
PROJECT MEMORANDUM

TO: Ms. Ellen Posivach, Port Richey City Manager
FROM: Joe Wagner, P. E., Taylor Engineering, Inc.
SUBJECT: Opinion of Probable Cost, Potential Dredged Material Management Areas Cost Differential, Port Richey, FL
DATE: February 3, 2010 (Revised)

As per your request, this project memorandum provides a preliminary opinion of probable cost that focuses on the differential cost of using the following three sites as potential dredged material management areas (DMMA) for the three proposed city of Port Richey dredging projects (Miller's Bayou, Cotee River, and North Bay Boulevard).

- 5419 Treadway — located across from Waterfront Park along Channel 18 inside Miller's Bayou
- River Gulf Trailer Park — located at the corner of River Gulf Road and Grand Boulevard along Channel 19 outside of Miller's Bayou
- Waterfront Park — located just west of Old Post Road along Channel 18 inside Miller's Bayou

The first preliminary opinion of probable cost of this project memorandum compares the differential cost of using any one of three sites (5419 Treadway, River Gulf Trailer Park, and Waterfront Park) as a DMMA for *only* the proposed Miller's Bayou dredging, see the discussion below and Table 1. The next preliminary opinions of probable costs detail the results of similar cost ratio analysis based on the proposed volume of dredged material for the use of each of the three DMMA sites for the Cotee River (Table 2) and North Bay Boulevard (Table 3) dredging projects. The remainder of this project memorandum presents an adjusted total opinion of probable costs for all three dredging projects that assumes the city can sell a portion of the dredged material (Table 4).

The city has not established a permanent final disposal location for all the proposed dredged material. Florida Department of Environmental Protection (FDEP) Permit No. 51-0238686-002 specifies the use of a utility easement (Oreto Drive site) located approximately 6.6 miles roundtrip from the 5419 Treadway site (accessed via U.S. Highway 19 and Ridge Road) as the final disposal location for each project area. However, preliminary calculations indicate that the Oreto Drive site will likely only hold between 10,000 and 15,000 cubic yards of bulked dredged material outside of the utility line footprint. The preliminary opinion of probable cost calculations assume that the selected contractor may suggest an alternate final disposal site better suited (i.e., less costly, easy to permit) to meet the project requirements. Each of the preliminary opinions of probable cost for the various dredging projects (Miller's Bayou, Cotee River, and North Bay Boulevard) includes a conservative cost estimate of \$18 per cubic yard to haul dredged material from the selected DMMA site to a final disposal location. In our preliminary opinion of probable cost analysis, we used the \$18 per cubic yard haul cost independent of what if any amount of material is actually disposed of at the Oreto Drive site.

Preliminary Opinion of Probable Cost — Potential DMMA Cost Differential for Miller’s Bayou Dredging Project

The proposed Miller’s Bayou dredging project would require the removal and sale or storage of approximately 42,500 cubic yards of material.

This preliminary opinion of probable cost only accounts for the use of each potential DMMA site during the offloading, dewatering, and final transportation of dredged material for a single dredging event, Miller’s Bayou, to a final disposal location; it does not account for the actual cost of purchasing or leasing the DMMA property. Notably, the property with the least expensive purchase or lease arrangement could prove more costly due to site restrictions and additional operating costs.

5419 Treadway

The 5419 Treadway site lies between Treadway Drive and the city-owned Waterfront Park along Channel 18. Given the site’s location within Miller’s Bayou, the size of the parcel (approximately 3.37 acres), its current condition (mostly cleared with maintained interior roads and drainage structures), proximity to a four-lane divided highway (US-19), and the stabilized and maintained shoreline, we believe that using the 5419 Treadway site as a DMMA would incur the least cost for the city. Use of the 5419 Treadway site for the Miller’s Bayou dredging project would cost the city approximately \$230,000. The “Current Miller’s Bayou Dredging Overall Cost” column in Table 1 includes the cost of using the 5419 Treadway site.

River Gulf Trailer Park

The River Gulf Trailer Park site is located at the intersection of River Gulf Road and Grand Boulevard along Channel 19 outside of Miller’s Bayou. Notably, Taylor Engineering based its cost to provide preliminary DMMA design services in Work Order #5 on the use of this site. Compared with the 5419 Treadway site, use of the River Gulf Trailer Park site as a DMMA for the Miller’s Bayou dredging project would incur additional costs related to the site’s location, size, and current condition. The approximately 2-acre site lies outside of Miller’s Bayou. The route for barge or pipeline transportation of the dredged material from the Miller’s Bayou channels to the River Gulf Trailer Park site would extend approximately 3,650 feet. In addition, the site would require more work than the 5419 Treadway site to make it usable as a DMMA. Specifically, use of the River Gulf Trailer Park site would require dredging a portion of Channel 19 to the edge of the site’s existing concrete block seawall. A visual inspection indicates that the seawall would require repair or installation of temporary mooring piles.

