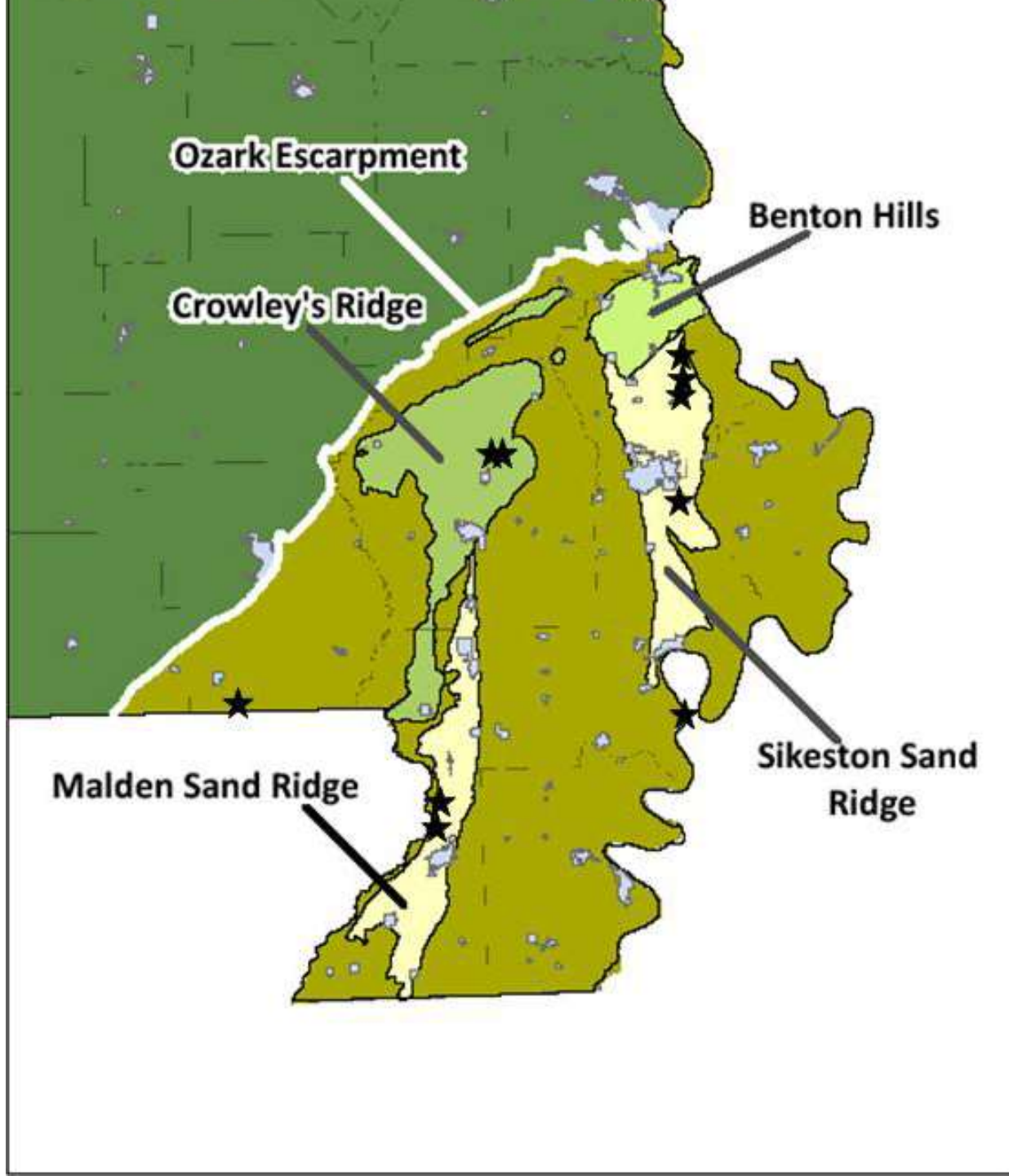


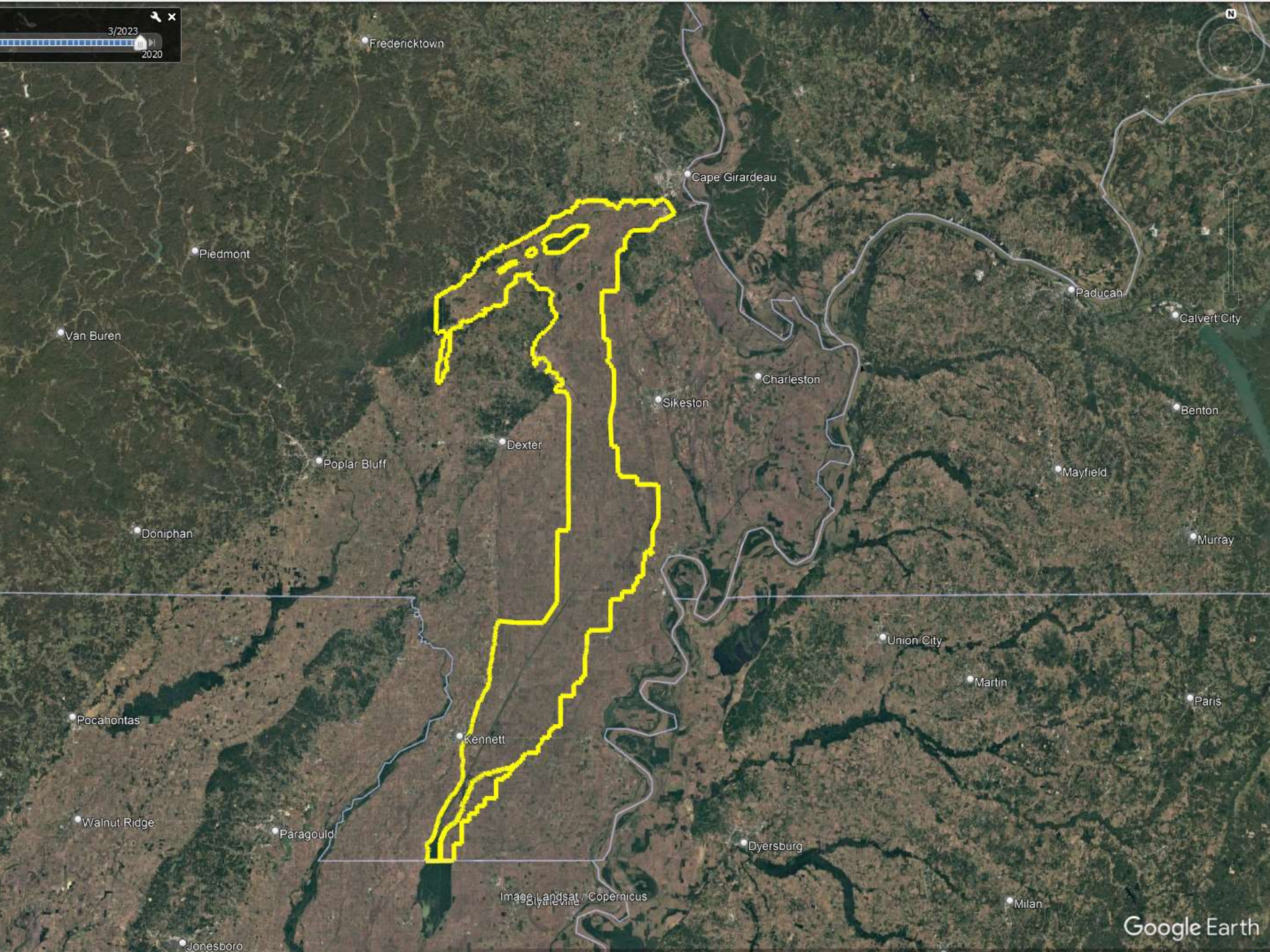


THE LITTLE RIVER DRAINAGE DISTRICT

**FLOOD CONTROL & DRAINAGE
SINCE-1907**







Fredericktown

Cape Girardeau

Piedmont

Paducah

Van Buren

Calvert City

Sikeston

Charleston

Benton

Poplar Bluff

Dexter

Mayfield

Doniphan

Murray

Pocahontas

Union City

Martin

Paris

Walnut Ridge

Paragould

Kennett

Dyersburg

Image Landsat / Copernicus

Milan

Jonesboro

Historical View

- 1907
 - Bill Introduced In The Missouri Legislature
- 1909
 - Petition To Circuit Court
 - Initially New Madrid County
 - Change Of Venue To Butler County
 - Engineering Plan Of Drainage Submitted
- Courts Decision
 - Gave Us Right Tax Ourselves (Assessed Benefit)
 - Eminent Domain
 - Right To Conduct Own Business

Cubic Yardage & Cost 1926 Report

➤ Headwater Diversion Channel System

- 10 Million Cubic Yards of Material
- Cost - \$2,730,000

➤ Main Drainage System

- 33.7 Million Cubic Yards of Material
- Cost - \$2,377,000

➤ West Basin Extension

- 1.6 Million Cubic Yards of Material
- Cost - \$202,000

➤ Equalizing Plan

- 20.7 Million Cubic Yards of Material
- Cost - \$4,000,000

➤ Total Cost Project

- 66 Million Cubic Yards of Material
- Cost - \$9,309,000

**Construction
Timeframe
1914-1928**

Organization & Leadership

Original LRDD Board of Supervisors



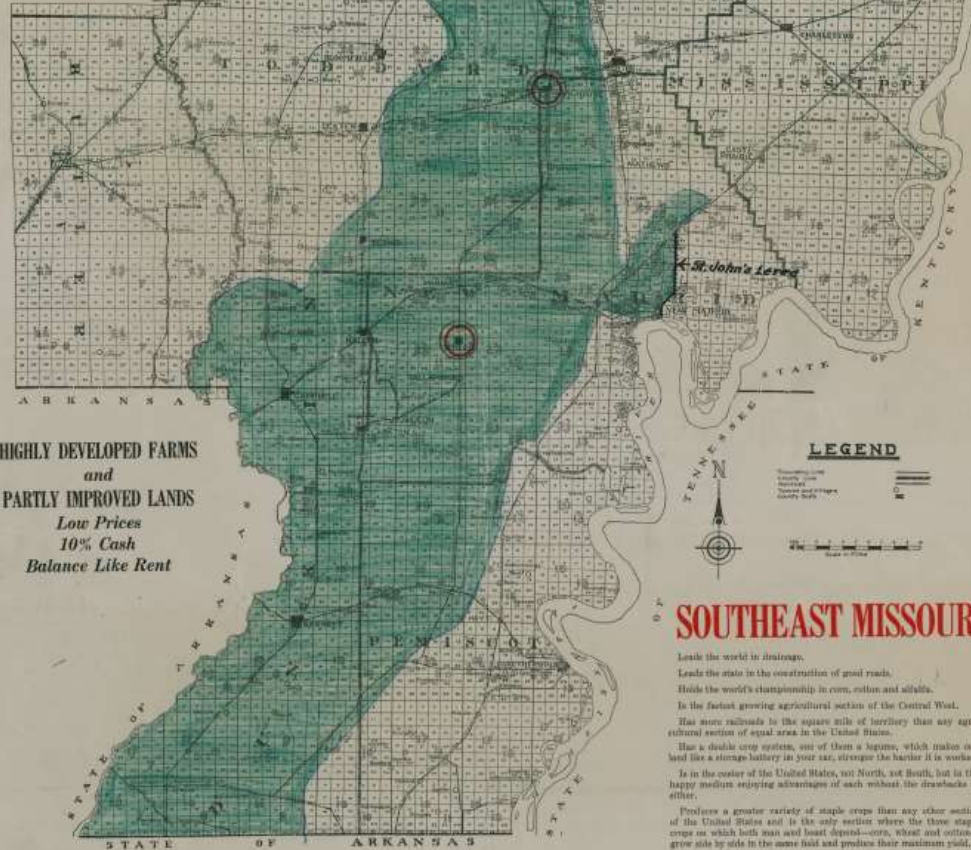
Current LRDD Board of Supervisors



HIMMELBERGER-HARRISON
LAND & INVESTMENT CO.
MAP OF
SOUTHEAST MISSOURI.

General Office
Cape Girardeau, Mo.

Branch Offices
Morehouse, Mo. Risco, Mo.



CUT-OVER LAND
No Cash Down
No Interest for 4 years
Then 33 years at 6%

HIGHLY DEVELOPED FARMS
and
PARTLY IMPROVED LANDS
Low Prices
10% Cash
Balance Like Rent

LEGEND



SOUTHEAST MISSOURI

Leads the world in drainage.
Leads the state in the construction of good roads.
Holds the world's championship in corn, cotton and alfalfa.
Is the fastest growing agricultural section of the Central West.
