Volume 10: Almedia

10.1 Executive Summary

St. Charles Parish tasked Principal Engineering, Inc. to complete the study of the Almeida Drainage Area for the East Bank Master Drainage Plan. Principal Engineering performed analyses for 25-Year and 100-Year Design Storms (NOAA Atlas 14), and developed drainage improvement that:

1. 25-Year: Reduce the water surface elevations in the canals to one foot below top of the bank such that future internal drainage improvements may function to eliminate street flooding.
2. 100-Year: Lower water surface elevations in the canals such that direct structure flooding from the canals is eliminated and future internal drainage improvements may function to eliminate internal area structure flooding.

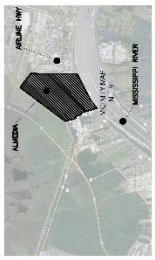
The recommended program consists of the 25-Year and select 100-Year improvements at major street crossings and railroad crossings.

Analysis used models built in EPA SWMM and AutoDesk's Storm and Sanitary Analysis. Existing flood-prone areas were identified in residential area between Riverbend Drive and Parish line Canal, and south of CN railroad, as well as area west of Parish line Canal and north of KCS railroad. The results of the existing conditions simulation illustrate the inadequacy of the drainage system for the design events.

The recommended improvements are grouped into phases and projects, building from the previous, in sensible order of construction, downstream to upstream.

Modeled improvements have been partitioned into executable projects with cost estimates provided. It is expected that the Parish will create an integrated priority list consisting of projects from all basins, constructed individually as funding becomes available. A summary of projects and costs is tabulated on the following pages by phase.

Recommended Program Construction Cost Estimation		
Phase	Number of Projects	Cost
Phase 1	4	$ 21,720,000.00
Phase 2	7	$ 6,465,620.00
Phase 3	4	$ 1,932,000.00
Phase 4	2	$ 1,227,450.00
Phase 5	2	$ 321,300.00
Phase 6	1	$ 163,760.00
Total	20	$ 31,830,130.00



