

APPENDIX F: MSA AND BBA PROJECT DESCRIPTIONS CONTINUED FROM SECTION 2.5 IN THE MAIN SEIS

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MSA Project Description Continued

MSA EARTHWORK

Required earthwork would consist of clearing, grubbing, excavation, and removal of approximately 1,279,232 CY of earthen material for the proposed diversion’s conveyance channel and disposal at an approved disposal site. If a borrow study in subsequent design phases indicates sufficient suitability within the excavated material, the Contractor may elect to use that material on-site. Any material used on site would stay within the right-of-way (ROW) and would be used to construct features as described in the Plans and Specs. Most of the fill material used throughout the proposed construction area would be imported from USACE approved borrow sources as described in SEA 571.

Table 1: MSA Material Quantities.

Activity	Cubic Yards (CY)	Description
Excavation	1,279,232	Intake channel, conveyance channel, outfall channel, and all crossings.
Excavation	5,345	Embankment cuts where spoil would not be removed
Fill	756,060	Intake channel, conveyance channel, outfall channel, and all crossings.

Project features within the construction ROW would be cleared, grubbed, and graded to establish a stable base upon which to construct. With the relatively flat topography of the area, the primary erosion control measure used would be silt fencing around all affected areas during construction and a turbidity curtain adjacent to the river. Seeding and grassing would also be conducted on compacted earthen slopes and areas disturbed by construction activity at the end of construction. Other erosion control measures may be implemented as needs are identified.

Embankment cuts would be established north of the conveyance channel in the northern part of the swamp. The cuts would occur along the existing ridge of an old railroad embankment. Water must be circulated throughout the swamp to reestablish the vitality of the wetland vegetation. Water movement into the northwest corner of the swamp is restricted by an embankment that was constructed decades ago to support a defunct Cypress logging railroad spur. Access to the embankment would be from the north, via a small reach of waterway from Blind River. The waterway ends at a stand of trees, which will require removal. There would be no clearing on or near Blind River itself (Figure 2). To establish the cuts, 7.51 acres along the old railroad embankment would be cleared for equipment access, 5 individual areas along the embankment would be excavated to existing grade to allow for water flow while all spoil would be placed in 20 individual areas along the embankment. It is anticipated that no material would be removed from the proposed construction area (Figure 1).

In order to limit the amount of diverted Mississippi River water from entering into Blind River, two submerged riprap weir features in Bayou Secret and Bourgeois Canal would be constructed. These submerged weirs would be constructed within each channel and set back from Blind River to allow shallow draft watercraft to still navigate to and from Blind River.

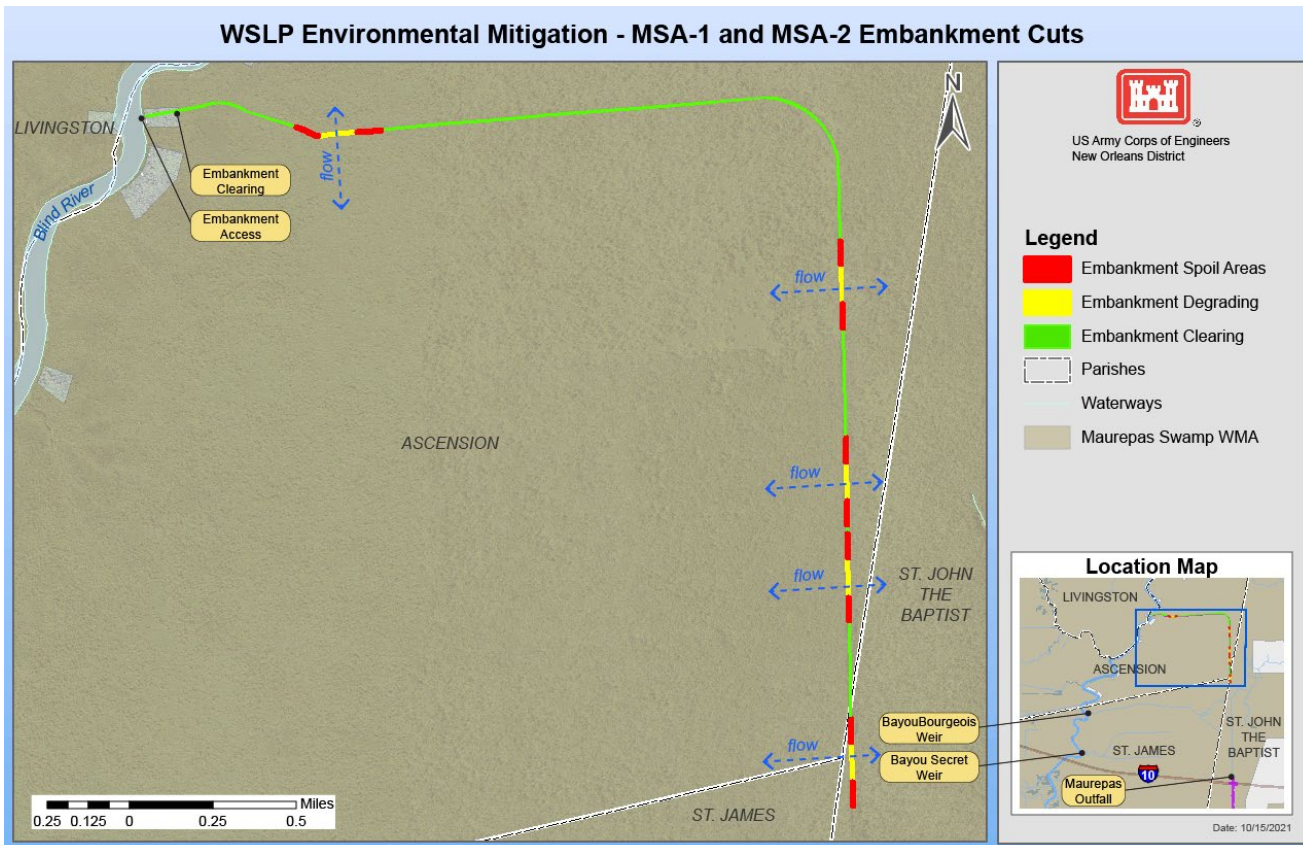


Figure 1: MSA Embankment Cuts.

