



ST. TAMMANY PARISH

COASTAL MASTER PLAN

EXECUTIVE SUMMARY AND FINAL REPORT

Appendix C:

Construction Cost Estimates



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1. Inflation & Cost Adjustments

Where costs are listed for prior reports or years, they have been inflated to 2023 dollars from costs listed in previous efforts using the U.S. Bureau of Labor Statistics Producer Price Index Other Nonresidential Structures data as follows:

Year	Percent of Inflation Adjustment to Match 2023 Dollar
2016-2017	5.2%
2017-2018	4.1%
2018-2019	.6%
2019-2020	2.1%
2020-2021	23.7%
2021-2022	7.6%
2022-2023	2.2%



2. Typical Major Items & Unit Costs in Detail

1. Mobilization and demobilization consists of preparatory work and operations, including those necessary for movement of personnel, equipment, supplies and incidentals to the project site; the establishment of temporary offices, buildings, and other facilities necessary for work on the project; the cost of bonds and insurance; and, other preconstruction expenses necessary for start of work, excluding the cost of construction materials. The pay unit for this work is typically a lump sum amount. For this alternative development, mobilization and demobilization costs were estimated at 5% of the construction costs.
2. Levee major items and unit costs include the following:
 - a. Clearing and grubbing consists of required clearing, grubbing, removing, and disposing of vegetation and debris within the limits of the right-of-way and easement areas, except such items designated to remain. This work includes cutting trees, logs, brush, stumps, and debris, excavating and removing stumps, roots, submerged logs, snags, and other vegetative or objectionable material and disposing of the same. For the alternatives development this is estimated to be

\$33,750 per acre.

- b. Geotextile fabric includes woven and nonwoven fabrics with varying properties for elongation, strength and permittivity. These unit costs ranged from \$2 per square yard to over of \$13.5 per square yard. For the alternatives development a value of \$13.5 per square yard is used.
- c. Levee embankment is the excavating, hauling, placing, and compacting of approved fill materials. The required material is a plastic soil (clay material) that is sourced from an offsite borrow pit. Levee embankment unit costs is estimated to be \$54 per in place cubic yard for purchasing, hauling, and placing the plastic material into the levee section inclusive of all testing labor, and equipment costs.
- d. Seeding, fertilizing, and mulching is the work associated with plant establishment on all seeded areas. These costs include soil amendments such as lime or fertilizer, the placement of the mulch to secure the grass seed in place during germination as well as the grass seed and maintenance until establishment and acceptance. These costs are estimated to be \$6,100 per acre of seeded area.
- e. Limestone surface is the crushed limestone material placed on top of the levee. This material provides a driving surface for maintenance and levee inspections. These stone roads are 6" thick and the unit costs include material purchase, hauling, placing, and compacting the stone. The unit costs were estimated to be \$80 per ton of limestone.
- f. Excavation is associated with removal, transport, and disposal of unstable soils within the footprint of the levee alignment. The alignments traverse areas that contain water saturated soils, organic matter, or other material not usable for foundation material and not suitable for the subbase of the levee. A unit cost of \$21 per cubic yard was estimated for the removal of the top two feet of existing soils. The associated removed volume was included in the levee embankment noted above. It is expected that the costs associated with geotextile fabric would be equivalent to the excavation unit costs; therefore no additional costs are included for geotextile fabric.

3. Floodwall, also known as T-Wall construction, includes excavation, pilings, reinforced concrete base, and structural wall to seven feet above the base. Lower levels of protection using these structural components generally were cost prohibitive at lesser levels. Based on historical projects constructed of a similar nature, the costs are estimated to be \$13,500 per linear foot for an average wall height.
4. Drainage structures include the costs associated with maintaining drainage requirements along the levee alignments. These alignments cross marshes and drainage ditches that require continued hydraulic connection to their outfalls. The number of drainage connections were estimated using aerial imagery. The drainage structures include a sluice gate to prevent backwater flow during storm events. These costs are estimated to be \$80,000 per structure.
5. Roadway roller gates allow for the passage of vehicular and rail traffic through the flood protection structure during non-storm events. These structures are estimated to be the width of the existing roadway and plus six (6) feet on each side to gate support columns. The minimum opening was estimated at 30 feet with some roadways requiring additional width as indicated within the align-



Credit: USACE New Orleans District 2023



Credit: STPG Public Works

ment details. These gates require 120 feet of frontal protection/walls on each side to transition back to an earthen levee. A 30-foot roadway gate is estimated at \$4,100,000 per structure and a 50-foot gate is estimated at \$16,500,000 each. Railroad gates were estimated at \$9,450,000 per unit for a single track with a 25-foot width.

6. Navigational floodgates including the steel wing barge gate and receiving wall allowing for passage of waterborne traffic through the flood protection system during non-storm events. The minimum opening is assumed to be 30-foot for non-commercial navigation and 60-feet for commercial. The closure gate was

assumed to be steel barge gates that operate using winch systems, with sill elevations set at 2 feet below authorized navigation depth. Navigation Floodgates also require pumps to remove the rainfall or storm surge water from the protected side. These expenses are included in the pump station item. A 30-foot to 40-foot floodgate is estimated at \$40,500,000 per structure and a 40-foot to 60-foot gate is estimated at \$67,500,000.

7. Pumping stations are required to manage the rainfall within the flood protection systems during gate closure events to prevent inland or upstream flooding. The size and capacity of the station is based on the watershed existing storage capacity and the estimated rainfall events. Where possible, pump sizes were extracted from hydraulic studies such as the USACE St. Tammany Feasibility Study. The pumps, housing, associated cofferdam, and other associated costs are estimated to be \$33,750 for each cubic feet per second (cfs) of pumping capacity required by modeling or hydraulic studies.
8. Miscellaneous Items include structural or incidental components for the alignments and include:
 - a. Surge Barrier – The structural flood protection barrier/wall would be placed in Lake Pontchartrain at the -7 foot NAVD88 contour parallel to Lakeview Drive. This unit cost is estimated to be \$135,000 per linear foot (lf) of structure and is based on a similar size and length structure located at the Inner Harbor Navigation Channel. The surge barrier only applies to one alignment considered for Eden Isle.
 - b. 2-Lane Roadway milling and overlay – This expense required for repairing an existing roadway and are estimated to be \$1,350 per lf of roadway.
 - c. Shoreline Protection – This expense is for the placement of rock riprap armoring along the shoreline to protect the shoreline from the wave energy. These costs are estimated to be \$125 per ton of stone with the classification of the stone to be USACE R250 class.
 - d. Concrete Roadway – These costs are for concrete roadways. They include the demolition and replacement of the on a concrete roadway. They are estimated to be \$25 per square foot (sf) of roadway. This cost is included in the Eden Isle East Alternative 1 and for the Oak Harbor Boulevard roadway.
 - e. Existing Pump Station Improvements – Account for an existing pump station will be rehabilitated and upgraded in the new flood protection system. The estimated costs are based on costs provided by St. Tammany Parish, the owner of the pump station, and are estimated at \$6,100,000. This cost is included in the Eden Isle East Alternative 1 and is associated with the Valley Road Pump Station.
 - f. Bike Path Gate at the Tammany Trace – The Tammany Trace is a bike path that runs from the west side of St. Tammany Parish through the study area. This expense is for the construction of a

small flood protection gate for the bike path, and is estimated to be \$1,350,000 per gate structure. This cost is included in the West Slidell alternatives on the western tie-in.

- g. Swing Bridge Replacement – This expense for the replacement of an existing swing bridge. The new structure will be at a higher elevation than the existing roadway and will continue to operate as needed for navigation. This item's cost is estimated to be \$40,500,000 per bridge structure. This is associated with West Slidell Alternative 3 Highway 433 (Bayou Liberty Road) roadway bridge.
- h. Pipeline Cover/Protection – This expense for alignments that cross subsurface natural gas or petroleum oil pipelines. It include the matting and/or bridge cover material required by the pipeline operator. They are estimated to be \$3,375,000 per pipeline structure crossing.
- i. Small Drainage Structures – This is a drainage structure consisting of a single barrel box culvert approximately 8 feet x 10 feet with sluice gates. This feature is for existing drainage channels. These are required in areas with existing drainage that are larger than the typical drainage channels and large ditches. These structures were estimated to cost \$3,375,000 each.
- j. Large Drainage Structures – This is a drainage structure consisting of a double barrel box culvert approximately 8 feet x 10 feet with sluice gates. This feature is for channels and small tributaries. They connect directly to the Pearl River or Doubloon Bayou. These structures are estimated to cost \$6,750,000 each.
- k. Four Barrel Box Culvert Drainage Structures – This is a four-barrel box culvert approximately 8 feet x 10 feet with sluice gates. These structures are to maintain existing water flows during normal conditions but would be closed during storm events. These structures are considered to have significant flows within waterways and are generally accompanied by a pump station. In at least one alignment, this type of structure will replace an existing low elevation bridge and roadway with a closable drainage structure and raised road. This structure type is estimated to cost \$13,500,000 each and excludes pump station costs.
- l. Frontage/Service Roadways – Several alignments require the collection of local traffic into a frontage or service road. This will maintain the existing movements through the neighborhoods but will minimize the number of roadway gates for the alignments. The costs are estimated to be \$1,350 per linear foot.

3. Alternative Alignments for West Slidell Levee

3.1 Alternative 1 – Keller Road Alignment

Levee alignment Alternative 1 (see Figure 5-8) extends west from Norfolk Southern Railroad towards Hwy 190 with a pump station and gate closure at Bayou Bonfouca and at Bayou Liberty below its confluence of Bayou Pacquet. After crossing Bayou Liberty, the alignment runs adjacent to Keller Road before crossing Bayou Pacquet Road with a roadway gate, continuing north/northwest towards Hwy 190. A roadway gate is also required where the levee crosses W. Doucette Road. This alignment remains south of S. Tranquility Road until ending at Highway 190.



Table C-1 West Slidell Alternative 1 Structure Components

Alternative 1: Keller Road Alignment	
Structure Components	
Structure Type	<ul style="list-style-type: none"> Levee with 10-ft wide crown, 3H:1V Side slopes
Structure Tie-Ins	<ul style="list-style-type: none"> Eastern Tie-In at Future Slidell Ring Levee Western Tie-in at Hwy 190
Footprint	<ul style="list-style-type: none"> Levee Length – 39,548 LF Levee Width – 82 LF
Other Structural Components	<ul style="list-style-type: none"> Navigable Floodgate (2) Pump Station – Large Capacity (2) Roadway Roller Gate (4) Roadway Gate at Bike Path (1) Pipeline Protection Structure (1)

3.1.1 Property Impacts

It is estimated that 35 parcels are impacted by this levee alignment. The most significant landowner impacted is the U.S. Fish & Wildlife Service’s Big Branch Wildlife Management Refuge property.

Table C-2 West Slidell Alternative 1 Property Impacts

Alternative 1: Keller Road			
Property Impacts			
	Residential	Total Acquisition with Structure	4
		Total Acquisition without Structure	3
		Partial Impact	28
	Commercial	Total Acquisition with Structure	0
		Total Acquisition without Structure	0
		Partial Impact	0
NWR Impact		Yes	
Total		35	

3.1.2 Roadway Impact

This alignment impacts the following roads:

1. Keller Road
2. Bayou Pacquet Road
3. C.C. Road
4. W. Doucette Road

The impacts include roadway floodgates that close during storms events and right-of-way encroachments.

3.1.3 Alignment Specific Environmental Impacts

An estimated 63 acres of wetland habitat will be impacted by this alignment.

3.1.4 Alternate 1 – Keller Road Estimate of Budgetary Construction Costs

100-Year Level of Protection Budgetary Costs

New work construction and associated first time cost were estimated based on the assumptions provided in Chapter 4. Main features include earthen levee construction, pump stations located at Bayou Pacquet and Bayou Liberty, and roadway gates.

The estimated construction costs range from \$600,000,000 to \$812,000,000. It also has costs associated with the total property acquisition of 106 acres and an estimated 4 structural conflicts, environmental mitigations expenses, utility relocation costs as well as engineering, planning, and construction management efforts.

Table C-3 West Slidell 100-YR Alternative 1 Estimated Total Capital Costs



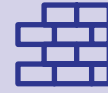



WSL 100-YR Alternative 1: Keller Rd. Alignment					
Item Description					
					
Real Estate	Environmental Cost	Construction Costs	Utility Relocation Costs	Engineering, Planning & Construction Management	Total
\$10,330,000	\$3,780,000	\$706,000,000	\$3,530,000	\$176,500,000	\$900,140,000

50-Year Level of Protection Budgetary Costs

With the construction of an earthen levee and two pump stations located at Bayou Bonfouca below the confluence of Bayou Pacquet and Bayou Liberty, the estimated construction costs range from approximately \$548,000,000 to \$742,000,000.

It also has costs associated with property acquisition of 76 acres and an estimated 4 structural conflicts, environmental mitigations expenses, utility relocation costs as well as engineering, planning and construction management efforts.

Table C-4 West Slidell 50-YR Alternative 1 Estimated Total Capital Costs



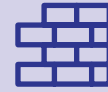



WSL 50-YR Alternative 1: Keller Rd. Alignment					
Item Description					
					
Real Estate	Environmental Cost	Construction Costs	Utility Relocation Costs	Engineering, Planning & Construction Management	Total
\$7,820,000	\$2,700,000	\$645,000,000	\$3,255,000	\$161,250,000	\$819,995,000

25-Year Level of Protection Budgetary Costs

With the construction of an earthen levee and two pump stations located at Bayou Bonfouca below the confluence of Bayou Pacquet and Bayou Liberty, the estimated construction costs range from \$530,000,000 to \$716,000,000.

It also has costs associated with property acquisition of 60 acres and an estimated 4 structural conflicts, environmental mitigations expenses, utility relocation costs as well as engineering, planning, and construction management efforts.

Table C-5 West Slidell 25-YR Alternative 1 Estimated Total Capital Costs

WSL 25-YR Alternative 1: Keller Rd. Alignment					
Item Description					
					
Real Estate	Environmental Cost	Construction Costs	Utility Relocation Costs	Engineering, Planning & Construction Management	Total
\$6,380,000	\$2,160,000	\$623,000,000	\$3,115,000	\$155,750,000	\$790,405,000

3.2 Alternative 2 – Bayou Pacquet

As seen in Figure 5-8, Alternative 2 levee alignment travels westward from Norfolk Southern Railroad as previously described in Alternative 1 towards Hwy 190 with a pump station and gate closure at Bayou Bonfouca, Bayou Liberty, and Bayou Pacquet. Areas excluded from the alignment are the areas to the south and west of the pump station at Bayou Liberty and Bayou Pacquet.



Table C-6 West Slidell Alternative 2 Structural Components

Alternative 2: Bayou Pacquet	
Structure Components	
Structure Type	<ul style="list-style-type: none"> Levee with 10-ft wide crown, 3H:1V Side slopes
Structure Tie-Ins	<ul style="list-style-type: none"> Eastern Tie-In at Future Slidell Ring Levee Western Tie-in at Hwy 190
Footprint	<ul style="list-style-type: none"> Levee Length – 38,174 LF Levee Width – 80 LF
Other Structural Components	<ul style="list-style-type: none"> Navigable Floodgate (3) Pump Station – Large Capacity (3) Roadway Roller Gate (5) Roadway Gate at Bike Path (1) Pipeline Protection Structure (1)

3.2.1 Property Impacts

It was estimated that fewer than 29 landowners would be affected by this alignment. The most significant landowner is the US Fish & Wildlife Service’s Big Branch Wildlife Management Refuge property as the majority property owner along the southern edge of Bayou Bonfouca.

Table C-7 West Slidell Alternative 2 Property Impacts

Alternative 2: Bayou Pacquet			
Property Impacts			
	Residential	Total Acquisition with Structure	3
		Total Acquisition without Structure	4
		Partial Impact	22
	Commercial	Total Acquisition with Structure	0
		Total Acquisition without Structure	0
		Partial Impact	0
		NWR Impact	Yes
		Total	29

3.2.2 Roadways Impacts

This alignment impacts the following roads:

1. Mayer Rd
2. C.C. Rd
3. W. Doucette Rd.

The roadway impacts include roadway floodgates that closed during a storm events and right-of-way encroachments.







3.2.3 Environmental Concerns

An estimated up to 63 acres of undeveloped wetland habitat will be impacted by this alignment.

3.2.4 Alternate 2 – Estimate of Budgetary Construction Costs 100 Year Level of Protection Budgetary Costs

With the construction of a levee and 3 pump stations located at Bayou Bonfouca, Bayou Pacquet, and Bayou Liberty, the estimated construction costs range from \$661,000,000 to \$895,000,000. It also has costs associated with property acquisition of 103 acres and an estimated 3 structural conflicts, environmental mitigations expenses, utility relocation costs as well as engineering, planning, and construction management efforts.







Table C-8 West Slidell 100-YR Alternative 2 Estimated Total Capital Costs

WSL 100-YR Alternative 2: Bayou Pacquet					
Item Description					
					
Real Estate	Environmental Cost	Construction Costs	Utility Relocation Costs	Engineering, Planning & Construction Management	Total
\$9,430,000	\$3,780,000	\$778,000,000	\$3,890,000	\$194,500,000	\$989,600,000

50 Year Level of Protection Budgetary Costs

With the construction of a levee and 3 pump stations located at Bayou Bonfouca as well as below the confluence of Bayou Pacquet and Bayou Liberty, the estimated construction costs range from \$611,000,000 to \$827,000,000. It also has costs associated with property acquisition of 74 acres and an estimated 4 structural conflicts, environmental mitigations expenses, utility relocation costs as well as engineering, planning, and construction management efforts







Table C-9 West Slidell 50-YR Alternative 2 Estimated Total Capital Costs

WSL 50-YR Alternative 2: Bayou Pacquet					
Item Description					
					
Real Estate	Environmental Cost	Construction Costs	Utility Relocation Costs	Engineering, Planning & Construction Management	Total
\$7,450,000	\$2,700,000	\$719,000,000	\$3,595,000	\$179,750,000	\$912,495,000

25 Year Level of Protection Budgetary Costs

With the construction of a levee and 3 pump stations located at Bayou Bonfouca as well as below the confluence of Bayou Pacquet and Bayou Liberty, the estimated construction costs range from \$592,000,000 to \$802,000,000. It also has costs associated with property acquisition of 58 acres and an estimated 3 structural conflicts, environmental mitigations expenses, utility relocation costs as well as engineering, planning, and construction management efforts.

Table C-10 West Slidell 25-YR Alternative 2 Estimated Total Capital Costs

WSL 25-YR Alternative 2: Bayou Pacquet					
Item Description					
					
Real Estate	Environmental Cost	Construction Costs	Utility Relocation Costs	Engineering, Planning & Construction Management	Total
\$5,660,000	\$2,160,000	\$697,000,000	\$3,485,000	\$174,250,000	\$882,555,000

3.3 Alternative 3 – Bayou Liberty Road

As seen in Figure 5-8, the levee alignment would travel west from Norfolk Southern Railroad towards Hwy 190 following the southern bank of Bayou Bonfouca along the UFWS Big Branch Refuge as described in Alternative 1 – Keller Road. The levee crosses Bayou Bonfouca with a pump station and gate closure at Bayou Bonfouca and then proceeds westward and then shifts northward towards the intersection of Hwy 433, locally known as Bayou Liberty Rd, and Rivet Dr. The levee proceeds northwestward with a T-Wall structure until the bridge at Bayou Liberty. Replacement of Bayou Liberty hydraulic swing bridge and a barge gate closure will be required at this location and a necessary pump station to address internal flooding concerns. The alignment travels northward along Bayou Liberty Rd then turns westward at Athene Dr. The alignment continues along Athene Dr towards S. Tranquility Rd through the wooded area south of Ned Ave. It turns northward towards Hwy 190 over the Tammany Trace.



Table C-11 West Slidell Alternative 3 Structural Components

Alternative 3: Bayou Liberty Road	
Structure Components	
Structure Type	<ul style="list-style-type: none"> Levee with 10-ft wide crown, 3H:1V Side slopes T-Wall along Bayou Liberty Rd.
Structure Tie-Ins	<ul style="list-style-type: none"> Eastern Tie-In at Future Slidell Ring Levee Western Tie-in at Hwy 190
Footprint	<ul style="list-style-type: none"> Levee Length – 31,845 LF Levee Width – 80 LF T-Wall along Bayou Liberty Rd. – 7,393'
Other Structural Components	<ul style="list-style-type: none"> Navigable Floodgate (2) Pump Station (2) Bridge Raising/Replacement (1) Roadway Roller Gate (5) Roadway Gate at Bike Path (1) Pipeline Protection Structure (1)

3.3.1 Property Impacts

It was estimated that this alignment would affect 99 landowners. The most significant landowner is the US Fishery & Wildlife Services' Big Branch Wildlife Management Refuge property as the majority property owner along the southern edge of Bayou Bonfouca.

Table C-12 West Slidell Alternative 3 Property Impacts

Alternative 3: Bayou Liberty Road			
Property Impacts			
	Residential	Total Acquisition with Structure	28
		Total Acquisition without Structure	9
		Partial Impact	59
	Commercial	Total Acquisition with Structure	1
		Total Acquisition without Structure	0
		Partial Impact	2
NWR Impact		Yes	
Total			99

3.3.2 Roadway Impacts

This alignment impacts the following roads:

1. Bayou Liberty Rd./Hwy 433/Thompson Rd
2. Mayes Trace
3. St. Genevieve Rd.
4. Stanley St.
5. Athene Dr.
6. C.C. Rd
7. W. Doucette Rd.

The roadway impacts include roadway floodgates that close during storm events and right-of-way encroachments. Additionally, in future evaluations of this alignment, consideration of local service roads may provide consolidated access to the main access roadway of Hwy 433.







3.3.3 Environmental Concerns

It was estimated that up to 63 acres of undeveloped wetland habitat will be impacted by this alignment.

3.3.4 Alternate 3 – Estimate of Budgetary Construction Costs 100 Year Level of Protection Budgetary Costs

With the construction of a levee and 2 pump stations located at Bayou Bonfouca & Bayou Liberty as well as the replacement of the DOTD Swing Bridge at Bayou Liberty, the estimated construction costs range from \$806,000,000 to \$1,090,000,000. It also has costs associated with property acquisition of 96 acres and an estimated 28 structural conflicts, environmental mitigations expenses, utility relocation costs as well as engineering, planning, and construction management efforts.







Table C-13 West Slidell 100-YR Alternative 3 Estimated Total Capital Costs

WSL 100-YR Alternative 3: Bayou Liberty Road					
Item Description					
					
Real Estate	Environmental Cost	Construction Costs	Utility Relocation Costs	Engineering, Planning & Construction Management	Total
\$16,560,000	\$3,780,000	\$948,000,000	\$4,740,000	\$237,000,000	\$1,210,080,000

50 Year Level of Protection Budgetary Costs

With the construction of a levee and 2 pump stations located at Bayou Bonfouca and Bayou Liberty as well as the replacement of the DOTD Swing Bridge at Bayou Liberty, the estimated construction costs range from \$770,000,000 to \$1,042,000,000. It also has costs associated with property acquisition of 71 acres and an estimated 28 structural conflicts, environmental mitigations expenses, utility relocation costs as well as engineering, planning, and construction management efforts.