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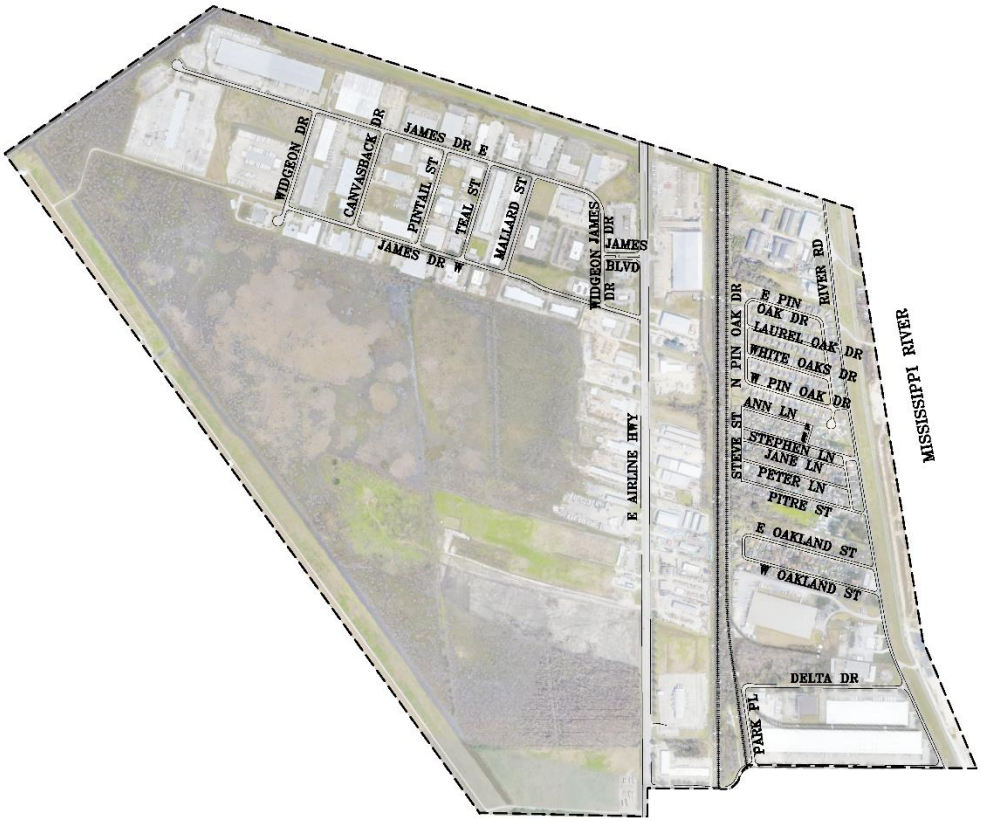
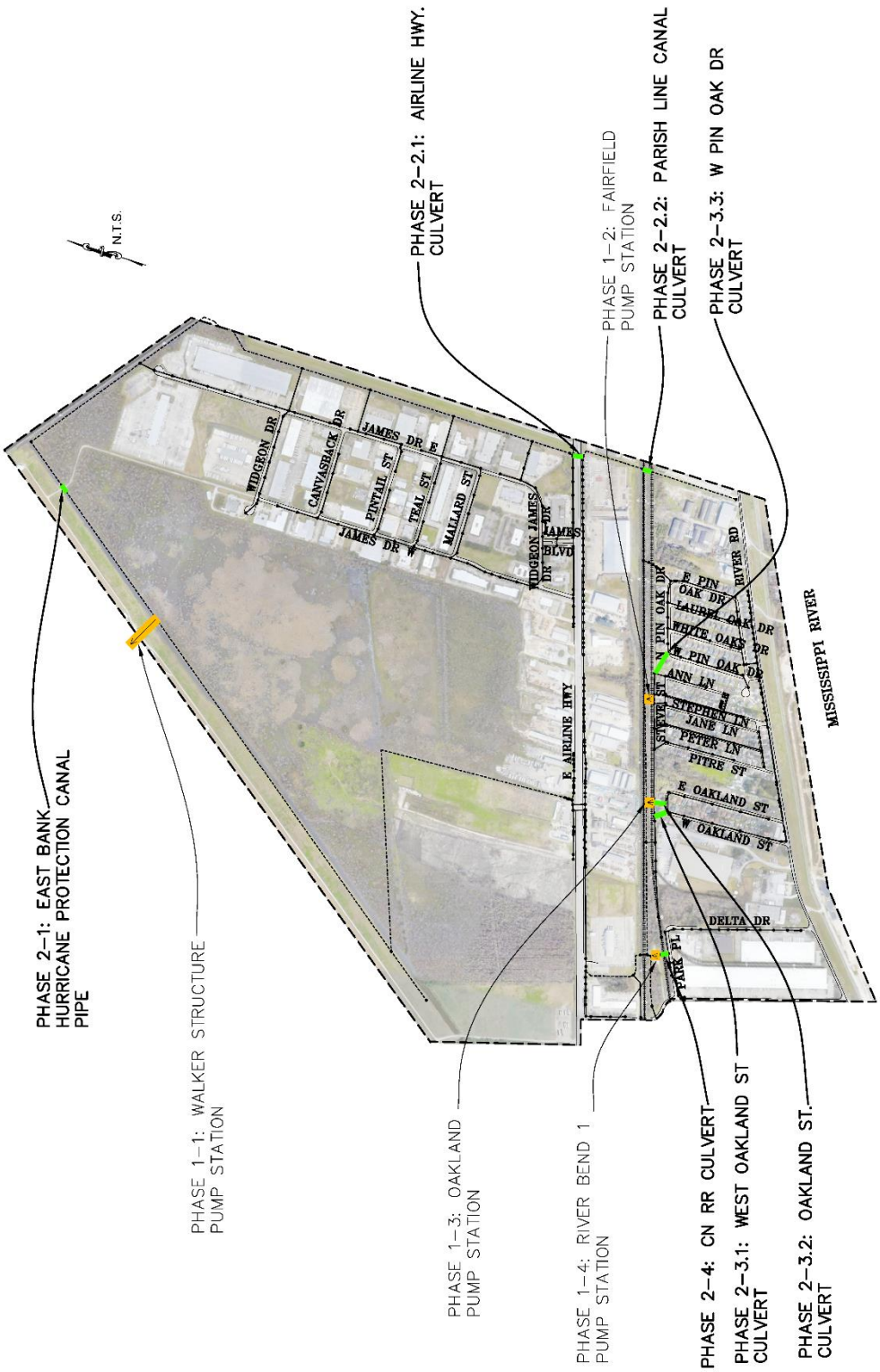


