

Volume 6: St. Rose

6.1 Executive Summary

St. Charles Parish tasked Principal Engineering, Inc. to complete the study of the St. Rose 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.

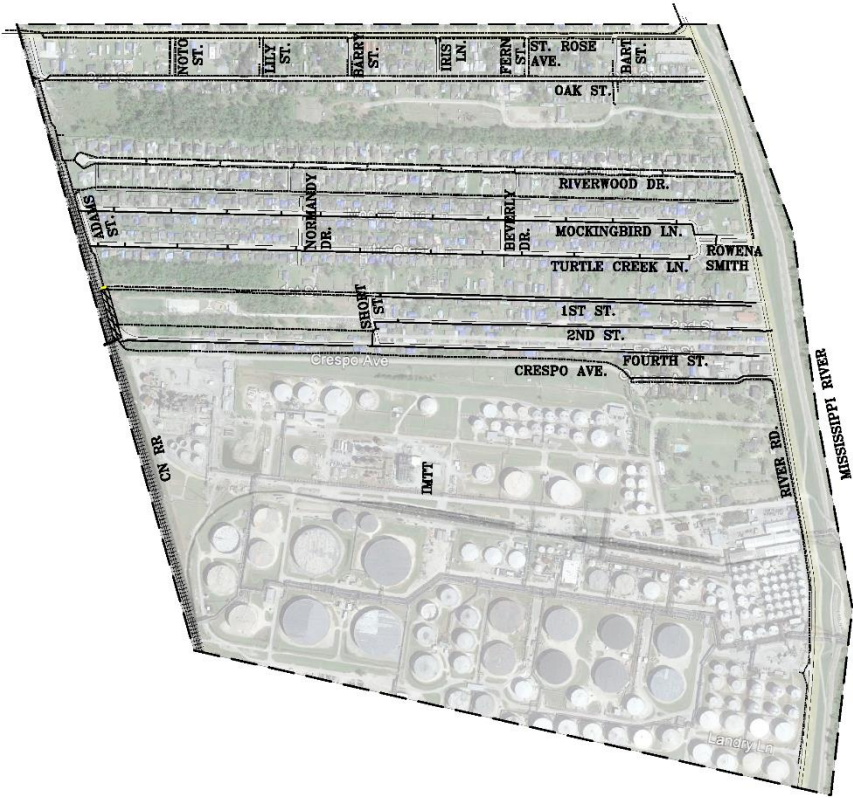
The recommended program consists of the 25-Year and select 100-Year improvements at major street crossings and railroad crossings.

Analysis used models built in EPA SWMM and AutoDesk's Storm and Sanitary Analysis. Existing flood-prone areas were identified in areas along Crespo St, between Fourth Street and Turtle Creek north of Short Street, along Turtle Creek Ln and Mockingbird Ln north of Normandy Drive, between Riverwood drive and Oak Street north of Lily St. 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. Some of the major improvements include upgrading existing Fourth Street and Oak Street Pump Stations, widening, and increasing capacity of the canals along CN RR, Crespo Ave, Short Street, and First Street.

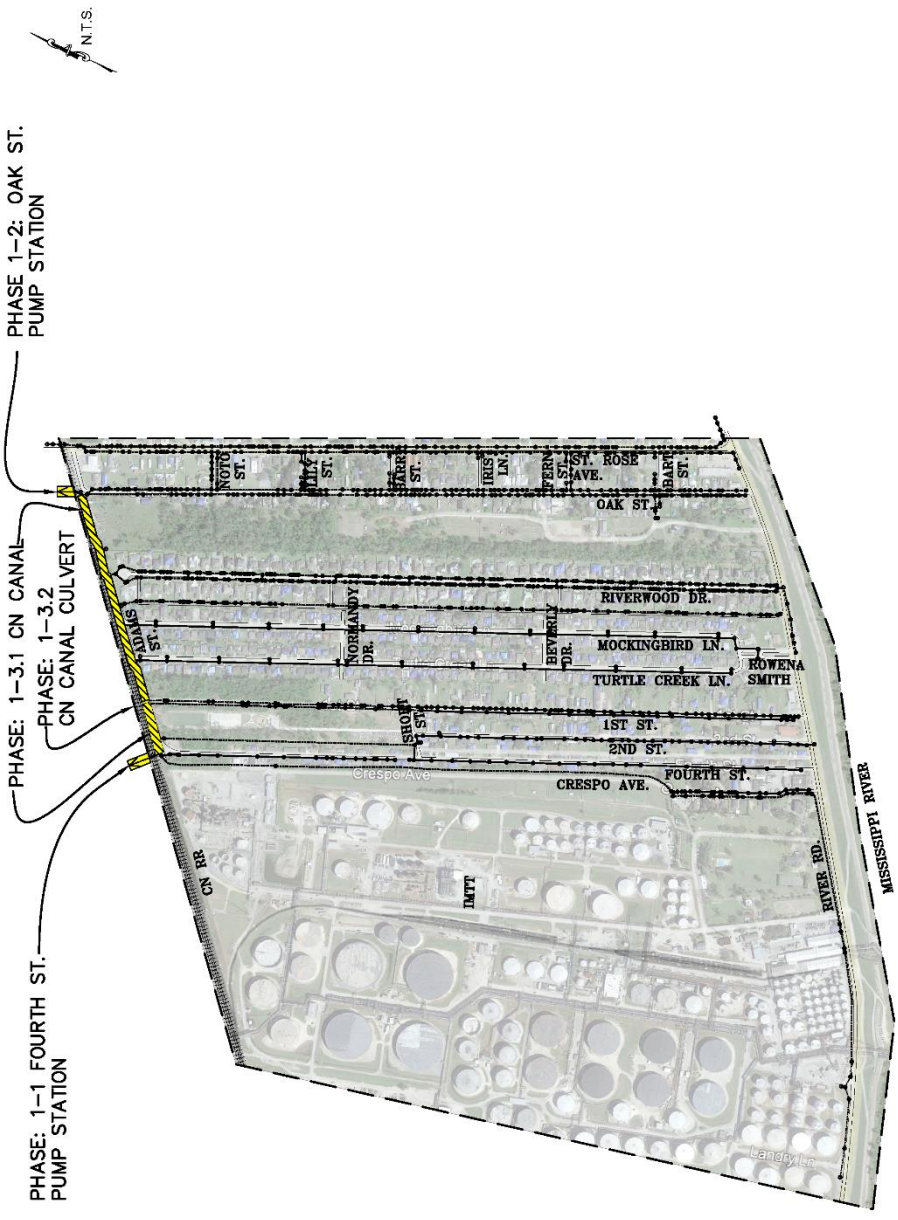
Modeled improvements have been partitioned into executable projects with cost estimates provided. It is expected that the Parish will create an integrated priority list consisting of projects from all basins, constructed individually as funding becomes available. A summary of projects and costs is tabulated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

