a maintenance cycle every 5 years. 5 years after maintenance Contract 1 reaches at 36.3, 24.0, and 22.0 will undergo maintenance under Contract 6 (10-Year cycle). 5 Years after maintenance Contract 6 those reaches will be maintained under a new 5-year cycle (Contract 11). Following this sequence, contract 6 will be required four additional times over the 50 year project life after Contract 6 is completed.

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -18ft MLG Mile 36.3 to 34.0 & Mile 24 to 22.0 & Mile 22.0 to 20.0 & Mile 11.0 to 0.0 to -18 Foot Elevation w/ 2 and 3 Feet of Advanced Maintenance Included Contract No. 1	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1A	Mobilization and Demobilization Dredging and Disposal (Mile 36.3 to Mile 20.0) Channel to be excavated to -20 NAVD88; 1v/2h side slope/150-foot bottom width	LS	1	\$871,046	\$871,046
1B	HNC Mile 36.3 to HNC Mile 34.0 Material to be placed within confined upland Site 1 (Port Commission site) opposite Short Cut Canal. No height restriction. Dike construction/maintenance not required.	CY	101,600	\$5.39	\$547,502
1C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.29	\$505,000	\$146,450
1B	HNC Mile 36.3 to HNC Mile 34.0 Material to be placed within confined upland Site 3 opposite HNC Mile 35.5 No height restriction. Dike construction/maintenance not required.	CY	101,600	\$5.90	\$599,521
1C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.32	\$505,000	\$161,600
1D	HNC Mile 24.0 to HNC Mile 22.0 Material to be placed semi-confined within designated Wetland Site 15 west of HNC Mile 23.5. Material to be placed within the open water area(s), a minimum 1,270 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	101,600	\$8.00	\$812,800
1E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
1F	Earthen Retention Dike Refurbishment	LF	2,450	\$60.00	\$147,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -18ft MLG Mile 36.3 to 34.0 & Mile 24 to 22.0 & Mile 22.0 to 20.0 & Mile 11.0 to 0.0 to -18 Foot Elevation w/ 2 and 3 Feet of Advanced Maintenance Included Contract No. 1	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1G	HNC Mile 22.0 to HNC Mile 20.0 Material to be placed unconfined within Wetland Site 16 opposite and adjacent to HNC Mile 21.4 along the west bank of the HNC WW. The discharge will be positioned to the west and placed a minimum 1,550 ft beyond the bank rim or erosion control structure at the front of the disposal area. Elevation of material placed within the open water area(s) NTE +3.0' NAVD 88 (See dwgs for details).	CY	101,600	\$5.71	\$580,014
1H	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
1G	HNC Mile 22.0 to HNC Mile 20.0 Material to be placed semi-confined within Wetland Site 15A between HNC Mile 23.0 and 22.5 along the west bank of the HNC WW. The initial buildup of mtl. shall begin in the north east corner, and to proceed outward in a west-southwesterly direction. Earthen closures will be required along the west side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	101,600	\$7.92	\$804,997
1H	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.41	\$505,000	\$207,050
1I	Earthen Retention Dike Refurbishment	LF	4,800	\$60.00	\$288,000
1J	Mobilization and Demobilization Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width	LS	1	\$1,031,109	\$1,031,109
1K	HNC Mile 11.0 to HNC Mile 5.0 Material to be placed earthen confined west of channel within "lung area". 715 Acres See plans for details.	CY	738,600	\$4.75	\$3,507,464
1L	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.09	\$505,000	\$550,450
1M	Earthen Retention Dike Refurbishment	LF	12,700	\$60.00	\$762,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -18ft MLG Mile 36.3 to 34.0 & Mile 24 to 22.0 & Mile 22.0 to 20.0 & Mile 11.0 to 0.0 to -18 Foot Elevation w/ 2 and 3 Feet of Advanced Maintenance Included Contract No. 1	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1N	HNC Mile 5.0 to HNC Mile 1.5 Material to be placed earthen confined on northeast end of Isle Denieres (East Island) for marsh creation. 370 Acres. See plans for details.	CY	451,300	\$5.49	\$2,478,179
1O	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.64	\$505,000	\$323,200
1P	Earthen Retention Dike Refurbishment	LF	6,500	\$60.00	\$390,000
1Q	HNC Mile 1.5 to HNC Mile 0.0 Material to be placed unconfined for beach nourishment on Isle Deniers See Plans for details	CY	193,400	\$5.43	\$1,049,620
1R	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.27	\$505,000	\$136,350
1S	Earthen Containment Dike Refurbishment (Lung)	LF	1,823	\$20.00	\$36,460
1T	Earthen Dike on bay side East Island	LF	3,419	\$60.00	\$205,140
1U	Earthen Containment Dike Refurbishment (East Island)	LF	1,425	\$20.00	\$28,500
Total:					\$14,106,986

Contract Duration

DY 91

Notes:

Channel Quantities do not reflect overdepth.

Dredging: 1,688,100 CY

Earthen Dike: 33,117 LF

Survey/Crew/Boat: 3.0 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -18ft MLG Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 4 Feet of Advanced Maintenance Included Contract No. 2	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2A	Mobilization and Demobilization Dredging and Disposal Mile 0.0 to Mile (-3.5) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width	LS	1	\$1,308,950	\$1,308,950
2B	Dredging and Disposal Mile 0.0 to Mile (-3.5) Material to be placed unconfined for Marsh Creation on the South side of East Island (Isle Deniers) within the surf zone (See plans for details). Material Quantity does not reflect overdepth.	CY	500,000	\$19.40	\$9,702,400
2C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.20	\$645,000	\$1,419,000
Total:					\$12,430,350
	Contract Duration	DY	66		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging: 500,000 CY

Survey/Crew/Boat: 2.2 MO

Feasibility Level Cost Estimate					
Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -18ft MLG Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 3			Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency		
Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
3A	Mobilization and Demobilization Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width	LS	1	\$1,031,109	\$1,031,109
3B	HNC Mile 11.0 to HNC Mile 5.0 Material to be placed earthen confined west of channel within "lung area". 715 Acres See plans for details.	CY	738,600	\$4.75	\$3,507,464
3C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.09	\$505,000	\$550,450
3D	Earthen Retention Dike Refurbishment	LF	12,700	\$60.00	\$762,000
3E	HNC Mile 5.0 to HNC Mile 1.5 Material to be placed earthen confined on northeast end of Isle Denieres (East Island) for marsh creation. 370 Acres. See plans for details.	CY	451,300	\$5.49	\$2,478,179
3F	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.64	\$505,000	\$323,200
3G	Earthen Retention Dike Refurbishment	LF	6,500	\$60.00	\$390,000
3H	HNC Mile 1.5 to HNC Mile 0.0 Material to be placed unconfined for beach nourishment on Isle Deniers See Plans for details	CY	193,400	\$5.43	\$1,049,620
3I	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.27	\$505,000	\$136,350
3J	Earthen Containment Dike Refurbishment (Lung)	LF	1,823	\$20.00	\$36,460
3K	Earthen Dike on bay side East Island	LF	3,419	\$60.00	\$205,140
3L	Earthen Containment Dike Refurbishment (East Island)	LF	1,425	\$20.00	\$28,500
Total:					\$10,498,472
Contract Duration		DY	60		
Note:					
Material Quantity does not reflect overdepth.					

Dredging: 1,383,300 CY

Earthen Dike: 25,867 LF

Survey/Crew/Boat: 2.0 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -18ft MLG Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 4 Feet of Advanced Maintenance Included Contract No. 4	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
4A	Mobilization and Demobilization	LS	1	\$1,308,950	\$1,308,950
	Dredging and Disposal Mile 0.0 to Mile (-3.5) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width				
4B	Dredging and Disposal Mile 0.0 to Mile (-3.5)	CY	500,000	\$19.40	\$9,702,400
	Material to be placed unconfined for Marsh Creation on the South side of East Island (Isle Deniers) within the surf zone (See plans for details). Material Quantity does not reflect overdepth.				
4C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.20	\$645,000	\$1,419,000
					Total: \$12,430,350
	Contract Duration	DY	66		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging: 500,000 CY

Survey/Crew/Boat: 2.2 MO

Feasibility Level Cost Estimate					
Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -18ft MLG Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 5		Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency			
Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
5A	Mobilization and Demobilization Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width	LS	1	\$1,031,109	\$1,031,109
5B	HNC Mile 11.0 to HNC Mile 5.0 Material to be placed earthen confined west of channel within "lung area". 715 Acres See plans for details.	CY	738,600	\$4.75	\$3,507,464
5C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.09	\$505,000	\$550,450
5D	Earthen Retention Dike Refurbishment	LF	12,700	\$60.00	\$762,000
5E	HNC Mile 5.0 to HNC Mile 1.5 Material to be placed earthen confined on northeast end of Isle Denieres (East Island) for marsh creation. 370 Acres. See plans for details.	CY	451,300	\$5.49	\$2,478,179
5F	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.64	\$505,000	\$323,200
5G	Earthen Retention Dike Refurbishment	LF	6,500	\$60.00	\$390,000
5H	HNC Mile 1.5 to HNC Mile 0.0 Material to be placed unconfined for beach nourishment on Isle Deniers See Plans for details	CY	193,400	\$5.43	\$1,049,620
5I	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.27	\$505,000	\$136,350
5J	Earthen Containment Dike Refurbishment (Lung)	LF	1,823	\$20.00	\$36,460
5K	Earthen Dike on bay side East Island	LF	3,419	\$60.00	\$205,140
5L	Earthen Containment Dike Refurbishment (East Island)	LF	1,425	\$20.00	\$28,500
Total:					\$10,498,472
Contract Duration		DY	60		
Note: Material Quantity does not reflect overdepth.					

Dredging: 1,383,300 CY

Earthen Dike: 25,867 LF

Survey/Crew/Boat: 2.0 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -18ft MLG Mile 36.3 to 20.0 & Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 6	Quantities & Line Items - Puls - Aug 2015 Costs - Ramose - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2, 5, and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6A	Mobilization and Demobilization Dredging and Disposal (Mile 36.3 to Mile 20.0) Channel to be excavated to -20 NAVD88; 1v/2h side slope/150-foot bottom width	LS	1	\$939,307	\$939,307
6B	HNC Mile 36.3 to HNC Mile 34.0 Material to be placed within confined upland Site 1 (Port Commission site) opposite Short Cut Canal. No height restriction. Dike construction/maintenance not required.	CY	101,600	\$5.39	\$547,502
6C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.29	\$505,000	\$146,450
6B	HNC Mile 36.3 to HNC Mile 34.0 Material to be placed within confined upland Site 3 opposite HNC Mile 35.5 No height restriction. Dike construction/maintenance not required.	CY	101,600	\$5.90	\$599,521
6C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.32	\$505,000	\$161,600
6D	NHC Mile 34.0 to HNC Mile 32.0 Material to be placed semi-confined within designated Wetland Site 7E opposite HNC Mile 31. Material to be placed within the open water area(s), a minimum 12,500 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	203,600	\$4.25	\$865,219
6E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.45	\$505,000	\$227,250
6F	Earthen Retention Dike Refurbishment	LF	6,900	\$60.00	\$414,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -18ft MLG Mile 36.3 to 20.0 & Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 6	Quantities & Line Items - Puls - Aug 2015 Costs - Ramose - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2, 5, and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6G	HNC Mile 32.0 to HNC Mile 29.5 Material to be placed semi-confined within designated Wetland Site 7E opposite HNC Mile 31. Material to be placed within the open water area(s), a minimum 12,500 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	153,700	\$5.84	\$897,116
6H	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.47	\$505,000	\$237,350
6I	Earthen Retention Dike Refurbishment	LF	6,900	\$60.00	\$414,000
6J	HNC Mile 29.5 to HNC Mile 28.0 Material to be placed unconfined within designated Wetland Site 12B opposite approximate HNC Mile 27.0. Mtl. shall be discharged within the open water areas, a minimum 4,500 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	153,700	\$4.17	\$641,359
6K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.32	\$505,000	\$161,600
6L	Earthen Retention Dike Refurbishment	LF	1,600	\$60.00	\$96,000
6J	HNC Mile 29.5 to HNC Mile 28.0 Material to be placed unconfined within designated Wetland Site 12 opposite approximate HNC Mile 27.0. Mtl. shall be discharged within the open water areas, a minimum 1,950 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	153,700	\$3.78	\$580,371
6K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.29	\$505,000	\$146,450
6L	Earthen Retention Dike Refurbishment	LF	1,800	\$60.00	\$108,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -18ft MLG Mile 36.3 to 20.0 & Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 6	Quantities & Line Items - Puls - Aug 2015 Costs - Ramose - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2, 5, and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6M	HNC Mile 28.0 to HNC Mile 26.0 Material to be placed unconfined within designated Wetland Site A-07-A opposite approximate HNC Mile 26.5. Mtl. shall be discharged within the open water areas, a minimum 5,700 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	203,600	\$3.37	\$685,399
6N	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.36	\$505,000	\$181,800
6O	Earthen Retention Dike Refurbishment	LF	9,300	\$60.00	\$558,000
6P	HNC Mile 27.6 to HNC Mile 27.4 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	1,900	\$61.46	\$116,774
6Q	Mechanical Dredging Flotation Channel Excavation Mile 27.6 to Mile 27.4. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,260	\$72.92	\$91,879
6R	HNC Mile 26.4 to HNC Mile 25.9 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	5,320	\$61.46	\$326,967
6S	Mechanical Dredging Flotation Channel Excavation Mile 26.4 to Mile 25.9 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	2,840	\$72.92	\$207,093
6T	HNC Mile 26.0 to HNC Mile 24.0 Material to be placed unconfined within designated Wetland Site A-07-A opposite approximate HNC Mile 26.5. Mtl. shall be discharged within the open water areas, a minimum 5,700 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	203,600	\$3.92	\$797,460
6U	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.40	\$505,000	\$202,000
6V	Earthen Retention Dike Refurbishment	LF	13,000	\$60.00	\$780,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -18ft MLG Mile 36.3 to 20.0 & Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 6	Quantities & Line Items - Puls - Aug 2015 Costs - Ramose - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2, 5, and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6T	HNC Mile 26.0 to HNC Mile 24.0 Material to be placed unconfined within designated Wetland Site 14A opposite approximate HNC Mile 27. Mtl. shall be discharged within the open water areas, a minimum 3,360 eet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	203,600	\$3.62	\$737,521
6U	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.37	\$505,000	\$186,850
6V	Earthen Retention Dike Refurbishment	LF	9,000	\$60.00	\$540,000
6W	HNC Mile 25.9 to HNC Mile 24.1 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	21,300	\$61.46	\$1,309,098
6X	Mechanical Dredging Flotation Channel Excavation Mile 25.9 to Mile 24.1 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	9,700	\$72.92	\$707,324
6Y	HNC Mile 24.0 to HNC Mile 22.0 Material to be placed semi-confined within Wetland Site 15A between HNC Mile 24.0 and 22.9 west of Site 15 'beyond the west bank of the HNC WW. The initial buildup of mtl. shall begin in the south east corner, and to proceed outward in a westerly direction. Earthen closures will be required along the east side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	101,600	\$8.00	\$812,800
6Z	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
6AA	Earthen Retention Dike Refurbishment	LF	2,450	\$60.00	\$147,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -18ft MLG Mile 36.3 to 20.0 & Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 6	Quantities & Line Items - Puls - Aug 2015 Costs - Ramose - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2, 5, and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6BB	HNC Mile 23.7 to HNC Mile 22.4 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	11,820	\$61.46	\$726,457
6CC	Mechanical Dredging Flotation Channel Excavation Mile 23.7 to Mile 22.4. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	6,540	\$72.92	\$476,897
6DD	HNC Mile 22.2 to HNC Mile 22.1 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	1,960	\$61.46	\$120,462
6EE	Mechanical Dredging Flotation Channel Excavation Mile 22.2 to Mile 22.1. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	730	\$72.92	\$53,232
6FF	HNC Mile 22.0 to HNC Mile 20.0 Material to be placed unconfined within Wetland Site 16 opposite and adjacent to HNC Mile 21.4 along the west bank of the HNC WW. The discharge will be positioned to the west and placed a minimum 1,550 ft beyond the bank rim or erosion control structure at the front of the disposal area. Elevation of material placed within the open water area(s) NTE +3.0' NAVD 88 (See dwgs for details).	CY	101,600	\$5.71	\$580,014
6GG	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
6FF	HNC Mile 22.0 to HNC Mile 20.0 Material to be placed semi-confined within Wetland Site 15A between HNC Mile 23.0 and 22.5 along the west bank of the HNC WW. The initial buildup of mtl. shall begin in the north east corner, and to proceed outward in a west-southwesterly direction. Earthen closures will be required along the west side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	101,600	\$7.92	\$804,997

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -18ft MLG Mile 36.3 to 20.0 & Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 6	Quantities & Line Items - Puls - Aug 2015 Costs - Ramose - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2, 5, and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6GG	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.41	\$505,000	\$207,050
6HH	Earthen Retention Dike Re-fubishment	LF	4,800	\$60.00	\$288,000
6II	Mobilization and Demobilization	LS	1	\$1,308,950	\$1,308,950
	Dredging and Disposal Mile 0.0 to Mile (-3.5) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width				
6JJ	Dredging and Disposal Mile 0.0 to Mile (-3.5)	CY	500,000	\$19.40	\$9,702,400
	Material to be placed unconfined for Marsh Creation on the South side of East Island (Isle Deniers) within the surf zone (See plans for details). Material Quantity does not reflect overdepth.				
6KK	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.20	\$645,000	\$1,419,000
					Total: \$27,608,861
Contract Duration		DY	157		
Notes:					
Channel Quantities do not reflect overdepth.					

Dredging: 1,723,000 CY

Rock: 40,340 TON

Flotation Channel: 21,070 LF

Earthen Dike: 55,750 LF

Survey/Crew/Boat: 5.2 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015

Costs - Ramos - Aug 2015

Maintenance Cost Earthen Retention -18ft MLG

Multiple Disposal Sites

Mile 20.0 to Mile 11.0 & Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included

Contract No. 7

Channel Maintenance - 2 and 10 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7A	Mobilization and Demobilization Dredging and Disposal (Mile 20.0 to Mile 11.0) Channel to be excavated to -20 NAVD88; 1v/2h side slope/150-foot bottom width	LS	1	\$939,307	\$939,307
7B	HNC Mile 20.0 to HNC Mile 18.0 Material to be placed unconfined within Wetland Site 19C oppsite and adjacent to HNC Mile 19.3 along the east bank of the HNC WW. The discharge will be positioned to the east and placed a minimum 500-ft beyond the bank rim/ridge or erosion control structure at the front of the disposal area. Elevation of material placed within the open water area(s) of Site 19C NTE +3.0' NAVD88 (See dwgs for details).	CY	203,600	\$3.10	\$630,671
7C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.33	\$505,000	\$166,650
7B	HNC Mile 20.0 to HNC Mile 18.0 Material to be placed semi-confined within the open water portions of Wetland Site 19D between HNC Mile 20.2 and 19.6, located beyond the west bank of the HNC WW. The initial buildup of mtl. shall begin in the north east corner, and to proceed outward in a westerly direction a minimum distance of 12,350 ft beyond the channel centewr line. Earthen closures will be required along the south side of the disposal area adjacent to the open water A 200-foot wide construction access corridor along theentrance of the waterway will be provided for the Contractors at the northeast and south east portions of the disposal site. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	203,600	\$3.21	\$654,126
7C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700
7D	Earthen Retention Dike Re-fubishment	LF	1,300	\$60.00	\$78,000
7E	HNC Mile 19.2 to HNC Mile 17.5 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	19,900	\$61.46	\$1,223,054
7F	Mechanical Dredging Flotation Channel Excavation Mile 19.2 to Mile 17.5 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	8,120	\$72.92	\$592,110

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -18ft MLG Mile 20.0 to Mile 11.0 & Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 7	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites
Channel Maintenance - 2 and 10 year frequency	

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7G	HNC Mile 19.1 to HNC Mile 17.8 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	3,640	\$61.46	\$223,714
	Mechanical Dredging Flotation Channel Excavation Mile 19.1 to Mile 17.8 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,790	\$72.92	\$130,527
7H	HNC Mile 18.0 HNC Mile 16.0 Material to be placed unconfined within Wetland Site 20C oppsoite HNC Mile 16.8 along the west bank of the HNC WW. A construction access corriodr, 200 feet in width, will be provided for the Contractors use at the intersection of Four Pt. Bayou with the HNC WW. The intial buildup shall occur in the east corner of the DA and to proceed outward in a westerly direction. Elevation of Mtl. NTE +3.0' NAVD88 (See dwgs for details).	CY	203,600	\$3.10	\$630,671
7I	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.33	\$505,000	\$166,650
7H	HNC Mile 18.0 HNC Mile 16.0 Material to be placed within Wetland Site 21 opposite HNC Mile 15.0. To prevent material runback, the discharge pipe will be postioned to the SW and placed approximately 600 feet west of HNC Mile 15.0. The material will be placed in a west south-westerly direction within the open water areas or tributaries along the back side of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs f/details).	CY	203,600	\$3.51	\$714,066
7I	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.37	\$505,000	\$186,850
7J	Earthen Retention Dike Re-fubishment	LF	2,000	\$60.00	\$120,000
7K	HNC Mile 17.7 to HNC Mile 16.7 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	13,480	\$61.46	\$828,481
7L	Mechanical Dredging Flotation Channel Excavation Mile 17.7 to Mile 16.7 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	5,480	\$72.92	\$399,602

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015

Costs - Ramos - Aug 2015

Maintenance Cost Earthen Retention -18ft MLG

Multiple Disposal Sites

Mile 20.0 to Mile 11.0 & Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included
 Contract No. 7

Channel Maintenance - 2 and 10 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7M	HNC Mile 16.9 to HNC Mile 13.3 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	42,600	\$61.46	\$2,618,196
7N	Mechanical Dredging Flotation Channel Excavation Mile 16.9 to Mile 13.3 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	19,200	\$72.92	\$1,400,064
7O	HNC Mile 16.0 to HNC Mile 13.0 Material to be placed within Wetland Site 21 opposite HNC Mile 15.0. To prevent material runback, the discharge pipe will be positioned to the SW and placed approximately 600 feet west of HNC Mile 15.0. The material will be placed in a west south-westerly direction within the open water areas or tributaries along the back side of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs f/details).	CY	307,300	\$3.06	\$940,092
7P	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.49	\$505,000	\$247,450
7Q	Earthen Retention Dike Re-fubishment	LF	3,850	\$60.00	\$231,000
7R	HNC Mile 15.6 to HNC Mile 14.0 (West Bank) Rock Retention Structure Refurbishment (Dk ht. +6' NAVD88) Stone quantity 20% of construction quantity	TN	18,900	\$61.46	\$1,161,594
7S	Mechanical Dredging Flotation Channel Excavation Mile 15.6 to Mile 14.0 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	8,650	\$72.92	\$630,758
7T	HNC Mile 13.2 to HNC Mile 11.9 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +6' NAVD88) Stone quantity 20% of construction quantity	TN	15,180	\$61.46	\$932,963
7U	Mechanical Dredging Flotation Channel Excavation Mile 13.1 to Mile 11.9 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	5,340	\$72.92	\$389,393
7V	HNC Mile 13.0 to HNC Mile 11.0 Material to be placed within Wetland Site 24 opposite HNC Mile 12.0 along the west bank of the HNC WW. A construction access corrdior, 200 ft in width, will be provided for the Contractors use at the entrance of the WW. The initial buildup will occur in the east corner of the DA and proceed outward in a west, south-westerly direction. Elevation of material placed within the open water area(s) NTE +3.0' NAVD88 (See dwgs for details).	CY	236,000	\$2.75	\$649,472

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015

Costs - Ramos - Aug 2015

Maintenance Cost Earthen Retention -18ft MLG

Multiple Disposal Sites

Mile 20.0 to Mile 11.0 & Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included

Contract No. 7

Channel Maintenance - 2 and 10 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7W	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700
7X	Earthen Retention Dike Re-fubishment	LF	4,100	\$60.00	\$246,000
7V	HNC Mile 13.0 to HNC Mile 11.0 Material to be placed within Wetland Site 21 opposite HNC Mile 15.0. To prevent material runback, the discharge pipe will be positioned to the SW and placed approximately 600 feet west of HNC Mile 15.0. The material will be placed in a west south-westerly direction within the open water areas or tributaries along the back side of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs f/details).	CY	236,000	\$3.10	\$731,034
7W	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.38	\$505,000	\$191,900
7X	Earthen Retention Dike Re-fubishment	LF	3,850	\$60.00	\$231,000
7Y	HNC Mile 12.7 to HNC Mile 12.3 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	5,420	\$61.46	\$333,113
7Z	Mechanical Dredging Flotation Channel Excavation Mile 12.6 to Mile 12.3 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,790	\$72.92	\$130,527
7AA	Mobilization and Demobilization Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width	LS	1	\$1,031,109	\$1,031,109
7BB	HNC Mile 11.0 to HNC Mile 5.0 Material to be placed earthen confined west of channel within "lung area". 715 Acres See plans for details.	CY	738,600	\$4.75	\$3,507,464
7CC	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.09	\$505,000	\$550,450
7DD	Earthen Retention Dike Re-fubishment	LF	12,700	\$60.00	\$762,000
7EE	HNC Mile 5.0 to HNC Mile 1.5 Material to be placed earthen confined on northeast end of Isle Denieres (East Island) for marsh creation. 370 Acres. See plans for details.	CY	451,300	\$5.49	\$2,478,179
7FF	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.64	\$505,000	\$323,200

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015

Costs - Ramos - Aug 2015

Maintenance Cost Earthen Retention -18ft MLG

Multiple Disposal Sites

Mile 20.0 to Mile 11.0 & Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included
 Contract No. 7

Channel Maintenance - 2 and 10 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7GG	Earthen Retention Dike Re-fubishment	LF	6,500	\$60.00	\$390,000
7HH	HNC Mile 1.5 to HNC Mile 0.0 Material to be placed unconfined for beach nourishment on Isle Deniers See Plans for details	CY	193,400	\$5.43	\$1,049,620
7II	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.27	\$505,000	\$136,350
7JJ	Earthen Containment Dike Refurbishment (Lung)	LF	1,823	\$20.00	\$36,460
7KK	Earthen Dike on bay side East Island	LF	3,419	\$60.00	\$205,140
7LL	Earthen Containment Dike Refurbishment (East Island)	LF	1,425	\$20.00	\$28,500
Total:					\$26,851,092
Contract Duration		DY	107		
Note:					
Channel Quantities do not reflect overdepth.					

Dredging: 2,333,800 CY

Rock: 119,120 TON

Flotation Channel: 50,370 LF

Earthen Dike: 40,967 LF

Survey/Crew/Boat: 3.6 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2014

Maintenance Cost Earthen Retention -18ft MLG

Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 4 Feet of Advanced Maintenance Included

Contract No. 8

Channel Maintenance - 2 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
8A	Mobilization and Demobilization	LS	1	\$1,308,950	\$1,308,950
	Dredging and Disposal Mile 0.0 to Mile (-3.5) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width				
8B	Dredging and Disposal Mile 0.0 to Mile (-3.5)	CY	500,000	\$19.40	\$9,702,400
	Material to be placed unconfined for Marsh Creation on the South side of East Island (Isle Deniers) within the surf zone (See plans for details). Material Quantity does not reflect overdepth.				
8C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.2	\$645,000	\$1,419,000
					Total: \$12,430,350
	Contract Duration	DY	66		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging: 500,000 CY

Survey/Crew/Boat: 2.2 MO

Feasibility Level Cost Estimate					
Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -18ft MLG Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 9		Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency			
Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
9A	Mobilization and Demobilization Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width	LS	1	\$1,031,109	\$1,031,109
9B	HNC Mile 11.0 to HNC Mile 5.0 Material to be placed earthen confined west of channel within "lung area". 715 Acres See plans for details.	CY	738,600	\$4.75	\$3,507,464
9C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.09	\$505,000	\$550,450
9D	Earthen Retention Dike Re-fubishment	LF	12,700	\$60.00	\$762,000
9E	HNC Mile 5.0 to HNC Mile 1.5 Material to be placed earthen confined on northeast end of Isle Denieres (East Island) for marsh creation. 370 Acres. See plans for details.	CY	451,300	\$5.49	\$2,478,179
9F	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.64	\$505,000	\$323,200
9G	Earthen Retention Dike Re-fubishment	LF	6,500	\$60.00	\$390,000
9H	HNC Mile 1.5 to HNC Mile 0.0 Material to be placed unconfined for beach nourishment on Isle Deniers See Plans for details	CY	193,400	\$5.43	\$1,049,620
9I	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.27	\$505,000	\$136,350
9J	Earthen Containment Dike Refurbishment (Lung)	LF	1,823	\$20.00	\$36,460
9K	Earthen Dike on bay side East Island	LF	3,419	\$60.00	\$205,140
9L	Earthen Containment Dike Refurbishment (East Island)	LF	1,425	\$20.00	\$28,500
					Total: \$10,498,472
Contract Duration		DY	60		
Note: Channel Quantities do not reflect overdepth.					

Dredging: 1,383,300 CY

Earthen Dike: 25,867 LF

Survey/Crew/Boat: 2.0 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -18ft MLG Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 4 Feet of Advanced Maintenance Included Contract No. 10	<i>Quantities & Line Items - Puls - Aug 2015</i> <i>Costs - Ramos - Aug 2015</i> Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
10A	Mobilization and Demobilization	LS	1	\$1,308,950	\$1,308,950
	Dredging and Disposal Mile 0.0 to Mile (-3.5) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width				
10B	Dredging and Disposal Mile 0.0 to Mile (-3.5)	CY	500,000	\$19.40	\$9,702,400
	Material to be placed unconfined for Marsh Creation on the South side of East Island (Isle Deniers) within the surf zone (See plans for details). Material Quantity does not reflect overdepth.				
10C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.2	\$645,000	\$1,419,000
					Total: \$2,727,950

Contract Duration

DY

66

Notes:

Channel Quantities do not reflect overdepth.

Dredging:

500,000 CY

Survey/Crew/Boat:

2.2 MO

Reach	18 foot depth				18 foot depth				
	Site 1				Site 2				Crew/Equipment Costs
	Unit Cost	CY	Duration (months)	Mob/Demob (Per Reach)	Unit Cost	CY	Duration (months)	Mob/Demob (Per Reach)	
Mob/Demob	\$871,046								\$505,000
36.3 to 34.5 (5-year)	\$5.39	101,600	0.29	\$315,563	\$5.90	101,600	0.32	\$315,563	\$505,000
24.0 to 22.0 (5-year)	\$8.00	101,600	0.30	\$366,046					\$505,000
22.0 to 19.7 (5-year)	\$5.71	101,600	0.30	\$323,123					\$505,000
		\$1,940,316				\$599,521			
Mob/Demob (36.3 to 22.0)	\$939,307								\$505,000
36.3 to 34.0	\$5.39	101,600	0.29	\$315,563	\$5.90	101,600	0.32	\$315,563	\$505,000
34.0 to 32.0	\$4.25	203,600	0.45	\$434,307					\$505,000
32.0 to 29.5	\$5.84	153,700	0.47	\$434,307					\$505,000
29.5 to 28.0	\$4.17	153,700	0.32	\$330,985	\$3.78	153,700	0.29	\$330,985	\$505,000
28.0 to 26.0	\$3.37	203,600	0.36	\$317,075					\$505,000
26.0 to 24.0	\$3.92	203,600	0.40	\$330,985	\$3.62	203,600	0.37	\$330,985	\$505,000
24.0 to 22.0	\$8.00	101,600	0.30	\$366,046					\$505,000
		\$5,246,856				\$1,917,413			
Mob/Demob (22.0 to 11.0)	\$828,123								\$505,000
22.0 to 20.0	\$5.71	101,600	0.30	\$323,123	\$7.92	101,600	0.41	\$323,123	\$505,000
20.0 to 18.0	\$3.10	203,600	0.33	\$320,704	\$3.21	203,600	0.34	\$320,704	\$505,000
18.0 to 16.0	\$3.10	203,600	0.33	\$320,704	\$3.51	203,600	0.37	\$320,704	\$505,000
16.0 to 13.0	\$3.06	307,300	0.49	\$320,704					\$505,000
13.0 to 11.0	\$2.75	236,000	0.34	\$320,704	\$3.10	236,000	0.38	\$320,704	\$505,000
		\$3,430,921				\$2,904,223			
Mob/Demob (0.0 to 11.0)	\$1,031,109								\$505,000
11.0 to 5.0	\$4.75	738,600	1.09	\$485,917					\$505,000
5.0 to 1.5	\$5.49	451,300	0.64	\$526,109					\$505,000
1.5 to 0.0	\$5.43	193,400	0.27	\$526,109					\$505,000
		\$7,035,263							
Mob/Demob (0.0 to -3.5)	\$1,308,950								645,000
0.0 to -3.5	\$19.40	500,000	2.20	\$663,950					645,000
		\$9,702,400							

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Construction Cost Alternative 1C Rock Retention -18

Mile 36.3 to Mile (-3.5) to -18 Foot Elevation w/ Advanced Maintenance Included

Summary Page

Contract No.	Description	Units	Estimated Quantity	Unit Price	Estimated Construction Cost
1	Mobilization/Demobilization Mile 36.3 to Mile 22.0	LS CY	1 890,000	\$939,307 \$22.39	\$939,307 \$19,923,432
2	Mobilization/Demobilization Mile 22.0 to Mile 11.5	LS CY	1 571,200	\$825,704 \$85.81	\$825,704 \$49,012,388
3	Mobilization/Demobilization Mile 11.5 to Mile 5.0	LS CY	1 1,725,000	\$1,030,374 \$6.48	\$1,030,374 \$11,177,498
4	Mobilization/Demobilization Mile 5.0 to Mile 0.0	LS CY	1 950,000	\$1,030,374 \$36.55	\$1,030,374 \$34,725,700
5	Mobilization/Demobilization Mile 0.0 to Mile (-3.5)	LS CY	1 668,000	\$1,308,950 \$10.90	\$1,308,950 \$7,281,747
Total:			4,804,200	\$26.49	\$127,255,474

Note:

Unit costs reflected on summary sheet include earthen dike construction, rock dike construction, geotextile fabric, floatation channel excavation within each specified reach, crews, surveying, and boats, if applicable.

