

Oak Lodge Sanitary District
MASTER PLAN COMMUNITY ADVISORY COMMITTEE
Wastewater Treatment Plant Pre-Design Project
Public Outreach Project
Summary of May 20, 2008 Meeting

The May 20, 2008, meeting of the Oak Lodge Sanitary District Master Plan Community Advisory Committee (MPCAC) convened at 6:10 pm in the Conference Room of the District Administration Building at 14611 SE River Rd, Milwaukie, Oregon.

Committee members attending this meeting were Tom Foeller, Jerry Foy, Greg Leedy, Sylvia Milne, Leah Robbins, Henry Schmidt, Brad Smith, Leonard Waldemar, and William Wild attending as representative from the District Board of Directors.

Committee members absent were Matt Anderson, Thelma Haggemiller, Myron Martwick, Bob Murch, Margaret Pritchard, and Charlie Stephens.

District staff members attending were J. Michael Read, General Manager of the District; Brett Arvidson, Manager of Planning and Engineering; and Kay Deines, Administrative Support Specialist.

Consultants attending were Clark Worth and Libby Barg, Barney & Worth, Inc.; Michelle Burkhart, CH2M Hill Project Engineer and Treatment Systems Engineer; and Dave Green, CH2M Hill Principal-in-Charge.

Members of the Oak Lodge Sanitary District Board of Directors attending the meeting were Paul Savas, President of the Board; Jim Martin and Doug Woods, members of the Board; and William Wild, member of the Board and the Board's representative on the MPCAC.

Member of the Public attending the meeting was Earl Moore, 18415 SE Wilmot Street.

Libby Barg of Barney & Worth, Inc. called the meeting to order at 6:10 p.m. and turned it over to District General Manager Michael Read. Michael requested that those present introduce themselves. Following self-introductions, he explained that the management and operations staff of the District had reviewed seven original alternatives for systems presented by the Consultants as part of the Pre-Design project building on the Master Plan project. They then used the Master Plan recommendation as the baseline for comparison and narrowed the choices down to three viable alternatives to be presented to the MPCAC. Michael encouraged the members of the Committee to be frank and open in their questions and in stating their opinions. He noted that staff and the Board hoped that the Committee would feel ready to recommend one of the Alternatives to the Board at the end of the meeting.

Libby Barg described the agenda and the packet information provided to the MPCAC. The information included an updated Committee roster, three updated proposed wastewater treatment plant footprint/process Alternatives, a revised Public Outreach project narrative, and the Pros and Cons of each of the three Alternatives.

Dave Green, CH2M Hill Principal-in-charge, introduced Michelle Burkhart of CH2M Hill and reviewed the Value Planning process and the resulting recommendations resulting from that process. Dave encouraged the Committee members to ask questions of the Consultants during the presentation so they could answer them promptly. He stated that he anticipated a workshop atmosphere for the meeting.

Dave and Michelle distributed illustrations of three suggested plant layouts (one for each system alternative), a comparison sheet for the three alternatives, and a listing of pros and cons for each alternative. Michelle then discussed each alternative and displayed a PowerPoint presentation giving a brief description of the proposed processes that were further developed after the brainstorming session resulting in selection of the three Whole Plant Alternatives.

The three Whole Plant Alternatives are:

Alternative 1 - Optimized Master Plan: Conventional Activated Sludge

This alternative utilizes the Alternative suggested by the MPCAC, optimized in the following ways: Utilization of more of the existing infrastructure, consideration of Chemically Enhanced Primary Treatment (CEPT) at times of high flow, and optimized secondary process design criteria. Filters would be required to meet a 10/10 permit requirement. Most of the process is done by gravity flow, which allows a minimal level of energy use compared to the other two alternatives.