Recommended Program Construction Cost Estimation		
Phase	Number of Projects	Cost
Phase 1	4	\$ 30,173,400.00
Phase 2	6	\$ 641,970.00
Phase 3	5	\$ 319,863.95
Total	15	\$ 31,135,233.95



ST. ROSE WATERSHED

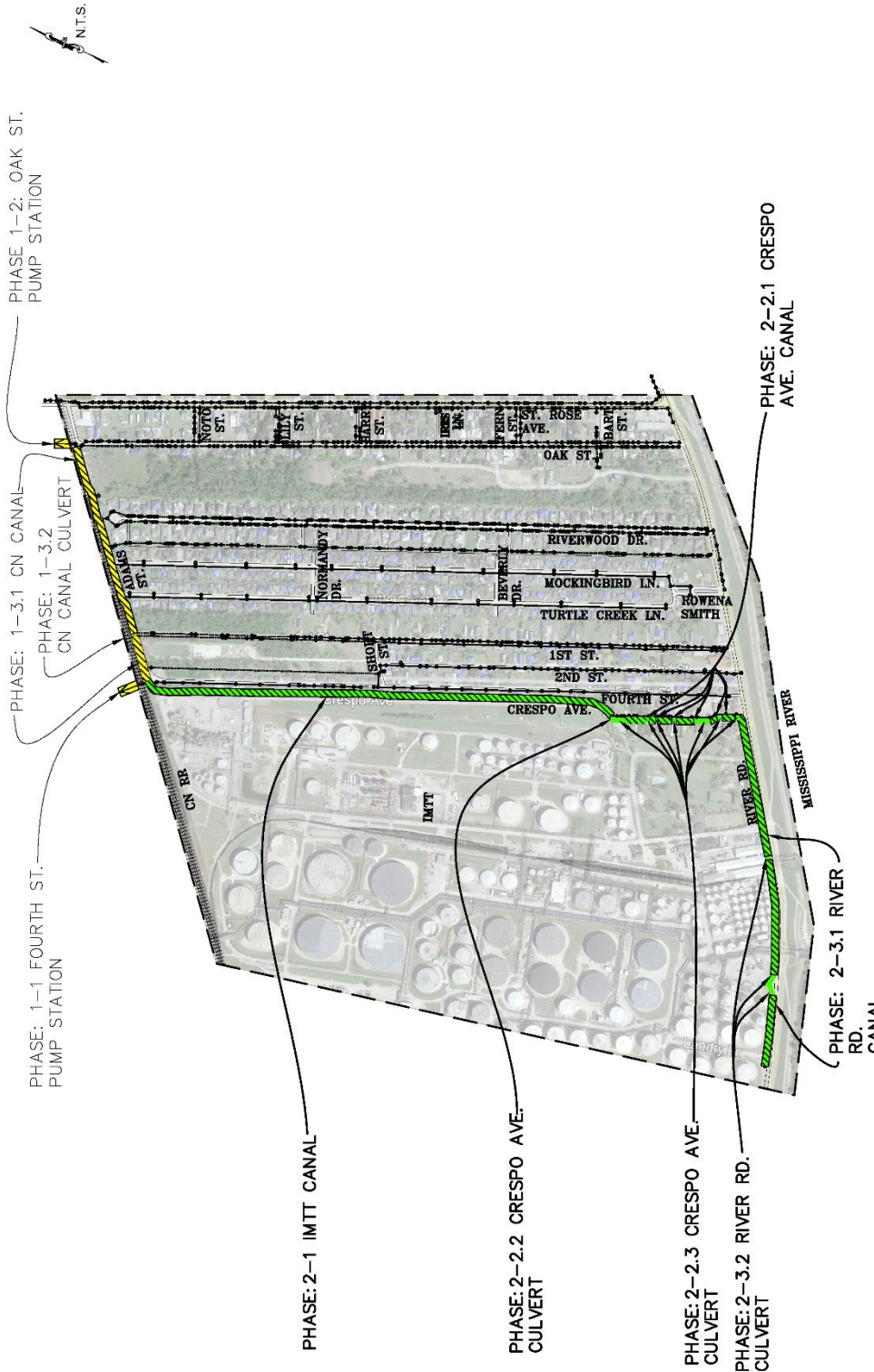
Phase 1 Projects and Construction Cost Estimates	
1-1: Fourth St Pump Station and Sump Replace and Upgrade	
Replace and Upgrade Pump Station 500 CFS 2400 Cubic Feet Sump	\$ 21,500,000.00
1-2: Oak St Pump Station and Sump Replace and Upgrade	
Replace and Upgrade Pump Station 200 CFS 2400 Cubic Feet Sump	\$ 8,500,000.00
1-3.1: Canal Widening Along CN Railway	
Canal Widening: 4' Depth, 26' Width Approximately 2000 Linear Feet	\$ 105,000.00
1-3.2: Box Culvert Along CN Railway	
Required 4' x 10' Box Culvert Approximately 20 Linear Feet	\$ 68,400.00
Phase 1 Subtotal	\$ 30,173,400.00