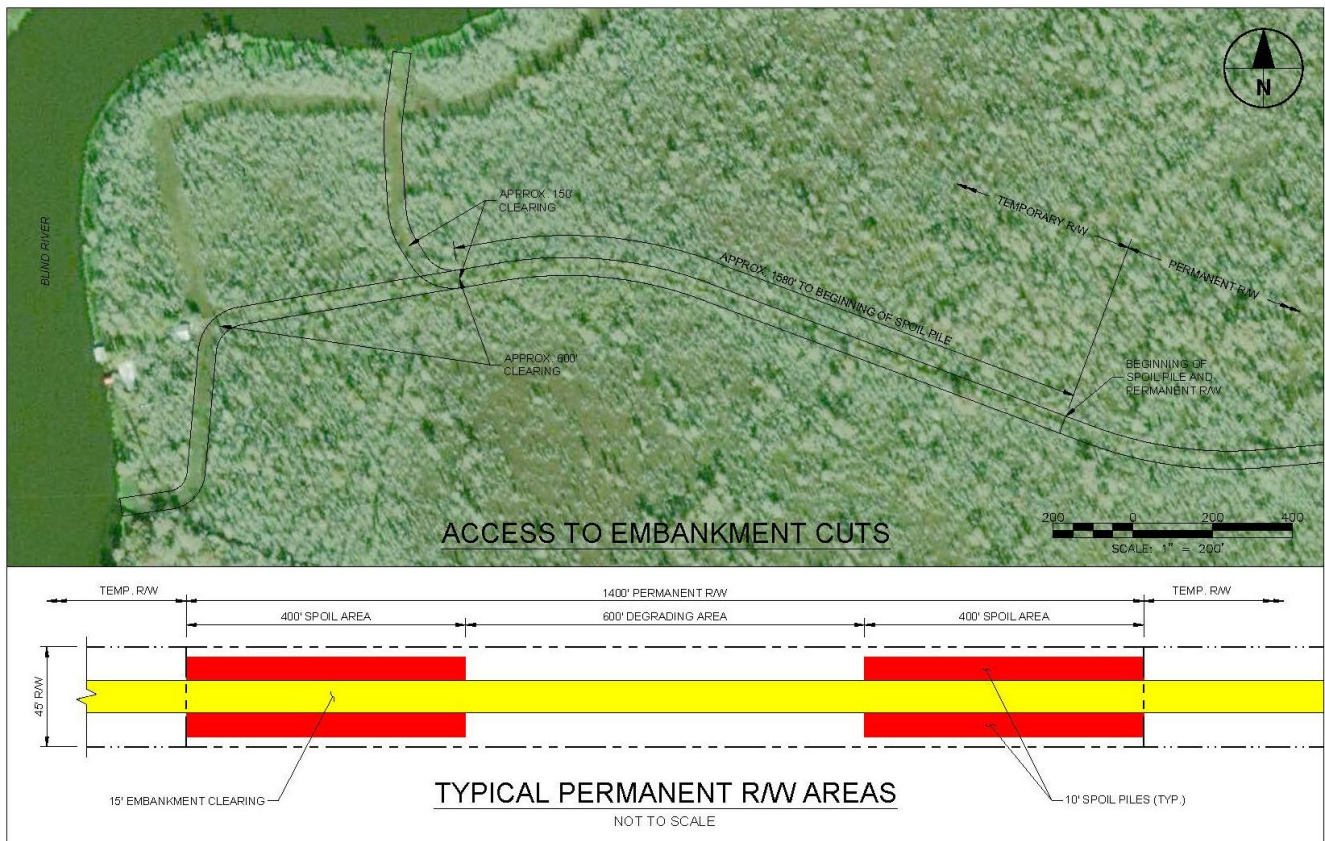


Figure 2: MSA Embankment Cut Access.

MSA CONSTRUCTION METHODS, TIMING, AND SEQUENCE

The following are the assumptions about equipment, methodology, and durations:

- Construction Duration would be 33 months.
- Construction is scheduled for 5 days a week, 8 hours a day.
- A haul road would be used for clearing and grubbing.
- Two Entergy transmission poles would be reinstalled, and the line will need to be raised due to elevation adjustment from construction.
- Headworks cofferdam would be constructed using a barge with a combination of land support.
- Pumps and sediment basins would be used to manage water for construction.
- Most of the fill material used throughout the project would be imported from a USACE approved borrow pit.

- Any excavated material not suitable for project construction would be removed from the site and appropriately discarded. This would likely be the case for most of the material excavated from the project site.
- Excavated material suitable for construction could be left on the site. Such material would be worked to obtain the proper moisture content, and could be mixed with imported material, to meet the USACE requirements for levee construction. The excavated material worked and/or mixed with imported material to the required technical specifications could be used for levee construction according to the final designs and specifications. All such working and/or mixing of materials would take place within the designated staging areas.
- Table 2 details the equipment anticipated to be utilized and the utilization duration by location for the construction of the MSA-1 or MSA-2 /WSP Project.

Table 2: MSA Equipment Anticipated to be Utilized and Utilization Duration by Location.

