

## Minutes of the

### REGULAR MEETING OF THE ENVIRONMENT COMMITTEE

Tuesday, December 8, 2015

#### Committee Members Present:

Sandra Rummel-Chair, Lona Schreiber, Wendy Wulff-Vice Chair, Marie McCarthy

#### Committee Members Absent:

Edward Reynoso, Harry Melander

### CALL TO ORDER

A quorum being present, Committee Chair Rummel called the regular meeting of the Council's Environment Committee to order at 4:08 p.m. Tuesday, December 8, 2015.

### APPROVAL OF AGENDA AND MINUTES

It was moved by Lona Schreiber seconded by Marie McCarthy to approve the agenda. **Motion carried.**

It was moved by Lona Schreiber, seconded by Sandy Rummel to approve the minutes of the Tuesday, November 10, 2015 regular meeting of the Environment Committee. **Motion carried.**

### BUSINESS

#### 1. 2015-313 SW: Authorization to Acquire Permanent/Temporary Easements and File Condemnation Petitions, 2016 Trenchless Rehabilitation Program

It was moved by Marie McCarthy, seconded by Wendy Wulff that the Metropolitan Council pass Resolution 2015-33 that authorizes acquisition of permanent and temporary easements necessary for the 2016 Trenchless Rehabilitation Program and authorizes Council legal staff to initiate condemnation proceedings for those parcels that staff cannot acquire by negotiation. **Motion carried.**

#### 2. 2015-314 SW: Authorization to Purchase Polymer for the Metropolitan Wastewater Treatment Plant - Contract No. 15P142

It was moved by Lona Schreiber, seconded by Wendy Wulff that the Metropolitan Council authorize the Regional Administrator to execute a purchase order with Polydyne, Inc. to provide Clarifloc CE-819 polymer at a unit price of \$0.785 per pound and Clarifloc CE-817 polymer at a unit price of \$0.110 per pound delivered to the Metropolitan Wastewater Treatment Plant. **Motion carried.**

### INFORMATION

#### 1. Draft Facility Plan for Metropolitan Wastewater Treatment Plant Solids Processing Facility –

The purpose of this presentation is to inform the Environment Committee to the start of a public involvement and participation process, that the messages developed will be aligned with Thrive initiatives, and provide a report of evaluations done for technology options.

The existing Metro Solids Processing Facility (SMB) has a firm capacity of 240 dry tons per day. Operation is currently at firm capacity with use of standby capacity for peak loads. Back up capacity is landfilling which is not sustainable. There is a need to provide capacity for additional regional growth and to provide additional flexibility to other MCES operations.

When conducting solids planning from a Thrive perspective MCES is looking at applying what we do to the Thrive initiatives and will be presented to the public in this manner. From a stewardship perspective we are endeavoring to be responsible stewards of the regions finite resources that would be reflected in rivers, agricultural soils, financial resources, and maximizing existing investments and infrastructures. From a prosperity perspective, we will foster economic competitiveness, be involved in strategic private and public decisions to build and grow our region's economic strength and encourage redevelopment and infill. From an equity perspective we desire to provide affordable service to everyone with equitable service to everyone while minimizing neighborhood disruption.

In the initial planning phase, there are a number of initiatives evaluated for possible implementation.

- continue with sustainable incineration and energy recovery
- convert to anaerobic digestion and methane recovery
- convert to land applications of digested sludge
- alkaline stabilize sludge and land apply.

A graph of total capital cost was reviewed related to the initiatives being considered. Most cost effective (Life Cycle Costing) is installing a 4<sup>th</sup> incinerator, 2<sup>nd</sup> is digest/incinerate, 3<sup>rd</sup> is digest, dry, and sell, then land application is the most expensive because of the short window of opportunity is to distribute the material to agricultural areas. Operations and maintenance costs are relatively low and are paid each year.

Regulated and nonregulated air quality. State greenhouse gas production (about 150 million tons of CO<sub>2</sub> per year). The Metro area include electricity, transportation, industry, and residential/commercial as well as wastewater treatment and landfills. We should keep doing the right thing.

