

The Lower Arkansas Valley Drainage System Study

Newsletter Date 05/13/05
Volume 1 Issue 1

INSIDE THIS ISSUE

- 1 Upcoming Event
- 2 Arkansas Valley Drainage
- 2 Current Activities
- 3 Current Needs
- 4 Long-Range Plans
- 4 Contact Information

UPCOMING EVENT

Visit with and listen to a presentation by Mr. Dan Morasch, Chief Drainage Technician, South Columbia Basin Irrigation District, Pasco, Washington. This presentation is in support of the Lower Arkansas Valley Drainage District Study being conducted by Colorado State University and local drainage districts. Mr. Morasch is a consultant to this study.

Date: June 2, 2005. Location: 1:00 - 3:00 p.m., Wiley Community Center, Wiley, CO, and 6:30 - 8:30 p.m., Lower Arkansas Valley Water Conservancy District Office, Rocky Ford, CO.

Study Objective:

To locate and map all buried tile drains and surface drains in the lower Arkansas Valley and to assess ways to inexpensively improve these systems.



The South Columbia Basin Irrigation District (SCBID), located in Pasco, Washington is part of the larger U.S. Bureau of Reclamation's Columbia Basin Project (CBP). The CBP includes over a million total authorized acres for irrigation in the State of Washington. The South

Columbia Basin Irrigation District was formed to irrigate about 200,000 acres of that large federal project.

Very few of Reclamation's post-World War II projects in the West were provided with the kind of drainage systems found on the CBP. They are some of the most unique drainage systems in the world. The SCBID is the only district within the CBP with a specific subsurface drain maintenance program and crew.

Agriculture is highly productive in the 200,000 acre SCBID service area, with orchards, vineyards, vegetables, hay, corn and other crops. Drainage is recognized by most growers as essential to future production. Groundwater can be as high as 8' to 10' feet below the surface in some areas of the district, mirroring some of the conditions in the Lower Arkansas Valley.

The SCBID drainage system comprises 1200 miles of buried concrete, tile and PVC drains (about the driving distance from Denver to San Francisco). The drainage system has 3000 manholes, about 30 percent of which have been buried over the years at landowner requests, or through damage. The manholes are 42 inches in diameter and range in depth from eight to twelve feet. In addition, there are 15 groundwater pumps throughout the 200,000 acre service area of SCBID that evacuate drainage water out of sumps in closed basins that have no other discharge capabilities (i.e., into wasteways or irrigation canals).

Study Purpose:

To help landowners and communities address crop production and localized flooding issues linked to the valley-wide drainage system.

ARKANSAS VALLEY DRAINAGE

Beginning in the early 1900s through the late 1920s, an estimated 84 miles of clay tile drains and 107 miles of open collector drains were constructed throughout Otero, Crowley, Bent and Prowers counties. This has been verified through research of old Federal Land Bank records. These drains were financed through serial bonds estimated at \$1.4 million dollars (1920 dollars). Colorado State University is presently mapping these clay and open drains using aerial photo interpretation and global positioning (GPS). The study is funded by the Colorado Water Conservation Board (CWCB), the Lower Arkansas Valley Water Conservancy District (LAVWCD), the Colorado Department of Transportation (CDOT) and local drainage districts. Additional assistance is being provided by local U.S.D.A. agencies.

CURRENT ACTIVITIES

Currently, the study has obtained mapping assistance from board members of the Wiley-Big Bend Drainage District, Kornman Drainage District, Granada Drainage District, Holly Drainage District, the Lubbers Drainage District, the Pleasant Valley Drainage District, the Las Animas Consolidated Drainage District, and the Las Animas Consolidated Extension Drainage District. These districts are assisting us in locating old manholes, "boil-ups," outlets to the open collector drains, and other visible features of these buried drainage systems. Once these features are superimposed on aerial photos, the drains can become identifiable due to differences in vegetative growth over the drains.