Item No.	Project Component	Duration (days)	Equipment Used
1	River Side of Levee		
1a	Cofferdam	111	Dump Trucks
			Bull Dozers
			Fuel Tanks
			Pumps
			Air Compressor
			Fill Compactor
			Front-End Loader/Backhoe
			Auger Equipment
			Generator
1b	Headworks Structure	280	150-Ton Crane
			80-Ton Crane
			Excavator
			Pile Driver
			Concrete Trucks
			Concrete Vibrators

Item No.	Project Component	Duration (days)	Equipment Used
			Welding Machine, Cutting Torch
1c	River Intake	150	Dump Trucks
			Bull Dozers
			Fuel Tanks
			Front-End Loader/Backhoe
			80-Ton Crane
			Barges
			Tug Boats
2	Conveyance Channel		
	Pump Sta. to End of Project	427	Dump Trucks
			Bull Dozers
	River Rd to CN RR	129	Fuel Tanks
			Pumps
	CN RR to KCS RR	319	Air Compressor
			Fill Compactor
	KCS RR to Airline Hwy	126	Front-End Loader/Backhoe
			Auger Equipment
Airline Hwy to Pump Sta.	229	Generator	
Sedimentation Basin	178	Tree Sheer	
3	Roadways		Jackhammers
	River Rd Detour	153	Dump Trucks
	River Rd Restoration	180	Bull Dozers
	Airline Hwy Detours	300	Fuel Tanks
			Asphalt Mixing Trucks
	Airline Hwy Reconstruction	204	Asphalt Laying Equipment

Item No.	Project Component	Duration (days)	Equipment Used
	Airline Hwy Raise	300	Asphalt compaction equipment
			Dump Trucks
			Bull Dozers
			Fuel Tanks
			Fill Compactor
			Front-End Loader/Backhoe
			Auger Equipment
4	Flood Wall		150-Ton Crane
	River Road to CN RR	180	80-Ton Crane
			Excavator
			Pile Driver
			Concrete Trucks
			Concrete Pumps
			Concrete Vibrators
Welding Machine, Cutting Torch			
5	Levees		Dump Trucks
	CN RR to KCS RR	289	Bull Dozers
			Fuel Tanks
	KCS RR to Airline Hwy	149	Fill Compactor
			Front-End Loader/Backhoe
	Airline Hwy to Pump Station	246	Auger Equipment
Generator			
6	Floodgates		
	River Road Floodgate	118	80-Ton Crane

Item No.	Project Component	Duration (days)	Equipment Used
			Excavator
			Pile Driver
	CN RR Floodgate	150	Concrete Mixing Trucks
			Concrete Pumps
	KCS RR Floodgate	210	Concrete Vibrators
			Welding Machine, Cutting Torch
7	Culverts & Headwalls		150-Ton Crane
	CN RR Crossing	167	80-Ton Crane
			Excavator
	KCS RR Crossing	227	Pile Driver
			Concrete Mixing Trucks
			Concrete Pumps
	Airline Hwy Crossing	236	Concrete Vibrators
Welding Machine, Cutting Torch			
8	Railroads		150-Ton Crane
	CN Shoo-fly & RR Removal	239	80-Ton Crane
			Excavator
	CN Reconstruct Railroad	124	Pile Driver
			Concrete Mixing Trucks
			Concrete Pumps
KCS Railroad Bridge	250	Concrete Vibrators	
		Welding Machine, Cutting Torch	
9	Interstate 10 Crossing	148	Dredge Vessel
			Hydraulic Dredge
			Dump Trucks

Item No.	Project Component	Duration (days)	Equipment Used
10	Utilities Relocations	378	Excavator
			HDD Drill Rig
11	Embankment Cuts	41	Compact Excavators
			Marsh Pull Buggy
			Tree Chipper
			Flatboats
12	Weirs at B. Secret & B. Canal	20	Chain Saws
			Marsh Buggy Excavator
			Tree Chipper
			Flatboats
			30- Ton Crane
13	I-10 Check Valves	8	Compact Utility Vehicles (Bobcats)

MSA SITE ACCESS

In general, construction site access would be obtained by both barge and vehicle via the following (Figure 3):

- barge access from the Mississippi River at the intake structure.
- vehicular access at State Hwy-44/River Road.
- vehicular access from Daffodil Street immediately north of CN RR.
- vehicular access from State Hwy 54/ Garyville Northern St. both North and south of KCS RR.
- vehicular access from eastbound and westbound US Hwy 61/Airline Hwy.
- vehicular access from eastbound and westbound Interstate 10.
- barge access from the Hope Canal and Blind River for the embankment cuts and weirs.