Has more railroads to the square mile of territory than any agricultural section of equal area in the United States.
Has a double crop system, one of them a legume, which makes our land like a storage battery in your ear, stores the harvest if it is needed.
Is in the center of the United States, not North, not South, but in the happy medium enjoying advantages of each without the drawbacks of either.
Produces a greater variety of staple crops than any other section of the United States and is the only section where the three staple crops on which both man and beast depend—corn, wheat and cotton—grow side by side in the same field and produce their maximum yield.

HIMMELBERGER-HARRISON LAND & INVESTMENT CO.

General Office, Cape Girardeau, Mo. Branch Offices from which property is shown Risco and Morehouse, Mo.

Drq. 2268- Indep. 107.22

Promoting
the Vision

Promoting the Vision



Promoting the Vision (August 1916)

River Diversion and Flood Control in Missouri

SYNOPSIS—This \$4,000,000 job is to reclaim nearly 1,000 sq.mi. of low land. Flood waters now spreading over this district will be diverted to a defined channel, with large detention basins to equalize the flow. The use of electrically operated excavators of great size is a feature of the work. The plan and methods are described fully.

The reclamation of an area of some 500,000 acres of swamp and overflowed land in southwestern Missouri—constituting the Little River drainage district—is being

The surface waters will be carried southward by the ditch system, which will extend to the Arkansas line and there discharge into Big Lake, Arkansas. The state boundary is an arbitrary limit to the Little River district. On the Arkansas side, however, the Keystone drainage district has been organized, which is practically an extension of the other. Its works will deliver the combined waters from the two districts into the St. Francis River at Marked Tree, Ark.; this in turn discharges into the Mississippi above Helena, Ark.

