

Port of New Orleans Deepening  
Feasibility Study

Appendix A: Engineering

Annex 5

Quantity Estimates

March 2020

**ALTERNATIVE 2, 40' DEPTH, USACE DEEPEMED APPROACH CHANNEL CONSTRUCTION**

**QUANTITY ESTIMATES**

ALT. 2, 40' DEPTH + 2' ADVANCE DREDGING APPROACH CHANNEL (EL. -41.4' NAVD88)				ALT. 2, 2' OVERDEPTH APPROACH CHANNEL (EL. -41.4' TO -43.4' NAVD88)			
STA.	AREA (SF)	Vol (CF)	Vol (CY)	STA.	AREA (SF)	Vol (CF)	Vol (CY)
3400	0.00			3400	0.00		
3500	0.00	0.00	0.00	3500	0.00	0.00	0.00
3600	0.00	0.00	0.00	3600	0.00	0.00	0.00
3800	0.00	0.00	0.00	3800	0.00	0.00	0.00
4000	0.00	0.00	0.00	4000	0.00	0.00	0.00
4123	0.00	0.00	0.00	4123	0.00	0.00	0.00
4200	0.00	0.00	0.00	4200	0.00	0.00	0.00
4400	0.00	0.00	0.00	4400	0.00	0.00	0.00
4600	0.00	0.00	0.00	4600	0.00	0.00	0.00
4800	0.00	0.00	0.00	4800	0.00	0.00	0.00
5000	34.14	3,414.00	131.31	5000	210.80	21,080.00	810.77
5200	124.20	15,834.00	609.00	5200	316.60	52,740.00	2,028.46
5400	793.50	91,770.00	3,529.62	5400	703.20	101,980.00	3,922.31
5600	748.70	154,220.00	5,931.54	5600	521.00	122,420.00	4,708.46
5800	1,348.90	209,760.00	8,067.69	5800	1,265.70	178,670.00	6,871.92
6000	1,391.10	274,000.00	10,538.46	6000	868.50	213,420.00	8,208.46
6200	585.00	197,610.00	7,600.38	6200	1,103.50	197,200.00	7,584.62
6400	1,148.60	173,360.00	6,667.69	6400	1,133.00	223,650.00	8,601.92
6600	1,062.25	221,085.00	8,503.27	6600	1,168.00	230,100.00	8,850.00
6800	1,456.30	251,855.00	9,686.73	6800	1,085.30	225,330.00	8,666.54
7000	1,898.60	335,490.00	12,903.46	7000	1,079.20	216,450.00	8,325.00
7200	2,594.20	449,280.00	17,280.00	7200	1,679.60	275,880.00	10,610.77
7400	765.60	335,980.00	12,922.31	7400	1,179.87	285,947.00	10,997.96
7600	1,309.60	207,520.00	7,981.54	7600	870.90	205,077.00	7,887.58
7800	954.20	226,380.00	8,706.92	7800	667.60	153,850.00	5,917.31
7849	266.97	29,918.67	1,150.72	7849	397.25	26,088.83	1,003.42
8000	97.90	27,547.69	1,059.53	8000	212.48	46,034.62	1,770.56
8200	113.50	21,140.00	813.08	8200	140.80	35,328.00	1,358.77
8400	0.00	11,350.00	436.54	8400	0.00	14,080.00	541.54
8600	0.00	0.00	0.00	8600	0.00	0.00	0.00
8800	0.00	0.00	0.00	8800	0.00	0.00	0.00

TOTAL: 124,519.78 CY

TOTAL: 108,666.36 CY

**USE TOTAL: 125,000.00 CY**

**ALT. 2, 40' + 2' ADVANCE DREDGING  
PHASE II PONO CONSTRUCTION**

<b>STA.</b>	<b>AREA (SF)</b>	<b>Vol (CF)</b>	<b>Vol (CY)</b>
4900	76.60		
5000	71.70	7,415.00	285.19
5100	77.80	7,475.00	287.50
5200	107.60	9,270.00	356.54
5300	238.80	17,320.00	666.15

