# Volume 2: Montz

## 2.1 Executive Summary

St. Charles Parish tasked Principal Engineering, Inc. to complete the study of the Montz Drainage Area for the East Bank Master Drainage Plan. Building on a 10-Year Design Storm study performed by Meyer Engineers, Ltd., Principal Engineering performed analyses on 25-Year and 100-Year Design Storms (NOAA Atlas 14) by developing 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 improvements and select 100-Year improvements at major street crossings and railroad crossings.

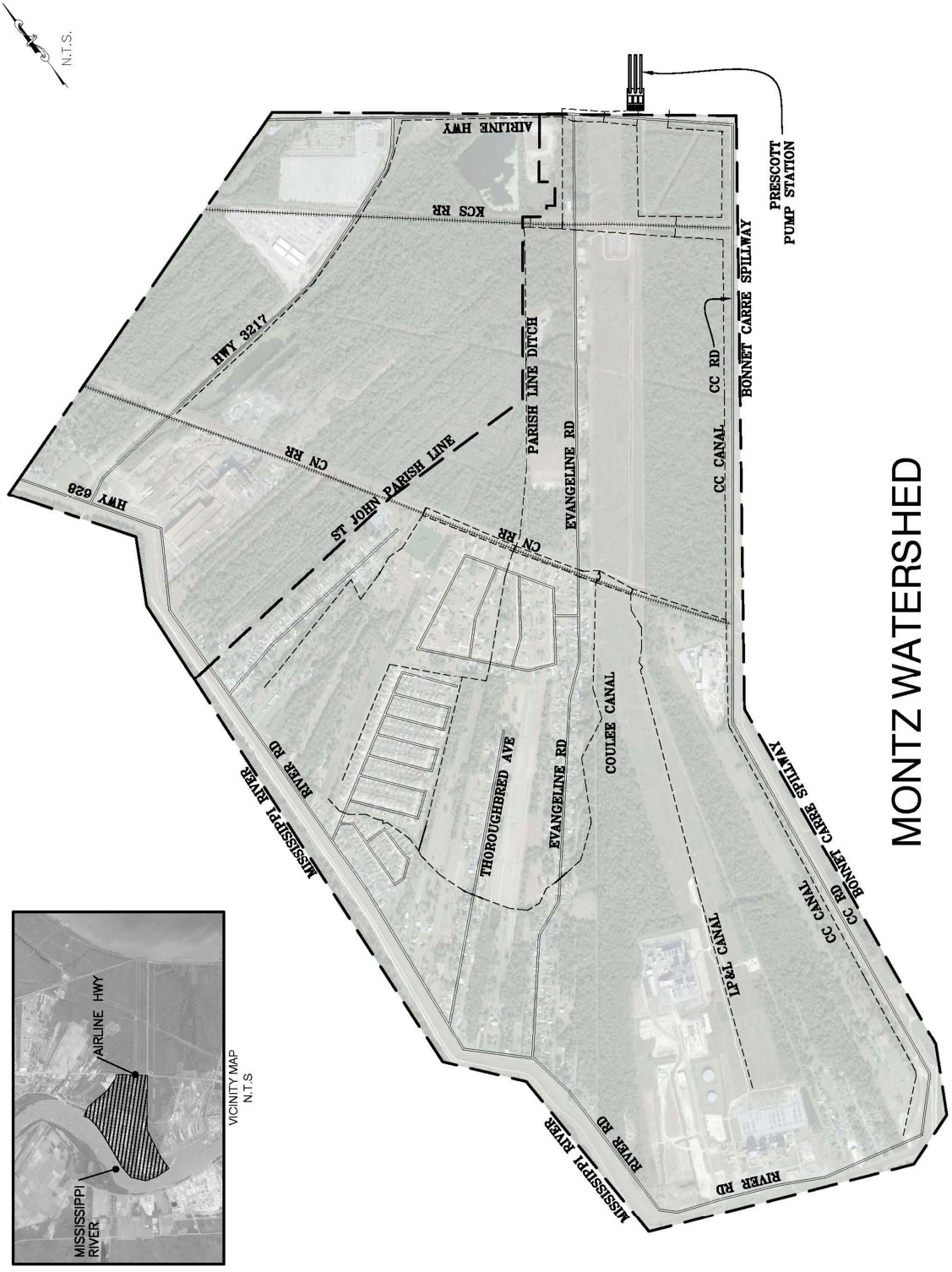
Analysis used models built in EPA SWMM and AutoDesk's Storm and Sanitary Analysis. Existing flood-prone areas were identified in Country Cottage, Evangeline Estates, Evangeline Road, and Airline Highway.