The Little River drainage district has its headquarters at Cape Girardeau, Mo. William A. O'Brien is Chief

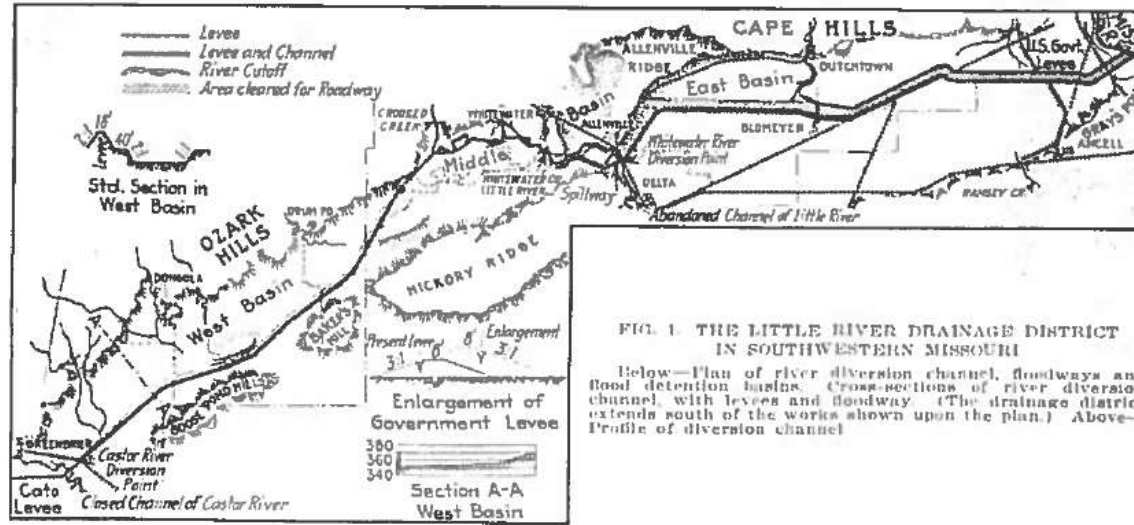
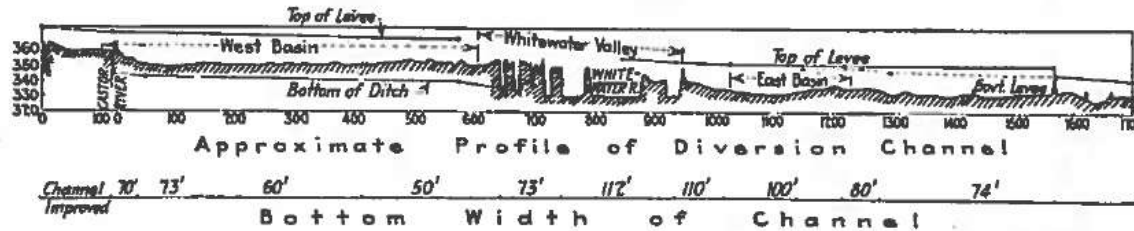


FIG. 1. THE LITTLE RIVER DRAINAGE DISTRICT IN SOUTHWESTERN MISSOURI

Below—Plan of river diversion channel, floodways and flood detention basins. Cross-sections of river diversion channel, with levees and floodway (The drainage district extends south of the works shown upon the plan.) Above—Profile of diversion channel

The Approved Plan

- Parts Of Seven Counties
 - Cape Girardeau, Bollinger, Stoddard, Dunklin, Scott, New Madrid, Pemiscot
- 1000 Miles Of Ditches
- 300 Miles Of Levees
- Detention/Sedimentation Basins (6)
 - Sediment
 - Flow Reduction
 - Temporary Storage
- Three Pumping Stations


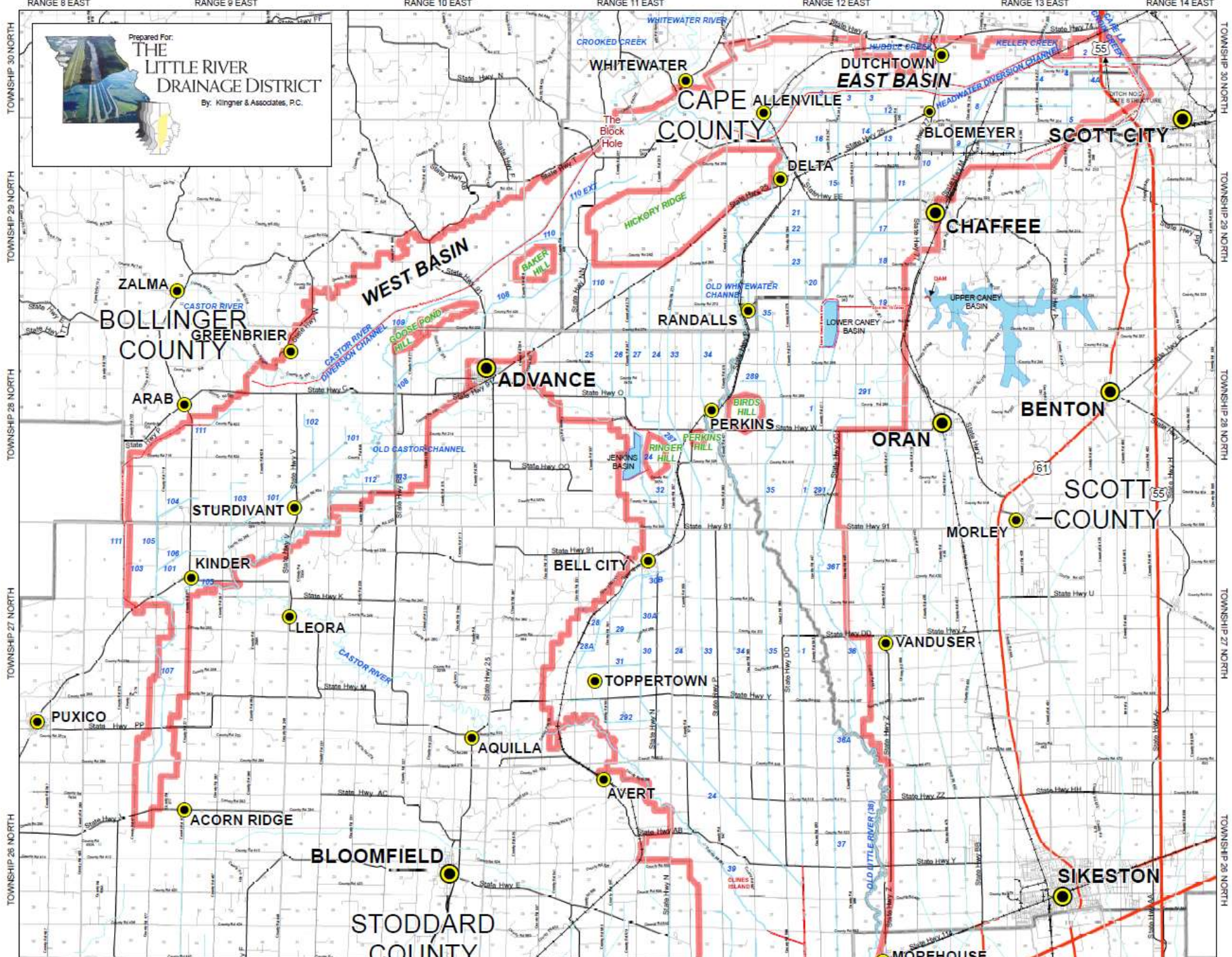
District Features

- Diversion Channel & Levee
 - 750,000 Acres, Upland Drainage Area
 - Cape Girardeau To Fredricktown Missouri
 - Levee – Main Line Mississippi River
 - Protect 1,200,000 Million Acres
 - 500 Year Flood Height Plus 7 Ft. of Freeboard
 - Tributaries Diverted
 - Castor River, Whitewater River, Hubble Creek, Cape Lacroix Creek, Crooked Creek, & Several Smaller Creeks
- Open Channels
 - 1000 Miles
 - 550,000 Acres In District
 - 620,000 Acres Additional Area Drained