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Construction Cost Alternative 1C Rock Retention -18 Mile 36.3 to 22.0 to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 1	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1A	Mobilization and Demobilization Dredging and Disposal (Mile 36.3 to Mile 22.0) Channel to be excavated to -20 NAVD88; 1v/2h side slope/150-foot bottom width	LS	1	\$939,307	\$939,307
1B	HNC Mile 36.3 to HNC Mile 34.0 Material to be placed within confined upland Site 1 (Port Commission site) opposite Short Cut Canal. No height restriction. Dike construction/maintenance not required.	CY	170,000	\$6.09	\$1,035,776
1C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.53	\$505,000	\$267,650
1D	NHC Mile 34.0 to HNC Mile 32.0 Material to be placed semi-confined within designated Wetland Site 7E east of HNC Mile 31. Material to be placed within the open water area(s), a minimum 12,500 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	77,500	\$14.35	\$1,112,032
1E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.58	\$505,000	\$292,900
1F	Earthen Retention Dike Refurbishment	LF	6,900	\$60.00	\$414,000
1G	HNC Mile 32.0 to HNC Mile 29.5 Material to be placed semi-confined within designated Wetland Site 7E east of HNC Mile 31. Material to be placed within the open water area(s), a minimum 12,500 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	95,500	\$7.22	\$689,434
1H	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.36	\$505,000	\$181,800
1I	Earthen Retention Dike Refurbishment	LF	6,900	\$60.00	\$414,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Construction Cost Alternative 1C Rock Retention -18 Mile 36.3 to 22.0 to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 1	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1J	HNC Mile 29.5 to HNC Mile 28.0 Material to be placed unconfined within designated Wetland Site 12B east of HNC Mile 27.0. Material shall be discharged within the open water areas, a minimum 4,500 -feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	88,000	\$8.79	\$773,837
1K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.39	\$505,000	\$196,950
1L	Earthen Retention Dike Refurbishment	LF	1,600	\$60.00	\$96,000
1M	HNC Mile 28.0 to HNC Mile 26.0 Material to be placed unconfined within designated Wetland Site A-07-A west of HNC Mile 26.5. Material shall be discharged within the open water areas, a minimum 5,700 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	117,000	\$8.24	\$964,454
1N	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.49	\$505,000	\$247,450
1O	Earthen Retention Dike Refurbishment	LF	9,300	\$60.00	\$558,000
1P	HNC Mile 27.6 to HNC Mile 27.4 (West Bank) Foreshore Protection Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	1,900	\$61.46	\$116,774
1Q	Mechanical Dredging Flotation Channel Excavation Mile 27.6 to Mile 27.4. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,260	\$72.92	\$91,879
1R	HNC Mile 26.4 to HNC Mile 25.9 (West Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN	26,600	\$61.46	\$1,634,836
		SY	12,800	\$9.78	\$125,184
1S	Mechanical Dredging Flotation Channel Excavation Mile 26.4 to Mile 25.9 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	2,840	\$72.92	\$207,093

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Construction Cost Alternative 1C Rock Retention -18 Mile 36.3 to 22.0 to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 1	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1T	HNC Mile 26.0 to HNC Mile 24.0 Material to be placed unconfined within designated Wetland Site A-07-A west of HNC Mile 26.5. Material shall be discharged within the open water areas, a minimum 5,700 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	171,000	\$6.22	\$1,063,757
1U	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.54	\$505,000	\$272,700
1V	Earthen Retention Dike Refurbishment	LF	13,000	\$60.00	\$780,000
1W	HNC Mile 25.9 to HNC Mile 24.1 (West Bank) Foreshore Protection Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	21,300	\$61.46	\$1,309,098
1X	Mechanical Dredging Flotation Channel Excavation Mile 25.9 to Mile 24.1 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	9,700	\$72.92	\$707,324
1Y	HNC Mile 24.0 to HNC Mile 22.0 Material to be placed semi-confined within designated Wetland Site 15 west of HNC Mile 23.5. Material to be placed within the open water area(s), a minimum 1,270 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	171,000	\$5.27	\$901,786
1Z	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.46	\$505,000	\$232,300
1AA	Earthen Retention Dike Refurbishment	LF	2,450	\$60.00	\$147,000
1BB	HNC Mile 23.7 to HNC Mile 22.4 (East Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN SY	59,100 28,500	\$61.46 \$9.78	\$3,632,286 \$278,730
1CC	Mechanical Dredging Flotation Channel Excavation Mile 23.7 to Mile 22.4. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	6,540	\$72.92	\$476,897
1DD	HNC Mile 22.2 to HNC Mile 22.1 (East Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN SY	9,800 4,700	\$61.46 \$9.78	\$602,308 \$45,966

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Construction Cost Alternative 1C Rock Retention -18 Mile 36.3 to 22.0 to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 1	<i>Quantities & Line Items - Puls - Aug 2015</i> <i>Costs - Ramos - Aug 2015</i>
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1EE	Mechanical Dredging Flotation Channel Excavation Mile 22.2 to Mile 22.1. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	730	\$72.92	\$53,232
Total:					\$20,862,739
	Contract Duration	DY	101		
	Notes:				
	Dredging quantity does not reflect overdepth.				

Dredging:	890,000 CY
Rock:	118,700 TON
Geotextile:	46,000 SY
Flotation Channel:	21,070 LF
Earthen Dike:	30,850 LF
Survey/Crew/Boat:	3.4 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Quantities & Line Items - Puls - Aug 2015
 Houma, Terrebonne Parish, Louisiana Costs - Ramos - Aug 2015
Construction Cost Alternative 1C Rock Retention -18
 Mile 22.0 to 11.5 to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included
 Contract No. 2

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2A	Mobilization and Demobilization	LS	1	\$825,704	\$825,704
	Dredging and Disposal (Mile 22.0 to Mile 11.5) Channel to be excavated to -20 NAVD88; 1v/2h side slope/150-foot bottom width				
2B	HNC Mile 22.0 to HNC Mile 20.0	CY	225,000	\$4.15	\$933,120
	Material to be placed unconfined within designated Wetland Site 16 west of HNC Mile 22. Material shall be discharged within the open water areas, a minimum 1,550 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).				
2C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.49	\$505,000	\$247,450
2D	HNC Mile 20.0 to HNC Mile 18.0	CY	21,000	\$25.51	\$535,718
	Material to be placed unconfined within Wetland Site 19C east of and adjacent to HNC Mile 19.5. The discharge will be positioned to the east and placed a minimum 500 ft beyond the bank rim/ridge or erosion control structure at the front of the disposal area. Elevation of material placed within the open water area(s) of Site 19C NTE +3.0' NAVD88 (See dwgs for details).				
2E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.28	\$505,000	\$141,400
2F	HNC Mile 19.2 to HNC Mile 17.5 (East Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN SY	99,500 47,900	\$61.46 \$9.78	\$6,115,270 \$468,462
2G	Mechanical Dredging Flotation Channel Excavation Mile 19.2 to Mile 17.5 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	8,120	\$72.92	\$592,110
2H	HNC Mile 19.1 to HNC Mile 17.8 (West Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN SY	18,200 8,750	\$61.46 \$9.78	\$1,118,572 \$85,575
2I	Mechanical Dredging Flotation Channel Excavation Mile 19.1 to Mile 17.8 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,790	\$72.92	\$130,527

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Construction Cost Alternative 1C Rock Retention -18 Mile 22.0 to 11.5 to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 2	<i>Quantities & Line Items - Puls - Aug 2015</i> <i>Costs - Ramos - Aug 2015</i>
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2J	HNC Mile 18.0 HNC Mile 16.0 Material to be placed unconfined within designated Wetland Site 20C west of HNC Mile 17. Material shall be discharged within the open water areas, a minimum 900 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	77,200	\$10.85	\$837,960
2K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.44	\$505,000	\$222,200
2L	HNC Mile 17.7 to HNC Mile 16.7 (West Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN	67,400	\$61.46	\$4,142,404
		SY	32,500	\$9.78	\$317,850
2M	Mechanical Dredging Flotation Channel Excavation Mile 17.7 to Mile 16.7 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	5,480	\$72.92	\$399,602
2N	HNC Mile 16.9 to HNC Mile 13.3 (East Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN	213,000	\$61.46	\$13,090,980
		SY	102,600	\$9.78	\$1,003,428
2O	Mechanical Dredging Flotation Channel Excavation Mile 16.9 to Mile 13.3 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	19,200	\$72.92	\$1,400,064
2P	HNC Mile 16.0 to HNC Mile 13.0 Material to be placed semi-confined within designated Wetland Site 21 west of HNC Mile 15. Material to be placed within the open water area(s), a minimum 600 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	153,000	\$8.86	\$1,355,213
2Q	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.71	\$505,000	\$358,550
2R	Earthen Retension Dike Refurbishment	LF	3,850	\$60.00	\$231,000
2S	HNC Mile 15.6 to HNC Mile 14.0 (West Bank) Rock Retention Structure (site 21) (Dk ht. +6' NAVD88) Geotextile	TN	94,500	\$61.46	\$5,807,970
		SY	45,500	\$9.78	\$444,990

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Construction Cost Alternative 1C Rock Retention -18 Mile 22.0 to 11.5 to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 2	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2T	Mechanical Dredging Flotation Channel Excavation Mile 15.6 to Mile 14.0 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	8,650	\$72.92	\$630,758
2U	HNC Mile 13.1 to HNC Mile 11.9 (West Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN	75,900	\$61.46	\$4,664,814
		SY	36,600	\$9.78	\$357,948
2V	Mechanical Dredging Flotation Channel Excavation Mile 13.1 to Mile 11.9 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	5,340	\$72.92	\$389,393
2W	HNC Mile 13.0 to HNC Mile 11.5 Material to be placed semi-confined within designated Wetland Site 24 west of HNC Mile 12.1. Material to be placed within the open water area(s), a minimum 900 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	95,000	\$6.82	\$648,128
2X	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700
2Y	Earthen Retension Dike Refurbishment	LF	4,100	\$60.00	\$246,000
2Z	HNC Mile 12.7 to HNC Mile 12.3 (East Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN	27,100	\$61.46	\$1,665,566
		SY	13,000	\$9.78	\$127,140
2AA	Mechanical Dredging Flotation Channel Excavation Mile 12.6 to Mile 12.3 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,790	\$72.92	\$130,527
Total:					\$49,838,092

CONTRACT DURATION

DY 68

Note:

Dredging quantity does not reflect overdepth.

Dredging: 571,200 CY

Rock: 595,600 TON

Geotextile: 286,850 SY

Flotation Channel: 50,370 LF

Earthen Dike: 7,950 LF

Feasibility Level Cost Estimate						
Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana			<i>Quantities & Line Items - Puls - Aug 2015</i> <i>Costs - Ramos - Aug 2015</i>			
Construction Cost Alternative 1C Rock Retention -18 Mile 11.5 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 3						
Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost	
3A	Mobilization and Demobilization	LS	1	\$1,030,374	\$1,030,374	
	Dredging and Disposal (Mile 11.5 to 5.0) Channel to be excavated to -21 NAVD88; 1v/3h side slope by 150' channel width					
3B	HNC Mile 11.5 to HNC Mile 10.0	CY	125,000	\$6.04	\$755,200	
	Material to be placed rock semi-confined west of channel within "lung area". 715 Acres See plans for details.					
3C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.27	\$505,000	\$136,350	
3D	Earthen Retension Dike Refurbishment	LF	12,700	\$60.00	\$762,000	
3E	Mechanical Dredging Flotation Channel Excavation Mile 11.5 to Mile 10.0 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	9,700	\$72.92	\$707,324	
3F	HNC Mile 10.0 to HNC Mile 5.0	CY	1,600,000	\$3.90	\$6,246,400	
	Material to be placed rock semi-confined west of channel within "lung area". 715 Acres See plans for details.					
3G	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.18	\$505,000	\$1,100,900	
3H	Earthen Retension Dike Refurbishment	LF	12,700	\$60.00	\$762,000	
3I	Mechanical Dredging Flotation Channel Excavation Mile 10.0 to Mile 5.0 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	9,700	\$72.92	\$707,324	
					Total	\$12,207,872
Contract Duration:		DY	74			
Notes:						
Dredging quantity does not reflect overdepth.						

Dredging: 1,725,000 CY

Rock:

Geotextile:

Flotation Channel: 19,400 LF

Earthen Dike: 25,400 LF

Survey/Crew/Boat: 2.5 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana
Construction Cost Alternative 1C Rock Retention -18
 Mile 11.5 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included
 Contract No. 3

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
4A	Mobilization and Demobilization	LS	1	\$1,030,374	\$1,030,374
	Dredging and Disposal (Mile 10.0 to 0.0) Channel to be excavated to -21 NAVD88; 1v/3h side slope by 150' channel width				
4B	HNC Mile 5.0 to HNC Mile 1.5	CY	760,000	\$9.31	\$7,072,256
	Material to be placed rock confined on northeast end of Isle Denieres (East Island) @ 3' contour for marsh creation. 370 Acres. See plans for details.				
4C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.51	\$505,000	\$762,550
4D	Earthen Retention Dike Refurbishment	LF	6,500	\$60.00	\$390,000
4E	Mechanical Dredging Flotation Channel Excavation Mile 5.0 to Mile 1.5 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	9,700	\$72.92	\$707,324
4F	HNC Mile 1.5 to HNC Mile 0.0	CY	190,000	\$11.93	\$2,266,624
	Material to be placed unconfined for beach nourishment on Isle Denieres See plans for details				
4G	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.57	\$505,000	\$287,850
4H	Rock Dike within Lung Disposal Area	TONS	225,208	\$61.46	\$13,841,284
	Geotextile	SY	108,489	\$9.78	\$1,061,022
4I	Rock Dike on bay side of East Island	TONS	125,988	\$61.46	\$7,743,222
	Geotextile	SY	60,692	\$9.78	\$593,568
				Total	\$35,756,074
	Contract Duration:	DY	62		
	Notes:				
	Dredging quantity does not reflect overdepth.				

Dredging: 950,000 CY

Rock: 351,196 TON

Geotextile: 169,181 SY

Flotation Channel: 9,700 LF

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Construction Cost Alternative 1C Rock Retention -18

Mile 11.5 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included
Contract No. 3

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
	Earthen Dike:		6,500 LF		
	Survey/Crew/Boat:		2.1 MO		

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Construction Cost Alternative 1C Rock Retention -18

Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 4 Feet of Advanced Maintenance Included
 Contract No. 4

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
5A	Mobilization and Demobilization	LS	1	\$1,308,950	\$1,308,950
	Dredging and Disposal Mile 0.0 to Mile (-3.5) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width.				
5B	Dredging and Disposal Mile 0.0 to Mile (-3.5)	CY	668,000	\$9.51	\$6,352,947
	Material to be placed unconfined for Marsh Creation on the south side of East Island (Isle Deniers) outside of rock confinement. (See plans for details). Material Quantity does not reflect overdepth.				
5C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.44	\$645,000	\$928,800
Total:					\$8,590,697
	Contract Duration:	DY	43		
	Note:				
	Dredging quantity does not reflect overdepth.				

Dredging: 668,000 CY

Survey/Crew/Boat: 1.4 MO

Reach	18 foot depth		Duration (months)	Mob/Demob (Per Reach)	Crew/Equipment Costs
	Unit Cost	CY			
Mob/Demob (36.3 to 22.0)	\$939,307				\$505,000
36.3 to 34.0	\$6.09	170,000	0.53	\$327,961	\$505,000
34.0 to 32.0	\$14.35	77,500	0.58	\$434,307	\$505,000
32.0 to 29.5	\$7.22	95,500	0.36	\$434,307	\$505,000
29.5 to 28.0	\$8.79	88,000	0.39	\$327,961	\$505,000
28.0 to 26.0	\$8.24	117,000	0.49	\$327,961	\$505,000
26.0 to 24.0	\$6.22	171,000	0.54	\$327,961	\$505,000
24.0 to 22.0	\$5.27	171,000	0.46	\$327,961	\$505,000
		\$6,541,075			
Mob/Demob (22.0 to 11.0)	\$825,704				\$505,000
22.0 to 20.0	\$4.15	225,000	0.49	\$320,704	\$505,000
20.0 to 18.0	\$25.51	21,000	0.28	\$320,704	\$505,000
18.0 to 16.0	\$10.85	77,200	0.44	\$320,704	\$505,000
16.0 to 13.0	\$8.86	153,000	0.71	\$320,704	\$505,000
13.0 to 11.5	\$6.82	95,000	0.34	\$320,704	\$505,000
		\$4,310,139			
Mob/Demob (0.0 to 11.0)	\$1,030,374				\$505,000
11.5 to 10.0	\$6.04	125,000	0.27	\$372,299	\$505,000
10.0 to 5.0	\$3.90	1,600,000	2.18	\$372,299	\$505,000
5.0 to 1.5	\$9.31	760,000	1.51	\$525,374	\$505,000
1.5 to 0.0	\$11.93	190,000	0.57	\$526,109	\$505,000
		\$16,340,480			
Mob/Demob (0.0 to -3.5)	\$1,308,950				645,000
0.0 to -3.5	\$9.51	668,000	1.44	663,950	645,000
		\$6,352,947			

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Maintenance Cost Rock Retention -18ft MLG

Costs for 10-Year Cycle to be Repeated 5 Times Over 50 Years

Multiple Disposal Sites

Mile 36.3 to Mile (-3.5) to -18 Foot Elevation w/ Advanced Maintenance Included
 Summary Page

Contract No.	Description	Cycle Frequency (Years)	Units	Quantity	Estimated Unit Price Per Cycle	Estimated Cycle Cost	Estimated Total Cost (50-Year)
1*	Mobilization/Demobilization	10	LS	1		\$871,046	\$4,355,230
	Mile 36.3 to Mile 34.0	10	CY	101,600	\$7.23	\$734,254	\$3,671,268
	Mile 24.0 to Mile 22.0	10	CY	101,600	\$10.94	\$1,111,300	\$5,556,500
	Mile 22.0 to Mile 20.0	10	CY	101,600	\$8.32	\$845,221	\$4,226,103
	Mobilization/Demobilization	2	LS	1		\$1,031,109	\$25,777,725
	Mile 11.0 to Mile 0.0	2	CY	1,383,300	\$9.67	\$13,381,624	\$334,540,608
2	Mobilization/Demobilization	2	LS	1		\$1,308,950	\$32,723,750
	Mile 0.0 to Mile (-3.5)	2	CY	500,000	\$22.24	\$11,121,400	\$278,035,000
3	Mobilization/Demobilization	2	LS	1		\$1,031,109	
	Mile 11.0 to Mile 0.0	2	CY	1,383,300	\$9.67	\$13,381,624	
4	Mobilization/Demobilization	2	LS	1		\$1,308,950	
	Mile 0.0 to Mile (-3.5)	2	CY	500,000	\$22.24	\$11,121,400	
5	Mobilization/Demobilization	2	LS	1		\$1,031,109	
	Mile 11.0 to Mile 0.0	2	CY	1,383,300	\$9.67	\$13,381,624	
6	Mobilization/Demobilization	10	LS	1		\$939,307	\$4,696,535
	Mile 36.3 to Mile 34.0	10	CY	101,600	\$7.36	\$747,687	\$3,738,437
	Mile 34.0 to Mile 32.0	10	CY	203,600	\$7.40	\$1,506,469	\$7,532,343
	Mile 32.0 to Mile 29.5	10	CY	153,700	\$10.07	\$1,548,466	\$7,742,331
	Mile 29.5 to Mile 28.0	10	CY	153,700	\$5.60	\$860,476	\$4,302,382
	Mile 28.0 to Mile 26.0	10	CY	203,600	\$10.65	\$2,167,912	\$10,839,561
	Mile 26.0 to Mile 24.0	10	CY	203,600	\$17.72	\$3,606,829	\$18,034,143
	Mile 24.0 to Mile 22.0	10	CY	101,600	\$24.49	\$2,488,347	\$12,441,736
	Mile 22.0 to Mile 20.0	10	CY	101,600	\$9.44	\$958,927	\$4,794,636
	Mobilization/Demobilization	2	LS	1	\$1,308,950	\$1,308,950	
Mile 0.0 to Mile (-3.5)	2	CY	500,000	\$22.24	\$11,121,400		
7	Mobilization/Demobilization	10	LS	1		\$939,307	\$4,696,535
	Mile 20.0 to Mile 18.0	10	CY	203,600	\$14.89	\$3,030,630	\$15,153,149
	Mile 18.0 to Mile 16.0	10	CY	203,600	\$29.90	\$6,088,383	\$30,441,913
	Mile 16.0 to Mile 13.0	10	CY	307,300	\$14.75	\$4,533,250	\$22,666,249
	Mile 13.0 to Mile 11.0	10	CY	236,000	\$6.71	\$1,582,869	\$7,914,345
	Mobilization/Demobilization	2	LS	1		\$1,031,109	
8	Mile 11.0 to Mile 0.0	2	CY	1,383,300	\$9.67	\$13,381,624	
	Mobilization/Demobilization	2	LS	1		\$1,308,950	
9	Mile 0.0 to Mile (-3.5)	2	CY	500,000	\$22.24	\$11,121,400	
	Mobilization/Demobilization	2	LS	1		\$1,031,109	
10	Mile 11.0 to Mile 0.0	2	CY	1,383,300	\$9.67	\$13,381,624	
	Mobilization/Demobilization	2	LS	1		\$1,308,950	
	Mile 0.0 to Mile (-3.5)	2	CY	500,000	\$22.24	\$11,121,400	
Total:				11,894,800	\$14.19	\$168,776,096	\$843,880,480

Note: Unit costs reflected on summary sheet include all disposal area dike refurbishment within each specified reach, if necessary
 * Three reaches specified in Contract 1 require a maintenance cycle every 5 years. 5 years after maintenance Contract 1 reaches at 36.3, 24.0, and 22.0 will undergo maintenance under Contract 6 (10-Year cycle). 5 Years after maintenance Contract 6 those reaches will be maintained under a new 5-year cycle (Contract 11). Following this sequence, contract 6 will be required four additional times over the 50 year project life after Contract 6 is completed.

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -18ft MLG Mile 36.3 to 34.0 & Mile 24 to 20.0 & Mile 22.0 to 20.0 & Mile 11.0 to 0.0 to -18 Foot Elevation w/ 2 and 3 Feet of Advanced Maintenance Included Contract No. 1	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1A	Mobilization and Demobilization Dredging and Disposal (Mile 36.3 to Mile 20.0) Channel to be excavated to -20 NAVD88; 1v/2h side slope/150-foot bottom width	LS	1	\$871,046	\$871,046
1B	HNC Mile 36.3 to HNC Mile 34.0 Material to be placed within confined upland Site 1 (Port Commission site) opposite Short Cut Canal. No height restriction. Dike construction/maintenance not required.	CY	101,600	\$5.39	\$547,502
1C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.29	\$505,000	\$146,450
1B	HNC Mile 36.3 to HNC Mile 34.0 Material to be placed within confined upland Site 3 opposite HNC Mile 35.5 No height restriction. Dike construction/maintenance not required.	CY	101,600	\$5.90	\$599,521
1C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.32	\$505,000	\$161,600
1D	HNC Mile 24.0 to HNC Mile 22.0 Material to be placed semi-confined within designated Wetland Site 15 west of HNC Mile 23.5. Material to be placed within the open water area(s), a minimum 1,270 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	101,600	\$8.00	\$812,800
1E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
1F	Earthen Retention Dike Refurbishment	LF	2,450	\$60.00	\$147,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Quantities & Line Items - Puls - Aug 2015
 Houma, Terrebonne Parish, Louisiana Costs - Ramos - Aug 2015
Maintenance Cost Rock Retention -18ft MLG
 Mile 36.3 to 34.0 & Mile 24 to 20.0 & Mile 22.0 to 20.0 & Mile 11.0 to 0.0 to -18 Foot Elevation
 w/ 2 and 3 Feet of Advanced Maintenance Included **Multiple Disposal Sites**
 Contract No. 1 **Channel Maintenance - 10 year frequency**

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1G	HNC Mile 22.0 to HNC Mile 20.0 Material to be placed unconfined within Wetland Site 16 opposite and adjacent to HNC Mile 21.4 along the west bank of the HNC WW. The discharge will be positioned to the west and placed a minimum 1,550 ft beyond the bank rim or erosion control structure at the front of the disposal area. Elevation of material placed within the open water area(s) NTE +3.0' NAVD 88 (See dwgs for details).	CY	101,600	\$5.71	\$580,014
1H	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
1G	HNC Mile 22.0 to HNC Mile 20.0 Material to be placed semi-confined within Wetland Site 15A between HNC Mile 23.0 and 22.5 along the west bank of the HNC WW. The initial buildup of mtl. shall begin in the north east corner, and to proceed outward in a west-southwesterly direction. Earthen closures will be required along the west side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	101,600	\$7.92	\$804,997
1H	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.41	\$505,000	\$207,050
1I	Earthen Retention Dike Refurbishment	LF	4,800	\$60.00	\$288,000
1J	Mobilization and Demobilization Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width	LS	1	\$1,031,109	\$1,031,109
1K	HNC Mile 11.0 to HNC Mile 5.0 Material to be placed rock semi-confined west of channel within "lung area". 715 Acres See plans for details.	CY	738,600	\$4.75	\$3,507,464
1L	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.09	\$505,000	\$550,450

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -18ft MLG Mile 36.3 to 34.0 & Mile 24 to 20.0 & Mile 22.0 to 20.0 & Mile 11.0 to 0.0 to -18 Foot Elevation w/ 2 and 3 Feet of Advanced Maintenance Included Contract No. 1	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1M	Earthen Retention Dike Refurbishment	LF	12,700	\$60.00	\$762,000
1N	Mechanical Dredging Flotation Channel Excavation Mile 11.0 to Mile 5.0. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	6,540	\$72.92	\$476,897
1O	HNC Mile 5.0 to HNC Mile 1.5 Material to be placed rock confined on northeast end of Isle Denieres (East Island) for marsh creation. 370 Acres. See plans for details.	CY	451,300	\$5.49	\$2,478,179
1P	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.64	\$505,000	\$323,200
1Q	Earthen Retention Dike Refurbishment	LF	6,500	\$60.00	\$390,000
1R	Mechanical Dredging Flotation Channel Excavation Mile 5.0 to Mile 1.5. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	6,540	\$72.92	\$476,897
1S	HNC Mile 1.5 to HNC Mile 0.0 Material to be placed unconfined for beach nourishment on Isle Deniers See Plans for details	CY	193,400	\$5.43	\$1,049,620
1T	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.27	\$505,000	\$136,350
1U	Rock Containment Dike for Lung Disposal Area Geotextile	TONS SY	22,313 10,749	\$60.00 \$6.00	\$1,338,780 \$64,494
1V	Rock Containment Dike Refurbishment (Lung)	TONS	12,099	\$60.00	\$725,940

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -18ft MLG Mile 36.3 to 34.0 & Mile 24 to 20.0 & Mile 22.0 to 20.0 & Mile 11.0 to 0.0 to -18 Foot Elevation w/ 2 and 3 Feet of Advanced Maintenance Included Contract No. 1	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1W	Rock Containment Dike for East Island Disposal Area	TONS	11,622	\$60.00	\$697,320
	Geotextile	SY	5,599	\$6.00	\$33,594
1X	Rock Containment Dike Refurbishment (East Island)	TONS	6,174	\$60.00	\$370,440
Total:					\$18,021,248

Contract Duration	DY	91	
Notes:			
Channel Quantities do not reflect overdepth.			

Dredging:	1,688,100 CY
Rock:	52,208 TON
Geotextile:	16,348 SY
Floation Channel:	13,080 LF
Earthen Dike:	26,450 LF
Survey/Crew/Boat:	3.0 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Maintenance Cost Rock Retention -18ft MLG

Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 4 Feet of Advanced Maintenance Included
 Contract No. 2

Channel Maintenance - 2 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2A	Mobilization and Demobilization	LS	1	\$1,308,950	\$1,308,950
	Dredging and Disposal Mile 0.0 to Mile (-3.5) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width				
2B	Dredging and Disposal Mile 0.0 to Mile (-3.5)	CY	500,000	\$19.40	\$9,702,400
	Material to be placed unconfined for Marsh Creation on the South side of East Island (Isle Deniers) within the surf zone (See plans for details). Material Quantity does not reflect overdepth.				
2C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.20	\$645,000	\$1,419,000
					Total: \$12,430,350
	Contract Duration	DY	66		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging: 500,000 CY

Survey/Crew/Boat: 2.2 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -18ft MLG Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 3	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
3A	Mobilization and Demobilization Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width	LS	1	\$1,031,109	\$1,031,109
3B	HNC Mile 11.0 to HNC Mile 5.0 Material to be placed rock semi-confined west of channel within "lung area". 715 Acres See plans for details.	CY	738,600	\$4.75	\$3,507,464
3C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.09	\$505,000	\$550,450
3D	Earthen Retention Dike Refurbishment	LF	12,700	\$60.00	\$762,000
3E	Mechanical Dredging Flotation Channel Excavation Mile 11.0 to Mile 5.0. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	6,540	\$72.92	\$476,897
3F	HNC Mile 5.0 to HNC Mile 1.5 Material to be placed rock confined on northeast end of Isle Denieres (East Island) for marsh creation. 370 Acres. See plans for details.	CY	451,300	\$5.49	\$2,478,179
3G	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.64	\$505,000	\$323,200
3H	Earthen Retention Dike Refurbishment	LF	6,500	\$60.00	\$390,000
3I	Mechanical Dredging Flotation Channel Excavation Mile 5.0 to Mile 1.5. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	6,540	\$72.92	\$476,897
3J	HNC Mile 1.5 to HNC Mile 0.0 Material to be placed unconfined for beach nourishment on Isle Deniers See Plans for details	CY	193,400	\$5.43	\$1,049,620
3K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.27	\$505,000	\$136,350
3L	Rock Containment Dike for Lung Disposal Area Geotextile	TONS SY	22,313 10,749	\$60.00 \$6.00	\$1,338,780 \$64,494
3M	Rock Containment Dike Refurbishment (Lung)	TONS	12,099	\$60.00	\$725,940

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -18ft MLG Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 3		Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency			
Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
3N	Rock Containment Dike for East Island Disposal Area	TONS	11,622	\$60.00	\$697,320
	Geotextile	SY	5,599	\$6.00	\$33,594
3O	Rock Containment Dike Refurbishment (East Island)	TONS	6,174	\$60.00	\$370,440
					Total: \$14,412,733
CONTRACT DURATION		DY	60		
Note:					
Channel Quantities do not reflect overdepth.					

Dredging: 1,383,300 CY

Rock: 52,208 TON

Geotextile: 16,348 SY

Flotation Channel: 13,080 LF

Earthen Dike: 19,200 LF

Survey/Crew/Boat: 2.0 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -18ft MLG Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 4 Feet of Advanced Maintenance Included Contract No. 4	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
4A	Mobilization and Demobilization	LS	1	\$1,308,950	\$1,308,950
	Dredging and Disposal Mile 0.0 to Mile (-3.5) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width				
4B	Dredging and Disposal Mile 0.0 to Mile (-3.5)	CY	500,000	\$19.40	\$9,702,400
	Material to be placed unconfined for Marsh Creation on the South side of East Island (Isle Deniers) within the surf zone (See plans for details). Material Quantity does not reflect overdepth.				
4C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.20	\$645,000	\$1,419,000
					Total: \$12,430,350
	Contract Duration	DY	66		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging: 500,000 CY

Survey/Crew/Boat: 2.2 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -18ft MLG Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 5	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
5A	Mobilization and Demobilization Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width	LS	1	\$1,031,109	\$1,031,109
5B	HNC Mile 11.0 to HNC Mile 5.0 Material to be placed rock semi-confined west of channel within "lung area". 715 Acres See plans for details.	CY	738,600	\$4.75	\$3,507,464
5C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.09	\$505,000	\$550,450
5D	Earthen Retention Dike Refurbishment	LF	12,700	\$60.00	\$762,000
5E	Mechanical Dredging Flotation Channel Excavation Mile 11.0 to Mile 5.0. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	6,540	\$72.92	\$476,897
5F	HNC Mile 5.0 to HNC Mile 1.5 Material to be placed rock confined on northeast end of Isle Denieres (East Island) for marsh creation. 370 Acres. See plans for details.	CY	451,300	\$5.49	\$2,478,179
5G	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.64	\$505,000	\$323,200
5H	Earthen Retention Dike Refurbishment	LF	6,500	\$60.00	\$390,000
5I	Mechanical Dredging Flotation Channel Excavation Mile 5.0 to Mile 1.5. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	6,540	\$72.92	\$476,897
5J	HNC Mile 1.5 to HNC Mile 0.0 Material to be placed unconfined for beach nourishment on Isle Deniers See Plans for details	CY	193,400	\$5.43	\$1,049,620
5K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.27	\$505,000	\$136,350
5L	Rock Containment Dike for Lung Disposal Area Geotextile	TONS SY	22,313 10,749	\$60.00 \$6.00	\$1,338,780 \$64,494
5M	Rock Containment Dike Refurbishment (Lung)	TONS	12,099	\$60.00	\$725,940

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -18ft MLG Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 5	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
5N	Rock Containment Dike for East Island Disposal Area	TONS	11,622	\$60.00	\$697,320
	Geotextile	SY	5,599	\$6.00	\$33,594
5O	Rock Containment Dike Refurbishment (East Island)	TONS	6,174	\$60.00	\$370,440
Total:					\$14,412,733

CONTRACT DURATION	DY	60
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Note:

Channel Quantities do not reflect overdepth.