TOTAL: 1,595.38

**43' DEPTH, USACE DEEPEENED APPROACH CHANNEL CONSTRUCTION  
QUANTITY ESTIMATES**

43' DEPTH + 2' ADVANCE DREDGING APPROACH CHANNEL (EL. -44.4' NAVD88)				2' OVERDEPTH APPROACH CHANNEL (EL. -44.4' TO -46.4' NAVD88)			
STA.	AREA (SF)	Vol (CF)	Vol (CY)	STA.	AREA (SF)	Vol (CF)	Vol (CY)
3400	0.00			3400	0.00		
3500	0.00	0.00	0.00	3500	0.00	0.00	0.00
3600	0.00	0.00	0.00	3600	0.00	0.00	0.00
3800	0.00	0.00	0.00	3800	0.00	0.00	0.00
4000	0.00	0.00	0.00	4000	0.00	0.00	0.00
4123	0.00	0.00	0.00	4123	0.00	0.00	0.00
4200	0.00	0.00	0.00	4200	0.00	0.00	0.00
4400	0.00	0.00	0.00	4400	0.00	0.00	0.00
4600	0.00	0.00	0.00	4600	0.00	0.00	0.00
4800	0.00	0.00	0.00	4800	0.00	0.00	0.00
5000	443.07	44,307.00	1,704.12	5000	332.80	33,280.00	1,280.00
5200	706.30	114,937.00	4,420.65	5200	512.80	84,560.00	3,252.31
5400	1,962.78	266,908.00	10,265.69	5400	844.60	135,740.00	5,220.77
5600	2,151.10	411,388.00	15,822.62	5600	1,340.80	218,540.00	8,405.38
5800	3,314.40	546,550.00	21,021.15	5800	1,350.70	269,150.00	10,351.92
6000	2,888.50	620,290.00	23,857.31	6000	1,177.70	252,840.00	9,724.62
6200	2,403.20	529,170.00	20,352.69	6200	1,288.40	246,610.00	9,485.00
6400	3,092.20	549,540.00	21,136.15	6400	1,435.70	272,410.00	10,477.31
6600	3,659.20	675,140.00	25,966.92	6600	1,903.30	333,900.00	12,842.31
6800	3,329.56	698,876.00	26,879.85	6800	1,589.37	349,267.00	13,433.35
7000	3,575.00	690,456.00	26,556.00	7000	1,568.00	315,737.00	12,143.73
7200	5,189.10	876,410.00	33,708.08	7200	1,769.60	333,760.00	12,836.92
7400	2,915.80	810,490.00	31,172.69	7400	1,505.90	327,550.00	12,598.08
7600	2,696.90	561,270.00	21,587.31	7600	1,115.80	262,170.00	10,083.46
7800	2,350.10	504,700.00	19,411.54	7800	1,133.70	224,950.00	8,651.92
7849	1,142.90	85,578.50	3,291.48	7849	963.70	51,386.30	1,976.40
8000	1,124.40	171,181.15	6,583.89	8000	1,072.70	153,748.20	5,913.39
8200	444.00	156,840.00	6,032.31	8200	300.80	137,350.00	5,282.69
8400	0.00	44,400.00	1,707.69	8400	0.00	30,080.00	1,156.92
8600	0.00	0.00	0.00	8600	0.00	0.00	0.00
8800	0.00	0.00	0.00	8800	0.00	0.00	0.00

TOTAL: 321,478.14 CY

TOTAL: 155,116.48 CY

**USE TOTAL: 321,500.00 CY**

**43' + 2' ADVANCE DREDGING  
PHASE II PONO CONSTRUCTION**

<b>STA.</b>	<b>AREA (SF)</b>	<b>Vol (CF)</b>	<b>Vol (CY)</b>
4900	197.50		
5000	342.78	27,014.00	1,039.00
5100	520.78	43,178.00	1,660.69
5200	623.30	57,204.00	2,200.15
5300	766.21	69,475.50	2,672.13

