Volume 7: Dianne Place

7.1 Executive Summary

St. Charles Parish tasked Principal Engineering, Inc. to complete the study of the Dianne Place 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 improvements 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 areas along Dianne Drive and Janet Drive north of Gene Drive, as well as in open space east of Janet Drive and south of CN RR. 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. Major improvements include upgrading existing Dianne Place Pump Station, increasing capacity of existing crossings under CN RR, and increasing capacity of existing drainage pipes and culverts along Dianne Drive and Janet Drive.

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	1	$ 4,650,000.00
Phase 2	6	$ 4,270,000.00
Phase 3	2	$ 1,397,613.60
Total	9	$ 10,317,613.60

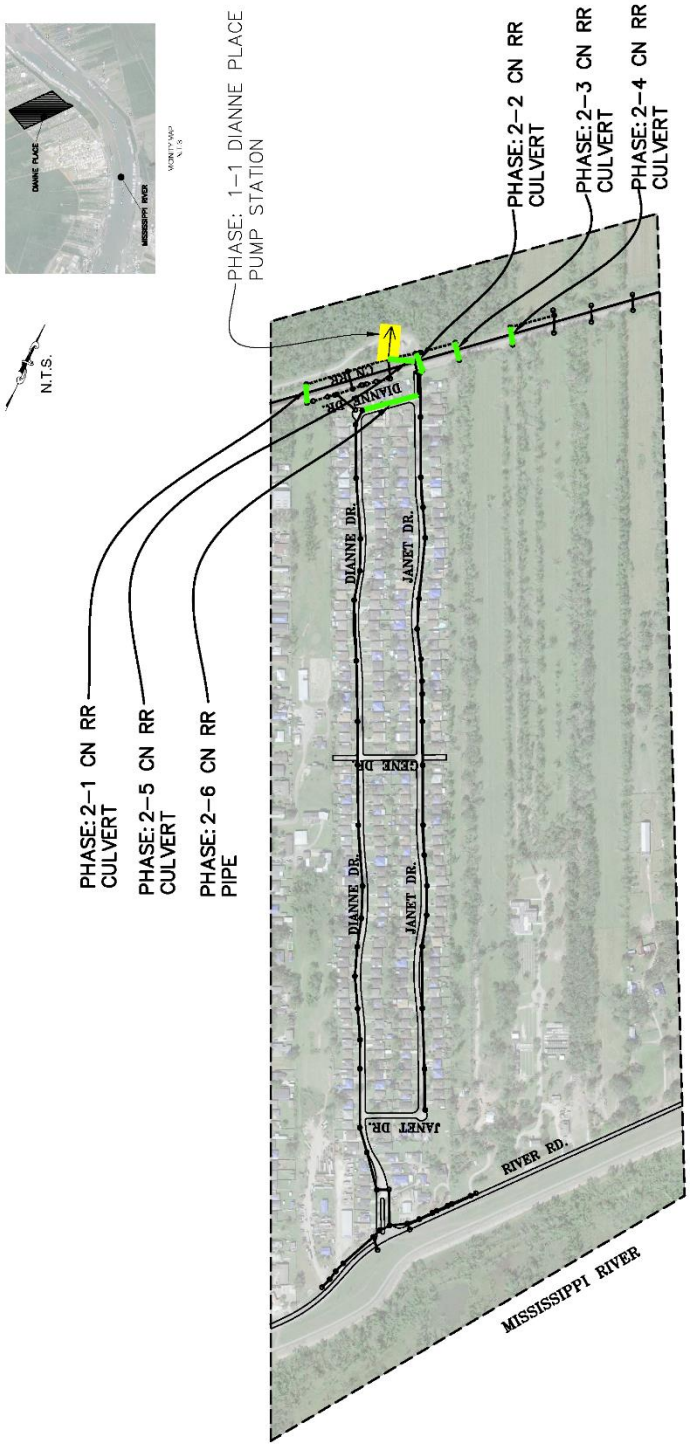
DIANNE PLACE WATERSHED

Phase 1 Projects and Construction Cost Estimates		
1-1: Dianne Place Pump Station and Sump Upgrade Upgrade Pump Station from 140 CFS to 250 CFS	$	4,650,000.00
Phase 1 Subtotal	**$**	**4,650,000.00**

