NOTICE OF PUBLIC MEETING

CITY OF ALBANY
JOINT MEETING
ALBANY & MILLERSBURG CITY COUNCILS
Council Chambers
333 Broadalbin Street SW
Thursday, January 18, 2018
5:00-7:00 p.m.

CITY of MILLERSBURG
OREGON
PHONE (541) 928-4523
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AGENDA

5:00 p.m. CALL TO ORDER – Sharon Konopa, Mayor

5:00 p.m. PLEDGE OF ALLEGIANCE

5:05 p.m. INTRODUCTIONS
1) Introduction of Albany City Council members and staff – Sharon Konopa, Mayor
2) Introduction of Millersburg City Council members and staff – Jim Lepin, Mayor

5:10 p.m. BUSINESS FROM THE PUBLIC

5:15 p.m. ALTERNATIVES FOR DISPOSAL OF WASTEWATER SOLIDS – Chris Bailey. [Pages 2-5]

6:45 p.m. BUSINESS FROM THE COUNCILS

7:00 p.m. ADJOURNMENT

City of Albany Website: www.cityofalbany.net

The location of the meeting/hearing is accessible to the disabled. If you have a disability that requires accommodation, advanced notice is requested by notifying the City Manager's Office at 541-917-7508, 541-704-2307, or 541-917-7519.

TO: Albany and Millersburg City Councils

VIA: Peter Troedsson, Albany City Manager
Kevin Kreitman, Millersburg City Manager

FROM: Chris Bailey, Albany Public Works Operations Director CB

DATE: January 12, 2018, for the January 18, 2018, Joint City Council Meeting

SUBJECT: Albany-Millersburg Water Reclamation Facility Solids Alternatives Analysis

RELATES TO STRATEGIC PLAN THEME:
- Safe City
- An Effective Government

Action Requested:

Staff recommends the City Councils receive this report and provide direction by motion to move forward with pre-design of the preferred wastewater solids handling alternative.

Discussion:

Background

The Cities of Albany and Millersburg constructed a new Water Reclamation Facility (WRF) to replace the aging and undersized wastewater treatment plant in 2010. The previous wastewater treatment plant was owned by the City of Albany and was initially constructed in the 1950s. The treatment plant used a process called anaerobic digestion to stabilize the wastewater solids. Stabilized solids are those that have been treated to reduce bacteria and other components, such as odor-producing compounds and may be applied on land or beneficially reused if certain Federal regulations are met. Such biosolids are known as either Class B (use on limited agricultural crops) or Class A (unlimited use). Albany's anaerobically digested Class B biosolids were previously applied primarily to grass seed farms in the local area.

As part of the WRF project, anaerobic digestion was abandoned in favor of a proprietary treatment process known as the Cannibal® that was intended to reduce the amount of solids requiring stabilization. The Cannibal® system did not perform and has resulted in unstabilized solids that do not meet the regulatory requirements to be beneficially used as a biosolids soil amendment. The solids are also quite odorous, which has resulted in numerous complaints from the surrounding neighbors. Because the solids cannot be beneficially used, they are currently disposed of at the landfill; an expensive, time-consuming, and difficult process.

Solids Treatment Alternatives Analysis

After the Cannibal® settlement negotiations, CH2M was hired to begin an analysis of solids treatment alternatives, which was presented to the Albany-Millersburg Joint Water/Wastewater Management Committee (AMJWMC) on February 28, 2013. At that point, CH2M recommended four process alternatives for further evaluation, but that more detailed evaluation was not fully completed. In August 2016, Albany hired Kennedy/Jenks Consultants to evaluate solids treatment alternatives, including those reviewed by CH2M as well as other technologies that are available and successfully used in solids treatment. Kennedy/Jenks completed their initial

analysis in October 2016, and recommended four broad alternatives for more detailed screening: aerobic digestion; anaerobic digestion; continuing the existing process with landfill disposal; and continuing the existing process with additional Class A treatment.

The detailed Solids Alternatives Analysis was completed in June 2017. From these four categories of options, eight alternatives specific to the level of biosolids treatment (Class B or Class A) were developed for a detailed examination. These eight alternatives are:

- Existing solids process
    - Landfill disposal, or
    - Class A treatment/reuse
- Aerobic digestion
    - Class B land application, or
    - Class A treatment/reuse
- Anaerobic digestion with primary treatment
    - Class B land application, or
    - Class A treatment/reuse
- Anaerobic digestion with no primary treatment
    - Class B land application, or
    - Class A treatment/reuse

In order to understand how four alternatives became eight, it is helpful to know some background about aerobic and anaerobic digestion in general and how the WRF is configured specifically. Both aerobic and anaerobic digestion are very commonly used at municipal wastewater treatment plants and are well understood processes. Properly run, aerobic and anaerobic digestion of municipal wastewater results in Class B biosolids with no additional treatment processes necessary. As stated earlier, the current process results in unstabilized solids. In order to get to a Class A biosolids product, an additional treatment process needs to be applied to either the existing solids, or aerobically or anaerobically digested biosolids. Additionally, the replacement of the existing dewatering equipment was included as a component of each alternative. This equipment was installed in 2000 and has reached the end of its useful life and requires replacement regardless of the alternative selected.