ALMEDIA WATERSHED

Phase 1 Projects and Construction Cost Estimates		
1-1: Walker Structure Pump Station and Sump Upgrade Upgrade Pump Station from 125 CFS to 250 CFS	$	7,500,000.00
1-2: Fairfield Pump Station Replacement Replace/Upgrade Pump Station from 25 CFS to 100 CFS	$	4,500,000.00
1-3: Oakland Pump Station Replacement Replace/Upgrade Pump Station from 67 CFS to 150 CFS	$	6,750,000.00
1-4: Riverbend 1 Pump Station and Sump Upgrade Upgrade Pump Station from 96 CFS to 150 CFS	$	2,970,000.00
Phase 1 Subtotal	**$**	**21,720,000.00**


ALMEDIA PROGRAM - PHASE 1 IMPROVEMENTS
25-YEAR CRITERIA WITH SELECTED 100-YEAR IMPROVEMENTS
N.T.S.
PHASE 1-1: WALKER STRUCTURE PUMP STATION
PHASE 1-2: FAIRFIELD PUMP STATION
PHASE 1-3: OAKLAND PUMP STATION
PHASE 1-4: RIVER BEND 1 PUMP STATION
WIDGEON DR
CANVASBACK DR
JAMES DR E
JAMES DR W
PINTAIL ST
TEAL ST
MALLARD ST
WIDGEON JAMES DR
JAMES BLVD
E AIRLINE HWY
N PIN OAK DR
E PIN OAK DR
LAUREL OAK DR
WHITE OAKS DR
W PIN OAK DR
ANN LN
STEPHEN LN
JANE LN
PETER LN
PITRE ST
E OAKLAND ST
W OAKLAND ST
DELTA DR
PARK PL
RIVER RD
MISSISSIPPI RIVER

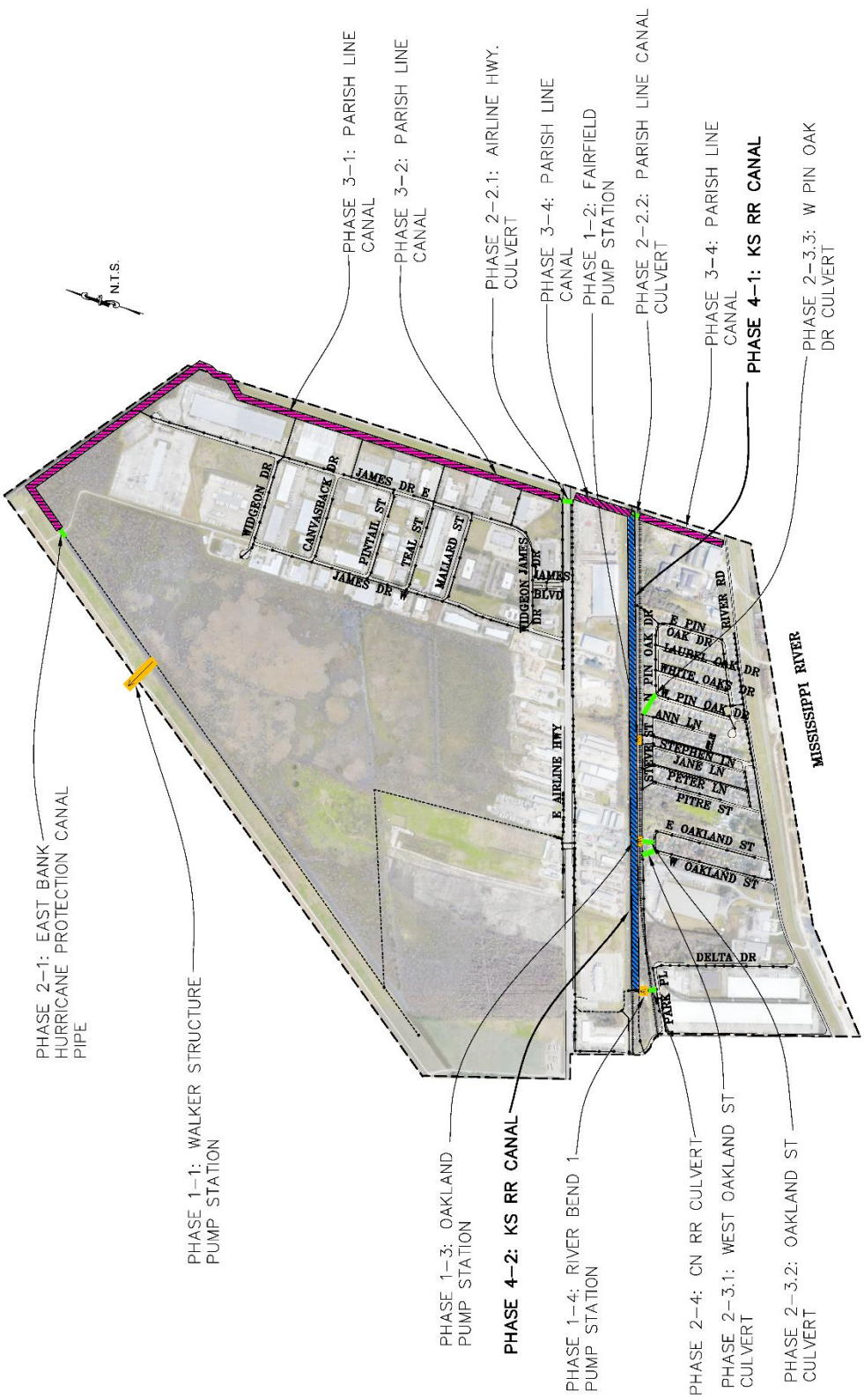
Phase 2 Projects and Construction Cost Estimates		
2-1: East Bank Hurricane Protection Canal Required 5-84" RCP Approximately 630 Linear Feet	$	504,000.00
2-2.1: Airline Hwy. Crossing at Parish Line Canal Required Jack and Bore 4-72" RCP Approximately 750 Linear Feet	$	4,875,000.00
2-2.2: Parish Line Canal Culvert Required Jack and Bore 1-60" RCP Approximately 100 Linear Feet	$	520,000.00
2-3.1: West Oakland St. Outfall Required 1-36" RCP Approximately 140 Linear Feet	$	29,820.00
2-3.2: Oakland Outfall Required 1-54" RCP Approximately 220 Linear Feet	$	121,000.00
2-3.3: W Pin Oak Dr Outfall Required 1-48" RCP Approximately 270 Linear Feet	$	64,800.00
2-4: CN RR Culvert Required Jack and Bore1-48″ RCP Approximately 90 Linear Feet	$	351,000.00
Phase 2 Subtotal	**$**	**6,465,620.00**