Table C-14 West Slidell 50-YR Alternative 3 Estimated Total Capital Costs

WSL 50-YR Alternative 3: Bayou Liberty Road					
Item Description					
					
Real Estate	Environmental Cost	Construction Costs	Utility Relocation Costs	Engineering, Planning & Construction Management	Total
\$14,980,000	\$2,700,000	\$906,000,000	\$4,530,000	\$226,500,000	\$1,154,710,000

25 Year Level of Protection Budgetary Costs

With the construction of a levee and 2 pump stations located at Bayou Bonfouca & Bayou Liberty as well as the replacement of the DOTD Swing Bridge at Bayou Liberty, the estimated construction costs range from \$754,000,000 to \$1,020,000,000. It also has costs associated with property acquisition of 58 acres and an estimated 28 structural conflicts, environmental mitigations expenses, utility relocation costs as well as engineering, planning, and construction management efforts.

Table C-15 West Slidell 25-YR Alternative 3 Estimated Total Capital Costs

WSL 25-YR Alternative 3: Bayou Liberty Road					
Item Description					
					
Real Estate	Environmental Cost	Construction Costs	Utility Relocation Costs	Engineering, Planning & Construction Management	Total
\$14,100,000	\$2,160,000	\$887,000,000	\$4,435,000	\$221,750,000	\$1,129,445,000

4. 100-Year Alternative Alignments for Eden Isle

Eden Isle is surrounded by roadways, that are the backbone for the alignment features.

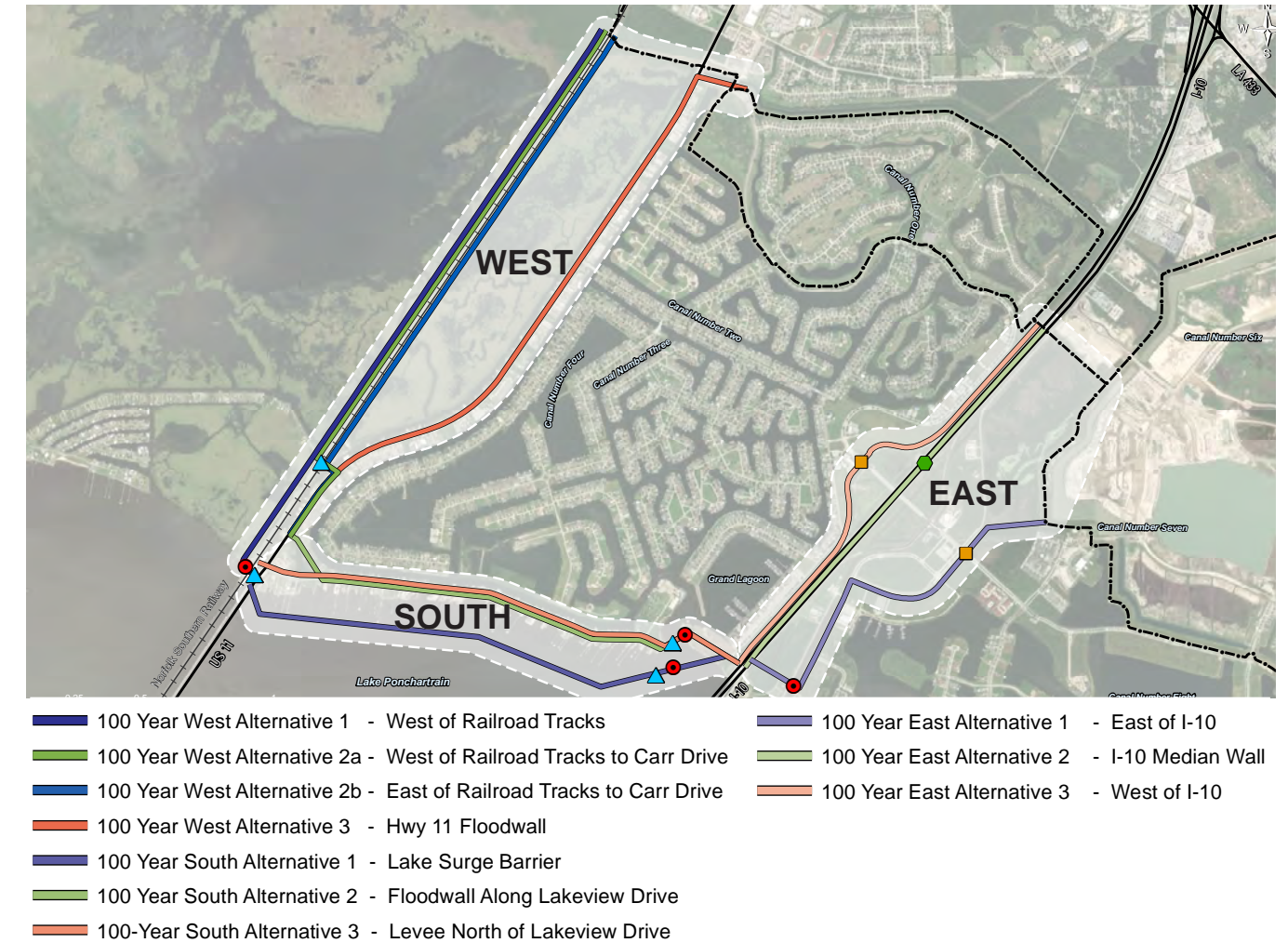


Figure C-1 100-YR Alternatives Eden Isle – All Alignments

4.1 Alternatives – East Alignment – 100-Year

US Interstate 10 is the eastern boundary for Eden Isle and lies between the two existing levee systems, Lakeshore Villages to the east and Oak Harbor to the west.



Figure C-2 Eden Isle 100-Year Alternatives – East

The Lakeshore Villages levee, dashed black line in Figure 5-14, is one mile east of I-10. Constructed to an elevation of +18-foot NAVD88 in 2006, the levee has settled to approximately +17 feet NAVD88. The Oak Harbor levee, north of the Eden Isle and west of I-10, was constructed in the early 1990's to elevation +12.0 feet NAVD88.

4.1.1 Alternative 1: East of I-10 - East Alignment – 100-Year

East Alternative 1 is a levee that connects the Lakeshore Village levee to a future southern alignment from the southwestern corner of the Lakeshore Villages levee and travels southwest to Oak Harbor Blvd. The alignment continues with a roadway roller gate at Oak Harbor Blvd, and includes raising I-10 near the shoreline of Lake Pontchartrain at a tie-in location along the south side of Eden Isle. The roadway roller gates at Oak Harbor are two 50-foot-wide gates. Thirty-foot-wide roadway roller gates are necessary at Valley Island Road and Harbor Drive. A riprap shoreline protection feature beneath the Interstate 10 bridge provides erosional resistance to the shoreface. The existing Valley Island Pump Station is upgraded in this alignment.

This alignment provides storm surge protection to the Interstate 10 evacuation corridor; however, does include the areas south and west of Oak Harbor Boulevard.

Table C-16 East Alternative 1 Structural Components

East Alternative 1: East of I-10	
Structure Components	
Structure Type	<ul style="list-style-type: none"> Levee with 10-ft wide crown, 3H:1V Side slopes
Structure Tie-Ins	<ul style="list-style-type: none"> South side of Eden Isle Existing Lakeshore Estates Levee (+17)
Footprint	<ul style="list-style-type: none"> Existing Elevation (Average): +6.0 Levee Length – 9,186LF Levee Width – 140-160LF
Other Structural Components	<ul style="list-style-type: none"> Elevate Roadway at I-10 Bridge/South Connection (2) – 30 ft Roadway Roller Gate (1) – 50 ft Roadway Roller Gate Restore/Revamp Existing Valley Island Pump Station

Property Impacts

An estimated 22 landowners are impacted in this alignment. The alignment will affect the State of Louisiana Department of Transportation and Development right-of-way.

Table C-17 East Alternative 1 Property Impacts

East Alternative 1: East of I-10			
		Parcel Description	
	Residential	Total Acquisition with Structure	2
		Total Acquisition without Structure	0
		Partial Impact	0
	Commercial	Total Acquisition with Structure	0
		Total Acquisition without Structure	0
		Partial Impact	20
		Total	22







Environmental Concerns

Seven acres of wetland habitat are impacted by this alignment.

Estimate of Budgetary Construction Costs

The estimated construction costs range between \$126,000,000 and \$171,000,000. Additional costs associated with property acquisition of 20 acres and two (2) structure conflicts, environmental mitigations expenses, utility relocation costs, as well as engineering, planning, and construction management.

Table C-18 East Alternative 1 Estimated Total Capital Costs

East Alternative 1: East of I-10					
Item Description					
					
Real Estate	Environmental Cost	Construction Costs	Utility Relocation Costs	Engineering, Planning & Construction Management	Total
\$2,270,000	\$360,000	\$158,360,000	\$1,580,000	\$39,590,000	\$202,160,000

4.1.2 Alternative 2: I-10 Median Wall - East Alignment – 100-Year

East Alternative 2 is a concrete T-wall barrier in the median of I-10 with tie-ins to the Oak Harbor levee at the northern end of the alignment and the southern flood protection alignment on the south side of Eden Isle. I-10 is raised at both ends to match 100-year elevation. A riprap shoreline protection feature is located beneath the Interstate 10 bridge. A pump station is required for the rainfall within the I-10 water shed. A box culvert type drainage structure with a closure feature is required in the ditch running perpendicular to Interstate 10 just north of Oak Harbor Boulevard. Areas outside the protection in this alignment include north bound Interstate 10 and areas east of Interstate 10.



Table C-19 East Alternative 2 Structural Components

East Alternative 2: I-10 Median Wall	
Structure Components	
Structure Type	<ul style="list-style-type: none"> Concrete T-Wall/Floodwall
Structure Tie-Ins	<ul style="list-style-type: none"> South side of Eden Isle Existing Oak Harbor Levee (West) or Lakeshore Estates (East)
Footprint	<ul style="list-style-type: none"> Existing Elevation (Approximate Average): +12 Floodwall Length – 8,963LF (Approx.) Floodwall Width – 50LF (Approx.)
Other Structural Components	<ul style="list-style-type: none"> Elevate Roadway at I-10 Bridge Elevate Roadway at I-10 Oak Harbor North Tie-In Drainage Structure on Ditch North of Oak Harbor Blvd Pump Station for Internal Rainfall

Property Impacts

There are no private or commercial landowners affected by this alignment. An interagency agreement with the State of Louisiana Department of Transportation & Development (DOTD) and the US Federal Highway Administration (USFHA) is required to construct a flood protection feature within their respective rights-of-way.

Table C-20 East Alternative 2 Property Impacts

East Alternative 2: I-10 Median Wall			
Parcel Description			
	Residential	Total Acquisition with Structure	0
		Total Acquisition without Structure	0
		Partial Impact	0
	Commercial	Total Acquisition with Structure	0
		Total Acquisition without Structure	0
		Partial Impact	0
Total			0



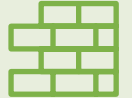



Environmental Concerns

No wetland habitat is impacted by this alignment.

Estimate of Budgetary Construction Costs

The estimated construction costs range from \$175,000,000 to \$237,000,000 with additional costs for property acquisition of 12 acres, no structure conflicts, environmental mitigation, utility relocation, engineering, planning, and construction management.

Table C-21 East Alternative 2 Estimated Total Capital Costs

East Alternative 2: I-10 Median Wall					
Item Description					
					
Real Estate	Environmental Cost	Construction Costs	Utility Relocation Costs	Engineering, Planning & Construction Management	Total
\$2,240,000	\$0	\$222,900,000	\$2,230,000	\$55,730,000	\$283,100,000

4.1.3 Alternative 3 – East Alignment – 100-Year

East Alternative 3 is a levee and concrete T-wall along the west side of Interstate 10 with a connection to Oak Harbor levee on the north. Two 50-foot roadway roller gates are required at Oak Harbor with the concrete T-Wall at the subdivision exit at Oak Harbor Blvd due to the narrow corridor between existing structures. A pumping station is needed for the interior rainfall within the I-10 impounded area. A drainage structure with a closure feature is required in the ditch perpendicular to I-10, north of Oak Harbor Boulevard. Interstate 10 and areas east of Interstate 10 are not protected in this alignment.



Table C-22 East Alternative 3 Structural Components

East Alternative 3: West of I-10	
Structure Components	
Structure Type	<ul style="list-style-type: none"> Levee with 10-ft wide crown, 3H:1V Side slopes
Structure Tie-Ins	<ul style="list-style-type: none"> South side of Eden Isle Subdivision Existing Oak Harbor Levee
Footprint	<ul style="list-style-type: none"> Existing Elevation (Average): +6.0 Levee Length – 6,297LF Levee Width – 140-160LF Floodwall Length – 3,266LF Floodwall Width – 50LF
Other Structural Components	<ul style="list-style-type: none"> (1) 50-ft wide Roadway Roller Gate at Oak Harbor Blvd Drainage Structure on Ditch North of Oak Harbor Blvd Pump Station for Internal Rainfall

Property Impacts

Three landowners are affected by this alignment.

Table C-23 East Alternative 3 Property Impacts

East Alternative 3: West of I-10			
Parcel Impacts			
	Residential	Total Acquisition with Structure	0
		Total Acquisition without Structure	0
		Partial Impact	0
	Commercial	Total Acquisition with Structure	0
		Total Acquisition without Structure	0
		Partial Impact	3
Total			3

Environmental Concerns


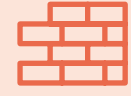


No wetland habitat is impacted by this alignment.

Estimate of Budgetary Construction Costs

The estimated construction costs range between \$94,000,000 and \$127,000,000 with additional costs

for property acquisition of 25 acres, no structural conflicts, environmental mitigation, utility relocation, engineering, planning, and construction management.







Table C-24 East Alternative 3 Estimated Total Capital Costs

East Alternative 3: West of I-10					
Item Description					
					
Real Estate	Environmental Cost	Construction Costs	Utility Relocation Costs	Engineering, Planning & Construction Management	Total
\$1,350,000	\$900,000	\$115,200,000	\$1,150,000	\$28,800,000	\$147,400,000

4.1.4 Alternatives Summary – East Alignment – 100-Year

Table 5-27 summarizes the costs for the 3 alignment options for the Eastern corridor of Eden Isle.

Table C-25 East Alignments 100-YR Estimated Total Capital Costs

		Eden Isle Alignment Alternatives (100YR)		
		East Alternative 1: East of I-10	East Alternative 2: I-10 Median Wall	East Alternative 3: West of I-10
	Real Estate	\$2,270,000	\$2,240,000	\$1,350,000
	Environmental Cost	\$360,000	\$0.00	\$900,000
	Construction Costs	\$158,360,000	\$222,900,000	\$115,200,000
	Utility Relocation Costs	\$1,580,000	\$2,230,000	\$1,150,000
	Engineering, Planning & Construction Management	\$39,590,000	\$55,730,000	\$28,800,000
	Total	\$202,160,000	\$283,100,000	\$147,400,000

4.2 Alternatives – West Alignment – 100-Year

The western border of Eden Isle is Highway 11 and the Norfolk Southern railroad. These structural features are the alternative alignments for structural protection on the west side of Eden Isle and extend from the South Slidell Levee at the north and Lake Pontchartrain to the south..



Figure C-3 100-YR Alternatives – Eden Isle – West Alignments

4.2.1 Alternative 1 – West Alignment – 100-Year

West Alternative 1, west of railroad to the Lake, is a levee along the western edge of the Norfolk Southern Railroad with a pumping station in Pontchartrain Canal at Lake Pontchartrain and a tie-in connection with the southern alignment.

Table C-26 West Alternative 1 Structural Components

West Alternative 1: West of Railroad to Lake	
Structure Components	
Structure Type	<ul style="list-style-type: none"> Levee with 10-ft wide crown, 3H:1V Side slopes
Structure Tie-Ins	<ul style="list-style-type: none"> Completed HWY 11 Levee to North Southern Corridor Connection @ Hwy 11
Footprint	<ul style="list-style-type: none"> Existing Elevation (Average): +1.0 Levee Length – 13,107LF Levee Width – 175-200LF
Other Structural Components	<ul style="list-style-type: none"> Roadway Roller Gate at Carr Dr. Vertical Water Quality Gates along Marsh (Min. 2) Roadway Access Gates at HWY 11 Pump Station at Southern Tie-In (Future ~1,250cfs)

Property Impacts

Seven (7) landowners are affected by this alignment. The alignment will affect the Norfolk Southern right-of-way.

Table C-27 West Alternative 1 Property Impacts

West Alternative 1: West of Railroad to Lake			
		Parcel Description	
	Residential	Total Acquisition with Structure	3
		Total Acquisition without Structure	1
		Partial Impact	3*
	Commercial	Total Acquisition with Structure	0
		Total Acquisition without Structure	0
		Partial Impact	0
		Total	7

*Count includes privately owned marsh properties

Environmental Concerns

This alignment impacts 60 acres of undeveloped wetland habitat.

Estimate of Budgetary Construction Costs

The estimated construction costs range between \$213,000,000 and \$288,000,000 with additional costs for property acquisition of 60 acres, three structure conflicts, environmental mitigation, utility relocations, engineering, planning, and construction management.

Table C-28 West Alternative 1 Estimated Total Capital Costs

West Alternative 1: West of Railroad to Lake					
Item Description					
Real Estate	Environmental Cost	Construction Costs	Utility Relocation Costs	Engineering, Planning & Construction Management	Total
\$1,670,000	\$2,640,000	\$262,220,000	\$1,310,000	\$65,560,000	\$333,400,000

4.2.2 Alternative 2A & 2B – West Alignment – 100-Year

West Alternative 2 is subdivided into 2A and 2B. Alternative 2A is a levee along the west side of Norfolk Southern Railroad to Carr Drive with a pump station at Carr Drive and a concrete T-wall in median of Hwy 11 from Carr Drive to the tie-in location at the southern alignment. Alternative 2B is a levee along east side the Norfolk Southern Railroad to Carr Drive with a pump station at Carr Drive and concrete T-wall in median of Hwy 11 to the tie-in location at the southern alignment.



Table C-29 West Alternative 2A Structural Components

West Alternative 2A: West of Railroad to Carr Drive	
Structure Components	
Structure Type	<ul style="list-style-type: none"> Levee with 10-ft wide crown, 3H:1V Side slopes Concrete T-wall/Floodwall along Hwy 11 below Carr Dr.
Structure Tie-Ins	<ul style="list-style-type: none"> Completed HWY 11 Levee to North Southern Corridor Connection @ Hwy 11
Footprint	<ul style="list-style-type: none"> Existing Elevation (Average): +1.0 Levee Length – 10,241LF Levee Width – 175-200LF Floodwall Length – 2,094LF Floodwall Width – 50LF
Other Structural Components	<ul style="list-style-type: none"> Roadway Roller Gate at Carr Drive Railroad Gate at Carr Drive Vertical Water Quality Gates Pump Station at Carr Drive (Future ~1250cfs) Roadway Access Gates along Hwy 11

Property Impacts

Approximately seven landowners are affected by this alignment. The alignment will affect the Norfolk Southern right-of-way.

Table C-30 West Alternative 2A Property Impacts

West Alternative 2A: West of Railroad to Carr Drive			
Parcel Description			
	Residential	Total Acquisition with Structure	3
		Total Acquisition without Structure	1
		Partial Impact	3
	Commercial	Total Acquisition with Structure	0
		Total Acquisition without Structure	0
		Partial Impact	0
Total			7

Environmental Concerns

47 acres of undeveloped wetland habitat are affected by this alignment.

Estimate of Budgetary Construction Costs

The estimated construction costs range between \$232,000,000 and \$314,000,000 with additional costs associated with property acquisition of 50 acres, three structural conflicts, environmental mitigation, utility relocations, engineering, planning, and construction management.

Table C-31 West Alternative 2A Estimated Total Capital Costs







West Alternative 2A: West of Railroad to Carr Drive					
Item Description					
					
Real Estate	Environmental Cost	Construction Costs	Utility Relocation Costs	Engineering, Planning & Construction Management	Total
\$2,100,000	\$2,100,000	\$290,980,000	\$1,450,000	\$72,740,000	\$369,370,000



Table C-32 West Alternative 2B Structural Components

West Alternative 2B: East of Railroad to Carr Drive	
Structure Components	
Structure Type	<ul style="list-style-type: none"> Levee with 10-ft wide crown, 3H:1V Side slopes Concrete T-wall/Floodwall along Hwy 11 below Carr Dr.
Structure Tie-Ins	<ul style="list-style-type: none"> Completed HWY 11 Levee to North Southern Corridor Connection @ Hwy 11
Footprint	<ul style="list-style-type: none"> Existing Elevation (Average): +1.0 Levee Length – 10,241LF Levee Width – 175-200LF Floodwall Length – 2,094LF Floodwall Width – 50LF
Other Structural Components	<ul style="list-style-type: none"> Roadway Roller Gate at Carr Drive Railroad Gate at Carr Drive Vertical Water Quality Gates Pump Station at Carr Drive (Future ~1250cfs) Roadway Access Gates along Hwy 11

Property Impacts

Approximately six landowners are affected by this alignment. The alignment will affect the Norfolk Southern right-of-way.

Table C-33 West Alternative 2B Property Impacts

West Alternative 2B: East of Railroad to Carr Drive			
Parcel Description			
	Residential	Total Acquisition with Structure	2
		Total Acquisition without Structure	0
		Partial Impact	4*
	Commercial	Total Acquisition with Structure	0
		Total Acquisition without Structure	0
		Partial Impact	0
Total			6

*Count includes privately owned marsh properties







Environmental Concerns

50 acres of undeveloped wetland habitat are affected by this alignment.

Estimate of Budgetary Construction Costs

The estimated construction costs range between \$216,000,000 and \$293,000,000 with additional costs associated with property acquisition of 50 acres, two structural conflicts, environmental mitigation, utility relocations, engineering, planning, and construction management.

Table C-34 West Alternative 2B Estimated Total Capital Costs

West Alternative 2B: East of Railroad to Carr Drive					
Item Description					
					
Real Estate	Environmental Cost	Construction Costs	Utility Relocation Costs	Engineering, Planning & Construction Management	Total
\$1,750,000	\$2,040,000	\$272,310,000	\$1,360,000	\$68,080,000	\$345,540,000

4.2.3 Alternative 3 – West Alignment – 100-Year

West Alternative 3 is a concrete T-Wall in the median of Highway 11 with a roadway roller gate at Schneider Canal levee and Carr Drive and tie-in to southern alignment. Additional roadway roller gates are required in the concrete T-Wall for driveway access and turn arounds.



Table C-35 West Alternative 3 Structural Components

West Alternative 3: Hwy 11 Floodwall	
Structure Components	
Structure Type	<ul style="list-style-type: none"> Levee with 10-ft wide crown, 3H:1V Side slopes Concrete T-wall/Floodwall along Hwy 11 below Carr Dr.
Structure Tie-Ins	<ul style="list-style-type: none"> Completed HWY 11 Levee to North Southern Corridor Connection @ Hwy 11
Footprint	<ul style="list-style-type: none"> Existing Elevation (Average): +6.0 Floodwall Length – 13,533LF Floodwall Width – 50LF
Other Structural Components	<ul style="list-style-type: none"> Roadway Access Gates along HWY 11 for Access Roadway Roller Gate at Carr Dr

Property Impacts

Three (3) landowners are affected by this alignment. The alignment will also affect the State of Louisiana Department of Transportation and Development right-of-way.

Table C-36 West Alternative 3 Property Impacts

West Alternative 3: Hwy 11 Floodwall			
Parcel Impacts			
	Residential	Total Acquisition with Structure	0
		Total Acquisition without Structure	0
		Partial Impact	0
	Commercial	Total Acquisition with Structure	0
		Total Acquisition without Structure	0
		Partial Impact	3
Total			3







Environmental Concerns

This alignment does not impact wetland habitat.

Estimate of Budgetary Construction Costs

The estimated construction costs range between \$283,000,000 to \$382,000,000 with additional costs associated with property acquisitions of 18 acres, environmental mitigation, utility relocations, engineering, planning, and construction management.







