

Volume 5: Ormond

5.1 Executive Summary

St. Charles Parish tasked Principal Engineering, Inc. to complete the study of the Ormond Drainage Area for the East Bank Master Drainage Plan. Principal Engineering performed analyses for the 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.

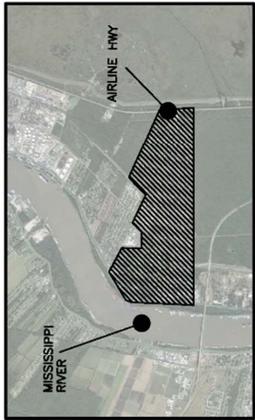
Analysis used models built in EPA SWMM and AutoDesk's Storm and Sanitary Analysis. Existing flood-prone areas were identified in areas along Ormond Boulevard, upstream of the CN Railroad on Murray Hill Drive and Destrehan Drive, Carriage Lane, Ducayet Drive, and Thomas Coby Drive.

The results of the existing conditions simulation illustrate the inadequacy of the drainage system for the design events.

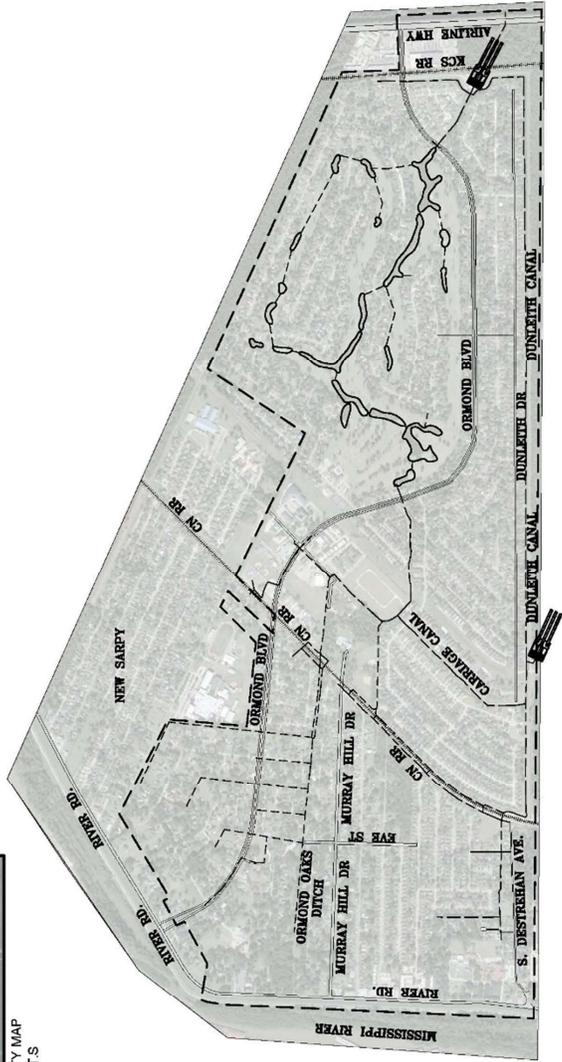
The recommended improvements are grouped into phases and projects, building from the previous, in sensible order of construction, downstream to upstream. Some the major improvements include upgrades to Destrehan #2 Pump Station, as well as increasing volumetric space in canals and railroad crossing, and adding subsurface drainage to Ormond Boulevard.

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	No. of Projects	Cost
Phase 1	8	\$47,729,843
Phase 2	7	\$14,235,300
Phase 3	14	\$3,129,175
Phase 4	5	\$1,072,050
Total	34	\$66,166,368

