



## DRAIN TILE STUDY PROMPTS DISCUSSION

In answer to the question, 'does agricultural tile drainage increase flooding?' Chuck Fritz of the International Water Institute says, "it depends."

His confident reply is supported by the work of the Basin Technical and Scientific Advisory Committee (BT-SAC), a group whose research has been commissioned by the Red River Retention Authority (RRRA) to explore ways to manage agricultural drainage systems with the goal of maximizing benefits to crops while minimizing impacts relative to flooding and water quality in downstream watercourses. The BTSAC includes accredited hydrologists, engineers, and natural resource scientists. The RRRA is comprised of the boards of the Minnesota Red River Watershed Management Board (RRWMB) and the North Dakota Red River Joint Water Resource District (RRJWRD). The BTSAC has published two reports; Briefing Paper No. 1 titled *Impacts of Subsurface Agricultural Drainage on Watershed Peak Flows*, and Briefing Paper No. 2 titled *Water Management Options for Subsurface Drainage*. These reports are available on the Red River Basin Decision Information Network website ([www.rrbdin.org](http://www.rrbdin.org), see "Featured Project.")

Preliminary statements of the BTSAC from the first Briefing Paper provided to the RRRA include:

- Any general statement implying that subsurface drainage decreases (or increases) flood peaks is strongly discouraged because it oversimplifies the complex processes involved.
- Timing and volume of runoff from different areas of a watershed or basin are key variables affecting peak flows

and duration of flooding.

- The cumulative impacts of tile/subsurface drainage on future peak flows in the Red River Basin are currently unclear.

The second Briefing Paper resulted in the following two conclusions:

- Situations exist where adding uncontrolled subsurface drainage to areas of the landscape has the potential to increase flooding. This risk must be considered and evaluated in water management decision making.
- The inclusion and appropriate operation of control structures on existing and proposed subsurface drainage systems can maximize water storage potential and potentially reduce flood flows.

Noting the differences in permitting requirements by the various water authorities and the rapidly accelerating pace of pattern tiling in the Red River Basin, Briefing Paper No. 2 also states that

"water managers from North Dakota and Minnesota currently have a limited window of opportunity to implement a standardized and effective risk management strategy for subsurface drainage systems."

To begin developing guidelines in response to the watershed management elements of Briefing Paper No. 2, the RRWMB requested a joint meeting be conducted of District Administrators and members of the board's Technical Advisory Committee (TAC). A meeting was conducted on April 27th at the Sand Hill River Watershed District office in Fertile, MN to frame their approach in the context of the data provided by the BTSAC reports.

The meeting resulted in a detailed discussion regarding tiling which included the various permit requirements for each watershed district. It was evident that the individual watershed districts have diverse approaches for

regulating tile systems. These regulations range from no permit required to regulating the drainage coefficient to requiring gated controls on the outlets.

While no final decisions were made or have been approved, the committee found common ground on the following options as a policy response to tile drainage management:

- No requirements for drainage coefficient (DC).
  - No requirements for random tile, under 1/8" DC.
  - All pattern/seepage tile must have a control for both pump and gravity systems.
  - All pattern tile will have an operating plan similar to holding areas.
  - Develop operating plans to address the Red River component and a local component for turning the pump on and off.
- The recommendations will be discussed with the Board of Managers at their next meeting.

### RRWMB MEETING HIGHLIGHTS

*At its regularly scheduled April meeting, the RRWMB:*

- *Heard a report from International Water Institute Director Chuck Fritz on the Basin Technical and Scientific Advisory Committee's (BTSAC) Briefing Paper No. 2, titled Water Management Options for Subsurface Drainage. In response to the information, the board directed District Administrators to convene to begin a process for policy development to guide their water management decisions related to tile drainage. (For more information, see feature article in this issue.)*
- *Received an update from Joe Belford, Ramsey County (ND) Commissioner, on the Devils Lake flooding conditions. Facts related to that situation include; 160,000 acres of land have been designated "wasteland" to allow landowners to retain ownership; the lake covers 180,000 acres, much of it farmland; total impact on business activity is estimated at \$194 million, resulting in extensive job losses; 700 structures of one kind or another have been engulfed by the rising water.*
- *Discussed the issue of permitting for wetlands, and the desire for a smoother process for project implementation. The Board of Managers agreed to invite relevant agencies and personnel to meet and tour appropriate project sites in an effort to demonstrate the need for a more efficient permitting process.*
- *Heard a reminder from the Red River Basin Commission's (RRBC) Julie Goehring on the June 6th Winnipeg tour and August 2nd Devils Lake tour of the RRBC board.*

## WATERSHED DISTRICT DEVELOPMENTS

### RED LAKE WATERSHED DISTRICT

Construction has started on the Thief River Falls Flood Damage Reduction/Red Lake Watershed District Ditch #14 project. The Minnesota Pollution Control Agency (MPCA) has recommended permit approval for the project.

### TWO RIVERS WATERSHED DISTRICT

The Natural Resources Conservation Service (NRCS) has provided draft project plans to the District and has authorized \$1.4 million for construction of Springbrook PL566 Project #10. An additional \$425,000 was appropriated through the Reinvest in Minnesota (RIM) program to help secure the right of way. A local share will also be necessary, perhaps available through the State of Minnesota bonding bill. The District plans to prepare a Step I submittal soon. Permit applications have been submitted to the various agencies for the project; when secured along with necessary right of way, bids will be let with construction to follow as early as July.

The MPCA has provided a contract agreement to fund the "Lower Red" Watershed Study, which will be done jointly with the Joe River WD, the Middle Snake Tamarac Rivers WD and the Two Rivers WD. A joint powers board formed for the study will meet to discuss the funding agreement and take the next steps. The study will take up to four years and will be done in two phases, each funded by the MPCA. The study will include water quality and quantity monitoring, research of related information, public engagement, data analysis, and develop action items to address any impairments.

### SAND HILL RIVER WD

The Sand Hill River WD project team met recently to work on upgrading the Bear Park Project and review the Winger Dam. In addition, the group prepared and sent the Purpose and Needs statement to the U.S. Army Corps of Engineers (USACE).

Polk County, along with the Lake Improvement District (LID), have petitioned the District to take over the Union Lake Flood Control and Erosion Project.

Reiner Construction of Hutchinson, Minnesota has started work on Project #24, consisting of Polk County Ditch #77 and #166. The benefitted area of the proj-

ect is approximately 10,000 acres and will consist of 17 miles of ditch and culvert improvement. Expected completion date is September 1, 2012.

### WILD RICE WD

In April, the project team will discuss the operating and maintenance plan for Moccasin Creek and the potential of extending the spring opening procedure. Another topic will be the opportunity for a second dam to be added, which has been requested by landowners.

### MIDDLE SNAKE TAMARAC RIVERS WD

Construction has started on the Brandt/Angus Flood Control Project. With a favorable construction season and adequate funding, it is hoped that the entire \$3.35 million dollar project can be completed in one construction season. RJ Zavoral and Sons, Inc. of East Grand Forks is the building contractor.

The District has been partnering with the local and federal Audubon Society on projects of mutual interest. The federal Audubon Society has a two-year agreement with the U.S. Fish and Wildlife Agency to do a study on bird migration in the Goose Lake area, which includes the Agassiz Valley Water Resource Management Project area. The local Audubon chapter has been very active in working with the District on projects that include bird houses, trails, education, public relations and more.

### EVENTS COMING UP

For a full list of upcoming events, including the next meeting of the RRWMB, please visit:

[www.rrwmb.org](http://www.rrwmb.org)



### NEWS & VIEWS

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