



City of Nampa

Wastewater Treatment and Disposal Upgrade

Wastewater Advisory Group

Meeting #5 Summary

December 6, 2011 ♦ 4 – 6 p.m.
Nampa Civic Center
311 3rd St. South
Nampa, Idaho 83687



**Nampa Wastewater Advisory Group
Meeting #5 Summary
Dec. 6, 2011**

Overview

The City of Nampa must implement an extensive program to upgrade how it treats and disposes its wastewater in order to meet anticipated stricter regulations.

The purpose of the Nampa Wastewater Advisory Group (NWAG) is to provide guidance to the City of Nampa on how best to upgrade its wastewater treatment and disposal system. Nampa must make upgrade decisions by early 2012.

NWAG Meeting #5 Agenda and Format

The City of Nampa hosted the fifth Nampa Wastewater Advisory Group (NWAG) meeting on Tuesday, December 6, 2011 at the Nampa Civic Center.

The meeting objectives were to:

- Provide an overview of rapid and direct infiltration options
- Identify next steps for the advisory group

Agenda:

- Welcome – Mayor Tom Dale, City of Nampa
- Workshop objectives – Michael Fuss, P.E., Public Works Director, City of Nampa
- Housekeeping – Rosemary Curtin, Public Involvement Consultant, RBCI
- Rapid infiltration – Steve Burgos, Associate, Brown and Caldwell
- Direct infiltration – Steve Burgos
- What’s next? – Rosemary Curtin

Each attendee was provided the following handouts:

- Agenda for NWAG Meeting #5
- PowerPoint presentation for NWAG Meeting #5
- “Infiltration” fact sheet
- “Rapid Infiltration Like/Dislike” comment form
- “Direct Infiltration Like/Dislike” comment form
- “Meeting Evaluation” comment form

Presentation Summary

Welcome – Mayor Tom Dale, City of Nampa

Mayor Dale thanked all meeting attendees for coming and continuing to participate in the Wastewater Advisory Group process. Mayor Dale began the meeting with the following remarks:

- Upgrading Nampa's wastewater treatment plant is one of the most important decisions that the City ever has, and ever will, make.
 - As this process continues, NWAG members are encouraged to keep in mind that recycled water would be a positive asset for the City.
 - NWAG members should not be shy about speaking up. If anyone has concerns, the project management team wants to make sure they are identified and addressed.
 - The City needs input from the NWAG to ensure the upgrade process is successful.
-

Workshop objectives – Michael Fuss, P.E., Public Works Director, City of Nampa

Michael thanked the NWAG for continuing to commit time attending meetings and learning about the City's wastewater upgrade. Michael asked the project management team, city staff and committee and to introduce themselves then reviewed what the group would be discussing:

- Please let the project management team know if there are topics not being addressed or if more details are needed.
 - The City relies on the NWAG's expertise to help the project management team and engineering team make the absolute right and best decision for Nampa.
 - The City has met with regulatory agencies within the past few weeks. The outcomes of these meetings will be presented. The project management team will also present details about the rapid infiltration option and direct infiltration option.
 - The NWAG will need to hold at least two more meetings than originally anticipated.
-

Housekeeping – Rosemary Curtin, Public Involvement Consultant, RBCI

Rosemary Curtin thanked all the NWAG members for attending the meeting and reviewed all the meeting handouts. Rosemary also reviewed the following housekeeping issues:

- NWAG members are encouraged to fill out their comment forms. Gathering input from everyone is a very important part of the working group process. The date of January 30, 2012 is being considered for the next NWAG meeting (#6). NWAG members were asked to mark on their comment form if this date works for them.
- The meeting is being recorded in order to accurately record questions and help with the development of the meeting summary.
- A summary of NWAG Meeting #4 has been developed and is available on Nampa's wastewater upgrade website. All meeting summaries and meeting materials are available on the website www.cityofnampa.us/wastewater/

- Several concerning comments have been submitted over the past few meetings. Some members have asked questions about the NWAG's role in the decision making process and the analysis being conducted. The project management team will be making phone calls to each NWAG member over the next few weeks to ensure everyone is satisfied with how the process is moving forward.
- The NWAG is the first community review of the project management team's work. The decisions being made are very important. Everyone's input, even those that have minority opinions, is extremely valuable to this process.