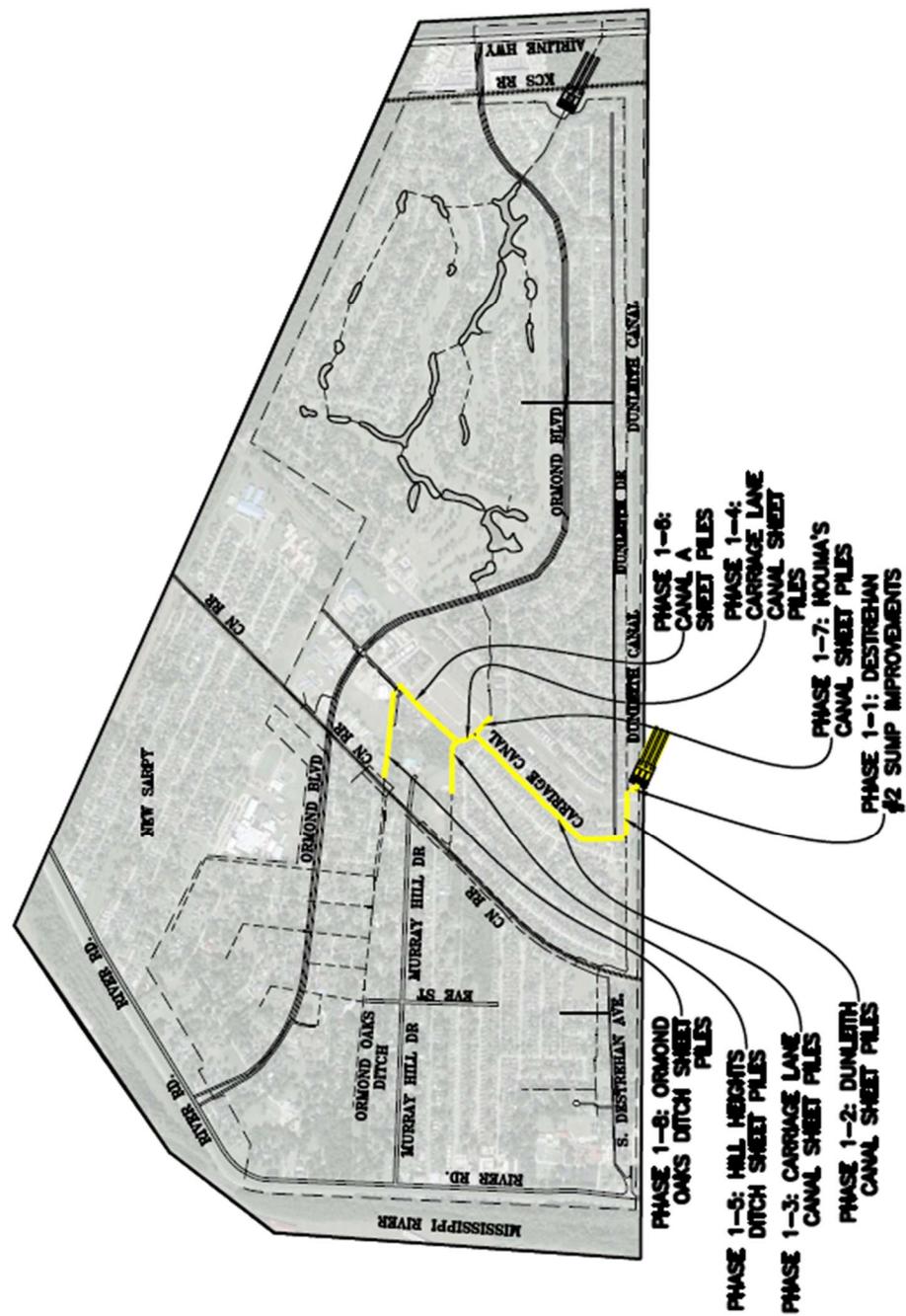


VICINITY MAP
N.T.S.



