



City of Nampa

Wastewater Treatment and Disposal Upgrade

Industry Working Group

Meeting #4 Summary

February 8, 2011 ♦ 2 p.m. – 4 p.m.
Nampa Civic Center
311 3rd Street South
Nampa, Idaho 83651



**Nampa Wastewater Industry Working Group
Meeting #4 Summary
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Overview

The City of Nampa must implement an extensive program to upgrade its treatment and disposal of wastewater in order to meet the upcoming National Pollutant Discharge Elimination System (NPDES) permit.

City leadership recognizes the significant role industries have in the community and values their input in the decision-making process. Industry representatives are participating in an Industry Working Group to provide their input on upgrading Nampa's wastewater treatment and disposal system. The Industry Working Group provides an opportunity for:

- An open exchange of information, ideas and technical data between industries and the City.
- Industries' perspectives to ensure a full range of wastewater treatment and disposal options are discussed.
- Input to the City of Nampa from industry about upgrading wastewater treatment and disposal facilities.

Meeting Agenda and Format

The City of Nampa hosted the fourth Industry Working Group meeting on Wednesday, February 8, 2012 at the Nampa Civic Center.

The meeting objectives were to:

- Present estimated costs for each upgrade option
- Review costs and advantages from phasing improvements
- Overview on financing options

Agenda:

- Welcome and thank you – Michael Fuss, Director of Public Works, City of Nampa
- Housekeeping – Rosemary Curtin, Public Involvement Consultant, RBCI
- Upgrade options – Steve Burgos, Senior Associate, Brown and Caldwell
- Phasing – Steve Burgos
- Review of cost estimates – Steve Burgos
- Financing options – John Ghilarducci, FCS Group
- Next steps – Rosemary Curtin

The following handouts were provided:

- Agenda for Industry Working Group Meeting #4
- PowerPoint presentation
- Wastewater Upgrade Overview factsheet
- Upgrade Options factsheet
- Infiltration Option factsheet
- Treat and Offset Option factsheet
- Upgrade the Treatment Plant Option factsheet
- 'Do Nothing More' Option factsheet
- Direct Infiltration Questions comment sheet
- Direct Infiltration Comments comment sheet
- Direct Infiltration Financing Options comment sheet
- Rapid Infiltration Questions comment sheet
- Rapid Infiltration Comments comment sheet
- Rapid Infiltration Financing Options comment sheet
- Treat and Offset Questions comment sheet
- Treat and Offset Comments comment sheet
- Treat and Offset Financing Options comment sheet
- Treat to EPA Levels Questions comment sheet
- Treat to EPA Levels Comments comment sheet
- Treat to EPA Levels Financing Options comment sheet
- Meeting Evaluation comment sheet

Meeting Attendees

Representatives from the largest industries in Nampa were invited to participate in the Industry Working Group. Nine industry representatives and one stakeholder attended the meeting.

- Burl Ackerman, J.R. Simplot Company
- Mike Ansglybekey, Wendell meat plant
- Bob Braun, The Amalgamated Sugar Company
- Johnny Chapman, Advanced Electrochemical
- Ted Comstock, Pepsi Bottling Ventures
- Melanie Miller, Lower Boise Watershed Council

- Dan Neal, Wendell Meat Plant
- John Rule, Microsil
- Jose Venegas, Cintas
- Noel Wing, J.R. Simplot Company

Staff

- Michael Fuss, Nampa Public Works
- Greg Pearce, Nampa Wastewater Superintendent
- Steve Burgos, Brown and Caldwell
- Matt Gregg, Brown and Caldwell
- Rosemary Curtin, RBCI
- Kara Veit, RBCI
- John Ghilarducci, FCS Group
- Bill Jarocki, Voltaic Solutions

Summary of Presentations

Welcome and thank you – Michael Fuss, Director of Public Works, City of Nampa

- Michael Fuss welcomed and thanked the Industry Working Group (IWG) members for attending the meeting. He explained that over the past three IWG meetings, the upgrade concept and evaluation process have been presented to the group. He emphasized that having the expertise from industry is very helpful to the City as it moves forward with the decision making process. Michael introduced the Wastewater Program Management Team and city staff and asked the working group members to introduce themselves.