Greenhouse gas, by technology, was reviewed and is shown as equivalent to cars. Fluidized bed incineration generates the greenhouse gas level of 5,000 cars, digestion and drying generates the greenhouse gas level of 11,000 cars, digestion and heat recovery generates the greenhouse gas level of 11,000 cars and digestion with electrical generation generates the greenhouse gas level of 3,500. These are low numbers and suggest all alternatives reviewed were similar compared to the regions greenhouse gas production of 4 million equivalent cars.

Regulated standards: Maximum Achievable Control Technology (MACT Standard) results show sustainable air emissions. Results from each of the tests were reviewed. Levels of mercury and lead require additional treatment to meet new standards for the 4<sup>th</sup> incinerator. The three existing incinerators meet their standards.

In order to have livable communities we need to consider the impact on traffic, odors, and disruption and inconvenience. These were considered minor due to plant location in an industrial area with immediate access to freeway traffic for the incineration process. Other processes will have significant traffic and odor impacts at and near the land application sites.

Recovery evaluation on energy from sludge reflects 2 megawatts annual average from incineration. Ash contains 25% phosphorus that is landfilled. We are working with the University of Minnesota and St. Thomas University to determine the effectiveness of using ash as a fertilizer supplement.

We want to continue with sustainable incineration and energy recovery because it is in alignment with Thrive principles of promoting stewardship and prosperity, enhancing livable communities, providing affordable service to all customers, providing sustainable solutions such as energy recovery, phosphorus recycle, and reduces greenhouse gases.

A timeline of the communication process was shared that will be started after the first of the year.

Comments/Questions:

Our incinerator net energy is at the lowest energy footprint in any of our technologies or processes among all of the facilities.

Who will be invited to the public input? There will be multiple meetings with various groups. Stakeholders could be City of St. Paul, regulatory groups, customers, Sierra Club, etc.

Recovery of methane is done in the anaerobic digestion process.

2. Wastewater Reuse –

Staff provided an informational update on wastewater reuse. By definition, wastewater reuse uses treated municipal wastewater for a number of potential purposes. Effluent is taken from a wastewater treatment plant, treating it and then using it for other purposes.

According to the United States Environmental Protection Agency, reclaimed water in the United States amounts to approximately 7-8% of the 32 billion gallons of municipal effluent generated per day. This amounts to approximately 2,500 million gallons per day. The typical drivers for using reclaimed water include conserving potable water, avoiding the need for new water source development, mitigate salt water intrusion, land subsidence, etc. due to declining groundwater levels, support or augment wetlands and other surface features.

Wastewater reuse is increasing and evolving across North America. In the past, 90% of wastewater reuse occurred in California, Arizona, Texas, and Florida. There have been new projects in New Jersey, New York, and Ontario with industrial cooling. In Virginia tidewater area, groundwater recharge is being used. Due to droughts in Texas and California and the cost of dual piping is fostering a movement to indirect potable and sometimes direct potable reuse efforts.

Examples of wastewater reuse in Minnesota include:

- City of Mankato – Calpine Energy
  - Cooling water for power plant
  - 6.2 million gallons per day
- MCES' East Bethel Water Reclamation Facility
  - Groundwater replenishment
  - 0.41 million gallons per day initial capacity
- Gold course irrigation
  - Available in multiple locations
  - 0.2 million gallons per day
- Shakopee Mdewakanton Sioux Community
  - Wetland enhancement
  - Approximately 1 million gallons per day

- Numerous spray irrigation applications

MCES' wastewater reuse drivers are to alleviate interceptor capacity constraints (this would likely involve satellite water reclamation facilities), conserve and supplement groundwater by shifting non-potable groundwater use to reclaimed water and replenish groundwater (called enhanced groundwater recharge), and help meet receiving water waste load allocations.

Wastewater reuse goals were set in the recently adopted Water Resource Policy Plan and progress is being made on those goals. In addition to the East Bethel water reclamation facility becoming operational in July 2014, reuse studies, in-plant evaluation of water reuse and conversation at MCES wastewater treatment plants, and collaboration with specific areas who have expressed an interest to conduct studies are ongoing.