Updates – Steve Burgos, Associate, Brown and Caldwell

Steve explained there are several important developments that have happened over the past few weeks. He presented the following updates:

- Since the last NWAG meeting, the project management team held an initial meeting with the Environmental Protection Agency (EPA). Both local and regional EPA staff attended, including the person who will be responsible for writing Nampa's new NPDES permit.
- The purpose of the meeting was to begin negotiating Nampa's new permit, present work done to date and give regulators the opportunity to ask questions or request clarification from the City.
- The meeting was an opportunity for the City to identify areas for further engagement, not only on the NPDES permit, but also on the infiltration option where EPA may have some input. The project management team presented its planned next steps for the infiltration process and identified what will be needed from regulators as the investigation of infiltration moves forward.
- EPA had requested that it be allowed to complete the City of Boise's draft NPDES permit before other cities in the Treasure Valley began negotiating their permits. Nampa respected this request. Boise's draft permit was recently issued so the EPA will now begin working with other cities in their negotiation processes.
- The City presented information to the EPA about the complexities of the Treasure Valley's watershed, specifically the complexities of Indian Creek. For example, during the irrigation season discharges from Indian Creek are diverted into the Riverside Canal system rather than flowing directly to the Boise River.
- Nampa's discharge is much more complicated than the City of Boise, which discharges directly into the lower Boise River. The local EPA staff has a good appreciation of the complexities of the Treasure Valley's watershed and Nampa's discharge.
- EPA concurred that if the infiltration option is pursued, it would provide instream benefits because Nampa would no longer be discharging its effluent into the Boise River.
- There was an acknowledgment on both sides that many questions remain for further discussion. The EPA committed it would respond to Nampa's specific questions. From the City's perspective it was a very constructive meeting.

- For upcoming meetings/discussions with the EPA, the City will continue to discuss the following:
 - Indian Creek’s diversion during irrigation season.
 - Infiltration offsets and the potential for water quality modeling for phosphorus requirements.
 - The City is given a wasteload allocation in the TMDL documents. If Nampa stops discharging into Indian Creek, the City will need to work with regulators to determine if it should keep its allocation to trade with other cities.
 - For the treat and offset option, the City wants to verify a solution that would be possible from a regulatory perspective.
- The EPA will likely respond to the City of Boise shortly about the Dixie Drain project. This decision will help Nampa better understand if treat and offset is a viable option.

Questions

What kinds of questions did the EPA ask during the meeting?

The EPA had questions for us about how far along the City is in the decision-making process. They had questions about infiltration, such as where we are looking and why we are looking at this option. They had questions on cost, such as how much it would cost the City to upgrade its wastewater treatment plant. They were a bit surprised to learn it will cost about \$200 million. The Indian Creek diversion issue led to many questions from the EPA. They wanted a better understanding of what happens in that area. They were very engaged, it was a two hour meeting and they appreciated that the City met with them and presented this information.

Is the EPA aware of how much these upgrades will cost?

Yes, EPA is aware of the cost. However, Nampa’s situation is unique and therefore the costs are different from what other communities are experiencing. Most of the other cities are much further along in the decision-making process than Nampa is. They are also further along in making upgrades to their treatment plants.

I thought the reason we were considering infiltration was to take EPA out of the equation?

The EPA wants to know about Nampa’s investigation of infiltration because they want to make certain that the infiltration basins provide enough offset from “waters of the U.S.”. If the City were to build the infiltration basins right next to a water body designated as “waters of the U.S.”, the EPA could make the argument that the treated water would filter back into Indian Creek within a short period of time. If so, then the facility could fall under the Clean water Act’s NPDES program and therefore remove one of the major advantages of the infiltration option. The EPA wants to make certain that there is proper offset from the waters of the U.S. and to ensure that the soil column properly treats the water.

