Bellingham, WA 98225

MEMORANDUM

TO: CITY COUNCIL

FROM: ERIC JOHNSTON, PUBLIC WORKS DIRECTOR

CC: MAYOR SETH FLEETWOOD

SUBJECT: RESOURCE RECOVERY PROJECT UPDATE

DATE: JULY 26, 2021

The Post Point Resource Recovery project continues to advance with development of the Facility Plan, which is required for Ecology approval of the project and pursuit of funding opportunities. The key elements for Council updates is to provide an overview of the Resource Recovery Project, a summary of the benefits of biosolids application, regulations governing biosolids land application, and risk considerations. This information is presented due to recent questions and concerns the community has expressed to Council regarding the risks associated with land application of biosolids.

Resource Recovery Project Overview

The City has been planning for the replacement of the current incineration system, which is past its service life and is subject to increasing emissions regulations and O&M costs. Furthermore, this system incinerates, rather than recovers, resources from the wastewater solids.

A decision-making process that linked pass/fail criteria to the City's Strategic Commitments and Legacies statements was used to narrow down the world of alternatives. The short-listed alternatives were then evaluated using a triple bottom line "plus" (TBL+) process to account for environmental, financial, social and technical considerations. The decision-making process was supported by the community and all TBL+ factors were considered to be important by the community (i.e., the factors were given equal weight and not ranked).

Through the decision-making process, the City selected anaerobic digestion as the core solids stabilization technology and the preliminary design of this concept is ongoing. Two products from this process will be recovered for beneficial use – Class A biosolids (e.g., fertilizer and soil amendment) and biogas (injection into a natural gas pipeline for use as a renewable vehicle fuel).

This recommended approach supports the City's Climate Action Plan goals by significantly reducing CO_2 emissions. Replacing the incineration system with anaerobic digestion includes an estimated reduction of the Sewer Utility's CO_2 emissions of 60 to 80%. The CO_2 reduction is equivalent to removing approximately 1,450 cars off the road per year. The project will produce the equivalent of 45,000 fifty-pound bags of commercial fertilizer per year. The incineration consumes commercially provided natural gas and waste ash for disposal at a landfill.

A Biosolids Facilities Plan will be submitted to Ecology later this year and preliminary design activities are ongoing.

Biosolids Benefits

Land application of biosolids as a beneficial use has been practiced for many decades and is a common method for enriching soils and supplementing or replacing commercial fertilizers. Biosolids use provides a wide array of essential nutrients, helps build soil health, improves plant growth, and reduces greenhouse gas emissions by sequestering carbon in the soil and reducing the use of fossil fuels to produce commercial fertilizer. This is in addition to the greenhouse gas benefits of producing and using digester gas as a renewable vehicle fuel.

Regulations Governing Biosolids Land Application
In Washington, biosolids are regulated by the Department of Ecology. Ecology's process follows and enhances requirements from federal regulations and US EPA, which tracks, assesses, and sets standards for pollutants of concern (e.g., PFAS compounds). This practice is closely monitored by Ecology and EPA and is the subject of many ongoing studies to assess the risks of exposure. Ecology discourages incineration and long-term reliance on landfills and instead favors recycling to pursue the maximum beneficial use of biosolids.

Specific to PFAS, Ecology has developed a comprehensive PFAS Chemical Action Plan to manage PFAS contamination, implement source control, and conduct further testing.

Risk Considerations
Historically, there have been concerns about potential compounds in biosolids, such as metals and pharmaceuticals. More recently, PFAS compounds are of concern. To address these concerns, regulatory authorities conduct risk assessments to establish guidance for the safe use of biosolids. Through a review of these potential risks and Bellingham's PFAS picture, we believe that once risk assessments are complete, the biosolids risk exposure will be found to be very low, especially compared to the significantly higher PFAS exposures that currently exist in our households from a myriad of consumer products. Local biosolids product use would be voluntary and have clear instructions for safe use that will follow Ecology guidance.

Next Steps
Building on the previous decisions that have been made to implement a digestion-based solution with production of Class A biosolids and a renewable biogas, the following activities are proposed to continue the advancement of the biosolids program:

- **Water Infrastructure Finance and Innovation Act (WIFIA) Loan** – Submit a WIFIA loan application July 23, 2021, to apply for low interest financing to minimize the impacts on rates.
- **Finalize Biosolids Facility Plan** – Submit a final plan later this year to Ecology for approval.
- **Continue Preliminary design** – Continue the development of the preliminary design of Class A digestion and biogas pipeline injection at Post Point.
- **"Off-site" RFP** – Solicit proposals from the market to prepare final biosolids product and determine beneficial use(s).
    - These proposals will provide the Council with additional information to decide the ultimate end use(s) of the Class A biosolids product and the possibility of a partnership with a private entity to provide these off-site services.
- **Additional Testing** – To continue the monitoring and assessment of risks as part of implementing the Resource Recovery Project, additional PFAS testing of Bellingham's wastewater could be conducted.