

Question 88

City of Buckley TMDL Status Report NPDES Phase II Permit Year 4 (January – December 2010)

The following scope of work was created to identify the TMDL needs that the City of Buckley will need to complete, in conjunction with the Pierce county Conservation District, in order to comply with the TMDL requirements associated with the Fecal Coliform TMDL on South Prairie Creek.

As Spiketon Ditch flows into South Prairie Creek, the City will need to investigate it for potential sources of fecal coliform. Identification of the potential sources contributing fecal coliform to Spiketon Ditch and determination of the relative contributions of bacteria from each of the sources will require the following investigations.

1. Locate and map all on-site wastewater systems within the subwatershed. Identify if the systems are functioning properly from information available from the Pierce County Health Department or by dye testing of individual systems and identify the systems that are located in areas that flood frequently. Property owner permission must be obtained to access private property.

Status: TPCHD has provided the City with a map of all on-site septic systems within the City. In addition the City is working in conjunction with TPCHD to send letters to all property owners along Spiketon Ditch with septic systems in an attempt to identify improperly functioning systems.

2. Locate and map properties where livestock are housed. Inventory the number of animals and management practices for each property. This task could be completed by Pierce County Conservation District.

Status: City staff have identified properties within the drainage area that have existing livestock and completed inventories of the number of animals on each property. Mapping of the properties and evaluation of management practices will be conducted in 2011.

3. Locate and map known areas where wildlife, including birds, congregate. This task could be completed by Pierce County Conservation District.

Status: City staff intends to schedule locating and mapping of wildlife congregation areas in 2011.

4. Select water quality sampling locations that would provide the most useful information to identify the locations or activities that are significant contributors to bacterial loads. Feasible sampling locations include the four public right-of-

way crossings of Spiketon Ditch, however, the optimum locations to support the study goals may be on private property. The City would need to obtain permission for access to private property.

Status: Pierce Conservation District has conducted bacterial source investigations along Spiketon Ditch and Isabel Ragland, Stream Team Assistant has indicated that the results will be incorporated into an analysis that the Department of Ecology will publish in mid-April.

The City's consultants, Gray & Osborne, are currently developing a Quality Assurance Project Plan (QAPP) that will form the basis of the City's sampling program. This plan is scheduled to be complete in 2011 after DOE has an opportunity to review the data from Pierce Conservation District's sampling and made recommendation's to the City on specific actions to take to identify and eliminate bacterial sources tributary to Spiketon Ditch and South Prairie Creek.

5. Collect and analyze water samples from selected locations. Samples should be collected during the growing and non-growing seasons since the TMDL identifies different reduction factors for the two seasons. Assume three rounds of samples during the growing and non-growing seasons. The City will need to prepare a Quality Assurance Project Plan (QAPP) that identifies the sampling and analysis protocol. QAPPs must be reviewed and approved by Ecology.

Status: See Status of #4.

6. Analyze water samples for total fecal coliform and conduct pollutant source DNA typing analysis to identify the sources of fecal coliform and relative contribution of each source. This process involves “typing” – or identifying – the types of E. coli bacteria that live within certain species of animals to develop a DNA “fingerprint” for E. coli from different host animals. The DNA of the E. coli from the Spiketon Ditch samples will be compared with known DNA fingerprints. The DNA information will be used to verify the bacterial sources and determine the relative contributions of bacteria from these activities. DNA fingerprinting is done at the University of Washington. The DNA testing procedure is approximately \$100/sample. Assume four sample locations and three samples per each sample day. Total samples: 72.

Status: See Status of #4.

7. Analyze water quality data to determine potential sources of bacterial contamination, relative contribution of the various sources and identify potential total contribution from stormwater. Prepare report.

Status: See Status of #4.