How will the EPA determine what a reasonable offset would be? Does the EPA set those limits, or does the City of Nampa have a say in this?

That is one of the questions that we will be negotiating with the EPA. The City of Nampa will have input on this.

If we do infiltration can we “kiss the EPA goodbye?”

If Nampa pursues infiltration and offsets from “waters of the U.S.” are deemed acceptable then EPA would not have jurisdiction over the City’s wastewater effluent discharge. The City would work with the local DEQ regulators on recycled water and groundwater regulations.

If infiltration is the preferred option, what requirements would the DEQ enforce on Nampa?

Nampa would have to meet groundwater regulations and recycled water regulations. These regulations are known formally as the Groundwater Rule (IDAPA 58.01.11) and the Recycled Water Rule (IDAPA 58.01.17).

Is it likely that the ponds or basins would interest the Department of Fish and Wildlife?

The water would not pond in the infiltration basins. The intent when designing the infiltration basins is that the water would infiltrate into the ground. The role of the Idaho Department of Fish and Game and the US Fish and Wildlife Service is to “conserve, protect and enhance fish, wildlife, plants and their habitats.” Since the City would be constructing the infiltration basins and thus creating habitat, it would likely not be impacted by either Idaho Fish and Game or US Fish and Wildlife Service. However, formal consultation with these entities have not occurred to date.

Could the infiltration ponds have hiking or walking trails around them?

They potentially could. This is something that we will ask the NWAG to provide input on. One of the benefits of the infiltration option is that it could potentially create a recreation area or amenity for the community. In Olympia, Washington there is a system where they treat the water to a very high level (Class A) and pump the water to a pond system prior to discharge into infiltration basins. The ponds serve as habitat for ducks, deer and other wildlife in the area. Recreational opportunities are an influential part of the decision-making process. If there are two options that are relatively equal and one brings a recreational benefit, that could be a determining factor.

Is there a difference between federal and state wetlands?

Wetlands of the U.S. are regulated by the Corp of Engineers. However, the Corp only gets involved when wetlands are “taken” or destroyed. In these cases, the Corp of Engineers regulates how the destruction of the wetlands would be mitigated. If Nampa adds a wetlands it’s not certain how the Corp would be involved. Coordination with the Corps will occur as the decision making process moves forward.

Could Nampa create a “wetlands bank” of credits?

There are wetlands banks throughout the state. These are areas where people have bought land, developed wetlands and then they provide credits to organizations that take wetlands through construction projects. The organizations then buy these wetlands to mitigate the areas they took through their construction projects. There is nothing to stop the City from trying to create a wetlands bank. However, it might add more challenges and there might be more regulations the City would have to meet.

What is the phosphorus effluent currently coming out of the stream and Indian Creek?

The WWTP effluent currently discharged to Indian Creek contains about 4 mg/L of phosphorus.

Does the EPA take into consideration what the City generates versus the agricultural community?

The EPA understands that the agriculture community contributes to phosphorus in the lower Boise River and Snake River. In negotiations with EPA, the project management team will help regulators understand the complexities of phosphorus that are not tied to the City's discharge from its wastewater treatment plant. The local EPA staff is more aware of these complexities than the regional staff by virtue of living in the Treasure Valley and witnessing the complexities of agricultural diversions and return flows throughout the system.

If Nampa pursues infiltration will phosphorus still be an issue of concern?

The Idaho DEQ has acknowledged that phosphorus is not a criteria for land application in the current regulations. However, they still might put regulations for phosphorus in the reuse permit. There are permits where phosphorus limits have been included. Fortunately, the upgrades at the treatment plant would treat for both nitrogen and phosphorus. These are issues that we will try to resolve as the City continues to negotiate its permit with the EPA and the Idaho DEQ.