Dredging: 1,383,300 CY

Rock: 52,208 TON

Geotextile: 16,348 SY

Flotation Channel: 13,080 LF

Earthen Dike: 19,200 LF

Survey/Crew/Boat: 2.0 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -18ft MLG Mile 36.3 to 20.0 & Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 6	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2, 5, and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6A	Mobilization and Demobilization Dredging and Disposal (Mile 36.3 to Mile 20.0) Channel to be excavated to -20 NAVD88; 1v/2h side slope/150-foot bottom width	LS	1	\$939,307	\$939,307
6B	HNC Mile 36.3 to HNC Mile 34.0 Material to be placed within confined upland Site 1 (Port Commission site) opposite Short Cut Canal. No height restriction. Dike construction/maintenance not required.	CY	101,600	\$5.39	\$547,502
6C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.29	\$505,000	\$146,450
6B	HNC Mile 36.3 to HNC Mile 34.0 Material to be placed within confined upland Site 3 opposite HNC Mile 35.5 No height restriction. Dike construction/maintenance not required.	CY	101,600.00	\$5.90	\$599,521
6C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.32	\$505,000	\$161,600
6D	NHC Mile 34.0 to HNC Mile 32.0 Material to be placed semi-confined within designated Wetland Site 7E opposite HNC Mile 31. Material to be placed within the open water area(s), a minimum 12,500 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	203,600	\$4.25	\$865,219
6E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.45	\$505,000	\$227,250
6F	Earthen Retention Dike Refurbishment	LF	6,900	\$60.00	\$414,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -18ft MLG Mile 36.3 to 20.0 & Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 6	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2, 5, and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6G	HNC Mile 32.0 to HNC Mile 29.5 Material to be placed semi-confined within designated Wetland Site 7E opposite HNC Mile 31. Material to be placed within the open water area(s), a minimum 12,500 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	153,700	\$5.84	\$897,116
6H	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.47	\$505,000	\$237,350
6I	Earthen Retention Dike Refurbishment	LF	6,900	\$60.00	\$414,000
6J	HNC Mile 29.5 to HNC Mile 28.0 Material to be placed unconfined within designated Wetland Site 12B opposite approximate HNC Mile 27.0. Mtl. shall be discharged within the open water areas, a minimum 4,500feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	153,700	\$4.17	\$641,359
6K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.32	\$505,000	\$161,600
6L	Earthen Retention Dike Refurbishment	LF	1,600	\$60.00	\$96,000
6J	HNC Mile 29.5 to HNC Mile 28.0 Material to be placed unconfined within designated Wetland Site 12 opposite approximate HNC Mile 27.0. Mtl. shall be discharged within the open water areas, a minimum 1,950 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	153,700	\$3.78	\$580,371
6K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.29	\$505,000	\$146,450
6L	Earthen Retention Dike Refurbishment	LF	1,800	\$60.00	\$108,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -18ft MLG Mile 36.3 to 20.0 & Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 6	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2, 5, and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6M	HNC Mile 28.0 to HNC Mile 26.0 Material to be placed unconfined within designated Wetland Site A-07-A opposite approximate HNC Mile 26.5. Mtl. shall be discharged within the open water areas, a minimum 5,700 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	203,600	\$3.37	\$685,399
6N	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.36	\$505,000	\$181,800
6O	Earthen Retention Dike Refurbishment	LF	9,300	\$60.00	\$558,000
6P	HNC Mile 27.6 to HNC Mile 27.4 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	1,900	\$61.46	\$116,774
6Q	Mechanical Dredging Flotation Channel Excavation Mile 27.6 to Mile 27.4. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,260	\$72.92	\$91,879
6R	HNC Mile 26.4 to HNC Mile 25.9 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	5,320	\$61.46	\$326,967
6S	Mechanical Dredging Flotation Channel Excavation Mile 26.4 to Mile 25.9 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	2,840	\$72.92	\$207,093
6T	HNC Mile 26.0 to HNC Mile 24.0 Material to be placed unconfined within designated Wetland Site A-07-A opposite approximate HNC Mile 26.5. Mtl. shall be discharged within the open water areas, a minimum 5,700 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	203,600	\$3.92	\$797,460
6U	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.40	\$505,000	\$202,000
6V	Earthen Retention Dike Refurbishment	LF	13,000	\$60.00	\$780,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -18ft MLG Mile 36.3 to 20.0 & Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 6	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2, 5, and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6T	HNC Mile 26.0 to HNC Mile 24.0 Material to be placed unconfined within designated Wetland Site 14A opposite approximate HNC Mile 27. Mtl. shall be discharged within the open water areas, a minimum 3,360 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	203,600	\$3.62	\$737,521
6U	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.37	\$505,000	\$186,850
6V	Earthen Retention Dike Refurbishment	LF	9,000	\$60.00	\$540,000
6W	HNC Mile 25.9 to HNC Mile 24.1 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	21,300	\$61.46	\$1,309,098
6X	Mechanical Dredging Flotation Channel Excavation Mile 25.9 to Mile 24.1 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	9,700	\$72.92	\$707,324
6Y	HNC Mile 24.0 to HNC Mile 22.0 Material to be placed semi-confined within Wetland Site 15A between HNC Mile 24.0 and 22.9 west of Site 15 'beyond the west bank of the HNC WW. The initial buildup of mtl. shall begin in the south east corner, and to proceed outward in a westerly direction. Earthen closures will be required along the east side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	101,600	\$8.00	\$812,800
6Z	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
6AA	Earthen Retention Dike Refurbishment	LF	2,450	\$60.00	\$147,000
6BB	HNC Mile 23.7 to HNC Mile 22.4 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	11,820	\$61.46	\$726,457

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -18ft MLG Mile 36.3 to 20.0 & Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 6	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2, 5, and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6CC	Mechanical Dredging Flotation Channel Excavation Mile 23.7 to Mile 22.4. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	6,540	\$72.92	\$476,897
6DD	HNC Mile 22.2 to HNC Mile 22.1 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	1,960	\$61.46	\$120,462
6EE	Mechanical Dredging Flotation Channel Excavation Mile 22.2 to Mile 22.1. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	730	\$72.92	\$53,232
6FF	HNC Mile 22.0 to HNC Mile 20.0 Material to be placed unconfined within Wetland Site 16 opposite and adjacent to HNC Mile 21.4 along the west bank of the HNC WW. The discharge will be positioned to the west and placed a minimum 1,550 ft from the channel center line to placement at the front of the disposal area. Elevation of material placed within the open water area(s) NTE +3.0' NAVD 88 (See dwgs for details).	CY	101,600	\$5.71	\$580,014
6GG	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
6FF	HNC Mile 22.0 to HNC Mile 20.0 Material to be placed semi-confined within Wetland Site 15 between HNC Mile 23.0 and 22.5 along the west bank of the HNC WW. The initial buildup of mtl. shall begin in the north east corner, and to proceed outward in a west-southwesterly direction. Earthen closures will be required along the west side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	101,600	\$7.92	\$804,997
6GG	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.41	\$505,000	\$207,050
6HH	Earthen Retention Dike Re-fubishment	LF	4,800	\$60.00	\$288,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -18ft MLG Mile 36.3 to 20.0 & Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 6	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2, 5, and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6II	Mobilization and Demobilization	LS	1	\$1,308,950	\$1,308,950
	Dredging and Disposal Mile 0.0 to Mile (-3.5) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width				
6JJ	Dredging and Disposal Mile 0.0 to Mile (-3.5)	CY	500,000	\$19.40	\$9,702,400
	Material to be placed unconfined for Marsh Creation on the South side of East Island (Isle Deniers) within the surf zone (See plans for details). Material Quantity does not reflect overdepth.				
6KK	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.20	\$645,000	\$1,419,000
					Total: \$27,608,861
	Contract Duration	DY	157		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging:	1,723,000 CY
Rock:	42,300 TON
Flotation Channel:	21,070 LF
Earthen Dike:	55,750 LF
Survey/Crew/Boat:	5.2 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -18ft MLG Mile 20.0 to 11.0 & Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 7	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2 and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7A	Mobilization and Demobilization Dredging and Disposal (Mile 20.0 to Mile 11.0) Channel to be excavated to -20 NAVD88; 1v/2h side slope/150-foot bottom width	LS	1	\$939,307	\$939,307
7B	HNC Mile 20.0 to HNC Mile 18.0 Material to be placed unconfined within Wetland Site 19C oppsite and adjacent to HNC Mile 19.3 along the east bank of the HNC WW. The discharge will be positioned to the east and placed a minimum 500-ft beyond the bank rim/ridge or erosion control structure at the front of the disposal area. Elevation of material placed within the open water area(s) of Site 19C NTE +3.0' NAVD88 (See dwgs for details).	CY	203,600	\$3.10	\$630,671
7C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.33	\$505,000	\$166,650
7B	HNC Mile 20.0 to HNC Mile 18.0 Material to be placed semi-confined within the open water portions of Wetland Site 19D between HNC Mile 20.2 and 19.6, located beyond the west bank of the HNC WW. The initial buildup of mtl. shall begin in the north east corner, and to proceed outward in a westerly direction a minimum distance of 2,350 ft from the center line of the channel. Earthen closures will be required along the south side of the disposal area adjacent to the open water A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors at the northeast and south east portions of the disposal site. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	203,600	\$3.21	\$654,126
7C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700
7D	Earthen Retention Dike Re-fubishment	LF	1,300	\$60.00	\$78,000
7E	HNC Mile 19.2 to HNC Mile 17.5 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	19,900	\$61.46	\$1,223,054
7F	Mechanical Dredging Flotation Channel Excavation Mile 19.2 to Mile 17.5 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	8,120	\$72.92	\$592,110

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -18ft MLG Mile 20.0 to 11.0 & Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 7	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2 and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7G	HNC Mile 19.1 to HNC Mile 17.8 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	3,640	\$61.46	\$223,714
7H	Mechanical Dredging Flotation Channel Excavation Mile 19.1 to Mile 17.8 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,790	\$72.92	\$130,527
7I	HNC Mile 18.0 HNC Mile 16.0 Material to be placed unconfined within Wetland Site 20C opposite HNC Mile 16.8 along the west bank of the HNC WW. A construction access corridor, 200 feet in width, will be provided for the Contractors use at the intersection of Four Pt. Bayou with the HNC WW. The initial buildup shall occur in the east corner of the DA and to proceed outward in a westerly direction. Elevation of Mtl. NTE +3.0' NAVD88 (See dwgs for details).	CY	203,600	\$3.10	\$630,671
7J	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.33	\$505,000	\$166,650
7I	HNC Mile 18.0 HNC Mile 16.0 Material to be placed within Wetland Site 21 opposite HNC Mile 15.0. To prevent material runback, the discharge pipe will be positioned to the SW and placed approximately 600 feet west of HNC Mile 15.0. The material will be placed in a west south-westerly direction within the open water areas or tributaries along the back side of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs f/details).	CY	203,600	\$3.51	\$714,066
7J	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.37	\$505,000	\$186,850
7K	Earthen Retention Dike Re-furbishment	LF	2,000	\$60.00	\$120,000
7L	HNC Mile 17.7 to HNC Mile 16.7 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	13,480	\$61.46	\$828,481
7M	Mechanical Dredging Flotation Channel Excavation Mile 17.7 to Mile 16.7 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	5,480	\$72.92	\$399,602

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -18ft MLG Mile 20.0 to 11.0 & Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 7	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2 and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7N	HNC Mile 16.9 to HNC Mile 13.3 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	42,600	\$61.46	\$2,618,196
7O	Mechanical Dredging Flotation Channel Excavation Mile 16.9 to Mile 13.3 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	19,200	\$72.92	\$1,400,064
7P	HNC Mile 16.0 to HNC Mile 13.0 Material to be placed within Wetland Site 21 opposite HNC Mile 15.0. To prevent material runback, the discharge pipe will be positioned to the SW and placed approximately 600 -feet west of HNC Mile 15.0. The material will be placed in a west south-westerly direction within the open water areas or tributaries along the back side of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs f/details).	CY	307,300	\$3.06	\$940,092
7Q	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.49	\$505,000	\$247,450
7R	Earthen Retention Dike Re-fubishment	LF	3,850	\$60.00	\$231,000
7S	HNC Mile 15.6 to HNC Mile 14.0 (West Bank) Rock Retention Structure Refurbishment (Dk ht. +6' NAVD88) Stone quantity 20% of construction quantity	TN	18,900	\$61.46	\$1,161,594
7T	Mechanical Dredging Flotation Channel Excavation Mile 15.6 to Mile 14.0 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	8,650	\$72.92	\$630,758
7U	HNC Mile 13.2 to HNC Mile 11.9 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +6' NAVD88) Stone quantity 20% of construction quantity	TN	15,180	\$61.46	\$932,963
7V	Mechanical Dredging Flotation Channel Excavation Mile 13.1 to Mile 11.9 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	5,340	\$72.92	\$389,393

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -18ft MLG Mile 20.0 to 11.0 & Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 7	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2 and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7W	HNC Mile 13.0 to HNC Mile 11.0 Material to be placed within Wetland Site 24 opposite HNC Mile 12.0 along the west bank of the HNC WW. A construction access corrdior, 200 ft in width, will be provided for the Contractors use at the entrance of the WW. The initial buildup will occur in the east corner of the DA and proceed outward in a west, south-westerly direction. Elevation of material placed within the open water area(s) NTE +3.0' NAVD88 (See dwgs for details).	CY	236,000	\$2.75	\$649,472
7X	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700
7Y	Earthen Retention Dike Re-fubishment	LF	4,100	\$60.00	\$246,000
7W	HNC Mile 13.0 to HNC Mile 11.0 Material to be placed within Wetland Site 21 opposite HNC Mile 15.0. To prevent material runback, the discharge pipe will be postioned to the SW and placed approximately 600 feet west of HNC Mile 15.0. The material will be placed in a west south-westerly direction within the open water areas or tributaries along the back side of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs f/details).	CY	236,000	\$3.10	\$731,034
7X	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.38	\$505,000	\$191,900
7Y	Earthen Retention Dike Re-fubishment	LF	3,850	\$60.00	\$231,000
7Z	HNC Mile 12.7 to HNC Mile 12.3 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	5,420	\$61.46	\$333,113
7AA	Mechanical Dredging Flotation Channel Excavation Mile 12.6 to Mile 12.3 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,790	\$72.92	\$130,527
7BB	Mobilization and Demobilization Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width	LS	1	\$1,031,109	\$1,031,109

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -18ft MLG Mile 20.0 to 11.0 & Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 7	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2 and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7CC	HNC Mile 11.0 to HNC Mile 5.0 Material to be placed rock semi-confined west of channel within "lung area". 715 Acres See plans for details.	CY	738,600	\$4.75	\$3,507,464
7DD	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.09	\$505,000	\$550,450
7EE	Earthen Retention Dike Re-fubishment	LF	12,700	\$60.00	\$762,000
7FF	Mechanical Dredging Flotation Channel Excavation Mile 11.0 to Mile 5.0. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	6,540	\$72.92	\$476,897
7GG	HNC Mile 5.0 to HNC Mile 1.5 Material to be placed rock confined on northeast end of Isle Denieres (East Island) for marsh creation. 370 Acres. See plans for details.	CY	451,300	\$5.49	\$2,478,179
7HH	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.64	\$505,000	\$323,200
7II	Earthen Retention Dike Re-fubishment	LF	6,500	\$60.00	\$390,000
7JJ	Mechanical Dredging Flotation Channel Excavation Mile 5.0 to Mile 1.5. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	6,540	\$72.92	\$476,897
7KK	HNC Mile 1.5 to HNC Mile 0.0 Material to be placed unconfined for beach nourishment on Isle Deniers See Plans for details	CY	193,400	\$5.43	\$1,049,620
7LL	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.27	\$505,000	\$136,350
7MM	Rock Containment Dike for Lung Disposal Area Geotextile	TONS SY	22,313 10,749	\$60.00 \$6.00	\$1,338,780 \$64,494
7NN	Rock Containment Dike Refurbishment (Lung)	TONS	12,099	\$60.00	\$725,940

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Maintenance Cost Rock Retention -18ft MLG**Multiple Disposal Sites**

Mile 20.0 to 11.0 & Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included

Contract No. 7

Channel Maintenance - 2 and 10 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
700	Rock Containment Dike for East Island Disposal Area	TONS	11,622	\$60.00	\$697,320
	Geotextile	SY	5,599	\$6.00	\$33,594
7PP	Rock Containment Dike Refurbishment (East Island)	TONS	6,174	\$60.00	\$370,440
Total:					\$30,765,354
CONTRACT DURATION		DY	107		
Note:					
Channel Quantities do not reflect overdepth.					

Dredging: 2,333,800 CY

Rock: 171,328 TON

Geotextile: 16,348 SY

Flotation Channel: 63,450 LF

Earthen Dike: 34,300 LF

Survey/Crew/Boat: 3.6 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -18ft MLG Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 4 Feet of Advanced Maintenance Included Contract No. 8	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
8A	Mobilization and Demobilization	LS	1	\$1,308,950	\$1,308,950
	Dredging and Disposal Mile 0.0 to Mile (-3.5) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width				
8B	Dredging and Disposal Mile 0.0 to Mile (-3.5)	CY	500,000	\$19.40	\$9,702,400
	Material to be placed unconfined for Marsh Creation on the South side of East Island (Isle Deniers) within the surf zone (See plans for details). Material Quantity does not reflect overdepth.				
8C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.2	\$645,000	\$1,419,000
					Total: \$12,430,350
	Contract Duration	DY	66		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging: 500,000 CY

Survey/Crew/Boat: 2.2 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -18ft MLG Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 9	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
9A	Mobilization and Demobilization Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width	LS	1	\$1,031,109	\$1,031,109
9B	HNC Mile 11.0 to HNC Mile 5.0 Material to be placed rock semi-confined west of channel within "lung area". 715 Acres See plans for details.	CY	738,600	\$4.75	\$3,507,464
9C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.09	\$505,000	\$550,450
9D	Earthen Retention Dike Re-fubishment	LF	12,700	\$60.00	\$762,000
9E	Mechanical Dredging Flotation Channel Excavation Mile 11.0 to Mile 5.0. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	6,540	\$72.92	\$476,897
9F	HNC Mile 5.0 to HNC Mile 1.5 Material to be placed rock confined on northeast end of Isle Denieres (East Island) for marsh creation. 370 Acres. See plans for details.	CY	451,300	\$5.49	\$2,478,179
9G	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.64	\$505,000	\$323,200
9H	Earthen Retention Dike Re-fubishment	LF	6,500	\$60.00	\$390,000
9I	Mechanical Dredging Flotation Channel Excavation Mile 5.0 to Mile 1.5. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	6,540	\$72.92	\$476,897
9J	HNC Mile 1.5 to HNC Mile 0.0 Material to be placed unconfined for beach nourishment on Isle Deniers See Plans for details	CY	193,400	\$5.43	\$1,049,620
9K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.27	\$505,000	\$136,350
9L	Rock Containment Dike for Lung Disposal Area Geotextile	TONS SY	22,313 10,749	\$60.00 \$6.00	\$1,338,780 \$64,494
9M	Rock Containment Dike Refurbishment (Lung)	TONS	12,099	\$60.00	\$725,940

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -18ft MLG Mile 11.0 to 0.0 to -18 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 9	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
9N	Rock Containment Dike for East Island Disposal Area	TONS	11,622	\$60.00	\$697,320
	Geotextile	SY	5,599	\$6.00	\$33,594
9O	Rock Containment Dike Refurbishment (East Island)	TONS	6,174	\$60.00	\$370,440
Total:					\$14,412,733

CONTRACT DURATION	DY	60
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Note:

Channel Quantities do not reflect overdepth.

Dredging: 1,383,300 CY

Rock: 52,208 TON

Geotextile: 16,348 SY

Flotation Channel: 13,080 LF

Earthen Dike: 19,200 LF

Survey/Crew/Boat: 2.0 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -18ft MLG Mile 0.0 to (-3.5) to -18 Foot Elevation w/ 4 Feet of Advanced Maintenance Included Contract No. 10	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
10A	Mobilization and Demobilization	LS	1	\$1,308,950	\$1,308,950
	Dredging and Disposal Mile 0.0 to Mile (-3.5) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width				
10B	Dredging and Disposal Mile 0.0 to Mile (-3.5)	CY	500,000	\$19.40	\$9,702,400
	Material to be placed unconfined for Marsh Creation on the South side of East Island (Isle Deniers) within the surf zone (See plans for details). Material Quantity does not reflect overdepth.				
10C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.2	\$645,000	\$1,419,000
					Total: \$12,430,350
	Contract Duration	DY	66		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging: 500,000 CY

Survey/Crew/Boat: 2.2 MO

Reach	18 foot depth				18 foot depth				
	Site 1				Site 2				Crew/Equipment Costs
	Unit Cost	CY	Duration (months)	Mob/Demob (Per Reach)	Unit Cost	CY	Duration (months)	Mob/Demob (Per Reach)	
Mob/Demob	\$871,046								\$505,000
36.3 to 34.5 (5-year)	\$5.39	101,600	0.29	\$315,563	\$5.90	101,600	0.32	\$315,563	\$505,000
24.0 to 22.0 (5-year)	\$8.00	101,600	0.30	\$366,046					\$505,000
22.0 to 19.7 (5-year)	\$5.71	101,600	0.30	\$323,123	\$7.92	101,600	0.41	\$323,123	\$505,000
		\$1,940,316				\$1,404,518			
Mob/Demob (36.3 to 22.0)	\$939,307								\$505,000
36.3 to 34.0	\$5.39	101,600	0.29	\$315,563	\$5.90	101,600	0.32	\$315,563	\$505,000
34.0 to 32.0	\$4.25	203,600	0.45	\$434,307					\$505,000
32.0 to 29.5	\$5.84	153,700	0.47	\$434,307					\$505,000
29.5 to 28.0	\$4.17	153,700	0.32	\$330,985	\$3.78	153,700	0.29	\$330,985	\$505,000
28.0 to 26.0	\$3.37	203,600	0.36	\$317,075					\$505,000
26.0 to 24.0	\$3.92	203,600	0.40	\$330,985	\$3.62	203,600	0.37	\$330,985	\$505,000
24.0 to 22.0	\$8.00	101,600	0.30	\$366,046					\$505,000
		\$5,246,856				\$1,917,413			
Mob/Demob (22.0 to 11.0)	\$828,123								\$505,000
22.0 to 20.0	\$5.71	101,600	0.30	\$323,123	\$7.92	101,600	0.41	\$323,123	\$505,000
20.0 to 18.0	\$3.10	203,600	0.33	\$320,704	\$3.21	203,600	0.34	\$320,704	\$505,000
18.0 to 16.0	\$3.10	203,600	0.33	\$320,704	\$3.51	203,600	0.37	\$320,704	\$505,000
16.0 to 13.0	\$3.06	307,300	0.49	\$320,704					\$505,000
13.0 to 11.0	\$2.75	236,000	0.34	\$320,704	\$3.10	236,000	0.38	\$320,704	\$505,000
		\$3,430,921				\$2,904,223			
Mob/Demob (0.0 to 11.0)	\$1,031,109								\$505,000
11.0 to 5.0	\$4.75	738,600	1.09	\$485,917					\$505,000
5.0 to 1.5	\$5.49	451,300	0.64	\$526,109					\$505,000
1.5 to 0.0	\$5.43	193,400	0.27	\$526,109					\$505,000
		\$7,035,263							
Mob/Demob (0.0 to -3.5)	\$1,308,950								\$645,000
0.0 to -3.5	\$19.40	500,000	2.20	663,950					\$645,000
		\$9,702,400							

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Consturction Cost Alternative 2A Adjacent Disposal -20

Mile 36.3 to Mile (-3.7) to -20 Foot Elevation w/ Advanced Maintenance Included
 Summary Page

Contract No.	Description	Units	Estimated Quantity	Unit Price	Estimated Cycle Cost
1	Mobilization/Demobilization Mile 36.3 to Mile 22.0	LS CY	1 1,755,000	\$939,307 \$12.08	\$939,307 \$21,199,806
2	Mobilization/Demobilization Mile 22.0 to Mile 11.5	LS CY	1 1,150,000	\$825,704 \$43.62	\$825,704 \$50,161,664
3	Mobilization/Demobilization Mile 11.5 to Mile 6.0	LS CY	1 1,894,500	\$857,241 \$2.67	\$857,241 \$5,054,688
4	Mobilization/Demobilization Mile 6.0 to Mile 0.0	LS CY	1 1,665,000	\$857,241 \$2.89	\$857,241 \$4,813,168
5	Mobilization/Demobilization Mile 0.0 to Mile (-3.7)	LS CY	1 1,100,000	\$1,308,950 \$4.51	\$1,308,950 \$4,965,040
Total:			7,564,500	\$12.03	\$90,982,809

Note:

Unit costs reflected on summary sheet include earthen dike construction, rock dike construction, geotextile fabric, floatation channel excavation within each specified reach, crews, surveying, and boats, if applicable.

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Consturction Cost Alternative 2A Adjacent Disposal -20 Mile 36.3 to 22.0 to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Contract No. 1	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1A	Mobilization and Demobilization Dredging and Disposal (Mile 36.3 to Mile 22.0) Channel to be excavated to -22 NAVD88; 1v/2h side slope/150-foot bottom width	LS	1	\$939,307	\$939,307
1B	HNC Mile 36.3 to HNC Mile 34.0 Material to be placed within confined upland Site 1 (Port Commision site) opposite Short Cut Canal. No height restriction. Dike construction/maintenance not required.	CY	325,000	\$3.66	\$1,189,760
1C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.61	\$505,000	\$308,050
1D	NHC Mile 34.0 to HNC Mile 32.0 Material to be placed semi-confined within designated Wetland Site 7E east of HNC Mile 31. Material to be placed within the open water area(s), a minimum 12,500 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	175,000	\$4.17	\$730,240
1E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.38	\$505,000	\$191,900
1F	Earthen Retention Dike Refurbishment	LF	6,900	\$60.00	\$414,000
1G	HNC Mile 32.0 to HNC Mile 29.5 Material to be placed semi-confined within designated Wetland Site 7E east of HNC Mile 31. Material to be placed within the open water area(s), a minimum 12,500 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	215,000	\$5.85	\$1,257,664
1H	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.66	\$505,000	\$333,300
1I	Earthen Retention Dike Refurbishment	LF	6,900	\$60.00	\$414,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Consturction Cost Alternative 2A Adjacent Disposal -20 Mile 36.3 to 22.0 to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Contract No. 1	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1J	HNC Mile 29.5 to HNC Mile 28.0 Material to be placed unconfined within designated Wetland Site 12B east of HNC Mile 27.0. Material shall be discharged within the open water areas, a minimum 4,500 -feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	185,000	\$5.03	\$930,624
1K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.47	\$505,000	\$237,350
1L	Earthen Retention Dike Refurbishment	LF	1,600	\$60.00	\$96,000
1M	HNC Mile 28.0 to HNC Mile 26.0 Material to be placed unconfined within designated Wetland Site A-07-A west of HNC Mile 26.5. Material shall be discharged within the open water areas, a minimum 5,700 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	250,000	\$4.65	\$1,161,600
1N	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.59	\$505,000	\$297,950
1O	Earthen Retention Dike Refurbishment	LF	9,300	\$60.00	\$558,000
1P	HNC Mile 27.6 to HNC Mile 27.4 (West Bank) Foreshore Protection Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	1,900	\$61.98	\$117,762
1Q	Mechanical Dredging Flotation Channel Excavation Mile 27.6 to Mile 27.4. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,260	\$73.54	\$92,660
1R	HNC Mile 26.4 to HNC Mile 25.9 (West Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN SY	26,600 12,800	\$61.98 \$9.87	\$1,648,668 \$126,336
1S	Mechanical Dredging Flotation Channel Excavation Mile 26.4 to Mile 25.9 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	2,840	\$73.54	\$208,854

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Consturction Cost Alternative 2A Adjacent Disposal -20 Mile 36.3 to 22.0 to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Contract No. 1	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1T	HNC Mile 26.0 to HNC Mile 24.0 Material to be placed unconfined within designated Wetland Site A-07-A west of HNC Mile 26.5. Material shall be discharged within the open water areas, a minimum 5,700 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	300,000	\$3.94	\$1,182,720
1U	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.60	\$505,000	\$303,000
1V	Earthen Retention Dike Refurbishment	LF	13,000	\$60.00	\$780,000
1W	HNC Mile 25.9 to HNC Mile 24.1 (West Bank) Foreshore Protection Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	21,300	\$61.98	\$1,320,174
1X	Mechanical Dredging Flotation Channel Excavation Mile 25.9 to Mile 24.1 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	9,700	\$73.54	\$713,338
1Y	HNC Mile 24.0 to HNC Mile 22.0 Material to be placed semi-confined within designated Wetland Site 15 west of HNC Mile 23.5. Material to be placed within the open water area(s), a minimum 1,270 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	305,000	\$3.40	\$1,038,464
1Z	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.53	\$505,000	\$267,650
1AA	Earthen Retention Dike Refurbishment	LF	2,450	\$60.00	\$147,000
1BB	HNC Mile 23.7 to HNC Mile 22.4 (East Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN SY	59,100 28,500	\$61.98 \$9.87	\$3,663,018 \$281,295
1CC	Mechanical Dredging Flotation Channel Excavation Mile 23.7 to Mile 22.4. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	6,540	\$73.54	\$480,952
1DD	HNC Mile 22.2 to HNC Mile 22.1 (East Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN SY	9,800 4,700	\$61.98 \$9.87	\$607,404 \$46,389

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Consturction Cost Alternative 2A Adjacent Disposal -20 Mile 36.3 to 22.0 to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Contract No. 1	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1EE	Mechanical Dredging Flotation Channel Excavation Mile 22.2 to Mile 22.1. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	730	\$73.54	\$53,684
					Total: \$22,139,113
Contract Duration		DY	115		
Notes:					
Dredging quantity does not reflect overdepth.					