ORMOND WATERSHED

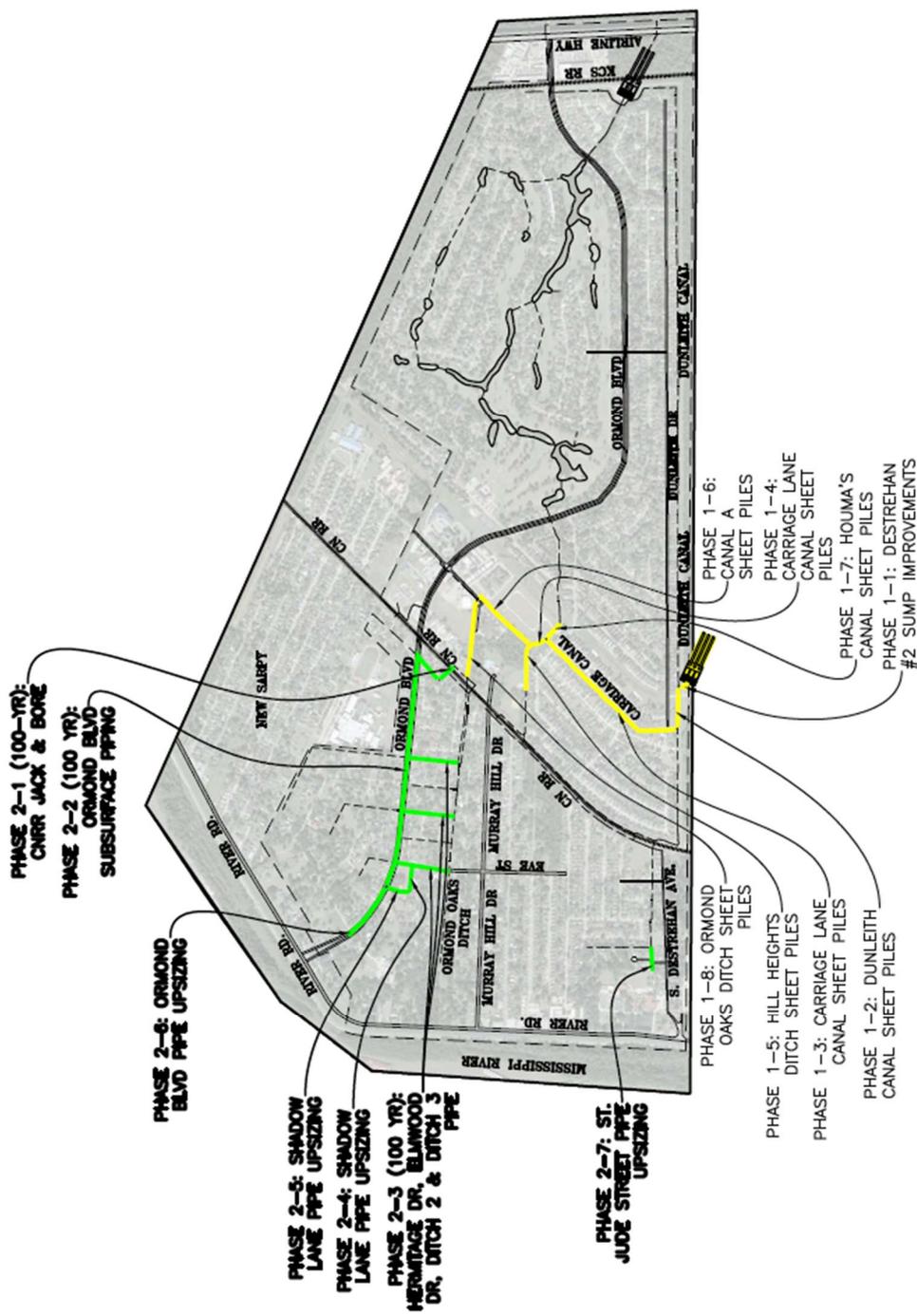
Phase 1 Projects and Construction Cost Estimates	
1-1: Destrehan #2 Sump Improvements	\$ 3,300,000.00
Increase storage volume from 3,900 CUYD to 6,700 CUYD at the Destrehan #2 Pump Station	
1-2: Dunleith Canal Sheet Piles	\$ 3,437,100.00
Reshape and Clean Canal; 11' Depth, 45' Width	
Add sheet piles Approximately 450 linear feet	
1-3: Carriage Lane Canal Sheet Piles	\$ 16,966,248.00
Reshape and Clean Canal; 9' Depth, 50' Width	
Add sheet piles Approximately 2,350 linear feet	
1-4: Carriage Lane Canal Sheet Piles	\$ 2,755,175.00
Reshape and Clean Canal; 11' Depth, 45' Width	
Add sheet piles Approximately 375 linear feet	
1-5: Hill Heights Ditch Sheet Piles	\$ 4,973,750.00
Reshape and Clean Canal; 8' Depth, 12' Width	
Add sheet piles Approximately 690 linear feet	
1-6: Canal A Sheet Piles	\$ 6,430,570.00
Reshape and Clean Canal; 9' Depth, 40' Width	
Add sheet piles Approximately 880 linear feet	
1-7: Houma's Canal Sheet Piles	\$ 1,914,000.00
Reshape and Clean Canal; 8' Depth, 22' Width	
Add sheet piles Approximately 185 linear feet	
1-8: Ormond Oak Ditch Sheet Piles	\$ 7,953,000.00
Reshape and Clean Canal; 7.5' Depth, 35' Width	
Add sheet piles Approximately 1,100 linear feet	
Phase 1 Subtotal	\$ 47,729,843