Housekeeping – Rosemary Curtin, Public Involvement Consultant, RBCI

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

- The meeting is being recorded in order to accurately record questions and help with the development of the meeting summary.
- Summaries of the past IWG meetings have been developed and are available on Nampa's wastewater upgrade website. All meeting summaries and meeting materials are available on the website www.cityofnampa.us/wastewater/
- The IWG is the first to review the estimated cost information and financing options for Nampa's wastewater upgrade. The decisions being made are very important. Everyone's input is extremely valuable to this process.
- IWG members have been provided comment forms for each upgrade option. The purpose of the comment forms is to gather all questions, comments and input on the information begin presented today. Gathering input from everyone is a very important part of the working group process. RBCI will be contacting IWG members within the next few weeks to schedule a day to pick up completed comment forms.
- The date for the next IWG meeting (#5) is Wednesday, February 22. IWG members were asked to mark on their meeting evaluation form if this date works for them.
- Brown and Caldwell has developed several technical memorandums for the wastewater upgrade process and options. The technical memorandums present in detail how the Program Management Team developed all of the risk costs, benefit costs, probability and process of how the analysis of each option was conducted.
- IWG members are encouraged to read these memorandums. Copies of the memorandums will be available at Nampa City Hall for IWG members to pick up. The IWG members are welcome to keep these memorandums after checking them out from City Hall.

Upgrade options – Steve Burgos, Senior Associate, Brown and Caldwell

Steve reviewed the upgrade options that are being considered and explained how the City is progressing through the decision making process.

- All of the options described below are being thoroughly analyzed and it has been determined that each option has benefits and drawbacks. There is not a preferred option and no decisions have been made about which option will be implemented. The options being evaluated are:
 - **Option #1 and #2: Infiltration** - Treated wastewater would be applied to an area of land rather than discharged into Indian Creek. Recycled water from the City's wastewater treatment plant would be pumped offsite and released into a system of basins and/or ponds, then slowly infiltrated back into the aquifer south of Lake Lowell. Two methods of infiltration are being considered:
 - **Option #1: Direct infiltration** would increase the level of treatment to a very high level at the plant. The treated water would be pumped away from the plant and applied to constructed ponds where it would infiltrate back into the groundwater.
 - **Option #2: Rapid infiltration** would increase the level of treatment to a high level at the plant. The treated water would be pumped away from the plant and applied to a series of basins. The basins would be designed to further cleanse the water by using the soil ecosystem to absorb pollutants and organic compounds. After being thoroughly cleansed through the soil, the treated water would infiltrate back into the groundwater.
 - **Option #3: Treat and Offset** –Upgrades would be made at the plant to treat wastewater to certain levels and water would continue to be discharged into Indian Creek. To meet stricter regulations, Nampa would remove pollutants from Indian Creek or Mason Creek at an alternate enhanced wetlands location.
 - **Option #4: Treat to EPA Levels** – Substantial upgrades would be made at the plant and water would continue to be discharged into Indian Creek. To meet stricter regulations, upgrades to the plant would include adding chemical and biological processes to remove pollutants that are harmful to waterways
 - **Option #5: Do Nothing More** – Continue current processes for treating and disposing Nampa's wastewater. This option would violate the federal Clean Water Act and have severe, negative implications for the City of Nampa.
- To determine which upgrade option is best for Nampa, the City is completing business case evaluations. The business case evaluations focus on selecting the preferred option that meets service levels defined by Nampa, accounts for risk and benefit cost to deliver a long-term solution and has the least life-cycle cost of ownership.
- So far, the City has completed the following steps of completing its business case evaluation:
 - Formed an expert team – City staff, Nampa Wastewater Advisory Group, Industrial Working Group, and consultants
 - Identified the challenge and levels of service
 - Brainstormed alternatives and screened fatal flaws

- Collected data on capital, operation and maintenance, risks, and benefits costs based on levels of service
- Performed net present value analysis
- Based on one-on-one interviews with City leadership it has been determined that regarding the wastewater upgrade process, the high priorities for Nampa are:
 - Economic development
 - Affordability of rates for residential, commercial, and industrial dischargers
 - Control of its destiny to maintain options
 - Consideration of all financing and funding options
 - Possibility of recreation opportunities
- The next step of the process will be to present the cost information and financing options to Nampa's Mayor and City Council. The Program Management Team wants to gather input from the IWG on the financing options and present this input to City leadership.

