

# Using TMDLs to Restore Water Quality in the Rock River Basin

## Key Facts about Agriculture

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### Agriculture is Important in the Rock River Basin

- 19% of Wisconsin farmland is located in the Rock River Basin
- 22% of all Wisconsin agricultural products are produced in the Rock River Basin.
- 5 of the top 15 agricultural producing counties are located in the Rock River Basin. Dane and Dodge County are in the top five counties for dairy, cattle and hog production.
- Most Rock River Basin farmers are good stewards of their land and of our water resources. However, with 62.5% of the basin in agriculture, what happens on agricultural lands and decisions farmers make regarding their operation has a critical impact on water quality.

### Agriculture and Targets for Reducing Pollution

- The **Total Maximum Daily Load (TMDL)** process identifies the maximum amount of phosphorus and sediment that a water body can receive and still meet water quality standards.
- More than half of the two major pollutants come from cropland, barnyards, pastures and other agricultural operations: 66.8% of the phosphorus and 91.8% of the sediment\*.
- Different water bodies across the basin have different reduction rates:
  - Phosphorus runoff reductions range from 4% to 66%
  - Sediment runoff reductions range from 0% to 94%
- The wide range of necessary reduction goals reflects the differences in soils, current land use practices, crop types, past nutrient applications, buffers and slope. Land management practices impact the amount of polluted runoff that comes from agricultural lands and thus the amount of reductions needed to meet water quality targets.

### Concentrated Animal Feeding Operations (CAFOs) and the TMDL

- CAFOs are farms with more than 1,000 animal units and all CAFOs are regulated via a Wisconsin Pollutant Discharge Elimination System (WPDES) permit. Currently, there are 27 CAFOs in the Rock River Basin with more proposed.
- A CAFOs Waste Load Allocation from the animal production area is zero as no discharge is allowed. However, once the manure is land applied, it becomes part of the TMDL Load Allocation (nonpoint or runoff sources) target reduction. Additional controls will be identified in nutrient management plans to address the spreading of manure from CAFOs.

### How Will This Plan be Implemented for Agriculture?

After approval of the TMDL by US Environmental Protection Agency (EPA) a strategy to implement the findings of the TMDL will be developed. An Agricultural Sector Team, comprised of experts, farmers and other basin stakeholders, will work to develop specific strategies for agriculture. It is anticipated

#### Who will be affected by the pollutant reduction targets?

Farmers and landowners in those sub-watersheds with high rates of sediment and phosphorus pollution will be approached first about appropriate practice changes and cost share opportunities.

Eventually all farms will be evaluated for sediment and phosphorus losses from their croplands. Those found to have fields with significant loss will need to take steps to mitigate those losses in an effort to protect their land and water resources.

\* The model uses total suspended solids, in agriculture that is mostly soils, plant debris and animal waste that washes off and becomes sediment, so the word sediment is used in this fact sheet instead of Total Suspended Solids.



that this plan will build on the already existing county, state and federal programs to achieve Wisconsin water quality standards in the Rock River Basin.

Agricultural producers are expected to comply with existing state (NR 151, NR 243) and local regulations. The TMDL model calculates phosphorus and sediment loading from agricultural lands draining to each impaired stream reach or water body, and estimates the load reduction necessary in order to meet clean water goals. The model identifies sub-watershed areas, not specific fields, which are contributing excess phosphorus and sediment to impaired waters. This information will enable targeting of those areas identified as causing the greatest amounts of pollutant loading. This targeted approach will address the worst areas first and be the "biggest bang for the buck". Field-scale models, like SNAP-Plus, can be used to help producers determine the most appropriate management practices for their land. Landowners will have the flexibility to select practices and then put them where they are needed most. The most likely change for agricultural producers will be changes to their nutrient management plans to meet the TMDL load allocations.

### **How Much is it Going to Cost and Will Cost sharing be Available?**

- Costs to meet the pollution reduction goals will vary and will depend on which management practices are needed. Landowners are the best decision-makers for their operations and will be encouraged to seek low-cost and innovative approaches to improve water quality.
- Currently cost sharing is mandatory before practice installation is required from agricultural operations.
- Cost sharing is available through a variety of federal, state and local funding programs. For example, the Targeted Runoff Management Grant Program is DNR's main program to fund TMDL-related projects.
- The development of a recovery plan for the Rock may include flexible approaches that look at the whole watershed and consider factors such as, but not limited to: cost effectiveness, pollutant trading opportunities, obtainable resources and new best management practices to meet water quality goals.

### **Who From the Agricultural Sector Will Need to be Involved and Committed to Implement the Pollution Reduction Goals?**

Successful implementation of a Rock River Recovery Plan to meet the targets identified in the TMDL report, depends on the commitment and involvement of farmers, crop consultants, county land and water conservation staff, DNR, DATCP, NRCS, and other interested parties (such as Town and Country RC&D, Dairy Business Association, Farm Bureau, Dairy Producers of Wisconsin, lake districts and non-profit organizations). Partners and stakeholders are encouraged to get involved with the development of the Rock River Recovery Plan. The plan provides more details on how to achieve sediment and phosphorus load reductions.

#### **How was the amount of pollution coming from agricultural fields determined?**

The amount of phosphorus and sediment coming from agriculture was calculated using a Soil and Water Assessment Tool (SWAT) computer model. A 10-year period of 1989 to 1998 for the hydrologic, or precipitation, data was used. The amount of rain and when it comes in the year is important for determining runoff pollution. This 10-year period was compared to longer trends and found to be representative.

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