

City of Nampa – Infiltration Option

Nampa's wastewater treatment plant currently treats 10 million gallons of wastewater a day, which totals to about 3.65 billion gallons of wastewater a year. What leaves the plant is clean recycled water. Currently, Nampa discharges its recycled water into Indian Creek. Disposing recycled water into United States waterways such as Indian Creek is regulated by the federal Clean Water Act.

The City of Nampa needs to make extensive upgrades to how it treats and disposes its recycled water in order to meet anticipated stricter federal regulations.

In response to these anticipated stricter regulations, the City of Nampa is analyzing current processes and considering several options for treating wastewater and disposing recycled water. Each option has benefits and risks, which are being thoroughly evaluated by the City and an engineering management team.

This fact sheet explains the option of applying recycled water to land. After being applied to the land, the water would slowly infiltrate into the groundwater. This option is called **infiltration**.

What is infiltration?

Infiltration is a process in which recycled water is applied to an area of land. Recycled water from the City's wastewater treatment plant would be sent through pipes to another location and applied to a system of basins and ponds.

Two techniques of infiltration, direct and rapid, are being evaluated as possible options for Nampa. Each technique requires a different level of treatment at the City's plant.

Rapid infiltration would require less treatment at the plant because this technique would use the soil to filter and absorb phosphorus, nitrogen and organic compounds from the water. Not all of the basins and ponds could be used at the same time to treat water because the soil would need time to dry after each treatment. Because the basins and ponds would have to be rotated, rapid infiltration would require the City to purchase greater amounts of land when compared to direct infiltration.

Direct infiltration would treat water to a high enough level at Nampa's plant that it could be applied to land without undergoing further treatment through the soil. Since no soil treatment is necessary, all the basins and ponds could be used at the same time without waiting for the soil to dry. Because the basins would not need to be rotated, direct infiltration would require less land. However, more upgrades to the wastewater treatment plant would be necessary because the water would have to be treated to a higher level than rapid infiltration.

Why is Nampa considering infiltration?

Infiltration is being used in many other Western states to reuse water and keep it readily available for other uses. The infiltration option would turn recycled water into a City resource while minimizing the influence of the Environmental Protection Agency over the City. In addition to lowering phosphorous levels in Indian Creek, there would be the added benefit of recharging the depleted underground aquifer south of Lake Lowell.

Currently, the price of water in Idaho is relatively inexpensive. However, the Bureau of Reclamation has identified the Treasure Valley area as having a “moderate” potential for a water supply crisis by 2025. Initially, infiltration will recharge the depleted aquifer.

If water becomes a more valued commodity, in the future Nampa could redirect the water sent for aquifer recharge to a pressurized irrigation system during the summer for residential and commercial irrigation. If this were to happen, Nampa would have to make some modifications to its existing irrigation system.

Infiltration would also allow Nampa to generate a source of water that could be used to promote economic development throughout the community. Instead of conveying all of the water to the infiltration basins, the water could be used by an industrial user.

The infiltration basins could also be used as a habitat area for wildlife and possibly scenic walking paths.

Along with the benefits described above, the City has also recognized this option has some potential drawbacks. Infiltration would require a very specific type of land, soil and ground water quality to be effective and the regulatory approval process is rather uncertain at this point. If the proper characteristics are found, the City must secure a very large amount of land for the amount of recycled water being applied. The right conditions must be found within a certain proximity of the City’s plant in order for this option to be cost effective.

Another issue to consider is that an infiltration project of this scale has not yet been implemented in Idaho. The Idaho Department of Environmental Quality (DEQ) is thoroughly reviewing all requirements to obtain the proper permits. Nampa is working closely with the DEQ through every step of this process.

How would Nampa implement the infiltration option?

Nampa’s plant would be upgraded to treat water to a high enough level that it could be applied to land. These upgrades would add more nitrogen removal processes and possibly a filtration system to the current treatment process.

After being treated to high levels at Nampa’s plant, the recycled water would be transported through a pipe system to an offsite location where it would then be applied to basins and ponds. The City would purchase land to build the infiltration site.

Nampa is analyzing several locations in Canyon County where infiltration could possibly work. If the analyses determine that this option is viable, the City will work with Canyon County and the State of Idaho to meet all permits and laws.

For more information

To give comments or learn more about upgrading Nampa’s wastewater treatment plant:

- Visit www.cityofnampa.us/wastewater
- Contact Karla Nelson at the Nampa Public Works Department, (208) 468-5523, nelsonk@cityofnampa.us