▪ **Question: How is your probability of occurrence generated?**

The value of the business case evaluation (BCE) approach is its ability to quantitatively compare alternatives on the basis of cost as opposed to qualitative comparisons that are more difficult to defend. A key component of the quantitative process associated with the BCE process is the development of risk and benefit costs for the various options considered. These costs are developed by estimating the capital and O&M costs (consequence of the potential risk or benefit occurring) then assigning a probability of occurrence. The risk or benefit cost is then the product of multiplying the real cost consequence and the probability of occurrence. The probabilities of risks and benefits were primarily generated using a sliding scale from very unlikely to very likely based on existing information. For example, those risks and benefits deemed very unlikely based on such information as precedence in other states or knowledge of specific issues in Idaho were given probabilities less than 10%. Preliminary probabilities were developed for each risk and benefit. These probabilities were discussed with the experts on the Program Team for concurrence prior to being finalized. The detailed justification for the various probabilities used in the BCE process appear in Technical Memorandum F-02 – Technical Risks and Benefits Quantification. It is important to note that the relative value of the probabilities between options is as important as the value of the probability itself. The intent of the BCE process for the consideration of risks and benefits is to develop a relative understanding of which options better manage future risks and benefits.

Phasing – Steve Burgos

Phasing is an implementation approach the City is considering. It is anticipated that the City will receive a draft of its new NPDES permit (discharge permit) in 2012. The City expects it will have to lower effluent phosphorus levels to 0.5 mg/L by 2018 and 0.07 mg/L by 2023. Getting

from 0.5 mg/L to 0.07 mg/L is expensive to do at a treatment plant, so the City is exploring other long-term options. Steve explained the following information about the possibility of phasing:

- Upgrades would be made to the treatment plant to meet the anticipated interim 2018 phosphorus limit of 0.5 mg/L. The City would continue to investigate long-term options for how to best meet the anticipated 2023 phosphorus limit of 0.07 mg/L. A long-term option would be selected and implemented to meet the 2023 phosphorus requirement of 0.07 mg/L.
- As upgrades are being made to the plant, the City would continue to investigate infiltration and treat and offset as long-term options for complying with the future permit limits.
- Upgrading the wastewater treatment and disposal system in two phases would allow the City to adjust its options as new permit requirements are determined. The City would have a better ability to navigate through the uncertain regulatory processes if it is given more time to determine a long-term option.
- Phasing of upgrades could help manage rate increases since it delays larger capital expenditures.
- The phasing decision has not been made. No decisions have been made at all. The Program Management Team will be working with the Nampa City Council toward decision points over the next few months.

▪ **Question: Why do upgrades have to be made to treat of either nitrogen or phosphorus?**

The City currently discharges its treated wastewater into Indian Creek, which is a waterway of the U.S., and therefore is subject to Clean Water Act regulations. If the City chooses to continue to discharge its treated wastewater into Indian Creek, upgrades would have to be made to the treatment plant to treat for phosphorus based on what is likely to appear in the City's next NPDES permit. If the City decides to stop discharging into Indian Creek, and instead apply the treated wastewater to land, phosphorus would no longer be an issue of concern. However, other pollutants such as nitrates are an issue of concern when applying treated wastewater to land, so the City would have to upgrade its plant to treat for other pollutants such as nitrogen.

▪ **Question: What is the difference in cost between removing phosphorus as opposed to nitrogen?**

Nitrogen removal costs are less expensive, but land would have to be purchased to build an infiltration site and a pipeline and pump station would need to be built. The costs of the buying land and constructing a pipeline and pump station would likely offset the difference in costs of upgrading the treatment plant.