ST. ROSE PROGRAM - PHASE 1 IMPROVEMENTS

25-YEAR CRITERIA WITH SELECTED 100-YEAR IMPROVEMENTS

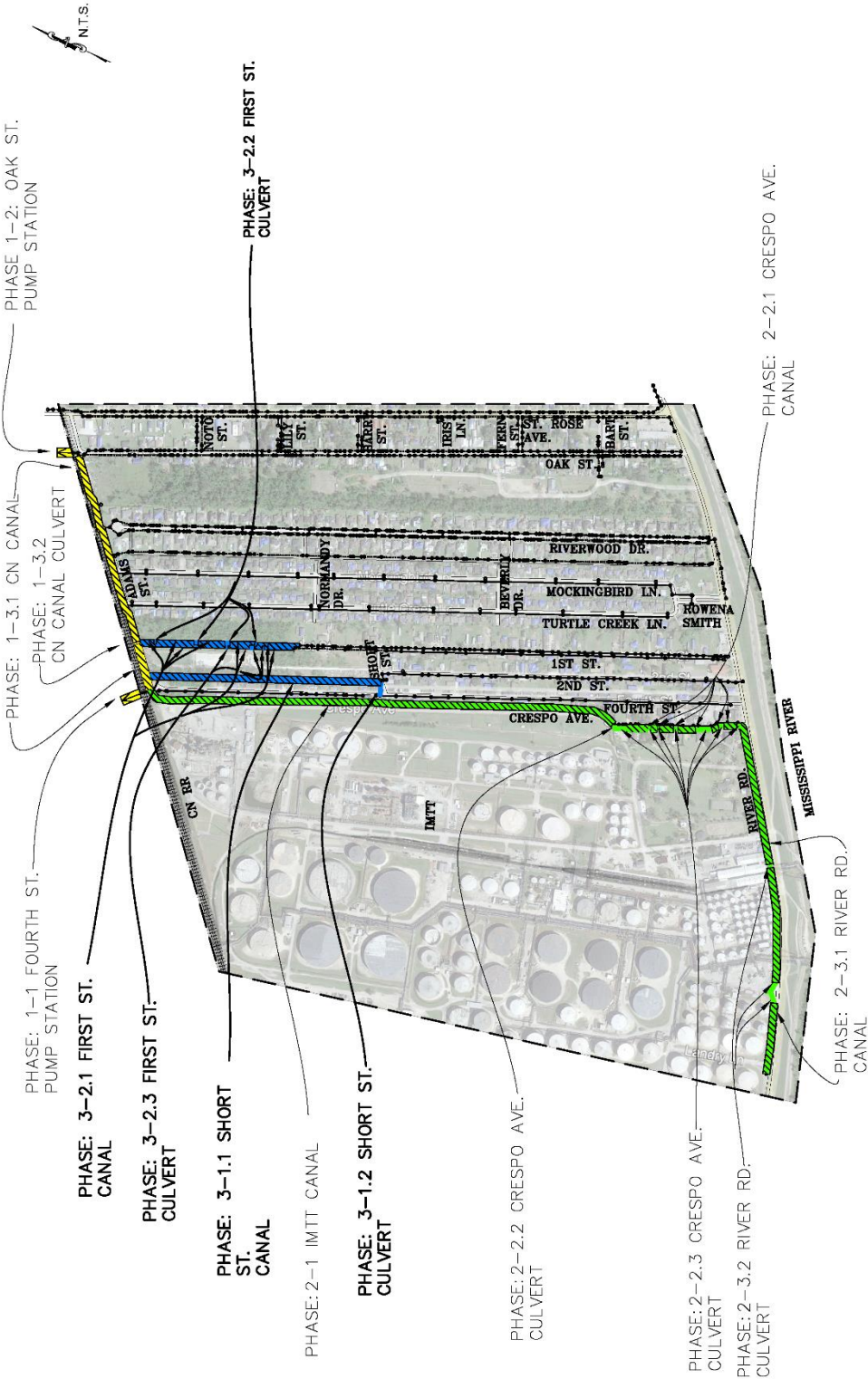
Phase 2 Projects and Construction Cost Estimates	
2-1: Canal Widening Along IMTT to Crespo Ave	
Canal Widening: 2.5' Depth, 14' Width Approximately 3500 Linear Feet	\$ 183,750.00
2-2.1: Canal Widening Along Crespo Ave	
Canal Widening: 2.5' Depth, 13' Width Approximately 600 Linear Feet	\$ 31,500.00
2-2.2: Required 48" RCPA Along Crespo Ave	
Required 48" RCPA Approximately 50 Linear Feet	\$ 24,400.00
2-2.3: Required 42" RCPA Along Crespo Ave	
Required 42" RCPA Approximately 300 Linear Feet	\$ 138,160.00
2-3.1: Canal Widening Along River Rd	
Canal Widening: 2.5' Depth, 13' Width Approximately 2400 Linear Feet	\$ 126,000.00
2-3.2: Required 42" RCPA Along River Rd	
Required 42" RCPA Approximately 300 Linear Feet	\$ 138,160.00
Phase 2 Subtotal	\$ 641,970.00