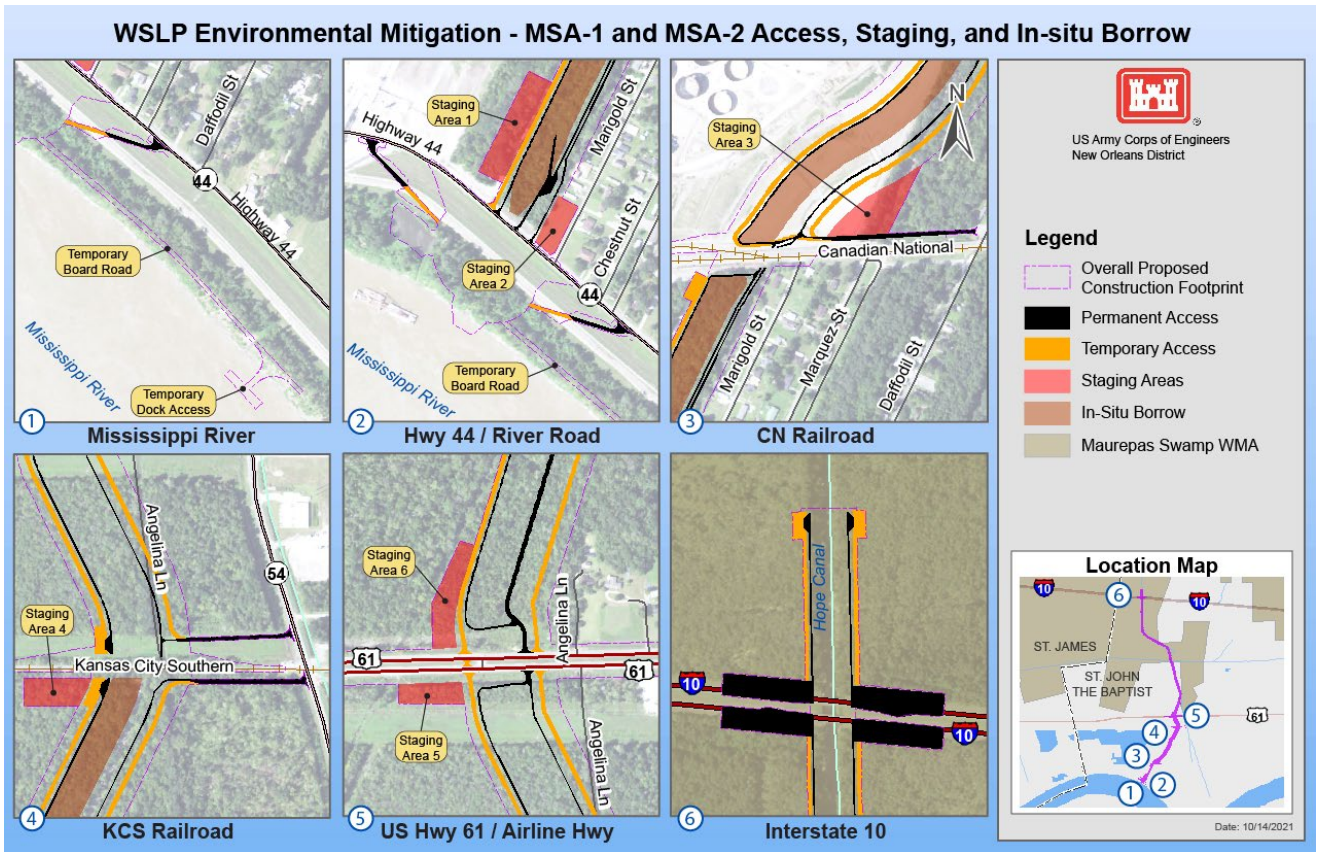


Figure 3: MSA Access, Staging, and In-Situ Borrow Features.

MSA STAGING

In general, construction staging areas would be in the vicinity of the site access locations. Staging areas are as follows:

Table 3: MSA Access, Staging, and Borrow Features.

Access, Staging, Borrow	Acres	Description
Permanent Access Roads	22.53	Roads to remain after construction.
Temporary Access Roads	32.83	Areas to be restored to pre-construction condition after construction.
Temporary Staging Areas	0.79	Area 1 - WSLP River Road to CN RR
	1.95	Area 2 - Diversion Intake System and River Road Crossing
	1.67	Area 3 - North of CN RR
	1.15	Area 4 - South of KCS RR
	0.88	Area 5 - South of Airline Hwy

	1.51	Area 6 - North of Airline Hwy
	7.94	Total
In Situ Borrow Areas	7.32	Area between River Rd and CN RR.
	20.53	Area between CN RR and KCS RR.
	27.85	Total

MSA MAINTENANCE/MANAGEMENT ACTIVITIES

The Project would include various maintenance and inspection activities associated with the head works and secondary features. Maintenance features and a general description of activities are as follows:

- Head Works: inspect and maintain in operable condition
- Sedimentation Basin: dredging and structural maintenance
- Access Roads: maintain in operable condition
- Outfall Channel: mowing, spraying, erosion control, etc.
- Airline Highway Culverts: maintain in operable condition
- I-10 Check Valves: inspect and maintain in operable condition
- Weirs: inspect and maintain in operable condition
- Railroad Embankment Cuts: inspect and maintain in operable condition

Ancillary Channel Maintenance would be conducted as follows:

- Routine inspections would involve visually observing the condition of the ancillary channels. Hydrographic surveying would be conducted periodically (every 5 years). The survey data would be used to evaluate whether deposition or scouring has significantly affected the channel invert elevation or the overall cross-section.
- Maintenance would include the removal of debris and deposited material as needed (every 25 years or based on inspection results).
- Maintenance would include management of invasive species, as needed, when inspections determine that invasive species are adversely affecting the structural integrity and/or functions of the project. Additional information on invasive species management is provided in the MSA-1 and MSA-2 Adaptive Management Plan.

MSA BOAT LAUNCH RELOCATION

The WSLP levee and associated Hope Canal drainage features would directly impact access to a boat launch owned and operated by LDWF. This boat launch is located on the very southern portion of Hope Canal near U.S. 61 to allow access to the Maurepas WMA and consists of an earthen parking area with a gravel launch into Hope Canal. The parking area is less than 0.2 acres and can accommodate approximately 6 vehicles and boat trailers. There are no other features or facilities associated with this boat launch.

A replacement boat launch would be located along the western guide levee of the MSA-1 or MSA-2 /WSLP Project just north of U.S. 61 (Airline Hwy.) This would allow for equal public access via boat into the conveyance channel (which follows Hope Canal) and to the LDWF Maurepas WMA. A parking lot to accommodate an equal or greater than number of vehicles and trailers would be constructed.