The 10-year rainfall event model with proposed improvements from Meyer Engineering served as the existing conditions model for Principal Engineering, Inc. St. Charles Parish selected certain improvements recommended by Meyer, not yet constructed, that Principal Engineering, Inc. included in the existing conditions model. The results of the existing conditions simulation illustrate the inadequacy of the drainage system for the design events.

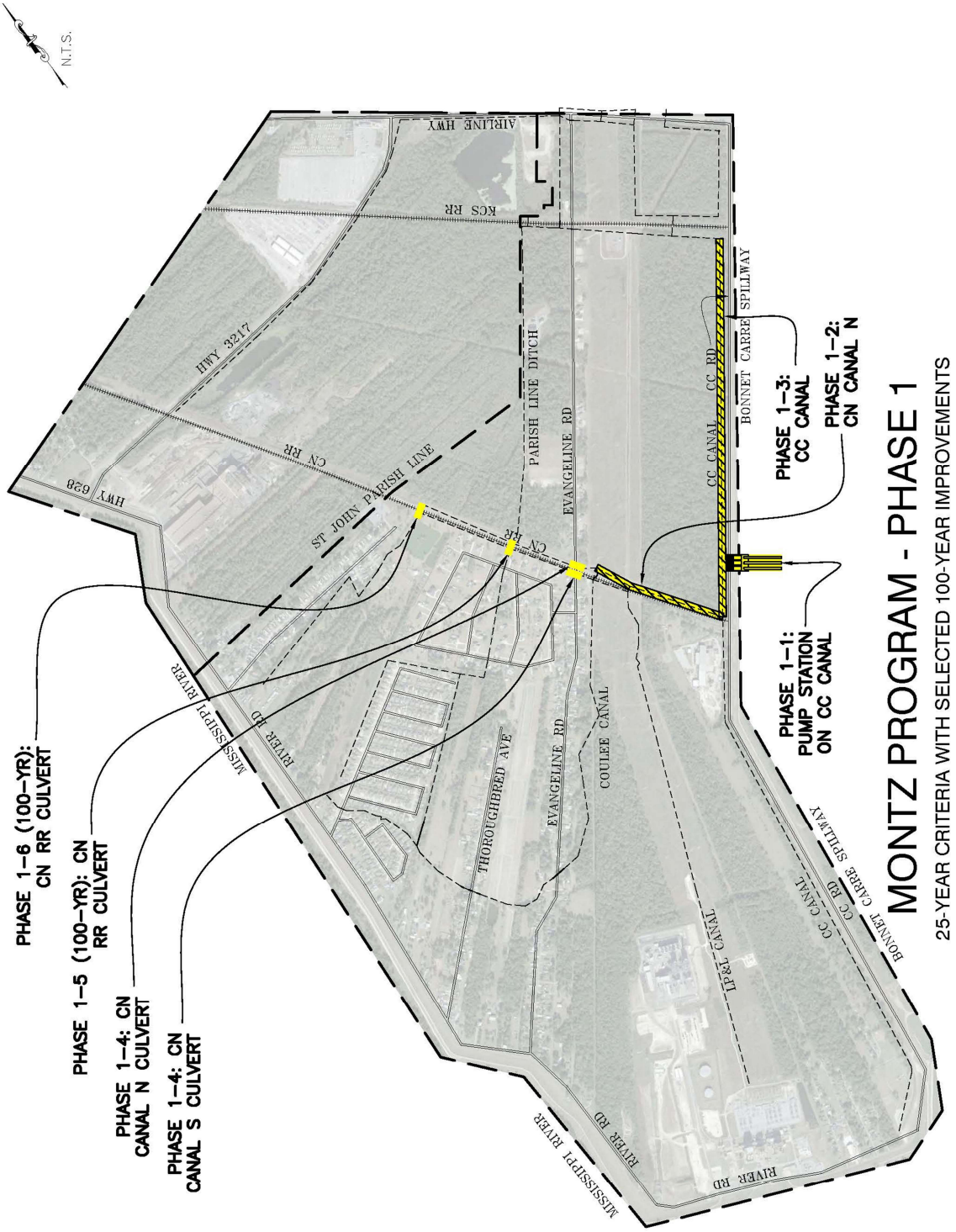
The recommended improvements are grouped into phases and projects, building from the previous, in sensible order of construction, downstream to upstream. Some the major improvements include an additional pump station along CC Road and increased capacity at the Prescott Pump Station.