Review of cost estimates – Steve Burgos

Steve presented the following cost information for upgrading Nampa's wastewater treatment system:

- Technical experts determined that Phase 1 of upgrading Nampa's wastewater treatment plant would include the following improvements:
 - Third aeration/selector basin
 - Chemical addition facility
 - Solids handling facility
 - Anaerobic digester
 - Primary effluent pump station
 - Demolishing a trickling filter and secondary clarifier
- The capital cost of the Phase 1 improvements is estimated to be \$26.8 million. The annual operation and maintenance cost for Phase 1 improvements is estimated to be \$1.4 million.
- Nampa is considering several long-term (Phase 2) options to upgrade its wastewater treatment system. The Phase 2 options include Direct Infiltration, Rapid Infiltration, Treat and Offset and Treat to EPA Levels. Below are the estimated capital costs for each Phase 2 option. The costs below all include the initial \$26.2 million for Phase 1 upgrades:
 - Direct Infiltration: approx.. \$80 million
 - Rapid Infiltration: approx. \$80 million
 - Treat and Offset: approx. \$35 million
 - Treat to EPA Levels: approx. \$60 million
 - Do Nothing More: \$0
- Below are the estimated annual operation and maintenance costs for each of the Phase 2 options:
 - Direct Infiltration - \$1, 372,000
 - Rapid Infiltration - \$2,402,000
 - Treat and Offset - \$3,028,000
 - Treat to EPA Levels - \$3,981,000
 - Do Nothing More - \$0
- A Net Present Value (NPV) analysis was conducted for each option. The net present value analysis distributes the costs of each option to the time periods during which they would occur. These costs are then converted to 2012 dollars using predefined inflation and discount rates. Below are the 20-year NPV costs for each of the Phase 2 options:
 - Direct Infiltration - \$99,466,000
 - Rapid Infiltration - \$97,509,000
 - Treat and Offset - \$62,665,000
 - Treat to EPA Levels - \$96,328,000
 - Do Nothing More - \$0

- The technical, economic, and public involvement risks and benefits were also analyzed for each Phase 2 option. These were developed to reflect the overall cost of asset ownership for each option. The risk and benefit costs were added to the 20-year NPV costs to produce a 20-year NPV cost with risks and benefits. Below are the 20-year NPV costs with risks and benefits for each of the Phase 2 options:
 - Direct Infiltration - \$4,912,000
 - Rapid Infiltration - \$93,128,000
 - Treat and Offset - \$94,287,000
 - Treat to EPA Levels - \$150,020,000
 - Do Nothing More - \$280,966,000
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- The risk benefit analysis identified several trends for each of the Phase 2 upgrade options. Infiltration would have the significant benefit of economic development potential, however there would be front-loaded risk costs based on the characteristics of the infiltration site. The Treat to EPA Levels and Treat and Offset options would have limited economic development benefits, significant risk based on emerging regulatory issues and the risk costs would be back-loaded. The “Do Nothing More” option would have the most significant risk costs.
- **Question: Would the \$1.4 million for annual operation and maintenance costs be on top of the current operation and maintenance costs?**
Yes, that is correct.
- **Question: Do you still anticipate that the EPA will require Nampa to treat to 0.07 mg/L for phosphorus?**
Yes. If Nampa decides to continue to discharge its treated wastewater into Indian Creek it is anticipated it will need to meet that limit by 2023.
- **Question: Are you looking at growing crops in the discharge areas for infiltration?**
No, the discharge areas of infiltration are solely a disposal method. There would not be any growing of crops at these sites as the option is currently defined.
- **Question: If infiltration is chosen, could the reused water be sold to customers?**
The City would be able to sell the recycled water to customers within its impact area. As the infiltration options are currently defined, this would not be part of the option, but could be included in the future should the demand arise along the pipeline alignment within the impact area.
- **Question: Is this incremental over the current operation and maintenance costs?**
Yes.

▪ **Question: Have you accounted for growth in the analysis?**

The cost estimates do not include any growth projections. The City conducted a re-rating of its treatment plant to a capacity of 18 MGD. Given that current influent flow rates are in the 11 MGD range, there are no growth projects planned over the next 20 years.

▪ **Question: Why is there such a big difference in annual operation and maintenance costs between Direct Infiltration and Rapid Infiltration?**

The major difference in the annual operation and maintenance costs is the power and chemicals for the additional processes required at the wastewater treatment plant for Direct Infiltration.