The current boat launch is closed to recreational access due to WSLP construction activities. The timing for construction for the new, replacement boat launch is uncertain, but would be undertaken as soon as is practicable. Consequently, recreational access at this location may not be available for a maximum of 3 years (the entire construction period for the diversion).

Pine Island Swamp Creation Project Description

PINE ISLAND GENERAL SOW

The proposed project involves creation of up to a total of approximately 1,964 acres of swamp habitat over eight separate mitigation areas as compensatory mitigation for some of the swamp impacts resulting from construction of BBA projects. The swamp creation areas (mitigation areas) would be located in open water areas around Milton Island on the north shore of Lake Pontchartrain. This site is located southwest of the town of Madisonville adjacent to the Tchefuncte River in St. Tammany Parish.

Required earthwork prior to dredging would first consist of containment dike construction or rehabilitation around the perimeter of each of the eight mitigation areas. The crest elevation of these dikes would be approximately 5.0 feet NAVD88 and each dike would have a 5-ft wide crown. Existing material within each mitigation area would be used to construct or rehabilitate the containment dikes. Temporary submerged pipelines would be placed on the bottom of the canals that run between the mitigation areas as well as underneath the roads separating them as indicated on the attached drawing. Following dike construction and installation of the temporary pipelines, a cutterhead dredge would hydraulically place material (sediment) from within the borrow area indicated on the attached drawing into the mitigation areas using the shown pipeline routes. After filling the mitigation areas is complete, a one-year settlement period would pass prior to dike degrading the containment dikes and planting the mitigation areas. The temporary pipelines would be removed after pumping of dredged materials into the mitigation areas is complete.

Earthwork would also include building a permanent shoreline protection rip-rap feature along an approximately 2,420-ft stretch of Lake Pontchartrain shoreline adjacent to Mitigation Area 7 which will be underlain with separator geotextile fabric.

After the end of the fill settlement period in the mitigation areas and after the containment dikes are degraded to match the average fill elevation in each mitigation area, native canopy and midstory plants typical of swamp habitats would be installed in the mitigation Areas.

PINE ISLAND PROPOSED PLANTING

Assumed total plantings within the swamp mitigation areas (approximate):

- Swamp Canopy: Approximately 1,070,925 seedlings. (545 seedlings per acre)
- Swamp Midstory: Approximately 267,240 seedlings. (136 seedlings per acre)
- Assume swamp canopy plant species would be installed on an 8ft by 10ft grid (545 seedlings per acre).

- Assume swamp midstory plant species would be installed on a 16ft by 20ft grid (136 seedlings per acre).
- Mowing poles (PVC pipes extending roughly 6 feet above grade) would be installed on each planted row every 50' to 100' to guide mowing operations.

PINE ISLAND DIKE CONSTRUCTION/REHABILITATION

Total perimeter retention would be required to retain dredged material and to allow for vertical accretion. The total length of the mitigation area which would require dike construction, rehabilitation, or lifting would be as approximately 147,482 ft.

Any existing features such as existing perimeter dikes, access roads, and or ridges would be used for retention of dredged material. If dike rehabilitation is required, material for dike maintenance would come from within the proposed footprint of the swamp sites.

Existing dikes would be used to the extent practical. The retention dikes would be constructed to elevation 5.0 feet NAVD88, with a 5'-wide crown to assure dike integrity. The borrow ditch in each mitigation area used to obtain material for the retention (containment) dikes would be offset a minimum of 40' from each dike to assure dike stability. The borrow ditches would be on the interior side of the dikes (e.g. within the limits of the mitigation areas).

Plugs would be left in the borrow ditch at 1,000- foot intervals to minimize water flow and material loss during pumping operations. Spill boxes and/or weirs would be constructed at locations along the northern and western retention dikes as necessary to allow for effluent water release from within the swamp creation areas for approximately one year after construction, when the perimeter dikes are breached and degraded. If deemed necessary by the construction contractor, a low-level interior weir or baffle dikes would be constructed to assist in vertical stacking of dredged material. The gaps would be spaced with care being taken to locate gaps at existing natural bayous, canals, or other openings. The gaps would require a 25-foot bottom at approximately elevation 0.0 feet NAVD88 (lower limit of existing nearby marsh platform) to assure water interchange with the existing marsh.

PINE ISLAND RIPRAP CONSTRUCTION

On the Lake Pontchartrain shoreline, a 2,240-ft long stretch of shoreline covering approximately 0.93 acres would be reinforced with a stone bank rip- rap. This riprap would be two feet thick and be placed on the graded shoreline from elevation 0' up to elevation 4.5'. This two-foot-thick riprap would be underlain with a 200-pound separator geotextile fabric. Total estimated geotextile fabric quantity for this rip-rap construction is 4,575 square yards and the estimated stone quantity is 5,700 tons or 2,940 cubic yards.

PINE ISLAND DREDGING

A hydraulic cutterhead dredge would be used to pump approximately 16.4 million cubic yards of material via a pipeline from the proposed borrow site in Lake Pontchartrain to the swamp creation sites. Initial elevation for dredge fill within each mitigation area would be to

approximate elevation 2.5 feet NAVD88, with the goal of ultimately resulting in a final target swamp elevation of approximately 2.0 feet. The maximum allowable dredging depth within the borrow site would be -19 feet NAVD88 plus a 1-foot allowable over depth to account for inaccuracies in the dredging process.

Three 75-ft corridors are envisioned. The first pipeline corridor would run down the middle of the entrance channel to the east of Milton Island and to the east of an area indicated to be a shell reef site. All activities related to this proposed work would avoid this area. All pipeline corridors would be placed and located in a manner which does not impact existing wetlands.

The estimated quantity required to achieve the initial target fill elevation of 2.5ft NAVD88 within the mitigation areas is approximately 16,401,310 cy.