Dredging:	1,755,000 CY
Rock:	118,700 TON
Geotextile:	46,000 SY
Flotation Channel:	21,070 LF
Earthen Dike:	30,850 LF
Survey/Crew/Boat:	3.8 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Consturction Cost Alternative 2A Adjacent Disposal -20 Mile 22.0 to Mile 11.5 to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Contract No. 2	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2A	Mobilization and Demobilization	LS	1	\$825,704	\$825,704
	Dredging and Disposal (Mile 22.0 to Mile 11.5) Channel to be excavated to -22 NAVD88; 1v/2h side slope/150-foot bottom width				
2B	HNC Mile 22.0 to HNC Mile 20.0	CY	393,000	\$2.85	\$1,121,779
	Material to be placed unconfined within designated Wetland Site 16 west of HNC Mile 22. Material shall be discharged within the open water areas, a minimum 1,550 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).				
2C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.59	\$505,000	\$297,950
2D	HNC Mile 20.0 to HNC Mile 18.0	CY	92,000	\$8.28	\$761,907
	Material to be placed unconfined within Wetland Site 19C east of and adjacent to HNC Mile 19.5. The discharge will be positioned to the east and placed a minimum 500 ft beyond the bank rim/ridge or erosion control structure at the front of the disposal area. Elevation of material placed within the open water area(s) of Site 19C NTE +3.0' NAVD88 (See dwgs for details).				
2E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.40	\$505,000	\$202,000
2F	HNC Mile 19.2 to HNC Mile 17.5 (East Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN SY	99,500 47,900	\$61.98 \$9.87	\$6,167,010 \$472,773
2G	Mechanical Dredging Flotation Channel Excavation Mile 19.2 to Mile 17.5 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	8,120	\$73.54	\$597,145
2H	HNC Mile 19.1 to HNC Mile 17.8 (West Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN SY	18,200 8,750	\$61.98 \$9.87	\$1,128,036 \$86,363
2I	Mechanical Dredging Flotation Channel Excavation Mile 19.1 to Mile 17.8 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,790	\$73.54	\$131,637

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Consturction Cost Alternative 2A Adjacent Disposal -20 Mile 22.0 to Mile 11.5 to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Contract No. 2	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2J	HNC Mile 18.0 HNC Mile 16.0 Material to be placed unconfined within designated Wetland Site 20C west of HNC Mile 17. Material shall be discharged within the open water areas, a minimum 900 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	170,000	\$5.26	\$894,336
2K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.47	\$505,000	\$237,350
2L	HNC Mile 17.7 to HNC Mile 16.7 (West Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN SY	67,400 32,500	\$61.98 \$9.87	\$4,177,452 \$320,775
2M	Mechanical Dredging Flotation Channel Excavation Mile 17.7 to Mile 16.7 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	5,480	\$73.54	\$402,999
2N	HNC Mile 16.9 to HNC Mile 13.3 (East Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN SY	213,000 102,600	\$61.98 \$9.87	\$13,201,740 \$1,012,662
2O	Mechanical Dredging Flotation Channel Excavation Mile 16.9 to Mile 13.3 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	19,200	\$73.54	\$1,411,968
2P	HNC Mile 16.0 to HNC Mile 13.0 Material to be placed semi-confined within designated Wetland Site 21 west of HNC Mile 15. Material to be placed within the open water area(s), a minimum 600 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	315,000	\$4.36	\$1,374,912
2Q	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.72	\$505,000	\$363,600
2R	Earthen Retention Dike Refurbishment	LF	3,850	\$60.00	\$231,000
2S	HNC Mile 15.6 to HNC Mile 14.0 (West Bank) Rock Retention Structure (site 21) (Dk ht. +6' NAVD88) Geotextile	TN SY	94,500 45,500	\$61.98 \$9.87	\$5,857,110 \$449,085

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Consturction Cost Alternative 2A Adjacent Disposal -20 Mile 22.0 to Mile 11.5 to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Contract No. 2	<i>Quantities & Line Items - Puls - Aug 2015</i> <i>Costs - Ramos - Aug 2015</i>
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2T	Mechanical Dredging Flotation Channel Excavation Mile 15.6 to Mile 14.0 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	8,650	\$73.54	\$636,121
2U	HNC Mile 13.1 to HNC Mile 11.9 (West Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN	75,900	\$61.98	\$4,704,282
		SY	36,600	\$9.87	\$361,242
2V	Mechanical Dredging Flotation Channel Excavation Mile 13.1 to Mile 11.9 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	6,540	\$73.54	\$480,952
2W	HNC Mile 13.0 to HNC Mile 11.5 Material to be placed semi-confined within designated Wetland Site 24 west of HNC Mile 12.1. Material to be placed within the open water area(s), a minimum 900 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	180,000	\$3.92	\$705,024
2X	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.37	\$505,000	\$186,850
2Y	Earthen Retention Dike Refurbishment	LF	4,100	\$60.00	\$246,000
2Z	HNC Mile 12.7 to HNC Mile 12.3 (East Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN	27,100	\$61.98	\$1,679,658
		SY	13,000	\$9.87	\$128,310

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Consturction Cost Alternative 2A Adjacent Disposal -20 Mile 22.0 to Mile 11.5 to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Contract No. 2	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2AA	Mechanical Dredging Flotation Channel Excavation Mile 12.6 to Mile 12.3 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,790	\$73.54	\$131,637
					Total: \$50,987,368

Contract Duration	DY	77	
Note:			
Dredging quantity does not reflect overdepth.			

Dredging:	1,150,000 CY
Rock:	595,600 TON
Geotextile:	286,850 SY
Flotation Channel:	51,570 LF
Earthen Dike:	7,950 LF
Survey/Crew/Boat:	2.6 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Consturction Cost Alternative 2A Adjacent Disposal -20 Mile 11.5 to Mile 6.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Contract No. 3	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
3A	Mobilization and Demobilization	LS	1	\$857,241	\$857,241
	Dredging and Disposal (Mile 10.0 to Mile 0.0) Channel to be excavated to -23' NAVD88; 1v/2h side slopes by 150' bottom width				
3B	HNC Mile 11.5 to Mile 10	CY	230,000	\$3.60	\$827,264
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 8.8 a minimum 1000' west of the channel centerline (See dwgs for details).				
3C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
3D	HNC Mile 10 to HNC Mile 8.0	CY	842,000	\$2.05	\$1,724,416
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 8.8 a minimum 1000' west of the channel centerline (See dwgs for details).				
3E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.65	\$505,000	\$328,250
3F	HNC Mile 8.0 to HNC Mile 6.0	CY	822,500	\$2.06	\$1,695,008
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 7.0 a minimum 1000' west of the channel centerline (See dwgs for details).				
3G	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.64	\$505,000	\$323,200
Total:					\$5,911,929
CONTRACT DURATION		DY	48		
Note:					
Dredging quantity does not reflect overdepth.					

Dredging: 1,894,500 CY

Survey/Crew/Boat: 1.6 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Consturction Cost Alternative 2A Adjacent Disposal -20 Mile 6.0 to Mile 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Contract No. 3	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
4A	Mobilization and Demobilization	LS	1	\$857,241	\$857,241
	Dredging and Disposal (Mile 10.0 to Mile 0.0) Channel to be excavated to -23' NAVD88; 1v/2h side slopes by 150' bottom width				
4B	HNC Mile 6.0 to HNC Mile 4.0	CY	705,000	\$2.19	\$1,543,104
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 5.0 a minimum 1000' west of the channel centerline (See dwgs for details).				
4C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.58	\$505,000	\$292,900
4D	HNC Mile 4.0 to HNC Mile 2.0	CY	665,000	\$2.20	\$1,464,064
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 3.0 a minimum 1000' west of the channel centerline (See dwgs for details).				
4E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.55	\$505,000	\$277,750
4F	HNC Mile 2.0 to HNC Mile 0.0	CY	295,000	\$3.52	\$1,038,400
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 1.0 a minimum 1000' west of the channel centerline (See dwgs for details).				
4G	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.39	\$505,000	\$196,950
Total:					\$5,670,409
CONTRACT DURATION		DY	46		
Note:					
Dredging quantity does not reflect overdepth.					

Dredging: 1,665,000 CY

Survey/Crew/Boat: 1.5 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Consturction Cost Alternative 2A Adjacent Disposal -20 Mile 0.0 to Mile (-3.7) to -20 Foot Elevation w/ 4 Feet of Advanced Maintenance Contract No. 4	Quantities & Line Items - Puls - Aug 2014 Costs - Salamone - Aug 2014
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Contract No.	Description	Units	Estimated Quantity	Unit Price	Estimated Construction Cost
5A	Mobilization and Demobilization	LS	1	\$1,308,950	\$1,308,950
	Dredging and Disposal Mile 0.0 to Mile (-3.7) Channel to be excavated to -24' NAVD88; 1v/2h side slopes by 300' bottom width				
5B	Material to be placed unconfined at the SPD	CY	1,100,000	\$3.62	\$3,984,640
	Mile (-1.7) and Mile (-2.5) Material to be placed at the single point discharge location(s) within Cat Island Pass at approximate HNC				
5C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.52	\$645,000	\$980,400
Total:					\$6,273,990
	CONTRACT DURATION	DY	46		
	Note: Dredging quantity does not reflect overdepth.				

Dredging: 1,100,000 CY

Survey/Crew/Boat: 1.5 MO

Reach	20 foot depth		Duration (months)	Mob/Demob (Per Reach)	Crew/Equipment Costs
	Unit Cost	CY			
Mob/Demob (36.3 to 22.0)	\$939,307				\$505,000
36.3 to 34.0	\$3.66	325,000	0.61	\$327,961	\$505,000
34.0 to 32.0	\$4.17	175,000	0.38	\$434,307	\$505,000
32.0 to 29.5	\$5.85	215,000	0.66	\$434,307	\$505,000
29.5 to 28.0	\$5.03	185,000	0.47	\$327,961	\$505,000
28.0 to 26.0	\$4.65	250,000	0.59	\$327,961	\$505,000
26.0 to 24.0	\$3.94	300,000	0.60	\$327,961	\$505,000
24.0 to 22.0	\$3.40	305,000	0.53	\$327,961	\$505,000
		\$7,491,072			
Mob/Demob (22.0 to 11.0)	\$825,704				\$505,000
22.0 to 20.0	\$2.85	393,000	0.59	\$320,704	\$505,000
20.0 to 18.0	\$8.28	92,000	0.40	\$320,704	\$505,000
18.0 to 16.0	\$5.26	170,000	0.47	\$320,704	\$505,000
16.0 to 13.0	\$4.36	315,000	0.72	\$320,704	\$505,000
13.0 to 11.5	\$3.92	180,000	0.37	\$320,704	\$505,000
		\$4,857,958			
Mob/Demob (11.5 to 0.0)	\$857,241				\$505,000
11.5 to 10.0	\$3.60	230,000	0.31	\$352,241	\$505,000
10.0 to 8.0	\$2.05	842,000	0.65	\$352,241	\$505,000
8.0 to 6.0	\$2.06	822,500	0.64	\$352,241	\$505,000
6.0 to 4.0	\$2.19	705,000	0.58	\$352,241	\$505,000
4.0 to 2.0	\$2.20	665,000	0.55	\$352,241	\$505,000
2.0 to 0.0	\$3.52	295,000	0.39	\$352,241	\$505,000
		\$8,292,256			
Mob/Demob (0.0 to -3.7)	\$1,308,950				\$645,000
0.0 to -3.7	\$3.62	1,100,000	1.52	\$663,950	\$645,000
		\$3,984,640			

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015

Costs - Ramos - Aug 2015

Maintenance Cost Adjacent Disposal -20ft MLG

Costs for 10-Year Cycle to be Repeated 5 Times Over 50 Years

Multiple Disposal Sites

Mile 36.3 to Mile (-3.7) to -20 Foot Elevation w/ Advanced Maintenance Included

Summary Page

Contract No.	Description	Cycle Frequency (Years)	Units	Quantity	Estimated Unit Price Per Cycle	Estimated Cycle Cost	Estimated Total Cost (50-Year)
1*	Mobilization/Demobilization	10	LS	1		\$871,046	\$4,355,230
	Mile 36.3 to Mile 34.0	10	CY	109,600	\$6.74	\$738,184	\$3,690,920
	Mile 24.0 to Mile 22.0	10	CY	109,600	\$10.39	\$1,139,248	\$5,696,240
	Mile 22.0 to Mile 20.0	10	CY	109,600	\$8.93	\$978,407	\$4,892,036
	Mobilization/Demobilization	2	LS	1		\$857,241	\$21,431,025
	Mile 11.0 to Mile 0.0	2	CY	1,434,101	\$3.76	\$5,397,499	\$134,937,476
2	Mobilization/Demobilization	2	LS	1		\$1,308,950	\$32,723,750
	Mile 0.0 to Mile (-3.7)	2	CY	580,000	\$11.37	\$6,596,212	\$164,905,300
3	Mobilization/Demobilization	2	LS	1		\$857,241	
	Mile 11.0 to Mile 0.0	2	CY	1,434,100	\$3.76	\$5,397,499	
4	Mobilization/Demobilization	2	LS	1		\$1,308,950	
	Mile 0.0 to Mile (-3.7)	2	CY	580,000	\$11.37	\$6,596,212	
5	Mobilization/Demobilization	2	LS	1		\$857,241	
	Mile 11.0 to Mile 0.0	2	CY	1,434,100	\$3.76	\$5,397,499	
6	Mobilization/Demobilization	10	LS	1		\$939,307	\$4,696,535
	Mile 36.3 to Mile 34.0	10	CY	109,600	\$6.73	\$737,342	\$3,686,712
	Mile 34.0 to Mile 32.0	10	CY	219,600	\$6.86	\$1,507,001	\$7,535,005
	Mile 32.0 to Mile 29.5	10	CY	165,800	\$10.20	\$1,691,836	\$8,459,181
	Mile 29.5 to Mile 28.0	10	CY	165,800	\$5.24	\$868,203	\$4,341,014
	Mile 28.0 to Mile 26.0	10	CY	219,600	\$9.97	\$2,190,283	\$10,951,416
	Mile 26.0 to Mile 24.0	10	CY	219,600	\$17.18	\$3,771,986	\$18,859,929
	Mile 24.0 to Mile 22.0	10	CY	109,600	\$22.96	\$2,516,295	\$12,581,476
	Mile 22.0 to Mile 20.0	10	CY	109,600	\$10.06	\$1,102,166	\$5,510,830
	Mobilization/Demobilization	2	LS	1		\$1,308,950	
	Mile 0.0 to Mile (-3.7)	2	CY	580,000	\$11.37	\$6,596,212	
7	Mobilization/Demobilization	10	LS	1		\$939,307	\$4,696,535
	Mile 20.0 to Mile 18.0	10	CY	219,600	\$13.91	\$3,055,428	\$15,277,138
	Mile 18.0 to Mile 16.0	10	CY	219,600	\$27.64	\$6,070,003	\$30,350,013
	Mile 16.0 to Mile 13.0	10	CY	331,400	\$13.82	\$4,578,899	\$22,894,496
	Mile 13.0 to Mile 11.0	10	CY	254,500	\$6.31	\$1,606,440	\$8,032,198
	Mobilization/Demobilization	2	LS	1		\$857,241	
	Mile 11.0 to Mile 0.0	2	CY	1,434,100	\$3.76	\$5,397,499	
8	Mobilization/Demobilization	2	LS	1		\$1,308,950	
	Mile 0.0 to Mile (-3.7)	2	CY	580,000	\$11.37	\$6,596,212	
9	Mobilization/Demobilization	2	LS	1		\$857,241	
	Mile 11.0 to Mile 0.0	2	CY	1,434,101	\$3.76	\$5,397,499	
10	Mobilization/Demobilization	2	LS	1		\$1,308,950	
	Mile 0.0 to Mile (-3.7)	2	CY	580,000	\$11.37	\$6,596,212	
Total:				12,743,603	\$8.33	\$106,100,891	\$530,504,456

Note: Unit costs reflected on summary sheet include all disposal area dike refurbishment within each specified reach, if necessary

* Three reaches specified in Contract 1 require a maintenance cycle every 5 years. 5 years after maintenance Contract 1 reaches at 36.3, 24.0, and 22.0 will undergo maintenance under Contract 6 (10-Year cycle). 5 Years after maintenance Contract 6 those reaches will be maintained under a new 5-year cycle (Contract 11). Following this sequence, contract 6 will be required four additional times over the 50 year project life after Contract 6 is completed.

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -20ft MLG Mile 36.3 to 34.0 & Mile 24 to 22.0 & Mile 22.0 to 20.0 & Mile 11.0 to 0.0 to -20 Foot Elevation w/ 2 and 3 Feet of Advanced Maintenance Included Contract No. 1	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2 and 5 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1A	Mobilization and Demobilization Dredging and Disposal (Mile 36.3 to Mile 20.0) Channel to be excavated to -20 NAVD88; 1v/2h side slope/150-foot bottom width	LS	1	\$871,046	\$871,046
1B	HNC Mile 36.3 to HNC Mile 34.0 Material to be placed within confined upland Site 1 (Port Commission site) opposite Short Cut Canal. No height restriction. Dike construction/maintenance not required.	CY	109,600	\$5.34	\$585,001
1C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
1B	HNC Mile 36.3 to HNC Mile 34.0 Material to be placed within confined upland Site 3 opposite HNC Mile 35.5 No height restriction. Dike construction/maintenance not required.	CY	109,600	\$5.30	\$580,792
1C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
1D	HNC Mile 24.0 to HNC Mile 22.0 Material to be placed semi-confined within Wetland Site 15 between HNC Mile 23.0 and 22.5 along the west bank of the HNC WW. The initial buildup of mtl. shall begin in the north east corner, and to proceed outward in a west-southwesterly direction. Earthen closures will be required along the west side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	109,600	\$7.41	\$812,268
1E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
1F	Earthen Retention Dike Re-fubishment	LF	2,450	\$60.00	\$147,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -20ft MLG Mile 36.3 to 34.0 & Mile 24 to 22.0 & Mile 22.0 to 20.0 & Mile 11.0 to 0.0 to -20 Foot Elevation w/ 2 and 3 Feet of Advanced Maintenance Included Contract No. 1	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2 and 5 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1D	HNC Mile 24.0 to HNC Mile 22.0 Material to be placed semi-confined within Wetland Site 15A between HNC Mile 24.0 and 22.9 west of Site 15 'beyond the west bank of the HNC WW. The initial buildup of mtl. shall begin in the south east corner, and to proceed outward in a westerly direction. Earthen closures will be required along the east side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	109,600	\$7.42	\$813,670
1E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
1F	Earthen Retention Dike Re-fubishment	LF	4,800	\$60.00	\$288,000
1G	HNC Mile 22.0 to HNC Mile 20.0 Material to be placed unconfined within Wetland Site 16 opposite and adjacent to HNC Mile 21.4 along the west bank of the HNC WW. The discharge will be positioned to the west and placed a minimum 1,500 ft beyond the center line of the channel to the front of the disposal area. Elevation of material placed within the open water area(s) NTE +3.0' NAVD 88 (See dwgs for details).	CY	109,600	\$5.29	\$579,389
1H	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
1G	HNC Mile 22.0 to HNC Mile 20.0 Material to be placed semi-confined within Wetland Site 15A between HNC Mile 23.3 and 22.5 west of Site 15 'beyond the west bank of the HNC WW. The initial buildup of mtl. shall begin in the south east corner, and to proceed outward in a westerly direction. Earthen closures will be required along the east side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	109,600	\$7.71	\$844,534

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -20ft MLG Mile 36.3 to 34.0 & Mile 24 to 22.0 & Mile 22.0 to 20.0 & Mile 11.0 to 0.0 to -20 Foot Elevation w/ 2 and 3 Feet of Advanced Maintenance Included Contract No. 1	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2 and 5 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1H	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.43	\$505,000	\$217,150
1I	Earthen Retention Dike Re-fubishment	LF	4,800	\$60.00	\$288,000
1J	Mobilization and Demobilization	LS	1	\$857,241	\$857,241
	Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width				
1K	HNC Mile 11 to HNC Mile 8.0	CY	374,000	\$3.28	\$1,225,523
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 8.8 a minimum 1000' west of the channel centerline (See dwgs for details).				
1L	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.46	\$505,000	\$232,300
1M	HNC Mile 8.0 to HNC Mile 6.0	CY	257,900	\$3.21	\$828,581
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 7.0 a minimum 1000' west of the channel centerline (See dwgs for details).				
1N	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
1O	HNC Mile 6.0 to HNC Mile 4.0	CY	267,400	\$3.10	\$828,298
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 5.0 a minimum 1000-feet west of the channel centerline (See dwgs for details).				
1P	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
1Q	HNC Mile 4.0 to HNC Mile 2.0	CY	267,400	\$3.10	\$828,298
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 3.0 a minimum 1000-feet west of the channel centerline (See dwgs for details).				
1R	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -20ft MLG Mile 36.3 to 34.0 & Mile 24 to 22.0 & Mile 22.0 to 20.0 & Mile 11.0 to 0.0 to -20 Foot Elevation w/ 2 and 3 Feet of Advanced Maintenance Included Contract No. 1	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2 and 5 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1S	HNC Mile 2.0 to HNC Mile 0.0 Material to be placed at the single point discharge location oppsie HNC Mile 1.0 a minimum 1000' west of the channel centerline (See dwgs for details).	CY	267,400	\$3.10	\$828,298
1T	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
Total:					\$9,894,191
	Contract Duration	DY	82		
	Notes:				
	Channel Quantitires do not reflect overdepth.				

Dredging: 1,762,900 CY

Survey/Crew/Boat: 2.7 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -20ft MLG Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 4 Feet of Advanced Maintenance Included Contract No. 2	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2A	Mobilization and Demobilization	LS	1	\$1,308,950	\$1,308,950
	Dredging and Disposal Mile 0.0 to Mile (-3.7) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width				
2B	Dredging and Disposal Mile 0.0 to Mile (-3.7)	CY	580,000	\$9.13	\$5,293,312
	Material to be placed at the SPD Mile -1.7 and Mile -2.5				
2C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.0	\$645,000	\$1,302,900
Total:					\$7,905,162
	Contract Duration	DY	61		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging: 580,000 CY

Survey/Crew/Boat: 2.0 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -20ft MLG Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 3	<i>Quantities & Line Items - Puls - Aug 2015</i> <i>Costs - Ramose - Aug 2015</i> Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
3A	Mobilization and Demobilization	LS	1	\$857,241	\$857,241
	Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width				
3B	HNC Mile 11 to HNC Mile 8.0	CY	374,000	\$3.28	\$1,225,523
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 8.8 a minimum 1000' west of the channel centerline (See dwgs for details).				
3C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.46	\$505,000	\$232,300
3D	HNC Mile 8.0 to HNC Mile 6.0	CY	257,900	\$3.21	\$828,581
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 7.0 a minimum 1000' west of the channel centerline (See dwgs for details).				
3E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
3F	HNC Mile 6.0 to HNC Mile 4.0	CY	267,400	\$3.10	\$828,298
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 5.0 a minimum 1000-foot west of the channel centerline (See dwgs for details).				
3G	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
3H	HNC Mile 4.0 to HNC Mile 2.0	CY	267,400	\$3.10	\$828,298
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 3.0 a minimum 1000-foot west of the channel centerline (See dwgs for details).				
3I	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
3J	HNC Mile 2.0 to HNC Mile 0.0	CY	267,400	\$3.10	\$828,298
	Material to be placed at the single point discharge location opposite HNC Mile 1.0 a minimum 1000' west of the channel centerline (See dwgs for details).				

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening	<i>Quantities & Line Items - Puls - Aug 2015</i>
Houma, Terrebonne Parish, Louisiana	<i>Costs - Ramose - Aug 2015</i>
Maintenance Cost Adjacent Disposal -20ft MLG	
Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included	
Contract No. 3	Channel Maintenance - 2 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
3K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
Total:					\$6,254,740

Contract Duration	DY	51
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Note:

Channel Quantities do not reflect overdepth.

Dredging: 1,434,100 CY

Survey/Crew/Boat: 1.7 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -20ft MLG Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 4 Feet of Advanced Maintenance Included Contract No. 4	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
4A	Mobilization and Demobilization	LS	1	\$1,308,950	\$1,308,950
	Dredging and Disposal Mile 0.0 to Mile (-3.7) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width				
4B	Dredging and Disposal Mile 0.0 to Mile (-3.7)	CY	580,000	\$9.13	\$5,293,312
	Material to be placed at the SPD Mile -1.7 and Mile -2.5				
4C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.0	\$645,000	\$1,302,900
Total:					\$7,905,162
	Contract Duration	DY	61		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging: 580,000 CY

Survey/Crew/Boat: 2.0 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -20ft MLG Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 5	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
5A	Mobilization and Demobilization	LS	1	\$857,241	\$857,241
	Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width				
5B	HNC Mile 11 to HNC Mile 8.0	CY	374,000	\$3.28	\$1,225,523
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 8.8 a minimum 1000' west of the channel centerline (See dwgs for details).				
5C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.46	\$505,000	\$232,300
5D	HNC Mile 8.0 to HNC Mile 6.0	CY	257,900	\$3.21	\$828,581
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 7.0 a minimum 1000' west of the channel centerline (See dwgs for details).				
5E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
5F	HNC Mile 6.0 to HNC Mile 4.0	CY	267,400	\$3.10	\$828,298
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 5.0 a minimum 1000-foot west of the channel centerline (See dwgs for details).				
5G	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
5H	HNC Mile 4.0 to HNC Mile 2.0	CY	267,400	\$3.10	\$828,298
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 3.0 a minimum 1000-foot west of the channel centerline (See dwgs for details).				
5I	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
5J	HNC Mile 2.0 to HNC Mile 0.0	CY	267,400	\$3.10	\$828,298
	Material to be placed at the single point discharge location opposite HNC Mile 1.0 a minimum 1000' west of the channel centerline (See dwgs for details).				

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
Maintenance Cost Adjacent Disposal -20ft MLG	
Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included	
Contract No. 5	Channel Maintenance - 2 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
5K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
Total:					\$6,254,740

Contract Duration	DY	51
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Note:

Channel Quantities do not reflect overdepth.

Dredging: 1,434,100 CY

Survey/Crew/Boat: 1.7 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -20ft MLG Mile 36.3 to 20.0 & Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 6	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
Channel Maintenance - 2, 5, and 10 year frequency	

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6A	Mobilization and Demobilization	LS	1	\$939,307	\$939,307
	Dredging and Disposal (Mile 36.3 to Mile 20.0) Channel to be excavated to -20 NAVD88; 1v/2h side slope/150-foot bottom width				
6B	HNC Mile 36.3 to HNC Mile 34.0	CY	109,600	\$5.30	\$580,792
	Material to be placed within confined upland Site 3 opposite HNC Mile 35.5 No height restriction. Dike construction/maintenance not required.				
6C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
6D	NHC Mile 34.0 to HNC Mile 32.0	CY	219,600	\$3.94	\$865,751
	Material to be placed semi-confined within designated Wetland Site 7E opposite HNC Mile 31. Material to be placed within the open water area(s), a minimum 12,500 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).				
6E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.45	\$505,000	\$227,250
6F	Earthen Retention Dike Refurbishment	LF	6,900	\$60.00	\$414,000
6G	HNC Mile 32.0 to HNC Mile 29.5	CY	165,800	\$6.09	\$1,010,186
	Material to be placed semi-confined within designated Wetland Site 7E opposite HNC Mile 31. Material to be placed within the open water area(s), a minimum 12,500 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).				
6H	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.53	\$505,000	\$267,650
6I	Earthen Retention Dike Refurbishment	LF	6,900	\$60.00	\$414,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Quantities & Line Items - Puls - Aug 2015
 Houma, Terrebonne Parish, Louisiana Costs - Ramos - Aug 2015
Maintenance Cost Adjacent Disposal -20ft MLG
 Mile 36.3 to 20.0 & Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included
 Contract No. 6 **Channel Maintenance - 2, 5, and 10 year frequency**

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6J	HNC Mile 29.5 to HNC Mile 28.0 Material to be placed unconfined within designated Wetland Site 12B opposite approximate HNC Mile 27.0. Mtl. shall be discharged within the open water areas, a minimum 4,500 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	165,800	\$3.88	\$643,039
6K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.32	\$505,000	\$161,600
6L	Earthen Retention Dike Refurbishment	LF	1,600	\$60.00	\$96,000
6J	HNC Mile 29.5 to HNC Mile 28.0 Material to be placed unconfined within designated Wetland Site 12 opposite approximate HNC Mile 27.0. Mtl. shall be discharged within the open water areas, a minimum 1,950 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	165,800	\$3.62	\$600,594
6K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
6L	Earthen Retention Dike Refurbishment	LF	1,800	\$60.00	\$108,000
6M	HNC Mile 28.0 to HNC Mile 26.0 Material to be placed unconfined within designated Wetland Site A-07-A opposite approximate HNC Mile 26.5. Mtl. shall be discharged within the open water areas, a minimum 5,700 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	219,600	\$3.20	\$702,720
6N	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.37	\$505,000	\$186,850
6O	Earthen Retention Dike Refurbishment	LF	9,300	\$60.00	\$558,000
6P	HNC Mile 27.6 to HNC Mile 27.4 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	1,900	\$61.46	\$116,774

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -20ft MLG Mile 36.3 to 20.0 & Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 6	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Channel Maintenance - 2, 5, and 10 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6Q	Mechanical Dredging Flotation Channel Excavation Mile 27.6 to Mile 27.4. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,260	\$72.92	\$91,879
6R	HNC Mile 26.4 to HNC Mile 25.9 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	5,320	\$61.46	\$326,967
6S	Mechanical Dredging Flotation Channel Excavation Mile 26.4 to Mile 25.9 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	2,840	\$72.92	\$207,093
6T	HNC Mile 26.0 to HNC Mile 24.0 Material to be placed unconfined within designated Wetland Site 14A opposite approximate HNC Mile 26.5. Mtl. shall be discharged within the open water areas, a minimum 3,360 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	219,600	\$3.55	\$778,614
6U	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.39	\$505,000	\$196,950
6V	Earthen Retention Dike Refurbishment	LF	13,000	\$60.00	\$780,000
6W	HNC Mile 25.9 to HNC Mile 24.1 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	21,300	\$61.46	\$1,309,098
6X	Mechanical Dredging Flotation Channel Excavation Mile 25.9 to Mile 24.1 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	9,700	\$72.92	\$707,324
6Y	HNC Mile 24.0 to HNC Mile 22.0 Material to be placed semi-confined within Wetland Site 15 between HNC Mile 23.0 and 22.5 along the west bank of the HNC WW. The initial buildup of mtl. shall begin in the north east corner, and to proceed outward in a west-southwesterly direction. Earthen closures will be required along the west side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	109,600	\$7.41	\$812,268

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -20ft MLG Mile 36.3 to 20.0 & Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 6	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
Channel Maintenance - 2, 5, and 10 year frequency	

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6Z	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
6AA	Earthen Retention Dike Refurbishment	LF	2,450	\$60.00	\$147,000
6Y	HNC Mile 24.0 to HNC Mile 22.0 Material to be placed semi-confined within Wetland Site 15A between HNC Mile 24.0 and 22.9 west of Site 15 'beyond the west bank of the HNC WW. The initial buildup of mtl. shall begin in the south east corner, and to proceed outward in a westerly direction. Earthen closures will be required along the east side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	109,600	\$7.42	\$813,670
6Z	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
6AA	Earthen Retention Dike Refurbishment	LF	4,800	\$60.00	\$288,000
6BB	HNC Mile 23.7 to HNC Mile 22.4 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	11,820	\$61.46	\$726,457
6CC	Mechanical Dredging Flotation Channel Excavation Mile 23.7 to Mile 22.4. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	6,540	\$72.92	\$476,897
6DD	HNC Mile 22.2 to HNC Mile 22.1 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	1,960	\$61.46	\$120,462
6EE	Mechanical Dredging Flotation Channel Excavation Mile 22.2 to Mile 22.1. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	730	\$72.92	\$53,232

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -20ft MLG Mile 36.3 to 20.0 & Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 6	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
Channel Maintenance - 2, 5, and 10 year frequency	

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6FF	HNC Mile 22.0 to HNC Mile 20.0 Material to be placed unconfined within Wetland Site 16 opposite and adjacent to HNC Mile 21.4 along the west bank of the HNC WW. The discharge will be positioned to the west and placed a minimum 1,550 ft beyond the channel center line to the front of the disposal area. Elevation of material placed within the open water area(s) NTE +3.0' NAVD 88 (See dwgs for details).	CY	109,600	\$5.29	\$579,389
6GG	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
6FF	HNC Mile 22.0 to HNC Mile 20.0 Material to be placed semi-confined within Wetland Site 15A between HNC Mile 24.0 and 22.9 west of Site 15 'beyond the west bank of the HNC WW. The initial buildup of mtl. shall begin in the south east corner, and to proceed outward in a westerly direction. Earthen closures will be required along the east side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	109,600	\$7.71	\$844,534
6GG	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.43	\$505,000	\$217,150
6HH	Earthen Retention Dike Re-fubishment	LF	4,800	\$60.00	\$288,000
6II	Mobilization and Demobilization Dredging and Disposal Mile 0.0 to Mile (-3.7) Channel to be excavated to -19' NAVD88; 1v/2h side slopes by 300' bottom width	LS	1	\$1,308,950	\$1,308,950

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -20ft MLG Mile 36.3 to 20.0 & Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 6	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
Channel Maintenance - 2, 5, and 10 year frequency	

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6JJ	Dredging and Disposal Mile 0.0 to Mile (-3.7)	CY	580,000	\$9.13	\$5,293,312
	Material to be placed at the SPD Mile -1.7 and Mile -2.5				
6KK	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.02	\$645,000	\$1,302,900
Total:					\$23,635,458

Contract Duration	DY	144
Notes:		
Channel Quantities do not reflect overdepth.		