ALMEDIA PROGRAM - PHASE 2 IMPROVEMENTS
25-YEAR CRITERIA WITH SELECTED 100-YEAR IMPROVEMENTS
N.T.S.
PHASE 2-1: EAST BANK HURRICANE PROTECTION CANAL PIPE
PHASE 1-1: WALKER STRUCTURE PUMP STATION
PHASE 2-1.1: AIRLINE HWY. CULVERT
PHASE 1-2: FAIRFIELD PUMP STATION
PHASE 2-2.2: PARISH LINE CANAL CULVERT
PHASE 2-3.3: W PIN OAK DR CULVERT
PHASE 1-3: OAKLAND PUMP STATION
PHASE 1-4: RIVER BEND 1 PUMP STATION
PHASE 2-4: CN RR CULVERT
PHASE 2-3.1: WEST OAKLAND ST CULVERT
PHASE 2-3.2: OAKLAND ST. CULVERT
MISSISSIPPI RIVER
WIDGEON DR
CANVASBACK DR
JAMES DR E
JAMES DR W
PINTAIL ST
TEAL ST
MALLARD ST
WIDGEON JAMES DR
JAMES BLVD
E AIRLINE HWY
E PIN OAK DR
W PIN OAK DR
RIVER RD
OAK DR
LAUREL OAK DR
WHITE OAKS DR
ANN LN
STEPHEN LN
JANE LN
PETER LN
PITRE ST
E OAKLAND ST
W OAKLAND ST
DELTA DR
PARK PL

Phase 3 Projects and Construction Cost Estimates		
3-1: Reshape and clean Parish Line Canal	$	1,229,865.00
Required cleaning and reshaping the canal. Approximately 5,360 Linear Feet		
3-2: Reshape and clean Parish Line Canal	$	309,750.00
Required cleaning and reshaping the canal. Approximately 1,350 Linear Feet		
3-3: Reshape and clean Parish Line Canal	$	165,217.50
Required cleaning and reshaping the canal. Approximately 720 Linear Feet		
3-4: Reshape and clean Parish Line Canal	$	227,167.50
Required cleaning and reshaping the canal. Approximately 990 Linear Feet		
Phase 3 Subtotal	**$**	**1,932,000.00**


