Little River Watershed Fact Sheet

WELCOME! Thank you for your interest in your local water quality!

This handout is intended to…

- **Orient you to water quality concerns throughout the watershed**
- **Share with you the approach that the state is required to take to address water quality impairments**
- **Encourage you to stay involved in the process by attending meetings, asking questions and making comments!**

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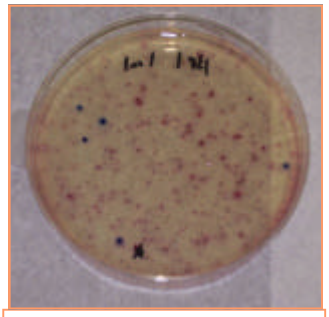
HOW IS THE WATER QUALITY IN THE LITTLE RIVER WATERSHED?

The Virginia Department of Environmental Quality (DEQ) is the state agency charged with monitoring and assessing streams, rivers and lakes across the Commonwealth. DEQ assesses water quality by comparing data collected to Virginia's Water Quality Standards. Streams that do not meet Virginia's Water Quality Standards are placed on the state's "Dirty Waters List" or 303(d) list.

BACTERIA PROBLEMS



BACTERIA COLONIES GROWING ON A PETRIE DISH.

DEQ tests water samples for bacteria (Fecal Coliforms and Escherichia Coli) on a bimonthly basis at monitoring stations. The Water Quality Standard for bacteria is risk-based, meaning the presence of elevated levels of E. Coli bacteria increase the risk for the presence of gastrointestinal disease-causing pathogens. Sources of bacteria in streams include humans, pets, livestock and wildlife.

It is known from collecting **bacteria** samples throughout the watershed that…

- **Little River** is considered "impaired" (i.e. bacteria levels exceed the Water Quality Standard) from its headwaters to the confluence with the New River. The impairment includes the Little River Reservoir.
- **Meadow Run** is also impaired from its headwaters to the confluence with the Little River.
- **Pine Creek** is impaired for nearly 4 miles beginning at the pond and extending downstream to the confluence with the Little River.
- **Meadow Creek** is impaired from where Mill Creek enters it downstream to where Meadow Creek meets the Little River.
- The **Mill Creek** subwatershed is impaired including two unnamed tributaries and **Poplar Branch.***
- **Brush Creek** is impaired extending nearly 6 miles upstream from the Brush Creek confluence with the Little River.
- **Laurel Creek** is impaired from its headwaters to the confluence with the Little River.
- **Dodd Creek** is impaired from the Rte. 710/714 junction downstream to its confluence with the West Fork Little River. **West Fork Dodd Creek** is impaired from the confluence of an unnamed tributary downstream to where it meets Dodd Creek.*

*** A TMDL STUDY AND IMPLEMENTATION PLAN HAVE BEEN COMPLETED FOR THIS SUBWATERSHED.**

TEMPERATURE PROBLEMS

DEQ measures water temperature on a bimonthly basis at monitoring stations. The Water Quality Standard for temperature depends on a stream's use. For example, stocked trout waters are expected to maintain lower temperatures than streams that are considered warmwater fisheries.

Sources of temperature impairment include lack of adequate streamside vegetation which provide shade for streams.

IDEAL VEGETATION COVER ON STREAM BANKS.

POOR VEGETATION COVER ON STREAM BANKS.

It is known from collecting **temperature** data throughout the watershed that…

- **Little River** is impaired from the mouth of Payne Creek downstream to its confluence with West Fork Little River. Exceedences of the 20°C Water Quality Standard for natural trout waters occur in this section.

- **Pine Creek** is impaired for nearly 4 miles beginning at the pond and extending downstream to the confluence with the Littler River for exceedences of the 20°C Water Quality Standard for natural trout waters.

- **Big Indian Creek** is impaired from approximately 0.5 miles upstream of the West Fork Big Indian Creek mouth downstream to the Big Indian Creek confluence with Little River for exceedences of the 20°C Water Quality Standard for natural trout waters.

- **West Fork of Dodd Creek** is impaired from the confluence with an unnamed tributary downstream to where it meets Dodd Creek for exceedences of the 20°C Water Quality Standard for natural trout waters.

- **Dodd Creek** is impaired from the mouth of West Fork Dodd Creek downstream to the Dodd Creek confluence with the West Fork Little River for exceedences of the 21°C Water Quality Standard for stockable trout waters.

BENTHIC MACROINVERTEBRATE COMMUNITY PROBLEMS

DEQ measures the health of the benthic (bottom-dwelling) macroinvertebrate (organisms that are large enough to see with the naked eye) periodically during the spring and fall. The benthic macroinvertebrate communities are assessed using a stream health index that is specifically calibrated for different conditions in the Commonwealth called the Virginia Stream Condition Index (VSCI). A VSCI score that is greater than 60 indicates that a stream is supportive of a healthy and diverse benthic macroinvertebrate community.

Sources of benthic macroinvertebrate community impairment include degraded habitat (due to excessive stream disturbance or too much sediment), lack of adequate streamside vegetation which provide shade for streams, toxics, and/or high nutrients.

It is known from collecting **benthic macroinvertebrate community** data throughout the watershed that…

- **Little River** is impaired from the mouth of the West Fork of Little River downstream to the confluence with Sidney Creek.
- **Meadow Run** is impaired from its headwaters downstream to its confluence with Little River.

