

Draft of April 30, 2010

*NOTE – This is a working document to integrate and organize all of the ideas discussed to date around the issue of aquifer protection. The Advisory Committee will need to review and refine this document as the conversation unfolds. In particular, (1) Are the Issue Statement, 50-year Vision, and Threats acceptable (and/or how can they be improved?); and (2) Which of the options/action items would the Advisory Committee like to move forward as a recommendation?*

## **5.0 Protecting the Aquifer**

### **5.1 Issue Statement**

Nearly all communities in the region rely on water from the aquifer that currently needs no regular treatment before it is distributed. Because most domestic water uses come from Rathdrum aquifer, the health of the aquifer is of paramount importance to this community.

Presently, water quality concerns are driven by a variety of threats, including storm water runoff and septic tanks. Some stakeholders have expressed concerns about the pollution risks from above and underground storage tanks (such as fuel and oil), the BNSF fuel facility, proposed Lake Coeur d’Alene dredging operations or actions to try to remove pollutants from the bed of the lake.

Because aquifer water quality is extremely high, this Section lists specific threats to the aquifer, some well-defined and others that are at an emerging state during the development of this plan. Each threat has a list of specific options or action items that the Advisory Committee may recommend to mitigate or diffuse the corresponding threat.

### **5.2 Fifty-year Vision**

The following recommendations are made to maintain the current pristine quality of the aquifer during the period of 2010 and 2060 and beyond.

### **5.3 Threats and Options/Action Items**

The Advisory Committee has identified six major threats to the water quality that should be addressed in developing a 50-year plan for aquifer protection:

1. Stormwater runoff;
2. Incidental releases, such as industrial or pipeline;
3. Well head contamination
4. Coeur d’Alene Lake metals;
5. Wastewater disposal; and
6. Emerging or unknown threats.

The following narrative presents each threat, a goal to address that threat, and a set of options/action items to achieve that goal.

**5.3.1 Overarching considerations that** apply to, and support the various options below, were considered by the Advisory Committee, and set forth below.

5.3.1.1 Develop or expand existing models for assessing quality impacts to support the recommendations below.

5.3.1.2 Undertake periodic (for example, every 5 years) threat assessments to aquifer water quality.

5.3.1.3 Consider whether existing programs that focus on the aquifer should be expanded to include basin wide consideration, such as threats to water quality on a watershed basis.

**5.3.2 Stormwater runoff** from developed lands can contain antifreeze, oil and greases, or nutrients (for example, fertilizer). As land development increases, the Advisory Committee recognizes that mitigating the impacts of stormwater run off is essential to protecting the quality of water in the aquifer.

5.3.2.1 Avoid using drainfields and dry wells in parking lots that are conduits for waste and pollution.

5.3.2.2 Review and improve stormwater permits at regular intervals.

5.3.2.3 Promote the use of grassy swales in development design. Although this is not a comprehensive treatment mechanism, the Advisory Committee believes this alternative is more desirable than mere collection in urban areas, which is difficult to deal with.

5.3.2.4 Monitor for an increase of chloride in runoff. Develop strategies to address the timing issue of chloride increases following a freeze and use of road salts.

5.3.2.5 Consider how to assess and approach the effects of nutrient pollution from both developed and agricultural lands.

**5.3.3 Incidental releases** from activities like petroleum delivery and storage.

5.3.3.1 Continue regular monitoring programs with vigilance to the risk of incidental releases of industrial pollution.

**5.3.4 Well head contamination** is possible if well head construction lacks a seal and allows for contamination.

5.3.4.1 Include consideration of wellhead contamination in continued or enhanced regulations and in periodic water quality threat assessments.

**5.3.5 Coeur d'Alene Lake metals** may be the source of some of the pollution of the Spokane River. Even though the River is the source of 50% of recharge into the aquifer, water moving through the sediment of the river bed has not yet produced detectable amounts of degradation at this time. Nevertheless, the Advisory Committee is concerned about the existence of contaminants in lake sediment close in proximity to the aquifer.

5.3.5.1 Determine whether monitoring of lake metals is being completed at the appropriate scale and time intervals (both length and frequency of testing).

5.3.5.2 Encourage support or increased resources for monitoring of lake metals.

5.3.5.3 Ensure that the prospect of catastrophic events involving the Lake are considered, such as a sudden shift from aerobic to anaerobic conditions, or plans for dredging.

### **5.3.6 Wastewater disposal and reuse**

5.3.6.1 Develop strategies to maintain standards of nondegradation that can include waste water reuse such as purple pipe. These should include monitoring plans. Determine whether monitoring at one facility is easier than at various points along the purple pipe.

5.3.6.2 Undertake studies to determine whether application of Class A treated water below the root zone is better than continued use of septic systems.

5.3.6.3 Develop better monitoring or consider study on impacts from septic systems.

**5.3.7 Emerging or unknown threats** are becoming more apparent to members of this Advisory Committee. Traces of personal care products and pharmaceuticals in our water systems are a growing concern, and the Advisory Committee recognizes that issues may emerge in the edges of the aquifer where there is less dilution due to the slow moving areas. The Advisory Committee is also concerned about activities beyond the regulatory boundary of the aquifer that may threaten water quality in the future. To address this issue, the Advisory Committee proposes the following:

5.3.7.1 Consider expanding regulations beyond aquifer boundaries to maintain water quality at a watershed scale.

5.3.7.2 Develop strategy to address overarching federal regulations that may conflict with regional or local needs. (i.e. Pipeline Safety Act)

5.3.7.3 Ensure an adequate, comprehensive monitoring program for short and long term studies, both in the aquifer and in the watershed. Test for viruses, personal care products, and pharmaceuticals.

5.3.7.4 Actively support existing long-term gauges and consider funding sources to pay USGS to add gauges where needed.

5.3.7.5 The USGS model is useful for large scale incidents but may not be helpful in predicting quality impacts from a single point source. See 5.3.1.1 above.