ORMOND PROGRAM - PHASE 1 IMPROVEMENTS

25-YEAR CRITERIA WITH SELECTED 100-YEAR IMPROVEMENTS

Phase 2 Projects and Construction Cost Estimates	
2-1: CN RR Jack & Bore	
Required addition of 3-60" Jack & Bore Pipes under CN RR to Ducayet Street Existing 1-60" Steel Pipe to remain Approximately 300 linear feet (900' material length)	\$ 3,888,000.00
2-2: Ormond Boulevard Subsurface Piping	
Add 1-60" RCP under Ormond Boulevard from Shadow Ln to Hermitage CT, 2-60" RCP from Hermitage CT to Ditch 3, and 3-60" RCP from Ditch 3 to new Ducayet Drive Jack & Bore to alleviate Ormond Oaks Ditch Approximately 3880 linear feet (9100' material length)	\$ 6,879,600.00
2-3: Hermitage Ct, Elmwood Ct, Ditch 2, & Ditch 3 Pipes	
Replace existing pipe between Ormond Blvd Subsurface and Ormond Oaks Ditch with 1-54" along Hermitage CT and 2-54" along Elmwood CT, Ditch 2 and Ditch 3. Approximately 750 linear feet (5220' material length)	\$ 2,427,300.00
2-4: Shadow Lane Pipe Upsizing	
Replace existing 1-36" RCP with 2-54" RCP from Shadow Lane to Ditch #1 Approximately 375 linear feet (750' material length)	\$ 348,750.00
2-5: Shadow Lane Pipe Upsizing	
Replace existing 1-24" RCP with 1-54" RCP from Ormond Blvd to the 2-54" crossing on Shadow Lane Approximately 350 linear feet	\$ 162,750.00
2-6: Ormond Blvd Pipe Upsizing	
Replace existing 1-24" RCP with 1-42" RCP from Elmwood Drive to Shadow Lane Approximately 900 linear feet	\$ 387,000.00
2-7: St. Jude Street Pipe Upsizing	
Replace existing 1-24" RCP with 1-42" RCP from St. Joseph St to Park Place Approximately 330 linear feet	\$ 141,900.00
Phase 2 Subtotal	\$ 14,235,300