WHAT DOES THE STATE DO TO ADDRESS WATER QUALITY PROBLEMS?

TMDL STUDY

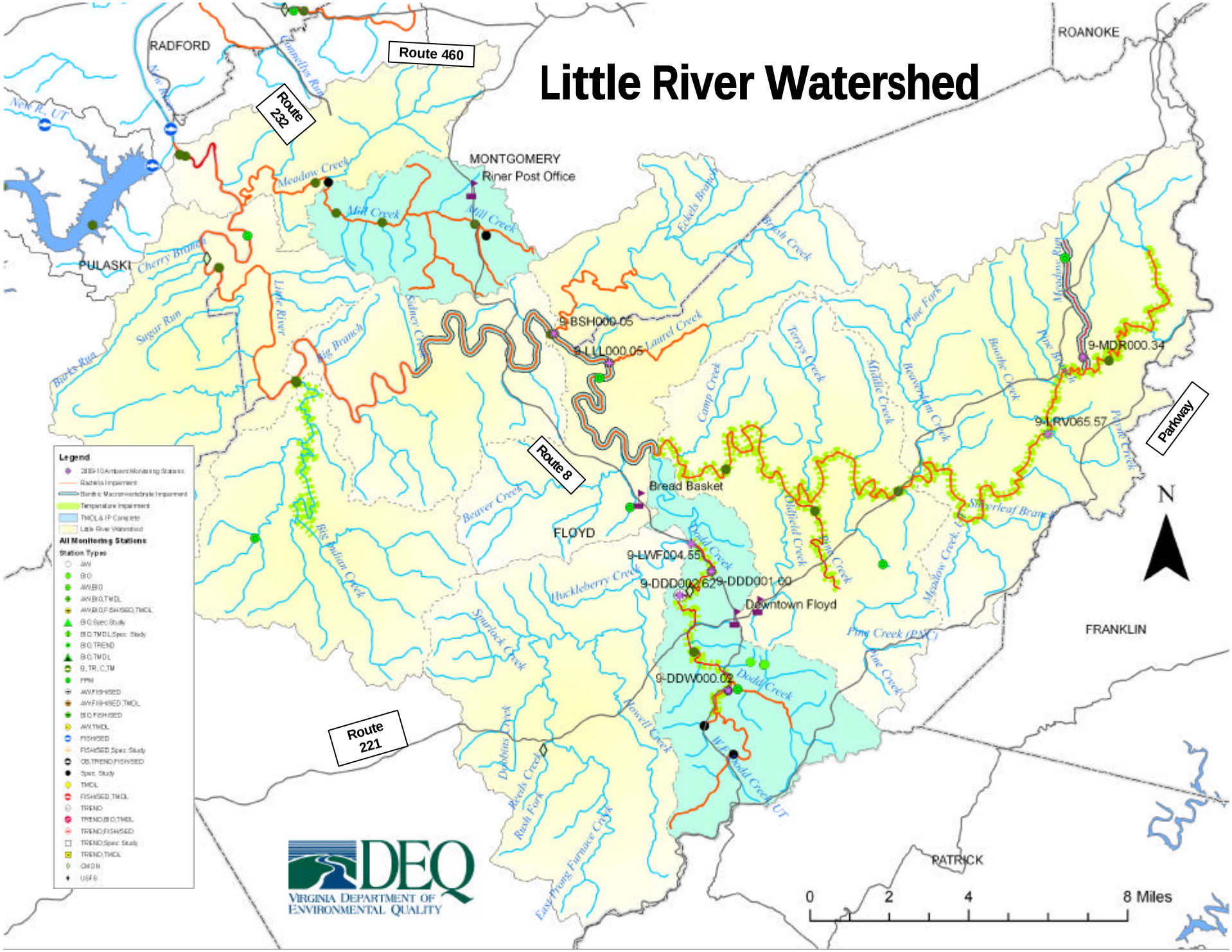
- TMDL = Total Maximum Daily Load = Special Study
- TMDL = Amount of pollution a stream can receive and still meet Water Quality Standards
- A TMDL study identifies all sources of pollution
  - ***Point source pollution*** is discharged from a dis crete location such as a pipe, tank, pit, or ditch
  - ***Non-point source pollution*** originates from diffuse areas (i.e. land surfaces) having no well-defined source
- Calculate the pollutant loading entering the stream from each source, then calculate the reductions needed from each source to attain water quality standards
- Obtain feedback from local stakeholders about the study through public meetings, comment periods and special events

TMDLs In a nutshell...

- Water Quality problems
- TMDL study identifies pollutant sources
- "Pollution Budget" is calculated
- TMDL Study is approved
- Implementation Plan process begins
- Appropriate Best Management Practices (BMPs) identified
- BMPs are installed in the watershed
- Monitoring shows water quality improvement!

WHAT HAPPENS AFTER A TMDL IS DEVELOPED?

IMPLEMENTATION PLAN

- State and local agencies, in cooperation with local citizens, develop an Implementation Plan outlining steps to meet the pollutant reductions called for in the TMDL
- Working Groups are formed to focus on different interest areas within the Implementation Plan: Residential, Agricultural and Government
- Measurable goals and follow up monitoring stations are established
- Plan is finalized and presented to the residents of the watershed!

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