ST. ROSE PROGRAM - PHASE 2 IMPROVEMENTS

25-YEAR CRITERIA WITH SELECTED 100-YEAR IMPROVEMENTS

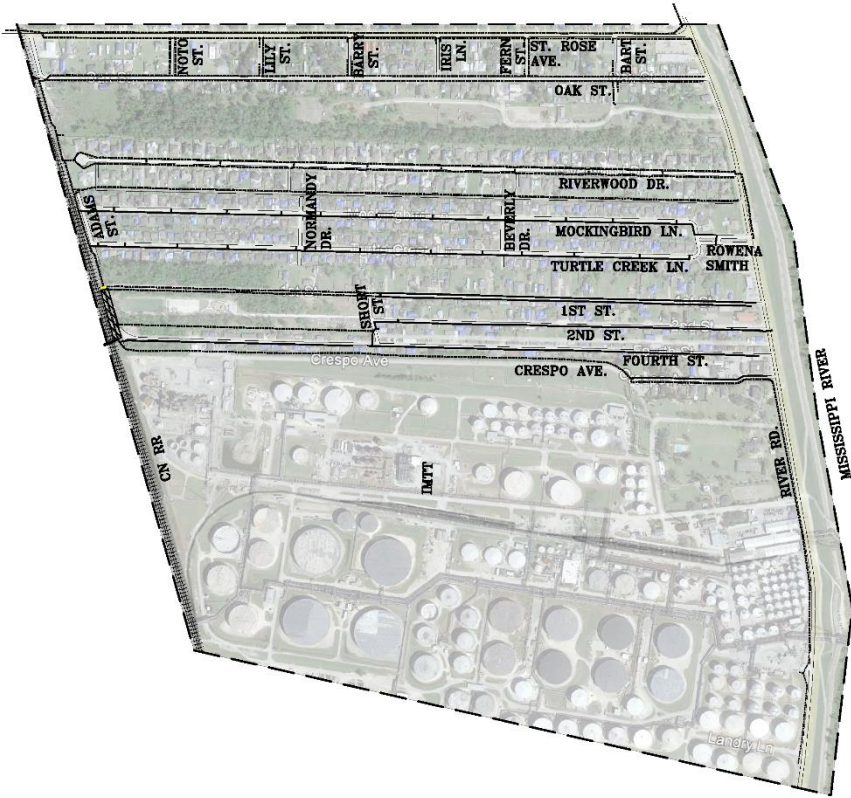
Phase 3 Projects and Construction Cost Estimates	
3-1.1: Canal Widening from Short St to CN Railroad	
Canal Widening: 3' Depth, 19' Width Approximately 1750 Linear Feet	\$ 91,875.00
3-1.2: Required 30" RCP at Short St Outfall	
Required 30" RCP Approximately 100 Linear Feet	\$ 29,080.00
3-2.1: Canal Widening Along First St to CN Railroad	
Canal Widening: 3' Depth, 16' Width Approximately 2200 Linear Feet	\$ 115,500.00
3-2.2: Required 42" RCPA at First St	
Required 42" RCPA Approximately 115 Linear Feet	\$ 52,960.95
3-2.3: Required 36" RCP at First St	
Required 36" RCP Approximately 80 Linear Feet	\$ 30,448.00
Phase 3 Subtotal	\$ 319,863.95



ST. ROSE PROGRAM - PHASE 3 IMPROVEMENTS
 25-YEAR CRITERIA WITH SELECTED 100-YEAR IMPROVEMENTS

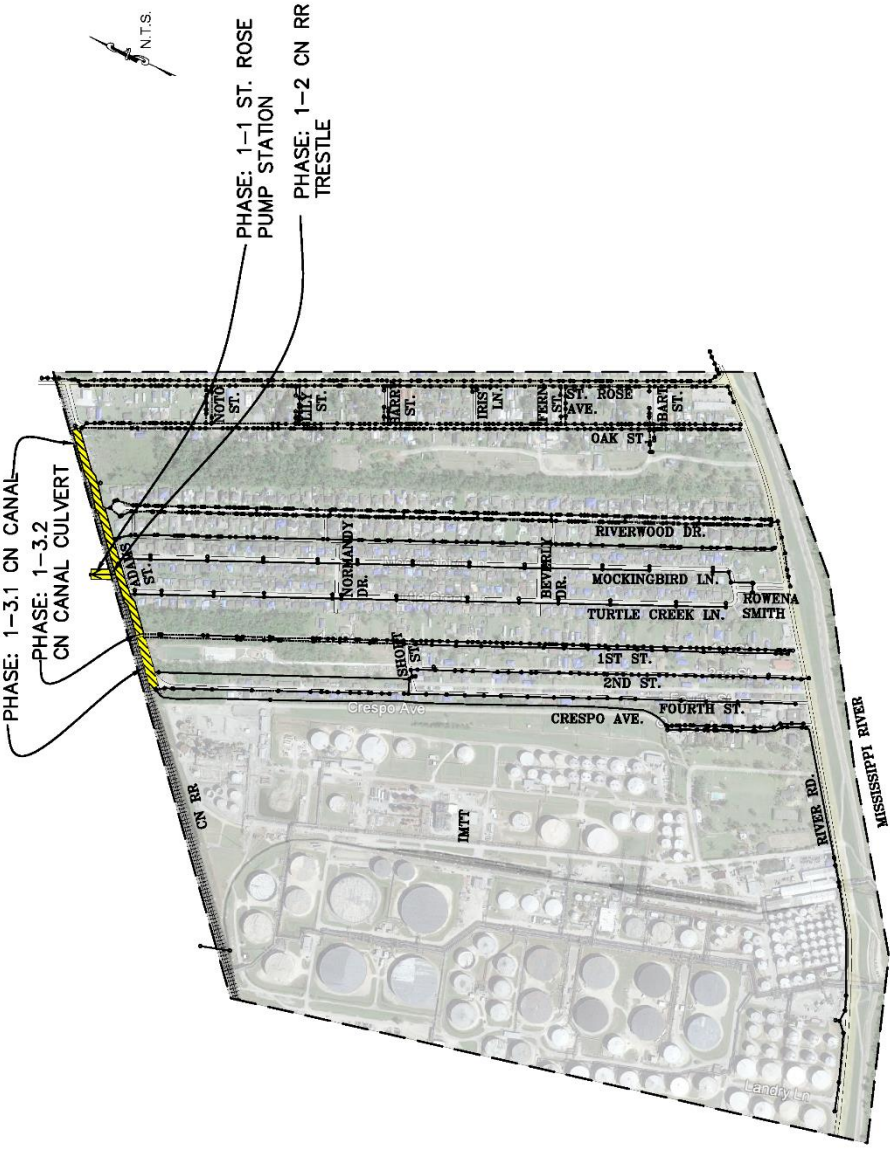
ALTERNATE 1

Recommended Program Construction Cost Estimation		
Phase	Number of Projects	Cost
Phase 1	4	\$ 30,473,400.00
Phase 2	6	\$ 9,208,220.00
Phase 3	5	\$ 319,863.95
Total	15	\$ 40,001,483.95