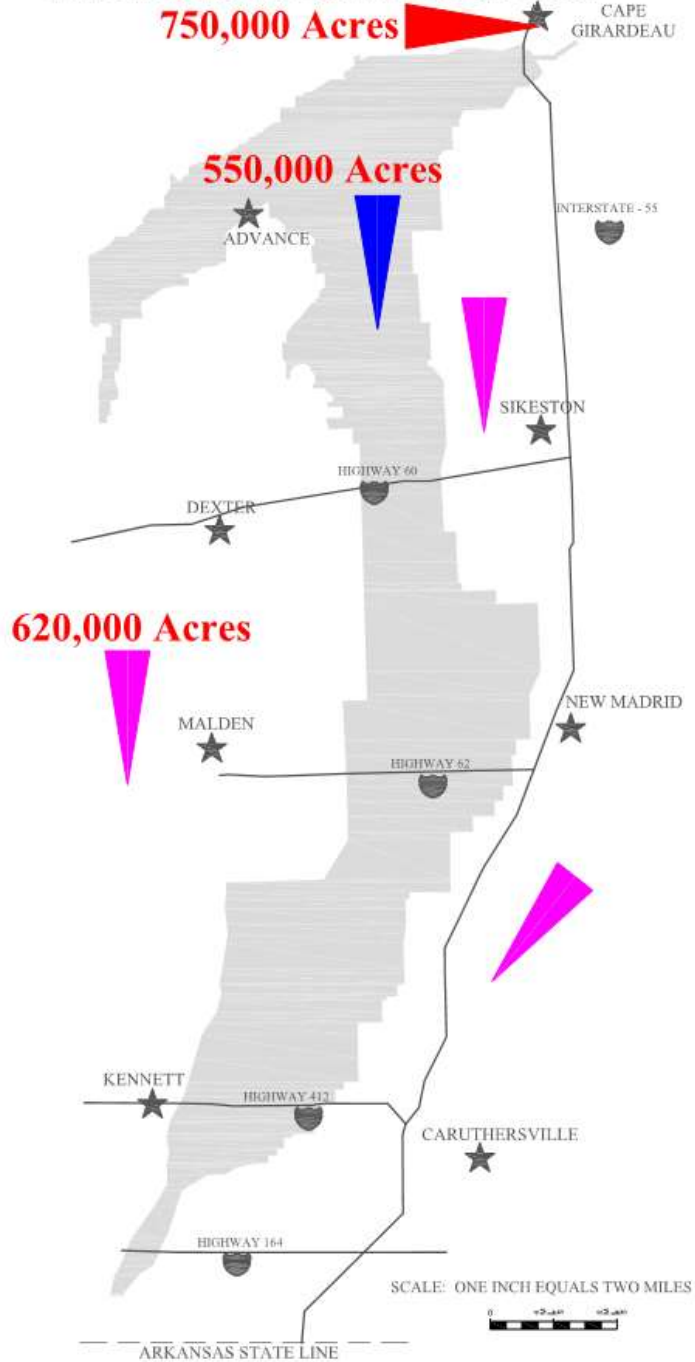


Area
Diverted
into
Mississippi
River
750,000
Acres

Prepared For:
THE LITTLE RIVER DRAINAGE DISTRICT
 By: Klingner & Associates, P.C.