Table C-37 West Alternative 3 Estimated Total Capital Costs

West Alternative 3: Hwy 11 Floodwall					
Item Description					
					
Real Estate	Environmental Cost	Construction Costs	Utility Relocation Costs	Engineering, Planning & Construction Management	Total
\$3,360,000	\$0	\$332,550,000	\$1,660,000	\$83,140,000	\$420,710,000

4.2.4 Alternatives Summary – West Alignment – 100-Year

Table 5-40 is a summary of the costs for the four alignment options for the western corridor of Eden Isle.

Table C-38 West 100-YR Alternatives Estimated Total Capital Costs

		Eden Isle Alignment Alternatives (100YR)			
		West Alt. 1 West of Railroad to Lake	West Alt. 2A West of Railroad to Carr Drive	West Alt. 2B East of Railroad to Carr Drive	West Alt. 3 Hwy 11 Floodwall
	Real Estate	\$1,670,000	\$2,100,000	\$1,750,000	\$3,360,000
	Environmental Cost	\$2,640,000	\$2,100,000	\$2,040,000	\$0
	Construction Costs	\$262,220,000	\$290,980,000	\$272,310,000	\$332,550,000
	Utility Relocation Costs	\$1,310,000	\$1,450,000	\$1,360,000	\$1,660,000
	Engineering, Planning & Construction Management	\$65,560,000	\$72,740,000	\$68,080,000	\$83,140,000
	Total	\$333,400,000	\$369,370,000	\$345,540,000	\$420,710,000

4.3 Alternatives – South Alignment – 100-Year

Lakeview Drive runs east/west along the southern end of Eden Isle and its barrier from Lake Pontchartrain (Figure 5-13). Three alternatives along this alignment are considered for increasing the southern protection for Eden Isle.

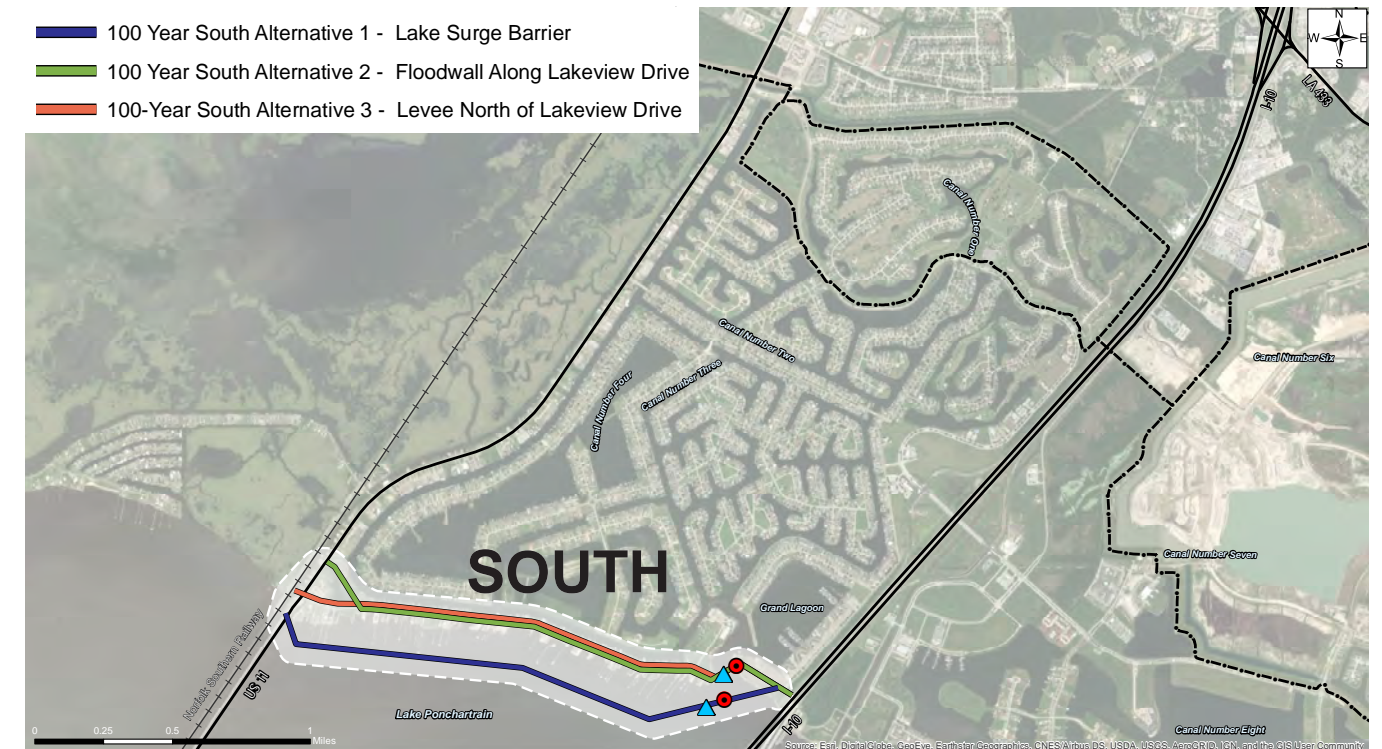


Figure C-4 100 YR Alternatives – South

4.3.1 Alternative 1 – South Alignment – 100-Year

South Alternative 1 is a surge barrier structure within the footprint of Lake Pontchartrain at approximately the -7-foot lake elevation. This surge barrier is supported by vertical and battered concrete piles. The alternative includes a pump station and gate closure at the waterway entrance at Grand Lagoon for navigation and tie-ins into the west & east alignments.

Table C-39 South Alternative 1 Structural Components

South Alternative 1: Lake Surge Barrier	
Structure Components	
Structure Type	• Surge Barrier in Lake
Structure Tie-Ins	• Eastern Corridor Connection @ I-10
Footprint	• Existing Elevation (Average): -8.0 • Surge Barrier Length – 10,227LF
Other Structural Components	• Navigable Floodgate & Pump Station near Grand Lagoon • Roadway Access Gate at Hwy 11





Figure C-5 Surge Barrier (USACE)

Property Impacts

Three landowners are affected by this alignment. This alignment also affects the State of Louisiana water bottoms.

Table C-40 South Alternative 1 Property Impacts

South Alternative 1: Lake Surge Barrier			
Parcel Description			
	Residential	Total Acquisition with Structure	0
		Total Acquisition without Structure	2
		Partial Impact	1
	Commercial	Total Acquisition with Structure	0
		Total Acquisition without Structure	0
		Partial Impact	0
Total			3







Environmental Concerns

47 acres of undeveloped water bottom habitat are affected by this alignment.

Estimate of Budgetary Construction Costs

The estimated construction costs range between \$1,767,000,000 to \$2,391,000,000 with additional cost associated with property acquisitions of 53 acres, environmental mitigations, utility relocations, engineering, planning, and construction management.

Table C-41 South Alternative 1 Estimated Total Capital Costs

South Alternative 1: Lake Surge Barrier					
Item Description					
					
Real Estate	Environmental Cost	Construction Costs	Utility Relocation Costs	Engineering, Planning & Construction Management	Total
\$650,000	\$2,580,000	\$2,079,150,000	\$20,790,000	\$519,790,000	\$2,622,960,000

4.3.2 Alternate 2 – South Alignment – 100-Year

South Alternative 2, Lakeview Drive concrete T-Wall, is a concrete T-Wall in the median of Lakeview Drive and includes a pump station and gate closure at the waterway entrance of Grand Lagoon. Roadway roller gates provide access and turn-around points along the roadway. The alignment includes a levee from the Grand Lagoon structure to eastern alignment tie in.

Table C-42 South Alternative 2 Structural Components

South Alternative 2: Floodwall Along Lakeview Drive	
Structure Components	
Structure Type	<ul style="list-style-type: none"> Concrete T-wall/Floodwall Levee with 10-ft wide crown, 3H:1V Side slopes
Structure Tie-Ins	<ul style="list-style-type: none"> Eastern Corridor Connection @ I-10 Western Corridor Connection @ Hwy 11
Footprint	<ul style="list-style-type: none"> Existing Elevation (Average): +6.0 Floodwall Length – 8,688LF Floodwall Width – 50LF Levee Length – 1,177LF Levee Width – 140-160LF
Other Structural Components	<ul style="list-style-type: none"> Roadway Roller Gate Structure at HWY 11 Roadway Access Gates along Lakeview Dr. Navigable Floodgate & Pump Station @ Grand Lagoon

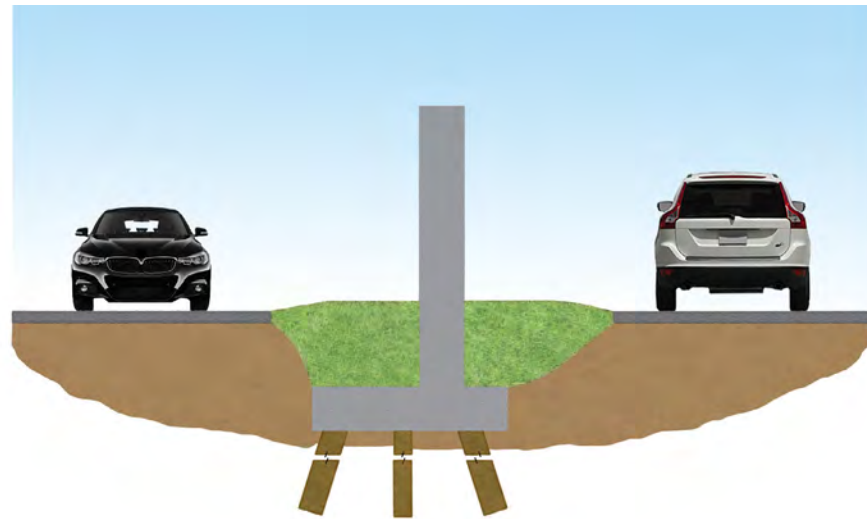




Figure C-6 Eden Isle Levee – South Concrete T-Wall Looking East

Property Impacts

210 landowners are affected by this alignment due primarily to the driveway connections along Lakeview Drive.

Table C-43 South Alternative 2 Property Impacts

South Alternative 2: Floodwall Along Lakeview Drive		
Parcel Description		
 Residential	Total Acquisition with Structure	0
	Total Acquisition without Structure	3
	Partial Impact	207
 Commercial	Total Acquisition with Structure	0
	Total Acquisition without Structure	0
	Partial Impact	0
Total		210







Environmental Concerns

Two acres of undeveloped wetland and water bottom habitat are affected by this alignment. The wetlands impacts are associated with the Grand Lagoon floodgate structure and receiving wall.

Estimate of Budgetary Construction Costs

The estimated construction costs range between \$282,000,000 and \$381,000,000 with additional costs associated with property acquisitions of 16 acres, environmental mitigations, utility relocations, engineering, planning, and construction management.

Table C-44 South Alternative 2 Estimated Total Capital Costs

South Alternative 2: Floodwall Along Lakeview Drive					
Item Description					
 Real Estate	 Environmental Cost	 Construction Costs	 Utility Relocation Costs	 Engineering, Planning & Construction Management	 Total
\$2,460,000	\$120,000	\$329,770,000	\$3,300,000	\$82,440,000	\$418,090,000

4.3.3 Alternate 3 – South Alignment – 100-Year

South Alternative 3 is a levee north of Lakeview Drive with a pumping station, gate closure at Grand Lagoon and tie-ins to west and east alignments. The levee construction includes a limestone path on top of the structure for recreational use.



Table C-45 South Alternative 3 Structural Components

South Alternative 3: Levee North of Lakeview Drive	
Structure Components	
Structure Type	<ul style="list-style-type: none"> Levee with 10-ft wide crown, 3H:1V Side slopes
Structure Tie-Ins	<ul style="list-style-type: none"> Eastern Corridor Connection @ I-10 Western Corridor Connection @ Hwy 11
Footprint	<ul style="list-style-type: none"> Existing Elevation (Average): +6.0 Levee Length – 9,865LF Levee Width – 140-160LF
Other Structural Components	<ul style="list-style-type: none"> Roadway Roller Gate at HWY 11 Navigable Floodgate & Pump Station @ Grand Lagoon

Property Impacts

110 landowners are affected by this alignment including the acquisition of 102 properties with and without structures. This total does not include properties south of Lakeview Drive as the levee will be constructed to the north side of the road above those properties.

Table C-46 South Alternative 3 Property Impacts

South Alternative 3: Levee North of Lakeview Drive			
Parcel Impacts			
	Residential	Total Acquisition with Structure	43
		Total Acquisition without Structure	58
		Partial Impact	8
	Commercial	Total Acquisition with Structure	1
		Total Acquisition without Structure	0
		Partial Impact	0
Total			110







Environmental Concerns

Two acres of undeveloped wetland and water bottom habitat are affected by this alignment. The wetlands are associated with the Grand Lagoon floodgate structure and receiving wall.

Estimate of Budgetary Construction Costs

The estimated construction costs range between \$168,000,000 and \$227,000,000 with additional costs associated with 34 acres of property acquisition, 44 structural conflicts, environmental mitigations, utility relocations, engineering, planning, and construction management.







Table C-47 South Alternative 3 Estimated Total Capital Costs

South Alternative 3: Levee North of Lakeview Drive					
Item Description					
					
Real Estate	Environmental Cost	Construction Costs	Utility Relocation Costs	Engineering, Planning & Construction Management	Total
\$18,840,000	\$120,000	\$184,660,000	\$1,850,000	\$46,160,000	\$251,630,000

4.3.4 Alternatives Summary – South Alignment – 100-Year

Table 5-50 is a summary of the costs for the three alignment options for the southern corridor of Eden Isle.

Table C-48 South 100-YR Alternatives Estimated Total Capital Costs

		Eden Isle Alignment Alternatives (100YR)		
		South Alternative 1 Lake Surge Barrier	South Alternative 2 Floodwall Along Lakeview Drive	South Alternative 3 Levee North of Lakeview Drive
	Real Estate	\$650,000	\$2,460,000	\$18,840,000
	Environmental Cost	\$2,580,000	\$120,000	\$120,000
	Construction Costs	\$2,079,150,000	\$329,770,000	\$184,660,000
	Utility Relocation Costs	\$20,790,000	\$3,330,000	\$1,850,000
	Engineering, Planning & Construction Management	\$519,790,000	\$82,440,000	\$46,160,000
	Total	\$2,622,960,000	\$418,090,000	\$251,630,000

4.4 50-Year Alternative Alignments for Eden Isle

Intermediate levels of protection for Eden Isle are considered for the 50-year level of protection using the Highway 11, Interstate 10, and Lakeview Drive corridors.



Figure C-7 50 YR Alternatives

4.4.1 50-YR Alternative – East

The median of the I-10 corridor is approximately +12 feet NAVD88 or greater and Eden Isle. The eastern and western limits of the right of way are at an elevation of approximately 6.0 feet NAVD88. The median elevation is above the minimum design elevation for the 50-Year level of protection on the east side of Eden Isle. The only costs associated with 50-year protection on the eastern side is the installation of a drainage structure located to the north of Oak Harbor Boulevard. Drainage modeling will be required for sizing this structure and determine if a pump station is necessary.

Property Impacts

No residential or commercial landowners are affected by this alignment. However, an agreement and or approval from the State of Louisiana Department of Transportation & Development (DOTD) and the US Federal Highway Administration (USFHA) are required for infrastructure within the rights-of-way.

Environmental Concerns

Less than one acre of previously disturbed wetland habitat is affected by this alignment. These wetlands may fall into the environmental impacts study performed for Interstate 10 and not require mitigation.

Estimate of Budgetary Construction Costs

The estimated construction costs ranging between \$3,000,000 to \$4,00,000 with additional costs associated with utility relocation, engineering, planning, and construction management.

Table C-49 East 50-YR Alternative 1 Estimated Total Capital Costs

East Alternatives 1: East Drainage					
Item Description					
					
Real Estate	Environmental Cost	Construction Costs	Utility Relocation Costs	Engineering, Planning & Construction Management	Total
\$0	\$0	\$2,930,000	\$30,000	\$730,000	\$3,690,000

4.4.2 50-YR Alternatives – West

The 50-year interim protection have the same landowner, wetland, and utility impacts as the 100-year alignments in the same footprint.

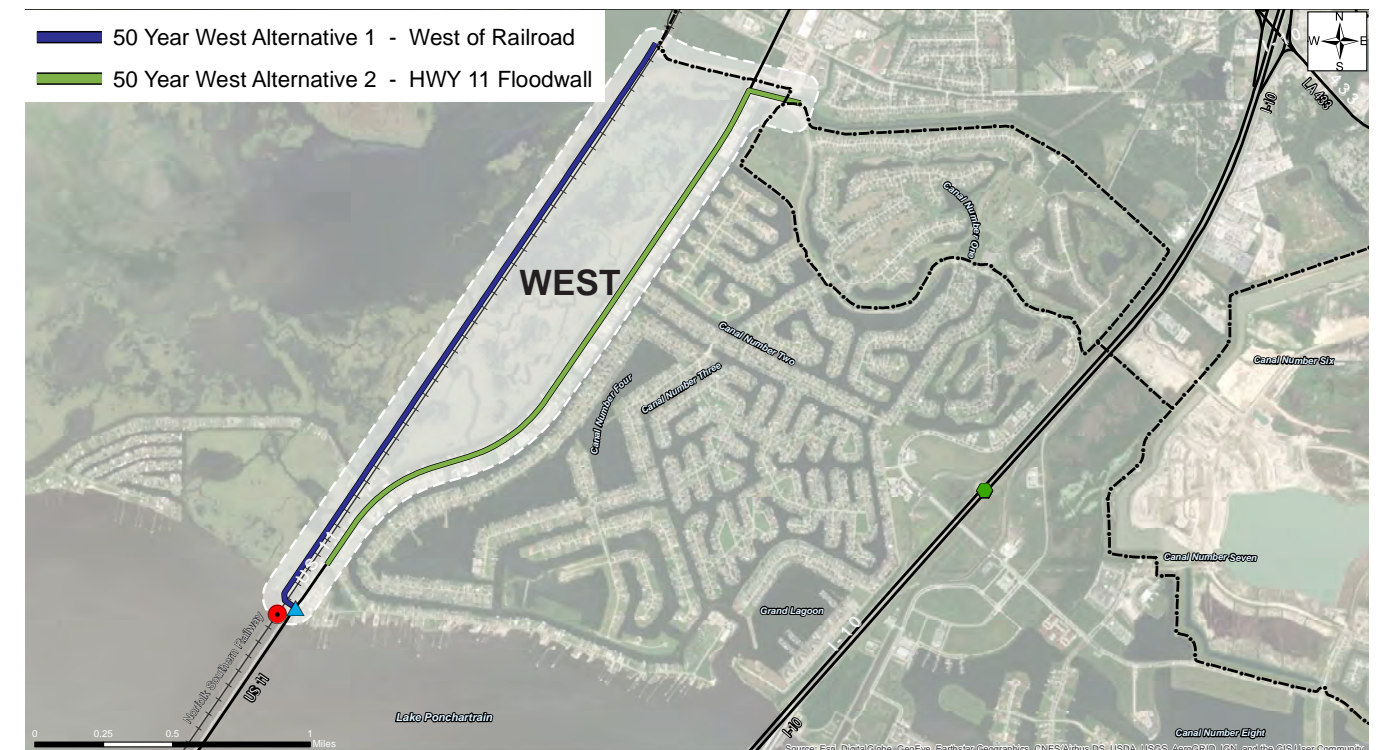


Figure C-8 50-YR Alternatives – West

Alternative 1 – West Alignment – 50-Year

West Alternative 1 is the same footprint for the 100-year West of Railroad to the Lake. It is a levee along the western edge of the Norfolk Southern Railroad with a pumping station in Pontchartrain Canal at Lake Pontchartrain, and a tie-in connection to the southern alignment.

Estimate of Budgetary Construction Costs

West Alternative 1 at 50-year has an estimated construction costs ranging from \$184,000,000 to \$249,000,000. It is also estimated to have additional costs associated with property acquisition of 45 acres and estimated three structural conflicts, environmental mitigations expenses, utility relocation, costs as well as engineering, planning, and construction management efforts.







Alternative 2 – West Alignment – 50-Year

West Alternative 2 is a concrete T-Wall in the median of Highway 11 with a gate at Schneider Canal levee and at Carr Drive and the tie-in location to southern alignment. It includes roadway roller gates in the concrete T-Wall for driveway access and turn arounds.

Estimate of Budgetary Construction Costs

West Alternative 2, 50-year level of protection, estimated construction costs range between \$252,000,000 to \$342,000,000 with an additional \$79,979,000 in costs associated with property acquisition of 17 acres, environmental mitigations, utility relocations, engineering, planning, and construction management.

Table C-50 West 50-YR Alternatives Estimated Total Capital Costs

		Eden Isle Alignment Alternatives (50YR)	
		West Alternative 1 West of Railroad to Lake	West Alternative 2 Hwy 11 Floodwall
	Real Estate	\$1,500,000	\$3,180,000
	Environmental Cost	\$1,950,000	\$0
	Construction Costs	\$201,050,000	\$320,780,000
	Utility Relocation Costs	\$2,010,000	\$3,210,000
	Engineering, Planning & Construction Management	\$50,260,000	\$80,200,000
	Total	\$256,770,000	\$407,370,000

4.4.3 50-YR Alternatives – South

Alternate 1 – South Alignment – 50-Year

Similar to the 100-year South Alternative 2, this alternative includes a T-Wall in median of Lakeview Drive a pumping station and gate closure at the waterway entrance of Grand Lagoon. Tie-ins to west and east alignments are included.

Alternate 2 – South Alignment – 50-Year

Similar to the 100-year South Alternative 3, this alternative includes a levee north of Lakeview Drive with a pumping station and gate closure at Grand Lagoon and tie-ins to west and east alignments. This alignment requires purchasing structures noted previously in Table 5-45.