ST. ROSE WATERSHED

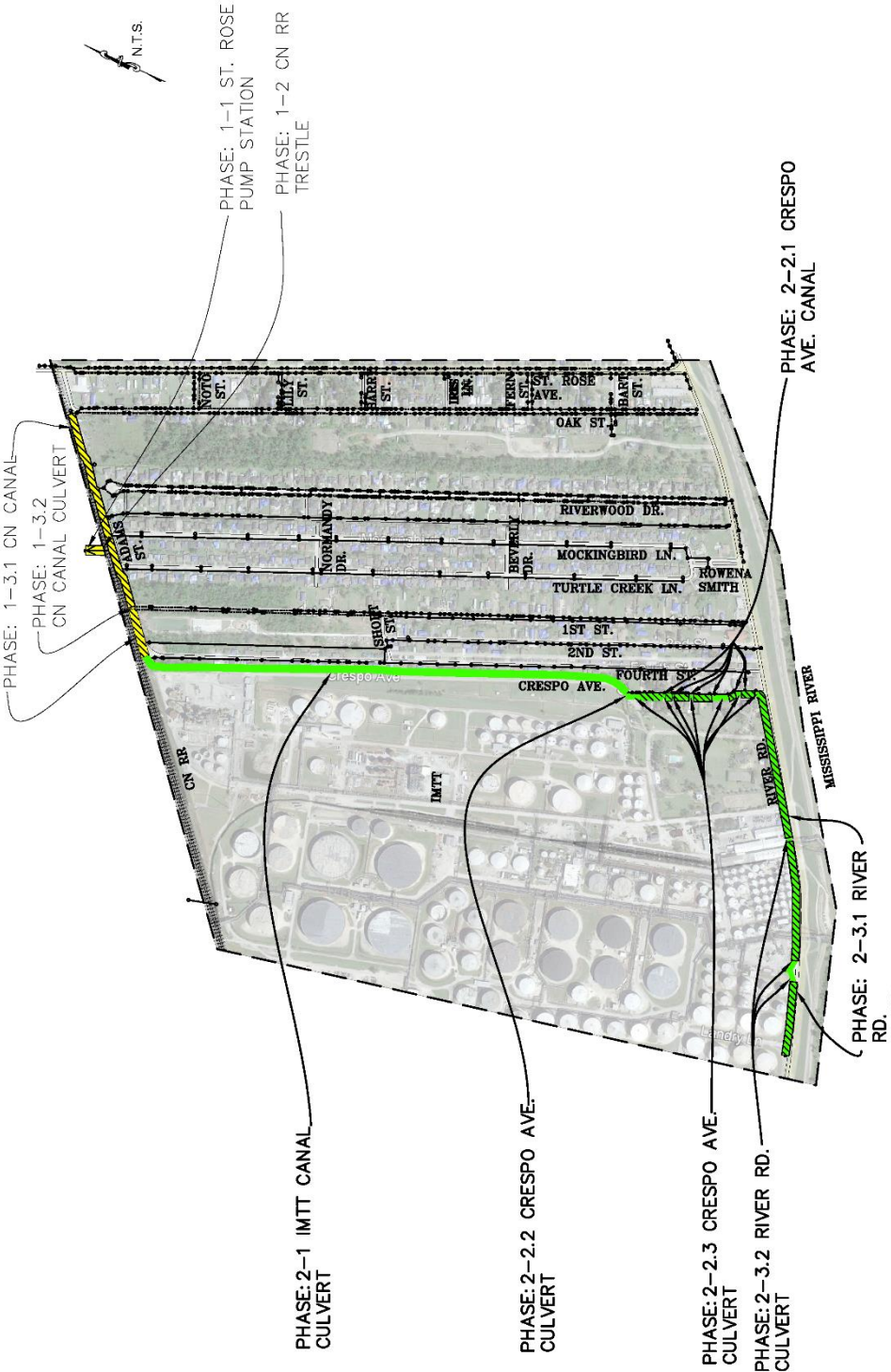
Phase 1 Projects and Construction Cost Estimates	
1-1: New Pump Station north of CN RR	
New Pump Station 525 CFS with Sump	\$ 30,000,000.00
1-2: New Trestle at CN RR	
Required 6' x 34' Trestle Approximately 130 Linear Feet	\$ 300,000.00
1-3.1: Canal Widening Along CN Railway	
Canal Widening: 4' Depth, 26' Width Approximately 2000 Linear Feet	\$ 105,000.00
1-3.2: Box Culvert Along CN Railway	
Required 4' x 10' Box Culvert Approximately 20 Linear Feet	\$ 68,400.00
Phase 1 Subtotal	\$ 30,473,400.00