Dredging:	1,899,200	CY
Rock:	42,300	TON
Flotation Channel:	21,070	LF
Earthen Dike:	38,200	LF
Survey/Crew/Boat:	4.8	MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Quantities & Line Items - Puls - Aug 2015
 Houma, Terrebonne Parish, Louisiana Costs - Ramos - Aug 2015
Maintenance Cost Adjacent Disposal -20ft MLG
 Mile 20.0 to 11.0 & Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included
 Contract No. 7 **Channel Maintenance - 2 and 10 year frequency**

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7A	Mobilization and Demobilization Dredging and Disposal (Mile 20.0 to Mile 11.0) Channel to be excavated to -20 NAVD88; 1v/2h side slope/150-foot bottom width	LS	1	\$939,307	\$939,307
7B	HNC Mile 20.0 to HNC Mile 18.0 Material to be placed unconfined within Wetland Site 19C oppsite and adjacent to HNC Mile 19.3 along the east bank of the HNC WW. The discharge will be positioned to the east and placed a minimum 500-ft beyond the bank rim/ridge or erosion control structure at the front of the disposal area. Elevation of material placed within the open water area(s) of Site 19C NTE +3.0' NAVD88 (See dwgs for details).	CY	219,600	\$2.96	\$649,313
7C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700
7B	HNC Mile 20.0 to HNC Mile 18.0 Material to be placed semi-confined within the open water portions of Wetland Site 19D between HNC Mile 20.2 and 19.6, located beyond the west bank of the HNC WW. The initial buildup of mtl. shall begin in the north east corner, and to proceed outward in a westerly direction a minimum distance of 2,350 ft beyond the channel center line. Earthen closures will be required along the south side of the disposal area adjacent to the open water A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors at the northeast and south east portions of the disposal site. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	219,600	\$3.07	\$674,611
7C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.35	\$505,000	\$176,750
7D	Earthen Retention Dike Re-fubishment	LF	1,300	\$60.00	\$78,000
7E	HNC Mile 19.2 to HNC Mile 17.5 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	19,900	\$61.46	\$1,223,054
7F	Mechanical Dredging Flotation Channel Excavation Mile 19.2 to Mile 17.5 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	8,120	\$72.92	\$592,110
7G	HNC Mile 19.1 to HNC Mile 17.8 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	3,640	\$61.46	\$223,714

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -20ft MLG Mile 20.0 to 11.0 & Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 7	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Channel Maintenance - 2 and 10 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7H	Mechanical Dredging Flotation Channel Excavation Mile 19.1 to Mile 17.8 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,790	\$72.92	\$130,527
7I	HNC Mile 18.0 HNC Mile 16.0 Material to be placed unconfined within Wetland Site 20C oppoosite HNC Mile 16.8 along the west bank of the HNC WW. A construction access corriodr, 200 feet in width, will be provided for the Contractors use at the intersection of Four Pt. Bayou with the HNC WW. The intial buildup shall occur in the east corner of the DA and to proceed outward in a westerly direction. Elevation of Mtl. NTE +3.0' NAVD88 (See dwgs for details).	CY	219,600	\$2.79	\$612,772
7J	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.32	\$505,000	\$161,600
7I	HNC Mile 18.0 HNC Mile 16.0 Material to be placed within Wetland Site 21 opposite HNC Mile 15.0. To prevent material runback, the discharge pipe will be postioned to the SW and placed approximately 600 feet west of HNC Mile 15.0. The material will be placed in a west south-westerly direction within the open water areas or tributaries along the back side of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs f/details).	CY	219,600	\$3.25	\$713,964
7J	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.37	\$505,000	\$186,850
7K	Earthen Retention Dike Re-fubishment	LF	2,000	\$60.00	\$120,000
7L	HNC Mile 17.7 to HNC Mile 16.7 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	13,480	\$61.46	\$828,481
7M	Mechanical Dredging Flotation Channel Excavation Mile 17.7 to Mile 16.7 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	5,480	\$72.92	\$399,602
7N	HNC Mile 16.9 to HNC Mile 13.3 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	42,600	\$61.46	\$2,618,196
7O	Mechanical Dredging Flotation Channel Excavation Mile 16.9 to Mile 13.3 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	19,200	\$72.92	\$1,400,064

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -20ft MLG Mile 20.0 to 11.0 & Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 7	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Channel Maintenance - 2 and 10 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7P	HNC Mile 16.0 to HNC Mile 13.0 Material to be placed within Wetland Site 21 opposite HNC Mile 15.0. To prevent material runback, the discharge pipe will be positioned to the SW and placed approximately 600 feet west of HNC Mile 15.0. The material will be placed in a west south-westerly direction within the open water areas or tributaries along the back side of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs f/details).	CY	331,400	\$2.94	\$975,642
7Q	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.51	\$505,000	\$257,550
7R	Earthen Retention Dike Re-fubishment	LF	3,850	\$60.00	\$231,000
7S	HNC Mile 15.6 to HNC Mile 14.0 (West Bank) Rock Retention Structure Refurbishment (Dk ht. +6' NAVD88) Stone quantity 20% of construction quantity	TN	18,900	\$61.46	\$1,161,594
7T	Mechanical Dredging Flotation Channel Excavation Mile 15.6 to Mile 14.0 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	8,650	\$72.92	\$630,758
7U	HNC Mile 13.2 to HNC Mile 11.9 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +6' NAVD88) Stone quantity 20% of construction quantity	TN	15,180	\$61.46	\$932,963
7V	Mechanical Dredging Flotation Channel Excavation Mile 13.1 to Mile 11.9 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	5,340	\$72.92	\$389,393
7W	HNC Mile 13.0 to HNC Mile 11.0 Material to be placed within Wetland Site 24 opposite HNC Mile 12.0 along the west bank of the HNC WW. A construction access corrdior, 200 ft in width, will be provided for the Contractors use at the entrance of the WW. The initial buildup will occur in the east corner of the DA and proceed outward in a west, south-westerly direction. Elevation of material placed within the open water area(s) NTE +3.0' NAVD88 (See dwgs for details).	CY	254,500	\$2.62	\$667,808
7X	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.35	\$505,000	\$176,750
7Y	Earthen Retention Dike Re-fubishment	LF	4,100	\$60.00	\$246,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening *Quantities & Line Items - Puls - Aug 2015*
 Houma, Terrebonne Parish, Louisiana *Costs - Ramos - Aug 2015*
Maintenance Cost Adjacent Disposal -20ft MLG
 Mile 20.0 to 11.0 & Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included
 Contract No. 7 **Channel Maintenance - 2 and 10 year frequency**

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7W	HNC Mile 13.0 to HNC Mile 11.0 Material to be placed within Wetland Site 21 opposite HNC Mile 15.0. To prevent material runback, the discharge pipe will be positioned to the SW and placed approximately 600 feet west of HNC Mile 15.0. The material will be placed in a west south-westerly direction within the open water areas or tributaries along the back side of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs f/details).	CY	254,500	\$2.88	\$732,960
7X	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.38	\$505,000	\$191,900
7Y	Earthen Retention Dike Re-fubishment	LF	3,850	\$60.00	\$231,000
7Z	HNC Mile 12.7 to HNC Mile 12.3 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	5,420	\$61.46	\$333,113
7AA	Mechanical Dredging Flotation Channel Excavation Mile 12.6 to Mile 12.3 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,790	\$72.92	\$130,527
7BB	Mobilization and Demobilization Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width	LS	1	\$857,241	\$857,241
7CC	HNC Mile 11 to HNC Mile 8.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 8.8 a minimum 1000' west of the channel centerline (See dwgs for details).	CY	374,000	\$3.28	\$1,225,523
7DD	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.46	\$505,000	\$232,300
7EE	HNC Mile 8.0 to HNC Mile 6.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 7.0 a minimum 1000' west of the channel centerline (See dwgs for details).	CY	257,900	\$3.21	\$828,581
7FF	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
Maintenance Cost Adjacent Disposal -20ft MLG	
Mile 20.0 to 11.0 & Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included	
Contract No. 7	Channel Maintenance - 2 and 10 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7GG	HNC Mile 6.0 to HNC Mile 4.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 5.0 a minimum 1000-feet west of the channel centerline (See dwgs for details).	CY	267,400	\$3.10	\$828,298
7HH	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
7II	HNC Mile 4.0 to HNC Mile 2.0 Material to be placed unconfined at the single point discharge location opposite HNC Mile 3.0 a minimum 1000-feet west of the channel centerline (See dwgs for details).	CY	267,400	\$3.10	\$828,298
7JJ	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
7KK	HNC Mile 2.0 to HNC Mile 0.0 Material to be placed at the single point discharge location opposite HNC Mile 1.0 a minimum 1000' west of the channel centerline (See dwgs for details).	CY	267,400	\$3.10	\$828,298
7LL	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
					Total: \$21,852,071
Contract Duration		DY	99		
Note:					
Channel Quantities do not reflect overdepth.					

Dredging: 2,459,200 CY

Rock: 119,120 TON

Flotation Channel: 50,370 LF

Earthen Dike: 9,700 LF

Survey/Crew/Boat: 3.3 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -20ft MLG Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 4 Feet of Advanced Maintenance Included Contract No. 8	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
8A	Mobilization and Demobilization	LS	1	\$1,308,950	\$1,308,950
	Dredging and Disposal Mile 0.0 to Mile (-3.7) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width				
8B	Dredging and Disposal Mile 0.0 to Mile (-3.7)	CY	580,000	\$9.13	\$5,293,312
	Material to be placed at the SPD Mile -1.7 and Mile -2.5				
8C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.0	\$645,000	\$1,302,900
Total:					\$7,905,162
	Contract Duration	DY	61		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging: 580,000 CY

Survey/Crew/Boat: 2.0 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -20ft MLG Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 9	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
9A	Mobilization and Demobilization	LS	1	\$857,241	\$857,241
	Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width				
9B	HNC Mile 11 to HNC Mile 8.0	CY	374,000	\$3.28	\$1,225,523
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 8.8 a minimum 1000' west of the channel centerline (See dwgs for details).				
9C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.46	\$505,000	\$232,300
9D	HNC Mile 8.0 to HNC Mile 6.0	CY	257,900	\$3.21	\$828,581
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 7.0 a minimum 1000' west of the channel centerline (See dwgs for details).				
9E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
9F	HNC Mile 6.0 to HNC Mile 4.0	CY	267,400	\$3.10	\$828,298
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 5.0 a minimum 1000-foot west of the channel centerline (See dwgs for details).				
9G	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
9H	HNC Mile 4.0 to HNC Mile 2.0	CY	267,400	\$3.10	\$828,298
	Material to be placed unconfined at the single point discharge location opposite HNC Mile 3.0 a minimum 1000-foot west of the channel centerline (See dwgs for details).				
9I	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
9J	HNC Mile 2.0 to HNC Mile 0.0	CY	267,400	\$3.10	\$828,298
	Material to be placed at the single point discharge location opposite HNC Mile 1.0 a minimum 1000' west of the channel centerline (See dwgs for details).				

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -20ft MLG Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 9	<i>Quantities & Line Items - Puls - Aug 2015</i> <i>Costs - Ramos - Aug 2015</i> Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
9K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
Total:					\$6,254,740

Contract Duration	DY	51
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Note:

Channel Quantities do not reflect overdepth.

Dredging: 1,434,101 CY

Survey/Crew/Boat: 1.7 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Adjacent Disposal -20ft MLG Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 4 Feet of Advanced Maintenance Included Contract No. 10	<i>Quantities & Line Items - Puls - Aug 2015</i> <i>Costs - Ramos - Aug 2015</i> Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
10A	Mobilization and Demobilization	LS	1	\$1,308,950	\$1,308,950
	Dredging and Disposal Mile 0.0 to Mile (-3.7) 3 slopes by 300' bottom width				
10B	Dredging and Disposal Mile 0.0 to Mile (-3.7)	CY	580,000	\$9.13	\$5,293,312
	Material to be placed at the SPD Mile -1.7 and Mile -2.5				
10C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.0	\$645,000	\$1,302,900
Total:					\$7,905,162
	Contract Duration	DY	61		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging: 580,000 CY

Survey/Crew/Boat: 2.0 MO

Reach	20-foot depth				20-foot depth				
	Site 1				Site 2				Crew/Equipment Costs
	Unit Cost	CY	Duration (months)	Mob/Demob (Per Reach)	Unit Cost	CY	Duration (months)	Mob/Demob (Per Reach)	
Mob/Demob	\$871,046								\$505,000
36.3 to 34.5 (5-year)	\$5.34	109,600	0.31	\$315,563	\$5.30	109,600	0.31	\$315,563	\$505,000
24.0 to 22.0 (5-year)	\$7.41	109,600	0.30	\$366,046	\$7.42	109,600	0.30	\$366,046	\$505,000
22.0 to 19.7 (5-year)	\$5.29	109,600	0.30	\$323,123	\$7.71	109,600	0.43	\$323,123	\$505,000
		\$1,976,658				\$2,238,996			
Mob/Demob (36.3 to 22.0)	\$939,307								\$505,000
36.3 to 34.0	\$5.34	109,600	0.31	\$315,563	\$5.30	109,600	0.31	\$315,563	\$505,000
34.0 to 32.0	\$3.94	219,600	0.45	\$434,307					\$505,000
32.0 to 29.5	\$6.09	165,800	0.53	\$434,307					\$505,000
29.5 to 28.0	\$3.88	165,800	0.32	\$330,985	\$3.62	165,800	0.30	\$330,985	\$505,000
28.0 to 26.0	\$3.20	219,600	0.37	\$317,075					\$505,000
26.0 to 24.0	\$3.55	219,600	0.39	\$330,985					\$505,000
24.0 to 22.0	\$7.41	109,600	0.30	\$366,046	\$7.42	109,600	0.30	\$366,046	\$505,000
		\$5,397,578				\$1,995,057			
Mob/Demob (22.0 to 11.0)	\$828,123								\$505,000
22.0 to 20.0	\$5.29	109,600	0.30	\$323,123	\$7.71	109,600	0.43	\$323,123	\$505,000
20.0 to 18.0	\$2.96	219,600	0.34	\$320,704	\$3.07	219,600	0.35	\$320,704	\$505,000
18.0 to 16.0	\$2.79	219,600	0.32	\$320,704	\$3.25	219,600	0.37	\$320,704	\$505,000
16.0 to 13.0	\$2.94	331,400	0.51	\$320,704					\$505,000
13.0 to 11.0	\$2.62	254,500	0.35	\$320,704	\$2.88	254,500	0.38	\$320,704	\$505,000
		\$3,484,924				\$2,966,068			
Mob/Demob (0.0 to 11.0)	\$857,241								\$505,000
11.0 to 8.0	\$3.28	374,000	0.46	\$352,241					\$505,000
8.0 to 6.0	\$3.21	257,900	0.31	\$352,241					\$505,000
6.0 to 4.0	\$3.10	267,400	0.31	\$352,241					\$505,000
4.0 to 2.0	\$3.10	267,400	0.31	\$352,241					\$505,000
2.0 to 0.0	\$3.10	267,400	0.31	\$352,241					\$505,000
		\$4,538,999							
Mob/Demob (0.0 to -3.7)	\$1,308,950								\$645,000
0.0 to -3.7	\$9.13	580,000	2.02	\$663,950					\$645,000
		\$5,293,312							

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Construction Cost Alternative 2B Earthen Retention -20

Mile 36.3 to Mile (-3.7) to -20 Foot Elevation w/ Advanced Maintenance Included

Summary Page

Contract No.	Description	Units	Estimated Quantity	Unit Price	Estimated Cycle Cost
1	Mobilization/Demobilization	LS	1	\$939,307	\$939,307
	Mile 36.3 to Mile 22.0	CY	1,755,000	\$12.03	\$21,120,878
2	Mobilization/Demobilization	LS	1	\$825,704	\$825,704
	Mile 22.0 to Mile 11.5	CY	1,150,000	\$43.30	\$49,794,162
3	Mobilization/Demobilization	LS	1	\$1,030,374	\$1,030,374
	Mile 11.5 to Mile 5.0	CY	2,244,500	\$5.16	\$11,582,884
4	Mobilization/Demobilization	LS	1	\$1,030,374	\$1,030,374
	Mile 5.0 to Mile 0.0	CY	1,315,000	\$8.90	\$11,705,510
5	Mobilization/Demobilization	LS	1	\$1,308,950	\$1,308,950
	Mile 0.0 to Mile (-3.7)	CY	1,100,000	\$11.72	\$12,894,670
Total:			7,564,500	\$14.84	\$112,232,814

Note:

Unit costs reflected on summary sheet include earthen dike construction, rock dike construction, geotextile fabric, floatation channel excavation within each specified reach, crews, surveying, and boats, if applicable.

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Construction Cost Alternative 2B Earthen Retention -20 Mile 36.3 to 22.0 to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 1	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1A	Mobilization and Demobilization Dredging and Disposal (Mile 36.3 to Mile 22.0) Dredging and Disposal (Mile 36.3 to Mile 22.0) Channel to be excavated to -22 NAVD88; 1v/2h side slope/150-foot bottom width	LS	1	\$939,307	\$939,307
1B	HNC Mile 36.3 to HNC Mile 34.0 Material to be placed within confined upland Site 1 (Port Commission site) opposite Short Cut Canal. No height restriction. Dike construction/maintenance not required.	CY	325,000	\$3.66	\$1,189,760
1C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.61	\$505,000	\$308,050
1D	NHC Mile 34.0 to HNC Mile 32.0 Material to be placed semi-confined within designated Wetland Site 7E east of HNC Mile 31. Material to be placed within the open water area(s), a minimum 12,500 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	175,000	\$4.17	\$730,240
1E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.38	\$505,000	\$191,900
1F	Earthen Retention Dike Refurbishment	LF	6,900	\$60.00	\$414,000
1G	HNC Mile 32.0 to HNC Mile 29.5 Material to be placed semi-confined within designated Wetland Site 7E east of HNC Mile 31. Material to be placed within the open water area(s), a minimum 12,500 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	215,000	\$5.85	\$1,257,664
1H	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.66	\$505,000	\$333,300
1I	Earthen Retention Dike Refurbishment	LF	6,900	\$60.00	\$414,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana
Construction Cost Alternative 2B Earthen Retention -20
 Mile 36.3 to 22.0 to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included
 Contract No. 1

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1J	HNC Mile 29.5 to HNC Mile 28.0 Material to be placed unconfined within designated Wetland Site 12B east of HNC Mile 27.0. Material shall be discharged within the open water areas, a minimum 4,500 -feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	185,000	\$5.03	\$930,624
1K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.47	\$505,000	\$237,350
1L	Earthen Retention Dike Refurbishment	LF	1,600	\$60.00	\$96,000
1M	HNC Mile 28.0 to HNC Mile 26.0 Material to be placed unconfined within designated Wetland Site A-07-A west of HNC Mile 26.5. Material shall be discharged within the open water areas, a minimum 5,700 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	250,000	\$4.65	\$1,161,600
1N	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.59	\$505,000	\$297,950
1O	Earthen Retention Dike Refurbishment	LF	9,300	\$60.00	\$558,000
1P	HNC Mile 27.6 to HNC Mile 27.4 (West Bank) Foreshore Protection Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	1,900	\$61.46	\$116,774
1Q	Mechanical Dredging Flotation Channel Excavation Mile 27.6 to Mile 27.4. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,260	\$72.92	\$91,879
1R	HNC Mile 26.4 to HNC Mile 25.9 (West Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN SY	26,600 12,800	\$61.46 \$9.78	\$1,634,836 \$125,184
1S	Mechanical Dredging Flotation Channel Excavation Mile 26.4 to Mile 25.9 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	2,840	\$72.92	\$207,093

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Construction Cost Alternative 2B Earthen Retention -20 Mile 36.3 to 22.0 to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 1	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1T	HNC Mile 26.0 to HNC Mile 24.0 Material to be placed unconfined within designated Wetland Site A-07-A west of HNC Mile 26.5. Material shall be discharged within the open water areas, a minimum 5,700 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	300,000	\$3.94	\$1,182,720
1U	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.60	\$505,000	\$303,000
1V	Earthen Retention Dike Refurbishment	LF	13,000	\$60.00	\$780,000
1W	HNC Mile 25.9 to HNC Mile 24.1 (West Bank) Foreshore Protection Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	21,300	\$61.46	\$1,309,098
1X	Mechanical Dredging Flotation Channel Excavation Mile 25.9 to Mile 24.1 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	9,700	\$72.92	\$707,324
1Y	HNC Mile 24.0 to HNC Mile 22.0 Material to be placed semi-confined within designated Wetland Site 15 west of HNC Mile 23.5. Material to be placed within the open water area(s), a minimum 1,270 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	305,000	\$3.40	\$1,038,464
1Z	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.53	\$505,000	\$267,650
1AA	Earthen Retention Dike Refurbishment	LF	2,450	\$60.00	\$147,000
1BB	HNC Mile 23.7 to HNC Mile 22.4 (East Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN SY	59,100 28,500	\$61.46 \$9.78	\$3,632,286 \$278,730
1CC	Mechanical Dredging Flotation Channel Excavation Mile 23.7 to Mile 22.4. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	6,540	\$72.92	\$476,897
1DD	HNC Mile 22.2 to HNC Mile 22.1 (East Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN SY	9,800 4,700	\$61.46 \$9.78	\$602,308 \$45,966

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Construction Cost Alternative 2B Earthen Retention -20 Mile 36.3 to 22.0 to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 1	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1EE	Mechanical Dredging Flotation Channel Excavation Mile 22.2 to Mile 22.1. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	730	\$72.92	\$53,232
Total:					\$22,060,185

Contract Duration	DY	115	
Notes:			
Dredging quantity does not reflect overdepth.			

Dredging:	1,755,000 CY
Rock:	118,700 TON
Geotextile:	46,000 SY
Flotation Channel:	21,070 LF
Earthen Dike:	40,150 LF
Survey/Crew/Boat:	3.8 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Construction Cost Alternative 2B Earthen Retention -20 Mile 22.0 to 11.5 to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 2	<i>Quantities & Line Items - Puls - Aug 2015</i> <i>Costs - Ramos - Aug 2015</i>
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2A	Mobilization and Demobilization	LS	1	\$825,704	\$825,704
	Dredging and Disposal (Mile 22.0 to Mile 11) Channel to be excavated to -22 NAVD88; 1v/2h side slope/150-foot bottom width				
2B	HNC Mile 22.0 to HNC Mile 20.0	CY	393,000	\$2.85	\$1,121,779
	Material to be placed unconfined within designated Wetland Site 16 west of HNC Mile 22. Material shall be discharged within the open water areas, a minimum 1,550 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).				
2C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.59	\$505,000	\$297,950
2D	HNC Mile 20.0 to HNC Mile 18.0	CY	92,000	\$8.28	\$761,907
	Material to be placed unconfined within Wetland Site 19C east of and adjacent to HNC Mile 19.5. The discharge will be positioned to the east and placed a minimum 500 ft beyond the bank rim/ridge or erosion control structure at the front of the disposal area. Elevation of material placed within the open water area(s) of Site 19C NTE +3.0' NAVD88 (See dwgs for details).				
2E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.40	\$505,000	\$202,000
2F	HNC Mile 19.2 to HNC Mile 17.5 (East Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN	99,500	\$61.46	\$6,115,270
		SY	47,900	\$9.78	\$468,462
2G	Mechanical Dredging Flotation Channel Excavation Mile 19.2 to Mile 17.5 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	8,120	\$72.92	\$592,110
2H	HNC Mile 19.1 to HNC Mile 17.8 (West Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN	18,200	\$61.46	\$1,118,572
		SY	8,750	\$9.78	\$85,575
2I	Mechanical Dredging Flotation Channel Excavation Mile 19.1 to Mile 17.8 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,790	\$72.92	\$130,527

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Construction Cost Alternative 2B Earthen Retention -20 Mile 22.0 to 11.5 to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 2	<i>Quantities & Line Items - Puls - Aug 2015</i> <i>Costs - Ramos - Aug 2015</i>
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2J	HNC Mile 18.0 HNC Mile 16.0 Material to be placed unconfined within designated Wetland Site 20C west of HNC Mile 17. Material shall be discharged within the open water areas, a minimum 900 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	170,000	\$5.26	\$894,336
2K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.47	\$505,000	\$237,350
2L	HNC Mile 17.7 to HNC Mile 16.7 (West Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN	67,400	\$61.46	\$4,142,404
		SY	32,500	\$9.78	\$317,850
2M	Mechanical Dredging Flotation Channel Excavation Mile 17.7 to Mile 16.7 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	5,480	\$72.92	\$399,602
2N	HNC Mile 16.9 to HNC Mile 13.3 (East Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN	213,000	\$61.46	\$13,090,980
		SY	102,600	\$9.78	\$1,003,428
2O	Mechanical Dredging Flotation Channel Excavation Mile 16.9 to Mile 13.3 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	19,200	\$72.92	\$1,400,064
2P	HNC Mile 16.0 to HNC Mile 13.0 Material to be placed semi-confined within designated Wetland Site 21 west of HNC Mile 15. Material to be placed within the open water area(s), a minimum 600 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	315,000	\$4.36	\$1,374,912
2Q	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.72	\$505,000	\$363,600
2R	Earthen Retention Dike Refurbishment	LF	3,850	\$60.00	\$231,000
2S	HNC Mile 15.6 to HNC Mile 14.0 (West Bank) Rock Retention Structure (site 21) (Dk ht. +6' NAVD88) Geotextile	TN	94,500	\$61.46	\$5,807,970
		SY	45,500	\$9.78	\$444,990

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Construction Cost Alternative 2B Earthen Retention -20 Mile 22.0 to 11.5 to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 2	<i>Quantities & Line Items - Puls - Aug 2015</i> <i>Costs - Ramos - Aug 2015</i>
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2T	Mechanical Dredging Flotation Channel Excavation Mile 15.6 to Mile 14.0 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	8,650	\$72.92	\$630,758
2U	HNC Mile 13.1 to HNC Mile 11.9 (West Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN	75,900	\$61.46	\$4,664,814
		SY	36,600	\$9.78	\$357,948
2V	Mechanical Dredging Flotation Channel Excavation Mile 13.1 to Mile 11.9 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	6,540	\$72.92	\$476,897
2W	HNC Mile 13.0 to HNC Mile 11.5 Material to be placed semi-confined within designated Wetland Site 24 west of HNC Mile 12.1. Material to be placed within the open water area(s), a minimum 900 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	180,000	\$3.92	\$705,024
2X	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.37	\$505,000	\$186,850
2Y	Earthen Retention Dike Refurbishment	LF	4,100	\$60.00	\$246,000
2Z	HNC Mile 12.7 to HNC Mile 12.3 (East Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN	27,100	\$61.46	\$1,665,566
		SY	13,000	\$9.78	\$127,140

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Construction Cost Alternative 2B Earthen Retention -20 Mile 22.0 to 11.5 to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 2	<i>Quantities & Line Items - Puls - Aug 2015</i> <i>Costs - Ramos - Aug 2015</i>
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2AA	Mechanical Dredging Flotation Channel Excavation Mile 12.6 to Mile 12.3 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,790	\$72.92	\$130,527
Total:					\$50,619,866

Contract Duration

DY

77

Note:

Dredging quantity does not reflect overdepth.

Dredging: 1,150,000 CY

Rock: 595,600 TON

Geotextile: 286,850 SY

Flotation Channel: 51,570 LF

Earthen Dike: 7,950 LF

Survey/Crew/Boat: 2.6 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana
Construction Cost Alternative 2B Earthen Retention -20
 Mile 11.5 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included
 Contract No. 3

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
3A	Mobilization and Demobilization	LS	1	\$1,030,374	\$1,030,374
	Dredging and Disposal (Mile 11.5 to 0.0) Channel to be excavated to -23 NAVD88; 1v/3h side slope by 150' channel width				
3B	HNC Mile 11.5 to HNC Mile 10.0	CY	230,000	\$3.65	\$839,040
	Material to be placed rock semi-confined west of channel within "lung area". 715 Acres See plans for details.				
3C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
3D	Earthen Retention Dike Refurbishment	LF	12,700	\$60.00	\$762,000
3E	HNC Mile 10.0 to HNC Mile 5.0	CY	2,014,500	\$3.83	\$7,709,894
	Material to be placed earthen-confined west of channel within "lung area". 715 Acres See plans for details.				
3F	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.69	\$505,000	\$1,358,450
3G	Earthen Retention Dike Refurbishment	LF	12,700	\$60.00	\$762,000
				Total	\$12,613,258
	Contract Duration:	DY	90		
	Notes:				
	Dredging quantity does not reflect overdepth.				

Dredging: 2,244,500 CY

Earthen Dike: 25,400 LF

Survey/Crew/Boat: 3.0 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana
Construction Cost Alternative 2B Earthen Retention -20
 Mile 11.5 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included
 Contract No. 3

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
4A	Mobilization and Demobilization	LS	1	\$1,030,374	\$1,030,374
	Dredging and Disposal (Mile 11.5 to 0.0) Channel to be excavated to -23 NAVD88; 1v/3h side slope by 150' channel width				
4B	HNC Mile 5.0 to HNC Mile 1.5	CY	1,050,000	\$7.73	\$8,117,760
	Material to be placed earthen confined on northeast end of Isle Denieres (East Island) @ 3' contour for marsh creation. 370 Acres. See plans for details.				
4C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.98	\$505,000	\$999,900
4D	Earthen Retension Dike Refurbishment	LF	6,500	\$60.00	\$390,000
4E	HNC Mile 1.5 to HNC Mile 0.0	CY	265,000	\$7.36	\$1,950,400
	Material to be placed on bay side of East Island Capacity of behind earthen disposal exceeded. 3' contour is limit. See plans for details				
4F	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.49	\$505,000	\$247,450
				Total	\$12,735,884
Contract Duration:		DY	74		
Notes:					
Dredging quantity does not reflect overdepth.					

Dredging: 1,315,000 CY

Earthen Dike: 6,500 LF

Survey/Crew/Boat: 2.5 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
Construction Cost Alternative 2B Earthen Retention -20	
Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 4 Feet of Advanced Maintenance Included	
Contract No. 4	

Contract No.	Description	Units	Estimated Quantity	Unit Price	Estimated Construction Cost
5A	Mobilization and Demobilization Dredging and Disposal Mile 0.0 to Mile (-3.7) Channel to be excavated to -24' NAVD88; 1v/2h side slopes by 300' bottom width.	LS	1	\$1,308,950	\$1,308,950
5B	Dredging and Disposal Mile 0.0 to Mile (-3.7) Material to be placed unconfined for Marsh Creation on the south side of East Island (Isle Deniers) outside of earthen confinement. (See plans for details). Material Quantity does not reflect overdepth.	CY	1,100,000	\$10.23	\$11,249,920
5C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.55	\$645,000	\$1,644,750
Total:					\$14,203,620
Contract Duration:		DY	77		
Note: Dredging quantity does not reflect overdepth.					

Dredging: 1,100,000 CY

Survey/Crew/Boat: 2.6 MO

Reach	20 foot depth		Duration (months)	Mob/Demob (Per Reach)	Crew/Equipment Costs
	Unit Cost	CY			
Mob/Demob (36.3 to 22.0)	\$939,307				\$505,000
36.3 to 34.0	\$3.66	325,000	0.61	\$327,961	\$505,000
34.0 to 32.0	\$4.17	175,000	0.38	\$434,307	\$505,000
32.0 to 29.5	\$5.85	215,000	0.66	\$434,307	\$505,000
29.5 to 28.0	\$5.03	185,000	0.47	\$327,961	\$505,000
28.0 to 26.0	\$4.65	250,000	0.59	\$327,961	\$505,000
26.0 to 24.0	\$3.94	300,000	0.60	\$327,961	\$505,000
24.0 to 22.0	\$3.40	305,000	0.53	\$327,961	\$505,000
		\$7,491,072			
Mob/Demob (22.0 to 11.5)	\$825,704				\$505,000
22.0 to 20.0	\$2.85	393,000	0.59	\$320,704	\$505,000
20.0 to 18.0	\$8.28	92,000	0.40	\$320,704	\$505,000
18.0 to 16.0	\$5.26	170,000	0.47	\$320,704	\$505,000
16.0 to 13.0	\$4.36	315,000	0.72	\$320,704	\$505,000
13.0 to 11.5	\$3.92	180,000	0.37	\$320,704	\$505,000
		\$4,857,958			
Mob/Demob (11.5 to 0.0)	\$1,030,374				\$505,000
11.5 to 10.0	\$3.65	230,000	0.30	\$372,299	\$505,000
10.0 to 5.0	\$3.83	2,014,500	2.69	\$372,299	\$505,000
5.0 to 1.5	\$7.73	1,050,000	1.98	\$525,374	\$505,000
1.5 to 0.0	\$7.36	265,000	0.49	\$526,109	\$505,000
		\$18,617,094			
Mob/Demob (0.0 to -3.7)	\$1,308,950				\$645,000
0.0 to -3.7	\$10.23	1,100,000	2.55	\$663,950	\$645,000
		\$11,249,920			

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Maintenance Cost Earthen Retention -20ft MLG

Costs for 10-Year Cycle to be Repeated 5 Times Over 50 Years

Multiple Disposal Sites

Mile 36.3 to Mile (-3.7) to -20 Foot Elevation w/ Advanced Maintenance Included
 Summary Page

Contract No.	Description	Cycle Frequency (Years)	Units	Quantity	Estimated Unit Price Per Cycle	Estimated Cycle Cost	Estimated Total Cost (50-Year)
1*	Mobilization/Demobilization	10	LS	1	\$871,046	871046	\$4,355,230
	Mile 36.3 to Mile 34.0	10	CY	109,600	\$6.74	\$738,184	\$3,690,920
	Mile 24.0 to Mile 22.0	10	CY	109,600	\$10.39	\$1,139,248	\$5,696,240
	Mile 22.0 to Mile 20.0	10	CY	109,600	\$8.93	\$978,407	\$4,892,036
	Mobilization/Demobilization	2	LS	1	\$1,031,109	\$1,031,109	\$25,777,725
	Mile 11.0 to Mile 0.0	2	CY	1,434,200	\$6.57	\$9,427,027	\$235,675,674
2	Mobilization/Demobilization	2	LS	1	\$1,308,950	\$1,308,950	\$32,723,750
	Mile 0.0 to Mile (-3.7)	2	CY	580,000	\$20.66	\$11,981,642	\$299,541,050
3	Mobilization/Demobilization	2	LS	1	\$1,031,109	\$1,031,109	
	Mile 11.0 to Mile 0.0	2	CY	1,434,200	\$6.57	\$9,427,027	
4	Mobilization/Demobilization	2	LS	1	\$1,308,950	\$1,308,950	
	Mile 0.0 to Mile (-3.7)	2	CY	580,000	\$20.66	\$11,981,642	
5	Mobilization/Demobilization	2	LS	1	\$1,031,109	\$1,031,109	
	Mile 11.0 to Mile 0.0	2	CY	1,434,200	\$6.57	\$9,427,027	
6	Mobilization/Demobilization	10	LS	1	\$939,307	\$939,307	\$4,696,535
	Mile 36.3 to Mile 34.0	10	CY	109,600	\$6.77	\$741,551	\$3,707,755
	Mile 34.0 to Mile 32.0	10	CY	219,600	\$6.86	\$1,507,001	\$7,535,005
	Mile 32.0 to Mile 29.5	10	CY	165,800	\$10.20	\$1,691,836	\$8,459,181
	Mile 29.5 to Mile 28.0	10	CY	165,800	\$5.24	\$868,203	\$4,341,014
	Mile 28.0 to Mile 26.0	10	CY	219,600	\$9.97	\$2,190,283	\$10,951,416
	Mile 26.0 to Mile 24.0	10	CY	219,600	\$16.08	\$3,531,986	\$17,659,929
	Mile 24.0 to Mile 22.0	10	CY	109,600	\$22.96	\$2,516,295	\$12,581,476
	Mile 22.0 to Mile 20.0	10	CY	109,600	\$10.06	\$1,102,166	\$5,510,830
	Mobilization/Demobilization	2	LS	1	\$1,308,950	\$1,308,950	
	Mile 0.0 to Mile (-3.7)	2	CY	580,000	\$20.66	\$11,981,642	
7	Mobilization/Demobilization	10	LS	1	\$939,307	\$939,307	\$4,696,535
	Mile 20.0 to Mile 18.0	10	CY	219,600	\$13.91	\$3,055,428	\$15,277,138
	Mile 18.0 to Mile 16.0	10	CY	219,600	\$27.64	\$6,070,003	\$30,350,013
	Mile 16.0 to Mile 13.0	10	CY	331,400	\$13.82	\$4,578,899	\$22,894,496
	Mile 13.0 to Mile 11.0	10	CY	254,500	\$6.31	\$1,606,440	\$8,032,198
	Mobilization/Demobilization	2	LS	1	\$1,031,109	\$1,031,109	
	Mile 11.0 to Mile 0.0	2	CY	1,434,200	\$6.57	\$9,427,027	
8	Mobilization/Demobilization	2	LS	1	\$1,308,950	\$1,308,950	
	Mile 0.0 to Mile (-3.7)	2	CY	580,000	\$20.66	\$11,981,642	
9	Mobilization/Demobilization	2	LS	1	\$1,031,109	\$1,031,109	
	Mile 11.0 to Mile 0.0	2	CY	1,434,200	\$6.57	\$9,427,027	
10	Mobilization/Demobilization	2	LS	1	\$1,308,950	\$1,308,950	
	Mile 0.0 to Mile (-3.7)	2	CY	580,000	\$20.66	\$11,981,642	
Total:				12,744,100	\$12.07	\$153,809,230	\$769,046,148

Note: Unit costs reflected on summary sheet include all disposal area dike refurbishment within each specified reach, if necessary
 * Three reaches specified in Contract 1 require a maintenance cycle every 5 years. 5 years after maintenance Contract 1 reaches at 36.3, 24.0, and 22.0 will undergo maintenance under Contract 6 (10-Year cycle). 5 Years after maintenance Contract 6 those reaches will be maintained under a new 5-year cycle (Contract 11). Following this sequence, contract 6 will be required four additional times over the 50 year project life after Contract 6 is completed.