Use of the River Gulf Trailer Park site as a DMMA for the Miller’s Bayou dredging project would incur a total cost of \$430,000 – \$470,000. Notably, the cost estimate for the River Gulf Trailer Park site includes several site improvements, such as dredging a portion of Channel 19 to the edge of the site’s existing concrete block seawall and installing mooring piles.

Waterfront Park

The Waterfront Park site is located just west of Old Post Road along Channel 18 inside Miller’s Bayou. Compared with the 5419 Treadway and River Gulf Trailer Park sites, use of the Waterfront Park site as a DMMA for the Miller’s Bayou dredging project would incur additional costs related to the permit conditions imposed on the use of the site. These permit conditions derive from the site’s current use as a public park, which requires use of a 2.5-acre impermeable geosynthetic line, temporary impacts to

seagrass and wetlands (0.47 acre), and mitigation to offset those impacts. The city would also sustain additional costs related to removing playgrounds and bathrooms, as well as constructing a gravel/lime rock haul road, a lime rock staging area, a barge offloading area (0.25 acre), and a surface water management system. The surface water management system would require three settling ponds and ancillary weirs, stand pipes, polyacrylamide blended (flocculent) logs, and filter curbs. Moreover, use of the currently permitted DMMA design would significantly reduce the volume of material the contractor could handle at one time, thus increasing the contract time and overall project cost.

Notably, the FDEP has specified the 2.5-acre impermeable geosynthetic liner and the three settling ponds to filter sediments from seepage and stormwater runoff from the spoil pile as permit conditions required to mitigate any possible long-term impacts to the site. Review of the FDEP permit files indicates that the FDEP required the liner due to the site’s primary use as a public park and as well as the presence of sediments that exceed both the Residential and Commercial/Industrial Soil Cleanup Target Levels (SCTL) for some polycyclic aromatic hydrocarbons (PAHs) and metals. Discussion with city staff indicate that that Waterfront Park is zoned as commercial/industrial and not residential. Removal of the geosynthetic liner as a permit condition would remain in the FDEP’s purview and would likely depend on the city’s ability to present a strong case that the site would not return to public or residential use or that the sediments will not have a long-term impact on the site. If the city can make that argument, then Taylor Engineering believes the FDEP could possibly remove the requirement to line the site.

Use of the Waterfront Park site for the Miller’s Bayou dredging project would incur a total cost of \$615,000 – \$755,000. Of this cost, approximately \$135,000 is a direct cost of materials and installation of 2.5-acre impermeable geosynthetic liner.

Table 1: DMMA Cost Differential for Miller’s Bayou

DMMA	Total Cost Range	
5419 Treadway	\$2,800,000	\$3,500,000
River Gulf Trailer Park	\$3,000,000	\$3,740,000
Waterfront Park	\$3,185,000	\$4,025,000

Preliminary Opinion of Probable Cost — Potential DMMA Cost Differential for Cotee River and North Bay Boulevard Dredging Projects

Tables 2 and 3 present the results of a similar cost ratio based analysis, as that provided for Miller’s Bayou, on the proposed volume of dredged material for the use of each of the three sites for the Cotee River (28,300 cubic yards) and North Bay Boulevard (9,500 cubic yards and construction of one bridge) dredging projects.

Each preliminary opinion of probable cost only accounts for the use of each potential DMMA site during the offloading, dewatering, and final transportation of dredged material for a single dredging event, either Cotee River or North Bay Boulevard, to a final disposal location; it does not account for the actual cost of purchasing or leasing the DMMA property. Notably, the property with the least expensive purchase or lease arrangement could prove more costly due to site restrictions and additional operating costs.

Table 2: DMMA Cost Differential for Cotee River Dredging Project

DMMA	Total Cost Range	
5419 Treadway	\$2,000,000	\$2,500,000
River Gulf Trailer Park	\$2,175,000	\$2,715,000
Waterfront Park	\$2,310,000	\$2,975,000

Table 3: DMMA Cost Differential for North Bay Boulevard Dredging Project

DMMA	Total Cost Range	
5419 Treadway	\$2,400,000	\$3,000,000
River Gulf Trailer Park	\$2,550,000	\$3,190,000
Waterfront Park	\$2,710,000	\$3,475,000

†Assumes the least expensive alternative — construction of just one bridge along Bay Boulevard

Preliminary Opinion of Probable Cost — Final Adjusted Total

The cost estimates for the three dredging projects (Miller’s Bayou, Cotee River, and North Bay Boulevard) included a conservative cost of \$18 per cubic yard to haul the dredged material from the selected DMMA site to a final disposal location. Taylor Engineering believes that the city, through the selected contractor, can sell a portion of the dredged material, specifically the weathered limestone and a portion of the sand removed from the channel, for use as structural fill.