ST. ROSE PROGRAM - PHASE 1 IMPROVEMENTS

25-YEAR CRITERIA WITH SELECTED 100-YEAR IMPROVEMENTS ALT-1

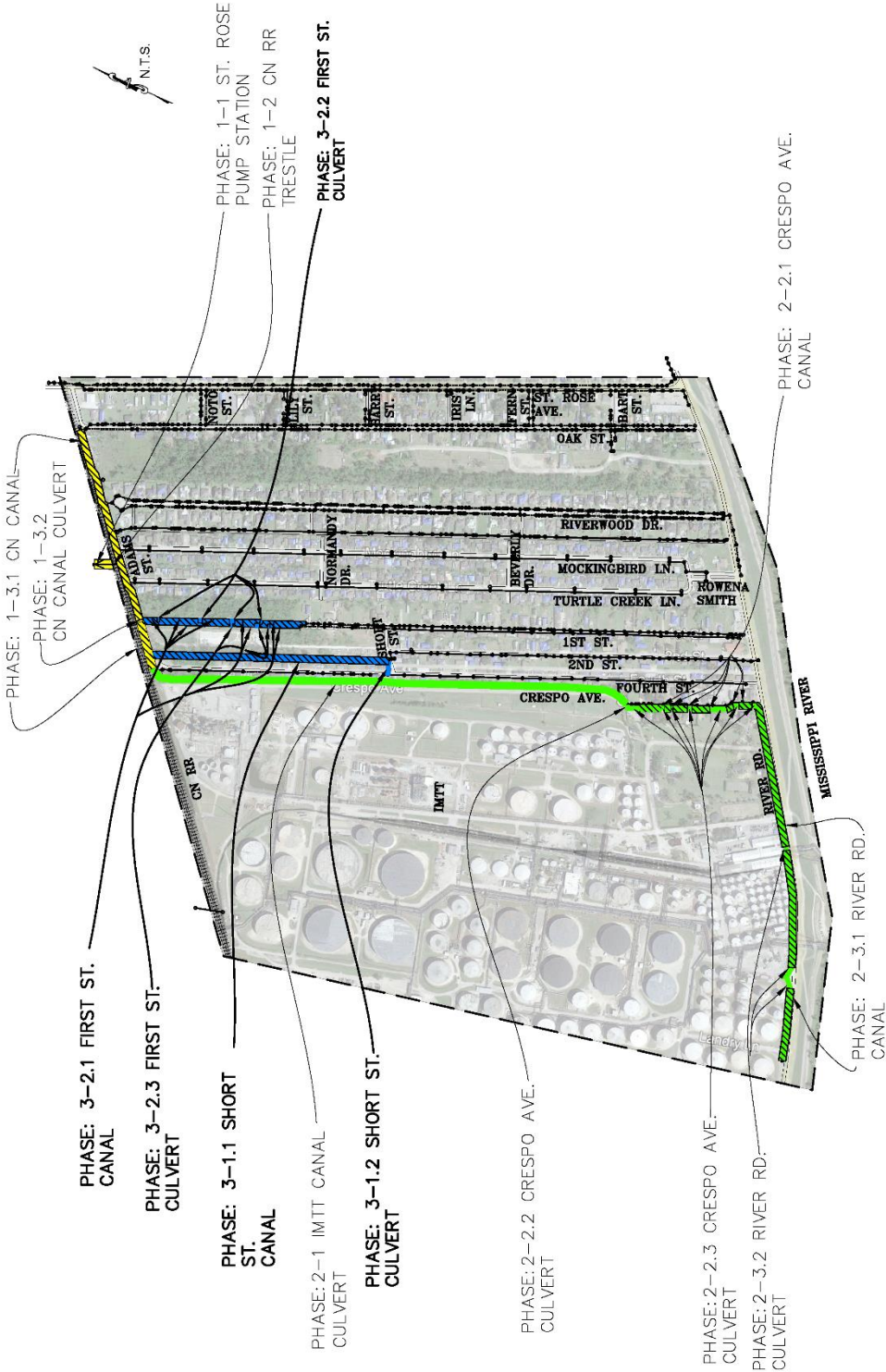
Phase 2 Projects and Construction Cost Estimates	
2-1: Box Culvert Along IMTT to Crespo Ave	
Required 4' x 5' Box Culvert Approximately 3500 Linear Feet	\$ 8,750,000.00
2-2.1: Canal Widening Along Crespo Ave	
Canal Widening: 2.5' Depth, 13' Width Approximately 600 Linear Feet	\$ 31,500.00
2-2.2: Required 48" RCPA Along Crespo Ave	
Required 48" RCPA Approximately 50 Linear Feet	\$ 24,400.00
2-2.3: Required 42" RCPA Along Crespo Ave	
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Required 42" RCPA Approximately 300 Linear Feet	\$ 138,160.00
Phase 2 Subtotal	\$ 9,208,220.00



ST. ROSE PROGRAM - PHASE 2 IMPROVEMENTS

25-YEAR CRITERIA WITH SELECTED 100-YEAR IMPROVEMENTS ALT-1

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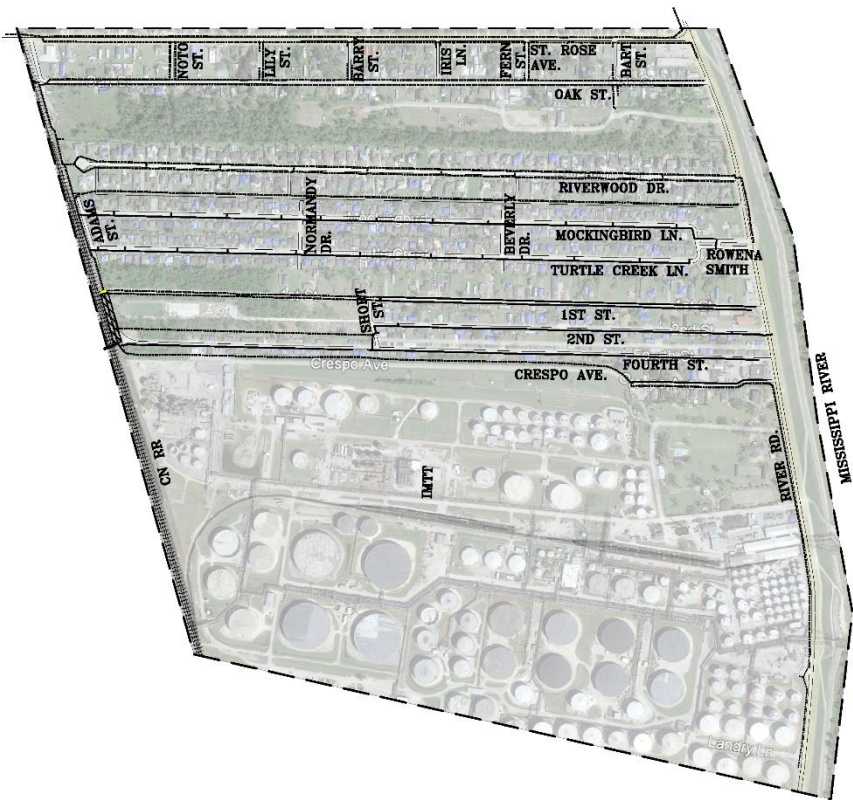