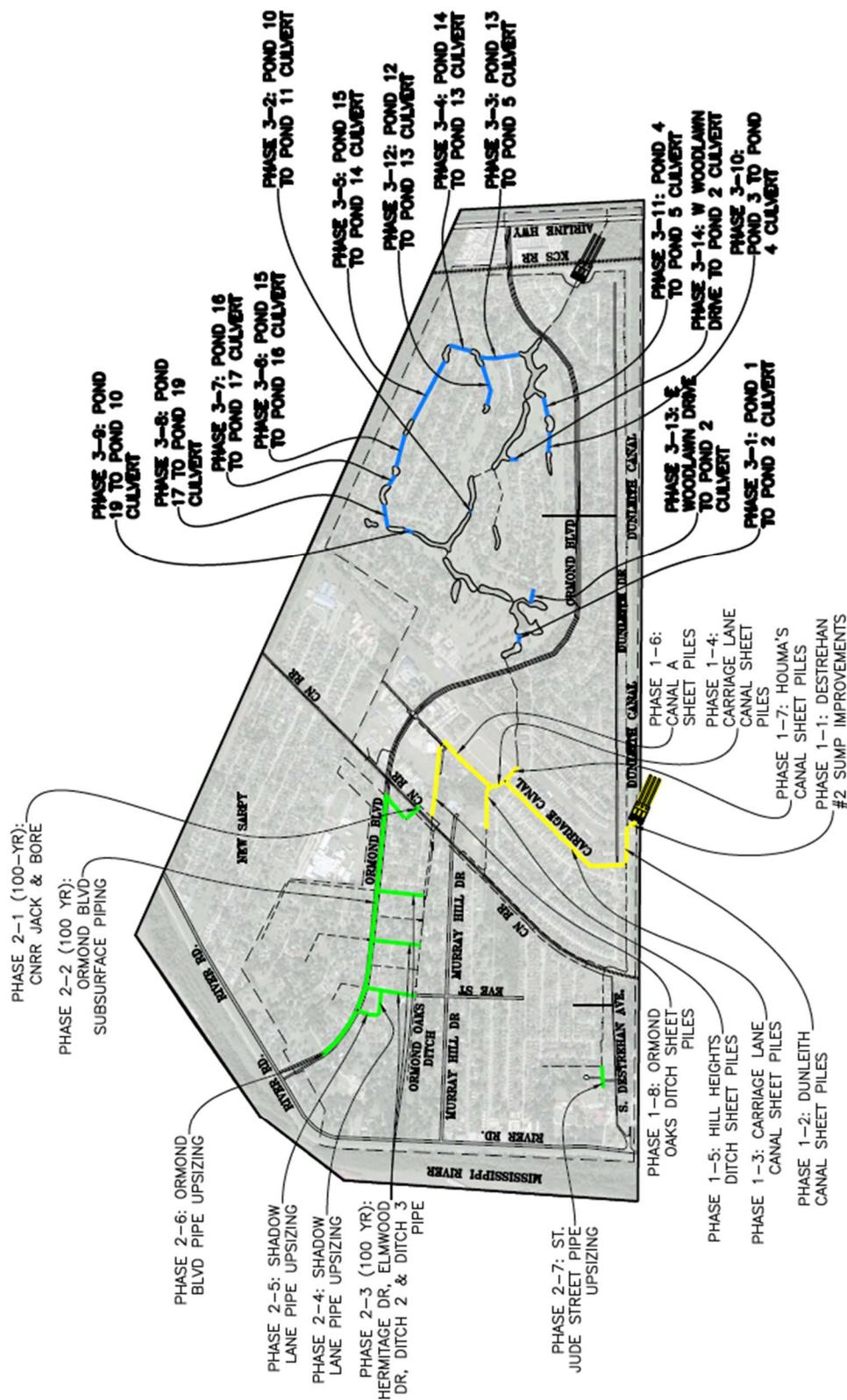


ORMOND PROGRAM - PHASE 2 IMPROVEMENTS

25-YEAR CRITERIA WITH SELECTED 100-YEAR IMPROVEMENTS

Phase 3 Projects and Construction Cost Estimates	
3-1: Pond 1 to Pond 2 Culvert	\$ 115,700.00
Replace existing 2-36" RCP with 2-48" RCP from Pond 1 to Pond 2 Approximately 130 linear feet (260' material length)	
3-2: Pond 10 to Pond 11 Culvert	\$ 8,900.00
Replace existing 1-36" RCP with 2-48" RCP from Pond 10 to Pond 11 Approximately 10 linear feet (20' material length)	
3-3: Pond 13 to Pond 5 Culvert	\$ 289,250.00
Add 1-48" RCP from Pond 13 to Pond 5; existing 24" CMP to be removed Approximately 650 linear feet	
3-4: Pond 14 to Pond 13 Culvert	\$ 311,500.00
Replace existing 1-36" RCP with 2-48" RCP from Pond 1 to Pond 2 Approximately 350 linear feet (700' material length)	
3-5: Pond 15 to Pond 14 Culvert	\$ 854,900.00
Add 2-36" RCP from Pond 15 to Pond 14 Approximately 1030 linear feet (2060' material length)	
3-6: Pond 15 to Pond 16 Culvert	\$ 423,300.00