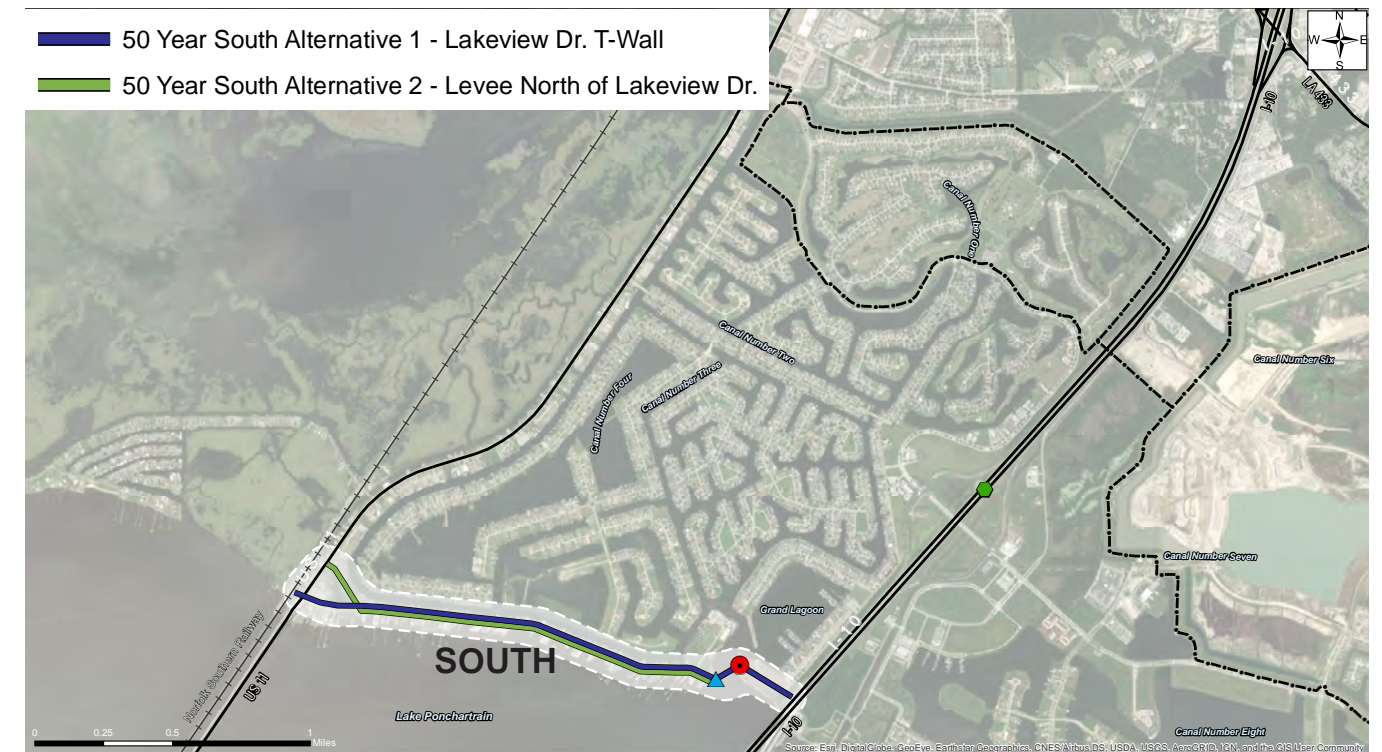


Figure C-9 50-YR Alternatives – South

Estimate of Budgetary Construction Costs

The estimated construction costs for alternate 1 range between \$281,000,000 and \$380,000,000 with additional costs associated with property acquisition of 14 acres, environmental mitigations, utility relocations, engineering, planning, and construction management.

The estimated construction costs for alternate 2 ranges between \$212,000,000 and \$287,000,000 with additional costs associated with property acquisition of 19 acres, 44 structural conflicts, environmental mitigations, utility relocations, engineering, planning, and construction management.

Table C-51 South 50-YR Alternatives Estimated Total Capital Costs

		Eden Isle Alignment Alternatives (50YR)	
		South Alternative 1 Floodwall Along Lakeview Drive	South Alternative 2 Levee North of Lakeview Drive
	Real Estate	\$2,400,000	\$22,860,000
	Environmental Cost	\$70,000	\$70,000
	Construction Costs	\$356,430,000	\$179,730,000
	Utility Relocation Costs	\$3,560,000	\$1,800,000
	Engineering, Planning & Construction Management	\$89,110,000	\$44,930,000
	Total	\$451,570,000	\$249,390,000

**5. Additional Construction Cost Estimates –
West Slidell Alignments**

Appendix C
West Slidell Alignments

	West Slidell Alignment Alternatives Component Summary		
	WSL Alternative 1	WSL Alternative 2	WSL Alternative 3
	Keller Rd. Alignment	Bayou Pacquet Alignment	Bayou Liberty Rd Alignment
Structure Components			
Structure Type	· Levee with 10ft wide crown, 3H:1V Side slopes	· Levee with 10ft wide crown, 3H:1V Side slopes	· Levee with 10ft wide crown, 3H:1V Side slopes · T-Wall along Bayou Liberty Rd.
Structure Tie-Ins	· Eastern Tie-In at Future Slidell Ring Levee · Western Tie-in at Hwy 190	· Eastern Tie-In at Future Slidell Ring Levee · Western Tie-in at Hwy 190	· Eastern Tie-In at Future Slidell Ring Levee · Western Tie-in at Hwy 190
Footprint	· Levee Length - 39,548LF (Approx.) · Levee Width - 82LF (Approx.)	· Levee Length - 38,174LF (Approx.) · Levee Width - 82LF (Approx.)	· Levee Length - 31,845LF (Approx.) · Levee Width - 82LF (Approx.) · T-Wall along Bayou Liberty Rd. - 7,393'
Other Structural Components	· Navigable Floodgate (2) · Pump Station (2) · Roadway Roller Gate (4) · Roadway Gate @ Bike Path (1) · Pipeline Protection Structure (1)	· Navigable Floodgate (3) · Pump Station (3) · Roadway Roller Gate (5) · Roadway Gate @ Bike Path (1) · Pipeline Protection Structure (1)	· Navigable Floodgate (2) · Pump Station (2) · Bridge Raising/Replacement (1) · Roadway Roller Gate (5) · Roadway Gate @ Bike Path (1) · Pipeline Protection Structure (1)
Flood Risk Reduction			
Areas Not Receiving Protection	· None	· Structures on Keller Rd · Structures on Mayer Dr.	· Structures to South of Bayou Liberty Road · Structures to West of Hwy 433
Lands, Easements, Right of Way, Relocations			
Roadways Impacted	· Bayou Paquet Rd. · W. Doucette Rd · C.C. Rd · Keller Rd	· Mayer Dr · W. Doucette Rd · C.C. Rd	· Bayou Liberty Road · Mayes Trace · St. Genevieve Rd · Stanley St. · W. Doucette Rd · C.C. Rd

Appendix C
West Slidell Alignments

Item Description	West Slidell Alignment Alternatives (100YR)		
	WSL 100YR Alt 1	WSL 100YR Alt 2	WSL 100YR Alt 3
	Keller Rd. Alignment	Bayou Pacquet Alignment	Bayou Liberty Rd Alignment
Real Estate	\$ 10,330,000.00	\$ 9,430,000.00	\$ 16,560,000.00
Environmental Cost	\$ 3,780,000.00	\$ 3,780,000.00	\$ 3,780,000.00
Construction Costs	\$ 706,000,000.00	\$ 778,000,000.00	\$ 948,000,000.00
Utility Relocation Costs	\$ 3,530,000.00	\$ 3,890,000.00	\$ 4,740,000.00
Engineering, Planning & Construction Management	\$ 176,500,000.00	\$ 194,500,000.00	\$ 237,000,000.00
Total	\$900,140,000.00	\$989,600,000.00	\$1,210,080,000.00

Item Description	West Slidell Alignment Alternatives (50YR)		
	WSL 50YR Alt 1	WSL 50YR Alt 2	WSL 50YR Alt 3
	Keller Rd. Alignment	Bayou Pacquet Alignment	Bayou Liberty Rd Alignment
Real Estate	\$ 7,820,000.00	\$ 7,450,000.00	\$ 14,980,000.00
Environmental Cost	\$ 2,700,000.00	\$ 2,700,000.00	\$ 2,700,000.00
Construction Costs	\$ 645,000,000.00	\$ 719,000,000.00	\$ 906,000,000.00
Utility Relocation Costs	\$ 3,225,000.00	\$ 3,595,000.00	\$ 4,530,000.00
Engineering, Planning & Construction Management	\$ 161,250,000.00	\$ 179,750,000.00	\$ 226,500,000.00
Total	\$819,995,000.00	\$912,495,000.00	\$1,154,710,000.00

Item Description	West Slidell Alignment Alternatives (25YR)		
	WSL 25YR Alternative 1	WSL 25YR Alternative 2	WSL 25YR Alternative 3
	Keller Rd. Alignment	Bayou Pacquet Alignment	Bayou Liberty Rd Alignment
Real Estate	\$ 6,380,000.00	\$ 5,660,000.00	\$ 14,100,000.00
Environmental Cost	\$ 2,160,000.00	\$ 2,160,000.00	\$ 2,160,000.00
Construction Costs	\$ 623,000,000.00	\$ 697,000,000.00	\$ 887,000,000.00
Utility Relocation Costs	\$ 3,115,000.00	\$ 3,485,000.00	\$ 4,435,000.00
Engineering, Planning & Construction Management	\$ 155,750,000.00	\$ 174,250,000.00	\$ 221,750,000.00
Total	\$790,405,000.00	\$882,555,000.00	\$1,129,445,000.00

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West Slidell Alignments

										West Slidell Alignment Alternatives (100YR) - Total Capital Costs					
										WSL 100YR Alternative 1		WSL 100YR Alternative 2		WSL 100YR Alternative 3	
										Keller Rd. Alignment		Bayou Pacquet Alignment		Bayou Liberty Rd Alignment	
Item No.	Item Description	Unit Cost	Unit	Qty.	Total	Qty.	Total	Qty.	Total						
REA	Real Estate														
RE.1	Parcel Costs - Marsh	\$15,000	AC	63	\$945,000.00	63	\$945,000.00	63	\$945,000.00						
RE.2	Parcel Costs - Developed Area	\$186,915	AC	43	\$8,037,345.00	40	\$7,476,600.00	33	\$6,168,195.00						
RE.3	Structure Costs	\$337,500	EA	4	\$1,350,000.00	3	\$1,012,500.00	28	\$9,450,000.00						
ENV	Environmental Cost														
ENV.1	Emergent Marsh	\$60,000.00	AC	63	\$3,780,000.00	63	\$3,780,000.00	63	\$3,780,000.00						
CON	Construction Costs														
CON.3	Construction Costs				\$706,000,000.00		\$778,000,000.00		\$948,000,000.00						
UTL	Utility Relocation Costs														
UTL.1	Utility Relocation Costs (0.5% undeveloped/1% developed areas)			0.50%	\$3,530,000.00	0.50%	\$3,890,000.00	0.50%	\$4,740,000.00						
E&D	Engineering, Planning & Construction Management														
ED.1	Engineering, Planning & Construction Management	25%			\$176,500,000.00		\$194,500,000.00		\$237,000,000.00						
	SubTotal				\$900,142,345.00		\$989,604,100.00		\$1,210,083,195.00						
	Total				\$900,000,000.00		\$990,000,000.00		\$1,210,000,000.00						

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West Slidell Alignments

West Slidell Alignment Alternatives (100YR) - Construction Costs									
				WSL 100YR Alternative 1		WSL 100YR Alternative 2		WSL 100YR Alternative 3	
				Keller Rd. Alignment		Bayou Pacquet Alignment		Bayou Liberty Rd Alignment	
Item No.	Item Description	Unit Cost	Unit	Qty.	Total	Qty.	Total	Qty.	Total
1 Mobilization & Demobilization									
1.1	Mobilization & Demobilization (5%)				\$24,919,500		\$27,429,100		\$33,440,600
2 Levees									
2.1	Clearing & Grubbing	\$33,750.00	AC	106	\$3,585,060	103	\$3,460,500	96	\$3,224,730
2.2	Geotextile Fabric	\$13.50	SY	448,211	\$6,050,840	432,639	\$5,840,620	360,910	\$4,872,290
2.3	Levee Embankment	\$54.00	CY	1,160,807	\$62,683,580	1,120,478	\$60,505,790	934,710	\$50,474,330
2.4	Seeding, Fertilization, Mulching	\$6,100.00	AC	93	\$564,890	89	\$545,270	75	\$454,870
2.5	Limestone Surface	\$80.00	TN	14,501	\$1,160,070	13,997	\$1,119,770	11,677	\$934,120
2.6	Excavation	\$21.00	CY	120,109	\$2,522,280	115,936	\$2,434,650	96,714	\$2,031,000
3 T-Walls									
3.1	T-Walls (7ft)	\$13,500.00	LF	0	\$0	0	\$0	7,393	\$99,805,500
4 Drainage Structures									
4.1	Single 10'x8' Sluice Gate Structure	\$80,000.00	EA	20	\$1,600,000	20	\$1,600,000	2	\$160,000
5 Roadway Roller Gates									
5.1	Two-Lane Hwy Crossing Gate (50')	\$16,500,000.00	EA	4	\$66,000,000	4	\$66,000,000	7	\$115,500,000
5.2	Two-Lane Hwy Crossing Gate (30')	\$4,100,000.00	EA	1	\$4,100,000	1	\$4,100,000	0	\$0
6 Navigable Floodgates (Steel Wing Barge Gate & Receiving Wall)									
6.1	Barge Gate - Bayou Bonfouca - (40ft Clear Width)	\$67,500,000.00	LS	\$1	\$67,500,000	\$1	\$67,500,000	\$1	\$67,500,000
6.2	Barge Gate - Bayou Liberty (30ft Clear Width)	\$40,500,000.00	LS	1	\$40,500,000	1	\$40,500,000	1	\$40,500,000
6.3	Barge Gate - Bayou Pacquet (30ft Clear Width)	\$40,500,000.00	LS		\$0	1	\$40,500,000		\$0
7 Pump Stations									
7.1	Pumping Stations (Pump and Housing Only)	\$33,750.00	CFS	6,900	\$232,875,000	7,400	\$249,750,000	6,900	\$232,875,000
8 Misc.									
8.1	2-Lane Roadway Replacement	\$1,350.00	LF	3,350	\$4,522,500		\$0	7,393	\$9,981,000
8.2	Swing Bridge Replacement	\$40,500,000.00	LS		\$0		\$0	1	\$40,500,000
8.3	Pipeline Cover/Protection	\$3,375,000.00	LS	1	\$3,375,000	1	\$3,375,000		\$0
8.4	Bike Path Gate (Tammany Trace)	\$1,350,000.00	LS	1	\$1,350,000	1	\$1,350,000		\$0
SubTotal					\$523,308,720		\$576,010,700		\$702,253,440
Contingency			35%		\$183,158,000		\$201,604,000		\$245,789,000
Total					\$706,000,000		\$778,000,000		\$948,000,000
Lower Range of Costs			85%		\$600,000,000		\$661,000,000		\$806,000,000
Upper Range of Costs			115%		\$812,000,000		\$895,000,000		\$1,090,000,000

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West Slidell Alignments

										West Slidell Alignment Alternatives (50YR) - Total Capital Costs					
										WSL 50YR Alternative 1		WSL 50YR Alternative 2		WSL 50YR Alternative 3	
										Keller Rd. Alignment		Bayou Pacquet Alignment		Bayou Liberty Rd Alignment	
Item No.	Item Description	Unit Cost	Unit	Qty.	Total	Qty.	Total	Qty.	Total						
RE.1	Real Estate														
RE.1	Parcel Costs - Marsh	\$15,000	AC	45	\$675,000.00	45	\$675,000.00	45	\$675,000.00						
RE.2	Parcel Costs - Developed Area	\$186,915	AC	31	\$5,794,365.00	29	\$5,420,535.00	26	\$4,859,790.00						
RE.3	Structure Costs	\$337,500	EA	4	\$1,350,000.00	4	\$1,350,000.00	28	\$9,450,000.00						
ENV	Environmental Cost														
ENV.1	Emergent Marsh	\$60,000.00	AC	45	\$2,700,000.00	45	\$2,700,000.00	45	\$2,700,000.00						
CON	Construction Costs														
CON.3	Construction Costs				\$645,000,000.00		\$719,000,000.00		\$906,000,000.00						
UTL	Utility Relocation Costs														
UTL.1	Utility Relocation Costs (0.5% undeveloped/1% developed areas)			0.50%	\$3,225,000.00	0.50%	\$3,595,000.00	0.50%	\$4,530,000.00						
E&D	Engineering, Planning & Construction Management														
ED.1	Engineering, Planning & Construction Management (25	25%			\$161,250,000.00		\$179,750,000.00		\$226,500,000.00						
	SubTotal				\$819,994,365.00		\$912,490,535.00		\$1,154,714,790.00						
	Total				\$820,000,000.00		\$912,000,000.00		\$1,155,000,000.00						

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West Slidell Alignments

West Slidell Alignment Alternatives (50YR) - Construction Costs									
				WSL 50YR Alternative 1		WSL 50YR Alternative 2		WSL 50YR Alternative 3	
				Keller Rd. Alignment		Bayou Pacquet Alignment		Bayou Liberty Rd Alignment	
Item No.	Item Description	Unit Cost	Unit	Qty.	Total	Qty.	Total	Qty.	Total
1 Mobilization & Demobilization									
1.1	Mobilization & Demobilization (5%)				\$22,767,100		\$25,351,500		\$31,944,500
2 Levees									
2.1	Clearing & Grubbing	\$33,750.00	AC	76	\$2,573,890	74	\$2,484,460	71	\$2,410,510
2.2	Geotextile Fabric	\$13.50	SY	303,201	\$4,093,220	292,667	\$3,951,010	244,145	\$3,295,960
2.3	Levee Embankment	\$54.00	CY	440,795	\$23,802,950	425,481	\$22,975,980	354,939	\$19,166,710
2.4	Seeding, Fertilization, Mulching	\$6,100.00	AC	63	\$382,130	60	\$368,860	50	\$307,700
2.5	Limestone Surface	\$80.00	TN	14,501	\$1,160,070	13,997	\$1,119,770	11,677	\$934,120
2.6	Excavation	\$21.00	CY	71,772	\$1,507,220	69,279	\$1,454,850	57,793	\$1,213,650
3 T-Walls									
3.1	T-Walls (7ft)	\$13,500.00	LF	0	\$0	0	\$0	7,393	\$99,805,500
4 Drainage Structures									
4.1	Single 10'x8' Sluice Gate Structure	\$80,000.00	EA	20	\$1,600,000	20	\$1,600,000	10	\$800,000
5 Roadway Roller Gates									
5.1	Two-Lane Hwy Crossing Gate (50')	\$16,500,000.00	EA	4	\$66,000,000	4	\$66,000,000	7	\$115,500,000
5.2	Two-Lane Hwy Crossing Gate (30')	\$4,100,000.00	EA	1	\$4,100,000	1	\$4,100,000	1	\$4,100,000
6 Navigable Floodgates (Steel Wing Barge Gate & Receiving Wall)									
6.1	Barge Gate - Bayou Bonfouca - (40ft Clear Width)	\$67,500,000.00	LS	\$1	\$67,500,000	\$1	\$67,500,000	\$1	\$67,500,000
6.2	Barge Gate - Bayou Liberty (30ft Clear Width)	\$40,500,000.00	LS	1	\$40,500,000	1	\$40,500,000	1	\$40,500,000
6.3	Barge Gate - Bayou Pacquet (30ft Clear Width)	\$40,500,000.00	LS		\$0	1	\$40,500,000		\$0
7 Pump Stations									
7.1	Pumping Stations (Pump and Housing Only)	\$33,750.00	CFS	6,900	\$232,875,000	7,400	\$249,750,000	6,900	\$232,875,000
8 Misc.									
8.1	2-Lane Roadway Replacement	\$1,350.00	LF	3,350	\$4,522,500		\$0	7,393	\$9,981,000
8.2	Swing Bridge Replacement	\$40,500,000.00	LS		\$0		\$0	1	\$40,500,000
8.3	Pipeline Cover/Protection	\$3,375,000.00	LS	1	\$3,375,000	1	\$3,375,000		\$0
8.4	Bike Path Gate (Tammany Trace)	\$1,350,000.00	LS	1	\$1,350,000	1	\$1,350,000		\$0
SubTotal					\$478,109,080		\$532,381,430		\$670,834,650
Contingency			35%		\$167,338,000		\$186,334,000		\$234,792,000
Total					\$645,000,000		\$719,000,000		\$906,000,000
Lower Range of Costs			85%		\$548,000,000		\$611,000,000		\$770,000,000
Upper Range of Costs			115%		\$742,000,000		\$827,000,000		\$1,042,000,000

Appendix C
West Slidell Alignments

										West Slidell Alignment Alternatives (25YR) - Total Capital Cost					
										WSL 25YR Alternative 1		WSL 25YR Alternative 2		WSL 25YR Alternative 3	
										Keller Rd. Alignment		Bayou Pacquet Alignment		Bayou Liberty Rd Alignment	
Item No.	Item Description	Unit Cost	Unit	Qty.	Total	Qty.	Total	Qty.	Total						
RE.1	Real Estate														
RE.1	Parcel Costs - Marsh	\$15,000	AC	36	\$540,000.00	36	\$540,000.00	36	\$540,000.00						
RE.2	Parcel Costs - Developed Area	\$186,915	AC	24	\$4,485,960.00	22	\$4,112,130.00	22	\$4,112,130.00						
RE.3	Structure Costs	\$337,500	EA	4	\$1,350,000.00	3	\$1,012,500.00	28	\$9,450,000.00						
ENV	Environmental Cost														
ENV.1	Emergent Marsh	\$60,000.00	AC	36	\$2,160,000.00	36	\$2,160,000.00	36	\$2,160,000.00						
CON	Construction Costs														
CON.3	Construction Costs				\$623,000,000.00		\$697,000,000.00		\$887,000,000.00						
UTL	Utility Relocation Costs														
UTL.1	Utility Relocation Costs (0.5% undeveloped/1% developed areas)			0.50%	\$3,115,000.00	0.50%	\$3,485,000.00	0.50%	\$4,435,000.00						
E&D	Engineering, Planning & Construction Management														
ED.1	Engineering, Planning & Construction Management (25%)		0.25		\$155,750,000.00		\$174,250,000.00		\$221,750,000.00						
	SubTotal				\$790,400,960.00		\$882,559,630.00		\$1,129,447,130.00						
	Total				\$790,000,000.00		\$883,000,000.00		\$1,129,000,000.00						

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West Slidell Alignments

West Slidell Alignment Alternatives (25YR) - Construction Costs									
				WSL 25YR Alternative 1		WSL 25YR Alternative 2		WSL 25YR Alternative 3	
				Keller Rd. Alignment		Bayou Pacquet Alignment		Bayou Liberty Rd Alignment	
Item No.	Item Description	Unit Cost	Unit	Qty.	Total	Qty.	Total	Qty.	Total
1 Mobilization & Demobilization									
1.1	Mobilization & Demobilization (5%)				\$21,971,300		\$24,583,300		\$31,303,700
2 Levees									
2.1	Clearing & Grubbing	\$33,750.00	AC	60	\$2,022,340	58	\$1,952,080	58	\$1,966,390
2.2	Geotextile Fabric	\$13.50	SY	224,105	\$3,025,420	216,319	\$2,920,310	180,455	\$2,436,140
2.3	Levee Embankment	\$54.00	CY	188,128	\$10,158,890	181,592	\$9,805,950	151,485	\$8,180,180
2.4	Seeding, Fertilization, Mulching	\$6,100.00	AC	46	\$282,450	45	\$272,630	37	\$227,430
2.5	Limestone Surface	\$80.00	TN	14,501	\$1,160,070	13,997	\$1,119,770	11,677	\$934,120
2.6	Excavation	\$21.00	CY	45,407	\$953,550	43,829	\$920,420	36,563	\$767,820
3 T-Walls									
3.1	T-Walls (7ft)	\$13,500.00	LF	0	\$0	0	\$0	7,393	\$99,805,500
4 Drainage Structures									
4.1	Single 10'x8' Sluice Gate Structure	\$80,000.00	EA	20	\$1,600,000	20	\$1,600,000	10	\$800,000
5 Roadway Roller Gates									
5.1	Two-Lane Hwy Crossing Gate (50')	\$16,500,000.00	EA	4	\$66,000,000	4	\$66,000,000	7	\$115,500,000
5.2	Two-Lane Hwy Crossing Gate (30')	\$4,100,000.00	EA	1	\$4,100,000	1	\$4,100,000	1	\$4,100,000
6 Navigable Floodgates (Steel Wing Barge Gate & Receiving Wall)									
6.1	Barge Gate - Bayou Bonfouca - (40ft Clear Width)	\$67,500,000.00	LS	\$1	\$67,500,000	\$1	\$67,500,000	\$1	\$67,500,000
6.2	Barge Gate - Bayou Liberty (30ft Clear Width)	\$40,500,000.00	LS	1	\$40,500,000	1	\$40,500,000	1	\$40,500,000
6.3	Barge Gate - Bayou Pacquet (30ft Clear Width)	\$40,500,000.00	LS		\$0	1	\$40,500,000		\$0
7 Pump Stations									
7.1	Pumping Stations (Pump and Housing Only)	\$33,750.00	CFS	6,900	\$232,875,000	7,400	\$249,750,000	6,900	\$232,875,000
8 Misc.									
8.1	2-Lane Roadway Replacement	\$1,350.00	LF	3,350	\$4,522,500		\$0	7,393	\$9,981,000
8.2	Swing Bridge Replacement	\$40,500,000.00	LS		\$0		\$0	1	\$40,500,000
8.3	Pipeline Cover/Protection	\$3,375,000.00	LS	1	\$3,375,000	1	\$3,375,000		\$0
8.4	Bike Path Gate (Tammany Trace)	\$1,350,000.00	LS	1	\$1,350,000	1	\$1,350,000		\$0
SubTotal					\$461,396,520		\$516,249,460		\$657,377,280
Contingency			35%		\$161,489,000		\$180,687,000		\$230,082,000
Total					\$623,000,000		\$697,000,000		\$887,000,000
Lower Range of Costs			85%		\$530,000,000		\$592,000,000		\$754,000,000
Upper Range of Costs			115%		\$716,000,000		\$802,000,000		\$1,020,000,000