ST. ROSE PROGRAM - PHASE 3 IMPROVEMENTS

25-YEAR CRITERIA WITH SELECTED 100-YEAR IMPROVEMENTS ALT-1

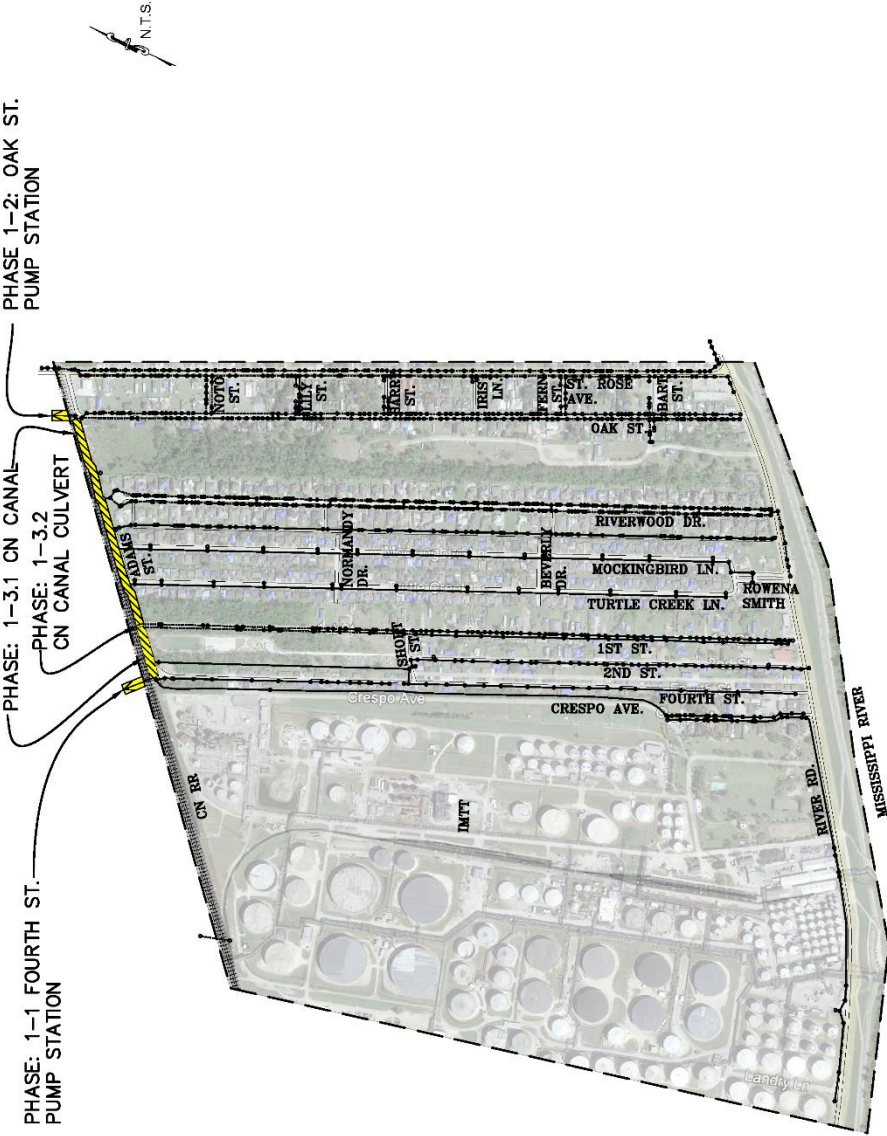
ALTERNATE 2

Recommended Program Construction Cost Estimation		
Phase	Number of Projects	Cost
Phase 1	4	\$ 30,173,400.00
Phase 2	6	\$ 9,208,220.00
Phase 3	5	\$ 319,863.95
Total	15	\$ 39,701,483.95



ST. ROSE WATERSHED

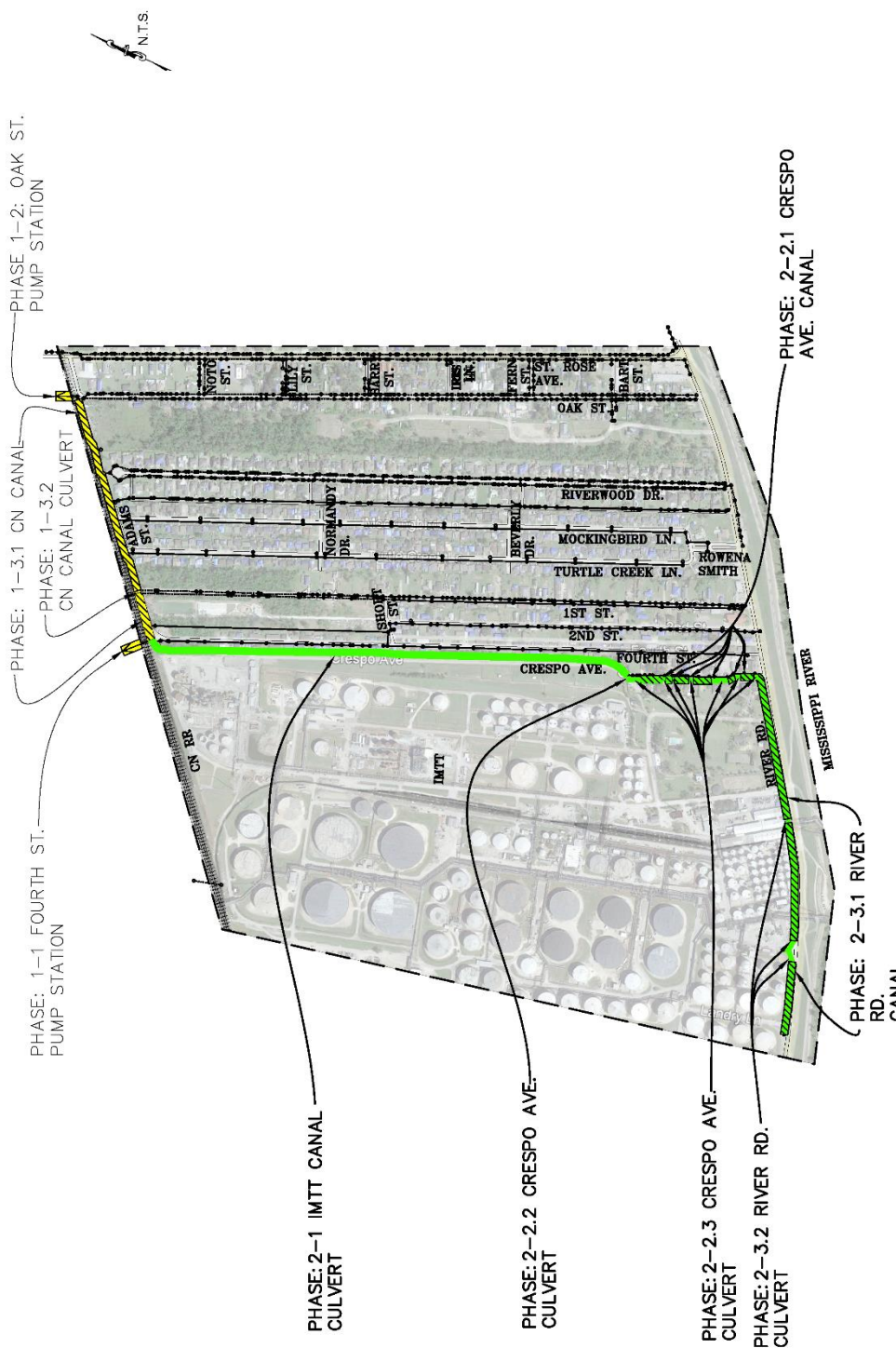
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ST. ROSE PROGRAM - PHASE 1 IMPROVEMENTS