TOTAL: 7,571.98

**ALTERNATIVE 3, 45' DEPTH, USACE DEEPEMED APPROACH CHANNEL CONSTRUCTION**

**QUANTITY ESTIMATES**

<b>ALT. 3, 45' DEPTH + 2' ADVANCE DREDGING APPROACH CHANNEL (EL. -46.4' NAVD88)</b>			
<b>STA.</b>	<b>AREA (SF)</b>	<b>Vol (CF)</b>	<b>Vol (CY)</b>
3400	0.00		
3500	0.00	0.00	0.00
3600	0.00	0.00	0.00
3800	0.00	0.00	0.00
4000	0.00	0.00	0.00
4123	0.00	0.00	0.00
4200	0.00	0.00	0.00
4400	0.00	0.00	0.00
4600	4.50	450.00	17.31
4800	23.60	2,810.00	108.08
5000	924.90	94,850.00	3,648.08
5200	1,398.63	232,353.00	8,936.65
5400	2,904.34	430,297.00	16,549.88
5600	3,518.54	642,288.00	24,703.38
5800	4,746.30	826,484.00	31,787.85
6000	4,115.31	886,161.00	34,083.12
6200	3,846.52	796,183.00	30,622.42
6400	4,711.86	855,838.00	32,916.85
6600	5,580.25	1,029,211.00	39,585.04
6800	5,049.24	1,062,949.00	40,882.65
7000	5,355.47	1,040,471.00	40,018.12
7200	7,064.53	1,242,000.00	47,769.23
7400	4,445.24	1,150,977.00	44,268.35
7600	3,849.35	829,459.00	31,902.27
7800	3,524.18	737,353.00	28,359.73
7849	2,444.24	146,226.29	5,624.09
8000	2,270.95	355,996.85	13,692.19
8200	772.80	304,375.00	11,706.73
8400	0.00	77,280.00	2,972.31
8600	0.00	0.00	0.00
8800	0.00	0.00	0.00

TOTAL: 490,154.31 CY  
**USE TOTAL: 500,000.00 CY**

<b>ALT. 3, 2' OVERDEPTH APPROACH CHANNEL (EL -46.4' TO 48.4' NAVD88)</b>			
<b>STA.</b>	<b>AREA (SF)</b>	<b>Vol (CF)</b>	<b>Vol (CY)</b>
3400	0.00		
3500	0.00	0.00	0.00
3600	0.00	0.00	0.00
3800	0.00	0.00	0.00
4000	0.00	0.00	0.00
4123	0.00	0.00	0.00
4200	0.00	0.00	0.00
4400	0.00	0.00	0.00
4600	54.80	5,480.00	210.77
4800	95.70	15,050.00	578.85
5000	813.38	90,908.00	3,496.46
5200	779.22	159,260.40	6,125.40
5400	1,004.56	178,378.40	6,860.71
5600	1,411.88	241,644.00	9,294.00
5800	1,512.10	292,398.00	11,246.08
6000	1,293.54	280,564.00	10,790.92
6200	1,506.10	279,964.00	10,767.85
6400	1,707.50	321,360.00	12,360.00
6600	1,944.28	365,178.00	14,045.31
6800	1,740.62	368,490.00	14,172.69
7000	1,645.68	338,630.00	13,024.23
7200	1,948.55	359,423.00	13,823.96
7400	1,560.19	350,874.00	13,495.15
7600	1,161.67	272,186.00	10,468.69
7800	1,216.77	237,844.00	9,147.85
7849	1,264.89	60,800.67	2,338.49
8000	1,225.05	187,990.32	7,230.40
8200	361.37	158,641.80	6,101.61
8400	0.00	36,137.00	1,389.88
8600	0.00	0.00	0.00
8800	0.00	0.00	0.00

TOTAL: 176,969.29

**ALT. 3, 45' + 2' ADVANCE DREDGING  
PHASE II PONO CONSTRUCTION**

<b>STA.</b>	<b>AREA (SF)</b>	<b>Vol (CF)</b>	<b>Vol (CY)</b>
4900	450.50		
5000	704.40	57,745.00	2,220.96
5100	882.40	79,340.00	3,051.54
5200	984.90	93,365.00	3,590.96
5300	1,127.80	105,635.00	4,062.88