ALMEDIA PROGRAM - PHASE 3 IMPROVEMENTS
25-YEAR CRITERIA WITH SELECTED 100-YEAR IMPROVEMENTS
N.T.S.
PHASE 3-1: PARISH LINE CANAL
PHASE 3-2: PARISH LINE CANAL
PHASE 2-2.1: AIRLINE HWY. CULVERT
PHASE 3-4: PARISH LINE CANAL
PHASE 1-2: FAIRFIELD PUMP STATION
PHASE 2-2.2: PARISH LINE CANAL CULVERT
PHASE 3-4: PARISH LINE CANAL
PHASE 2-3.3: W PIN OAK DR CULVERT
PHASE 2-1: EAST BANK HURRICANE PROTECTION CANAL PIPE
PHASE 1-1: WALKER STRUCTURE PUMP STATION
PHASE 1-3: OAKLAND PUMP STATION
PHASE 1-4: RIVER BEND 1 PUMP STATION
PHASE 2-4: CN RR CULVERT
PHASE 2-3.1: WEST OAKLAND ST CULVERT
PHASE 2-3.2: OAKLAND ST CULVERT
WIDGEON DR
CANVASBACK DR
JAMES DR E
PINTAIL ST
TEAL ST
MALLARD ST
JAMES DR W
WIDGEON JAMES DR
JAMES BLVD
E AIRLINE HWY
N PIN OAK DR
E PIN OAK DR
LAUREL OAK DR
WHITE OAKS DR
W PIN OAK DR
ANN LN
STEPHEN LN
JANE LN
PETER LN
PITRE ST
E OAKLAND ST
W OAKLAND ST
DELTA DR
PARK PL
RIVER RD
MISSISSIPPI RIVER

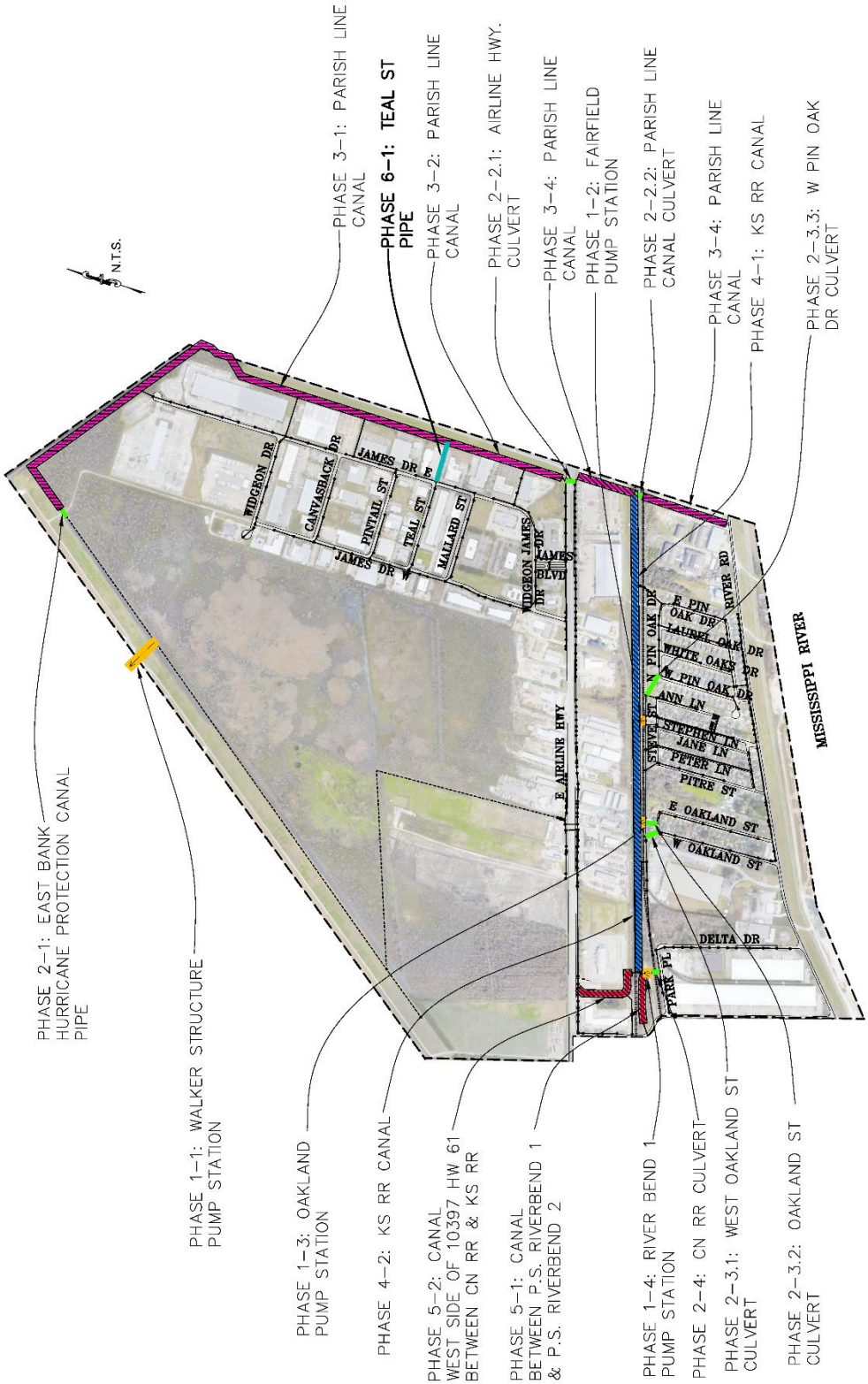
Phase 4 Projects and Construction Cost Estimates		
4-1: Reshape and clean KS RR Canal	$	585,007.50
Required cleaning and reshaping the canal. Approximately 2,550 Linear Feet		
4-2:Reshape and clean KS RR Canal	$	642,442.50
Required cleaning and reshaping the canal. Approximately 2,800 Linear Feet		
Phase 4 Subtotal	**$**	**1,227,450.00**