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -20ft MLG Mile 36.3 to 34.0 & Mile 24 to 22.0 & Mile 22.0 to 20.0 & Mile 11.0 to 0.0 to -20 Foot Elevation w/ 2 and 3 Feet of Advanced Maintenance Included Contract No. 1	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1A	Mobilization and Demobilization Dredging and Disposal (Mile 36.3 to Mile 20.0) Channel to be excavated to -20 NAVD88; 1v/2h side slope/150-foot bottom width	LS	1	\$871,046	\$871,046
1B	HNC Mile 36.3 to HNC Mile 34.0 Material to be placed within confined upland Site 1 (Port Commission site) opposite Short Cut Canal. No height restriction. Dike construction/maintenance not required.	CY	109,600	\$5.34	\$585,001
1C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
1B	HNC Mile 36.3 to HNC Mile 34.0 Material to be placed within confined upland Site 3 opposite HNC Mile 35.5 No height restriction. Dike construction/maintenance not required.	CY	109,600	\$5.30	\$580,792
1C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
1D	HNC Mile 24.0 to HNC Mile 22.0 Material to be placed semi-confined within Wetland Site 15 between HNC Mile 23.0 and 22.5 along the west bank of the HNC WW. The initial buildup of mtl. shall begin in the north east corner, and to proceed outward in a west-southwesterly direction. Earthen closures will be required along the west side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	109,600	\$7.41	\$812,268
1E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
1F	Earthen Retention Dike Refurbishment	LF	2,450	\$60.00	\$147,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Quantities & Line Items - Puls - Aug 2015
 Houma, Terrebonne Parish, Louisiana Costs - Ramos - Aug 2015
Maintenance Cost Earthen Retention -20ft MLG
 Mile 36.3 to 34.0 & Mile 24 to 22.0 & Mile 22.0 to 20.0 & Mile 11.0 to 0.0 to -20 Foot Elevation
 w/ 2 and 3 Feet of Advanced Maintenance Included **Multiple Disposal Sites**
 Contract No. 1 **Channel Maintenance - 10 year frequency**

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1D	HNC Mile 24.0 to HNC Mile 22.0 Material to be placed semi-confined within Wetland Site 15A between HNC Mile 24.0 and 22.9 west of Site 15 beyond the west bank of the HNC WW. The initial buildup of mtl. shall begin in the south east corner, and to proceed outward in a westerly direction. Earthen closures will be required along the east side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	109,600	\$7.42	\$813,670
1E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
1F	Earthen Retention Dike Refurbishment	LF	4,800	\$60.00	\$288,000
1G	HNC Mile 22.0 to HNC Mile 20.0 Material to be placed unconfined within Wetland Site 16 opposite and adjacent to HNC Mile 21.4 along the west bank of the HNC WW. The discharge will be positioned to the west and placed a minimum 1,550 ft beyond the center line of the channel to the front of the disposal area. Elevation of material placed within the open water area(s) NTE +3.0' NAVD 88 (See dwgs for details).	CY	109,600	\$5.29	\$579,389
1H	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
1G	HNC Mile 22.0 to HNC Mile 20.0 Material to be placed semi-confined within Wetland Site 15A between HNC Mile 23.3 and 22.5 west of Site 15 'beyond the west bank of the HNC WW. The initial buildup of mtl. shall begin in the south east corner, and to proceed outward in a westerly direction. Earthen closures will be required along the east side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	109,600	\$7.71	\$844,534
1H	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.43	\$505,000	\$217,150

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -20ft MLG Mile 36.3 to 34.0 & Mile 24 to 22.0 & Mile 22.0 to 20.0 & Mile 11.0 to 0.0 to -20 Foot Elevation w/ 2 and 3 Feet of Advanced Maintenance Included Contract No. 1	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1I	Earthen Retention Dike Refurbishment	LF	4,800	\$60.00	\$288,000
1J	Mobilization and Demobilization	LS	1	\$1,031,109	\$1,031,109
	Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width				
1K	HNC Mile 11.0 to HNC Mile 5.0	CY	765,600	\$4.58	\$3,508,285
	Material to be placed earthen confined west of channel within "lung area". 715 Acres See plans for details.				
1L	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.09	\$505,000	\$550,450
1M	Earthen Retention Dike Refurbishment	LF	12,700	\$60.00	\$762,000
1N	HNC Mile 5.0 to HNC Mile 1.5	CY	468,000	\$5.30	\$2,480,026
	Material to be placed earthen confined on northeast end of Isle Denieres (East Island) for marsh creation. 370 Acres. See plans for details.				
1O	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.64	\$505,000	\$323,200
1P	Earthen Retention Dike Refurbishment	LF	6,500	\$60.00	\$390,000
1Q	HNC Mile 1.5 to HNC Mile 0.0	CY	200,600	\$5.04	\$1,011,666
1R	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.26	\$505,000	\$131,300
	Material to be placed unconfined for beach nourishment on Isle Deniers See Plans for details				
1S	Earthen Containment Dike Refurbishment (Lung)	LF	1,823	\$20.00	\$36,460

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -20ft MLG Mile 36.3 to 34.0 & Mile 24 to 22.0 & Mile 22.0 to 20.0 & Mile 11.0 to 0.0 to -20 Foot Elevation w/ 2 and 3 Feet of Advanced Maintenance Included Contract No. 1	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1T	Earthen Dike on bay side East Island	LF	3,419	\$60.00	\$205,140
1U	Earthen Containment Dike Refurbishment (East Island)	LF	1,425	\$20.00	\$28,500
Total:					\$14,097,587
Contract Duration		DY	91		
Notes:					
Channel Quantities do not reflect overdepth.					

Dredging:	1,763,000 CY
Earthen Dike:	31,250 LF
Survey/Crew/Boat:	3.0 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -20ft MLG Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 4 Feet of Advanced Maintenance Included Contract No. 2	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2A	Mobilization and Demobilization	LS	1	\$1,308,950	\$1,308,950
	Dredging and Disposal Mile 0.0 to Mile (-3.7) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width				
2B	Dredging and Disposal Mile 0.0 to Mile (-3.7)	CY	580,000	\$18.02	\$10,452,992
	Material to be placed unconfined for Marsh Creation on the South side of East Island (Isle Deniers) within the surf zone (See plans for details). Material Quantity does not reflect overdepth.				
2C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.4	\$645,000	\$1,528,650
					Total: \$13,290,592
	Contract Duration	DY	71		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging: 580,000 CY

Survey/Crew/Boat: 2.4 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -20ft MLG Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 3	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
3A	Mobilization and Demobilization Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width	LS	1	\$1,031,109	\$1,031,109
3B	HNC Mile 11.0 to HNC Mile 5.0 Material to be placed earthen confined west of channel within "lung area". 715 Acres See plans for details.	CY	765,600	\$4.58	\$3,508,285
3C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.09	\$505,000	\$550,450
3D	Earthen Retention Dike Refurbishment	LF	12,700	\$60.00	\$762,000
3E	HNC Mile 5.0 to HNC Mile 1.5 Material to be placed earthen confined on northeast end of Isle Denieres (East Island) for marsh creation. 370 Acres. See plans for details.	CY	468,000	\$5.30	\$2,480,026
3F	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.64	\$505,000	\$323,200
3G	Earthen Retention Dike Refurbishment	LF	6,500	\$60.00	\$390,000
3H	HNC Mile 1.5 to HNC Mile 0.0 Material to be placed unconfined for beach nourishment on Isle Deniers See Plans for details	CY	200,600	\$5.04	\$1,011,666
3I	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.26	\$505,000	\$131,300
3J	Earthen Containment Dike Refurbishment (Lung)	LF	1,823	\$20.00	\$36,460

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
Maintenance Cost Earthen Retention -20ft MLG	
Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included	
Contract No. 3	Channel Maintenance - 2 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
3K	Earthen Dike on bay side East Island	LF	3,419	\$60.00	\$205,140
3L	Earthen Containment Dike Refurbishment (East Island)	LF	1,425	\$20.00	\$28,500
Total:					\$10,458,136

Contract Duration	DY	60
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Note:

Channel Quantities do not reflect overdepth.

Dredging: 1,434,200 CY

Earthen Dike: 25,867 LF

Survey/Crew/Boat: 2.0 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -20ft MLG Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 4 Feet of Advanced Maintenance Included Contract No. 4	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
4A	Mobilization and Demobilization	LS	1	\$1,308,950	\$1,308,950
	Dredging and Disposal Mile 0.0 to Mile (-3.7) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width				
4B	Dredging and Disposal Mile 0.0 to Mile (-3.7)	CY	580,000	\$18.02	\$10,452,992
	Material to be placed unconfined for Marsh Creation on the South side of East Island (Isle Deniers) within the surf zone (See plans for details). Material Quantity does not reflect overdepth.				
4C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.4	\$645,000	\$1,528,650
					Total: \$13,290,592
	Contract Duration	DY	71		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging: 580,000 CY

Survey/Crew/Boat: 2.4 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -20ft MLG Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 5	<i>Quantities & Line Items - Puls - Aug 2015</i> <i>Costs - Ramos - Aug 2015</i>
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Channel Maintenance - 2 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
5A	Mobilization and Demobilization Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width	LS	1	\$1,031,109	\$1,031,109
5B	HNC Mile 11.0 to HNC Mile 5.0 Material to be placed earthen confined west of channel within "lung area". 715 Acres See plans for details.	CY	765,600	\$4.58	\$3,508,285
5C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.09	\$505,000	\$550,450
5D	Earthen Retention Dike Refurbishment	LF	12,700	\$60.00	\$762,000
5E	HNC Mile 5.0 to HNC Mile 1.5 Material to be placed earthen confined on northeast end of Isle Denieres (East Island) for marsh creation. 370 Acres. See plans for details.	CY	468,000	\$5.30	\$2,480,026
5F	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.64	\$505,000	\$323,200
5G	Earthen Retention Dike Refurbishment	LF	6,500	\$60.00	\$390,000
5H	HNC Mile 1.5 to HNC Mile 0.0 Material to be placed unconfined for beach nourishment on Isle Deniers See Plans for details	CY	200,600	\$5.04	\$1,011,666
5I	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.26	\$505,000	\$131,300
5J	Earthen Containment Dike Refurbishment (Lung)	LF	1,823	\$20.00	\$36,460

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana	<i>Quantities & Line Items - Puls - Aug 2015</i> <i>Costs - Ramos - Aug 2015</i>
Maintenance Cost Earthen Retention -20ft MLG	
Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included	
Contract No. 5	Channel Maintenance - 2 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
5K	Earthen Dike on bay side East Island	LF	3,419	\$60.00	\$205,140
5L	Earthen Containment Dike Refurbishment (East Island)	LF	1,425	\$20.00	\$28,500
Total:					\$10,458,136

Contract Duration	DY	60
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Note:

Channel Quantities do not reflect overdepth.

Dredging: 1,434,200 CY

Earthen Dike: 25,867 LF

Survey/Crew/Boat: 2.0 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening *Quantities & Line Items - Puls - Aug 2015*
 Houma, Terrebonne Parish, Louisiana *Costs - Ramos - Aug 2015*
Maintenance Cost Earthen Retention -20ft MLG **Multiple Disposal Sites**
 Mile 36.3 to 20.0 & Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included
 Contract No. 6 **Channel Maintenance - 2, 5, and 10 year frequency**

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6A	Mobilization and Demobilization	LS	1	\$939,307	\$939,307
	Dredging and Disposal (Mile 36.3 to Mile 20.0) Channel to be excavated to -20 NAVD88; 1v/2h side slope/150-foot bottom width				
6B	HNC Mile 36.3 to HNC Mile 34.0	CY	109,600	\$5.34	\$585,001
	Material to be placed within confined upland Site 3 opposite HNC Mile 35.5 No height restriction. Dike construction/maintenance not required.				
6C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
6D	NHC Mile 34.0 to HNC Mile 32.0	CY	219,600	\$3.94	\$865,751
	Material to be placed semi-confined within designated Wetland Site 7E opposite HNC Mile 31. Material to be placed within the open water area(s), a minimum 12,500 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).				
6E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.45	\$505,000	\$227,250
6F	Earthen Retention Dike Refurbishment	LF	6,900	\$60.00	\$414,000
6G	HNC Mile 32.0 to HNC Mile 29.5	CY	165,800	\$6.09	\$1,010,186
	Material to be placed semi-confined within designated Wetland Site 7E opposite HNC Mile 31. Material to be placed within the open water area(s), a minimum 12,500 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).				
6H	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.53	\$505,000	\$267,650
6I	Earthen Retention Dike Refurbishment	LF	6,900	\$60.00	\$414,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening *Quantities & Line Items - Puls - Aug 2015*
 Houma, Terrebonne Parish, Louisiana *Costs - Ramos - Aug 2015*
Maintenance Cost Earthen Retention -20ft MLG **Multiple Disposal Sites**
 Mile 36.3 to 20.0 & Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included
 Contract No. 6 **Channel Maintenance - 2, 5, and 10 year frequency**

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6J	HNC Mile 29.5 to HNC Mile 28.0 Material to be placed unconfined within designated Wetland Site 12B opposite approximate HNC Mile 27.0. Mtl. shall be discharged within the open water areas, a minimum 4,500 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	165,800	\$3.88	\$643,039
6K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.32	\$505,000	\$161,600
6L	Earthen Retention Dike Refurbishment	LF	1,600	\$60.00	\$96,000
6J	HNC Mile 29.5 to HNC Mile 28.0 Material to be placed unconfined within designated Wetland Site 12 opposite approximate HNC Mile 27.0. Mtl. shall be discharged within the open water areas, a minimum 1,950 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	165,800	\$3.62	\$600,594
6K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
6L	Earthen Retention Dike Refurbishment	LF	1,800	\$60.00	\$108,000
6M	HNC Mile 28.0 to HNC Mile 26.0 Material to be placed unconfined within designated Wetland Site A-07-A opposite approximate HNC Mile 26.5. Mtl. shall be discharged within the open water areas, a minimum 5,700 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	219,600	\$3.20	\$702,720
6N	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.37	\$505,000	\$186,850
6O	Earthen Retention Dike Refurbishment	LF	9,300	\$60.00	\$558,000
6P	HNC Mile 27.6 to HNC Mile 27.4 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	1,900	\$61.46	\$116,774
6Q	Mechanical Dredging Flotation Channel Excavation Mile 27.6 to Mile 27.4. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,260	\$72.92	\$91,879

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening *Quantities & Line Items - Puls - Aug 2015*
 Houma, Terrebonne Parish, Louisiana *Costs - Ramos - Aug 2015*
Maintenance Cost Earthen Retention -20ft MLG **Multiple Disposal Sites**
 Mile 36.3 to 20.0 & Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included
 Contract No. 6 **Channel Maintenance - 2, 5, and 10 year frequency**

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6R	HNC Mile 26.4 to HNC Mile 25.9 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	5,320	\$61.46	\$326,967
6S	Mechanical Dredging Flotation Channel Excavation Mile 26.4 to Mile 25.9 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	2,840	\$72.92	\$207,093
6T	HNC Mile 26.0 to HNC Mile 24.0 Material to be placed unconfined within designated Wetland Site 14A opposite approximate HNC Mile 27. Mtl. shall be discharged within the open water areas, a minimum 500-feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	219,600	\$3.55	\$778,614
6U	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.39	\$505,000	\$196,950
6V	Earthen Retention Dike Refurbishment	LF	9,000	\$60.00	\$540,000
6W	HNC Mile 25.9 to HNC Mile 24.1 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	21,300	\$61.46	\$1,309,098
6X	Mechanical Dredging Flotation Channel Excavation Mile 25.9 to Mile 24.1 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	9,700	\$72.92	\$707,324
6Y	HNC Mile 24.0 to HNC Mile 22.0 Material to be placed semi-confined within Wetland Site 15 between HNC Mile 23.0 and 22.5 along the west bank of the HNC WW. The initial buildup of mtl. shall begin in the north east corner, and to proceed outward in a west-southwesterly direction. Earthen closures will be required along the west side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	109,600	\$7.41	\$812,268
6Z	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
6AA	Earthen Retention Dike Refurbishment	LF	2,450	\$60.00	\$147,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening *Quantities & Line Items - Puls - Aug 2015*
 Houma, Terrebonne Parish, Louisiana *Costs - Ramos - Aug 2015*
Maintenance Cost Earthen Retention -20ft MLG **Multiple Disposal Sites**
 Mile 36.3 to 20.0 & Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included
 Contract No. 6 **Channel Maintenance - 2, 5, and 10 year frequency**

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6Y	HNC Mile 24.0 to HNC Mile 22.0 Material to be placed semi-confined within Wetland Site 15A between HNC Mile 24.0 and 22.9 west of Site 15 'beyond the west bank of the HNC WW. The initial buildup of mtl. shall begin in the south east corner, and to proceed outward in a westerly direction. Earthen closures will be required along the east side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	109,600	\$7.42	\$813,670
6Z	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
6AA	Earthen Retention Dike Refurbishment	LF	4,800	\$60.00	\$288,000
6BB	HNC Mile 23.7 to HNC Mile 22.4 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	11,820	\$61.46	\$726,457
6CC	Mechanical Dredging Flotation Channel Excavation Mile 23.6 to Mile 22.4. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	6,540	\$72.92	\$476,897
6DD	HNC Mile 22.2 to HNC Mile 22.1 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	1,960	\$61.46	\$120,462
6EE	Mechanical Dredging Flotation Channel Excavation Mile 22.2 to Mile 22.1. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	730	\$72.92	\$53,232
6FF	HNC Mile 22.0 to HNC Mile 20.0 Material to be placed unconfined within Wetland Site 16 opposite and adjacent to HNC Mile 21.4 along the west bank of the HNC WW. The discharge will be positioned to the west and placed a minimum 1,550 ft beyond the center line of the channel to the front of the disposal area. Elevation of material placed within the open water area(s) NTE +3.0' NAVD 88 (See dwgs for details).	CY	109,600	\$5.29	\$579,389
6GG	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening *Quantities & Line Items - Puls - Aug 2015*
 Houma, Terrebonne Parish, Louisiana *Costs - Ramos - Aug 2015*
Maintenance Cost Earthen Retention -20ft MLG **Multiple Disposal Sites**
 Mile 36.3 to 20.0 & Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included
 Contract No. 6 **Channel Maintenance - 2, 5, and 10 year frequency**

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6FF	HNC Mile 22.0 to HNC Mile 20.0 Material to be placed semi-confined within Wetland Site 15A between HNC Mile 24.0 and 22.9 west of Site 15 'beyond the west bank of the HNC WW. The initial buildup of mtl. shall begin in the south east corner, and to proceed outward in a westerly direction. Earthen closures will be required along the east side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	109,600	\$7.71	\$844,534
6GG	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.43	\$505,000	\$217,150
6HH	Earthen Retention Dike Re-furbishment	LF	4,800	\$60.00	\$288,000
6II	Mobilization and Demobilization Dredging and Disposal Mile 0.0 to Mile (-3.7) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width	LS	1	\$1,308,950	\$1,308,950
6JJ	Dredging and Disposal Mile 0.0 to Mile (-3.7) Material to be placed unconfined for Marsh Creation on the South side of East Island (Isle Deniers) within the surf zone (See plans for details). Material Quantity does not reflect overdepth.	CY	580,000	\$18.02	\$10,452,992
6KK	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.37	\$645,000	\$1,528,650
					Total: \$31,474,847

Contract Duration

DY 164

Notes:

Channel Quantities do not reflect overdepth.

Dredging: 1,899,200 CY

Rock: 42,300 TON

Flotation Channel: 21,070 LF

Earthen Dike: 47,550 LF

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -20ft MLG Mile 36.3 to 20.0 & Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 6	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2, 5, and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
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Survey/Crew/Boat: 5.5 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -20ft MLG Mile 20.0 to Mile 11.0 & Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 7	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2 and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7A	Mobilization and Demobilization Dredging and Disposal (Mile 20.0 to Mile 11.0) Channel to be excavated to -20 NAVD88; 1v/2h side slope/150-foot bottom width	LS	1	\$939,307	\$939,307
7B	HNC Mile 20.0 to HNC Mile 18.0 Material to be placed unconfined within Wetland Site 19C oppsite and adjacent to HNC Mile 19.3 along the east bank of the HNC WW. The discharge will be positioned to the east and placed a minimum 500-ft beyond the bank rim/ridge or erosion control structure at the front of the disposal area. Elevation of material placed within the open water area(s) of Site 19C NTE +3.0' NAVD88 (See dwgs for details).	CY	219,600	\$2.96	\$649,313
7C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700
7B	HNC Mile 20.0 to HNC Mile 18.0 Material to be placed semi-confined within the open water portions of Wetland Site 19D between HNC Mile 20.2 and 19.6, located beyond the west bank of the HNC WW. The initial buildup of mtl. shall begin in the north east corner, and to proceed outward in a westerly direction a minimum distance of 2,350 ft beyond the channel center line. Earthen closures will be required along the south side of the disposal area adjacent to the open water A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors at the northeast and south east portions of the disposal site. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	219,600	\$3.07	\$674,611
7C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.35	\$505,000	\$176,750
7D	Earthen Retention Dike Re-furbishment	LF	1,300	\$60.00	\$78,000
7E	HNC Mile 19.2 to HNC Mile 17.5 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	19,900	\$61.46	\$1,223,054
7F	Mechanical Dredging Flotation Channel Excavation Mile 19.2 to Mile 17.7 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	8,120	\$72.92	\$592,110
7G	HNC Mile 19.1 to HNC Mile 17.8 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	3,640	\$61.46	\$223,714

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -20ft MLG Mile 20.0 to Mile 11.0 & Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 7	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2 and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7H	Mechanical Dredging Flotation Channel Excavation Mile 18.1 to Mile 17.8 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,790	\$72.92	\$130,527
7I	HNC Mile 18.0 HNC Mile 16.0 Material to be placed unconfined within Wetland Site 20C oppsoite HNC Mile 16.8 along the west bank of the HNC WW. A construction access corriodr, 200 feet in width, will be provided for the Contractors use at the intersection of Four Pt. Bayou with the HNC WW. The intial buildup shall occur in the east corner of the DA and to proceed outward in a westerly direction. Elevation of Mtl. NTE +3.0' NAVD88 (See dwgs for details).	CY	219,600	\$2.79	\$612,772
7J	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.32	\$505,000	\$161,600
7I	HNC Mile 18.0 HNC Mile 16.0 Material to be placed within Wetland Site 21 opposite HNC Mile 15.0. To prevent material runback, the discharge pipe will be postioned to the SW and placed approximately 600 feet west of HNC Mile 15.0. The material will be placed in a west south-westerly direction within the open water areas or tributaries along the back side of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs f/details).	CY	219,600	\$3.25	\$713,964
7J	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.37	\$505,000	\$186,850
7K	Earthen Retention Dike Re-fubishment	LF	2,000	\$60.00	\$120,000
7L	HNC Mile 17.7 to HNC Mile 16.7 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	13,480	\$61.46	\$828,481
7M	Mechanical Dredging Flotation Channel Excavation Mile 17.7 to Mile 16.7 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	5,480	\$72.92	\$399,602
7N	HNC Mile 16.9 to HNC Mile 13.3 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	42,600	\$61.46	\$2,618,196

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -20ft MLG Mile 20.0 to Mile 11.0 & Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 7	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites
Channel Maintenance - 2 and 10 year frequency	

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7O	Mechanical Dredging Flotation Channel Excavation Mile 16.9 to Mile 13.3 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	19,200	\$72.92	\$1,400,064
7P	HNC Mile 16.0 to HNC Mile 13.0 Material to be placed within Wetland Site 21 opposite HNC Mile 15.0. To prevent material runback, the discharge pipe will be positioned to the SW and placed approximately 600 feet west of HNC Mile 15.0. The material will be placed in a west south-westerly direction within the open water areas or tributaries along the back side of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs f/details).	CY	331,400	\$2.94	\$975,642
7Q	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.51	\$505,000	\$257,550
7R	Earthen Retention Dike Re-fubishment	LF	3,850	\$60.00	\$231,000
7S	HNC Mile 15.6 to HNC Mile 14.0 (West Bank) Rock Retention Structure Refurbishment (Dk ht. +6' NAVD88) Stone quantity 20% of construction quantity	TN	18,900	\$61.46	\$1,161,594
	Mechanical Dredging Flotation Channel Excavation Mile 15.6 to Mile 14.0 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	8,650	\$72.92	\$630,758
7T	HNC Mile 13.2 to HNC Mile 11.9 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +6' NAVD88) Stone quantity 20% of construction quantity	TN	15,180	\$61.46	\$932,963
7U	Mechanical Dredging Flotation Channel Excavation Mile 13.1 to Mile 11.9 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	5,340	\$72.92	\$389,393
7V	HNC Mile 13.0 to HNC Mile 11.0 Material to be placed within Wetland Site 24 opposite HNC Mile 12.0 along the west bank of the HNC WW. A construction access corrdior, 200 ft in width, will be provided for the Contractors use at the entrance of the WW. The initial buildup will occur in the east corner of the DA and proceed outward in a west, south-westerly direction. Elevation of material placed within the open water area(s) NTE +3.0' NAVD88 (See dwgs for details).	CY	254,500	\$2.62	\$667,808
7W	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.35	\$505,000	\$176,750

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -20ft MLG Mile 20.0 to Mile 11.0 & Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 7	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2 and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7X	Earthen Retention Dike Re-fubishment	LF	4,100	\$60.00	\$246,000
7V	HNC Mile 13.0 to HNC Mile 11.0 Material to be placed within Wetland Site 21 opposite HNC Mile 15.0. To prevent material runback, the discharge pipe will be postioned to the SW and placed approximately 600 feet west of HNC Mile 15.0. The material will be placed in a west south-westerly direction within the open water areas or tributaries along the back side of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs f/details).	CY	254,500	\$2.88	\$732,960
7W	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.38	\$505,000	\$191,900
7X	Earthen Retention Dike Re-fubishment	LF	3,850	\$60.00	\$231,000
7Y	HNC Mile 12.7 to HNC Mile 12.3 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	5,420	\$61.46	\$333,113
7Z	Mechanical Dredging Flotation Channel Excavation Mile 12.6 to Mile 12.3 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,790	\$72.92	\$130,527
7AA	Mobilization and Demobilization Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width	LS	1	\$1,031,109	\$1,031,109
7BB	HNC Mile 11.0 to HNC Mile 5.0 Material to be placed earthen confined west of channel within "lung area". 715 Acres See plans for details.	CY	765,600	\$4.58	\$3,508,285
7CC	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.09	\$505,000	\$550,450
7DD	Earthen Retention Dike Re-fubishment	LF	12,700	\$60.00	\$762,000
7EE	HNC Mile 5.0 to HNC Mile 1.5 Material to be placed earthen confined on northeast end of Isle Denieres (East Island) for marsh creation. 370 Acres. See plans for details.	CY	468,000	\$5.30	\$2,480,026
7FF	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.64	\$505,000	\$323,200

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -20ft MLG Mile 20.0 to Mile 11.0 & Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 7	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites
Channel Maintenance - 2 and 10 year frequency	

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7GG	Earthen Retention Dike Re-fubishment	LF	6,500	\$60.00	\$390,000
7HH	HNC Mile 1.5 to HNC Mile 0.0 Material to be placed unconfined for beach nourishment on Isle Deniers See Plans for details	CY	200,600	\$5.04	\$1,011,666
7II	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.26	\$505,000	\$131,300
7JJ	Earthen Containment Dike Refurbishment (Lung)	LF	1,823	\$20.00	\$36,460
7KK	Earthen Dike on bay side East Island	LF	3,419	\$60.00	\$205,140
7LL	Earthen Containment Dike Refurbishment (East Island)	LF	1,425	\$20.00	\$28,500
Total:					\$26,493,765

Contract Duration	DY	108
Note:		
Material Quantity does not reflect overdepth.		

Dredging:	2,459,300 CY
Rock:	119,120 TON
Flotation Channel:	50,370 LF
Earthen Dike:	40,967 LF
Survey/Crew/Boat:	3.6 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -20ft MLG Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 4 Feet of Advanced Maintenance Included Contract No. 8	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
8A	Mobilization and Demobilization	LS	1	\$1,308,950	\$1,308,950
	Dredging and Disposal Mile 0.0 to Mile (-3.7) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width				
8B	Dredging and Disposal Mile 0.0 to Mile (-3.7)	CY	580,000	\$18.02	\$10,452,992
	Material to be placed unconfined for Marsh Creation on the South side of East Island (Isle Deniers) within the surf zone (See plans for details). Material Quantity does not reflect overdepth.				
8C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.4	\$645,000	\$1,528,650
					Total: \$13,290,592
	Contract Duration	DY	71		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging: 580,000 CY

Survey/Crew/Boat: 2.4 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -20ft MLG Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 9	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
9A	Mobilization and Demobilization	LS	1	\$1,031,109	\$1,031,109
	Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width				
9B	HNC Mile 11.0 to HNC Mile 5.0	CY	765,600	\$4.58	\$3,508,285
	Material to be placed earthen confined west of channel within "lung area". 715 Acres See plans for details.				
9C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.09	\$505,000	\$550,450
9D	Earthen Retention Dike Re-furbishment	LF	12,700	\$60.00	\$762,000
9E	HNC Mile 5.0 to HNC Mile 1.5	CY	468,000	\$5.30	\$2,480,026
	Material to be placed earthen confined on northeast end of Isle Denieres (East Island) for marsh creation. 370 Acres. See plans for details.				
9F	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.64	\$505,000	\$323,200
9G	Earthen Retention Dike Re-furbishment	LF	6,500	\$60.00	\$390,000
9H	HNC Mile 1.5 to HNC Mile 0.0	CY	200,600	\$5.04	\$1,011,666
	Material to be placed unconfined for beach nourishment on Isle Deniers See Plans for details				
9I	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.26	\$505,000	\$131,300
9J	Earthen Containment Dike Refurbishment (Lung)	LF	1,823	\$20.00	\$36,460

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
Maintenance Cost Earthen Retention -20ft MLG	
Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included	
Contract No. 9	Channel Maintenance - 2 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
9K	Earthen Dike on bay side East Island	LF	3,419	\$60.00	\$205,140
9L	Earthen Containment Dike Refurbishment (East Island)	LF	1,425	\$20.00	\$28,500
Total:					\$10,458,136

Contract Duration	DY	60
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Note:

Channel Quantities do not reflect overdepth.