**TOTAL: 12,926.35**

**48' DEPTH, USACE DEEPEDED APPROACH CHANNEL CONSTRUCTION**

**QUANTITY ESTIMATES**

<b>48' DEPTH + 2' ADVANCE DREDGING APPROACH CHANNEL (EL. -49.4' NAVD88)</b>			
<b>STA.</b>	<b>AREA (SF)</b>	<b>Vol (CF)</b>	<b>Vol (CY)</b>
3400	0.00		
3500	0.00	0.00	0.00
3600	0.00	0.00	0.00
3800	0.00	0.00	0.00
4000	0.00	0.00	0.00
4123	151.60	9,323.40	358.59
4200	414.90	21,810.25	838.86
4400	184.10	59,900.00	2,303.85
4600	404.60	58,870.00	2,264.23
4800	592.10	99,670.00	3,833.46
5000	2,214.00	280,610.00	10,792.69
5200	2,793.10	500,710.00	19,258.08
5400	4,500.50	729,360.00	28,052.31
5600	5,810.16	1,031,066.00	39,656.38
5800	7,338.10	1,314,826.00	50,570.23
6000	6,364.80	1,370,290.00	52,703.46
6200	6,598.10	1,296,290.00	49,857.31
6400	7,302.70	1,390,080.00	53,464.62
6600	8,532.10	1,583,480.00	60,903.08
6800	7,817.40	1,634,950.00	62,882.69
7000	7,859.20	1,567,660.00	60,294.62
7200	10,026.10	1,788,530.00	68,789.62
7400	6,895.60	1,692,170.00	65,083.46
7600	5,700.50	1,259,610.00	48,446.54
7800	5,479.40	1,117,990.00	42,999.62
7849	4,423.70	242,625.95	9,331.77
8000	4,145.10	646,944.40	24,882.48
8200	1,403.40	554,850.00	21,340.38
8400	0.00	140,340.00	5,397.69
8600	0.00	0.00	0.00
8800	0.00	0.00	0.00

TOTAL: 784,306.00 CY  
**USE TOTAL:** CY

<b>2' OVERDEPTH APPROACH CHANNEL (EL -49.4' TO 51.4' NAVD88)</b>			
<b>STA.</b>	<b>AREA (SF)</b>	<b>Vol (CF)</b>	<b>Vol (CY)</b>
3400	0.00		
3500	0.00	0.00	0.00
3600	0.00	0.00	0.00
3800	0.00	0.00	0.00
4000	0.00	0.00	0.00
4123	274.00	16,851.00	648.12
4200	605.20	33,849.20	1,301.89
4400	447.30	105,250.00	4,048.08
4600	553.20	100,050.00	3,848.08
4800	822.10	137,530.00	5,289.62
5000	920.70	174,280.00	6,703.08
5200	1,064.60	198,530.00	7,635.77
5400	1,135.90	220,050.00	8,463.46
5600	1,776.70	291,260.00	11,202.31
5800	1,949.90	372,660.00	14,333.08
6000	1,570.60	352,050.00	13,540.38
6200	2,085.00	365,560.00	14,060.00
6400	1,830.60	391,560.00	15,060.00
6600	2,013.30	384,390.00	14,784.23
6800	1,963.90	397,720.00	15,296.92
7000	1,730.70	369,460.00	14,210.00
7200	2,005.50	373,620.00	14,370.00
7400	1,679.38	368,488.00	14,172.62
7600	1,298.00	297,738.00	11,451.46
7800	1,427.70	272,570.00	10,483.46
7849	1,403.50	69,364.40	2,667.86
8000	1,291.90	203,502.70	7,827.03
8200	475.30	176,720.00	6,796.92
8400	0.00	47,530.00	1,828.08
8600	0.00	0.00	0.00
8800	0.00	0.00	0.00

TOTAL: 220,022.43



**48' + 2' ADVANCE DREDGING  
PHASE II PONO CONSTRUCTION**

<b>STA.</b>	<b>AREA (SF)</b>	<b>Vol (CF)</b>	<b>Vol (CY)</b>
4900	1,008.30		
5000	1,262.70	113,550.00	4,367.31
5100	1,440.70	135,170.00	5,198.85
5200	1,543.20	149,195.00	5,738.27
5300	1,686.14	161,467.00	6,210.27