ALMEDIA PROGRAM - PHASE 4 IMPROVEMENTS
25-YEAR CRITERIA WITH SELECTED 100-YEAR IMPROVEMENTS
N.T.S.
PHASE 2-1: EAST BANK HURRICANE PROTECTION CANAL PIPE
PHASE 1-1: WALKER STRUCTURE PUMP STATION
PHASE 3-1: PARISH LINE CANAL
PHASE 3-2: PARISH LINE CANAL
PHASE 2-2.1: AIRLINE HWY. CULVERT
PHASE 3-4: PARISH LINE CANAL
PHASE 1-2: FAIRFIELD PUMP STATION
PHASE 2-2.2: PARISH LINE CANAL CULVERT
PHASE 3-4: PARISH LINE CANAL
PHASE 4-1: KS RR CANAL
PHASE 2-3.3: W PIN OAK DR CULVERT
PHASE 1-3: OAKLAND PUMP STATION
PHASE 4-2: KS RR CANAL
PHASE 1-4: RIVER BEND 1 PUMP STATION
PHASE 2-4: CN RR CULVERT
PHASE 2-3.1: WEST OAKLAND ST CULVERT
PHASE 2-3.2: OAKLAND ST CULVERT
WIDGEON DR
CANVASBACK DR
JAMES DR E
JAMES DR W
PINTAIL ST
TEAL ST
MALLARD ST
WIDGEON JAMES DR
JAMES BLVD
E AIRLINE HWY
SEWER ST
E PIN OAK DR
W PIN OAK DR
RIVER RD
LAUREL OAK DR
WHITE OAKS DR
ANN LN
STEPHEN LN
JANE LN
PETER LN
PITRE ST
E OAKLAND ST
W OAKLAND ST
DELTA DR
PARK PL
MISSISSIPPI RIVER

Phase 5 Projects and Construction Cost Estimates		
5-1: Reshape and clean canal between P.S. Riverbent 1 & P.S. Riverbent 2	$	126,262.50
Required cleaning and reshaping the canal. Approximately 550 Linear Feet		
5-2:Reshape and Clean canal west side of 10397 HW 61 between CN RR & KS RR	$	195,037.50
Required cleaning and reshaping the canal. Approximately 850 Linear Feet		
Phase 5 Subtotal	**$**	**321,300.00**