PINE ISLAND DURATION

Necessary dike construction and initial pumping of sediment into the mitigation areas would take about 1 year to complete. After a year-long settlement period, degrading of dike would begin and would take approximately 9 months. Initial planting activities would take place between December and March and would likely take about 2 months to complete.

Monitoring to determine contractor success of the plantings would likely occur the October after plantings. Monitoring to determine initial success would likely occur two Octobers after initial plantings. If this monitoring shows initial success criteria had been satisfied, the monitoring responsibilities would be transferred to the Non-Federal Sponsor the following spring.

PINE ISLAND SITE ACCESS

Access to the project site would be as follows:

From the north, Guste Island Road runs down the middle of the mitigation areas. This road then splits into Grand Rue Port Louis Road which runs down the east side. South Chenier Drive runs down the west side. Access to the mitigation areas can also be made via the many canals that run between all the areas.

PINE ISLAND STAGING

Staging of equipment for initial dike construction activities and riprap construction would be via barge(s) on or near the Lake Pontchartrain shoreline as indicated on the attached drawing. The proposed staging areas would first be submitted for Government approval. Staging of materials for the initial planting event would be within the mitigation areas themselves most likely.

PINE ISLAND MAINTENANCE/MANAGEMENT ACTIVITIES

After completion of all dike construction, dredge pumping, and soil preparation activities but prior to initial plantings, herbicides may be applied to the mitigation areas to help control

invasive and nuisance plant species. Mowing may also be performed in the mitigation area during this time period. After the mitigation area is initially planted and before the success of these plantings is evaluated (monitored), herbicide applications and/or mowing may also occur to help suppress undesirable vegetation. Throughout this period, access/maintenance roads would be maintained as necessary as would be any new drainage features established.

The first monitoring event would occur in the fall of the year of the initial plantings. This report could show additional plantings are needed or it may not. Regardless, various mowing events and herbicide application events would take place during the period from the first monitoring event to the second monitoring event performed the next year. It is assumed that the second monitoring event would show success criteria for the plantings had been achieved as were success criteria about control of invasive and nuisance plants. It is also assumed this monitoring event would show the success criterion established for the final soil surface elevation in the mitigation areas had been achieved. In this case, the Non-Federal Sponsor would take over the project including all management and maintenance work.

PINE ISLAND EQUIPMENT

Equipment to be used for the respective work is assumed as follows:

- Dike Construction: Excavators, marsh buggies, airboats
- Dredge Pumping: Cutterhead dredge, tugs, crew boats, pipeline (steel, and rubber), derricks, barges, up to D-8 dozers, excavators, front-end loaders, marsh buggies, airboats, marsh masters
- Rip-rap Construction: Excavators, scows, barges, up to D-8 dozers, front-end wheel loaders, marsh buggies
- Planting Preparation: Tractor with harrow and scarifier, bulldozers, and backhoe.
- Planting: Pickup trucks, ATVs and/or UTVs, and marsh buggies.