Committee comments and questions on this option included

- Concerns about the chemicals and polymer used for CEPT – the chemicals and polymer would enter the biosolids but not the river. These chemicals are currently used in drinking water treatment and are considered non-toxic. Chemicals will remain in the biosolids when the material is applied to farmlands.
- Cost of chemicals for CEPT – they are expensive, but will be used infrequently so the cost will not be high. During the past year CEPT would have been used five or six times.
- Size of the planned new buildings adjacent to Brad Smith's house. Brad stated that he had believed from previous presentations that the structures that would take the place of the existing old administration building and digester would be at ground level. Michelle stated that the illustration does not show the elevations of the building, and that about 2/3 of the building adjacent to Brad's house would be above ground, but 1/3 of the area (taken up by the grit channels) would be near ground level. The building would be multi-level and the appearance could be mitigated using landscaping and architectural methods.
- Why is the new headworks building so much larger than the existing facility? Michelle and Dave explained that this is because the new structure houses more than one facility, and is also completely enclosed with noise and odor attenuating technology included.
- Beneficial re-use of the digester gases. Michelle and Dave stated that there are opportunities for beneficial reuse of the methane produced during the digester process. Dave stated that even with the best quality of gas produced from a wastewater treatment plant digester, the most that can be hoped for is a break-even operation. Henry Schmidt stated that he feels that a break-even operation is better than burning the gas off in a torch as it is now. Dave Benfield stated that currently the majority of the methane produced in the plant is used to heat the 180,000 gallons of sludge in the digester. He stressed that there is no natural gas connection to the digester's boiler, only methane from the plant is used to heat it. Henry

expressed his appreciation for that information, he was not aware that any methane produced during the treatment process was being utilized.

- Rehabilitation and re-use of structures - In rehabilitating the pump station the existing pump station would be remodeled, and a parallel, peaking station would be constructed next to it in order to provide needed redundancy of processes. Also, a requirement during the Master Plan process required that the renovated plant fit inside the existing plant footprint.

Alternative 2 - Split Flow: Conventional Activated Sludge/MBR

This Alternative uses the existing liquids process of the current treatment plant with rehabilitation of the mechanical and electrical components. Capacity and reliability shortfalls are met by a second treatment process consisting of a Membrane Bioreactor (MBR) facility. Construction would be simplified in this alternative. Operation of an MBR facility requires a high level of energy use and therefore a larger carbon footprint.

This Alternative includes new rectangular primary clarifiers which pencils out as a better solution as far as treatment capacity, treatment simplicity, and reduced energy use. Using the MBR as a split flow option allows you to use the MBR at its optimal capacity and reap the benefit of the effluent quality produced by the system, and in the low flow season be able to take one part of the CAS process offline for maintenance.

Questions asked by the Committee members about this Alternative were related to energy use by the MBR, the possibility for regular maintenance from the two separate treatment trains in addition to the MBR, and the footprint and arrangement of the processes within the facility.

- The MBR facility does use energy at a higher level than the first Alternative. Because only a small portion of the flow would be treated in the MBR the energy use was not drastically higher than in the other Alternatives.
- The MBR facility provides immediate opportunities for reclaimed water use because of the high quality of the effluent.
- This Alternative has the most compact footprint of the three. The reason that the primary clarifiers, even though they are large, are placed at the top of the hill in each Alternative is to take advantage of gravity and reduce energy use by reducing pumping of the sewage.
- This alternative takes advantage of proven technology and has the least process risk during construction.
- It is more complex operationally because there are two parallel treatment trains, but would not require more staff to operate the plant. There is a slight increase over current levels of truck traffic because it would require chemicals to be delivered, and biosolids and screenings to be trucked out.
- Membrane suppliers and availability? Dave Green stated that once a membrane cartridge is purchased from a supplier, then the District would be locked into that supplier. Michael explained that the current largest supplier of membranes is Siemens Corporation, which is an old and established company.
- Cover for MBR. It is the consensus of the consultants and District staff that it would not be feasible to cover this except perhaps for a cover to screen the view of the facility from above.

Alternative 3 – Activated Sludge/Cannibal Solids Reduction Process

This Alternative reduces the amount of biosolids produced by treatment from .8 lbs of biosolids per pound of solids present in the influent to .1 lbs of biosolids per pound of solids present in the influent. The process uses anaerobic, anoxic, and aerobic conditions to provide an environment where the bacteria eat themselves and degrade solids. Screening during the treatment process removes hair, lint, and similar fibers as well as grit from the raw sewage, reducing the trash in the biosolids to almost none in addition to the reduction in the biological waste by the treatment process. Michelle stressed that this is a new treatment process. She stated that CH2M Hill feels so strongly about the viability of this process that they are using it in some of their Design/Build/Operate proposals.