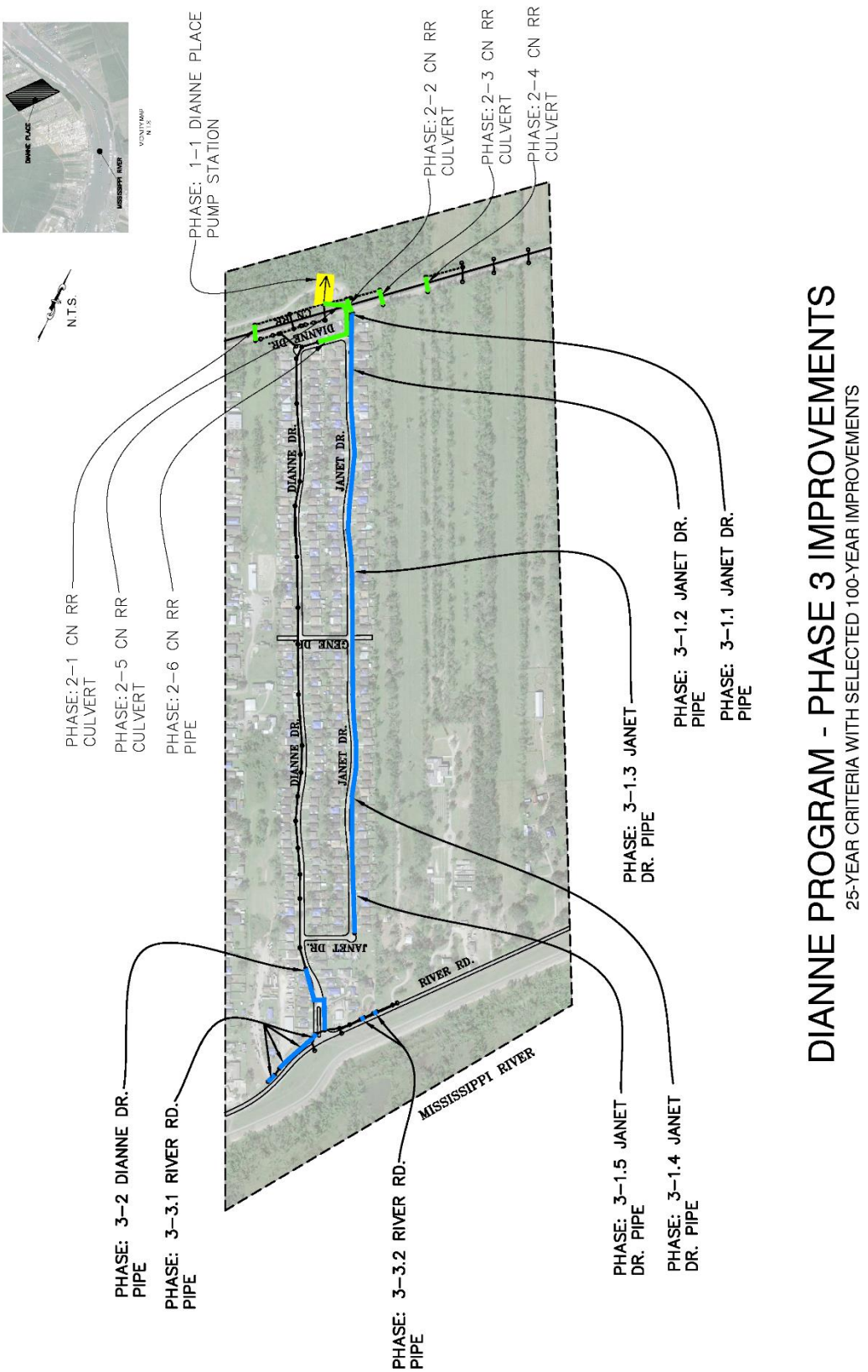
DIANNE PLACE PROGRAM - PHASE 1 IMPROVEMENTS

25-YEAR CRITERIA WITH SELECTED 100-YEAR IMPROVEMENTS

Phase 2 Projects and Construction Cost Estimates		
2-1: CN Railway Crossing West of Dianne Dr	$	720,000.00
Required Jack and Bore 2-42" Pipe Approximately 100 Linear Feet		
2-2: CN Railway Crossing at Janet Dr	$	800,000.00
Required Jack and Bore 2-48" Pipe Approximately 100 Linear Feet		
2-3: CN Railway Crossing East of Janet Dr	$	720,000.00
Required Jack and Bore 2-42" Pipe Approximately 100 Linear Feet		
2-4: CN Railway Crossing East of Janet Dr 2	$	640,000.00
Required Jack and Bore 2-36" Pipe Approximately 100 Linear Feet		
2-5: CN Railway Crossing for Dianne Dr	$	1,000,000.00
Required Jack and Bore 60" Pipe Approximately 100 Linear Feet		
2-6: Dianne Dr Trunk Line Extension	$	390,000.00
Required 60" RCP Approximately 300 Linear Feet		
Phase 2 Subtotal	**$**	**4,270,000.00**


DIANNE PLACE PROGRAM - PHASE 2 IMPROVEMENTS
25-YEAR CRITERIA WITH SELECTED 100-YEAR IMPROVEMENTS
PHASE: 1-1 DIANNE PLACE PUMP STATION
PHASE: 2-1 CN RR CULVERT
PHASE: 2-5 CN RR CULVERT
PHASE: 2-6 CN RR PIPE
PHASE: 2-2 CN RR CULVERT
PHASE: 2-3 CN RR CULVERT
PHASE: 2-4 CN RR CULVERT
DIANNE PLACE
DIANNE DR.
JANET DR.
RIVER RD.
MISSISSIPPI RIVER
N.T.S.

Phase 3 Projects and Construction Cost Estimates		
3-1.1: Janet Dr Trunk Line Required 42" RCP Approximately 20 Linear Feet	$	9,625.60
3-1.2: Janet Dr Trunk Line Required 36" RCP Approximately 520 Linear Feet	$	197,912.00
3-1.3: Janet Dr Trunk Line Required 30" RCP Approximately 1860 Linear Feet	$	540,888.00
3-1.4: Janet Dr Trunk Line Required 30" RCP Approximately 900 Linear Feet	$	261,720.00
3-1.5: Janet Dr Trunk Line Required 24" RCP and 18" RCP Approximately 500 Linear Feet	$	136,300.00
3-1.6: River Road Trunk Line Required 18" RCP Approximately 50 Linear Feet	$	12,220.00
3-1.7: River Road Trunk Line Required 24" RCP Approximately 390 Linear Feet	$	113,646.00
3-2: Dianne Dr Trunk Line Required 24" RCP Approximately 430 Linear Feet	$	125,302.00
Phase 3 Subtotal	**$**	**1,397,613.60**



DIANNE PROGRAM - PHASE 3 IMPROVEMENTS

25-YEAR CRITERIA WITH SELECTED 100-YEAR IMPROVEMENTS