6. Additional Construction Cost Estimates – Eden Isle Alignments

Appendix C Eden Isle Alignments

Item Description	Eden Isle Alignment Alternatives (100YR)			
	West Alt 1	West Alt 2A	West Alt 2B	West Alt 3
	West of Railroad to Lake	West of Railroad to Carr Dr.	East of Railroad to Carr Dr.	Hwy 11 T-wall
Real Estate	\$1,670,000.00	\$2,100,000.00	\$1,750,000.00	\$3,360,000.00
Environmental Cost	\$2,640,000.00	\$2,100,000.00	\$2,040,000.00	\$0.00
Construction Costs	\$262,220,000.00	\$290,980,000.00	\$272,310,000.00	\$332,550,000.00
Utility Relocation Costs	\$1,310,000.00	\$1,450,000.00	\$1,360,000.00	\$1,660,000.00
Engineering, Planning & Construction Management	\$65,560,000.00	\$72,740,000.00	\$68,080,000.00	\$83,140,000.00
Total	\$333,400,000.00	\$369,370,000.00	\$345,540,000.00	\$420,710,000.00

Item Description	Eden Isle Alignment Alternatives (100YR)		
	South Alt 1	South Alt 2	South Alt 3
	Lake Surge Barrier	Floodwall Along Lakeview Dr.	Levee North of Lakeview Dr.
Real Estate	\$ 650,000.00	\$ 2,460,000.00	\$ 18,840,000.00
Environmental Cost	\$ 2,580,000.00	\$ 120,000.00	\$ 120,000.00
Construction Costs	\$ 2,079,150,000.00	\$ 329,770,000.00	\$ 184,660,000.00
Utility Relocation Costs	\$ 20,790,000.00	\$ 3,300,000.00	\$ 1,850,000.00
Engineering, Planning & Construction Management	\$ 519,790,000.00	\$ 82,440,000.00	\$ 46,160,000.00
Total	\$2,622,960,000.00	\$418,090,000.00	\$251,630,000.00

Item Description	Eden Isle Alignment Alternatives (100YR)		
	East Alt 1	East Alt 2	East Alt 3
	East of I-10	I-10 Median Wall	West of I-10
Real Estate	\$ 2,270,000.00	\$ 2,240,000.00	\$ 1,350,000.00
Environmental Cost	\$ 360,000.00	\$ -	\$ 900,000.00
Construction Costs	\$ 158,360,000.00	\$ 222,900,000.00	\$ 115,200,000.00
Utility Relocation Costs	\$ 1,580,000.00	\$ 2,230,000.00	\$ 1,150,000.00
Engineering, Planning & Construction Management	\$ 39,590,000.00	\$ 55,730,000.00	\$ 28,800,000.00
Total	\$202,160,000.00	\$283,100,000.00	\$147,400,000.00

Appendix C
Eden Isle Alignments

Eden Isle Alignment Alternatives (100YR) - Western Corridor - Total Capital Costs											
West Alternative 1											
West Alternative 2A											
West Alternative 2B											
West Alternative 3											
West of Railroad to Lake											
West of Railroad to Carr Dr											
East of Railroad to Carr Dr											
Hwy 11 T-wall											
Item No.	Item Description	Unit Cost	Unit	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total
RE.1	Real Estate										
RE.1	Parcel Costs - Marsh	\$15,000	AC	44	\$660,000	35	\$525,000	34	\$510,000	0	\$0
RE.2	Parcel Costs - Developed Area	\$186,915	AC	0	\$0	3	\$560,745	3	\$560,745	18	\$3,364,470
RE.3	Structure Costs	\$250,000	EA	3	\$1,012,500	3	\$1,012,500	2	\$675,000	0	\$0
ENV	Environmental Cost										
ENV.1	Emergent Marsh	\$60,000	AC	44	\$2,640,000	35	\$2,100,000	34	\$2,040,000	0	\$0
CON	Construction Costs										
CON.3	Construction Costs				\$262,221,000		\$290,976,000		\$272,311,000		\$332,550,000
UTL	Utility Relocation Costs										
UTL.1	Utility Relocation Costs (0.5% undeveloped/1% developed areas)			0.50%	\$1,311,105	0.50%	\$1,454,880	0.50%	\$1,361,555	0.50%	\$1,662,750
E&D	Engineering, Planning & Construction Management										
ED.1	Engineering, Planning & Construction Management	25%			\$65,555,250		\$72,744,000		\$68,077,750		\$83,137,500
	SubTotal				\$333,399,855		\$369,373,125		\$345,536,050		\$420,714,720
	Total				\$333,000,000		\$369,000,000		\$346,000,000		\$421,000,000

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Eden Isle Alignment Alternatives (100YR) - Western Corridor - Construction Costs											
Item No.	Item Description	Unit Cost	Unit	West Alternative 1		West Alternative 2A		West Alternative 2B		West Alternative 3	
				Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total
				West of Railroad to Lake		West of Railroad to Carr Dr		East of Railroad to Carr Dr		Hwy 11 T-wall	
1 Mobilization & Demobilization											
1.1	Mobilization & Demobilization (5%)				\$9,249,400		\$10,263,700		\$9,605,300		\$11,730,200
2 Levees											
2.1	Clearing & Grubbing	\$33,750	AC	44	\$1,492,874	37	\$1,262,159	37	\$1,248,499	0	\$0
2.2	Geotextile Fabric	\$13.50	SY	177,679	\$2,398,673	138,825	\$1,874,140	138,527	\$1,870,114	0	\$0
2.3	Levee Embankment	\$54	CY	765,211	\$41,321,394	597,877	\$32,285,383	596,593	\$32,216,028	0	\$0
2.4	Seeding, Fertilization, Mulching	\$6,100	AC	44	\$269,823	37	\$228,123	37	\$225,655	0	\$0
2.5	Limestone Surface	\$80	TN	4,806	\$384,487	3,755	\$300,409	3,747	\$299,763	0	\$0
2.6	Excavation	\$21	CY	108,744	\$2,283,618	84,964	\$1,784,245	84,782	\$1,780,412	0	\$0
3 T-Walls											
3.1	T-Walls (7ft)	\$13,500	LF	0	\$0	2,094	\$28,274,400	1,850	\$24,980,400	13,533	\$182,694,150
4 Drainage Structures											
4.1	Single 10'x8' Sluice Gate Structure	\$80,000	EA	15	\$1,200,000.00	10	\$800,000	10	\$800,000	8	\$640,000
4.2	4 Box Culvert Sluice Gate Drainage Structure	\$13,500,000	EA	2	\$27,000,000.00	2	\$27,000,000	2	\$27,000,000		\$0
					\$0		\$0		\$0		\$0
5 Roadway Roller Gates											
5.1	Four-Lane Hwy Crossing Gate (2 - 50' gates)	\$16,500,000	EA	1	\$16,500,000	1	\$16,500,000	1	\$16,500,000	2	\$33,000,000
5.2	Two-Lane Hwy Crossing Gate (30')	\$4,100,000	EA		\$0		\$0		\$0		\$0
6 Navigable Floodgates (Steel Wing Barge Gate & Receiving Wall)											
6.1	Eden Isles Grand Lagoon Marina Gate (40-60' Clear Width)	\$67,500,000	LS		\$0		\$0		\$0		\$0
6.2	Pontchartrain Canal Gate (30-40' Clear Width)	\$40,500,000	LS	1	\$40,500,000	1	\$40,500,000	1	\$40,500,000		\$0
7 Pump Stations											
7.1	Pumping Stations (Pump and Housing Only)	\$33,750	CFS	1,250	\$42,188,000	1,250	\$42,188,000	1,250	\$42,188,000		\$0
7.2	Existing Pump Station Improvements	\$6,100,000	EA		\$0		\$0		\$0		\$0
8 Misc.											
8.1	Railroad Crossing Gate	\$9,450,000	EA	1	\$9,450,000	1	\$9,450,000		\$0		\$0
8.2	2-Lane Roadway Milling & Overlay	\$1,350	LF		\$0	2,094	\$2,827,000	1,850	\$2,498,000	13,533	\$18,269,000
8.3	Interstate New Construction (w/ embankment)	\$12,850,000	LS		\$0		\$0		\$0		\$0
8.4	Shoreline Protection (Riprap)	\$125	TN		\$0		\$0		\$0		\$0
8.5	Concrete Roadway (Demo \$2.45/sf, Drainage \$4/sf, Replacement \$11.45/sf)	\$25.00	SF		\$0		\$0		\$0		\$0
8.6	Surge Barrier	\$135,000	LF		\$0		\$0		\$0		\$0
	SubTotal				\$194,238,268		\$215,537,558		\$201,712,170		\$246,333,350
	Contingency		35%		\$67,983,000		\$75,438,000		\$70,599,000		\$86,217,000
	Total				\$262,221,000		\$290,976,000		\$272,311,000		\$332,550,000
	Lower Range of Costs		85%		\$223,000,000		\$247,000,000		\$231,000,000		\$283,000,000
	Upper Range of Costs		115%		\$302,000,000		\$335,000,000		\$313,000,000		\$382,000,000

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Eden Isle Alignment Alternatives (100YR) - Southern Corridor - Total Capital Costs									
South Alternative 1					South Alternative 2			South Alternative 3	
Lake Surge Barrier					Floodwall Along Lakeview Dr.			Levee North of Lakeview Dr.	
Item No.	Item Description	Unit Cost	Unit	Qty.	Total	Qty.	Total	Qty.	Total
RE.1	Real Estate								
RE.1	Parcel Costs - Marsh	\$15,000	AC	43	\$645,000	2	\$30,000	2	\$30,000
RE.2	Parcel Costs - Developed Area	\$186,915	AC	0	\$0	13	\$2,429,895	23	\$4,299,045
RE.3	Structure Costs	\$250,000	EA	0	\$0	0	\$0	43	\$14,512,500
ENV	Environmental Cost								
ENV.1	Emergent Marsh	\$60,000	AC	43	\$2,580,000	2	\$120,000	2	\$120,000
CON	Construction Costs								
CON.3	Construction Costs				\$2,079,153,000		\$329,766,000		\$184,657,000
UTL	Utility Relocation Costs								
UTL.1	Utility Relocation Costs (0.5% undeveloped/1% developed areas)			1.00%	\$20,791,530	1.00%	\$3,297,660	1.00%	\$1,846,570
E&D	Engineering, Planning & Construction Management								
ED.1	Engineering, Planning & Construction Management (25%)	25%			\$519,788,250		\$82,441,500		\$46,164,250
	SubTotal				\$2,622,957,780		\$418,085,055		\$251,629,365
	Total				\$2,623,000,000		\$418,000,000		\$252,000,000

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Eden Isle Alignments

					Eden Isle Alignment Alternatives (100YR) - Southern Corridor - Construction Costs					
					South Alternative 1		South Alternative 2		South Alternative 3	
					Lake Surge Barrier		Floodwall along Lakeview Dr.		Levee North of Lakeview Dr.	
Item No.	Item Description	Unit Cost	Unit	Qty.	Total	Qty.	Total	Qty.	Total	
1 Mobilization & Demobilization										
1.1	Mobilization & Demobilization (5%)				\$73,338,700		\$11,632,000		\$6,513,500	
2 Levees										
2.1	Clearing & Grubbing	\$33,750	AC	0	\$0	15	\$503,840	25	\$850,650	
2.2	Geotextile Fabric	\$13.50	SY	0	\$0	12,032	\$162,426	95,923	\$1,294,965	
2.3	Levee Embankment	\$54	CY	0	\$0	39,015	\$2,106,830	311,056	\$16,797,016	
2.4	Seeding, Fertilization, Mulching	\$6,100	AC	0	\$0	15	\$91,064	25	\$153,747	
2.5	Limestone Surface	\$80	TN	0	\$0	432	\$34,525	3,441	\$275,258	
2.6	Excavation	\$21	CY	0	\$0	7,149	\$150,133	56,998	\$1,196,957	
3 T-Walls										
3.1	T-Walls (7ft)	\$13,500	LF	0	\$0	8,688	\$117,285,291	0	\$0	
4 Drainage Structures										
4.1	Single 10'x8' Sluice Gate Structure	\$80,000	EA		\$0	20	\$1,600,000	20	\$1,600,000	
					\$0		\$0		\$0	
5 Roadway Roller Gates										
5.1	Four-Lane Hwy Crossing Gate (2 - 50' gates)	\$16,500,000	EA	1	\$16,500,000	1	\$16,500,000		\$0	
5.2	Two-Lane Hwy Crossing Gate (30')	\$4,100,000	EA		\$0		\$0	1	\$4,100,000	
6 Navigable Floodgates (Steel Wing Barge Gate & Receiving Wall)										
6.1	Eden Isles Grand Lagoon Marina Gate (40-60' Clear Width)	\$67,500,000	EA	1	\$67,500,000	1	\$67,500,000	1	\$67,500,000	
6.2	Pontchartrain Canal Gate (30-40' Clear Width)	\$40,500,000	EA		\$0		\$0		\$0	
7 Pump Stations										
7.1	Pumping Stations (Pump and Housing Only)	\$33,750	CFS	63	\$2,126,000	63	\$2,126,000	150	\$5,063,000	
7.2	Existing Pump Station Improvements	\$6,100,000	EA		\$0		\$0		\$0	
8 Misc.										
8.1	Railroad Crossing Gate	\$9,450,000	EA		\$0		\$0		\$0	
8.2	2-Lane Roadway Milling & Overlay	\$1,350	LF		\$0	8,688	\$11,729,000		\$0	
8.3	Interstate New Construction (w/ embankment)	\$12,850,000	LS		\$0	1	\$12,850,000		\$0	
8.4	Shoreline Protection (Riprap)	\$125	TN		\$0		\$0	5,500	\$687,500	
8.5	Concrete Roadway (Demo \$2.45/sf, Drainage \$4/sf, Replacement \$11.45/sf)	\$25.00	SF		\$0		\$0	150,000	\$3,750,000	
8.6	Surge Barrier	\$135,000	LF	10,227	\$1,380,648,335		\$0		\$0	
8.7	Eden Isles Grand Lagoon Marina Receiving Walls - Additional Costs	\$27,000,000	LS		\$0		\$0	1	\$27,000,000	
	SubTotal				\$1,540,113,035		\$244,271,109		\$136,782,594	
	Contingency		35%		\$539,040,000		\$85,495,000		\$47,874,000	
	Total				\$2,079,153,000		\$329,766,000		\$184,657,000	
	Lower Range of Costs		85%		\$1,767,000,000		\$280,000,000		\$157,000,000	
	Upper Range of Costs		115%		\$2,391,000,000		\$379,000,000		\$212,000,000	

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Eden Isle Alignment Alternatives (100YR) - Eastern Corridor - Total Capital Costs										
					East Alternative 1	East Alternative 2		East Alternative 3		
					East of I-10	I-10 Median Wall		West of I-10		
Item No.	Item Description	Unit Cost	Unit	Qty.	Total	Qty.	Total	Qty.	Total	
RE.1	Real Estate									
RE.1	Parcel Costs - Marsh	\$15,000	AC	6	\$90,000	0	\$0	15	\$230,000	
RE.2	Parcel Costs - Developed Area	\$186,915	AC	8	\$1,500,000	12	\$2,240,000	6	\$1,120,000	
RE.3	Structure Costs	\$337,500	EA	2	\$675,000	0	\$0	0	\$0	
ENV	Environmental Cost									
ENV.1	Emergent Marsh	\$60,000	AC	6	\$360,000	0	\$0	15	\$900,000	
CON	Construction Costs									
CON.3	Construction Costs				\$158,360,000		\$222,900,000		\$115,200,000	
UTL	Utility Relocation Costs									
UTL.1	Utility Relocation Costs (0.5% undeveloped/1% developed areas)			1.00%	\$1,580,000	1.00%	\$2,230,000	1.00%	\$1,150,000	
E&D	Engineering, Planning & Construction Management									
ED.1	Engineering, Planning & Construction Management (25	25%			\$39,590,000		\$55,725,000		\$28,800,000	
	SubTotal				\$202,155,000		\$283,095,000		\$147,400,000	
	Total				\$202,000,000		\$283,000,000		\$147,000,000	

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Eden Isle Alignments

Item Description	Eden Isle Alignment Alternatives (50YR)	
	West Alternative 1	West Alternative 2
	West of Railroad to Lake	Hwy 11 T-wall
Real Estate	\$1,500,000.00	\$3,180,000.00
Environmental Cost	\$1,950,000.00	\$0.00
Construction Costs	\$201,050,000.00	\$320,780,000.00
Utility Relocation Costs	\$2,010,000.00	\$3,210,000.00
Engineering, Planning & Construction Management	\$50,260,000.00	\$80,200,000.00
Total	\$256,770,000.00	\$407,370,000.00

Item Description	Eden Isle Alignment Alternatives (50YR)	
	South Alternative 2	South Alternative 3
	Lakeview Dr. T-wall	Levee North of Lakeview Dr.
Real Estate	\$2,400,000.00	\$22,860,000.00
Environmental Cost	\$70,000.00	\$70,000.00
Construction Costs	\$356,430,000.00	\$179,730,000.00
Utility Relocation Costs	\$3,560,000.00	\$1,800,000.00
Engineering, Planning & Construction Management	\$89,110,000.00	\$44,930,000.00
Total	\$451,570,000.00	\$249,390,000.00

Item Description	Eden Isle Alignment Alternatives (50YR)	
	East Alternative 1	
	East Drainage	
Real Estate	\$0.00	
Environmental Cost	\$0.00	
Construction Costs	\$2,930,000.00	
Utility Relocation Costs	\$30,000.00	
Engineering, Planning & Construction Management	\$730,000.00	
Total	\$3,690,000.00	

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Eden Isle Alignment Alternatives (50YR) - Total Capital Costs													
		West Alternative 1				West Alternative 2		East Alternative 1		South Alternative 1		South Alternative 2	
		West of Railroad to Lake				Hwy 11 T-wall		East Drainage		Lakeview Dr. T-wall		Levee North of Lakeview Dr.	
Item No.	Item Description	Unit Cost	Unit	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total
RE.1	Real Estate												
RE.1	Parcel Costs - Marsh	\$15,000	AC	32	\$487,469	0	\$0	0	\$0	1	\$15,000	1	\$17,161
RE.2	Parcel Costs - Developed Area	\$186,915	AC	0	\$0	17	\$3,177,555	0	\$0	13	\$2,379,560	16	\$2,926,878
RE.3	Structure Costs	\$337,500	EA	3	\$1,012,500	0	\$0	0	\$0	0	\$0	59	\$19,912,500
ENV	Environmental Cost												
ENV.1	Emergent Marsh	\$60,000	AC	32	\$1,949,876	0	\$0	0	\$0	1	\$60,000	1	\$68,645
CON	Construction Costs												
CON.3	Construction Costs				\$201,050,000		\$320,783,000		\$2,934,000		\$356,431,000		\$179,726,000
UTL	Utility Relocation Costs												
UTL.1	Utility Relocation Costs (0.5% undeveloped/1% developed areas)			1.00%	\$2,010,500	1.00%	\$3,207,830	1.00%	\$29,340	1.00%	\$3,564,310	1.00%	\$1,797,260
E&D	Engineering, Planning & Construction Management												
ED.1	Engineering, Planning & Construction Managemen	25%			\$50,262,500		\$80,195,750		\$733,500		\$89,107,750		\$44,931,500
	SubTotal				\$256,772,845		\$407,364,135		\$3,696,840		\$451,557,620		\$249,379,945
	Total				\$257,000,000		\$407,000,000		\$4,000,000		\$452,000,000		\$249,000,000

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				Eden Isle Alignment Alternatives (50YR) - Construction Costs									
				West Alternative 1		West Alternative 2		East Alternative 1		South Alternative 1		South Alternative 2	
				West of Railroad to Lake		Hwy 11 T-wall		East Drainage		Lakeview Dr. T-wall		Levee North of Lakeview Dr.	
Item No.	Item Description	Unit Cost	Unit	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total
1 Mobilization & Demobilization													
1.1	Mobilization & Demobilization (5%)				\$7,091,725		\$11,315,104		\$103,500		\$12,572,536		\$6,339,537
2 Levees													
2.1	Clearing & Grubbing	\$33,750	AC	32	\$1,096,805	0	\$0	0	0	1	\$48,332	16	\$528,487
2.2	Geotextile Fabric	\$14	SY	120,880	\$1,631,884	0	\$0	0	0	6,931	\$93,572	55,260	\$746,013
2.3	Levee Embankment	\$54	CY	353,023	\$19,063,220	0	\$0	0	0	9,114	\$492,133	72,659	\$3,923,605
2.4	Seeding, Fertilization, Mulching	\$6,100	AC	32	\$198,237	0	\$0	0	0	1	\$8,736	16	\$95,519
2.5	Limestone Surface	\$81	TN	4,806	\$389,293	0	\$0	0	0	432	\$34,957	3,441	\$278,699
2.6	Excavation	\$20	CY	70,878	\$1,417,552	0	\$0	0	0	937	\$18,745	7,472	\$149,446
3 T-Walls													
3.1	T-Walls (7ft)	\$13,500	LF	0	\$0	13,533	\$182,692,800		\$0	8,688	\$117,285,291		\$0
4 Drainage Structures													
4.1	Single 10'x8' Sluice Gate Structure	\$80,000	EA	15	\$1,200,000	8	\$640,000		\$0	20	\$1,600,000	20	\$1,600,000
4.2	Single 10'x8' Drainage Structure - I-10	\$2,070,000						1	\$2,070,000				
5 Roadway Gates													
5.1	Four-Lane Hwy Crossing Gate (2 - 50' gate)	\$16,500,000	EA	1	\$16,500,000	1	\$16,500,000		\$0	1	\$16,500,000		\$0
5.2	Two-Lane Hwy Crossing Gate (30')	\$4,100,000	EA	2	\$8,200,000	2	\$8,200,000		\$0	0	\$0	1	\$4,100,000
					\$0		\$0		\$0		\$0		\$0
6 Navigable Floodgates (Steel Wing Barge Gate & Receiving Wall)													
6.1	Grand Lagoon Gate (40-60' Clear Width)	\$67,500,000	LS		\$0	0	\$0		\$0	1	\$67,500,000	1	\$67,500,000
6.2	Pontchartrain Canal Gate (30-40' Clear Width)	\$40,500,000	LS	1	\$40,500,000	0	\$0		\$0		\$0		\$0
7 Pump Stations													
7.1	Pumping Stations (Pump and Housing Only)	\$33,750	CFS	1,250	\$42,187,500		\$0		\$0	1,400	\$47,250,000	1,400	\$47,250,000
7.2	Existing Pump Station Improvements	\$6,100,000	EA		\$0		\$0		\$0		\$0		\$0
8 Misc.													
8.1	Railroad Crossing Gate	\$9,450,000	EA	1	\$9,450,000		\$0		\$0		\$0		\$0
8.2	2-Lane Roadway Milling & Overlay	\$1,350	LF		\$0	13,533	\$18,269,280		\$0		\$0		\$0
8.3	Interstate New Construction (w/ embankment)	\$12,850,000	LS		\$0		\$0		\$0		\$0		\$0
8.4	Shoreline Protection (Riprap)	\$125	TN		\$0		\$0		\$0	4,952	\$618,963	4,952	\$618,963
8.5	Concrete Roadway	\$25	SF		\$0		\$0		\$0		\$0		\$0
8.6	Surge Barrier	\$135,000	LF		\$0		\$0		\$0		\$0		\$0
	SubTotal				\$148,926,216		\$237,617,184		\$2,173,500		\$264,023,265		\$133,130,268
	Contingency		35%		\$52,124,176		\$83,166,014		\$760,725		\$92,408,143		\$46,595,594
	Total				\$201,050,000		\$320,783,000		\$2,934,000		\$356,431,000		\$179,726,000
	Lower Range of Costs		85%		\$171,000,000		\$273,000,000		\$2,000,000		\$303,000,000		\$153,000,000
	Upper Range of Costs		115%		\$231,000,000		\$369,000,000		\$3,000,000		\$410,000,000		\$207,000,000