ALMEDIA PROGRAM - PHASE 5 IMPROVEMENTS
25-YEAR CRITERIA WITH SELECTED 100-YEAR IMPROVEMENTS
N.T.S.
PHASE 2-1: EAST BANK HURRICANE PROTECTION CANAL PIPE
PHASE 1-1: WALKER STRUCTURE PUMP STATION
PHASE 1-3: OAKLAND PUMP STATION
PHASE 4-2: KS RR CANAL
PHASE 5-2: CANAL WEST SIDE OF 10397 HW 61 BETWEEN CN RR & KS RR
PHASE 5-1: CANAL BETWEEN P.S. RIVERBEND & P.S. RIVERBEND
PHASE 1-4: RIVER BEND 1 PUMP STATION
PHASE 2-4: CN RR CULVERT
PHASE 2-3.1: WEST OAKLAND ST CULVERT
PHASE 2-3.2: OAKLAND ST CULVERT
PHASE 3-1: PARISH LINE CANAL
PHASE 3-2: PARISH LINE CANAL
PHASE 2-2.1: AIRLINE HWY. CULVERT
PHASE 3-4: PARISH LINE CANAL
PHASE 1-2: FAIRFIELD PUMP STATION
PHASE 2-2.2: PARISH LINE CANAL CULVERT
PHASE 3-4: PARISH LINE CANAL
PHASE 4-1: KS RR CANAL
PHASE 2-3.3: W PIN OAK DR CULVERT
WIDGEON DR
CANVASBACK DR
JAMES DR E
PINTAIL ST
TEAL ST
MALLARD ST
JAMES DR W
WIDGEON JAMES DR
JAMES BLVD
E AIRLINE HWY
STEVE ST
E PIN OAK DR
W PIN OAK DR
RIVER RD
E PIN OAK DR
LAUREL OAK DR
WHITE OAKS DR
W PIN OAK DR
ANN LN
STEPHEN LN
JANE LN
PETER LN
PITRE ST
E OAKLAND ST
W OAKLAND ST
DELTA DR
PARK PL
MISSISSIPPI RIVER

Phase 6 Projects and Construction Cost Estimates		
6-1: Teal Street		
Required 1-42″ RCP Approximately 460 Linear Feet	$	163,760.00
Phase 6 Subtotal	**$**	**163,760.00**


ALMEDIA PROGRAM - PHASE 6 IMPROVEMENTS
25-YEAR CRITERIA WITH SELECTED 100-YEAR IMPROVEMENTS
N.T.S.
PHASE 2-1: EAST BANK HURRICANE PROTECTION CANAL PIPE
PHASE 1-1: WALKER STRUCTURE PUMP STATION
PHASE 1-3: OAKLAND PUMP STATION
PHASE 4-2: KS RR CANAL
PHASE 5-2: CANAL WEST SIDE OF 10397 HW 61 BETWEEN CN RR & KS RR
PHASE 5-1: CANAL BETWEEN P.S. RIVERBEND 1 & P.S. RIVERBEND 2
PHASE 1-4: RIVER BEND 1 PUMP STATION
PHASE 2-4: CN RR CULVERT
PHASE 2-3.1: WEST OAKLAND ST CULVERT
PHASE 2-3.2: OAKLAND ST CULVERT
PHASE 3-1: PARISH LINE CANAL
PHASE 6-1: TEAL ST PIPE
PHASE 3-2: PARISH LINE CANAL
PHASE 2-2.1: AIRLINE HWY. CULVERT
PHASE 3-4: PARISH LINE CANAL
PHASE 1-2: FAIRFIELD PUMP STATION
PHASE 2-2.2: PARISH LINE CANAL CULVERT
PHASE 3-4: PARISH LINE CANAL
PHASE 4-1: KS RR CANAL
PHASE 2-3.3: W PIN OAK DR CULVERT
WIDGEON DR
CANVASBACK DR
JAMES DR E
PINTAIL ST
TEAL ST
MALLARD ST
JAMES DR W
WIDGEON JAMES DR
JAMES BLVD
E AIRLINE HWY
STEVE ST
E PIN OAK DR
OAK DR
LAUREL OAK DR
WHITE OAKS DR
W PIN OAK DR
ANN LN
STEPHEN LN
JANE LN
PETER LN
PITRE ST
E OAKLAND ST
W OAKLAND ST
DELTA DR
PARK PL
RIVER RD
MISSISSIPPI RIVER