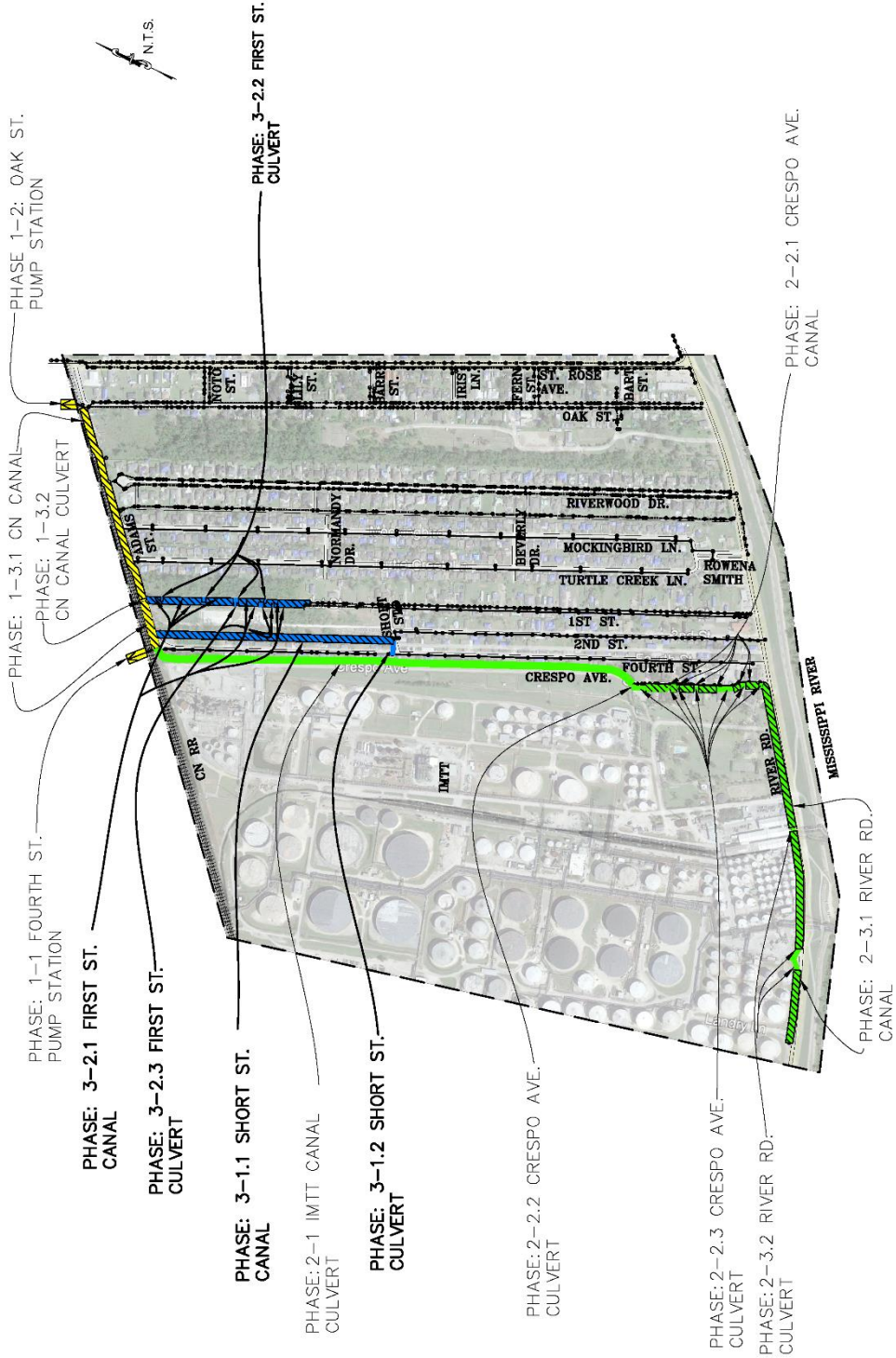
25-YEAR CRITERIA WITH SELECTED 100-YEAR IMPROVEMENTS ALT-2

Phase 2 Projects and Construction Cost Estimates	
2-1: Box Culvert Along IMTT to Crespo Ave	
Required 4' x 5' Box Culvert Approximately 3500 Linear Feet	\$ 8,750,000.00
2-2.1: Canal Widening Along Crespo Ave	
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ST. ROSE PROGRAM - PHASE 2 IMPROVEMENTS
 25-YEAR CRITERIA WITH SELECTED 100-YEAR IMPROVEMENTS ALT-2

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ST. ROSE PROGRAM - PHASE 3 IMPROVEMENTS
 25-YEAR CRITERIA WITH SELECTED 100-YEAR IMPROVEMENTS ALT-2