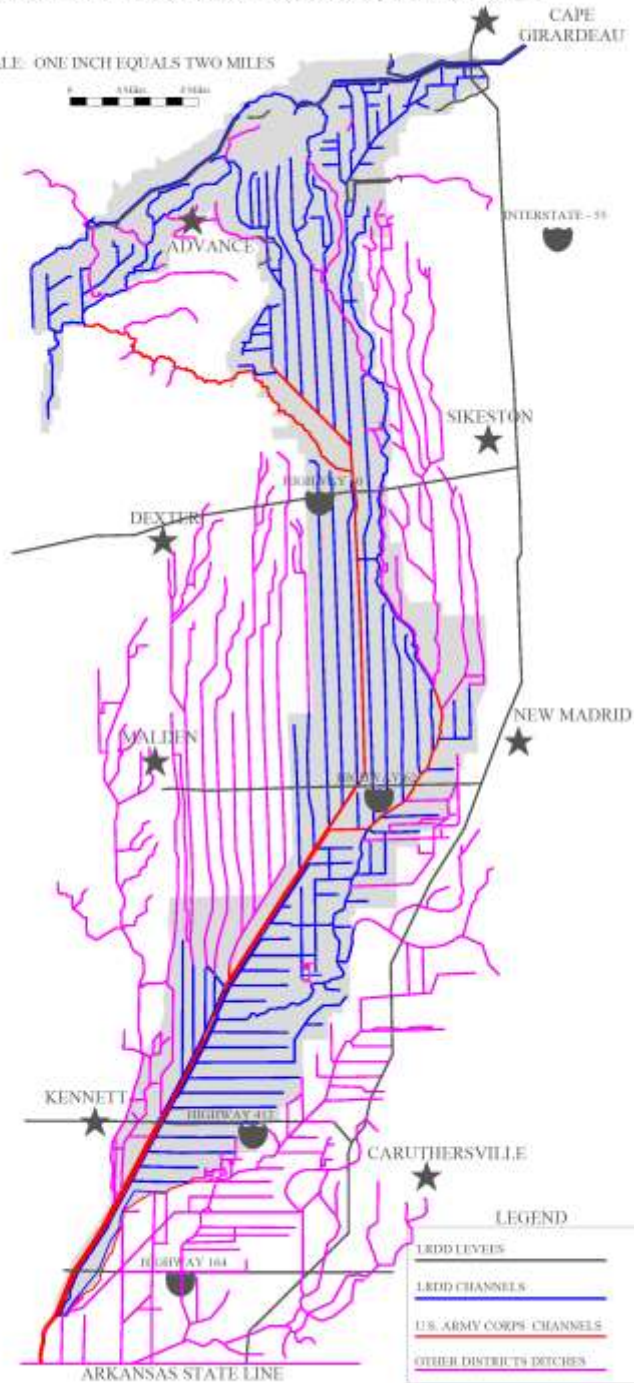



THE LITTLE RIVER DRAINAGE DISTRICT



THE LITTLE RIVER DRAINAGE DISTRICT

SCALE: ONE INCH EQUALS TWO MILES



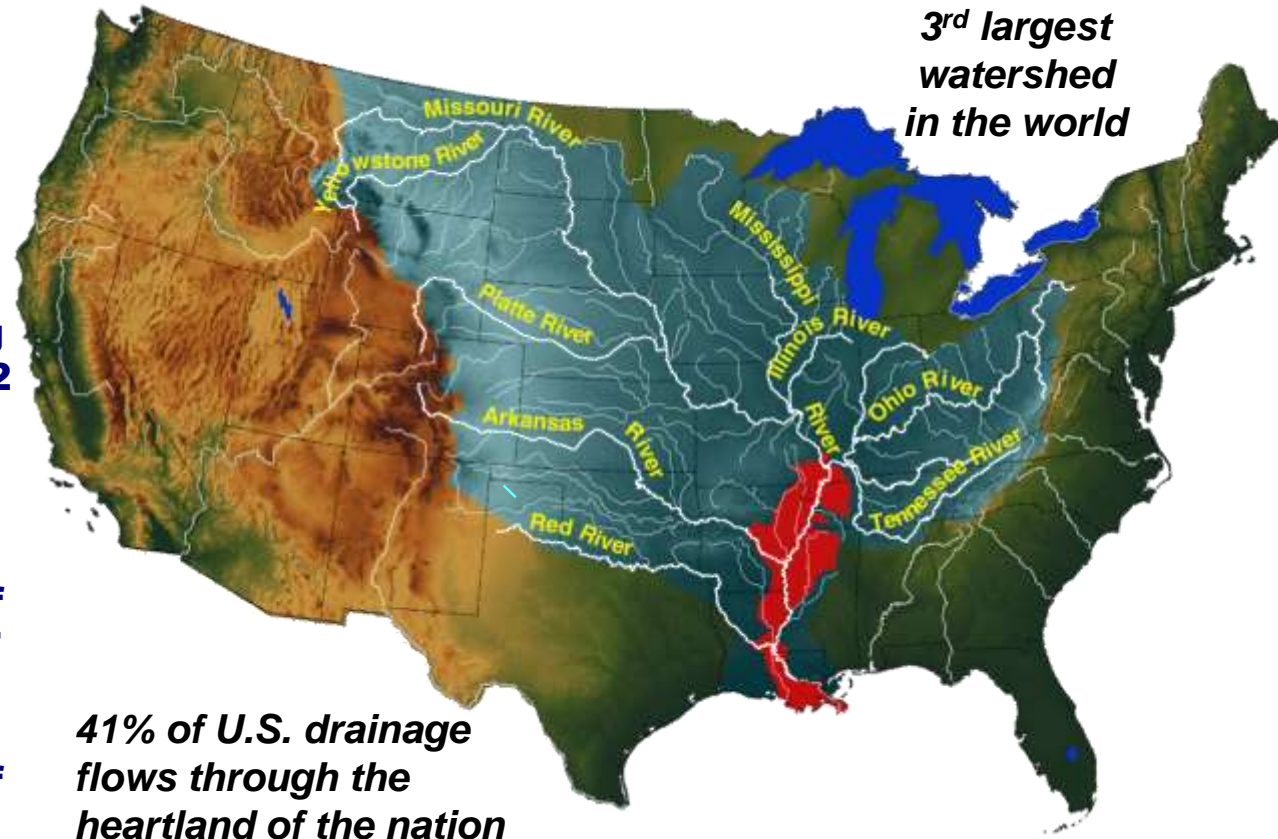
LEGEND

- LRDD LEVEES
- LRDD CHANNELS
- U.S. ARMY CORPS CHANNELS
- OTHER DISTRICTS' DITCHES

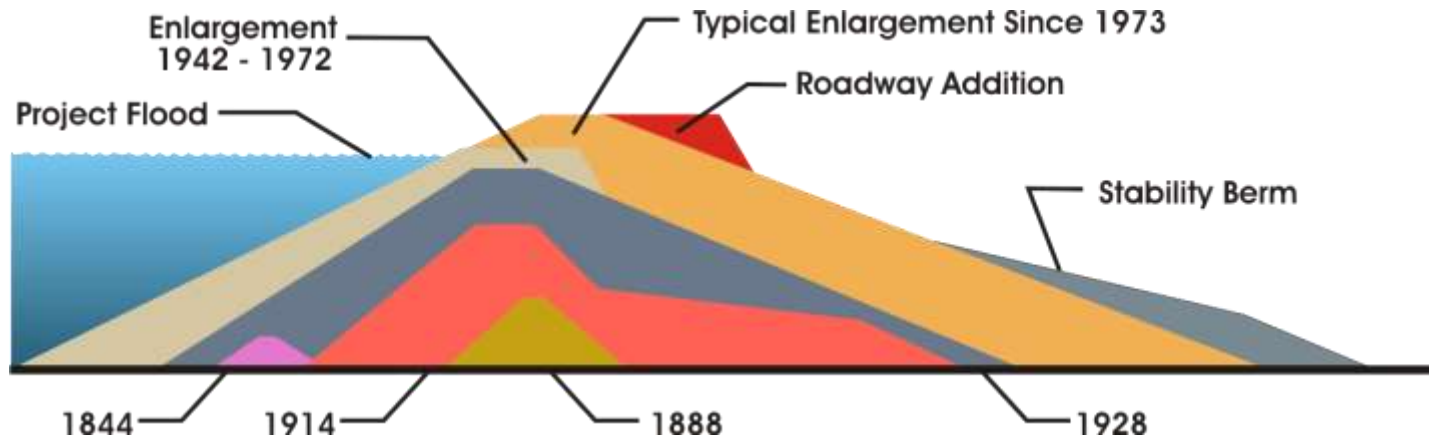


World's Largest "Naturally" Navigable Watershed

- **More than 670 million tons of cargo move on the Mississippi River system each year**
- **\$6 B saved annually in transportation benefits**
- **The Mississippi River remained opened during the 1988, 1999 and 2012 droughts, as well as the 2011 record flood. The ability to keep the river open offered unequivocal evidence of the benefit of the MR&T project to the nation. Keeping it open and reliable is a pillar of economic stability and national security.**



Evolution of Mississippi River Levees



**LRDD Headwater
Diversion Channel
Levee**

**Flood of Record
2016**

Businesses and Property Protected



MR&T Levee Protection Near Delta, MO
Taken: 01/03/2016 (Flood of Record)
Crest Elevation: 16.9 ft. above natural ground
Crest Freeboard: 9 ft.

Businesses and Property Protected



MR&T Levee Protection Near Scott City, MO
Taken: 01/05/2016 (Flood of Record)
Crest Elevation: 16.9 ft. above natural ground
Crest Freeboard: 9 ft.

Businesses and Property Protected



Businesses and Property Protected



MR&T Levee Protection Near Cape Girardeau, MO
Taken: 01/05/2016 (Flood of Record)
Crest Elevation: 16.9 ft. above natural ground
Crest Freeboard: 9 ft.

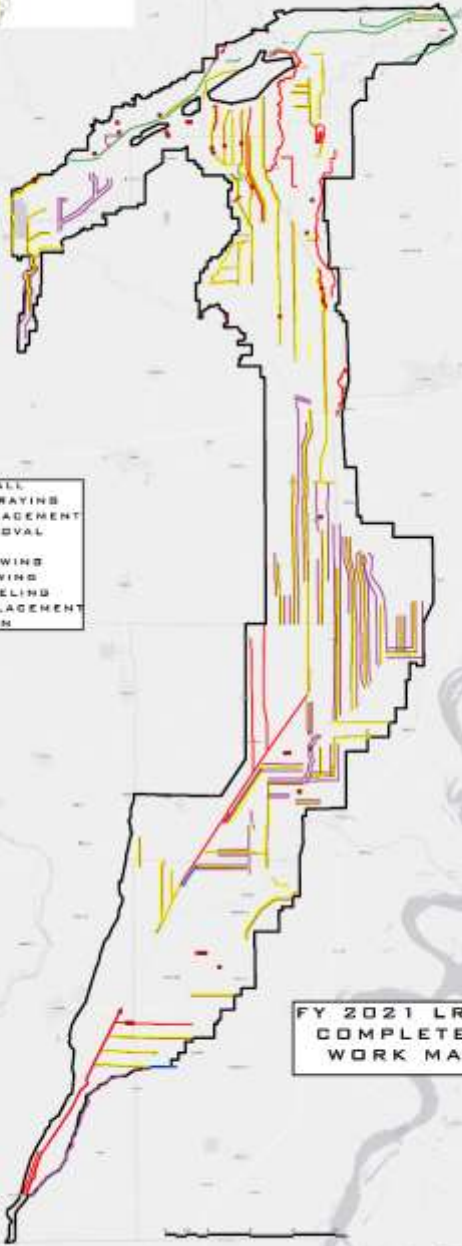
Businesses and Property Protected



THE LITTLE RIVER DRAINAGE DISTRICT



- PIPE INSTALL
- BRUSH SPRAYING
- GRAVEL PLACEMENT
- DRIFT REMOVAL
- CLEARING
- BRUSH MOWING
- LEVEE MOWING
- SPOIL LEVELING
- RIP RAP PLACEMENT
- EXCAVATION