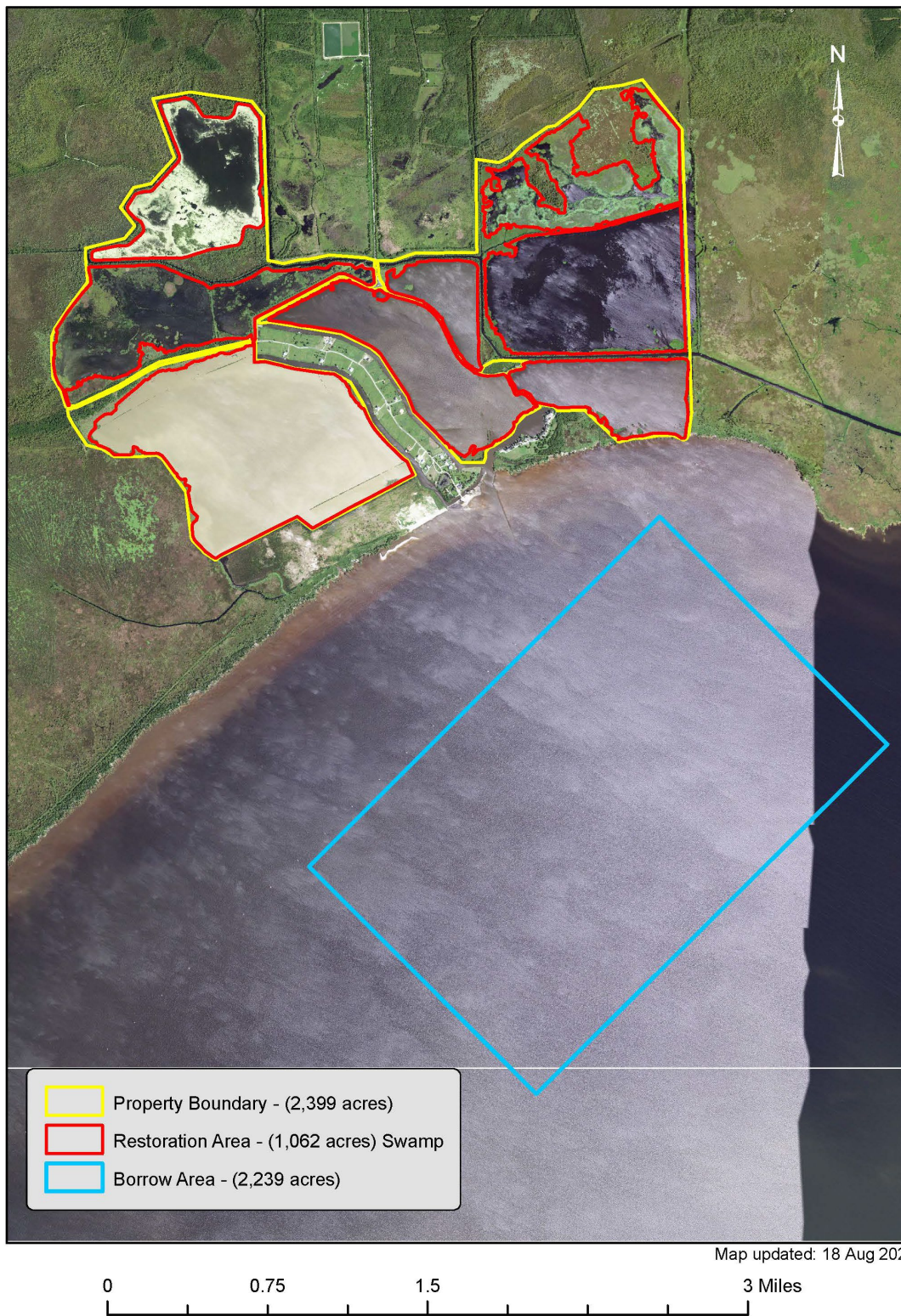


Figure 4. Proposed Pine Island Mitigation Site (Swamp restoration)

St. James Swamp Creation and Restoration Project Description

ST. JAMES GENERAL SOW

The proposed project involves creation and restoration of up to approximately 1,247 acres of swamp as compensatory mitigation for swamp impacts resulting from construction of West Shore Lake Pontchartrain (WSLP) Project. Swamp creation and restoration areas (mitigation areas) would be located in existing agricultural fields at the St. James mitigation site. This site is located off the Mississippi River between the towns of Romeville and Union, LA around the Nucorp Plant in St. James Parish.

The main earthwork activities required prior to planting the mitigation areas would include degrading (scraping) portions of some mitigation areas (see degrading section), removal of undesirable drainage ditches and culverts, removal of undesirable earthen berms, establishing dirt access roads, establishing a project staging area, and tillage of areas to be planted. To maximize water flow into the site, any existing dikes/berms within the property boundary which prevent water flow into the site would be degraded as long as this effort does not harm or adversely affect outside properties/water sources. Any existing drainage features (drainage ditches, etc.) within or adjacent to the mitigation areas and within the property boundary would likely be removed to help assure appropriate site hydrology. The mitigation areas would then be planted with native canopy and midstory species typical of swamp habitats.

Note that the total acreages of swamp creation/restoration indicated above would be reduced by the Contractor's staging area and possibly by additional dirt roadways within established within the mitigation areas for access and maintenance/management purposes. These acreages could also be reduced if other features requiring protection are discovered during further project design activities.

ST. JAMES PROPOSED PLANTING

Assumed total plantings within the swamp mitigation areas (approximate):

- Swamp Canopy: Approximately 678,774 seedlings. (545 seedlings per acre)
- Swamp Midstory: Approximately 169,693 seedlings. (136 seedlings per acre)
- Assume swamp canopy plant species would be installed on an 8ft by 10ft grid (545 seedlings per acre)
- Assume swamp midstory plant species would be installed on a 16ft by 20ft grid (136 seedlings per acre)

- Mowing poles (PVC pipes extending roughly 6 feet above grade) would be installed on each planted row every 50' to 100' to guide mowing operations.

ST. JAMES DEGRADE AREAS

Portions of swamp mitigation Areas would be degraded (scraped down) to achieve and elevation of approximately 2.0 feet NAVD88 to help ensure satisfactory hydrology/hydroperiod for swamp habitat.

Degrade material would be hauled off site to a contractor-provided upland disposal area, assume a 15-mile one-way haul distance. Some of the degraded soil may be used on-site if such fill is required.

ST. JAMES DEMOLITION

No existing structures appear to be within the mitigation site. There is an existing underground pipeline that passes through a portion of the mitigation area. It is currently unknown what type of pipe is in this location. Assume at least a 20-ft buffer around the route of the pipeline unless it is determined that the pipeline is abandoned. The location of the pipeline shown on the map is approximate.

ST. JAMES DURATION

Necessary earthwork and related activities would likely take about 2 years. Due to the large quantity of material to degrade, a 7-day work week is assumed for excavation. Initial plantings would begin November following completion of earthwork and continue through mid-March.

Monitoring to determine contractor success of the plantings would likely occur the October after plantings. Monitoring to determine initial success would likely occur two Octobers after initial plantings. If this monitoring shows initial success criteria had been satisfied, the monitoring responsibilities would be transferred to the Non-Federal Sponsor the following spring.

ST. JAMES SITE ACCESS

Access to the project work limits would be as follows:

From the north, access to the site to be made via route LA-3125 which leads to Helvetia Street and Wilton Road. Each of these roads run through the site north/south and would be preserved. From the south, access to the site can be made via route LA-44 which leads to Helvetia Street.

Dirt maintenance/access roads approximately 15 feet wide would be established around the perimeter of each of the mitigation areas shown on attached drawing. The Contractor may also establish other maintenance/access roads within the mitigation areas. Such roads would first have to be approved by the Government. If approved, such roads would slightly reduce the acreage of each mitigation area affected.

ST. JAMES STAGING

Staging area(s) will only be permitted within one of the mitigation areas. The Contractor would determine where, within a particular mitigation area, to place staging and laydown areas suitable for the Contractor's means and methods to meet the required project period of performance. The proposed staging area would first be submitted for Government approval. The Contractor would be permitted to place crush stone paving for parking and laydown areas along with a temporary construction trailers. No utilities would be provided by the Government, and the Contractor would have to obtain all permissions and permits for utilities. The trailer, crushed stone paving, and temporary utilities would have to be removed by the Contractor and the end of the project and the disturbed area would have to be planted with native grasses by the Contractor before leaving the project site.