Overview of infiltration options – Steve Burgos

Steve presented the NWAG with information about the direct infiltration option and the rapid infiltration option. His presentation included the following information:

- The City will have to decide whether it wants to continue discharging its treated wastewater into Indian Creek or apply the treated wastewater to land.
- 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.
- 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.
- 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. In addition, a buffer zone would be required around the basins thereby adding to the overall land area requirements.

- A major difference between rapid infiltration and direct infiltration is that direct infiltration assumes there is no treatment in the soil column. Therefore the City would have to treat the water to a Class A recycled water level at the treatment plant. For rapid infiltration, the City could treat the water to a Class C recycled water level and assume treatment in the soil column.
- Class A water is the highest level of treatment for recycled water and can be used for residential irrigation and food crops. Class C water is also treated to a very high level, it can be used to irrigate fiber crops, but it cannot be used for residential irrigation or food crops.
- Infiltration is being used in many other western states to reuse water. Benefits of infiltration include:
 - Turn treated water into a City resource
 - Minimize the influence of the EPA
 - Recharge the depleted aquifer south of Lake Lowell
 - Add another water supply to the City's inventory
 - Potential use of recycled water for economic development
 - Basins could be used as a recreation/habitat area for wildlife
- Risks of infiltration include:
 - Finding the right site
 - Public perception
 - Regulatory approvals
 - Right-of-way acquisition for pipeline
 - Operability/reliability
- For rapid infiltration, the water would need to be treated to a Class C level before being applied to land. A concern with rapid infiltration would be the possibility of pollutants building up in the soil. If this option is pursued, the City would be required to present very detailed groundwater models of what would happen over time in regards to a potential pollution build-up prior to any approvals by the IDEQ.

Questions

Has cost been included in the analysis of infiltration?

Yes. At the next NWAG meeting in January the risk costs and benefit costs for each option will be presented.

Could an injection well be used to discharge the treated water back into the ground?

No, according to the Idaho Groundwater Rule it is not legal to discharge human contact wastewater through the use of injection wells.

Is there a Class B?

Yes, there is Class B water. It is similar to Class C in regards to limits for total coliform. The recycled water classifications go from Class A through Class E.

You mentioned that the aquifer south of Lake Lowell was decreasing before it began to stabilize again. What level was it decreasing at?

The Bureau of Reclamation did a very detailed study of the whole area south of Lake Lowell. One of the findings of this study was that the groundwater elevations in the area have been declining over the last three or four decades. The exact amount of water table change varied from as much as 80 feet south of the Mora Canal to 17 feet in the area near the dry lake bed. The decrease in groundwater elevation was attributed to the groundwater pumping rate exceeding the aquifer recharge rate. Recently, groundwater elevations have stabilized at their existing depths.

Would this option be 100 percent infiltration?

Yes, but the treated water could be used for other purposes as they arise in the future like residential irrigation and/or economic development.

You said Class C recycled water cannot be used for residential irrigation and food crops. But the Class C is higher quality water than what we are currently getting from the irrigation ditches?

That is a fair observation and part of the complexities of this project. The City does not maintain water quality information for irrigation canals. If the City pursues infiltration, these issues will be raised during the permit negotiations.

Do the purple pipes in Meridian carry recycled water?

Yes, the City of Meridian is currently implementing a Class A reuse pilot program.

Is there a possibility that the contaminants from the water could build up in the soil?

That is one of the questions that the DEQ is going to require the City to answer. The City will use groundwater models to demonstrate, based on the soil conditions and water quality, what is happening to various constituents in the soil column. The soil quality will be monitored very closely.

What size would the infiltration basins be?

The size would depend on a number of factors such as the soil types and how much flexibility the City wants to have. We haven't developed any specific sizing on infiltration basins yet.

Why do you have to let the soil dry out between treatments?

From the DEQ's perspective, for effective treatment to happen there must be wet and dry cycles to make sure the soil is not overloaded. There are other communities that have been doing infiltration for over 20 years and the soil is still performing very well. As part of our analysis we are studying these cases.

Would there be extra labor involved with an infiltration option?