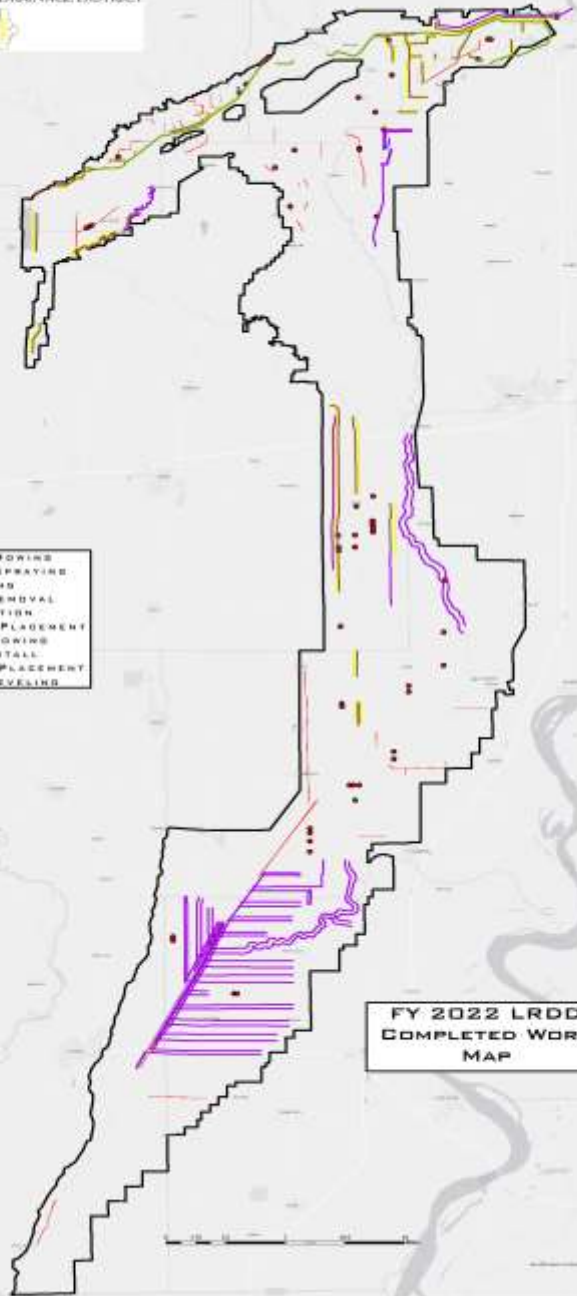
FY 2021 LRDD
COMPLETED
WORK MAP



THE LITTLE RIVER DRAINAGE DISTRICT



- BRUSH MOWING
- BRUSH SPRAYING
- CLEARING
- DRIFT REMOVAL
- EXCAVATION
- GRAVEL PLACEMENT
- LEVEE MOWING
- PIPE INSTALL
- RIP RAP PLACEMENT
- SPOIL LEVELING



FY 2022 LRDD
COMPLETED
WORK
MAP



Excavation



Excavation



Excavation



Excavation



Excavation



Excavation



Excavation



Excavation



Excavation



Excavation



Excavation



6-CAT 336F 65 FT.

Reach 1.25 yd bucket



5-CAT 326 Size 60 FT. Custom Mowers



**2-CAT 349F 45 FT.
Reach 4.5 yd bucket**



4-CAT 336F HT



2-CAT 352F 82 FT.