ST. JAMES MAINTENANCE/MANAGEMENT ACTIVITIES

After completion of all excavation, grading, and soil preparation activities but prior to initial plantings, herbicides may be applied to the mitigation areas to help control invasive and nuisance plant species. Mowing may also be performed in the mitigation areas during this time period. After the mitigation areas are initially planted and before the success of these plantings is evaluated (monitored), herbicide applications and/or mowing may also occur to help suppress undesirable vegetation. Throughout this period, access/maintenance roads would be maintained as necessary as would any new drainage features established.

The first monitoring event would occur in the fall of the year of the initial plantings. This report could show additional plantings are needed or it may not. Regardless, various mowing events and herbicide application events would take place during the period from the first monitoring event to the second monitoring event. It is assumed that the second monitoring event would show success criteria for the plantings had been achieved as were success criteria about control of invasive and nuisance plants. In this case, the Non-Federal Sponsor would take over the project including all management and maintenance work.

ST. JAMES EQUIPMENT

- Equipment to be used for the respective work is assumed as follows:
- Degrading: Up to D8 bulldozers, wheel tractor scrapers, front-end loaders, off-road and on-road dump trucks.
- Demolition (if needed): Backhoes with grapple and hammer attachments, bulldozer, front loaders, and on/off road dump trucks.
- Planting Preparation: Tractor with harrow and scarifier, bulldozers, and backhoe.
- Planting: Pickup trucks, ATVs and/or UTVs, and 2,000 to 4,000 gallon water trucks.
- Initial Maintenance: Tractors with brush-hog/mowers; ATVs and/or UTVs, back-pack sprayers and/or boom sprayers; bulldozers or backhoes.

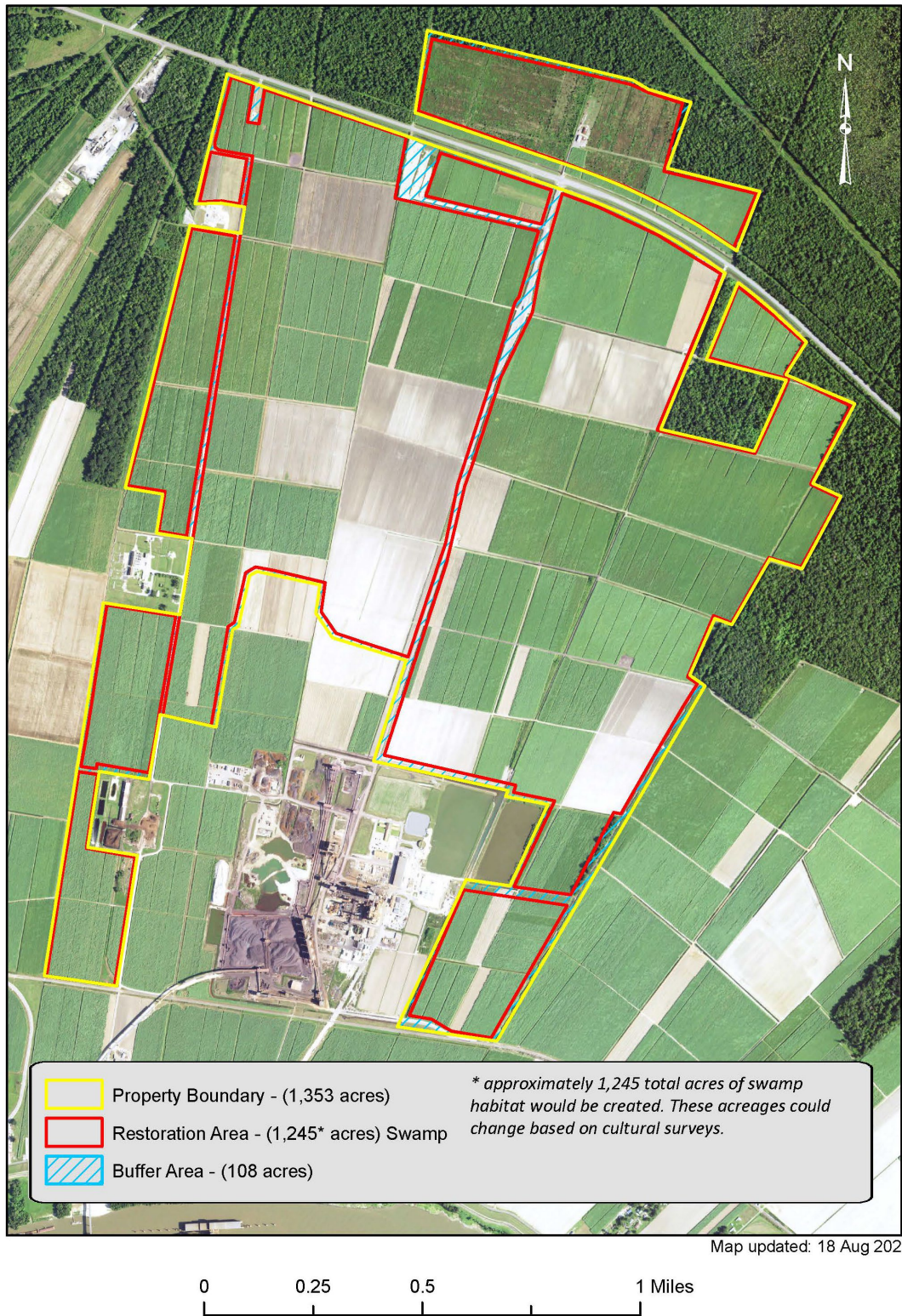


Figure 5. Proposed St. James Mitigation Site (Swamp restoration)