Dredging: 1,434,200 CY

Earthen Dike: 25,867 LF

Survey/Crew/Boat: 2.0 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Earthen Retention -20ft MLG Mile 0.0 to (-3.5) to -20 Foot Elevation w/ 4 Feet of Advanced Maintenance Included Contract No. 10	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
10A	Mobilization and Demobilization	LS	1	\$1,308,950	\$1,308,950
	Dredging and Disposal Mile 0.0 to Mile (-3.7) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width				
10B	Dredging and Disposal Mile 0.0 to Mile (-3.7)	CY	580,000	\$18.02	\$10,452,992
	Material to be placed unconfined for Marsh Creation on the South side of East Island (Isle Deniers) within the surf zone (See plans for details). Material Quantity does not reflect overdepth.				
10C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.4	\$645,000	\$1,528,650
					Total: \$13,290,592
	Contract Duration	DY	71		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging: 580,000 CY

Survey/Crew/Boat: 2.4 MO

Reach	20-foot depth				20-foot depth				
	Site 1				Site 2				Crew/Equipment Costs
	Unit Cost	CY	Duration (months)	Mob/Demob (Per Reach)	Unit Cost	CY	Duration (months)	Mob/Demob (Per Reach)	
Mob/Demob	\$871,046				\$1,404,700				\$505,000
36.3 to 34.5 (5-year)	\$5.34	109,600	0.31	\$315,563	\$5.30	109,600	0.31	\$315,563	\$505,000
24.0 to 22.0 (5-year)	\$7.41	109,600	0.30	\$366,046	\$7.42	109,600	0.30	\$366,046	\$505,000
22.0 to 19.7 (5-year)	\$5.29	109,600	0.30	\$323,123	\$7.71	109,600	0.43	\$323,123	\$505,000
		\$1,976,658				\$2,238,996			
Mob/Demob (36.3 to 22.0)	\$939,307								\$505,000
36.3 to 34.0	\$5.34	109,600	0.31	\$315,563					\$505,000
34.0 to 32.0	\$3.94	219,600	0.45	\$434,307					\$505,000
32.0 to 29.5	\$6.09	165,800	0.53	\$434,307					\$505,000
29.5 to 28.0	\$3.88	165,800	0.32	\$330,985	\$3.62	165,800	0.30	\$330,985	\$505,000
28.0 to 26.0	\$3.20	219,600	0.37	\$317,075					\$505,000
26.0 to 24.0	\$3.55	219,600	0.39	\$330,985					\$505,000
24.0 to 22.0	\$7.41	109,600	0.30	\$366,046	\$7.42	109,600	0.30	\$366,046	\$505,000
		\$5,397,578				\$1,414,264			
Mob/Demob (22.0 to 11.0)	\$828,123								\$505,000
22.0 to 20.0	\$5.29	109,600	0.30	\$323,123	\$7.71	109,600	0.43	\$323,123	\$505,000
20.0 to 18.0	\$2.96	219,600	0.34	\$320,704	\$3.07	219,600	0.35	\$320,704	\$505,000
18.0 to 16.0	\$2.79	219,600	0.32	\$320,704	\$3.25	219,600	0.37	\$320,704	\$505,000
16.0 to 13.0	\$2.94	331,400	0.51	\$320,704					\$505,000
13.0 to 11.0	\$2.62	254,500	0.35	\$320,704	\$2.88	254,500	0.38	\$320,704	\$505,000
		\$3,484,924				\$2,966,068			
Mob/Demob (0.0 to 11.0)	\$1,031,109								\$505,000
11.0 to 5.0	\$4.58	765,600	1.09	\$485,917					\$505,000
5.0 to 1.5	\$5.30	468,000	0.64	\$526,109					\$505,000
1.5 to 0.0	\$5.04	200,600	0.26	\$526,109					\$505,000
		\$6,999,977							
Mob/Demob (0.0 to -3.7)	\$1,308,950								\$645,000
0.0 to -3.7	\$18.02	580,000	2.37	\$663,950					\$645,000
		\$10,452,992							

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Construction Cost Alternative 2C Rock Retention -20

Mile 36.3 to Mile (-3.7) to -20 Foot Elevation w/ Advanced Maintenance Included

Summary Page

Contract No.	Description	Units	Estimated Quantity	Unit Price	Estimated Construction Cost
1	Mobilization/Demobilization	LS	1	\$939,307	\$939,307
	Mile 36.3 to Mile 22.0	CY	1,755,000	\$12.08	\$21,199,806
2	Mobilization/Demobilization	LS	1	\$825,704	\$825,704
	Mile 22 to Mile 11.5	CY	1,150,000	\$43.62	\$50,161,664
3	Mobilization/Demobilization	LS	1	\$1,030,374	\$1,030,374
	Mile 11.5 to Mile 0.0	CY	2,244,500	\$5.69	\$12,768,349
4	Mobilization/Demobilization	LS	1	\$1,030,374	\$1,030,374
	Mile 11.5 to Mile 0.0	CY	1,315,000	\$28.27	\$37,170,592
5	Mobilization/Demobilization	LS	1	\$1,308,950	\$1,308,950
	Mile 0.0 to Mile (-3.7)	CY	1,100,000	\$11.72	\$12,894,670
Total:			7,564,500	\$18.42	\$139,329,789

Note:

Unit costs reflected on summary sheet include earthen dike construction, rock dike construction, geotextile fabric, floatation channel excavation within each specified reach, crews, surveying, and boats, if applicable.

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Construction Cost Alternative 2C Rock Retention -20

Mile 36.3 to 22.0 to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included
 Contract No. 1

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1A	Mobilization and Demobilization	LS	1	\$939,307	\$939,307
	Dredging and Disposal (Mile 36.3 to Mile 22.0) Channel to be excavated to -22 NAVD88; 1v/2h side slope/150-foot bottom width				
1B	HNC Mile 36.3 to HNC Mile 34.0	CY	325,000	\$3.66	\$1,189,760
	Material to be placed within confined upland Site 1 (Port Commission site) opposite Short Cut Canal. No height restriction. Dike construction/maintenance not required.				
1C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.61	\$505,000	\$308,050
1D	NHC Mile 34.0 to HNC Mile 32.0	CY	175,000	\$4.17	\$730,240
	Material to be placed semi-confined within designated Wetland Site 7E east of HNC Mile 31. Material to be placed within the open water area(s), a minimum 12,500 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).				
1E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.38	\$505,000	\$191,900
1F	Earthen Retention Dike Refurbishment	LF	6,900	\$60.00	\$414,000
1G	HNC Mile 32.0 to HNC Mile 29.5	CY	215,000	\$5.85	\$1,257,664
	Material to be placed semi-confined within designated Wetland Site 7E east of HNC Mile 31. Material to be placed within the open water area(s), a minimum 12,500 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).				
1H	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.66	\$505,000	\$333,300
1I	Earthen Retention Dike Refurbishment	LF	6,900	\$60.00	\$414,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Construction Cost Alternative 2C Rock Retention -20 Mile 36.3 to 22.0 to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 1	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1J	HNC Mile 29.5 to HNC Mile 28.0 Material to be placed unconfined within designated Wetland Site 12B east of HNC Mile 27.0. Material shall be discharged within the open water areas, a minimum 4,500 -feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	185,000	\$5.03	\$930,624
1K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.47	\$505,000	\$237,350
1L	Earthen Retension Dike Refurbishment	LF	1,600	\$60.00	\$96,000
1M	HNC Mile 28.0 to HNC Mile 26.0 Material to be placed unconfined within designated Wetland Site A-07-A west of HNC Mile 26.5. Material shall be discharged within the open water areas, a minimum 5,700 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	250,000	\$4.65	\$1,161,600
1N	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.59	\$505,000	\$297,950
1O	Earthen Retension Dike Refurbishment	LF	9,300	\$60.00	\$558,000
1P	HNC Mile 27.6 to HNC Mile 27.4 (West Bank) Foreshore Protection Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	1,900	\$61.98	\$117,762
1Q	Mechanical Dredging Flotation Channel Excavation Mile 27.6 to Mile 27.4. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,260	\$73.54	\$92,660
1R	HNC Mile 26.4 to HNC Mile 25.9 (West Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN SY	26,600 12,800	\$61.98 \$9.87	\$1,648,668 \$126,336
1S	Mechanical Dredging Flotation Channel Excavation Mile 26.4 to Mile 25.9 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	2,840	\$73.54	\$208,854

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Construction Cost Alternative 2C Rock Retention -20 Mile 36.3 to 22.0 to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 1	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1T	HNC Mile 26.0 to HNC Mile 24.0 Material to be placed unconfined within designated Wetland Site A-07-A west of HNC Mile 26.5. Material shall be discharged within the open water areas, a minimum 5,700 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	300,000	\$3.94	\$1,182,720
1U	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.60	\$505,000	\$303,000
1V	Earthen Retension Dike Refurbishment	LF	13,000	\$60.00	\$780,000
1W	HNC Mile 25.9 to HNC Mile 24.1 (West Bank) Foreshore Protection Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	21,300	\$61.98	\$1,320,174
1X	Mechanical Dredging Flotation Channel Excavation Mile 25.9 to Mile 24.1 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	9,700	\$73.54	\$713,338
1Y	HNC Mile 24.0 to HNC Mile 22.0 Material to be placed semi-confined within designated Wetland Site 15 west of HNC Mile 23.5. Material to be placed within the open water area(s), a minimum 1,270 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	305,000	\$3.40	\$1,038,464
1Z	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.53	\$505,000	\$267,650
1AA	Earthen Retension Dike Refurbishment	LF	2,450	\$60.00	\$147,000
1BB	HNC Mile 23.7 to HNC Mile 22.4 (East Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN	59,100	\$61.98	\$3,663,018
		SY	28,500	\$9.87	\$281,295
1CC	Mechanical Dredging Flotation Channel Excavation Mile 23.7 to Mile 22.4. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	6,540	\$73.54	\$480,952

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Construction Cost Alternative 2C Rock Retention -20 Mile 36.3 to 22.0 to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 1	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1DD	HNC Mile 22.2 to HNC Mile 22.1 (East Bank)	TN	9,800	\$61.98	\$607,404
	Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	SY	4,700	\$9.87	\$46,389
1EE	Mechanical Dredging Flotation Channel Excavation Mile 22.2 to Mile 22.1. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	730	\$73.54	\$53,684
Total:					\$22,139,113
Contract Duration		DY	115		
Notes:					
Dredging quantity does not reflect overdepth.					

Dredging: 1,755,000 CY

Rock: 118,700 TON

Geotextile: 46,000 SY

Flotation Channel: 21,070 LF

Earthen Dike: 40,150 LF

Survey/Crew/Boat: 3.8 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Construction Cost Alternative 2C Rock Retention -20 Mile 22.0 to 11.5 to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 2	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2A	Mobilization and Demobilization	LS	1	\$825,704	\$825,704
	Dredging and Disposal (Mile 22.0 to Mile 11) Channel to be excavated to -22 NAVD88; 1v/2h side slope/150-foot bottom width				
2B	HNC Mile 22.0 to HNC Mile 20.0	CY	393,000	\$2.85	\$1,121,779
	Material to be placed unconfined within designated Wetland Site 16 west of HNC Mile 22. Material shall be discharged within the open water areas, a minimum 1,550 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details). (See dwgs for details).				
2C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.59	\$505,000	\$297,950
2D	HNC Mile 20.0 to HNC Mile 18.0	CY	92,000	\$8.28	\$761,907
	Material to be placed unconfined within Wetland Site 19C east of and adjacent to HNC Mile 19.5. The discharge will be positioned to the east and placed a minimum 500 ft beyond the bank rim/ridge or erosion control structure at the front of the disposal area. Elevation of material placed within the open water area(s) of Site 19C NTE +3.0' NAVD88 (See dwgs for details).				
2E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.40	\$505,000	\$202,000
2F	HNC Mile 19.2 to HNC Mile 17.5 (East Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN	99,500	\$61.98	\$6,167,010
		SY	47,900	\$9.87	\$472,773
2G	Mechanical Dredging Flotation Channel Excavation Mile 19.2 to Mile 17.5 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	8,120	\$73.54	\$597,145
2H	HNC Mile 19.1 to HNC Mile 17.8 (West Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN	18,200	\$61.98	\$1,128,036
		SY	8,750	\$9.87	\$86,363
2I	Mechanical Dredging Flotation Channel Excavation Mile 19.1 to Mile 17.8 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,790	\$73.54	\$131,637

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Construction Cost Alternative 2C Rock Retention -20 Mile 22.0 to 11.5 to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 2	<i>Quantities & Line Items - Puls - Aug 2015</i> <i>Costs - Ramos - Aug 2015</i>
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2J	HNC Mile 18.0 HNC Mile 16.0 Material to be placed unconfined within designated Wetland Site 20C west of HNC Mile 17. Material shall be discharged within the open water areas, a minimum 900 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	170,000	\$5.26	\$894,336
2K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.47	\$505,000	\$237,350
2L	HNC Mile 17.7 to HNC Mile 16.7 (West Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN	67,400	\$61.98	\$4,177,452
		SY	32,500	\$9.87	\$320,775
2M	Mechanical Dredging Flotation Channel Excavation Mile 17.7 to Mile 16.7 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	5,480	\$73.54	\$402,999
2N	HNC Mile 16.9 to HNC Mile 13.3 (East Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN	213,000	\$61.98	\$13,201,740
		SY	102,600	\$9.87	\$1,012,662
2O	Mechanical Dredging Flotation Channel Excavation Mile 16.9 to Mile 13.3 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	19,200	\$73.54	\$1,411,968
2P	HNC Mile 16.0 to HNC Mile 13.0 Material to be placed semi-confined within designated Wetland Site 21 west of HNC Mile 15. Material to be placed within the open water area(s), a minimum 600 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	315,000	\$4.36	\$1,374,912
2Q	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.72	\$505,000	\$363,600
2R	Earthen Retention Dike Refurbishment	LF	3,850	\$60.00	\$231,000
2S	HNC Mile 15.6 to HNC Mile 14.0 (West Bank) Rock Retention Structure (site 21) (Dk ht. +6' NAVD88) Geotextile	TN	94,500	\$61.98	\$5,857,110
		SY	45,500	\$9.87	\$449,085

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Construction Cost Alternative 2C Rock Retention -20 Mile 22.0 to 11.5 to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 2	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2T	Mechanical Dredging Flotation Channel Excavation Mile 15.6 to Mile 14.0 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	8,650	\$73.54	\$636,121
2U	HNC Mile 13.1 to HNC Mile 11.9 (West Bank) Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	TN	75,900	\$61.98	\$4,704,282
		SY	36,600	\$9.87	\$361,242
2V	Mechanical Dredging Flotation Channel Excavation Mile 13.1 to Mile 11.9 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	6,540	\$73.54	\$480,952
2W	HNC Mile 13.0 to HNC Mile 11.5 Material to be placed within Wetland Site 24. Material to be placed semi-confined within designated Wetland Site 24 west of HNC Mile 12.1. Material to be placed within the open water area(s), a minimum 900 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).	CY	180,000	\$3.92	\$705,024
2X	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.37	\$505,000	\$186,850
2Y	Earthen Retention Dike Refurbishment	LF	4,100	\$60.00	\$246,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Construction Cost Alternative 2C Rock Retention -20 Mile 22.0 to 11.5 to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 2	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2Z	HNC Mile 12.7 to HNC Mile 12.3 (East Bank)	TN	27,100	\$61.98	\$1,679,658
	Foreshore Protection (Stone) (Dk ht. +5' NAVD88) Geotextile	SY	13,000	\$9.87	\$128,310
2AA	Mechanical Dredging Flotation Channel Excavation Mile 12.6 to Mile 12.3 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,790	\$73.54	\$131,637
Total:					\$50,987,368

CONTRACT DURATION

DY

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Note:

Dredging quantity does not reflect overdepth.

Dredging: 1,150,000 CY

Rock: 595,600 TON

Geotextile: 286,850 SY

Flotation Channel: 51,570 LF

Earthen Dike: 7,950 LF

Survey/Crew/Boat: 2.6 MO

Feasibility Level Cost Estimate					
Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana			Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015		
Construction Cost Alternative 2C Rock Retention -20 Mile 11.5 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 3					
Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
3A	Mobilization and Demobilization	LS	1	\$1,030,374	\$1,030,374
	Dredging and Disposal (Mile 10.0 to 0.0) Channel to be excavated to -23 NAVD88; 1v/3h side slope by 150' channel width				
3B	HNC Mile 11.5 to HNC Mile 10.0	CY	230,000	\$3.65	\$839,040
	Material to be placed rock semi-confined west of channel within "lung area". 715 Acres See plans for details.				
3C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
3D	Earthen Retention Dike Refurbishment	LF	12,700	\$60.00	\$762,000
3E	Mechanical Dredging Flotation Channel Excavation Mile 11.5 to Mile 10.0 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	4,070	\$73.54	\$299,308
3F	HNC Mile 10.0 to HNC Mile 5.0	CY	2,014,500	\$3.83	\$7,709,894
	Material to be placed rock semi-confined west of channel within "lung area". 715 Acres See plans for details.				
3G	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.69	\$505,000	\$1,358,450
3H	Earthen Retention Dike Refurbishment	LF	12,700	\$60.00	\$762,000
3I	Mechanical Dredging Flotation Channel Excavation Mile 10.0 to Mile 5.0 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	12,050	\$73.54	\$886,157
Total					\$13,798,723
Contract Duration:		DY	90		
Notes:					
Material Quantity does not reflect overdepth.					

Dredging: 2,244,500 CY

Rock:

Geotextile:

Flotation Channel: 16,120 LF

Earthen Dike: 25,400 LF

Survey/Crew/Boat: 3.0 MO

Feasibility Level Cost Estimate					
Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana			Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015		
Construction Cost Alternative 2C Rock Retention -20					
Mile 11.5 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included					
Contract No. 3					
Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
4A	Mobilization and Demobilization	LS	1	\$1,030,374	\$1,030,374
	Dredging and Disposal (Mile 10.0 to 0.0) Channel to be excavated to -23 NAVD88; 1v/3h side slope by 150' channel width				
4B	HNC Mile 5.0 to HNC Mile 1.5	CY	1,050,000	\$7.73	\$8,117,760
	Material to be placed rock confined on northeast end of Isle Denieres (East Island) for marsh creation. 370 Acres. See plans for details.				
4C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.98	\$505,000	\$999,900
4D	Earthen Retention Dike Refurbishment	LF	6,500	\$60.00	\$390,000
4E	Mechanical Dredging Flotation Channel Excavation Mile 5.0 to Mile 1.5 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	8,700	\$73.54	\$639,798
4F	HNC Mile 1.5 to HNC Mile 0.0	CY	265,000	\$7.36	\$1,950,400
	Material to be placed unconfined for beach nourishment on Isle Denieres See plans for details				
4G	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.49	\$505,000	\$247,450
4H	Rock Dike within Lung Disposal Area	TONS	238,441	\$61.98	\$14,778,573
	Geotextile	SY	114,863	\$9.87	\$1,133,698
4I	Rock Dike on bay side of East Island	TONS	133,559	\$61.98	\$8,277,987
	Geotextile	SY	64,339	\$9.87	\$635,026
Total					\$38,200,966
Contract Duration:		DY	74		
Notes:					
Material Quantity does not reflect overdepth.					

Dredging:	1,315,000 CY
Rock:	372,000 TON
Geotextile:	179,202 SY
Flotation Channel:	8,700 LF
Earthen Dike:	6,500 LF
Survey/Crew/Boat:	2.5 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Construction Cost Alternative 2C Rock Retention -20

Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 4 Feet of Advanced Maintenance Included
 Contract No. 4

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
5A	Mobilization and Demobilization	LS	1	\$1,308,950	\$1,308,950
	Dredging and Disposal Mile 0.0 to Mile (-3.7) Channel to be excavated to -24' NAVD88; 1v/2h side slopes by 300' bottom width.				
5B	Dredging and Disposal Mile 0.0 to Mile (-3.7)	CY	1,100,000	\$10.23	\$11,249,920
	Material to be placed unconfined for beach nourishment on the south side of East Island (Isle Deniers) in surf zonet. (See plans for details). Material Quantity does not reflect overdepth.				
5C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.55	\$645,000	\$1,644,750
					Total: \$14,203,620
Contract Duration:		DY	77		
Note:					
Dredging quantity does not reflect overdepth.					

Dredging: 1,100,000 CY

Survey/Crew/Boat: 2.6 MO

Reach	20 foot depth		Duration (months)	Mob/Demob (Per Reach)	Crew/Equipment Costs
	Unit Cost	CY			
Mob/Demob (36.3 to 22.0)	\$939,307				\$505,000
36.3 to 34.0	\$3.66	325,000	0.61	\$327,961	\$505,000
34.0 to 32.0	\$4.17	175,000	0.38	\$434,307	\$505,000
32.0 to 29.5	\$5.85	215,000	0.66	\$434,307	\$505,000
29.5 to 28.0	\$5.03	185,000	0.47	\$327,961	\$505,000
28.0 to 26.0	\$4.65	250,000	0.59	\$327,961	\$505,000
26.0 to 24.0	\$3.94	300,000	0.60	\$327,961	\$505,000
24.0 to 22.0	\$3.40	305,000	0.53	\$327,961	\$505,000
		\$7,491,072			
Mob/Demob (22.0 to 11.0)	\$825,704				\$505,000
22.0 to 20.0	\$2.85	393,000	0.59	\$320,704	\$505,000
20.0 to 18.0	\$8.28	92,000	0.40	\$320,704	\$505,000
18.0 to 16.0	\$5.26	170,000	0.47	\$320,704	\$505,000
16.0 to 13.0	\$4.36	315,000	0.72	\$320,704	\$505,000
13.0 to 11.5	\$3.92	180,000	0.37	\$320,704	\$505,000
		\$4,857,958			
Mob/Demob (0.0 to 11.0)	\$1,030,374				\$505,000
11.5 to 10.0	\$3.65	230,000	0.30	\$372,299	\$505,000
10.0 to 5.0	\$3.83	2,014,500	2.69	\$372,299	\$505,000
5.0 to 1.5	\$7.73	1,050,000	1.98	\$525,374	\$505,000
1.5 to 0.0	\$7.36	265,000	0.49	\$526,109	\$505,000
		\$18,617,094			
Mob/Demob (0.0 to -3.7)	\$1,308,950				\$645,000
0.0 to -3.7	\$10.23	1,100,000	2.55	\$663,950	\$645,000
		\$11,249,920			

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Maintenance Cost Rock Retention -20ft MLG

Costs for 10-Year Cycle to be Repeated 5 Times Over 50 Years

Multiple Disposal Sites

Mile 36.3 to Mile (-3.7) to -20 Foot Elevation w/ Advanced Maintenance Included
 Summary Page

Contract No.	Description	Cycle Frequency (Years)	Units	Quantity	Estimated Unit Price Per Cycle	Estimated Cycle Cost	Estimated Total Cost (50-Year)
1*	Mobilization/Demobilization	10	LS	1	\$871,046	\$871,046	\$4,355,230
	Mile 36.3 to Mile 34.0	10	CY	109,600	\$6.74	\$738,184	\$3,690,920
	Mile 24.0 to Mile 22.0	10	CY	109,600	\$10.39	\$1,139,248	\$5,696,240
	Mile 22.0 to Mile 20.0	10	CY	109,600	\$8.93	\$978,407	\$4,892,036
	Mobilization/Demobilization	2	LS	1	\$1,031,109	\$1,031,109	\$25,777,725
	Mile 11.0 to Mile 0.0	2	CY	1,434,200	\$9.68	\$13,881,031	\$347,025,774
2	Mobilization/Demobilization	2	LS	1	\$1,308,950	\$1,308,950	\$32,723,750
	Mile 0.0 to Mile (-3.7)	2	CY	580,000	\$20.66	\$11,981,642	\$299,541,050
3	Mobilization/Demobilization	2	LS	1	\$1,031,109	\$1,031,109	
	Mile 11.0 to Mile 0.0	2	CY	1,434,200	\$9.68	\$13,881,031	
4	Mobilization/Demobilization	2	LS	1	\$1,308,950	\$1,308,950	
	Mile 0.0 to Mile (-3.7)	2	CY	580,000	\$20.66	\$11,981,642	
5	Mobilization/Demobilization	2	LS	1	\$1,031,109	\$1,031,109	
	Mile 11.0 to Mile 0.0	2	CY	1,434,200	\$9.68	\$13,881,031	
6	Mobilization/Demobilization	10	LS	1	\$939,307	\$939,307	\$4,696,535
	Mile 36.3 to Mile 34.0	10	CY	109,600	\$6.77	\$741,551	\$3,707,755
	Mile 34.0 to Mile 32.0	10	CY	219,600	\$6.86	\$1,507,001	\$7,535,005
	Mile 32.0 to Mile 29.5	10	CY	165,800	\$10.20	\$1,691,836	\$8,459,181
	Mile 29.5 to Mile 28.0	10	CY	165,800	\$5.24	\$868,203	\$4,341,014
	Mile 28.0 to Mile 26.0	10	CY	219,600	\$9.97	\$2,190,283	\$10,951,416
	Mile 26.0 to Mile 24.0	10	CY	219,600	\$17.18	\$3,771,986	\$18,859,929
	Mile 24.0 to Mile 22.0	10	CY	109,600	\$22.96	\$2,516,295	\$12,581,476
	Mile 22.0 to Mile 20.0	10	CY	109,600	\$10.06	\$1,102,166	\$5,510,830
	Mobilization/Demobilization	2	LS	1	\$1,308,950	\$1,308,950	
	Mile 0.0 to Mile (-3.7)	2	CY	580,000	\$20.66	\$11,981,642	
7	Mobilization/Demobilization	10	LS	1	\$939,307	\$939,307	\$4,696,535
	Mile 20.0 to Mile 18.0	10	CY	219,600	\$13.91	\$3,055,428	\$15,277,138
	Mile 18.0 to Mile 16.0	10	CY	219,600	\$27.64	\$6,070,003	\$30,350,013
	Mile 16.0 to Mile 13.0	10	CY	331,400	\$13.82	\$4,578,899	\$22,894,496
	Mile 13.0 to Mile 11.0	10	CY	254,500	\$6.31	\$1,606,440	\$8,032,198
	Mobilization/Demobilization	2	LS	1	\$1,031,109	\$1,031,109	
8	Mobilization/Demobilization	2	LS	1	\$1,308,950	\$1,308,950	
	Mile 0.0 to Mile (-3.7)	2	CY	580,000	\$20.66	\$11,981,642	
9	Mobilization/Demobilization	2	LS	1	\$1,031,109	\$1,031,109	
	Mile 11.0 to Mile 0.0	2	CY	1,434,200	\$9.68	\$13,881,031	
10	Mobilization/Demobilization	2	LS	1	\$1,308,950	\$1,308,950	
	Mile 0.0 to Mile (-3.7)	2	CY	580,000	\$20.66	\$11,981,642	
Total:				12,744,100	\$13.84	\$176,319,250	\$881,596,248

Note: Unit costs reflected on summary sheet include all disposal area dike refurbishment within each specified reach, if necessary
 * Three reaches specified in Contract 1 require a maintenance cycle every 5 years. 5 years after maintenance Contract 1 reaches at 36.3, 24.0, and 22.0 will undergo maintenance under Contract 6 (10-Year cycle). 5 Years after maintenance Contract 6 those reaches will be maintained under a new 5-year cycle (Contract 11). Following this sequence, contract 6 will be required four additional times over the 50 year project life after Contract 6 is completed.

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening *Quantities & Line Items - Puls - Aug 2015*
 Houma, Terrebonne Parish, Louisiana *Costs - Ramos - Aug 2015*
Maintenance Cost Rock Retention -20ft MLG
 Mile 36.3 to 34.0 & Mile 24 to 20.0 & Mile 22.0 to 20.0 & Mile 11.0 to 0.0 to -20 Foot Elevation
 w/ 2 and 3 Feet of Advanced Maintenance Included **Multiple Disposal Sites**
 Contract No. 1 **Channel Maintenance - 10 year frequency**

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1A	Mobilization and Demobilization Dredging and Disposal (Mile 36.3 to Mile 20.0) Channel to be excavated to -20 NAVD88; 1v/2h side slope/150-foot bottom width	LS	1	\$871,046	\$871,046
1B	HNC Mile 36.3 to HNC Mile 34.0 Material to be placed within confined upland Site 1 (Port Commission site) opposite Short Cut Canal. No height restriction. Dike construction/maintenance not required.	CY	109,600	\$5.34	\$585,001
1C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
1B	HNC Mile 36.3 to HNC Mile 34.0 Material to be placed within confined upland Site 3 opposite HNC Mile 35.5 No height restriction. Dike construction/maintenance not required.	CY	109,600	\$5.30	\$580,792
1C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
1D	HNC Mile 24.0 to HNC Mile 22.0 Material to be placed semi-confined within Wetland Site 15 between HNC Mile 23.0 and 22.5 along the west bank of the HNC WW. The initial buildup of mtl. shall begin in the north east corner, and to proceed outward in a west-southwesterly direction. Earthen closures will be required along the west side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	109,600	\$7.41	\$812,268
1E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
1F	Earthen Retention Dike Refurbishment	LF	2,450	\$60.00	\$147,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Quantities & Line Items - Puls - Aug 2015
 Houma, Terrebonne Parish, Louisiana Costs - Ramos - Aug 2015
Maintenance Cost Rock Retention -20ft MLG
 Mile 36.3 to 34.0 & Mile 24 to 20.0 & Mile 22.0 to 20.0 & Mile 11.0 to 0.0 to -20 Foot Elevation
 w/ 2 and 3 Feet of Advanced Maintenance Included **Multiple Disposal Sites**
 Contract No. 1 **Channel Maintenance - 10 year frequency**

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1D	HNC Mile 24.0 to HNC Mile 22.0 Material to be placed semi-confined within Wetland Site 15A between HNC Mile 24.0 and 22.9 west of Site 15 'beyond the west bank of the HNC WW. The initial buildup of mtl. shall begin in the south east corner, and to proceed outward in a westerly direction. Earthen closures will be required along the east side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	109,600	\$7.42	\$813,670
1E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
1F	Earthen Retention Dike Refurbishment	LF	4,800	\$60.00	\$288,000
1G	HNC Mile 22.0 to HNC Mile 20.0 Material to be placed unconfined within Wetland Site 16 opposite and adjacent to HNC Mile 21.4 along the west bank of the HNC WW. The discharge will be positioned to the west and placed a minimum 1,550 ft from the center line of the channel to the front of the disposal area. Elevation of material placed within the open water area(s) NTE +3.0' NAVD 88 (See dwgs for details).	CY	109,600	\$5.29	\$579,389
1H	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
1G	HNC Mile 22.0 to HNC Mile 20.0 Material to be placed semi-confined within Wetland Site 15A between HNC Mile 23.3 and 22.5 west of Site 15 'beyond the west bank of the HNC WW. The initial buildup of mtl. shall begin in the south east corner, and to proceed outward in a westerly direction. Earthen closures will be required along the east side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	109,600	\$7.71	\$844,534
1H	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.43	\$505,000	\$217,150

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana
Maintenance Cost Rock Retention -20ft MLG
 Mile 36.3 to 34.0 & Mile 24 to 20.0 & Mile 22.0 to 20.0 & Mile 11.0 to 0.0 to -20 Foot Elevation
 w/ 2 and 3 Feet of Advanced Maintenance Included
 Contract No. 1

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Multiple Disposal Sites
Channel Maintenance - 10 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1I	Earthen Retention Dike Refurbishment	LF	4,800	\$60.00	\$288,000
1J	Mobilization and Demobilization	LS	1	\$1,031,109	\$1,031,109
	Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width				
1K	HNC Mile 11.0 to HNC Mile 5.0	CY	765,600	\$4.58	\$3,508,285
	Material to be placed rock semi-confined west of channel within "lung area". 715 Acres See plans for details.				
1L	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.09	\$505,000	\$550,450
1M	Earthen Retention Dike Refurbishment	LF	12,700	\$60.00	\$762,000
1N	Mechanical Dredging Flotation Channel Excavation Mile 11.0 to Mile 5.0. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	9,700	\$72.92	\$707,324
1O	HNC Mile 5.0 to HNC Mile 1.5	CY	468,000	\$5.30	\$2,480,026
	Material to be placed rock confined on northeast end of Isle Denieres (East Island) for marsh creation. 370 Acres. See plans for details.				
1P	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.64	\$505,000	\$323,200
1Q	Earthen Retention Dike Refurbishment	LF	6,500	\$60.00	\$390,000
1R	Mechanical Dredging Flotation Channel Excavation Mile 5.0 to Mile 1.5. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	9,700	\$72.92	\$707,324
1S	HNC Mile 1.5 to HNC Mile 0.0	CY	200,600	\$5.04	\$1,011,666
	Material to be placed unconfined for beach nourishment on Isle Deniers See Plans for details				
1T	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.26	\$505,000	\$131,300
1U	Rock Containment Dike for Lung Disposal Area Geotextile	TONS SY	22,720 10,945	\$60.00 \$6.00	\$1,363,200 \$65,670
1V	Rock Containment Dike Refurbishment (Lung)	TONS	12,538	\$60.00	\$752,280

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening
 Houma, Terrebonne Parish, Louisiana
Maintenance Cost Rock Retention -20ft MLG
 Mile 36.3 to 34.0 & Mile 24 to 20.0 & Mile 22.0 to 20.0 & Mile 11.0 to 0.0 to -20 Foot Elevation
 w/ 2 and 3 Feet of Advanced Maintenance Included
 Contract No. 1

Quantities & Line Items - Puls - Aug 2015
Costs - Ramos - Aug 2015

Multiple Disposal Sites
Channel Maintenance - 10 year frequency

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
1W	Rock Containment Dike for East Island Disposal Area	TONS	11,835	\$60.00	\$710,100
	Geotextile	SY	5,701	\$6.00	\$34,206
1X	Rock Containment Dike Refurbishment (East Island)	TONS	6,400	\$60.00	\$384,000
Total:					\$18,551,591
Contract Duration		DY	91		
Notes:					
Channel Quantities do not reflect overdepth.					