Reach 1.25 yd bucket



MACK GRANITE 64FT HEAVY HAUL



LOWBOY & CAT 323 NEXT GEN



4-CAT 745C 36 yd. bed





52,000 Gallons of Bulk Diesel Storage



52,000 Gallons of Bulk Diesel Storage



5,500 Gallons of Bulk Highway Diesel



5,500 Gallons of Bulk Highway Diesel



Native and Warm Season Grass



Native and Warm Season Grass



Native and Warm Season Grass



Native and Warm Season Grass



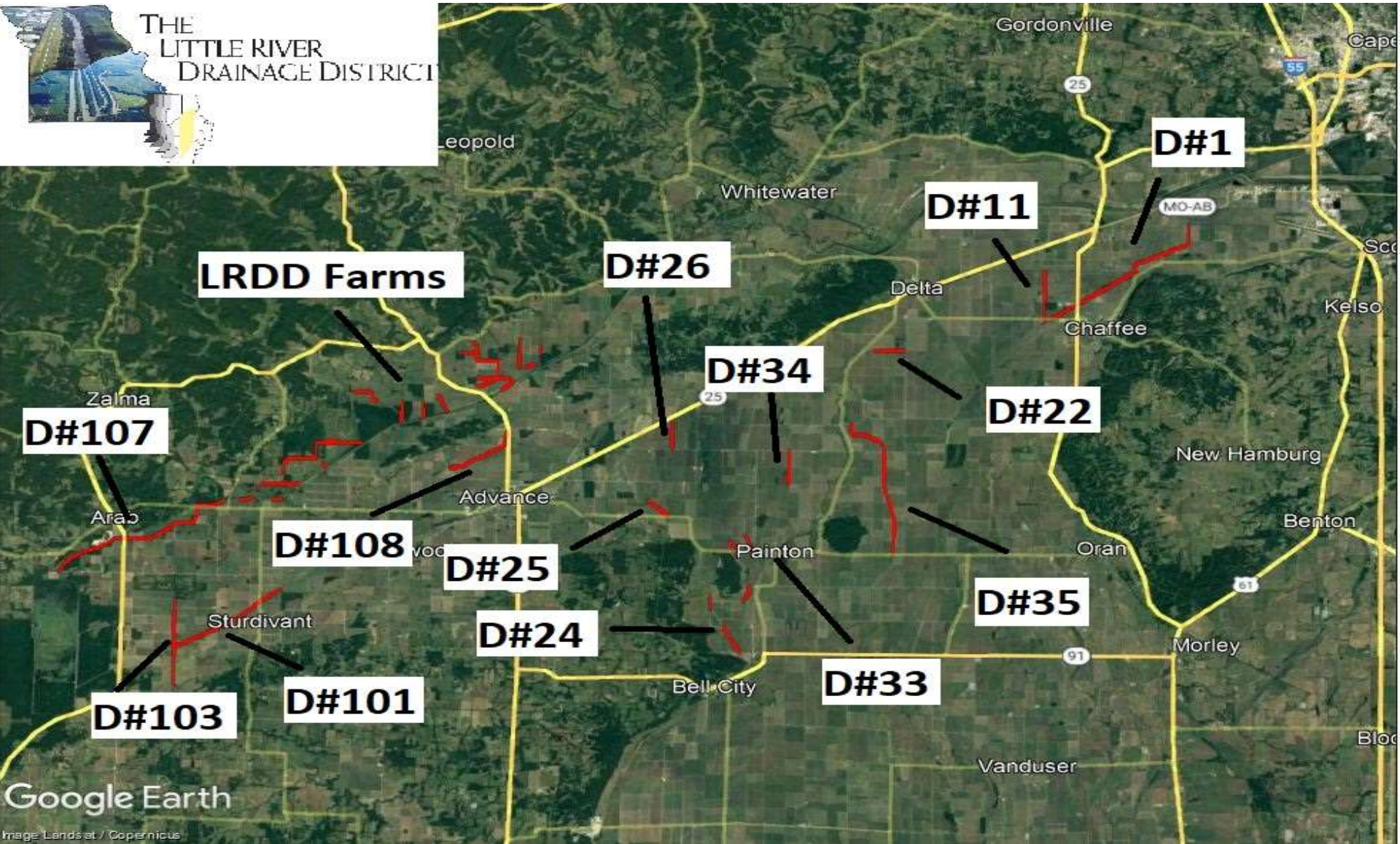
Native and Warm Season Grass



Aerial Drone Spraying



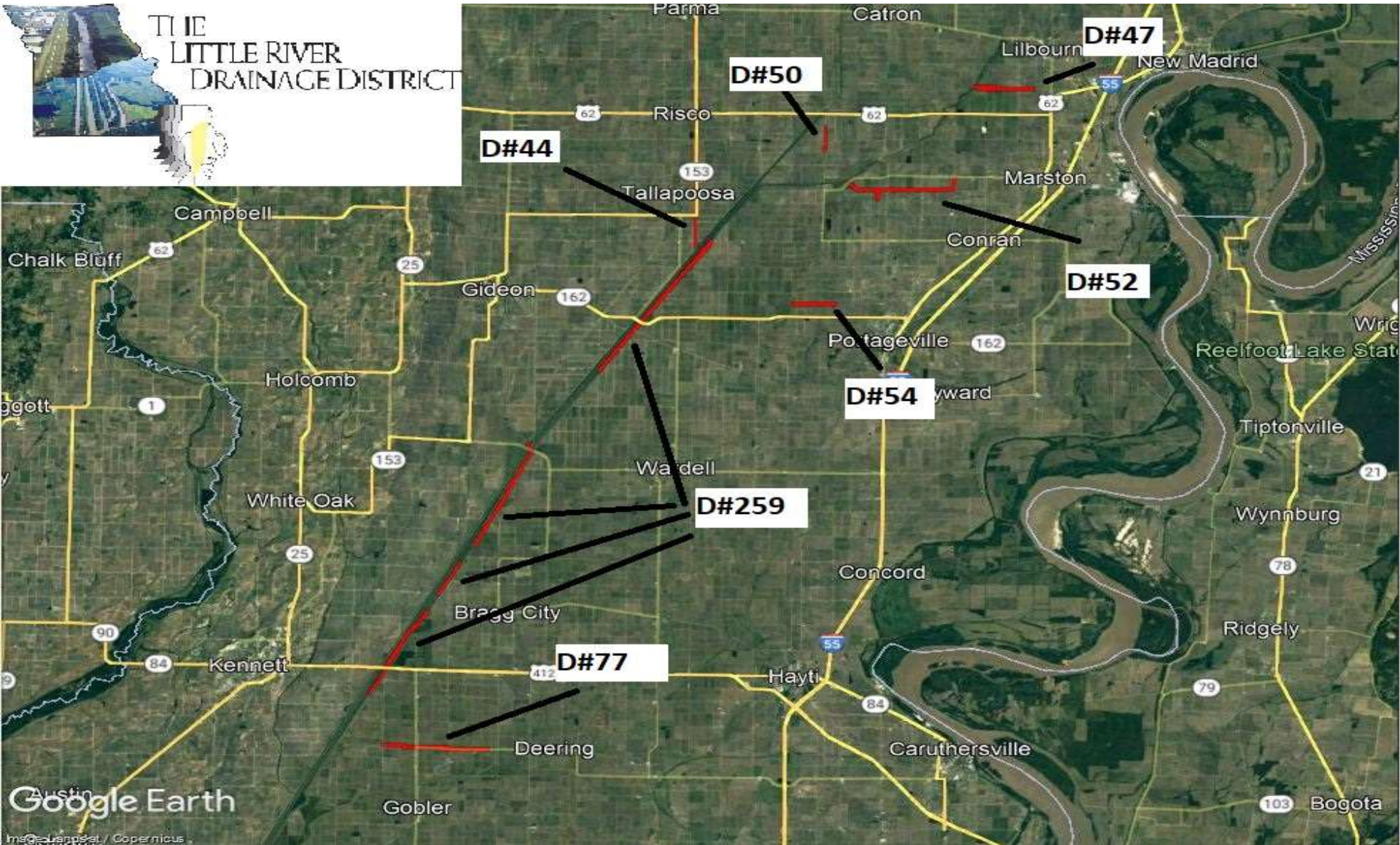
Aerial Drone Spraying



Aerial Drone Spraying



THE
LITTLE RIVER
DRAINAGE DISTRICT



North of Hornersville Missouri Looking North

Picture provided by Moore and Moore Farms 2018



QUESTIONS

COMMENTS

WWW.THELRDD.ORG



**FLOOD CONTROL & DRAINAGE
SINCE-1907**



Charles B. Baker



CHARLES B. BAKER

Supervisor 1942 - 1957/V. Pres. 1951 - 1957

Before Flood Control and Drainage



Before Flood Control and Drainage



Before Flood Control and Drainage



Before Flood Control and Drainage



Before Flood Control and Drainage



Promoting A Vision (Otto Kochtitzky)



OTTO KOCHTITZKY
Chief Engineer 1907 - 1910

Promoting A Vision (Isham Randolph)