▪ **Question: The City initially said the upgrades would cost nearly \$200 million. What accounts for the difference in that estimate versus what is being presented today?**

The City went back and compared the two cost evaluations. The significant difference is the new cost estimates do not include growth projections. There are also multiple smaller factors that add up to a big difference in cost. These factors included refining the treatment processes, refining the option definitions, different discount rate, different markups and contingencies, midpoint of construction analysis and capital cost distribution.

▪ **Question: Can Brown and Caldwell develop a technical memorandum to explain the difference in cost between the initial estimate and what is being presented today?**

A technical memorandum can be developed if the IWG would like this information.

Financing options - John Ghilarducci, FCS Group

John presented information about Nampa's existing wastewater utility, the different financing options the City is considering and how these impact each of the upgrade options. He also presented estimates for how the upgrades will affect typical residential rates. His presentation included the following information:

- Regarding financing, the main issue the City is evaluating is whether to fund the upgrades through cash financing or debt financing.
- Nampa's wastewater utility is an enterprise fund, which means it is a self-sufficient fund in the City government which is intended to be run like a business. The revenue for Nampa's wastewater fund is the money received through rates paid by the City's residents, businesses and industry.
- Nampa's current residential wastewater rate is \$18.62 a month. Nampa's current rate is close to half of the average rates for some other cities in the Treasure Valley. For example Boise's rate is \$23.25, Eagle is \$30.00 and Meridian is \$35.21.
- The financing options that Nampa is considering are:
 - Pay-as-you-go (cash funding)

- General obligation bond financing
- Revenue bond financing
- Special programs
- Pay-as-you-go would adjust rates to meet scheduled capital expenditures on a periodic or annual basis. The advantages of this option is that it would ensure existing users are paying to keep the system up to date and it would allow for greater flexibility in capital funding approaches. The disadvantages of this option are that it could cause rate volatility from year to year and it would burden the existing ratepayers with the full cost of improvements that will serve others in the future.
- For the general obligation bond financing option, the City would pledge the full faith and credit of the jurisdiction (taxing power) for debt repayment. The advantages of this option is that there are good terms available, the repayment would be spread over the years and the debt could be repaid back by rate revenues and backstopped by tax revenue. The disadvantage of this option is that it would require a public vote (2/3 majority) and there would be the added cost of interest.
- For the revenue bond financing option, the City would pledge utility rate revenue to debt repayment. The advantages of this option are that it would spread the repayment over the years, the terms are currently favorable and the rate revenues would be pledged to repayment. The disadvantages of this option are that the terms are not as favorable as general obligation bonds and it would require debt service coverage. This option would also require a public vote (simple majority) and there would be the added cost of interest.
- There are also special programs available that are highly competitive. An example of this is a program through the Idaho Department of Environmental Quality that offers grants for planning and loans for the design/construction of wastewater projects. The advantages of this option are that it would spread the repayment over the years and it has favorable terms. The disadvantages are that these programs are highly competitive to acquire and a local match is often required.
- The preliminary financial analysis used growth rates from the comprehensive plan, inflation rates and a funding earnings rate. The outputs are the projected rate increases. The key assumptions built into the analysis were:
 - Working capital target balances (minimum of 60 days/maximum of 90 days cash operating expenditures)
 - Minimum target capital fund balance target is set at 2 percent of the replacement value of the existing plant-in-service (target balance is approximately \$4 million on a \$199 million plant value)
 - Revenue bonds
 - 20-year term
 - Interest rate: 4.5 percent in 2012 and 2013, 4.8 percent in 2014 and 2015, and 5 percent thereafter
 - 1.5 coverage requirement

- Annual revenue at existing rates is assumed to be used for operating, existing debt service and capital needs (including collection system and replacement)
- Below are the projected residential rates for each upgrade option:
 - Direct Infiltration – cash only: \$43.81 by 2018 / cash and debt: \$36.51 by 2018
 - Rapid Infiltration – cash only: \$44.39 by 2018 / cash and debt: \$36.99 by 2018
 - Treat and Offset – cash only: \$28.82 by 2018 / cash and debt: \$24.50 by 2018
 - Treat to EPA Levels – cash only: \$35.45 by 2018 / cash and debt: \$31.47 by 2018

▪ **Question: What is the interest rate difference between revenue and general bond?**

The most recent Bond Buyer Index shows the G.O. bond interest rate at 3.7% and the revenue bond interest rate at 4.77%. Looking over the last several months, the difference between the two interest rates is rarely less than 1% and rarely more than 1.1%.

