



Texas Watershed Dams A Different Perspective

Jimmy Crowder, PE / April 4, 2024



Build Better. Together.



Texas Watershed Dams *A Foreign* Perspective

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Our Background

We provide specialized expertise and design for geotechnical, dam, and tunnel engineering projects worldwide.

- Founded 1956 in the Washington, DC area
- 550+ people in 24+ offices
- 100% Employee-owned
- ENR Top 250 Design Firm
- Work domestically and internationally in both private and public sectors



Jim Schnabel, circa 1956



Office Locations





Chambers Creek No. 129

TAWS MISSION STATEMENT

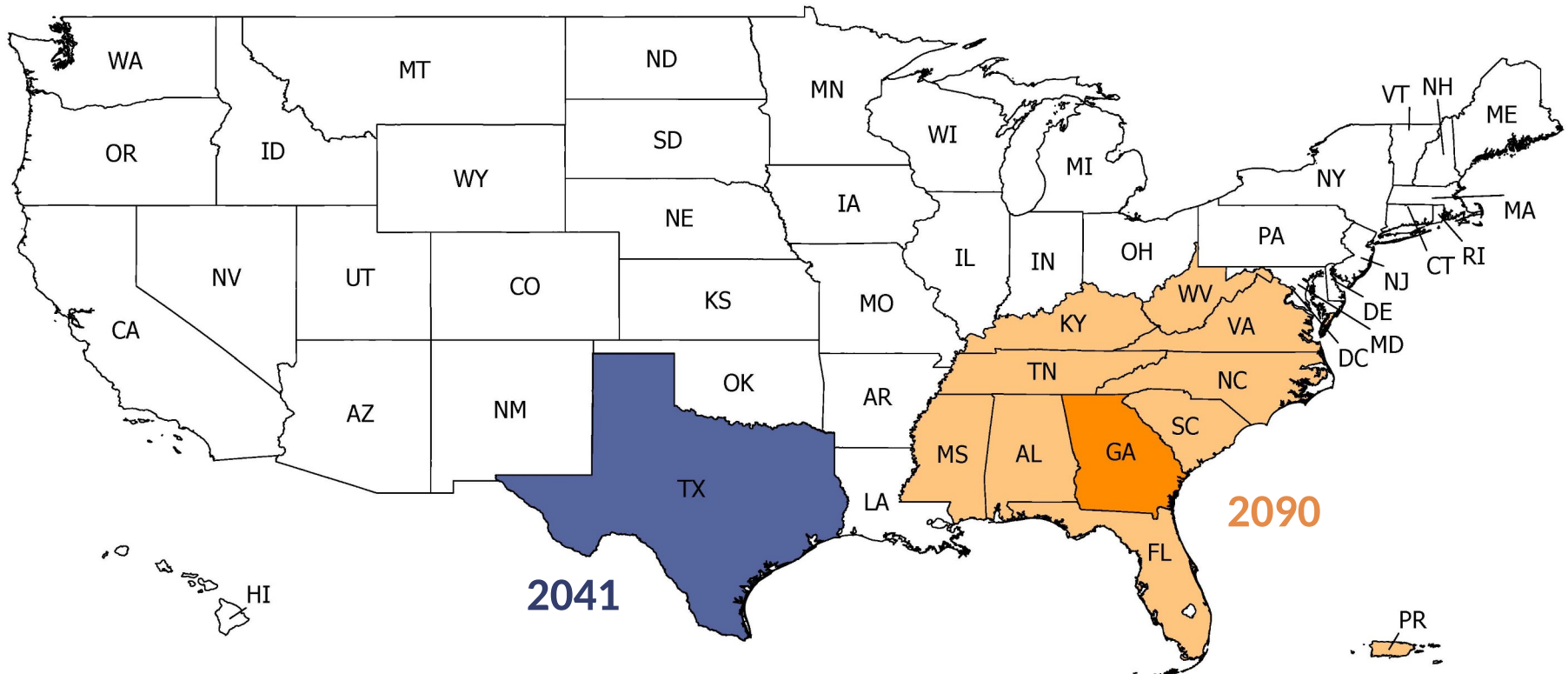
1. Strive to secure adequate State and Federal funding for PL-534, Pilot and PL-566 Small Watershed Program.
2. Foster communication between and among its members.
3. Disseminate information to legislative, governmental, public, and private groups to further the efforts of the Small Watershed Program and its associated benefits.
4. Expand its focus to other programs and regulatory or legislative initiatives which have an impact on Small Watershed Program



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- 11 States/Territories
- 11 State Conservation Boards
- 11 NRCS State Offices