CURRENT NEEDS

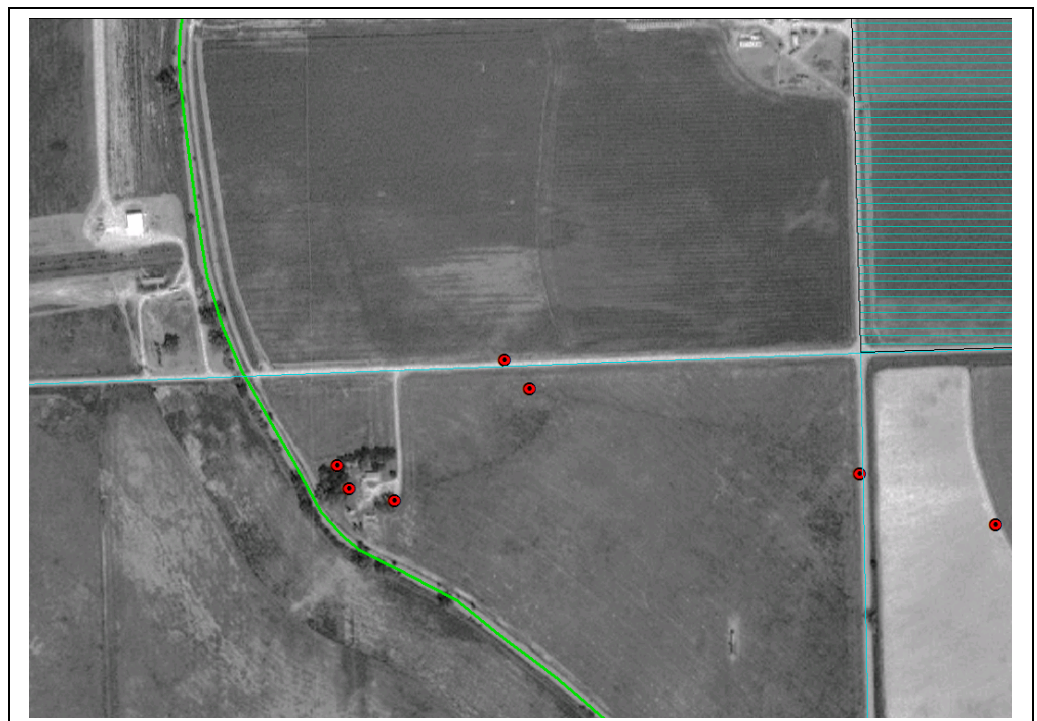
We would like to obtain similar help from the following drainage districts to continue the mapping program:

Water District 67	Water District 17
Arbor Drainage District	Grand Valley Drainage District
May Valley Drainage District	Fairmount Drainage District
McClave Drainage District	Holbrook Drainage District
Riverview Drainage District	Crowley Drainage District
Dry Creek Drainage District	King Center Drainage District
Prosperity Drainage District	Numa Drainage District
Deadman Drainage District	Olney Springs Drainage District
Vista Del Rio Drainage District	Ordway Drainage District
	Valley View Drainage District

Study Participants:

Colorado State University and drainage districts in Crowley, Otero, Bent and Prowers counties.

The photo below shows a buried tile drain alignment in a landowner’s field that was made apparent through superimposing GPS coordinates of identifiable surface features onto an aerial photo.



LONG-RANGE PLANS

The study will create a digital map and hard copy folio of all buried clay tile drains and surface drains. These products will assist drainage districts in better documenting the location of their drains, thereby potentially contributing to improving maintenance programs. There may even be an opportunity to more inexpensively maintain the system in the future. Mr. Dan Morasch of the South Columbia Basin Irrigation District will speak to these ideas, using his many years of experience as a drainage technician.



Walt Epley, CSU
Project Field Director
GPS/GIS mapping

CONTACT INFORMATION

The intent of the study is to work in a close partnership among drainage districts and CSU. For further information on ways that you can help us locate all buried drains or to learn more about the study, please call:

Dr. John Wilkins-Wells, CSU
Office phone: 970-491-5635
Cell Phone: 970-218-5088
johnww@lamar.colostate.edu

Dr. Lauren Grasmick
Local Project Coordinator
Home phone: 719-336-5430
Cell Phone: 719-688-5431
laureng@rural-com.com