Promoting A Vision



Promoting A Vision



Implementing A Plan



Implementing A Plan



Survey Camps



Survey Crews



Survey Crews



Construction



Stump Pulling Equipment



Stump Pulling Equipment



Stump Pulling Equipment



Otto Kochtitzky (Chief Engineer #1 LRDD) A-Frame Digger



Otto Kochtitzky (Chief Engineer #1 LRDD)
A-Frame Digger



Otto Kochtitzky (Chief Engineer #1 LRDD) A-Frame Digger



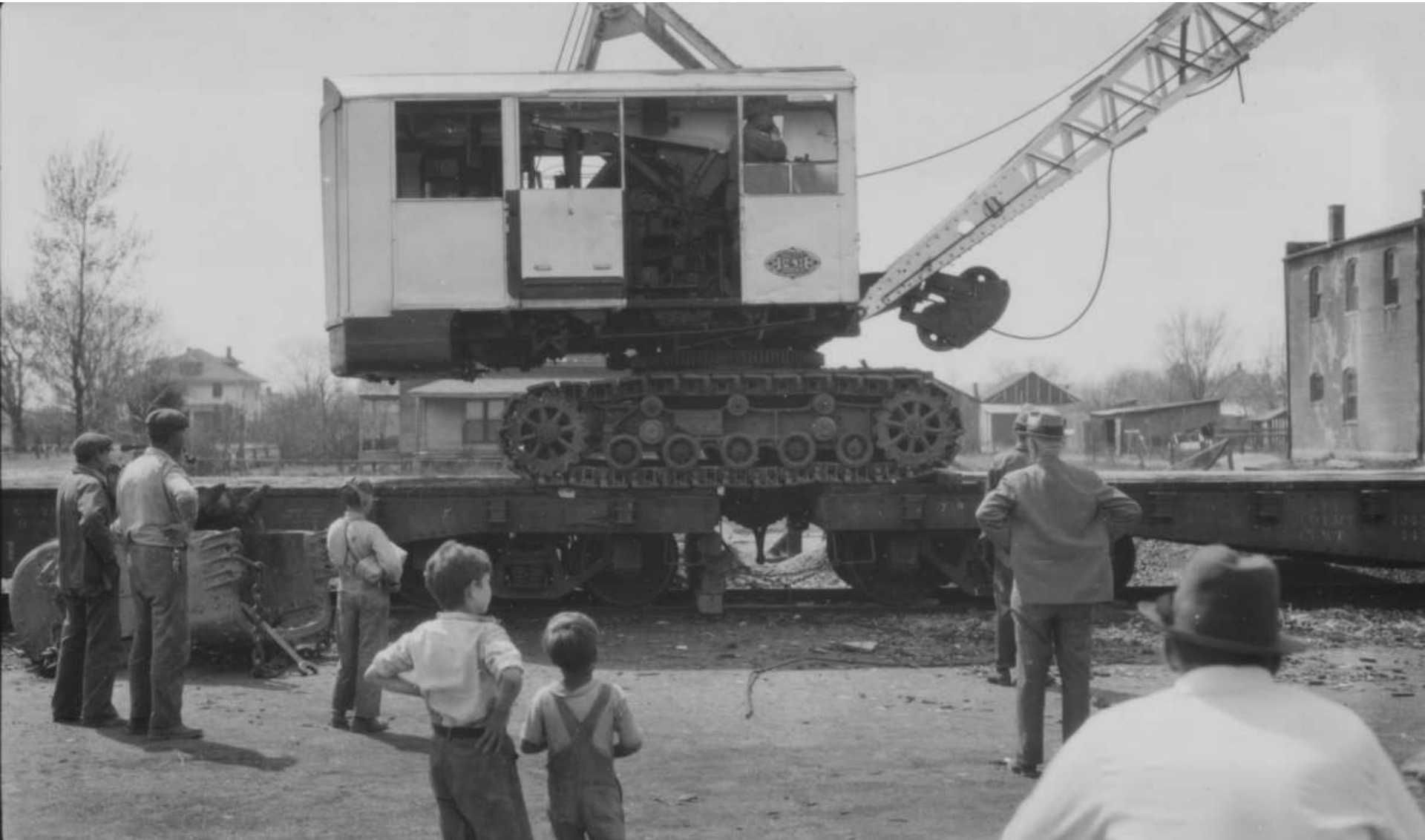
Electric Dragline



Tracked Draglines



Railroad Dragline Hauling



Floodway Construction



Kirk, MO (East of Kennett)



Kirk, MO (East of Kennett)



CANAL CONS. CO. CUTTING THROUGH KIRK

Dredge Headwater Diversion Channel



Railroad and LRDD Interaction



Allenville Spillway Construction



Allenville Spillway Construction

Progress--Allenville Spillway 12/18/18



Revetment Willow Matting



Board Mattress Sta. 640 CR. Div. Ch. Placing stone at up stream end. (2)

Revetment Willow Matting BlockHole



BlockHole Near Delta, MO

Headwater Diversion Channel



Logging Operation



Upper Caney Basin Detention (2500 Acres)



Transformer for Electric Draglines



Early Channel Excavation



Swamp Life During Construction



Contractors Camp Sta. 21 C.R. Div Ch

Swamp Life During Construction



Swamp Life During Construction



Swamp Life During Construction



Swamp Life During Construction



Swamp Life During Construction



Early Engineering Office



Upper Caney Shop and Grader

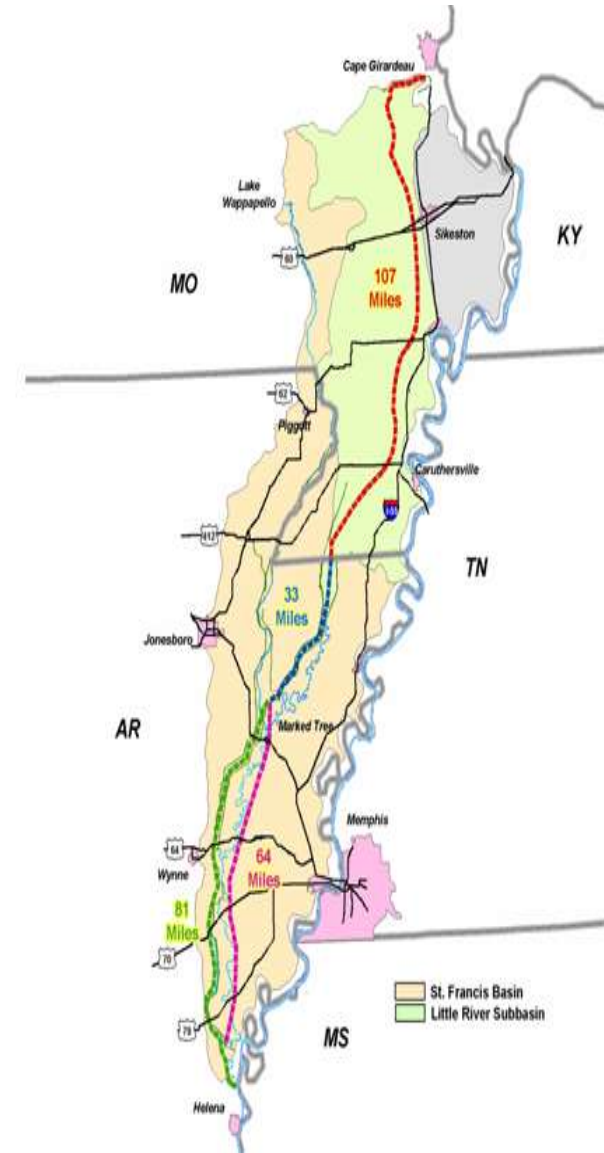


Early Maintenance Vehicles



Where Does The Water Go?

- North Side Of HWDC Levee
 - Directly To Mississippi River
 - At I-55, 3.5 Miles To River
- South Side Of HWDC Levee
 - Thru District (100 Miles)
 - Thru And/or Around Big lake Wildlife Refuge
 - Thru Chute Of Little River To Marked Tree Arkansas (Siphons Into St. Francis River)
 - Thru Various Other Channels To WG Huxstable Pumping Plant Marianna Arkansas To St. Francis River
 - Down St. Francis River To Mississippi River At Helena Arkansas



Early Days of Flood Control and Drainage



1 mile west of Sec 13

Early Days (Intersection 62 Hwy & Floodways)



NW. NW. Sec. 14-22-12. Highway SE

Early Days of Flood Control and Drainage



Early Days of Flood Control and Drainage



Early Days of Flood Control and Drainage



Early Days of Flood Control and Drainage



Road along Ditch 44
halfway between Parma &
Risco (1949)

“Almost Dry Conditions” Early Days



1927 Flood (Birth of Federal Investment)



1927 Flood (Birth of Federal Investment)



1927 Flood (Birth of Federal Investment)