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.

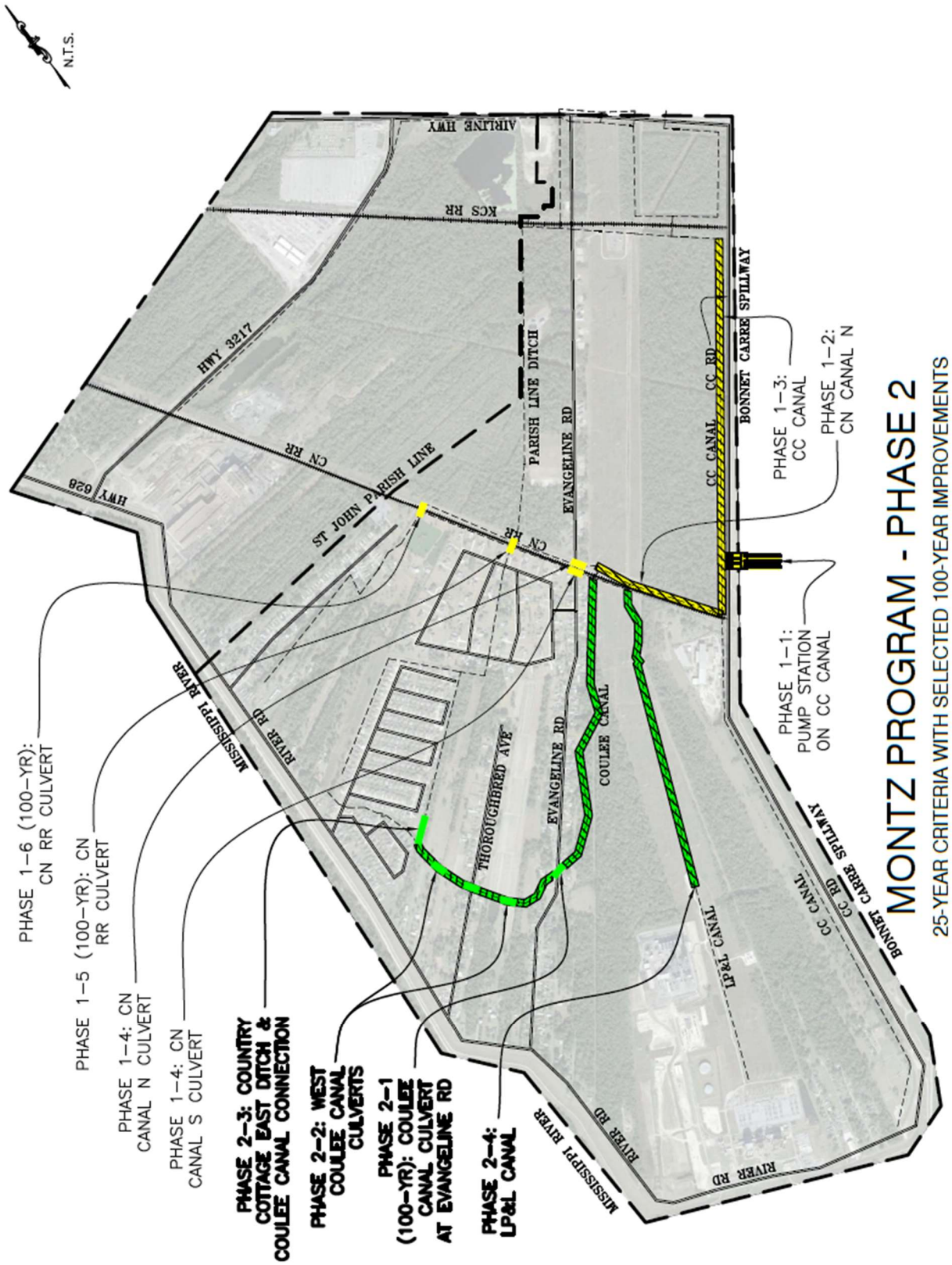
| Recommended Program Construction Cost Estimation | | |
|---|---|---|
| **Phase** | **No. of Projects** | **Cost** |
| Phase 1 | 6 | $13,578,140 |
| Phase 2 | 4 | $922,915 |
| Phase 3 | 6 | $21,664,704 |
| Total | 18 | $36,165,759 |