**TOTAL: 21,514.69**

**ALTERNATIVE 4, 50' DEPTH, USACE DEEPEMED APPROACH CHANNEL CONSTRUCTION**

**QUANTITY ESTIMATES**

<b>ALT. 4, 50' DEPTH + 2' ADVANCE DREDGING APPROACH CHANNEL (EL. -51.4' NAVD88)</b>			
<b>STA.</b>	<b>AREA (SF)</b>	<b>Vol (CF)</b>	<b>Vol (CY)</b>
3400	0.00		
3500	0.00	0.00	0.00
3600	0.00	0.00	0.00
3800	0.00	0.00	0.00
4000	38.10	3,810.00	146.54
4123	611.20	39,931.95	1,535.84
4200	1,093.80	65,642.50	2,524.71
4400	648.90	174,270.00	6,702.69
4600	1,139.90	178,880.00	6,880.00
4800	1,178.80	231,870.00	8,918.08
5000	3,153.40	433,220.00	16,662.31
5200	3,895.60	704,900.00	27,111.54
5400	5,669.30	956,490.00	36,788.08
5600	7,613.60	1,328,290.00	51,088.08
5800	9,387.50	1,700,110.00	65,388.85
6000	8,027.70	1,741,520.00	66,981.54
6200	8,699.50	1,672,720.00	64,335.38
6400	9,314.40	1,801,390.00	69,284.23
6600	10,566.50	1,988,090.00	76,465.00
6800	9,910.00	2,047,650.00	78,755.77
7000	9,870.50	1,978,050.00	76,078.85
7200	12,055.60	2,192,610.00	84,331.15
7400	8,595.25	2,065,085.00	79,426.35
7600	7,027.20	1,562,245.00	60,086.35
7800	6,925.40	1,395,260.00	53,663.85
7849	5,852.80	313,065.90	12,041.00
8000	5,603.60	864,958.20	33,267.62
8200	1,922.70	752,630.00	28,947.31
8400	0.00	192,270.00	7,395.00
8600	0.00	0.00	0.00
8800	0.00	0.00	0.00

TOTAL: 1,014,806.10 CY  
**USE TOTAL: 1,000,000.00 CY**

<b>ALT. 4, 2' OVERDEPTH APPROACH CHANNEL (EL. -51.4' TO 53.4' NAVD88)</b>			
<b>STA.</b>	<b>AREA (SF)</b>	<b>Vol (CF)</b>	<b>Vol (CY)</b>
3400	0.00		
3500	0.00	0.00	0.00
3600	0.00	0.00	0.00
3800	0.00	0.00	0.00
4000	150.60	15,060.00	579.23
4123	674.70	50,755.95	1,952.15
4200	775.00	55,813.45	2,146.67
4400	496.10	127,110.00	4,888.85
4600	835.30	133,140.00	5,120.77
4800	688.30	152,360.00	5,860.00
5000	962.40	165,070.00	6,348.85
5200	1,138.20	210,060.00	8,079.23
5400	1,195.70	233,390.00	8,976.54
5600	1,834.00	302,970.00	11,652.69
5800	2,098.20	393,220.00	15,123.85
6000	1,769.00	386,720.00	14,873.85
6200	2,126.40	389,540.00	14,982.31
6400	2,108.00	423,440.00	16,286.15
6600	2,066.40	417,440.00	16,055.38
6800	2,132.70	419,910.00	16,150.38
7000	2,107.70	424,040.00	16,309.23
7200	2,074.80	418,250.00	16,086.54
7400	1,725.70	380,050.00	14,617.31
7600	1,352.60	307,830.00	11,839.62
7800	1,477.60	283,020.00	10,885.38
7849	1,462.90	72,042.25	2,770.86
8000	1,518.20	225,073.05	8,656.66
8200	568.60	208,680.00	8,026.15
8400	0.00	56,860.00	2,186.92
8600	0.00	0.00	0.00
8800	0.00	0.00	0.00

TOTAL: 240,455.57

**ALT. 4, 50' + 2' ADVANCE DREDGING  
PHASE II PONO CONSTRUCTION**

<b>STA.</b>	<b>AREA (SF)</b>	<b>Vol (CF)</b>	<b>Vol (CY)</b>
4900	1,396.30		
5000	1,650.80	152,355.00	5,859.81
5100	1,828.70	173,975.00	6,691.35
5200	1,931.30	188,000.00	7,230.77
5300	2,074.20	200,275.00	7,702.88

**TOTAL: 27,484.81**