This question came up during the risks and benefits analysis and we are continuing to analyze this issue. If there is additional labor, it will be accounted for in the cost estimate for the infiltration options.

What would be the pros and cons of using infiltration seasonally versus year-round?

Based on Boise’s draft permit, it is anticipated that phosphorus limits will be seasonal, from May 1 until September 30. The option of infiltration that Nampa is pursuing would be to implement infiltration seasonally from May thru September. One of the advantages of infiltration is that if regulators make phosphorus a year-round permit in the future or some other constituent not currently regulated is included in future permits, the City could switch to year-round infiltration.

Is the infiltration “buffer zone” where the wildlife habitat will be located?

Not necessarily. For the rapid infiltration option, the DEQ would require a 500 foot buffer zone between the site and human contact. Habitat could be located in the buffer zone or in other locations in and around the infiltration basins.

Why doesn’t the DEQ regulate phosphorus?

Phosphorus is not included in the Groundwater Rule as either a primary or a secondary constituent. Therefore, the IDEQ cannot regulate phosphorus. However, if the infiltration basins are located in close proximity to waters of the U.S., the IDEQ could include a phosphorus limit in the reuse permit which could require the City to remove phosphorus during the WWTP process. The requirements will be determined during ongoing negotiations with the IDEQ.

What is the classification of the water that comes out of the City’s treatment plant today?

The water that comes out of the City’s treatment plant today is not classified. Classifications are only used for recycled water. However, the water discharged today meets the majority of the requirements for Class C recycled water. Therefore, if the City were to classify their effluent, it would be closest to Class C Recycled water per the Idaho Recycled Water Rule.

Does the Clean Water Act regulate the quality of groundwater?

Currently, the federal Clean Water Act only regulates “navigable waters of the United States.” The states are responsible for regulating their own groundwater. However, there have been multiple lawsuits that have tried to change the Clean Water Act to give it jurisdiction over groundwater.

Isn’t there currently a bill in the US Congress related to the Clean Water Act?

There are many bills in the House and Senate right now attempting to make changes to the Clean Water Act and further define what “navigable waters of the United States” encompasses. Considering that the Clean water Act is one of the most litigated environmental laws, there will probably always be legislation or litigation trying to change the Clean Water Act.

Earlier in the process we were told that the state regulators would be easier to work with than the EPA. But now it sounds like the Idaho DEQ will be just as difficult to work with?

The suggestion that local regulators would be easier to work with was based largely on their understanding of local conditions as compared to regulators located outside of Idaho and

specifically the Treasure Valley. In addition, the Idaho legislature plays a significant role in state environmental rulemaking. Cities and counties have better access to state legislators who can impact the rulemaking process.

Infiltration Site Investigation – Steve Burgos

Steve explained that the City has narrowed down potential areas where infiltration could possibly be implemented. He presented the following information about the City's investigation of possible infiltration sites:

- Several years ago the City conducted a very broad preliminary hydrogeologic evaluation to identify large areas of land in and around Nampa that might be conducive to infiltration. The study determined the area south of Lake Lowell displays potential qualities for infiltration to be successful.
- Recently the City further narrowed potential areas based on more specific factors such as land slope, presence of underlying basalt, soil permeability, vadose zone thickness and land use.
- Infiltration will create a fairly large “mounding” effect on the groundwater table. From that perspective, there needs to be enough separation between surface elevation to the groundwater (the unsaturated zone or vadose zone) to ensure the groundwater table doesn't become so elevated that it has the potential to flood areas on the surface. Areas with vadose zone less than 50 feet were removed from further investigation.
- Areas exhibiting basalt at surface or within subsurface were also removed from further investigation. Underlying basalt makes it very difficult to predict groundwater flow direction. Basalt underlies most of the City limits. Non-basalt areas typically occur north and south of Lake Lowell.
- Areas with soil permeabilities greater than 3 gallons per day per square foot have been considered suitable for infiltration. Land uses were also taken into consideration. Areas containing residential development or proposed development were eliminated from consideration.
- Infiltration basins require a relatively broad, flat surface. Therefore slopes exceeding 2 percent have been considered unsuitable.
- There are a large number of injection wells in and around the area south of Lake Lowell to remove excess water that collects due to the “bowl” like landscape. Irrigation canals are located along hillsides which would be beneficial for infiltration as it would reduce surface water-groundwater interaction.
- As part of the study, the City must demonstrate to DEQ that infiltration would not have an impact on groundwater quality.
- Based on the criteria described above, the City developed a composite map that identifies three priority areas where infiltration could possibly work. The City is beginning discussions with the residents and neighbors in these areas to inform them about the investigation of infiltration. A public open house was held on December 13th for residents in and around the study area that wanted to learn more about infiltration.