Truck traffic is drastically reduced in this Alternative due to the reduction in biosolids produced by the Cannibal process. Hauling costs are reduced, as well as the risk associated with future regulatory requirements related to biosolids disposal. Eliminating the anaerobic digesters and the primary clarifiers eliminates the most odorous parts of the treatment process. The layout of this Alternative also allows for the largest buffer area between the plant facilities and most of the plant's immediate neighbors.

Questions asked were:

- Is CH2M Hill currently operating a Cannibal process plant, and how old is the oldest plant currently in operation? CH2M Hill has not turned on a Cannibal process plant yet – they are building one in Albany that is due to begin operation this summer. The oldest plant currently in operation is about 5 years old.
- Are there any 'horror stories' among the plants in existence? Michelle stated that there are, but not to the extent that the process is not working. Dave Green explained that the manufacturer took the extraordinary step of guaranteeing performance of the plants, and those plants that have not been met the guaranteed level of biosolids reduction have led the company to pay fines.
- Why was Cannibal not presented to the MPCAC previously? The reasons are that the process is very new, and also because it has a large footprint and would not fit within the previous footprint requirements. Michael stated that the basic technology has been around for quite a long time, but that Siemens has created an environment that enhances the decomposition component of bacteria eating bacteria, which is the breakthrough in the process. The treatment process is patented.
- Is Cannibal a less mechanical process? Michelle stated that it is less mechanical than the membrane process. Michael explained that there are no primary clarifiers and minimized solids processing.
- Is there a long term advantage in reduction of mechanical processes? There is an advantage from potentially fewer maintenance costs because there is less equipment to maintain.
- Are there Cannibal plants in Europe or elsewhere in the world? No – this is a process that was developed in the U.S., and the first plants were built here.

Michelle then reviewed the three Alternatives and the various technologies used. She compared the levels of truck traffic, energy use, and carbon footprint of each. She then reviewed costs of each Alternative. Dave Green explained that the costs being presented here are for comparison of those facilities that differ between the Alternatives only. The figures do not represent total

costs and do not include items that are common to all of the Alternatives such as disinfection and solids handling. A three to five year design and construction period is assumed in the costs.

Capital Costs – Building everything today, pay for it over 20 years. Cannibal is the least expensive, but there is not a huge difference in 20-year capital costs.

Questions and comments from the Committee were:

- Are these today's dollars spread over 20 years (Capital Costs)? Yes. If you built it all today, the costs presented are what it would cost to build the facility, with the caveat of the above explanation that these figures are for comparison only, and are not meant to represent the actual cost of the construction of the facility.

Present Worth – this is a calculation to determine present value. It is used to incorporate operations and maintenance costs (annual costs), and tie them to the current base year. The annual costs are then included with capital costs to give an idea of the Present Worth cost. Present Worth allows the comparison of a technology that may be inexpensive to build but expensive to operate to one that may be more expensive to construct but less expensive to operate. The lower the Present Worth amount, the lower the long term cost and future rates. Michelle explained that deferral of some construction for as long as 10 years in the current Alternatives did not affect the Present Worth analysis – those costs remained essentially the same within each Alternative.

- Jerry Foy commented that it appeared that Alternative 3 is the most logical as far as economy of operation and aesthetics.
- Greg Leedy pointed out that from his back yard he would see not a view of a green field and the Willamette, but a large brown sewage aeration basin if Alternative 3 is selected. Visual screening of the aeration basin would also block the river view.
- Would staff recommend moving forward with a very new technology over the alternatives using proven technology? Michael Read stated that he would happily accept any of the three technologies presented, including the newer MBR and Cannibal processes. He believes strongly in the extended aeration system of treatment, which is the basis of the Cannibal system.
- Economies of scale seem to be in the area of biosolids handling. How do these Alternatives fit into the chance for cooperating in that area with Clackamas County? Michael explained that pumping of biosolids is expensive, not just the cost of power for the pumping, but in purchasing and maintenance of the equipment, installation of the pipeline, and acquisition of the rights to install the pipeline. The Cannibal process should result in trucking of 1/10 of the current amount of biosolids along with the ability to reuse the existing solids handling equipment and eliminate the drying beds. There would not be enough biosolids produced to require the beds. Cooperation with Clackamas County will have to wait until Clackamas County has reached a decision on how they plan to proceed with future sanitary sewer service. The District must continue to determine the best plan for wastewater treatment within the District boundaries.
- Rate projections? Henry Schmidt asked for rate projections on the various alternatives. The figures presented at this meeting are not meant to show projected rates, and rate figures are not yet available. Michael stated that it was the goal of the staff, consultant, and the Alternative section process to provide the best possible service for the lowest feasible rates.