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Eden Isle Alignments

Item Description	Eden Isle Alignment Alternatives (Interim)		
	West Alternative Highway 11 Raising	East Alternative East Drainage	South Alternative Lakeview Dr Raising
Real Estate	\$0	\$0	\$2,650,000
Environmental Cost	\$0	\$0	\$120,000
Construction Costs	\$35,400,000	\$2,930,000	\$174,380,000
Utility Relocation Costs	\$350,000	\$30,000	\$1,740,000
Engineering, Planning & Construction Management	\$8,850,000	\$730,000	\$43,590,000
Total	\$44,600,000	\$3,690,000	\$222,480,000

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				Eden Isle Alignment Alternatives (Interim) - Total Capital Costs					
				West Alternative Highway 11 Raising		East Alternative East Drainage		South Alternative Lakeview Dr Raising	
Item No.	Item Description	Unit Cost	Unit	Qty.	Total	Qty.	Total	Qty.	Total
RE.1	Real Estate								
RE.1	Parcel Costs - Marsh	\$15,000	AC	0	\$0	0	\$0	2	\$30,000
RE.2	Parcel Costs - Developed Area	\$186,915	AC	0	\$0	0	\$0	14	\$2,616,810
RE.3	Structure Costs	\$337,500	EA	0	\$0	0	\$0	0	\$0
ENV	Environmental Cost								
ENV.1	Emergent Marsh	\$60,000	AC	0	\$0	0	\$0	2	\$120,000
CON	Construction Costs								
CON.3	Construction Costs				\$35,397,000		\$2,934,000		\$174,379,000
UTL	Utility Relocation Costs								
UTL.1	Utility Relocation Costs (0.5% undeveloped/1% developed areas)			1.00%	\$353,970	1.00%	\$29,340	1.00%	\$1,743,790
E&D	Engineering, Planning & Construction Management								
ED.1	Engineering, Planning & Construction Management	25%			\$8,849,250		\$733,500		\$43,594,750
	SubTotal				\$44,600,220		\$3,696,840		\$222,484,350
	Total				\$45,000,000		\$4,000,000		\$222,000,000

Appendix C
Eden Isle Alignments

Eden Isle Alignment Alternatives (Interim) - Construction Costs									
				West Alternative		East Alternative		South Alternative	
				Highway 11 Raising		East Drainage		Lakeview Dr Raising	
Item No.	Item Description	Unit Cost	Unit	Qty.	Total	Qty.	Total	Qty.	Total
1 Mobilization & Demobilization									
1.1	Mobilization & Demobilization (5%)				\$1,248,571		\$103,500		\$6,150,952
2 Levees									
2.1	Clearing & Grubbing	\$33,750	AC	0	\$0	0	\$0		\$0
2.2	Geotextile Fabric	\$13.50	SY	0	\$0	0	\$0		\$0
2.3	Levee Embankment	\$54	CY	0	\$0	0	\$0		\$0
2.4	Seeding, Fertilization, Mulching	\$6,100	AC	0	\$0	0	\$0		\$0
2.5	Limestone Surface	\$81	TN	0	\$0	0	\$0		\$0
2.6	Excavation	\$20	CY	0	\$0	0	\$0		\$0
3 T-Walls									
3.1	T-Wall	\$13,500	LF	0	\$0		\$0		\$0
4 Drainage Structures									
4.1	Drainage Structures	\$80,000	EA	0	\$0		\$0		\$0
5 Roadway Gates									
5.1	Two-Lane Hwy Crossing Gate	\$1,600,000	EA		\$0		\$0		\$0
6 Navigable Floodgates									
6.1	Eden Isles Grand Lagoon Marina Gate (40'	\$67,500,000	LS	0	\$0		\$0	1	\$67,500,000
6.2	Pontchartrain Canal Gate (30-40' Clear W	\$40,500,000	LS	0	\$0		\$0		\$0
7 Navigable Floodgates (Steel Wing Barge Gate)									
7.1	Pumping Stations	\$33,750	CFS	0	\$0		\$0	1,400	\$47,250,000
7.2	Existing Pump Station Improvements	\$6,100,000	EA		\$0		\$0		\$0
8 Misc. (NOT USED FOR Interim)									
8.1	Railroad Crossing Gate	\$9,450,000	EA		\$0		\$0		\$0
8.2	2-Lane Roadway Milling & Overlay	\$1,350	LF		\$0		\$0		\$0
8.3	Interstate New Construction (w/ embankr	\$12,850,000	LS		\$0		\$0		\$0
8.4	Shoreline Protection (Riprap)	\$125	TN		\$0		\$0	4,952	\$619,031
8.5	Concrete Roadway (Demo \$2.45/sf, Drain	\$25.00	SF		\$0		\$0		\$0
8.6	Surge Barrier	\$135,000	LF		\$0		\$0		\$0
9 25-YR Roadway Estimates									
9.1	I-10 Drainage Structure	\$2,070,000	LS		\$0	1	\$2,070,000		\$0
9.1	Hwy 11 Raising (2016 EA with Escalation)	\$24,971,419	LS	1	\$24,971,419		\$0		\$0
9.2	Lakeview Dr. Raising	\$7,650,000	LS		\$0		\$0	1	\$7,650,000
SubTotal					\$26,219,989		\$2,173,500		\$129,169,983
Contingency						35%	\$9,176,996	\$760,725	\$45,209,494
Total					\$35,397,000		\$2,934,000		\$174,379,000
Lower Range of Costs						85%	\$30,000,000	\$2,000,000	\$148,000,000
Upper Range of Costs						115%	\$41,000,000	\$3,000,000	\$201,000,000

7. Additional Construction Cost Estimates – Mandeville Seawall Alignments

Appendix C Mandeville Seawall Alignments

	Mandeville Seawall Alignment Alternatives	
	100YR	50YR
Structure Components		
Structure Type	· Steel Sheetpile Wall with Concrete Cap	· Steel Sheetpile Wall with Concrete Cap
Structure Tie-Ins	· Eastern Tie-In at Jackson St. · Western Tie-in at Galvez Canal	· Eastern Tie-In at Jackson St. · Western Tie-in at Galvez Canal
Footprint	· Seawall (T-Wall) Length - 12,900LF (Approx.) · Seawall Length - 60LF (Approx.)	· Steel Sheetpile Wall Length - 12,900LF (Approx.) · Seawall Length - 40LF (Approx.)
Other Structural Components	· Navigable Floodgate (0) · Pump Station (2) · Roadway Roller Gate (30FT) - (1) · Drainage Structures (3)	· Navigable Floodgate (0) · Pump Station (2) · Roadway Roller Gate (30FT) - (1) · Drainage Structures (3)
Flood Risk Reduction		
Areas Not Receiving Protection		
Lands, Easements, Right of Way, Relocations		
Parcels/Properties Affected	· 0 Impacted or Acquired	· 0 Impacted or Acquired
Roadways Impacted	· Lakeshore Dr.	· Lakeshore Dr.
Environmental Impacts		
Wetlands Affected	· Approximately 0 acres	· Approximately 0 acres
Construction & Cost Assumptions		
Total Estimated Costs	\$375,000,000	\$154,000,000
Project Risks & Opportunities		

Appendix C
Mandeville Seawall Alignments

Item Description	Mandeville Seawall Alignment Alternatives	
	100YR	Interim
	Qty.	Qty.
Real Estate	\$ -	\$ -
Environmental Cost	\$ -	\$ -
Construction Costs	\$ 298,000,000.00	\$ 122,000,000.00
Utility Relocation Costs	\$ 2,980,000.00	\$ 1,220,000.00
Engineering, Planning & Construction Management	\$ 74,500,000.00	\$ 30,500,000.00
Total	\$375,480,000.00	\$153,720,000.00

Appendix C
Mandeville Seawall Alignments

					Mandeville Seawall Alignment Alternatives		
					100YR	Interim	
Item No.	Item Description	Unit Cost	Unit	Qty.	Total	Qty.	Total
REA	Real Estate						
RE.1	Parcel Costs - Marsh	\$15,000.00	AC	0	\$0.00	0	\$0.00
RE.2	Parcel Costs - Developed Area	\$186,915.00	AC	0	\$0.00	0	\$0.00
RE.3	Structure Costs	\$337,500.00	EA		\$0.00		\$0.00
ENV	Environmental Cost						
ENV.1	Emergent Marsh	\$60,000.00	AC	0	\$0.00	0	\$0.00
CON	Construction Costs						
CON.3	Construction Costs				\$298,000,000.00		\$122,000,000.00
UTL	Utility Relocation Costs						
UTL.1	Utility Relocation Costs (0.5% undeveloped/1% developed areas)			1.00%	\$2,980,000.00	1.00%	\$1,220,000.00
E&D	Engineering, Planning & Construction Management						
ED.1	Engineering, Planning & Construction Management (25	25%			\$74,500,000.00		\$30,500,000.00
	SubTotal				\$375,480,000.00		\$153,720,000.00
	Total				\$375,000,000.00		\$154,000,000.00

Appendix C
Mandeville Seawall Alignments

Item No.	Item Description	Unit Cost	Unit	Mandeville Seawall Alternatives			
				100YR		Interim	
				Qty.	Total	Qty.	Total
1 Mobilization & Demobilization							
1.1	Mobilization & Demobilization (5%)				\$10,527,700.00		\$4,300,800.00
2 Levees							
2.1	Clearing & Grubbing	\$33,750.00	AC	0	\$0.00	0	\$0.00
2.2	Geotextile Fabric	\$13.50	SY	0	\$0.00	0	\$0.00
2.3	Levee Embankment	\$54.00	CY	0	\$0.00	0	\$0.00
2.4	Seeding, Fertilization, Mulching	\$6,100.00	AC	0	\$0.00	0	\$0.00
2.5	Limestone Surface	\$80.00	Tons	0	\$0.00	0	\$0.00
2.6	Excavation	\$21.00	CY	0	\$0.00	0	\$0.00
3 T-Walls							
3.1	T-Walls (7ft)	\$13,500.00	lf	12,900	\$174,150,000.00	0	\$0.00
4 Drainage Structures							
4.1	Single 10'x8' Sluice Gate Structure	\$80,000.00	EA	3	\$240,000.00	3	\$240,000.00
5 Roadway Roller Gates							
5.1	Two-Lane Hwy Crossing Gate (50')	\$16,500,000.00	EA	0	\$0.00		\$0.00
5.2	Two-Lane Hwy Crossing Gate (30')	\$4,100,000.00	EA	1	\$4,100,000.00	1	\$4,100,000.00
6 Navigable Floodgates (Steel Wing Barge Gate & Receiving Wall)							
6.1	Barge Gate -(40ft Clear Width)	\$67,500,000.00	LS		\$0.00		\$0.00
			LS		\$0.00		\$0.00
			LS		\$0.00		\$0.00
7 Pump Stations							
7.1	Pumping Stations (Pump and Housing Only)	\$33,750.00	CFS	950	\$32,063,000.00	700	\$23,625,000.00
8 Misc.							
8.1	2-Lane Roadway Replacement	\$1,350.00	LF		\$0.00		\$0.00
8.2	Steel Sheetpile Wall - 40ft	\$4,500.00	LS		\$0.00	12,900	\$58,050,000.00
8.3	Pipeline Cover/Protection	\$3,375,000.00	LS		\$0.00		\$0.00
8.4	Bike Path Gate (Tammany Trace)	\$1,350,000.00	LS		\$0.00		\$0.00
	SubTotal				\$221,080,700.00		\$90,315,800.00
	Contingency		35%		\$77,378,000.00		\$31,611,000.00
	Total				\$298,000,000.00		\$122,000,000.00
	Lower Range of Costs		85%		\$253,000,000.00		\$104,000,000.00
	Upper Range of Costs		115%		\$343,000,000.00		\$140,000,000.00

8. Additional Construction Cost Estimates –
Slidell Levee - East Alignments

Appendix C
Slidell Levee - East Alignments

					Kingpoint to Hwy 190 Capital Cost Summary			
					Alignment A		Alignment B	
Item No.	Item Description	Unit Cost	Unit	Qty.	Total	Qty.	Total	
RE.1	Real Estate							
RE.1	Parcel Costs - Marsh	\$15,000.00	AC		\$0.00	21.4	\$320,850.00	
RE.2	Parcel Costs - Developed	\$186,915.00	AC	16.3	\$3,041,107.05		\$0.00	
RE.3	Structure Costs	\$337,500.00	EA	1	\$337,500.00	0	\$0.00	
ENV	Environmental Cost							
ENV.1	Emergent Marsh	\$60,000.00	AC	0.0	\$0.00	0.0	\$0.00	
CON	Construction Costs							
CON.3	Construction Costs				\$32,000,000.00		\$26,000,000.00	
UTL	Utility Relocation Costs							
UTL.1	Utility Relocation Costs (0.5% undeveloped/1% developed areas)			1.00%	\$320,000.00	1%	\$260,000.00	
E&D	Engineering, Planning & Construction Management							
ED.1	Engineering, Planning & Construction Management	25%			\$8,000,000.00		\$6,500,000.00	
	SubTotal				\$43,698,607.05		\$33,080,850.00	
	Total				\$44,000,000.00		\$33,000,000.00	

Appendix C
Slidell Levee - East Alignments

					Kingspoint to Hwy 190 Construction Cost Summary			
					Alternative A		Alternative B	
Item No.	Item Description	Unit Cost	Unit	Qty.	Total	Qty.	Total	
1 Mobilization & Demobilization								
1.1	Mobilization & Demobilization (5%)				\$1,132,500		\$934,100	
2 Levees								
2.1	Clearing & Grubbing	\$33,750.00	AC	16	\$540,000	21	\$708,750	
2.2	Geotextile Fabric	\$13.50	SY	0	\$0	0	\$0	
2.3	Levee Embankment	\$54.00	CY	114,998	\$6,209,910	163,583	\$8,833,460	
2.4	Seeding, Fertilization, Mulching	\$6,100.00	AC	16	\$97,600	21	\$128,100	
2.5	Limestone Surface	\$80.00	TN	510	\$40,780	982	\$78,540	
3 T-Walls								
3.1	T-Walls (7ft)	\$13,500.00	lf	1,108	\$14,962,050	603	\$8,133,750	
4 Drainage Structures								
4.1	Single 10'x8' Sluice Gate Structure	\$80,000.00	EA	10	\$800,000	10	\$800,000	
5 Roadway Roller Gates								
5.1	Two-Lane Hwy Crossing Gate (50')	\$16,500,000.00	EA	0	\$0	0	\$0	
5.2	Two-Lane Hwy Crossing Gate (30')	\$4,100,000.00	EA	0	\$0	0	\$0	
6 Navigable Floodgates (Steel Wing Barge Gate & Receiving Wall)								
6.1	Barge Gate - (40ft Clear Width)	\$67,500,000.00	LS	0	\$0	0	\$0	
6.2	Barge Gate - (30ft Clear Width)	\$40,500,000.00	LS	0	\$0	0	\$0	
7 Pump Stations								
7.1	Pumping Stations (Pump and Housing Only)	\$33,750.00	CFS	0	\$0	0	\$0	
SubTotal					\$23,782,840		\$19,616,700	
Contingency					\$8,324,000		\$6,866,000	
Total					\$32,000,000		\$26,000,000	

Appendix C
Slidell Levee - East Alignments

Lakeshore Estates to Kingspoin Capital Cost Estimate Summary											
				Alignment A - CPRA MP2017		Alignment B		Alignment C		Alignment D	
Item No.	Item Description	Unit Cost	Unit	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total
RE.1	Real Estate										
RE.1	Parcel Costs - Marsh	\$15,000.00	AC	10.0	\$150,000.00	20.3	\$303,750.00	23.3	\$349,500.00	24.8	\$372,000.00
RE.2	Parcel Costs - Developed	\$186,915.00	AC	4.9	\$915,883.50	3.3	\$607,473.75	3.0	\$560,745.00	3.0	\$560,745.00
RE.2	Structure Costs	\$337,500.00	EA	1	\$337,500.00	0	\$0.00	0	\$0.00	0	\$0.00
ENV	Environmental Cost										
ENV.1	Emergent Marsh	\$60,000.00	AC	10.0	\$600,000.00	20.3	\$1,215,000.00	23.3	\$1,398,000.00	24.8	\$1,488,000.00
CON	Construction Costs										
CON.3	Construction Costs				\$227,000,000.00		\$229,000,000.00		\$258,000,000.00		\$248,000,000.00
UTL	Utility Relocation Costs										
UTL.1	Utility Relocation Costs (0.5% undeveloped/1% developed areas)			0.50%	\$1,135,000.00		\$0.00	0.50%	\$1,290,000.00	0.50%	\$1,240,000.00
E&D	Engineering, Planning & Construction Management										
ED.1	Engineering, Planning & Construction Management	25%			\$56,750,000.00		\$57,250,000.00		\$64,500,000.00		\$62,000,000.00
	SubTotal				\$286,888,383.50		\$288,376,223.75		\$326,098,245.00		\$313,660,745.00
	Total				\$287,000,000.00		\$288,000,000.00		\$326,000,000.00		\$314,000,000.00

Appendix C
Slidell Levee - East Alignments

				Lakeshore Estates to Kingspoint Construction Cost Estimate Summary							
				Alternative A - CPRA MP2017		Alternative B		Alternative C		Alternative D	
Item No.	Item Description	Unit Cost	Unit	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total
1 Mobilization & Demobilization											
1.1	Mobilization & Demobilization (5%)				\$8,000,700		\$8,065,500		\$9,092,600		\$8,730,200
2 Levees (First Lift)											
2.1	Clearing & Grubbing	\$33,750.00	AC	0	\$0	7	\$242,260	13	\$448,450	14	\$472,500
2.2	Geotextile Fabric	\$13.50	SY	0	\$0	0	\$0	64,311	\$868,190	72,028	\$972,380
2.3	Levee Embankment	\$54.00	CY	0	\$0	49,177	\$2,655,540	100,912	\$5,449,260	113,021	\$6,103,130
2.4	Seeding, Fertilization, Mulching	\$6,100.00	AC	0	\$0	7	\$43,790	13	\$81,050	14	\$85,400
2.5	Limestone Surface	\$80.00	Tons	0	\$0	0	\$0	0	\$0	0	\$0
2 Levees (Second Lift)											
2.1	Clearing & Grubbing	\$33,750.00	AC	10	\$342,400	12	\$391,490	23	\$764,820	28	\$945,000
2.2	Geotextile Fabric	\$13.50	SY	0	\$0	0	\$0		\$0		\$0
2.3	Levee Embankment	\$54.00	CY	119,856	\$6,472,220	89,227	\$4,818,250	169,617	\$9,159,290	189,971	\$10,258,430
2.4	Seeding, Fertilization, Mulching	\$6,100.00	AC	10	\$61,890	12	\$70,760	23	\$138,230	28	\$170,800
2.5	Limestone Surface	\$80.00	Tons	0	\$0	0	\$0	0	\$0	0	\$0
3 T-Walls											
3.1	T-Walls (up to 7ft)	\$13,500.00	If	0	\$0	0	\$0	0	\$0	0	\$0
3.2	T-Walls (>7ft)	\$16,000.00	If	1,302	\$20,831,360	1,299	\$20,780,960	1,462	\$23,389,600	878	\$14,043,200
4 Drainage Structures											
4.1	Single 10'x8' Sluice Gate Structure	\$80,000.00	EA	10	\$800,000	10	\$800,000	10	\$800,000	10	\$800,000
5 Roadway Roller Gates											
5.1	Two-Lane Hwy Crossing Gate (50')	\$16,500,000.00	EA	0	\$0	0	\$0	0	\$0	0	\$0
5.2	Two-Lane Hwy Crossing Gate (30')	\$4,100,000.00	EA	1	\$4,100,000	1	\$4,100,000	1	\$4,100,000	1	\$4,100,000
6 Navigable Floodgates (Steel Wing Barge Gate & Receiving Wall)											
6.2	Barge Gate - (30ft Clear Width)	\$40,500,000.00	LS	1	\$40,500,000	1	\$40,500,000	1	\$40,500,000	1	\$40,500,000
7 Pump Stations											
7.1	Pumping Stations W-14 (Pump and Housing Only)	\$33,750.00	CFS	2,358	\$79,583,000	2,358	\$79,583,000	2,632	\$88,830,000	2,632	\$88,830,000
7.2	Pumping Stations Lakeshore Estates (Pump and Hd)	\$33,750.00	CFS	217	\$7,324,000	217	\$7,324,000	217	\$7,324,000	217	\$7,324,000
SubTotal											
	Contingency		35%		\$58,805,000		\$59,281,000		\$66,831,000		\$64,167,000
	Total				\$ 227,000,000		\$ 229,000,000		\$ 258,000,000		\$ 248,000,000