N.T.S.
AIRLINE HWY
KCS RR
HWY 3217
PARISH LINE DITCH
EVANGELINE RD
CC CANAL
CC RD
BONNET CARRE SPILLWAY
PRESCOTT PUMP STATION
HWY 628
CN RR
ST JOHN PARISH LINE
CN RR
RIVER RD
MISSISSIPPI RIVER
THOROUGHBRED AVE
EVANGELINE RD
COULEE CANAL
BONNET CARRE SPILLWAY
CC RD
CC CANAL
L P&L CANAL
RIVER RD
MISSISSIPPI RIVER
MONTZ WATERSHED
AIRLINE HWY
MISSISSIPPI RIVER
VICINITY MAP
N.T.S

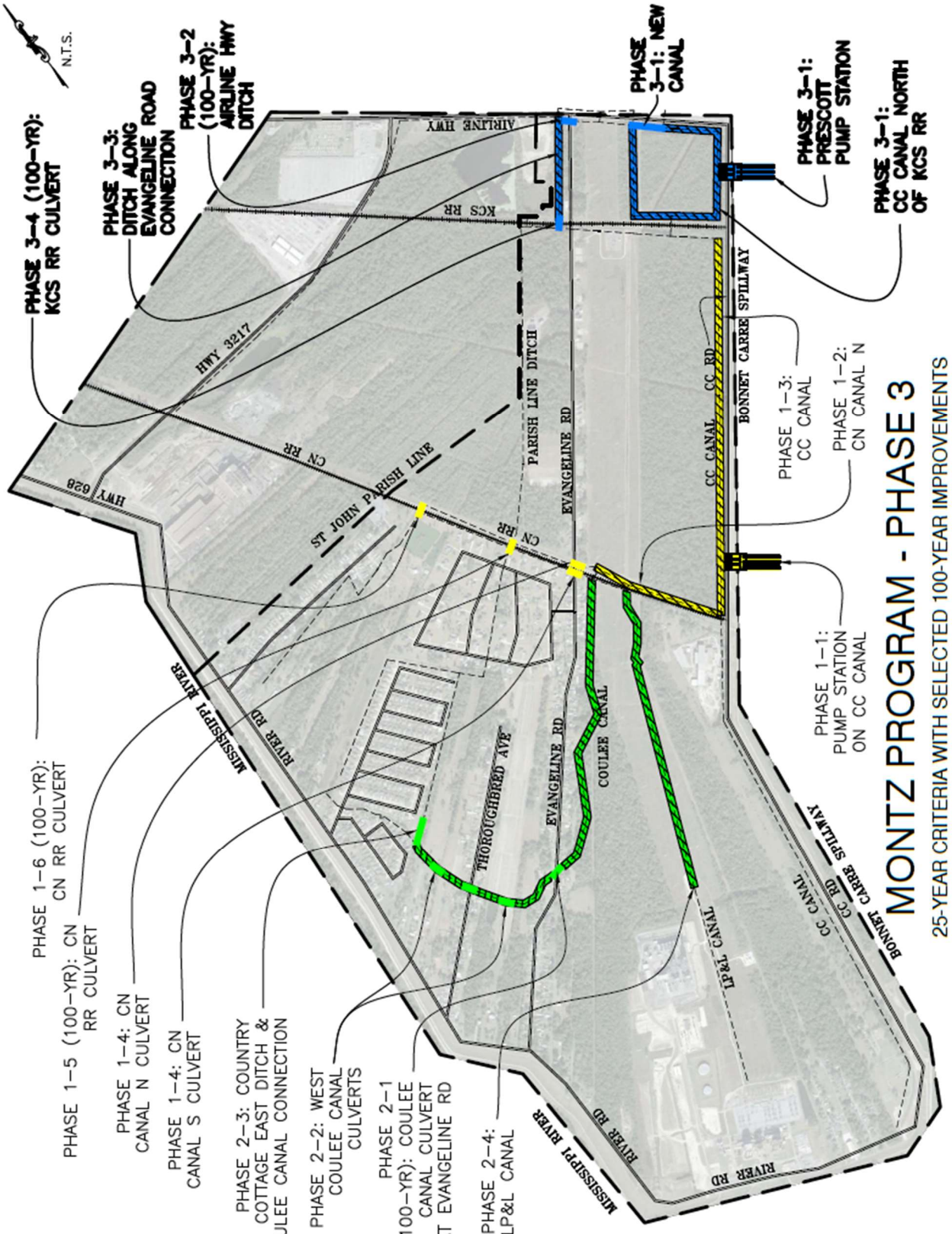
| Phase 1 Projects | |
|---|---|
| 1-1: 200 CFS Pump Station on CC Canal | |
| This pump station to be located downstream of the railroad location and will serve to alleviate flooding caused upstream of the CN Canal and Coulee Canal toward Country Cottage and Evangeline Road | $ 11,300,000.00 |
| 1-2: Reshape and Clean CN Canal | |
| Reshape and clean the canal along the Canadian National Railroad (North side of railroad)<br>3:1 side slopes<br>Approximately 1,881 linear feet | $ 624,900.00 |
| 1-3: Reshape and Clean CC Canal | |
| Reshape and clean the canal along the CC Road (downstream of CN railroad)<br>3:1 side slopes<br>Approximately 5,238 linear feet | $ 477,240.00 |
| 1-4: Concrete Box Culverts on CN Canal | |
| 2-10'x5' box culverts to replace existing 42" and 24" RCP under Evangeline Road on the North and South side of the CN Railroad<br>Approximately 40 linear feet (80' material length) | $ 312,000.00 |
| 1-5: Jack-and-Bore at CN Railroad and Evangeline Canal | |
| 2-60" Jack-and-bore crossing CN railroad for Evangeline Canal towards Parish Line Ditch<br>Existing 48" to remain<br>Approximately 80 linear feet (160' material length) | $ 691,200.00 |
| 1-6: Jack-and-Bore at CN Railroad and Hollywood Canal | |
| 1-60" Jack-and-bore crossing CN railroad for Hollywood Canal towards Parish Line Ditch<br>Existing 60" to remain.<br>Approximately 40 linear feet | $ 172,800.00 |
| **Phase 1 Subtotal** | **$ 13,578,140** |