- The City has been contacted by landowners that want to have their property studied to see if infiltration would be possible on their land.

Questions

Did the City look at the BLM ground in its study?

The City considered these areas no-go areas due in large part to the more extensive federal permitting process required on federal lands including NEPA permitting processes.

Would it make a difference if the water ran into the Snake River versus the Boise River?

It would not make a difference if the water ran into the Snake River instead of the Boise River as both are considered “waters of the U.S.” and both are impaired for total phosphorus.

If the City treats its water to Class A, could it sell this water to farmers in Canyon County that would use it for irrigation?

The project management team asked the Department of Water Resources about this and the agency is hesitant to allow the City to become a purveyor of water in areas outside the City limits. This will be discussed further with the IDWR as infiltration is investigated.

What is the size of the sites you are investigating? Would it be 30 acres or 100 acres?

The size of the infiltration basins depend greatly on the kind of soil that is found during the tests. To refine basin sizing, the City needs to begin testing and sampling ion specific sites.

Has the county been involved in this process? Does this meet their comprehensive land use requirements?

The City has had meetings with the county and their planning services. If these investigations show that infiltration is possible, to the City would be required to approach the County about conditional use permits and potential re-zoning.

Why does the Department of Water Resources disapprove of the City selling its treated wastewater?

Water rights and water law are a very sensitive and complicated subject in Idaho. Nampa would be allowed to reuse and sell recycled water within its City limits. There is uncertainty when it comes to the question of being able to sell it to consumers outside the City limits.

Has the City mailed letters to all the property owners that it is interested in working with?

The City has called two property owners that own land with the necessary criteria to gauge their interest in infiltration.

How many letters were mailed to the community to inform them about the infiltration studies?

Approximately 1,100 letters were mailed to the community around the study area. All NWAG members were also mailed the letter and FAQs about the infiltration soil tests.

How would a 200 acre infiltration site impact 1,100 people?

The City mailed letters to the community in order to ensure the site testing is a transparent, open, public process. There is the potential for misinformation and this could raise concerns

among county residents. We wanted to be sure to identify and address these concerns early in the process, rather than later in the process.

Do you think testing will begin in December?

If the landowner consents, the City then will have get an access agreement before it can test the soil. The earliest this testing could begin is December, but it could occur later depending on the amount of time it takes to finalize the access agreement.

Next Steps – Rosemary Curtin

The project management team will be meeting with the Nampa City Council to present information about all the upgrade options being considered.

Costs and financing options will be presented at the next NWAG meeting. The next meeting (#6) will be held on February 7, 2012.

- The City is moving forward with further analysis of the infiltration option (s). Over the next several months, the project management team hopes to be conducting soil tests on properties south of Lake Lowell, between Skyline Road and 12th Avenue. NWAG members will be kept informed as these soil analyses progress.
- There will be key decision points coming up regarding phasing and evaluation of the options. The City will ask the NWAG for input as decisions are made about financing, funding and the recommended preferred option.
- Based on the NWAG's input, the project management team will provide recommendations to Nampa's City Council on how to upgrade and fund its wastewater system. Input from the NWAG will help the City Council make a more informed decision.
- Please fill out and return your comment forms to Kate Nice at RBCI. You can email comments to kate@rbc.net or mail your comment form to 1945 Wildwood, Boise, ID 83713.