9. Additional Construction Cost Estimates – Military Road Alignments

	Military Road Alignment Alternatives				
	MR 100YR Alt A	MR 100YR Alt B	MR 100YR Alt C	MR 100YR Alt D	MR 100YR Alt E
	Military Road Alignment	Bluffs Subdivision Alignment	Old River Road Alignment	Doubloon Alignment	US Highway 190 Alignment
Structure Components					
Structure Type	· Levee with 10ft wide crown, 3H:1V Side slopes · T-Wall along Military Rd.	· Levee with 10ft wide crown, 3H:1V Side slopes · T-Wall along Old River Rd. and Devils Elbow	· Levee with 10ft wide crown, 3H:1V Side slopes · T-Wall along Old River Rd. and Devils Elbow	· Levee with 10ft wide crown, 3H:1V Side slopes · T-Wall along Devils Elbow	· Levee with 10ft wide crown, 3H:1V Side slopes · T-Wall along US Hwy 190E
Structure Tie-Ins	· Southern Tie-In at PO-0184 · Northern Tie-in at Hwy 190	· Southern Tie-In at PO-0184 · Northern Tie-in at Interstate 10	· Southern Tie-In at PO-0184 · Northern Tie-in at Interstate 10	· Southern Tie-In at PO-0184 · Northern Tie-in at Interstate 10	· Southern Tie-In at PO-0184 · Northern Tie-in at Interstate 10
Footprint	· Levee Length - 5,558LF (Approx.) · Levee Width - 55LF (Approx.) · Floodwall Length - 11,268LF (Approx.) · Floodwall Width - 50LF (Approx.)	· Levee Length - 12,704LF (Approx.) · Levee Width - 71LF (Approx.) · Floodwall Length - 5,936LF (Approx.) · Floodwall Width - 50LF (Approx.)	· Levee Length - 15,449LF (Approx.) · Levee Width - 85LF (Approx.) · Floodwall Length - 8,512LF (Approx.) · Floodwall Width - 50LF (Approx.)	· Levee Length - 20,480LF (Approx.) · Levee Width - 75LF (Approx.) · Floodwall Length - 3,465LF (Approx.) · Floodwall Width - 50LF (Approx.)	· Levee Length - 21,759LF (Approx.) · Levee Width - 84LF (Approx.) · Floodwall Length - 6,915LF (Approx.) · Floodwall Width - 50LF (Approx.)
Other Structural Components	· Navigable Floodgate (0) · Pump Station (1) · Roadway Gate (8) · Drainage Structures (2) · Frontage Road - 1,947 LF (Approx.)	· Pump Station (2) · Roadway Gate (3) · Drainage (4) · Frontage Road - 878 LF (Approx.)	· Navigable Floodgate (0) · Pump Station (2) · Roadway Gate (3) · Drainage (4) · Frontage Road - 1,375 LF (Approx.)	· Pump Station (2) · Roadway Gate (4) · Drainage (7)	· Pump Station (2) · Roadway Gate (2) · Drainage (9) · Frontage Road - 2,674 LF (Approx.)
Flood Risk Reduction					
Flood Protection Level	· 100YR Protection - Elevation - +18.5FT NAVD88 · Interim Protection - +12.0FT NAVD88	· 100YR Protection - Elevation - +18.5FT NAVD88 · Interim Protection - +12.0FT NAVD88	· 100YR Protection - Elevation - +18.5FT NAVD88 · Interim Protection - +12.0FT NAVD88	· 100YR Protection - Elevation - +18.5FT NAVD88 · Interim Protection - +12.0FT NAVD88	· 100YR Protection - Elevation - +18.5FT NAVD88 · Interim Protection - +12.0FT NAVD88
Areas Not Receiving Protection	· Structures between Alignment and Pearl River · Structures to North of US 190 to Alignment	· Structures to South of Electrical Transmission ROW · Structures to North of US 190 & Alignment · Structures to East of Leeds Dr.	· Structures to South of Electrical Transmission ROW · Structures to North of US 190 & Alignment · Structures to North of Doubloon Bayou	· Structures to South of Turtle Back Glade/Jameston Dr · Structures to North of Doubloon Bayou	· Structures to Near Yorktown Dr. Cul-de-Sac
Lands, Easements, Right of Way, Relocations					
Parcels/Properties Affected	· 2 Total Impacted or Acquired · 33 Partial Impacted or Acquired	· 0 Total Impacted or Acquired · 30 Partial Impacted or Acquired	· 0 Total Impacted or Acquired · 22 Partial Impacted or Acquired	· 0 Total Impacted or Acquired · 45 Partial Impacted or Acquired	· 0 Total Impacted or Acquired · 58 Partial Impacted or Acquired
Roadways Impacted	· Leaning Oak Dr · US HWY 190 · Cross Creek Dr · Turtle Creek Blvd · Cross Gates Blvd (South) · Herwig Bluff Rd · Steele Rd · Cross Gates Blvd (North)	· Leaning Oak Dr · US HWY 190 · Arbor View Dr	· Leaning Oak Dr · US HWY 190 · White Stork Dr	· Leaning Oak Dr · US HWY 190 · Douglas Dr · Starling Dr	· US Hwy 190 · Yorktown Dr
Environmental Impacts					
Wetlands Affected	· Less than 10 acres	· Approximately 19 acres	· Approximately 24 acres	· Approximately 64 acres	· Approximately 66 acres
Construction & Cost Assumptions					
Total Estimated Costs	\$737,000,000	\$456,000,000	\$526,000,000	\$448,000,000	\$525,000,000
Project Risks & Opportunities					

Appendix C
Military Road Alignments

Item Description	Military Road Alignment Alternatives (100YR)				
	MR 100YR Alt A	MR 100YR Alt B	MR 100YR Alt C	MR 100YR Alt D	MR 100YR Alt E
	Military Road Alignment	Bluffs Subdivision Alignment	Old River Road Alignment	Doubloon Alignment	US Highway 190 Alignment
	Qty.	Qty.	Qty.	Qty.	Qty.
Real Estate	\$ 13,940,000	\$ 9,310,000	\$ 12,790,000	\$ 11,090,000	\$ 14,820,000
Environmental Cost	\$ 180,000	\$ 1,140,000	\$ 1,440,000	\$ 3,840,000	\$ 3,960,000
Construction Costs	\$ 574,000,000	\$ 354,000,000	\$ 406,000,000	\$ 344,000,000	\$ 403,000,000
Utility Relocation Costs	\$ 5,740,000	\$ 3,540,000	\$ 4,060,000	\$ 3,440,000	\$ 2,015,000
Engineering, Planning & Construction Management	\$ 143,500,000	\$ 88,500,000	\$ 101,500,000	\$ 86,000,000	\$ 100,750,000
Total	\$ 737,360,000	\$ 456,490,000	\$ 525,790,000	\$ 448,370,000	\$ 524,545,000

Item Description	Military Road Alignment Alternatives (Interim)				
	MR Interim Alt A	MR Interim Alt B	MR Interim Alt C	MR Interim Alt D	MR Interim Alt E
	Military Road Alignment	Bluffs Subdivision Alignment	Old River Road Alignment	Doubloon Alignment	US Highway 190 Alignment
	Qty.	Qty.	Qty.	Qty.	Qty.
Real Estate	\$ 6,510,000	\$ 8,800,000	\$ 7,340,000	\$ 13,100,000	\$ 18,900,000
Environmental Cost	\$ 131,000	\$ 880,000	\$ 1,140,000	\$ 2,440,000	\$ 2,650,000
Construction Costs	\$ 288,000,000	\$ 261,000,000	\$ 279,000,000	\$ 239,000,000	\$ 279,000,000
Utility Relocation Costs	\$ 2,880,000	\$ 2,610,000	\$ 2,790,000	\$ 2,390,000	\$ 1,395,000
Engineering, Planning & Construction Management	\$ 72,000,000	\$ 65,250,000	\$ 69,750,000	\$ 59,750,000	\$ 69,750,000
Total	\$ 369,521,000	\$ 338,540,000	\$ 360,020,000	\$ 316,680,000	\$ 371,695,000

Item Description	Military Road Alignment Alternatives Resilience		
	MR Resilience Opt 1	MR Resilience Opt 2	MR Resilience Opt 3
	French Branch Closure	Old River Rd Raising	Doubloon Bayou Improvements
	Qty.	Qty.	Qty.
Real Estate	\$ 190,000	\$ -	\$ 2,610,000
Environmental Cost	\$ 60,000	\$ -	\$ 10,440,000
Construction Costs	\$ 131,000,000	\$ 6,000,000	\$ 59,000,000
Utility Relocation Costs	\$ 1,310,000	\$ 60,000	\$ 590,000
Engineering, Planning & Construction Management	\$ 32,750,000	\$ 1,500,000	\$ 14,750,000
Total	\$ 165,310,000	\$ 7,560,000	\$ 87,390,000

Appendix C
Military Road Alignments

														Military Road Alignment Alternatives (100YR)									
														MR 100YR Alt A		MR 100YR Alt B		MR 100YR Alt C		MR 100YR Alt D		MR 100YR Alt E	
														Military Road Alignment		Bluffs Subdivision Alignment		Old River Road Alignment		Doubloon Alignment		US Highway 190 Alignment	
Item No.	Item Description	Unit Cost	Unit	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total										
REA	Real Estate																						
RE.1	Parcel Costs - Marsh	\$15,000.00	AC	3	\$45,000.00	19	\$285,000.00	24	\$360,000.00	64	\$960,000.00	66	\$990,000.00										
RE.2	Parcel Costs - Developed Area	\$186,915.00	AC	24	\$4,448,577.00	23	\$4,299,045.00	34	\$6,355,110.00	0	\$0.00	9	\$1,682,235.00										
RE.3	Structure Costs	\$337,500.00	EA	28	\$9,450,000.00	14	\$4,725,000.00	18	\$6,075,000.00	30	\$10,125,000.00	36	\$12,150,000.00										
ENV	Environmental Cost																						
ENV.1	Emergent Marsh	\$60,000.00	AC	3	\$180,000.00	19	\$1,140,000.00	24	\$1,440,000.00	64	\$3,840,000.00	66	\$3,960,000.00										
CON	Construction Costs																						
CON.3	Construction Costs				\$574,000,000.00		\$354,000,000.00		\$406,000,000.00		\$344,000,000.00		\$403,000,000.00										
UTL	Utility Relocation Costs																						
UTL.1	Utility Relocation Costs (0.5% undeveloped/1% developed areas)			1.00%	\$5,740,000.00	1.00%	\$3,540,000.00	1.00%	\$4,060,000.00	1.00%	\$3,440,000.00	0.50%	\$2,015,000.00										
E&D	Engineering, Planning & Construction Management																						
ED.1	Engineering, Planning & Construction Management	25%			\$143,500,000.00		\$88,500,000.00		\$101,500,000.00		\$86,000,000.00		\$100,750,000.00										
	SubTotal				\$737,363,577.00		\$456,489,045.00		\$525,790,110.00		\$448,365,000.00		\$524,547,235.00										
	Total				\$737,000,000.00		\$456,000,000.00		\$526,000,000.00		\$448,000,000.00		\$525,000,000.00										

Appendix C
Military Road Alignments

Military Road Alignment Alternatives (100YR)													
				MR 100YR Alt A		MR 100YR Alt B		MR 100YR Alt C		MR 100YR Alt D		MR 100YR Alt E	
				Military Road Alignment		Bluffs Subdivision Alignment		Old River Road Alignment		Doubloon Alignment		US Highway 190 Alignment	
Item No.	Item Description	Unit Cost	Unit	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total
1 Mobilization & Demobilization													
1.1	Mobilization & Demobilization (5%)				\$20,241,500.00		\$12,488,700.00		\$14,328,800.00		\$12,126,200.00		\$14,213,700.00
2 Levees													
2.1	Clearing & Grubbing	\$33,750.00	AC	26	\$888,670.00	42	\$1,422,320.00	58	\$1,945,640.00	59	\$1,988,850.00	67	\$2,259,720.00
2.2	Geotextile Fabric	\$13.50	SY	46,315	\$625,250.00	128,647	\$1,736,730.00	180,235	\$2,433,170.00	216,949	\$2,928,810.00	251,532	\$3,395,680.00
2.3	Levee Embankment	\$54.00	CY	62,718	\$3,386,770.00	243,140	\$13,129,580.00	424,661	\$22,931,710.00	440,577	\$23,791,170.00	584,493	\$31,562,600.00
2.4	Seeding, Fertilization, Mulching	\$6,100.00	AC	10	\$58,370.00	27	\$162,140.00	37	\$227,160.00	45	\$273,430.00	52	\$317,010.00
2.5	Limestone Surface	\$80.00	Tons	2,038	\$163,030.00	4,658	\$372,640.00	5,665	\$453,160.00	7,509	\$600,740.00	7,978	\$638,260.00
2.6	Excavation	\$21.00	CY	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
3 T-Walls													
3.1	T-Walls (up to 7ft)	\$13,500.00	LF	2,588	\$34,937,137.35	1,772	\$23,918,961.15	3,413	\$46,079,313.75	1,190	\$16,071,536.70	1,190	\$16,071,536.70
3.2	T-Walls (>7ft)	\$16,200.00	LF	8,680	\$140,619,960.90	4,164	\$67,463,393.40	5,099	\$82,597,958.28	2,275	\$36,847,479.96	5,724	\$92,735,454.96
4 Drainage Structures													
4.1	Misc. Culverts for Internal Drainage	\$80,000.00	EA	17	\$1,360,000.00	19	\$1,520,000.00	24	\$1,920,000.00	24	\$1,920,000.00	29	\$2,320,000.00
4.2	Single 10'x8' Sluice Gate Structure	\$3,375,000.00	EA	1	\$3,375,000.00	3	\$10,125,000.00	2	\$6,750,000.00	3	\$10,125,000.00	3	\$10,125,000.00
4.3	Double 10'x8' Sluice Gate Structure	\$6,750,000.00	EA		\$0.00		\$0.00	1	\$6,750,000.00	2	\$13,500,000.00	4	\$27,000,000.00
4.4	4 Box Culvert Sluice Gate Drainage Structure	\$13,500,000.00	EA	1	\$13,500,000.00	1	\$13,500,000.00	1	\$13,500,000.00	1	\$13,500,000.00	2	\$27,000,000.00
5 Roadway Roller Gates													
5.1	Double Roadway Gate	\$21,000,000.00	EA	6	\$126,000,000.00	2	\$42,000,000.00	1	\$21,000,000.00	2	\$42,000,000.00	1	\$21,000,000.00
5.2	Single Roadway Gate	\$4,050,000.00	EA	2	\$8,100,000.00	1	\$4,050,000.00	2	\$8,100,000.00	2	\$8,100,000.00	1	\$4,050,000.00
6 Navigable Floodgates (Steel Wing Barge Gate & Receiving Wall)													
6.1	Floodgate - Doubloon Bayou (40ft-60ft Clear Width)	\$67,500,000.00	LS		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
7 Pump Stations (Pump and Housing Only)													
7.1	Pumping Station - Doubloon Bayou	\$33,750.00	CFS		\$0.00		\$0.00		\$0.00		\$0.00	1,200	\$40,500,000.00
7.2	Pumping Station - French Branch	\$33,750.00	CFS	2,050	\$69,188,000.00	2,050	\$69,188,000.00	2,050	\$69,188,000.00	2,050	\$69,188,000.00		\$0.00
7.3	Pumping Station - Highland Bluff	\$33,750.00	CFS		\$0.00		\$0.00		\$0.00	50	\$1,688,000.00	50	\$1,688,000.00
7.4	Pumping Station - E. of Leeds Dr.	\$33,750.00	CFS		\$0.00		\$0.00	25	\$844,000.00		\$0.00		\$0.00
8 Misc.													
8.1	2-Lane Frontage Roadway	\$1,350.00	LF	1,947	\$2,628,450.00	878	\$1,185,000.00	1,375	\$1,856,000.00	0	\$0.00	2,674	\$3,610,000.00
					\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
	SubTotal				\$425,072,138.25		\$262,262,464.55		\$300,904,912.03		\$254,649,216.66		\$298,486,961.66
	Contingency		35%		\$148,775,000.00		\$91,792,000.00		\$105,317,000.00		\$89,127,000.00		\$104,470,000.00
	Total				\$574,000,000.00		\$354,000,000.00		\$406,000,000.00		\$344,000,000.00		\$403,000,000.00
	Lower Range of Costs		85%		\$488,000,000.00		\$301,000,000.00		\$345,000,000.00		\$292,000,000.00		\$343,000,000.00
	Upper Range of Costs		115%		\$660,000,000.00		\$407,000,000.00		\$467,000,000.00		\$396,000,000.00		\$463,000,000.00

Appendix C
Military Road Alignments

	Military Road Alignment Alternatives (INTERIM)				
	MR INTERIM Alt A	MR INTERIM Alt B	MR INTERIM Alt C	MR INTERIM Alt D	MR INTERIM Alt E
	Military Road Alignment	Bluffs Subdivision Alignment	Old River Road Alignment	Doubloon Alignment	US Highway 190 Alignment
Structure Components					
Structure Type	· Levee with 10ft wide crown, 3H:1V Side slopes · T-Wall along Military Rd.	· Levee with 10ft wide crown, 3H:1V Side slopes · T-Wall along Old River Rd.	· Levee with 10ft wide crown, 3H:1V Side slopes · T-Wall along Old River Rd.	· Levee with 10ft wide crown, 3H:1V Side slopes	· Levee with 10ft wide crown, 3H:1V Side slopes · T-Wall along US Hwy 190E
Structure Tie-Ins	· Southern Tie-In at PO-0184 · Northern Tie-in at D'Evereux Dr.	· Southern Tie-In at PO-0184 · Northern Tie-in at the Bluffs Subdivisions	· Southern Tie-In at PO-0184 · Northern Tie-in at the Bluffs Subdivisions	· Southern Tie-In at PO-0184 · Northern Tie-in at the Bluffs Subdivisions	· Southern Tie-In at PO-0184 · Northern Tie-in at the Bluffs Subdivisions
Footprint	· Levee Length - 5,558LF (Approx.) · Levee Width - 16LF (Approx.) · Floodwall Length - 4,338LF (Approx.) · Floodwall Width - 50LF (Approx.)	· Levee Length - 12,452LF (Approx.) · Levee Width - 32LF (Approx.) · Floodwall Length - 2,391LF (Approx.) · Floodwall Width - 50LF (Approx.)	· Levee Length - 12,123LF (Approx.) · Levee Width - 36LF (Approx.) · Floodwall Length - 4,113LF (Approx.) · Floodwall Width - 50LF (Approx.)	· Levee Length - 20,510LF (Approx.) · Levee Width - 46LF (Approx.) · Floodwall Length - 0LF (Approx.) · Floodwall Width - 0LF (Approx.)	· Levee Length - 21,768LF (Approx.) · Levee Width - 45LF (Approx.) · Floodwall Length - 3,450LF (Approx.) · Floodwall Width - 50LF (Approx.)
Other Structural Components	· Navigable Floodgate (0) · Pump Station (1) · Roadway Gate (3) · Drainage Structures (2)	· Pump Station (2) · Roadway Gate (3) · Drainage (4) · Frontage Road - 878 LF (Approx.)	· Navigable Floodgate (0) · Pump Station (2) · Roadway Gate (2) · Drainage (3) · Frontage Road - 1,375 LF (Approx.)	· Pump Station (2) · Roadway Gate (4) · Drainage (6)	· Pump Station (2) · Roadway Gate (2) · Drainage (8) · Frontage Road - 2,674 LF (Approx.)
Flood Risk Reduction					
Flood Protection Level	· 100YR Protection - Elevation - +18.5FT NAVD88 · Interim Protection - +12.0FT NAVD88	· 100YR Protection - Elevation - +18.5FT NAVD88 · Interim Protection - +12.0FT NAVD88	· 100YR Protection - Elevation - +18.5FT NAVD88 · Interim Protection - +12.0FT NAVD88	· 100YR Protection - Elevation - +18.5FT NAVD88 · Interim Protection - +12.0FT NAVD88	· 100YR Protection - Elevation - +18.5FT NAVD88 · Interim Protection - +12.0FT NAVD88
Areas Not Receiving Protection	· Structures between Alignment and Pearl River · Structures to North of US 190 to Alignment	· Structures to South of Electrical Transmission ROW · Structures to North of US 190 & Alignment · Structures to East of Leeds Dr.	· Structures to South of Electrical Transmission ROW · Structures to North of US 190 & Alignment · Structures to North of Doubloon Bayou	· Structures to South of Turtle Back Glade/Jameston Dr · Structures to North of Doubloon Bayou	· Structures to Near Yorktown Dr. Cul-de-Sac
Lands, Easements, Right of Way, Relocations					
Parcels/Properties Affected	· 0 Total Impacted or Acquired · 13 Partial Impacted or Acquired	· 0 Total Impacted or Acquired · 19 Partial Impacted or Acquired	· 0 Total Impacted or Acquired · 14 Partial Impacted or Acquired	· 0 Total Impacted or Acquired · 37 Partial Impacted or Acquired	· 0 Total Impacted or Acquired · 50 Partial Impacted or Acquired
Roadways Impacted	· Leaning Oak Dr · US HWY 190 · Cross Creek Dr	· Leaning Oak Dr · US HWY 190 · Arbor View Dr	· US Hwy 190 · White Stork Dr.	· Leaning Oak Dr · US HWY 190 · Douglas Dr · Starling Dr	· US Hwy 190 · Yorktown Dr
Environmental Impacts					
Wetlands Affected	· Less than 5 acres	· Approximately 15 acres	· Approximately 19 acres	· Approximately 41 acres	· Approximately 44 acres
Construction & Cost Assumptions					
Total Estimated Costs	\$370,000,000	\$339,000,000	\$360,000,000	\$317,000,000	\$372,000,000
Project Risks & Opportunities					

Appendix C
Military Road Alignments

Item Description	Military Road Alignment Alternatives (Interim)				
	MR Interim Alt A	MR Interim Alt B	MR Interim Alt C	MR Interim Alt D	MR Interim Alt E
	Military Road Alignment	Bluffs Subdivision Alignment	Old River Road Alignment	Doubloon Alignment	US Highway 190 Alignment
	Qty.	Qty.	Qty.	Qty.	Qty.
Real Estate	\$ 6,510,000	\$ 8,800,000	\$ 7,340,000	\$ 13,100,000	\$ 18,900,000
Environmental Cost	\$ 131,000	\$ 880,000	\$ 1,140,000	\$ 2,440,000	\$ 2,650,000
Construction Costs	\$ 288,000,000	\$ 261,000,000	\$ 279,000,000	\$ 239,000,000	\$ 279,000,000
Utility Relocation Costs	\$ 2,880,000	\$ 2,610,000	\$ 2,790,000	\$ 2,390,000	\$ 1,395,000
Engineering, Planning & Construction Management	\$ 72,000,000	\$ 65,250,000	\$ 69,750,000	\$ 59,750,000	\$ 69,750,000
Total	\$ 369,521,000	\$ 338,540,000	\$ 360,020,000	\$ 316,680,000	\$ 371,695,000

Appendix C
Military Road Alignments

														Military Road Alignment Alternatives (INTERIM)				
														MR INTERIM Alt A	MR INTERIM Alt B	MR INTERIM Alt C	MR INTERIM Alt D	MR INTERIM Alt E
														Military Road Alignment	Bluffs Subdivision Alignment	Old River Road Alignment	Doubloon Alignment	US Highway 190 Alignment
Item No.	Item Description	Unit Cost	Unit	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total					
REA	Real Estate																	
RE.1	Parcel Costs - Marsh	\$15,000.00	AC	2	\$32,732.23	15	\$219,161.45	19	\$284,213.83	41	\$609,790.22	44	\$662,491.62					
RE.2	Parcel Costs - Developed Area	\$186,915.00	AC	11	\$2,093,448.00	12	\$2,170,698.02	12	\$2,334,733.52	0	\$0.00	7	\$1,362,224.00					
RE.3	Structure Costs	\$337,500.00	EA	13	\$4,387,500.00	19	\$6,412,500.00	14	\$4,725,000.00	37	\$12,487,500.00	50	\$16,875,000.00					
ENV	Environmental Cost																	
ENV.1	Emergent Marsh	\$60,000.00	AC	2	\$130,928.94	15	\$876,645.80	19	\$1,136,855.33	41	\$2,439,160.90	44	\$2,649,966.48					
CON	Construction Costs																	
CON.3	Construction Costs				\$288,000,000.00		\$261,000,000.00		\$279,000,000.00		\$239,000,000.00		\$279,000,000.00					
UTL	Utility Relocation Costs																	
UTL.1	Utility Relocation Costs (0.5% undeveloped/1% developed areas)			0	\$2,880,000.00	0	\$2,610,000.00	0	\$2,790,000.00	0	\$2,390,000.00	0	\$1,395,000.00					
E&D	Engineering, Planning & Construction Management																	
ED.1	Engineering, Planning & Construction Management (25%)	25%			\$72,000,000.00		\$65,250,000.00		\$69,750,000.00		\$59,750,000.00		\$69,750,000.00					
	SubTotal				\$369,524,609.17		\$338,539,005.27		\$360,020,802.68		\$316,676,451.12		\$371,694,682.10					
	Total				\$370,000,000.00		\$339,000,000.00		\$360,000,000.00		\$317,000,000.00		\$372,000,000.00					