Several unknowns, including the quantity of material that the designated final offloading site can handle, dictated the conservative hauling cost. At this time, the city has not established a permanent final disposal location for all the proposed dredged material. Although FDEP Permit No. 51-0238686-002 specifies the use of the Oreto Drive site as the final disposal location for this project, the site will only hold between 10,000 and 15,000 cy of bulked dredged material. As noted, the selected contractor may suggest an alternate final disposal site better suited (i.e., less costly, easy to permit) to meet the project requirements.

As noted, each preliminary opinion of probable cost only accounts for the use of each potential DMMA site during the offloading, dewatering, and final transportation of dredged material for a single dredging event, either Miller’s Bayou, Cotee River, and North Bay Boulevard, to a final disposal location; it does not account for the actual cost of purchasing or leasing the DMMA property. The city should carefully consider that the property with the least expensive purchase or lease arrangement could prove more costly due to site restrictions and additional operating costs.

Table 4: Preliminary Opinion of Probable Cost using the 5419 Treadway DMMA

Dredging Area	Overall Cost*		Dredging Volume (cy)	Sellable Dredged Material (cy)	Projected Cost Savings	Final Adjusted Total	
Miller’s Bayou	\$2,800,000	\$3,500,000	42,500	33,000	\$693,000	\$2,100,000	\$2,800,000
Cottee River	\$2,000,000	\$2,500,000	28,300	16,750	\$351,750	\$1,600,000	\$2,100,000
North Bay Blvd (and 1 Bridge)†	\$2,400,000	\$3,000,000	9,500	6,050	\$127,050	\$2,300,000	\$2,900,000
Property Purchase Cost						\$1,600,000	\$1,600,000
Total						\$7,600,000	\$9,400,000

*Includes cost of using 5419 Treadway DMMA for the project

†Assumes the least expensive alternative — construction of just one bridge along Bay Boulevard

Table 4 presents Taylor Engineering’s final preliminary opinion of probable costs for the Miller’s Bayou, Cottee River, and North Bay Boulevard dredging projects using the 5419 Treadway site as the DMMA. Based on directive from your office we have included the cost to purchase the 5419 Treadway site at an estimated cost of \$1,600,000. The final adjusted total (\$7,600,000 to \$9,400,000) incorporates projected cost savings from selling a portion of the dredged material as outlined above.

Table 5: Preliminary Opinion of Probable Cost using the River Gulf Trailer Park DMMA

Dredging Area	Overall Cost*		Dredging Volume (cy)	Sellable Dredged Material (cy)	Projected Cost Savings	Final Adjusted Total	
Miller’s Bayou	\$3,000,000	\$3,740,000	42,500	33,000	\$693,000	\$2,300,000	\$3,000,000
Cottee River	\$2,175,000	\$2,715,000	28,300	16,750	\$351,750	\$1,800,000	\$2,400,000
North Bay Blvd (and 1 Bridge)†	\$2,550,000	\$3,190,000	9,500	6,050	\$127,050	\$2,400,000	\$3,100,000
Property Purchase Cost						\$400,000	\$400,000
Total						\$6,900,000	\$8,900,000

*Includes cost of using River Gulf Trailer Park DMMA for the project

†Assumes the least expensive alternative — construction of just one bridge along Bay Boulevard

Table 5 presents Taylor Engineering’s final preliminary opinion of probable costs for the Miller’s Bayou, Cottee River, and North Bay Boulevard dredging projects using the River Gulf Trailer Park as the DMMA. Based on directive from your office we have included the cost to purchase the River Gulf Trailer Park site at an estimated cost of \$400,000. The final adjusted total (\$6,900,000 to \$8,900,000) incorporates projected cost savings from selling a portion of the dredged material as outlined above.

Table 6: Preliminary Opinion of Probable Cost using the Waterfront Park DMMA

Dredging Area	Overall Cost*		Dredging Volume (cy)	Sellable Dredged Material (cy)	Projected Cost Savings	Final Adjusted Total	
Miller's Bayou	\$3,185,000	\$4,025,000	42,500	33,000	\$693,000	\$2,500,000	\$3,300,000
Cotee River	\$2,310,000	\$2,975,000	28,300	16,750	\$351,750	\$2,000,000	\$2,600,000
North Bay Blvd (and 1 Bridge)†	\$2,710,000	\$3,475,000	9,500	6,050	\$127,050	\$2,600,000	\$3,300,000
Property Purchase Cost						\$0	\$0
Total						\$7,100,000	\$9,200,000

†Assumes the least expensive alternative — construction of just one bridge along Bay Boulevard

Table 6 presents Taylor Engineering's final preliminary opinion of probable costs for the Miller's Bayou, Cotee River, and North Bay Boulevard dredging projects using Waterfront Park as the DMMA. The final adjusted total (\$7,100,000 to \$9,200,000) incorporates projected cost savings from selling a portion of the dredged material as outlined above. Of this cost, approximately \$135,000 is a direct cost of materials and installation of 2.5-acre impermeable geosynthetic liner.