N.T.S.
MONTZ PROGRAM - PHASE 1
25-YEAR CRITERIA WITH SELECTED 100-YEAR IMPROVEMENTS
PHASE 1–1: PUMP STATION ON CC CANAL
PHASE 1–2: CN CANAL N
PHASE 1–3: CC CANAL
PHASE 1–4: CN CANAL S CULVERT
PHASE 1–4: CN CANAL N CULVERT
PHASE 1–5 (100–YR): CN RR CULVERT
PHASE 1–6 (100–YR): CN RR CULVERT
AIRLINE HWY
KCS RR
HWY 3217
CN RR
HWY 628
ST JOHN PARISH LINE
PARISH LINE DITCH
EVANGELINE RD
CC CANAL
CC RD
BONNET CARRE SPILLWAY
THOROUGHBRED AVE
COULEE CANAL
L&T CANAL
MISSISSIPPI RIVER
RIVER RD

| Phase 2 Projects | |
|---|---|
| 2-1: Coulee Canal Culverts Crossing Evangeline Road<br>3-72″ culverts to replace existing 48″ culverts<br>Approximately 210 linear feet (630′ material length) | $ 453,600.00 |
| 2-2: Coulee Canal Culvert Crossings between Evangeline and Country Cottage East Ditch<br>2-48″ culverts to replace existing pipes along Coulee Canal<br>Approximately 235 linear feet (470′ material length) | $ 209,150.00 |
| 2-3: Country Cottage East Ditch and Coulee Canal<br>Connect these two open channels with 1-36″ culvert, Canals are not currently connected.<br>Approximately 365 linear feet | $ 151,475.00 |
| 2-4: Reshape and Clean LP&L Canal<br>Reshape and clean the canal along the LP&L Canal (toward CN railroad)<br>3:1 side slopes<br>Approximately 4,254 linear feet | $ 108,690.00 |
| **Phase 2 Subtotal** | **$ 922,915** |