▪ **Question: On the wastewater revenues, what is the split between industrial and residential funding?**

The 2011 actual rate revenue shows \$2,480,558 from industrial customers of total rate revenue of \$9,120,172. This equates to a percentage of 27.2 of rate revenues coming from the industrial customer class. The remaining revenue comes primarily from residential customers, hook-up fees, and septage haulers.

▪ **Question: Will the increased rates all be allocated to TP or will it be split between TP and flow?**

That is the work that has yet to be done. The total cost of service analysis will tell us who should be paying what after we estimate allocation based on their flows and loadings. We know impacts on individual rate payers will be different for different customers, but we don't know yet what those individual impacts will be. It will be a few months before the cost of service analysis is completed.

▪ **Question: Are these cost projections based on the residents paying 100 percent?**

No, businesses and industry would also see an increase in their wastewater bills. The rate increases shown were the gross increases in the wastewater fund revenue that would be required to fund the necessary improvements. A total cost of service study will be completed prior to any rate adjustment. Following this study, there will be a clearer picture of rate impacts for business and industry.

Upcoming decision points – Steve Burgos

The Program Management Team will be working with Nampa's City Council and the citizens' Wastewater Advisory Group over the next few months. Steve presented the following information about the timeline moving forward:

- The City Council will need to provide direction on the phasing option and preferred financing option in February/March 2012.
- The Program Management Team will be conducting two workshops with the City Council on February 27 and March 29.
- A rate increase will be necessary in order to raise enough capital to make the improvements to Nampa's wastewater system. If capital costs are large and made in the near future, the rate increase will be higher. If capital costs are small and the larger expenditures are delayed, the rate increase would be smaller.
- In order to raise rates, the City must decide whether to pursue a phased approach or select a long-term option, produce a formal Facility Plan, estimate the capital costs for the project and perform a rate analysis. To be implemented, the rate increase must receive approval from Nampa's City Council.
- Based on the direction from the City Council, the Program Management Team will begin developing a planning document for the preferred option. It is anticipated this will happen in March.
- **Question: When will the industries get the analysis on how these upgrades will affect their rates?**
The rates for Nampa's industries will depend on whether or not Nampa's City Council chooses to phase the upgrades. The rates for industry will not be evaluated in detail until a decision has been made on the phasing aspect of the process.
- **Question: When do you expect the proposal for rate increases to go into effect?**
Nampa has five years to comply with the first new regulations of its permit. The goal is to be heavily in design by 2013; however, the City will need to know if it has enough money to begin construction in 2014. To generate enough revenue to meet the construction costs associated with Phase 1, there could be a rate increase as early as summer 2012.
- **Question: When will the industries get the analysis on how these upgrades will affect their rates?**
The rates for Nampa's industries will depend on whether or not Nampa's City Council chooses to phase the upgrades. The rates for industry will not be released until a decision has been made on the phasing aspect of the process. Once decided, the City will complete a cost of service study to determine the new rates. This should be complete by June 2012.
- **Question: When do you expect the proposal for rate increases to go into effect?**
Nampa has five years to comply with the first new regulations of its permit. Since there is significant construction associated with any of the options pursued, the City will need to raise the appropriate revenue to pay for construction. Therefore, rate increases could occur as soon as summer 2012.

Next steps – Rosemary Curtin, RBCI

- The next IWG meeting will be held on February 22. The purpose of this meeting will be to answer questions about the financing options, cost projections and risk/benefit analysis.
- IWG members are encouraged to read the technical memorandums. Copies of the technical memorandums are available at Nampa City Hall for IWG members to pick up. The IWG members are welcome to keep these memorandums after checking them out from City Hall.
- RBCI will be contacting the IWG members individually to schedule a time to pick up their comment forms. If you have any questions please contact Kate Nice at RBCI, kate@rbc.net, (208) 377-9688.