Henry asked if the cost/rate chart that he had seen previously as a member of the Oak Lodge Sanitary District Budget Committee might improve with implementation of one of the three Alternatives arrived at during the Value Planning process. Michael stated that that was very possible, and was definitely the goal of the process.

Clark Worth then provided a “scorecard” for each member to use as an evaluation tool for the Alternatives. The scorecard is intended for the Committee member to use to rate each Alternative. There is space on the scorecard for comments, and Clark encouraged each member to reflect and comment fully on each item.

Member comments and questions

- What process does Operations Staff like best? Aric Osterlund stated that he and the other operators have discussed this, and they would rank the Cannibal process as their least favored process. They like the reuse of biosolids on farmland afforded by the Conventional Activated Sludge process and the smaller carbon footprint of the older technology. Dave Benfield agreed with Aric, stating that he, too, prefers the tried and true technology.
- Leah Robbins commented that she liked the ability in Alternative 2 to take one of the treatment trains offline to perform maintenance and repair on it while treatment was uninterrupted. Clark Worth commented that flexibility was one of the goals in the MPCAC Vision Statement for selecting an Alternative to recommend to the Board of Directors.
- Re-use of existing infrastructure – Why can we reuse the existing pump station and digester tank when previously the Committee was told these structures could not be re-used? Michelle explained that the concrete tanks would be cleaned, inspected, and tested for the condition of the concrete before the structures would be reused, but initial inspection shows that they should be reusable. She stated that concrete is very durable and typically has a very long usable lifespan. The reason that re-use was not a part of the first set of Alternatives is that previously the Consultants were required to keep the new treatment plant entirely within the footprint of the existing plant. By removing that requirement re-use of facilities became feasible.
- View of plant from neighboring homes, specifically the aeration basin for the Cannibal process. Michelle stated that the Cannibal process would require a large aeration basin that would be similar to the existing one, but larger. The basin would be built in the field behind Greg Leedy’s home. The side nearest Greg’s home would be pretty much at ground level, but on the western (downhill) edge it would be quite tall. The basin would likely obscure Greg’s view of the Willamette River, and while it could be screened with landscaping that would obscure even more of the view.
- Time is needed for consideration of the options. Committee members expressed their reluctance to make a decision at this meeting without time to consider the new information presented. They noted that many members are absent from this meeting and the Committee wants to hear from them before making any decisions. The Committee requested time to consider the new Alternatives and costs presented, discuss them with their neighbors, and then have a meeting to ask any resulting new questions of the Consultants and staff.
- If at the next MPCAC meeting one Alternative was eliminated, would the Consultant be able to do an in-depth study of the remaining two for presentation to the Committee? Michael stated that would require re-negotiation of the contract and significant extra cost as study of a second Alternative is not part of the project as bid and negotiated between CH2M Hill and Oak Lodge Sanitary District. The District could not afford to study two Alternatives in depth. Michael believes that the information necessary for making a decision has been

provided, even though it is not all of the information that would be available after an in-depth study.

- Clackamas County Service District #1 is believed to be making their final decision in June, and their decision may affect Oak Lodge Sanitary District's decision.

The Committee agreed that they did not want to make a decision on a recommendation to the Board of Directors at this meeting. They want to consider and digest the information presented to them tonight, as well as have time to share it with the other residents before holding one additional meeting to come to a decision.

CH2M Hill will provide the PowerPoint data that they presented at this meeting to staff to send to the Committee members. That information will be attached to the meeting summary.

The meeting adjourned at 8:40 pm.