

Title: Introducing Alternative Designs and Tools for Drainage Ditches

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Description:

Alternative designs for drainage ditches exist that can improve drainage function, maintain ditch stability, reduce the need for ditch maintenance and provide additional ecosystem services compared to the traditional trapezoidal designs. In this workshop, we highlight two common approaches for improving function of drainage ditches, the two-stage and self-forming channels. First, we will set the stage with a brief history on the function and design of drainage ditches in the context of the impacts of American settlement, agricultural production, and water resources in the North Central Region of the United States.

Second, we will introduce the two-stage and self-forming concepts including how they were developed, how they are performing, and where we see them heading in the future in terms of research, monitoring, implementation, and socioeconomic and political constraints.

Third, we will discuss and compare the design of both two-stage and self-forming channel, where each practice applies on the landscape, and tools available to help landowners and decision-makers select and size these approaches using case study examples, and the trade-offs to implementing them.

Participants will be given a set of data from a real ditch site and will be asked to use the tools to design and evaluate if a two-stage, self-forming, traditional ditch maintenance or do nothing option should be selected. Participants will be asked to bring their own laptop computers outfitted with Microsoft Excel.