Add 2-36" RCP from Pond 15 to Pond 16 Approximately 510 linear feet (1020' material length)	
3-7: Pond 16 to Pond 17 Culvert	\$ 145,250.00
Add 2-36" RCP from Pond 16 to Pond 17 Approximately 175 linear feet (350' material length)	
3-8: Pond 17 to Pond 19 Culvert	\$ 159,775.00
Add 1-36" RCP from Pond 17 to Pond 19; existing 36" CMP to remain Approximately 385 linear feet	
3-9: Pond 19 to Pond 10 Culvert	\$ 66,750.00
Add 1-48" RCP from Pond 19 to Pond 10; existing 1-48" RCP to remain Approximately 150 linear feet	
3-10: Pond 3 to Pond 4 Culvert	\$ 130,725.00
Add 1-36" RCP from Pond 3 to Pond 4 Approximately 315 linear feet	
3-11: Pond 4 to Pond 5 Culvert	\$ 130,750.00
Add 1-36" RCP from Pond 4 to Pond 5 Approximately 315 linear feet	
3-12: Pond 13 to Pond 14 Culvert	\$ 261,450.00
Replace existing 1-8" PVC with 1-36" RCP from Pond 13 to Pond 14 Approximately 630 linear feet	
3-13: E Woodlawn Drive to Pond 2 Culvert	\$ 136,950.00
Add 1-36" RCP from E Woodlawn Dr. to Pond 2; existing 24" CMP to remain Approximately 330 linear feet	