Similarities – Flood and Sediment Control Structures



Choccolocco Creek No. 7 - Alabama



Hightower Creek No. 18 - Georgia



Hurricane Creek No. 9 - Tennessee



Flat Rock Creek Site 1 - Arkansas



Similarities – Design Criteria

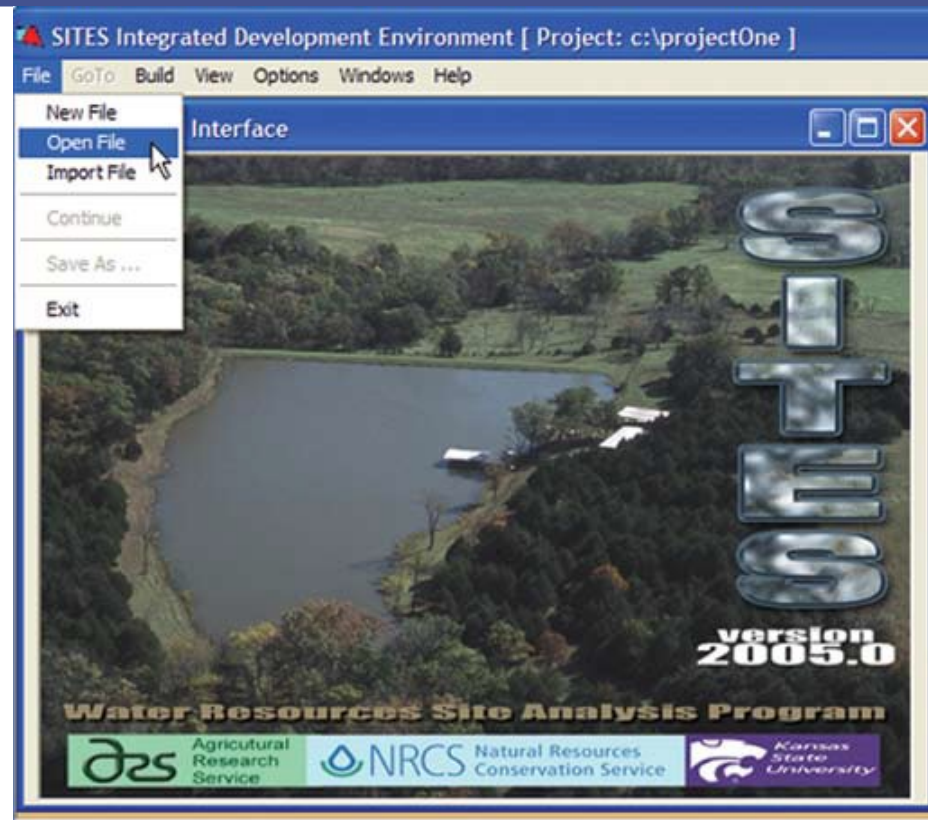


United States Department of Agriculture



Technical Release 210-60 Earth Dams and Reservoirs

March 2019



Conservation Engineering Division

Natural
Resources
Conservation
Service

nrcs.usda.gov/





Similarities – Standard Drawings



Bull Creek No. 12



Euharlee Creek No. 51

Similarities – Easement Issues

STATE OF GEORGIA, COUNTY OF MUSCOGEE

WHEREAS, Muscogee County, a body corporate of the State of Georgia is desirous of obtaining certain real property located in Land Lot 7 of the 9th District of said County for use by it in what is termed "Structure Number 3 - Bull Creek Watershed" project, and for public recreation park purposes; and

WHEREAS, certain portions of said land is the property of C. Alex Sears, Jr., a resident of Muscogee County, Georgia; and

WHEREAS, for the considerations hereinafter recited, C. Alex Sears, Jr. in order to provide the convenience to the said County of condemnation proceedings, agrees to convey to said County the same estate in the said land hereinafter stipulated, that the said County would have obtained under present applicable condemnation law, to-wit, fee simple title, with the same possibility of reverter if any (in event if some time in the future the land is no longer used for the purposes hereinafore stated) that Owner would have had under condemnation; and

WHEREAS, a map or plat has been prepared by the Office of the County Engineer of Muscogee County, Georgia showing said property and other property, the same being dated "October 31, 1962, revised March 21, 1963, revised August 30, 1963", entitled "Structure Number 3 - Bull Creek Watershed" and attached hereto and made a part hereof, certain areas thereof having been designated therein "Parcel A", "Parcel B", "Parcel C", and "Parcel D" for the purpose of referring to same in the within instrument;

NOW KNOWING, in consideration of the premises, and for the consideration hereinafter stipulated, the parties herewith each to the other grant, bargain, sell, and convey, and agree and contract as follows:

11

C. Alex Sears, Jr. herewith grant, bargain, sell and convey to Muscogee County, a body corporate of the State of Georgia, all of "Parcel A", on said attached map or plat, the same consisting of 2.459 acres and the location, courses and dimensions of which are shown on said attached plat; and C. Alex Sears, Jr. herewith grant, bargain, sell and convey unto Muscogee County, a body corporate of the State of Georgia, all of "Parcel B",



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Differences - Texas Soils

- “Fat” Clays
- Large volume changes with moisture
- Tendency for shallow slope failures over time





Lime Treatment



Differences - Filter Drains

- Clays can be difficult to filter
- Readily available gradations may not work
- Limestone not the best parent material





Differences - Jack and Bore



Aug 26, 2022 at 2:54:35 PM



Aug 29, 2022 at 12:49:37 PM
6246 Honeysuckle Rd
Midlothian TX 76065
United States



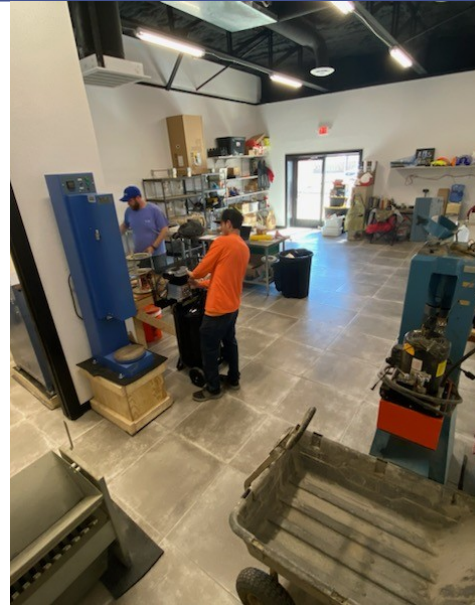
Differences - Sedimentation





Different Approaches - Construction Testing

- QA/QC Testing by Engineer
- More timely reporting of results
- More control over quality





Different Approaches - Cofferdams

- Large, single cofferdam for entire work area vs. smaller cofferdams for distinct work areas
- Consideration for downstream consequences
- Anticipated duration for needed protection
- Construction sequencing



Image © 2024 Maxar Technologies





Different Approaches - Irrigation



Questions?

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