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DATE: January 27, 2025

TO: Alicia Hughes-Skandjjs, Chair  
Public Works and Facilities Committee

THROUGH: Denise Koch, Engineering and Public Works Director  
Brian McGuire, Utility Superintendent

FROM: Chad P. Gubala, Ph.D., Utility and Production and Treatment Manager

SUBJECT: Pyrolysis SRF Update and Design Phase Authorization Request

The CBJ currently spends ~\$1.5M-\$2M per year shipping dried biosolids contaminated with Per- and Polyfluoroalkyl Substances (PFAS) from Juneau to a secure landfill for disposal in Arlington, Oregon. This disposal method is required since there are no acceptable means to land, apply, or dispose of processed biosolids locally. The annual expenditure for biosolids disposal, along with the costs/impacts of biosolids shipping and decreasing secure landfill access have rendered this disposal method costly and unsustainable.

CBJ Utility staff have been reviewing biosolids treatment and disposal alternatives for several years and have found a method suitable for local processing in the form of an advanced pyrolysis system to safely convert biosolids into biochar for commercial resale and/or local beneficial reuse.

To advance the development of this project, the CBJ applied for and was successful in securing partial funding through the Emerging Contaminants program of the Alaska Department of Environmental Conservation (ADEC) administered Statewide Revolving loan Fund (SRF) program. An amount of \$1,955,000 was allocated through this ADEC SRF program for use by the CBJ Utility to contribute toward the addition of a pyrolysis unit to the biosolids dryer/crusher processing system at the Mendenhall Wastewater Treatment Plant (MWWTP). Total cost of this project is estimated at ~\$6-7m. The SRF-allocated funds are to be provided as a 100% forgivable loan, which the Utility is planning on using to fund the procurement and management of the preliminary design phase of the pyrolysis project, pending ADEC SRF approval. The additional funds necessary to complete the project will need to be secured by the Utility from other sources following completion of the design phase.

The MWWTP dryer and crusher systems were added sequentially and independently function as cost-savings steps for biosolids shipping and handling without a pyrolysis unit. The pyrolysis process requires pre-dried and crushed biosolids as feed-stock and may be readily added to the existing biosolids recycling and disposal train. Its addition to this system will be the final step to eliminate the need to export/transport waste products offshore from Juneau.

**Action Requested:** The CBJ requests PWFC authorization to engage ADEC in discussions leading to the release of the allocated funds for the execution of a design phase for the pyrolysis biosolids recycle/disposal program.