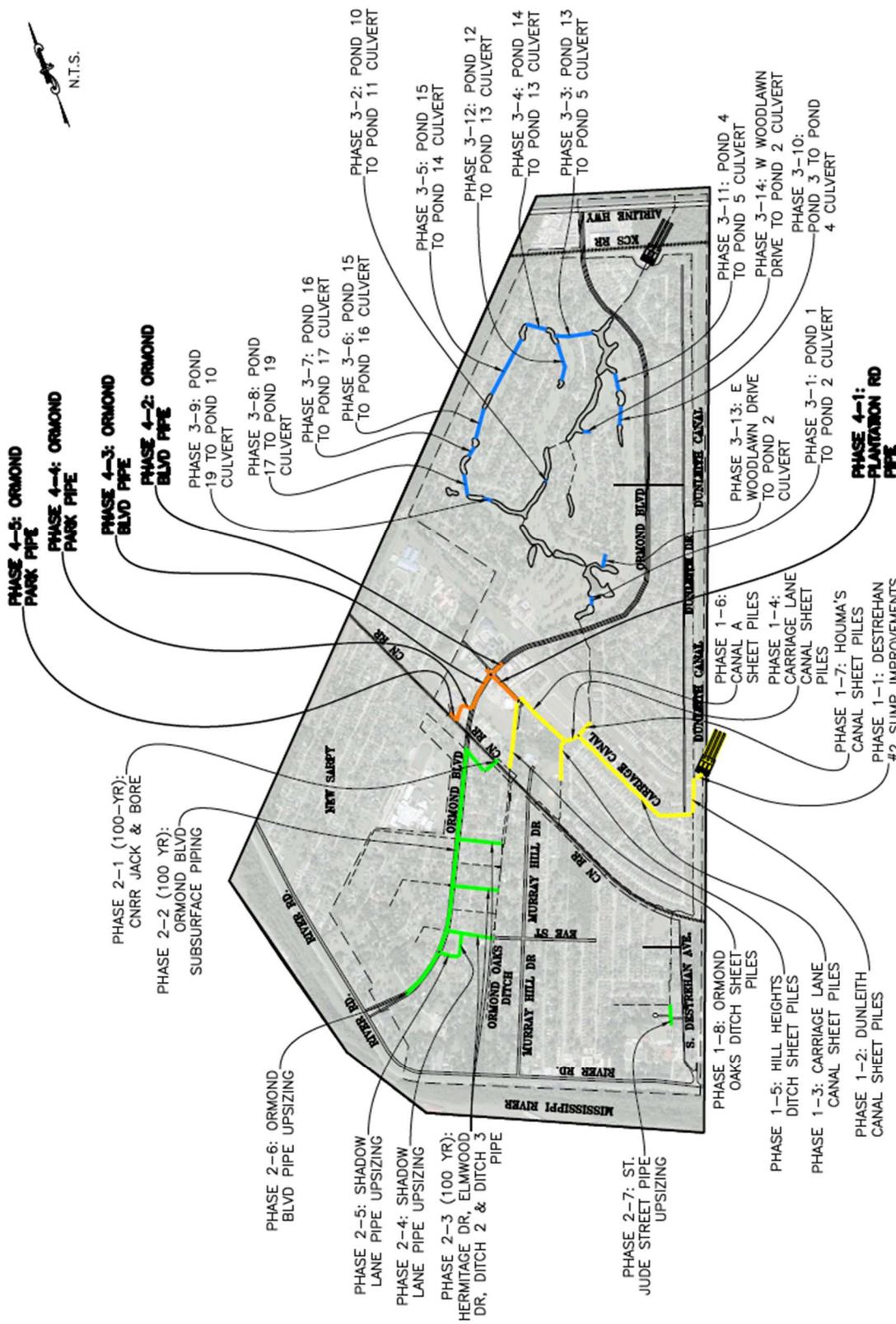
3-14: E Woodlawn Drive to Pond 2 Culvert	
Add 1-30" RCP from E Woodlawn Dr. to Pond 2; existing 30" RCP to remain Approximately 235 linear feet	\$ 94,000.00
Phase 3 Subtotal	\$ 3,129,175



ORMOND PROGRAM - PHASE 3 IMPROVEMENTS

25-YEAR CRITERIA WITH SELECTED 100-YEAR IMPROVEMENTS

Phase 4 Projects and Construction Cost Estimates	
4-1: Pipe Along Plantation Road	
Add 1-54" RCP along Plantation Road Existing 42" RCP to remain Approximately 450 linear feet	\$ 209,250.00
4-2: Pipe Along Ormond Boulevard	
Replace existing 1-21" RCP with 1-42" RCP along Ormond Boulevard Approximately 260 linear feet	\$ 111,800.00
4-3: Pipe Along Ormond Boulevard	
Replace existing 1-24", 1-21" and 1-18" RCP with 2-42" RCP along Ormond Boulevard Approximately 650 linear feet (1300' material length)	\$ 559,000.00
4-4: Pipe to Ormond Park	
Add 1-30" RCP around the Fire Department towards Ormond Park Existing 27" RCP to remain Approximately 200 linear feet	\$ 112,000.00
4-5: Pipe to Ormond Park	
Add 1-30" RCP from CN RR to Fire Department Pipe around the Fire Department towards Ormond Park Existing 18" RCP to remain Approximately 200 linear feet	\$ 67,000.00
Phase 4 Subtotal	\$ 1,072,050



ORMOND PROGRAM - PHASE 4 IMPROVEMENTS

25-YEAR CRITERIA WITH SELECTED 100-YEAR IMPROVEMENTS