Appendix C
Military Road Alignments

Military Road Alignment Alternatives (INTERIM)													
				MR INTERIM Alt A		MR INTERIM Alt B		MR INTERIM Alt C		MR INTERIM Alt D		MR INTERIM Alt E	
				Military Road Alignment		Bluffs Subdivision Alignment		Old River Road Alignment		Doubloon Alignment		US Highway 190 Alignment	
Item No.	Item Description	Unit Cost	Unit	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total
1 Mobilization & Demobilization													
1.1	Mobilization & Demobilization (5%)				\$10,174,400.00		\$9,192,800.00		\$9,841,200.00		\$8,443,300.00		\$9,842,800.00
2 Levees													
2.1	Clearing & Grubbing	\$33,750.00	AC	13	\$452,280.00	26	\$885,060.00	31	\$1,061,050.00	41	\$1,372,030.00	47	\$1,602,930.00
2.2	Geotextile Fabric	\$13.50	SY	22,231	\$300,120.00	72,136	\$973,830.00	88,901	\$1,200,160.00	128,392	\$1,733,300.00	157,311	\$2,123,700.00
2.3	Levee Embankment	\$54.00	CY	3,345	\$180,630.00	44,819	\$2,420,220.00	94,289	\$5,091,600.00	96,583	\$5,215,500.00	161,968	\$8,746,260.00
2.4	Seeding, Fertilization, Mulching	\$6,100.00	AC	5	\$28,020.00	15	\$90,920.00	18	\$112,040.00	27	\$161,820.00	33	\$198,260.00
2.5	Limestone Surface	\$80.00	Tons	2,038	\$163,030.00	4,566	\$365,250.00	4,445	\$355,600.00	7,520	\$601,630.00	7,982	\$638,530.00
2.6	Excavation	\$21.00	CY	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
3 T-Walls													
3.1	T-Walls (up to 7ft)	\$13,500.00	LF	308	\$4,163,452.65	319	\$4,308,479.10	1,056	\$14,249,714.40	0	\$0.00	3,450	\$46,572,907.50
3.2	T-Walls (>7ft)	\$16,200.00	LF	4,030	\$65,287,994.22	2,072	\$33,564,106.08	3,058	\$49,535,899.92	0	\$0.00	0	\$567.00
4 Drainage Structures													
4.1	Misc. Culverts for Internal Drainage	\$80,000.00	EA	10	\$800,000.00	15	\$1,200,000.00	16	\$1,280,000.00	21	\$1,680,000.00	25	\$2,000,000.00
4.2	Single 10'x8' Sluice Gate Structure	\$3,375,000.00	EA	1	\$3,375,000.00	3	\$10,125,000.00	2	\$6,750,000.00	3	\$10,125,000.00	3	\$10,125,000.00
4.3	Double 10'x8' Sluice Gate Structure	\$6,750,000.00	EA		\$0.00		\$0.00	1	\$6,750,000.00	2	\$13,500,000.00	4	\$27,000,000.00
4.4	4 Box Culvert Sluice Gate Drainage Structure	\$13,500,000.00	EA	1	\$13,500,000.00	1	\$13,500,000.00	1	\$13,500,000.00	1	\$13,500,000.00	2	\$27,000,000.00
5 Roadway Roller Gates													
5.1	Double Roadway Gate	\$21,000,000.00	EA	2	\$42,000,000.00	2	\$42,000,000.00	1	\$21,000,000.00	2	\$42,000,000.00	1	\$21,000,000.00
5.2	Single Roadway Gate	\$4,050,000.00	EA	1	\$4,050,000.00	1	\$4,050,000.00	1	\$4,050,000.00	2	\$8,100,000.00	1	\$4,050,000.00
6 Navigable Floodgates (Steel Wing Barge Gate & Receiving Wall)													
6.1	Floodgate - Doubloon Bayou	\$67,500,000.00	LS		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
7 Pump Stations (Pump and Housing Only)													
7.1	Pumping Station - Doubloon Bayou	\$33,750.00	CFS		\$0.00		\$0.00		\$0.00		\$0.00	1,200	\$40,500,000.00
7.2	Pumping Station - French Branch	\$33,750.00	CFS	2,050	\$69,188,000.00	2,050	\$69,188,000.00	2,050	\$69,188,000.00	2,050	\$69,188,000.00		\$0.00
7.3	Pumping Station - Highland Bluff	\$33,750.00	CFS		\$0.00		\$0.00		\$0.00	50	\$1,688,000.00	50	\$1,688,000.00
7.4	Pumping Station - E. of Leeds Dr.	\$33,750.00	CFS		\$0.00		\$0.00	25	\$844,000.00		\$0.00		\$0.00
8 Misc.													
8.1	2-Lane Frontage Roadway	\$1,350.00	LF	0	\$0.00	878	\$1,185,000.00	1,375	\$1,856,000.00	0	\$0.00	2,674	\$3,610,000.00
					\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
SubTotal					\$213,662,926.87		\$193,048,665.18		\$206,665,264.32		\$177,308,580.00		\$206,698,954.50
Contingency			35%		\$74,782,000.00		\$67,567,000.00		\$72,333,000.00		\$62,058,000.00		\$72,345,000.00
Total					\$288,000,000.00		\$261,000,000.00		\$279,000,000.00		\$239,000,000.00		\$279,000,000.00
Lower Range of Costs			85%		\$245,000,000.00		\$222,000,000.00		\$237,000,000.00		\$203,000,000.00		\$237,000,000.00
Upper Range of Costs			115%		\$331,000,000.00		\$300,000,000.00		\$321,000,000.00		\$275,000,000.00		\$321,000,000.00

Appendix C
Military Road Alignments

	Military Road Alignment Alternatives Resilience		
	MR Resilience Opt 1	MR Resilience Opt 2	MR Resilience Opt 3
	Military Road Alignment	Old River Road Raising	Doubloon Bayou Improvements
Structure Components			
Structure Type	· Closure Structure on French Branch	· 2,000ft Roadway raising to elevation +7.0	· Four (4) Barrel Culvert on Military Rd
Structure Tie-Ins	· Western Tie-In at Old River Road · Eastern Tie-in at Old River Road	· Western Tie-In at Old River Road · Eastern Tie-in at Old River Road	· 250ft upstream of Military Rd · 1000ft upstream of Fritchie Marsh Discharge
Footprint	· Floodwall Length. - 500LF (Approx.)	· Roadway Raising along Old River Rd.	· Dredging approx. 26,500LF, 200ft bottom width, 3H:1V Side Slopes
Other Structural Components	· Pump Station (1) · Drainage Structures (2)	· Road - 2,000 LF (Approx.)	· Dredging/Desnagging of Doubloon Bayou - approx. 26,500LF
Flood Risk Reduction			
Areas Not Receiving Protection	· Structures not closest to French Branch/W-15		
Lands, Easements, Right of Way, Relocations			
Parcels/Properties Affected	· 4 Partial Impacted or Acquired	· 0 Total Impacted or Acquired	· 0 Total Impacted or Acquired
Roadways Impacted	· Old River Road	· Old River Road	· Military Rd · US Hwy 190
Environmental Impacts			
Wetlands Affected	· None Expected to be Impacted	· None Expected to be Impacted	· Approximately 174 acres
Construction & Cost Assumptions			
Total Estimated Costs	\$165,000,000	\$8,000,000	\$87,000,000
Project Risks & Opportunities			

Appendix C
Military Road Alignments

Item Description	Military Road Alignment Alternatives Resilience		
	MR Resilience Opt 1	MR Resilience Opt 2	MR Resilience Opt 3
	French Branch Closure	Old River Rd Raising	Doubloon Bayou Improvements
	Qty.	Qty.	Qty.
Real Estate	\$ 190,000	\$ -	\$ 2,610,000
Environmental Cost	\$ 60,000	\$ -	\$ 10,440,000
Construction Costs	\$ 131,000,000	\$ 6,000,000	\$ 59,000,000
Utility Relocation Costs	\$ 1,310,000	\$ 60,000	\$ 590,000
Engineering, Planning & Construction Management	\$ 32,750,000	\$ 1,500,000	\$ 14,750,000
Total	\$ 165,310,000	\$ 7,560,000	\$ 87,390,000

Appendix C
Military Road Alignments

										Military Road Alignment Alternatives Resilience					
										MR Resilience Opt 1		MR Resilience Opt 2		MR Resilience Opt 3	
										French Branch Closure		Old River Rd Raising		Doubloon Bayou Improvements	
Item No.	Item Description	Unit Cost	Unit	Qty.	Total	Qty.	Total	Qty.	Total						
REA	Real Estate														
RE.1	Parcel Costs - Marsh	\$15,000.00	AC		\$0.00	0	\$0.00	174	\$2,609,848.48						
RE.2	Parcel Costs - Developed Area	\$186,915.00	AC	1	\$186,915.00	0	\$0.00	0	\$0.00						
RE.3	Structure Costs	\$337,500.00	EA	0	\$0.00	0	\$0.00	0	\$0.00						
ENV	Environmental Cost														
ENV.1	Emergent Marsh	\$60,000.00	AC	1	\$60,000.00	0	\$0.00	174	\$10,439,393.94						
CON	Construction Costs														
CON.3	Construction Costs				\$131,000,000.00		\$6,000,000.00		\$59,000,000.00						
UTL	Utility Relocation Costs														
UTL.1	Utility Relocation Costs (0.5% undeveloped/1% developed areas)			1.00%	\$1,310,000.00	1.00%	\$60,000.00	1.00%	\$590,000.00						
E&D	Engineering, Planning & Construction Management														
ED.1	Engineering, Planning & Construction Management	25%			\$32,750,000.00		\$1,500,000.00		\$14,750,000.00						
	SubTotal				\$165,306,915.00		\$7,560,000.00		\$87,389,242.42						
	Total				\$165,000,000.00		\$8,000,000.00		\$87,000,000.00						

Appendix C
Military Road Alignments

				Military Road Alignment Alternatives Resilience					
				MR Resilience Opt 1		MR Resilience Opt 2		MR Resilience Opt 3	
				French Branch Closure		Old River Rd Raising		Doubloon Bayou Improvements	
Item No.	Item Description	Unit Cost	Unit	Qty.	Total	Qty.	Total	Qty.	Total
1 Mobilization & Demobilization									
1.1	Mobilization & Demobilization (5%)				\$4,611,900.00		\$202,100.00		\$2,087,200.00
2 Levees									
2.1	Clearing & Grubbing	\$33,750.00	AC	1	\$19,370.00	5	\$153,410.00	0	\$0.00
2.2	Geotextile Fabric	\$13.50	SY	0	\$0.00	15,333	\$207,000.00	0	\$0.00
2.3	Levee Embankment	\$54.00	CY	0	\$0.00	6,181	\$333,750.00	0	\$0.00
2.4	Seeding, Fertilization, Mulching	\$6,100.00	AC	0	\$0.00	3	\$19,330.00	0	\$0.00
2.5	Limestone Surface	\$80.00	Tons	0	\$0.00	5,867	\$469,330.00	0	\$0.00
2.6	Excavation	\$21.00	CY	0	\$0.00	0	\$0.00	0	\$0.00
3 T-Walls									
3.1	T-Walls (up to 7ft)	\$13,500.00	LF	0	\$0.00	0	\$0.00	0	\$0.00
3.2	T-Walls (>7ft)	\$16,200.00	LF	500	\$8,100,000.00	0	\$0.00	0	\$0.00
4 Drainage Structures									
4.1	Misc. Culverts for Internal Drainage	\$80,000.00	EA	1	\$80,000.00	2	\$160,000.00	0	\$0.00
4.2	Single 10'x8' Sluice Gate Structure	\$3,375,000.00	EA	0	\$0.00	0	\$0.00	0	\$0.00
4.3	Double 10'x8' Sluice Gate Structure	\$6,750,000.00	EA	0	\$0.00	0	\$0.00	0	\$0.00
4.4	4 Box Culvert Sluice Gate Drainage Structure	\$13,500,000.00	EA	1	\$13,500,000.00	0	\$0.00	1	\$13,500,000.00
5 Roadway Roller Gates									
5.1	Double Roadway Gate	\$21,000,000.00	EA	0	\$0.00	0	\$0.00	0	\$0.00
5.2	Single Roadway Gate	\$4,050,000.00	EA	0	\$0.00	0	\$0.00	0	\$0.00
6 Navigable Floodgates (Steel Wing Barge Gate & Receiving Wall)									
6.1	Floodgate - Doubloon Bayou (40ft-60ft Clear Width)	\$67,500,000.00	LS	0	\$0.00		\$0.00		\$0.00
7 Pump Stations (Pump and Housing Only)									
7.1	Pumping Station - Doubloon Bayou	\$33,750.00	CFS		\$0.00		\$0.00		\$0.00
7.2	Pumping Station - French Branch	\$33,750.00	CFS	2,050	\$69,188,000.00	0	\$0.00	0	\$0.00
7.3	Pumping Station - Highland Bluff	\$33,750.00	CFS		\$0.00		\$0.00		\$0.00
7.4	Pumping Station - E. of Leeds Dr.	\$33,750.00	CFS		\$0.00		\$0.00		\$0.00
8 Misc.									
8.1	2-Lane Roadway Milling & Overlay	\$1,350	LF	1,000	\$1,350,000.00	2,000	\$2,700,000.00		\$0.00
8.2	Channel Dredging & Desnagging (200ft Bottom Width)	\$20	CY		\$0.00		\$0.00	1,412,156	\$28,243,000.00
	SubTotal				\$96,849,270.00		\$4,244,920.00		\$43,830,200.00
	Contingency		35%		\$33,897,000.00		\$1,486,000.00		\$15,341,000.00
	Total				\$131,000,000.00		\$6,000,000.00		\$59,000,000.00
	Lower Range of Costs		85%		\$111,000,000.00		\$5,000,000.00		\$50,000,000.00
	Upper Range of Costs		115%		\$151,000,000.00		\$7,000,000.00		\$68,000,000.00

10. Additional Construction Cost Estimates – Bayou Lacombe Alignments

Appendix C Bayou Lacombe Alignments

	Bayou Lacombe Alignment Alternatives		
	100YR	50 YR	25YR
Structure Components			
Structure Type	· Levee with 10ft wide crown, 3H:1V Side slopes	· Levee with 10ft wide crown, 3H:1V Side slopes	· Levee with 10ft wide crown, 3H:1V Side slopes
Structure Tie-Ins	· Eastern Tie-In at Hwy 190 East of Bayou Lacombe	· Eastern Tie-In at Hwy 190 East of Bayou Lacombe	· Eastern Tie-In at Hwy 190 East of Bayou Lacombe
	· Western Tie-in at Hwy 190 West of Bayou Lacombe	· Western Tie-in at Hwy 190 West of Bayou Lacombe	· Western Tie-in at Hwy 190 West of Bayou Lacombe
Footprint	· Levee Length - 52,415LF (Approx.) · Levee Width - 86LF (Approx.)	· Levee Length - 52,415LF (Approx.) · Levee Width - 58LF (Approx.)	· Levee Length - 52,415LF (Approx.) · Levee Width - 43LF (Approx.)
Other Structural Components	· Navigable Floodgate (1) · Pump Station (1) · Roadway Roller Gate (50FT) - (1) · Roadway Roller Gate (30FT) - (8) · Roadway Gate at Bike Path - (2) · Drainage Structure (2) · Pipeline Protection Structure (1)	· Navigable Floodgate (1) · Pump Station (1) · Roadway Roller Gate (50FT) - (1) · Roadway Roller Gate (30FT) - (8) · Roadway Gate at Bike Path - (2) · Drainage Structure (2) · Pipeline Protection Structure (1)	· Navigable Floodgate (1) · Pump Station (1) · Roadway Roller Gate (50FT) - (1) · Roadway Roller Gate (30FT) - (8) · Roadway Gate at Bike Path - (2) · Drainage Structure (2) · Pipeline Protection Structure (1)
Flood Risk Reduction			
Areas Not Receiving Protection			
Lands, Easements, Right of Way, Relocations			
Parcels/Properties Affected	· 41 Impacted or Acquired	· 41 Impacted or Acquired	· 41 Impacted or Acquired
Roadways Impacted	· S. Tranquility Rd. · Transmitter Rd. · Dinkins Dr. · Pacquet Rd Access Rd. · Pacquet Rd · Highway 434 (Lake Dr.) · Barringer Rd. · S. Pontchartrain Dr.	· S. Tranquility Rd. · Transmitter Rd. · Dinkins Dr. · Pacquet Rd Access Rd. · Pacquet Rd · Highway 434 (Lake Dr.) · Barringer Rd. · S. Pontchartrain Dr.	· S. Tranquility Rd. · Transmitter Rd. · Dinkins Dr. · Pacquet Rd Access Rd. · Pacquet Rd · Highway 434 (Lake Dr.) · Barringer Rd. · S. Pontchartrain Dr.
Environmental Impacts			
Wetlands Affected	· Approximately 110 acres	· Approximately 102 acres	· Approximately 88 acres
Construction & Cost Assumptions			
Total Estimated Costs	\$546,000,000	\$529,000,000	\$484,000,000
Project Risks & Opportunities			

Appendix C
Bayou Lacombe Alignments

Item Description	Bayou Lacombe Alignment Alternatives		
	100YR	50YR	25YR
	Qty.	Qty.	Qty.
Real Estate	\$ 8,657,000.00	\$ 8,095,000.00	\$ 7,157,000.00
Environmental Cost	\$ 6,300,000.00	\$ 6,124,000.00	\$ 5,273,000.00
Construction Costs	\$ 423,000,000.00	\$ 410,000,000.00	\$ 376,000,000.00
Utility Relocation Costs	\$ 2,115,000.00	\$ 2,050,000.00	\$ 1,880,000.00
Engineering, Planning & Construction Management	\$ 105,750,000.00	\$ 102,500,000.00	\$ 94,000,000.00
Total	\$545,822,000.00	\$528,769,000.00	\$484,310,000.00

Appendix C
Bayou Lacombe Alignments

				Bayou Lacombe Alignment Alternatives					
				100YR		50YR		25YR	
Item No.	Item Description	Unit Cost	Unit	Qty.	Total	Qty.	Total	Qty.	Total
REA	Real Estate								
RE.1	Parcel Costs - Marsh	\$15,000.00	AC	111	\$1,659,000.00	102	\$1,531,000.00	88	\$1,318,000.00
RE.2	Parcel Costs - Developed Area	\$186,915.00	AC	30	\$5,648,000.00	28	\$5,214,000.00	24	\$4,489,000.00
RE.3	Structure Costs	\$337,500.00	EA	4	\$1,350,000.00	4	\$1,350,000.00	4	\$1,350,000.00
ENV	Environmental Cost								
ENV.1	Emergent Marsh	\$60,000.00	AC	105	\$6,300,000.00	102	\$6,124,000.00	88	\$5,273,000.00
CON	Construction Costs								
CON.3	Construction Costs				\$423,000,000.00		\$410,000,000.00		\$376,000,000.00
UTL	Utility Relocation Costs								
UTL.1	Utility Relocation Costs (0.5% undeveloped/1% developed areas)			0.50%	\$2,115,000.00	0.50%	\$2,050,000.00	0.50%	\$1,880,000.00
E&D	Engineering, Planning & Construction Management								
ED.1	Engineering, Planning & Construction Management (25	25%			\$105,750,000.00		\$102,500,000.00		\$94,000,000.00
	SubTotal				\$545,822,000.00		\$528,769,000.00		\$484,310,000.00
	Total				\$546,000,000.00		\$529,000,000.00		\$484,000,000.00

Appendix C
Bayou Lacombe Alignments

Item No.	Item Description	Unit Cost	Unit	Bayou Lacombe Levee Alternatives					
				100YR		50YR		25YR	
				Qty.	Total	Qty.	Total	Qty.	Total
1 Mobilization & Demobilization									
1.1	Mobilization & Demobilization (5%)				\$14,916,300.00		\$14,455,500.00		\$13,269,600.00
2 Levees									
2.1	Clearing & Grubbing	\$33,750.00	AC	141	\$4,751,460.00	130	\$4,385,970.00	112	\$3,776,800.00
2.2	Geotextile Fabric	\$13.50	SY	506,678	\$6,840,160.00	454,263	\$6,132,560.00	366,905	\$4,953,220.00
2.3	Levee Embankment	\$54.00	CY	968,828	\$52,316,720.00	800,785	\$43,242,380.00	458,025	\$24,733,330.00
2.4	Seeding, Fertilization, Mulching	\$6,100.00	AC	105	\$638,580.00	94	\$572,520.00	76	\$462,420.00
2.5	Limestone Surface	\$80.00	Tons	19,219	\$1,537,510.00	19,219	\$1,537,510.00	19,219	\$1,537,510.00
2.6	Excavation	\$21.00	CY	65,033	\$1,365,700.00	112,595	\$2,364,500.00	83,476	\$1,752,990.00
3 T-Walls									
3.1	T-Walls (7ft)	\$13,500.00	lf	0	\$0.00	0	\$0.00	0	\$0.00
4 Drainage Structures									
4.1	Single 10'x8' Sluice Gate Structure	\$80,000.00	EA	0	\$0.00		\$0.00	0	\$0.00
5 Roadway Roller Gates									
5.1	Two-Lane Hwy Crossing Gate (50')	\$16,500,000.00	EA	1	\$16,500,000.00	1	\$16,500,000.00	1	\$16,500,000.00
5.2	Two-Lane Hwy Crossing Gate (30')	\$4,100,000.00	EA	8	\$32,800,000.00	8	\$32,800,000.00	8	\$32,800,000.00
6 Navigable Floodgates (Steel Wing Barge Gate & Receiving Wall)									
6.1	Barge Gate - Bayou Lacombe - (40ft Clear Width)	\$67,500,000.00	LS	1	\$67,500,000.00	1	\$67,500,000.00	1	\$67,500,000.00
			LS		\$0.00		\$0.00		\$0.00
			LS		\$0.00		\$0.00		\$0.00
7 Pump Stations									
7.1	Pumping Stations (Pump and Housing Only)	\$33,750.00	CFS	3,200	\$108,000,000.00	3,200	\$108,000,000.00	3,200	\$108,000,000.00
8 Misc.									
8.1	2-Lane Roadway Replacement	\$1,350.00	LF		\$0.00		\$0.00		\$0.00
8.2	Swing Bridge Replacement	\$40,500,000.00	LS		\$0.00		\$0.00		\$0.00
8.3	Pipeline Cover/Protection	\$3,375,000.00	LS	1	\$3,375,000.00	1	\$3,375,000.00	1	\$3,375,000.00
8.4	Bike Path Gate (Tammany Trace)	\$1,350,000.00	LS	2	\$2,700,000.00	2	\$2,700,000.00		\$0.00
	SubTotal				\$313,241,430.00		\$303,565,940.00		\$278,660,870.00
	Contingency		35%		\$109,635,000.00		\$106,248,000.00		\$97,531,000.00
	Total				\$423,000,000.00		\$410,000,000.00		\$376,000,000.00
	Lower Range of Costs		85%		\$360,000,000.00		\$349,000,000.00		\$320,000,000.00
	Upper Range of Costs		115%		\$486,000,000.00		\$472,000,000.00		\$432,000,000.00