Findings determined through the assessment process include:

- Additional treatment of constituents normally found in wastewater treatment plant effluent drives reuse treatment cost.
- Location of potential users/uses drives reuse distribution system costs.
- Reuse incremental cost estimate: \$5 – \$10 per 1,000 gallons (Twin Cities potable water rates: \$1 - \$5 per 1,000 gallons).
- Comparisons among water management alternatives needed.

Conclusion and next steps include:

- Collaboration on reclaimed water feasibility studies is key, salts (concern for water utilities and high impact on wastewater reuse), and comparison among water management alternatives.
- MCES outreach to local communities and MCES wastewater customers, regulatory agencies, and potential users & partners (e.g., large groundwater users)

Comments/Questions:

Chair Rummel stated I'm glad we are doing this work and glad we are doing thoughtful exploration. Evidence is there this is an issue we need to deal with.

3. Industrial Pretreatment Incentive Program –

Ned Smith, Director of Finance and Revenue and Bob Nordquist, Industrial Waste Manager provided an update on the Industrial Pretreatment Incentive Program (IPIP). Application period closed on October 31, 2015.

This is a program for the Council to finance, own and lease back preprocessing facilities at customer sites. A high strength charge customer builds a facility at their location to pretreat wastewater before sending on to us. The advantage for them is they receive lower interest rates financed with our debt then they would get on the open market and it lowers the strength charges they pay to us throughout the life of the facility. Industries are responsible for the operating and maintenance costs. They design and build using their procurement and contractors. They pay all operating costs and pay the Council lease payments for the facility. The lease is discounted up to 30% for measured results and they take ownership after 10 years.

MCES received five applications at the extended deadline of October 31, 2015. Applicants represent diverse industries consisting of two food processing plants, one dairy and two animal processing plants (tanneries). These applicants are served by the Blue Lake, Empire and Metropolitan Wastewater Treatment Plants. Total preliminary pretreatment capital costs are approximately \$20 million. The technologies proposed are

membrane/filtration, reverse osmosis, and centrifuge. It is estimated that a 25% reduction across the five applicants would reduce total suspended solids by about 3,000 pounds per day and reduce chemical oxygen demand by about 14,500 pounds per day.

Three due diligence teams were formed and are conducting the following:

- Financial Review – members consist of staff from treasury, ES Finance and a 3<sup>rd</sup> party analyst. They determine potential funding mechanisms for the process and coordinate 3<sup>rd</sup> party review of offered financial assurance and financial stability of each customer. Project cash flows will be analyzed for benefit to the customer as well as benefit to MCES and ratepayers.
- Technical Review – members consist of staff from Industrial Waste and Technical Services Engineering. They will review the technologies for efficacy at the site as well as review for adverse impacts on the plants.
- Legal Review – members consist of staff from the Office of the General Council with ES Finance assistance. They will review customer-requested contract amendments.

Next steps in this process are for the due diligence teams to conduct initial reviews which will take approximately 4-6 weeks to complete. MCES will issue an offer or offers to proceed which are forecast in first quarter of 2016. For the balance of 2016, the formal/completed designs will be reviewed, funding secured and contracts executed.

Comments/Questions:

This is a “neat” idea. We should make sure it goes forward, keep interest of industries and advertise. Get some good press.

Seems to be a win-win.

What kind of savings might a business enjoy by participating? Staff stated savings enjoy are through strength charges and reduced chemical-oxygen demand. Most savings around \$500,000 to \$1 million per year. For an individual company, could be 75-100% reduction in strength charges.

Appreciate the forward thinking nature of this. Consistent with our goals at Met Council and Thrive initiatives.

4. General Manager's Report –

In Leisa Thompson's absence, Bryce Pickart provided the following General Manager's report.

- The Council is acting as agent for DNR and contracting for the White Bear Lake surface water augmentation study the legislature has funded this past spring. There are possibilities of water quality issues seen.
- We are working with Metro Cities to identify members for another inflow and infiltration task force. Information item is anticipated in January.
- There was a spill at Centerville interceptor – minor spill to the environment.
- On behalf of staff, I wanted to thank the Environment Committee for working with us this year.

**ADJOURNMENT**

Business completed, the meeting adjourned at 5:24 p.m.

Susan Taylor  
Recording Secretary