N.T.S.
MONTZ PROGRAM - PHASE 2
25-YEAR CRITERIA WITH SELECTED 100-YEAR IMPROVEMENTS
AIRLINE HWY
KCS RR
HWY 3217
CN RR
HWY 628
ST JOHN PARISH LINE
PARISH LINE DITCH
EVANGELINE RD
CC CANAL
CC RD
BONNET CARRE SPILLWAY
PHASE 1–3: CC CANAL
PHASE 1–2: CN CANAL N
PHASE 1–1: PUMP STATION ON CC CANAL
MISSISSIPPI RIVER
RIVER RD
THOROUGHBRED AVE
COULEE CANAL
LP&L CANAL
PHASE 1–6 (100–YR): CN RR CULVERT
PHASE 1–5 (100–YR): CN RR CULVERT
PHASE 1–4: CN CANAL N CULVERT
PHASE 1–4: CN CANAL S CULVERT
PHASE 2–3: COUNTRY COTTAGE EAST DITCH & COULEE CANAL CONNECTION
PHASE 2–2: WEST COULEE CANAL CULVERTS
PHASE 2–1 (100–YR): COULEE CANAL CULVERT AT EVANGELINE RD
PHASE 2–4: LP&L CANAL

| Phase 3 Projects | |
|---|---|
| 3-1 (Alternative 3): Additional Pump Station | $ 19,200,000.00 |
| 340 CFS Pump Station between KCS RR and Airline Highway into Bonnet Carre Spillway with existing 170 Pump Station to be removed | |
| 3-1: Reshape and Clean CC Canal | $ 110,964.00 |
| Reshape and clean the canal along the CC Road (toward US Hwy 61)<br>3:1 side slopes, 10′ bottom width<br>Approximately 4,343 linear feet | |
| 3-1 (Alternatives 2&3 ): CC Canal Connection | $ 131,346.00 |
| Small segment that is not connected along US Hwy 61 to be connected<br>6′ depth, 1:3 side slopes, 10′ bottom,<br>Approximately 427 linear feet | |
| 3-2: Concrete Box Culvert Under Evangeline Road along Airline Highway Ditch | $ 234,000.00 |
| 10′x5′ CBC crossing under Evangeline Road on the south side of US Hwy 61 to lead downstream toward Prescott pump station<br>Approximately 60 linear feet | |
| 3-3: Additional Ditch Parallel to Evangeline Road Connection | $ 433,194.00 |
| Connect the KCS Canal to the Airline Hwy Ditch with an additional ditch parallel to the ditch along Evangeline Road (125′ northwest)<br>5′ depth, 1:3 side slopes, 15′ bottom width,<br>Approximately 1,408 linear feet | |
| 3-4: Jack-and Bore under KCS Railroad | $ 1,555,200.00 |
| 3-60″ steel Jack-and bores connecting KCS Canal to ditch along Evangeline Rd<br>Approximately 120 linear feet (360′ material length) | |
| **Phase 3 Subtotal** | **$ 21,664,704** |


MONTZ PROGRAM - PHASE 3
25-YEAR CRITERIA WITH SELECTED 100-YEAR IMPROVEMENTS
N.T.S.
PHASE 3-4 (100-YR): KCS RR CULVERT
PHASE 3-3: DITCH ALONG EVANGELINE ROAD CONNECTION
PHASE 3-2 (100-YR): AIRLINE HWY DITCH
PHASE 3-1: NEW CANAL
PHASE 3-1: PRESCOTT PUMP STATION
PHASE 3-1: CC CANAL NORTH OF KCS RR
PHASE 1-6 (100-YR): CN RR CULVERT
PHASE 1-5 (100-YR): CN RR CULVERT
PHASE 1-4: CN CANAL N CULVERT
PHASE 1-4: CN CANAL S CULVERT
PHASE 2-3: COUNTRY COTTAGE EAST DITCH & COULEE CANAL CONNECTION
PHASE 2-2: WEST COULEE CANAL CULVERTS
PHASE 2-1 (100-YR): COULEE CANAL CULVERT AT EVANGELINE RD
PHASE 2-4: LP&L CANAL
PHASE 1-3: CC CANAL
PHASE 1-2: CN CANAL N
PHASE 1-1: PUMP STATION ON CC CANAL
AIRLINE HWY
KCS RR
HWY 3217
HWY 628
CN RR
ST JOHN PARISH LINE
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EVANGELINE RD
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