

Summary of the Linking Land Use and Water Quality Workshops
Thursday, March 26, 2015

Registration, Welcome, and Introductions

The workshops were held at the Community Center in Fulda. Two sessions were held; one from 12:00-4:00 pm and one from 5:00-9:00 pm. There were 35 participants for the afternoon session and 8 participants for the evening session. Presenters and coordination staff were also present.

The workshops began with a check in and a meal catered by Brian's Supper Club was provided. Introductions then took place. The workshop sponsors were recognized and thanked. Everyone was asked to state their name and who they represent.



Linking Land Use and Water Quality

Karen Terry, University of Minnesota Extension Educator, began the workshop with a presentation entitled "Linking Land Use and Water Quality". Karen began her presentation by showing that the amount of available freshwater is a very small portion of the planet. Minnesota is unique in that it is the source of many major bodies of water in North America. Any problems that we create in our water bodies are transported downstream for other states to deal with. Karen then reviewed the extent of the



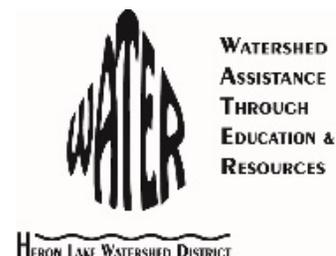
West Fork Des Moines River (WFDMR) and provided information about land use and land cover in the watershed. Problems within the watershed include bacteria, nutrients, sedimentation, and streambank erosion.

The benefits a watershed provides were addressed. These benefits include: recreational opportunities, strong agricultural systems, drinking water protection, property values, flood minimization, habitat, and sense of place. Karen then discussed how adding impervious surfaces can affect a watershed. This causes altered runoff patterns, increases flooding, and creates water quality and quantity issues. Shoreland development around lakes also causes runoff problems. Although our watershed is currently altered, there are steps we can all take to improve the quality of our land and water resources. These steps include creating plans, policies, and practices. Plans are the goals we set fourth for the watershed. Policies are the rules and regulations we put in place and the practices include the actions we physically undertake to help achieve our goals. Everyone has an idea of how we can achieve a healthy watershed, and conversations need to be held between all stakeholders to ensure we are all working together towards the same, unified goals.

In the afternoon session, a question was asked regarding the aesthetics of a developed shoreline. Discussion was held and it was explained that science should be considered when making water quality decisions, not aesthetics.

West Fork Des Moines River Watershed Project: TMDLs and WRAPS

Jan Voit, Heron Lake Watershed District (HLWD), gave a presentation titled "West Fork Des Moines River Watershed Project: TMDLs and WRAPS". In her presentation, Jan reviewed the WFDMR Total Maximum Daily Load (TMDL) and the impairments listed in the TMDL. There are a



total of 33 impairments including: 5 for fecal coliform, 10 for turbidity, 15 for excess nutrients, and one for pH. Minnesota legislature is changing the way waters are managed. They are progressing towards a watershed approach and the Watershed Restoration and Protection Strategies (WRAPS) process. The process is a 10-year cycle that involves assessing the health of the watershed and formulating strategies to improve the health of the watershed. The TMDL and WRAPS were compared. The WFDNR faces some great challenges and needs to see reductions of 86%. The WFDNR started the WRAPS process in 2014.

In the evening session, discussion was held regarding the dam at the outlet to Heron Lake and the politics involved in water planning.

Des Moines River Watershed Health Assessment

Jon Lore, Minnesota Department of Natural Resources (DNR), gave a presentation titled “Des Moines River Watershed Health Assessment”. During his presentation, Jon described the role that the Ecological & Water Resources Division will have in the WRAPS process. We have altered the hydrology of the area and this is having devastating effects on geomorphology and stream stability. It now takes less rain to create more runoff because the longitudinal, lateral, and vertical connectivity of streams has been altered. In this area of the state, streams are rarely allowed access to their floodplains. This



increases the flow of streams and their ability to move vast amounts of sediment. Erosion and sedimentation in our streams are serious problems. Valuable land is disappearing due to streambank erosion and fish habitat is being eliminated due to sedimentation. Many banks are monitored in this area for erosion; in some cases over 20 feet of a bank was lost in a one year time period. Our watershed is suffering because water is not allowed to stay on the landscape long enough. In order to restore watershed health, we need to address the causes of the problems and not the symptoms. The economy and “this is the way it has always been done” mentality are roadblocks to achieving better water quality. Everyone has a role in restoring our watershed health.

The Watershed Game

After the presentations, the Watershed Game was played. There are two versions of the game: the lake and the stream model. The game is used to teach players how land use decisions can affect water quality. Each watershed has various land uses and players must implement Best Management Practices (BMPs) to reduce the amount of sediment in the water. The goal is to work together to significantly improve the water quality in the watershed. In the process, players learn of the different BMPs that can be implemented in their area. The process of having a plan, creating policies, and implementing practices to reach a goal is simulated. Sometimes the goals are met, while other times they are not. Discussion is then held after the game was played to reflect on the processes that took place.

Doug Malchow and Karen Terry, University of Minnesota Extension, led the Watershed Games during the workshop. Afterwards, discussions were held. It was noted that not every land use within a watershed cannot reduce their runoff by the same amount. Varying land uses have different impacts on the water quality. BMPs that are implemented in an urban area tend to be more costly due to the large amount of infrastructure and the high concentration of people. Having a plan and educating the population is important. Although they can be costly we will see great benefits from both.

It was observed that players became so invested in the game and worked hard to reduce their runoff, while this same amount of enthusiasm towards watershed work is usually not seen in real life. It was

also noted that point source pollution is easier to manage because can easily be identified and numbers can be assigned for reduction. Although the same reductions can be assigned to nonpoint source pollution, the causes and groups responsible for the reductions are much more difficult to identify.

There were difficulties in playing this game. One difficulty is that the standards can change. Money also plays a large role in what work can be done in a watershed. Natural disasters happen and we have no control over them. Oftentimes we have to deal with runoff and pollution problems that are created upstream. We have no control over what happens upstream, yet we have to deal with the consequences of having poor water quality. Watershed plans are important. However, the plans need to be created with sound science and we have to actually use to them in order for them to be beneficial.