Further complicating the analysis is the current configuration of the WRF. The WRF was designed around the Cannibal® system. This creates some significant problems in trying to retroactively install an additional solids processing system. First, the existing tanks that could be used as aerobic digesters were not designed to aerobically digest the full amount of solids the treatment plant receives and additional tanks would have to be constructed. Also, aerobic digestion is a very energy-intensive process and is typically not used at treatment facilities as large as the WRF because of its high operational cost. Anaerobic digestion may seem like a better alternative since the tanks previously used as anaerobic digesters are still in place. However, anaerobic digestion typically uses what is called primary sludge, or solids that settle out of an initial, primary, treatment process. Unfortunately, the primary treatment process at the WRF was demolished as part of the project that implemented the Cannibal® system. Anaerobic digestion without primary sludge is possible but is atypical and may present operational challenges. Addition of a primary treatment process is possible at the WRF but adds a large

capital cost to that alternative. In short, attempting to retroactively install a traditional digestion process at the WRF is complicated and expensive because the facility was not designed to include these processes.

When looking at solids alternatives that will provide a solution years into the future, staff felt it was important to include the ability to produce Class A biosolids. While Class B biosolids are still useable, it is likely that regulations surrounding the reuse of Class B biosolids will become more stringent within the 20 year time frame this analysis covers. Additionally, the availability of farmland and public perception associated with Class B land application is problematic in the Willamette Valley. Therefore, staff asked Kennedy/Jenks to analyze Class A options as well. The consultants looked at three Class A treatment options: thermal drying, lime stabilization, and composting. An economic and non-economic analysis resulted in the selection of composting as the preferred Class A treatment alternative. The composting technology referred to is specifically called Covered Aerated Static Pile Composting and is a federally approved Class A treatment technology that can be used with digested or undigested solids. WRF staff conducted a successful year-long pilot project of a composting system with the current solids, which resulted in a product that met Class A regulations.

Kennedy/Jenks conducted an economic and non-economic analysis for each of the eight alternatives. The economic analysis looked at the life cycle costs for a 20-year time period, including initial capital costs, expansion as needed to accommodate increasing solids loading to the WRF, and operating costs. The non-economic analysis considered factors such as odor potential, operational reliability, worker safety, phasing potential, and end-use options, among several others.

Preferred Alternative and Recommended Path Forward

The preferred alternative is the existing process with off-site Class A composting treatment. The advantages of this option are that it can be phased in over time, it significantly reduces annual operating costs over the existing process, and it preserves space at the WRF for future site improvement needs. Additionally, Class A compost is a marketable product that be given away or sold to the public. The estimated 20-year capital and operating costs for a full-scale composting operation are $27.2 million (in 2016 dollars), which is similar to other options that only produce a Class B product. It is the recommendation of staff and Kennedy/Jenks that a small-scale facility that can process a portion of the WRF solids be built initially with capacity added over time as resources allow. The ability to phase in composting means that the full cost estimate would not be required in order to begin composting operations for a portion of the solids currently produced from the WRF.

The details of this analysis and the preferred alternative were presented to the AMJWMC on November 9, 2017. The Committee supported the recommended path forward of beginning a preliminary design effort for the preferred alternative which would include:

- Identification of land suitable for a composting facility sized for incremental through full-scale operation. (There is not adequate space at the WRF.)
- Siting and preliminary design of new dewatering equipment.
- Identification of reliable sources and costs for bulking material necessary for on-going composting activities.
- Feasibility analysis of successfully selling or giving away compost material.

- Preliminary update of the Biosolids Management Plan for submission to DEQ.
- Development of a phasing plan with detailed cost estimates per phase.
- Development of pre-design level drawings (10%), including phasing.

The WRF solids alternatives analysis process was intended to identify options that would provide a long lasting solution to the current solids issues at the WRF. While economic considerations are very important given the limited financial resources of the two communities, of equal importance are non-economic risk factors such as reliability of the process and impacts on the surrounding neighborhood. The Kennedy/Jenks recommendation of continuing the existing WRF processes with the addition of a Class A composting treatment provides a quality end product with an optimum amount of flexibility, economy, and reuse options.

Moving forward to a pre-design project will refine the design and implementation of an off-site composting facility. The pre-design effort will answer several questions, such as potential locations for the facility, sources of bulking material, end-use options, and phasing options. It will include an analysis of all of the factors that will go into the detailed design and identify any potential fatal flaws prior to the Cities fully committing to a Class A composting facility.

Budget Impact:

Anticipated cost for the pre-design effort will be presented at the meeting, and if directed to move forward, staff will include this project in the fiscal year 2018-19 budget request.

KP:CB:kc