Talking with your Landlord:

Saturated Buffers

There are many landowners looking for young, innovative farmers who are promoting a sound conservation ethic as they look at the future care of their land. Gaining conservation, communication and financial skills will help Emerging Farmers stand out in the community and create a competitive advantage for building relationships with future landlords. This publication series lays the initial roadmap to help develop those skills and provide resources for continued growth.

Saturated Buffer Basics

Where Should They Be Installed?

Existing buffers and existing tile drainage systems can be retrofitted saturated buffers if they meet specific site requirements. A good candidate site has the following: ≥30 feet wide buffer area, well established vegetation, a flat area ≥300 feet along the waterway, and up to two-foot elevation change along the length of the buffer. Check with your local NRCS office to see if your site qualifies.

The Dollars and Sense of Saturated Buffers

Saturated buffer installation costs for existing buffers and tile systems range from $2,000-4,000 with minimal maintenance costs.

Saturated Buffer Benefits

- Improved water quality
- Minimal cost and maintenance after installation
- Opportunity to seed pollinator habitat
- Edge of field practice - no impact on yield

Denitrifying practices like wetlands, bioreactors and saturated buffers remove nitrate from tile drainage water through a process called denitrification. Microbes breathe in nitrate (NO_3) and exhale inert N_2 gas back into the atmosphere. These microbes require an anaerobic (oxygen free) environment to ensure that they use the nitrate in the water rather than oxygen as part of their respiration process.

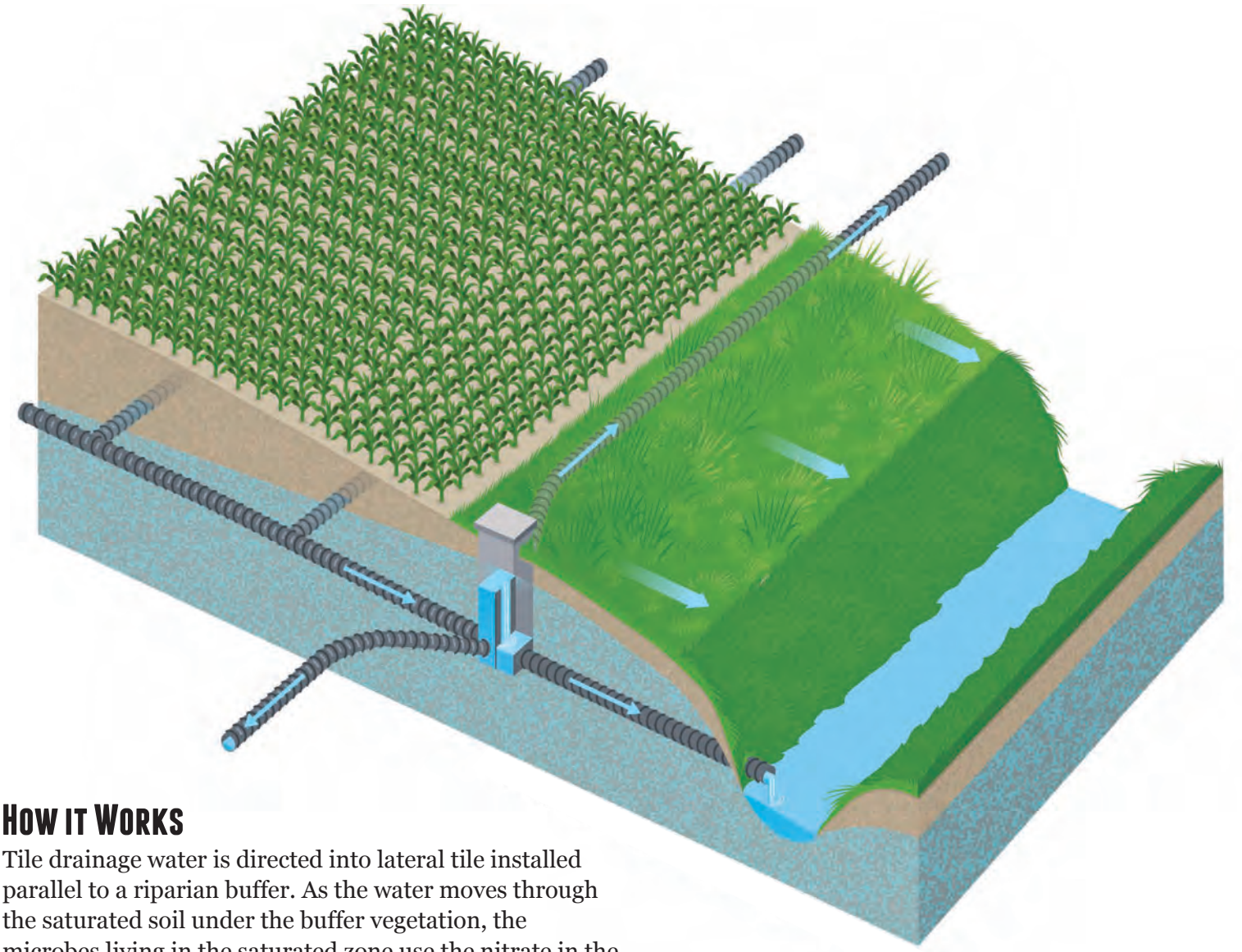

Image from transformingdrainage.org

How it Works

Tile drainage water is directed into lateral tile installed parallel to a riparian buffer. As the water moves through the saturated soil under the buffer vegetation, the microbes living in the saturated zone use the nitrate in the water as part of their respiration process. Plants in the buffer also remove nitrate from the drainage water through root uptake. **Saturated buffers can remove, on average, 50% of the nitrate in subsurface flow**.

Start Small

Working with your landlord to gather information about the practice and addressing any concerns early will help smooth the transition to the new practice and minimize conflicts.

Your local NRCS staff and Iowa State University Extension and Outreach field specialists are available to meet with you and your landlords to help answer questions, provide resources and technical assistance.

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Iowa Learning Farms is funded by the Iowa Department of Agriculture and Land Stewardship through the Integrated Farm and Livestock Management Demonstration Program, in collaboration with Iowa Department of Natural Resources (USEPA Section 319), Natural Resources Conservation Service, Conservation Districts of Iowa, Iowa State University Extension and Outreach, Leopold Center for Sustainable Agriculture, Iowa Farm Bureau Federation and Iowa Water Center. The Emerging Farmers project is funded by Natural Resources Conservation Service and Iowa Department of Agriculture and Land Stewardship