Dredging: 1,763,000 CY

Rock: 53,493 TON

Geotextile: 16,646 SY

Flotation Channel: 19,400 LF

Earthen Dike: 31,250 LF

Survey/Crew/Boat: 3.0 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -20ft MLG Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 4 Feet of Advanced Maintenance Included Contract No. 2	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2014 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
2A	Mobilization and Demobilization Dredging and Disposal Mile 0.0 to Mile (-3.7) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width	LS	1	\$1,308,950	\$1,308,950
2B	Dredging and Disposal Mile 0.0 to Mile (-3.7) Material to be placed unconfined for Marsh Creation on the South side of East Island (Isle Deniers) within the surf zone (See plans for details). Material Quantity does not reflect overdepth.	CY	580,000	\$18.02	\$10,452,992
2C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.4	\$645,000	\$1,528,650
Total:					\$13,290,592
	Contract Duration	DY	71		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging: 580,000 CY

Survey/Crew/Boat: 2.4

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -20ft MLG Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 3	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
3A	Mobilization and Demobilization Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width	LS	1	\$1,031,109	\$1,031,109
3B	HNC Mile 11.0 to HNC Mile 5.0 Material to be placed rock semi-confined west of channel within "lung area". 715 Acres See plans for details.	CY	765,600	\$4.58	\$3,508,285
3C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.1	\$505,000	\$550,450
3D	Earthen Retention Dike Refurbishment	LF	12,700	\$60.00	\$762,000
3E	Mechanical Dredging Flotation Channel Excavation Mile 11.0 to Mile 5.0. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	9,700	\$72.92	\$707,324
3F	HNC Mile 5.0 to HNC Mile 1.5 Material to be placed rock confined on northeast end of Isle Denieres (East Island) for marsh creation. 370 Acres. See plans for details.	CY	468,000	\$5.30	\$2,480,026
3G	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.6	\$505,000	\$323,200
3H	Earthen Retention Dike Refurbishment	LF	6,500	\$60.00	\$390,000
3I	Mechanical Dredging Flotation Channel Excavation Mile 5.0 to Mile 1.5. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	9,700	\$72.92	\$707,324
3J	HNC Mile 1.5 to HNC Mile 0.0 Material to be placed unconfined for beach nourishment on Isle Deniers See Plans for details	CY	200,600	\$5.04	\$1,011,666
3K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.3	\$505,000	\$131,300
3L	Rock Containment Dike for Lung Disposal Area Geotextile	TONS SY	22,720 10,945	\$60.00 \$6.00	\$1,363,200 \$65,670
3M	Rock Containment Dike Refurbishment (Lung)	TONS	12,538	\$60.00	\$752,280
3N	Rock Containment Dike for East Island Disposal Area Geotextile	TONS SY	11,835 5,701	\$60.00 \$6.00	\$710,100 \$34,206

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -20ft MLG Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 3	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
30	Rock Containment Dike Refurbishment (East Island)	TONS	6,400	\$60.00	\$384,000
Total:					\$14,912,140

Contract Duration	DY	60
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Note:

Material Quantity does not reflect overdepth.

Dredging: 1,434,200 CY

Rock: 53,493 TON

Geotextile: 16,646 SY

Flotation channel: 19,400 LF

Earthen Dike: 19,200 LF

Survey/Crew/Boat: 2.0 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -20ft MLG Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 4 Feet of Advanced Maintenance Included Contract No. 4	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
4A	Mobilization and Demobilization	LS	1	\$1,308,950	\$1,308,950
	Dredging and Disposal Mile 0.0 to Mile (-3.7) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width				
4B	Dredging and Disposal Mile 0.0 to Mile (-3.7)	CY	580,000	\$18.02	\$10,452,992
	Material to be placed unconfined for Marsh Creation on the South side of East Island (Isle Deniers) within the surf zone (See plans for details). Material Quantity does not reflect overdepth.				
4C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.4	\$645,000	\$1,528,650
					Total: \$13,290,592
	Contract Duration	DY	71		
	Notes: Channel Quantities do not reflect overdepth.				

Dredging: 580,000 CY

Survey/Crew/Boat: 2.4 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -20ft MLG Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 5	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
5A	Mobilization and Demobilization Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width	LS	1	\$1,031,109	\$1,031,109
5B	HNC Mile 11.0 to HNC Mile 5.0 Material to be placed rock semi-confined west of channel within "lung area". 715 Acres See plans for details.	CY	765,600	\$4.58	\$3,508,285
5C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.1	\$505,000	\$550,450
5D	Earthen Retention Dike Refurbishment	LF	12,700	\$60.00	\$762,000
5E	Mechanical Dredging Flotation Channel Excavation Mile 11.0 to Mile 5.0. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	9,700	\$72.92	\$707,324
5F	HNC Mile 5.0 to HNC Mile 1.5 Material to be placed rock confined on northeast end of Isle Denieres (East Island) for marsh creation. 370 Acres. See plans for details.	CY	468,000	\$5.30	\$2,480,026
5G	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.6	\$505,000	\$323,200
5H	Earthen Retention Dike Refurbishment	LF	6,500	\$60.00	\$390,000
5I	Mechanical Dredging Flotation Channel Excavation Mile 5.0 to Mile 1.5. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	9,700	\$72.92	\$707,324
5J	HNC Mile 1.5 to HNC Mile 0.0 Material to be placed unconfined for beach nourishment on Isle Deniers See Plans for details	CY	200,600	\$5.04	\$1,011,666
5K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.3	\$505,000	\$131,300
5L	Rock Containment Dike for Lung Disposal Area Geotextile	TONS SY	22,720 10,945	\$60.00 \$6.00	\$1,363,200 \$65,670
5M	Rock Containment Dike Refurbishment (Lung)	TONS	12,538	\$60.00	\$752,280
5N	Rock Containment Dike for East Island Disposal Area Geotextile	TONS SY	11,835 5,701	\$60.00 \$6.00	\$710,100 \$34,206

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -20ft MLG Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 5	<i>Quantities & Line Items - Puls - Aug 2015</i> <i>Costs - Ramos - Aug 2015</i> Channel Maintenance - 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
50	Rock Containment Dike Refurbishment (East Island)	TONS	6,400	\$60.00	\$384,000
					Total: \$14,912,140

Contract Duration	DY	60
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Note:

Material Quantity does not reflect overdepth.

Dredging: 1,434,200 CY

Rock: 53,493 TON

Geotextile: 16,646 SY

Flotation Channel: 19,400 LF

Earthen Dike: 19,200 LF

Survey/Crew/Boat: 2.0 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening *Quantities & Line Items - Puls - Aug 2015*
 Houma, Terrebonne Parish, Louisiana *Costs - Ramos - Aug 2015*
Maintenance Cost Rock Retention -20ft MLG **Multiple Disposal Sites**
 Mile 36.3 to 20.0 & Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included
 Contract No. 6 **Channel Maintenance - 2, 5, and 10 year frequency**

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6A	Mobilization and Demobilization	LS	1	\$939,307	\$939,307
	Dredging and Disposal (Mile 36.3 to Mile 20.0) Channel to be excavated to -20 NAVD88; 1v/2h side slope/150-foot bottom width				
6B	HNC Mile 36.3 to HNC Mile 34.0	CY	109,600	\$5.34	\$585,001
	Material to be placed within confined upland Site 3 opposite HNC Mile 35.5 No height restriction. Dike construction/maintenance not required.				
6C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.31	\$505,000	\$156,550
6D	NHC Mile 34.0 to HNC Mile 32.0	CY	219,600	\$3.94	\$865,751
	Material to be placed semi-confined within designated Wetland Site 7E opposite HNC Mile 31. Material to be placed within the open water area(s), a minimum 12,500 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).				
6E	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.45	\$505,000	\$227,250
6F	Earthen Retention Dike Refurbishment	LF	6,900	\$60.00	\$414,000
6G	HNC Mile 32.0 to HNC Mile 29.5	CY	165,800	\$6.09	\$1,010,186
	Material to be placed semi-confined within designated Wetland Site 7E opposite HNC Mile 31. Material to be placed within the open water area(s), a minimum 12,500 feet from the channel centerline. A 200-ft wide construction access corridor, at the entrance of the HNC waterway, will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs. For details).				
6H	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.53	\$505,000	\$267,650
6I	Earthen Retention Dike Refurbishment	LF	6,900	\$60.00	\$414,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Quantities & Line Items - Puls - Aug 2015
 Houma, Terrebonne Parish, Louisiana Costs - Ramos - Aug 2015
Maintenance Cost Rock Retention -20ft MLG **Multiple Disposal Sites**
 Mile 36.3 to 20.0 & Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included
 Contract No. 6 **Channel Maintenance - 2, 5, and 10 year frequency**

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6J	HNC Mile 29.5 to HNC Mile 28.0 Material to be placed unconfined within designated Wetland Site 12B opposite approximate HNC Mile 27.0. Mtl. shall be discharged within the open water areas, a minimum 4,500 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	165,800	\$3.88	\$643,039
6K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.32	\$505,000	\$161,600
6L	Earthen Retention Dike Refurbishment	LF	1,600	\$60.00	\$96,000
6J	HNC Mile 29.5 to HNC Mile 28.0 Material to be placed unconfined within designated Wetland Site 12 opposite approximate HNC Mile 27.0. Mtl. shall be discharged within the open water areas, a minimum 1,950 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	165,800	\$3.62	\$600,594
6K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
6L	Earthen Retention Dike Refurbishment	LF	1,800	\$60.00	\$108,000
6M	HNC Mile 28.0 to HNC Mile 26.0 Material to be placed unconfined within designated Wetland Site A-07-A opposite approximate HNC Mile 26.5. Mtl. shall be discharged within the open water areas, a minimum 5,700 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	219,600	\$3.20	\$702,720
6N	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.37	\$505,000	\$186,850
6O	Earthen Retention Dike Refurbishment	LF	9,300	\$60.00	\$558,000
6P	HNC Mile 27.6 to HNC Mile 27.4 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	1,900	\$61.46	\$116,774
6Q	Mechanical Dredging Flotation Channel Excavation Mile 27.6 to Mile 27.4. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,260	\$72.92	\$91,879

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Quantities & Line Items - Puls - Aug 2015
 Houma, Terrebonne Parish, Louisiana Costs - Ramos - Aug 2015
Maintenance Cost Rock Retention -20ft MLG **Multiple Disposal Sites**
 Mile 36.3 to 20.0 & Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included
 Contract No. 6 **Channel Maintenance - 2, 5, and 10 year frequency**

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6R	HNC Mile 26.4 to HNC Mile 25.9 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	5,320	\$61.46	\$326,967
6S	Mechanical Dredging Flotation Channel Excavation Mile 26.4 to Mile 25.9 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	2,840	\$72.92	\$207,093
6T	HNC Mile 26.0 to HNC Mile 24.0 Material to be placed unconfined within designated Wetland Site 14A opposite approximate HNC Mile 27. Mtl. shall be discharged within the open water areas, a minimum 3,360 feet from the channel centerline. Construction access corridors, 200 ft in width, shall be provided for the Contractors use of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	219,600	\$3.55	\$778,614
6U	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.39	\$505,000	\$196,950
6V	Earthen Retention Dike Refurbishment	LF	13,000	\$60.00	\$780,000
6W	HNC Mile 25.9 to HNC Mile 24.1 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	21,300	\$61.46	\$1,309,098
6X	Mechanical Dredging Flotation Channel Excavation Mile 25.9 to Mile 24.1 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	9,700	\$72.92	\$707,324
6Y	HNC Mile 24.0 to HNC Mile 22.0 Material to be placed semi-confined within Wetland Site 15 between HNC Mile 23.0 and 22.5 along the west bank of the HNC WW. The initial buildup of mtl. shall begin in the north east corner, and to proceed outward in a west-southwesterly direction. Earthen closures will be required along the west side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	109,600	\$7.41	\$812,268
6Z	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
6AA	Earthen Retention Dike Refurbishment	LF	2,450	\$60.00	\$147,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Quantities & Line Items - Puls - Aug 2015
 Houma, Terrebonne Parish, Louisiana Costs - Ramos - Aug 2015
Maintenance Cost Rock Retention -20ft MLG **Multiple Disposal Sites**
 Mile 36.3 to 20.0 & Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included
 Contract No. 6 **Channel Maintenance - 2, 5, and 10 year frequency**

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6Y	HNC Mile 24.0 to HNC Mile 22.0 Material to be placed semi-confined within Wetland Site 15A between HNC Mile 24.0 and 22.9 west of Site 15 'beyond the west bank of the HNC WW. The initial buildup of mtl. shall begin in the south east corner, and to proceed outward in a westerly direction. Earthen closures will be required along the east side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	109,600	\$7.42	\$813,670
6Z	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500
6AA	Earthen Retention Dike Refurbishment	LF	4,800	\$60.00	\$288,000
6BB	HNC Mile 23.7 to HNC Mile 22.4 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	11,820	\$61.46	\$726,457
6CC	Mechanical Dredging Flotation Channel Excavation Mile 23.7 to Mile 22.4. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	6,540	\$72.92	\$476,897
6DD	HNC Mile 22.2 to HNC Mile 22.1 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	1,960	\$61.46	\$120,462
6EE	Mechanical Dredging Flotation Channel Excavation Mile 22.2 to Mile 22.1. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	730	\$72.92	\$53,232
6FF	HNC Mile 22.0 to HNC Mile 20.0 Material to be placed unconfined within Wetland Site 16 opposite and adjacent to HNC Mile 21.4 along the west bank of the HNC WW. The discharge will be positioned to the west and placed a minimum 1,550 ft from the center line of the channel to the front of the disposal area. Elevation of material placed within the open water area(s) NTE +3.0' NAVD 88 (See dwgs for details).	CY	109,600	\$5.29	\$579,389
6GG	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.30	\$505,000	\$151,500

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening *Quantities & Line Items - Puls - Aug 2015*
 Houma, Terrebonne Parish, Louisiana *Costs - Ramos - Aug 2015*
Maintenance Cost Rock Retention -20ft MLG **Multiple Disposal Sites**
 Mile 36.3 to 20.0 & Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included
 Contract No. 6 **Channel Maintenance - 2, 5, and 10 year frequency**

Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6FF	HNC Mile 22.0 to HNC Mile 20.0 Material to be placed semi-confined within Wetland Site 15A between HNC Mile 24.0 and 22.9 west of Site 15 'beyond the west bank of the HNC WW. The initial buildup of mtl. shall begin in the south east corner, and to proceed outward in a westerly direction. Earthen closures will be required along the east side of the disposal area adjacent to the p/l canal intersecting the disposal area. A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors use. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	109,600	\$7.71	\$844,534
6GG	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.43	\$505,000	\$217,150
6HH	Earthen Retention Dike Re-fubishment	LF	4,800	\$60.00	\$288,000
6II	Mobilization and Demobilization Dredging and Disposal Mile 0.0 to Mile (-3.7) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width	LS	1	\$1,308,950	\$1,308,950
6JJ	Dredging and Disposal Mile 0.0 to Mile (-3.7) Material to be placed unconfined for Marsh Creation on the South side of East Island (Isle Deniers) within the surf zone (See plans for details). Material Quantity does not reflect overdepth.	CY	580,000	\$18.02	\$10,452,992

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -20ft MLG Mile 36.3 to 20.0 & Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 2 Feet of Advanced Maintenance Included Contract No. 6	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2, 5, and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
6KK	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.4	\$645,000	\$1,528,650
Total:					\$29,025,096
	Contract Duration	DY	164		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging:	1,899,200 CY
Rock:	42,300 TON
Flotation Channel:	21,070 LF
Earthen Dike:	51,550 LF
Survey/Crew/Boat:	5.5 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -20ft MLG Mile 20.0 to 11.0 & Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 7	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2, 5, and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7A	Mobilization and Demobilization Dredging and Disposal (Mile 20.0 to Mile 11.0) Channel to be excavated to -20 NAVD88; 1v/2h side slope/150-foot bottom width	LS	1	\$939,307	\$939,307
7B	HNC Mile 20.0 to HNC Mile 18.0 Material to be placed unconfined within Wetland Site 19C oppsite and adjacent to HNC Mile 19.3 along the east bank of the HNC WW. The discharge will be positioned to the east and placed a minimum 500-ft beyond the center line of the channel to the front of the disposal area. Elevation of material placed within the open water area(s) of Site 19C NTE +3.0' NAVD88 (See dwgs for details).	CY	219,600	\$2.96	\$649,313
7C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.34	\$505,000	\$171,700
7B	HNC Mile 20.0 to HNC Mile 18.0 Material to be placed semi-confined within the open water portions of Wetland Site 19D between HNC Mile 20.2 and 19.6, located beyond the west bank of the HNC WW. The initial buildup of mtl. shall begin in the north east corner, and to proceed outward in a westerly direction a minimum distance of 2,350 ft beyond the center line of the channel. Earthen closures will be required along the south side of the disposal area adjacent to the open water A 200-foot wide construction access corridor along the entrance of the waterway will be provided for the Contractors at the northeast and south east portions of the disposal site. Elevation of material NTE +3.0' NAVD88 (See dwgs for details).	CY	219,600	\$3.07	\$674,611
7C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.35	\$505,000	\$176,750
7D	Earthen Retention Dike Re-furbishment	LF	1,300	\$60.00	\$78,000
7E	HNC Mile 19.2 to HNC Mile 17.5 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	19,900	\$61.46	\$1,223,054
7F	Mechanical Dredging Flotation Channel Excavation Mile 19.2 to Mile 17.5 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	8,120	\$72.92	\$592,110
7G	HNC Mile 19.1 to HNC Mile 17.8 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	3,640	\$61.46	\$223,714

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -20ft MLG Mile 20.0 to 11.0 & Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 7	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2, 5, and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7H	Mechanical Dredging Flotation Channel Excavation Mile 19.1 to Mile 17.8 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,790	\$72.92	\$130,527
7I	HNC Mile 18.0 HNC Mile 16.0 Material to be placed unconfined within Wetland Site 20C oppsoite HNC Mile 16.8 along the west bank of the HNC WW. A construction access corriodr, 200 feet in width, will be provided for the Contractors use at the intersection of Four Pt. Bayou with the HNC WW. The intial buildup shall occur in the east corner of the DA and to proceed outward in a westerly direction. Elevation of Mtl. NTE +3.0' NAVD88 (See dwgs for details).	CY	219,600	\$2.79	\$612,772
7J	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.32	\$505,000	\$161,600
7I	HNC Mile 18.0 HNC Mile 16.0 Material to be placed within Wetland Site 21 opposite HNC Mile 15.0. To prevent material runback, the discharge pipe will be postioned to the SW and placed approximately 600 feet west of HNC Mile 15.0. The material will be placed in a west south-westerly direction within the open water areas or tributaries along the back side of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs f/details).	CY	219,600	\$3.25	\$713,964
7J	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.37	\$505,000	\$186,850
7K	Earthen Retention Dike Re-fubishment	LF	2,000	\$60.00	\$120,000
7L	HNC Mile 17.7 to HNC Mile 16.7 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	13,480	\$61.46	\$828,481
7M	Mechanical Dredging Flotation Channel Excavation Mile 17.7 to Mile 16.7 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	5,480	\$72.92	\$399,602
7N	HNC Mile 16.9 to HNC Mile 13.3 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	42,600	\$61.46	\$2,618,196
7O	Mechanical Dredging Flotation Channel Excavation Mile 16.9 to Mile 13.3 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	19,200	\$72.92	\$1,400,064

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -20ft MLG Mile 20.0 to 11.0 & Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 7	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2, 5, and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7P	HNC Mile 16.0 to HNC Mile 13.0 Material to be placed within Wetland Site 21 opposite HNC Mile 15.0. To prevent material runback, the discharge pipe will be positioned to the SW and placed approximately 600 feet west of HNC Mile 15.0. The material will be placed in a west south-westerly direction within the open water areas or tributaries along the back side of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs f/details).	CY	331,400	\$2.94	\$975,642
7Q	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.51	\$505,000	\$257,550
7R	Earthen Retention Dike Re-fubishment	LF	3,850	\$60.00	\$231,000
7S	HNC Mile 15.6 to HNC Mile 14.0 (West Bank) Rock Retention Structure Refurbishment (Dk ht. +6' NAVD88) Stone quantity 20% of construction quantity	TN	18,900	\$61.46	\$1,161,594
7T	Mechanical Dredging Flotation Channel Excavation Mile 15.6 to Mile 14.0 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	8,650	\$72.92	\$630,758
7U	HNC Mile 13.2 to HNC Mile 11.9 (West Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +6' NAVD88) Stone quantity 20% of construction quantity	TN	15,180	\$61.46	\$932,963
7V	Mechanical Dredging Flotation Channel Excavation Mile 13.1 to Mile 11.9 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	5,340	\$72.92	\$389,393
7W	HNC Mile 13.0 to HNC Mile 11.0 Material to be placed within Wetland Site 24 opposite HNC Mile 12.0 along the west bank of the HNC WW. A construction access corrdior, 200 ft in width, will be provided for the Contractors use at the entrance of the WW. The initial buildup will occur in the east corner of the DA and proceed outward in a west, south-westerly direction. Elevation of material placed within the open water area(s) NTE +3.0' NAVD88 (See dwgs for details).	CY	254,500	\$2.62	\$667,808
7X	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.35	\$505,000	\$176,750
7Y	Earthen Retention Dike Re-fubishment	LF	4,100	\$60.00	\$246,000

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -20ft MLG Mile 20.0 to 11.0 & Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 7	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2, 5, and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7W	HNC Mile 13.0 to HNC Mile 11.0 Material to be placed within Wetland Site 21 opposite HNC Mile 15.0. To prevent material runback, the discharge pipe will be positioned to the SW and placed approximately 600 feet west of HNC Mile 15.0. The material will be placed in a west south-westerly direction within the open water areas or tributaries along the back side of the disposal area. Elevation of material NTE +3.0' NAVD88 (See dwgs f/details).	CY	254,500	\$2.88	\$732,960
7X	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.38	\$505,000	\$191,900
7Y	Earthen Retention Dike Re-fubishment	LF	3,850	\$60.00	\$231,000
7Z	HNC Mile 12.7 to HNC Mile 12.3 (East Bank) Foreshore Protection (Stone) Refurbishment (Dk ht. +5' NAVD88) Stone quantity 20% of construction quantity	TN	5,420	\$61.46	\$333,113
7AA	Mechanical Dredging Flotation Channel Excavation Mile 12.6 to Mile 12.3 Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	1,790	\$72.92	\$130,527
7BB	Mobilization and Demobilization Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width	LS	1	\$1,031,109	\$1,031,109
7CC	HNC Mile 11.0 to HNC Mile 5.0 Material to be placed rock semi-confined west of channel within "lung area". 715 Acres See plans for details.	CY	765,600	\$4.58	\$3,508,285
7DD	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.09	\$505,000	\$550,450
7EE	Earthen Retention Dike Re-fubishment	LF	12,700	\$60.00	\$762,000
7FF	Mechanical Dredging Flotation Channel Excavation Mile 11.0 to Mile 5.0. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	9,700	\$72.92	\$707,324
7GG	HNC Mile 5.0 to HNC Mile 1.5 Material to be placed rock confined on northeast end of Isle Denieres (East Island) for marsh creation. 370 Acres. See plans for details.	CY	468,000	\$5.30	\$2,480,026

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -20ft MLG Mile 20.0 to 11.0 & Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 7	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Multiple Disposal Sites Channel Maintenance - 2, 5, and 10 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
7HH	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.64	\$505,000	\$323,200
7II	Earthen Retention Dike Re-fubishment	LF	6,500	\$60.00	\$390,000
7JJ	Mechanical Dredging Flotation Channel Excavation Mile 5.0 to Mile 1.5. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	9,700	\$72.92	\$707,324
7KK	HNC Mile 1.5 to HNC Mile 0.0 Material to be placed unconfined for beach nourishment on Isle Deniers See Plans for details	CY	200,600	\$5.04	\$1,011,666
7LL	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.26	\$505,000	\$131,300
7MM	Rock Containment Dike for Lung Disposal Area Geotextile	TONS SY	22,720 10,945	\$60.00 \$6.00	\$1,363,200 \$65,670
7NN	Rock Containment Dike Refurbishment (Lung)	TONS	12,538	\$60.00	\$752,280
7OO	Rock Containment Dike for East Island Disposal Area Geotextile	TONS SY	11,835 5,701	\$60.00 \$6.00	\$710,100 \$34,206
7PP	Rock Containment Dike Refurbishment (East Island)	TONS	6,400	\$60.00	\$384,000
Total:					\$34,101,712

Contract Duratiojn	DY	108
Note:		
Material Quantity does not reflect overdepth.		

Dredging:	2,459,300 CY
Rock:	172,613 TON
Geotextile:	16,646 SY
Flotation Channel:	69,770 LF
Earthen Dike:	34,300 LF
Survey/Crew/Boat:	3.6 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -20ft MLG Mile 0.0 to (-3.7) to -20 Foot Elevation w/ 4 Feet of Advanced Maintenance Included Contract No. 8	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
8A	Mobilization and Demobilization	LS	1	\$1,308,950	\$1,308,950
	Dredging and Disposal Mile 0.0 to Mile (-3.7) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width				
8B	Dredging and Disposal Mile 0.0 to Mile (-3.7)	CY	580,000	\$18.02	\$10,452,992
	Material to be placed unconfined for Marsh Creation on the South side of East Island (Isle Deniers) within the surf zone (See plans for details). Material Quantity does not reflect overdepth.				
8C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.4	\$645,000	\$1,528,650
					Total: \$13,290,592
	Contract Duration	DY	71		
	Notes: Channel Quantities do not reflect overdepth.				

Dredging: 580,000 CY

Survey/Crew/Boat: 2.4

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -20ft MLG Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 9	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
9A	Mobilization and Demobilization Dredging and Disposal (Mile 11 to Mile 0.0) Channel to be excavated to -21' NAVD88; 1v/2h side slopes by 150' bottom width	LS	1	\$1,031,109	\$1,031,109
9B	HNC Mile 11.0 to HNC Mile 5.0 Material to be placed rock semi-confined west of channel within "lung area". 715 Acres See plans for details.	CY	765,600	\$4.58	\$3,508,285
9C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	1.1	\$505,000	\$550,450
9D	Earthen Retention Dike Re-fubishment	LF	12,700	\$60.00	\$762,000
9E	Mechanical Dredging Flotation Channel Excavation Mile 11.0 to Mile 5.0. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	9,700	\$72.92	\$707,324
9F	HNC Mile 5.0 to HNC Mile 1.5 Material to be placed rock confined on northeast end of Isle Denieres (East Island) for marsh creation. 370 Acres. See plans for details.	CY	468,000	\$5.30	\$2,480,026
9G	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.6	\$505,000	\$323,200
9H	Earthen Retention Dike Re-fubishment	LF	6,500	\$60.00	\$390,000
9I	Mechanical Dredging Flotation Channel Excavation Mile 5.0 to Mile 1.5. Channel excavated at existing grade of -2 ft NAVD88 w/ 80-foot bottom width	LF	9,700	\$72.92	\$707,324
9J	HNC Mile 1.5 to HNC Mile 0.0 Material to be placed unconfined for beach nourishment on Isle Deniers See Plans for details	CY	200,600	\$5.04	\$1,011,666
9K	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	0.3	\$505,000	\$131,300
9L	Rock Containment Dike for Lung Disposal Area Geotextile	TONS SY	22,720 10,945	\$60.00 \$6.00	\$1,363,200 \$65,670
9M	Rock Containment Dike Refurbishment (Lung)	TONS	12,538	\$60.00	\$752,280
9N	Rock Containment Dike for East Island Disposal Area Geotextile	TONS SY	11,835 5,701	\$60.00 \$6.00	\$710,100 \$34,206

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -20ft MLG Mile 11.0 to 0.0 to -20 Foot Elevation w/ 3 Feet of Advanced Maintenance Included Contract No. 9	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015 Channel Maintenance - 2 year frequency
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
90	Rock Containment Dike Refurbishment (East Island)	TONS	6,400	\$60.00	\$384,000
Total:					\$14,912,140

Contract Duration	DY	60
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Note:

Material Quantity does not reflect overdepth.

Dredging: 1,434,200 CY

Rock: 53,493 TON

Geotextile: 16,646 SY

Flotation channel: 19,400 LF

Earthen Dike: 19,200 LF

Survey/Crew/Boat: 2.0 MO

Feasibility Level Cost Estimate

Project: Houma Navigation Canal Deepening Houma, Terrebonne Parish, Louisiana Maintenance Cost Rock Retention -20ft MLG Mile 0.0 to (-3.5) to -20 Foot Elevation w/ 4 Feet of Advanced Maintenance Included Contract No. 10	Quantities & Line Items - Puls - Aug 2015 Costs - Ramos - Aug 2015
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Item	Description	Units	Estimated Quantity	Unit Price	Estimated Cost
10A	Mobilization and Demobilization	LS	1	\$1,308,950	\$1,308,950
	Dredging and Disposal Mile 0.0 to Mile (-3.7) Channel to be excavated to -22' NAVD88; 1v/2h side slopes by 300' bottom width				
10B	Dredging and Disposal Mile 0.0 to Mile (-3.7)	CY	580,000	\$18.02	\$10,452,992
	Material to be placed unconfined for Marsh Creation on the South side of East Island (Isle Deniers) within the surf zone (See plans for details). Material Quantity does not reflect overdepth.				
10C	Surveying, Shore Crew, Pipeline Crew, and Crewboat	MO	2.4	\$645,000	\$1,528,650
					Total: \$13,290,592
	Contract Duration	DY	71		
	Notes:				
	Channel Quantities do not reflect overdepth.				

Dredging: 580,000 CY

Survey/Crew/Boat: 2.4 MO

Reach	20-foot depth				20-foot depth				
	Site 1				Site 2				Crew/Equipment Costs
	Unit Cost	CY	Duration (months)	Mob/Demob (Per Reach)	Unit Cost	CY	Duration (months)	Mob/Demob (Per Reach)	
Mob/Demob	\$871,046								\$505,000
36.3 to 34.5 (5-year)	\$5.34	109,600	0.31	\$315,563	\$5.30	109,600	0.31	\$315,563	\$505,000
24.0 to 22.0 (5-year)	\$7.41	109,600	0.30	\$366,046	\$7.42	109,600	0.30	\$366,046	\$505,000
22.0 to 19.7 (5-year)	\$5.29	109,600	0.30	\$323,123	\$7.71	109,600	0.43	\$323,123	\$505,000
		\$1,976,658				\$2,238,996			
Mob/Demob (36.3 to 22.0)	\$939,307								\$505,000
36.3 to 34.0	\$5.34	109,600	0.31	\$315,563	\$5.30	109,600	0.31	\$315,563	\$505,000
34.0 to 32.0	\$3.94	219,600	0.45	\$434,307					\$505,000
32.0 to 29.5	\$6.09	165,800	0.53	\$434,307					\$505,000
29.5 to 28.0	\$3.88	165,800	0.32	\$330,985	\$3.62	165,800	0.30	\$330,985	\$505,000
28.0 to 26.0	\$3.20	219,600	0.37	\$317,075					\$505,000
26.0 to 24.0	\$3.55	219,600	0.39	\$330,985					\$505,000
24.0 to 22.0	\$7.41	109,600	0.30	\$366,046	\$7.42	109,600	0.30	\$366,046	\$505,000
		\$5,397,578				\$1,995,057			
Mob/Demob (22.0 to 11.0)	\$828,123								\$505,000
22.0 to 20.0	\$5.29	109,600	0.30	\$323,123	\$7.71	109,600	0.43	\$323,123	\$505,000
20.0 to 18.0	\$2.96	219,600	0.34	\$320,704	\$3.07	219,600	0.35	\$320,704	\$505,000
18.0 to 16.0	\$2.79	219,600	0.32	\$320,704	\$3.25	219,600	0.37	\$320,704	\$505,000
16.0 to 13.0	\$2.94	331,400	0.51	\$320,704					\$505,000
13.0 to 11.0	\$2.62	254,500	0.35	\$320,704	\$2.88	254,500	0.38	\$320,704	\$505,000
		\$3,484,924				\$2,966,068			
Mob/Demob (0.0 to 11.0)	\$1,031,109								\$505,000
11.0 to 5.0	\$4.58	765,600	1.09	\$485,917					\$505,000
5.0 to 1.5	\$5.30	468,000	0.64	\$526,109					\$505,000
1.5 to 0.0	\$5.04	200,600	0.26	\$526,109					\$505,000
		\$6,999,977							
Mob/Demob (0.0 to -3.7)	\$1,308,950								\$645,000
0.0 to -3.7	\$18.02	580,000	2.37	\$663,950					\$645,000
		\$10,452,992							