



PNCWA Sustainability and Biosolids Webinar Series

Title: *WRRF Greenhouse Gas Fundamentals*

Date: May 27, 2026

Time: 11:00 AM – 12:00 PM

Description:

Cities and utilities in the Pacific Northwest have set carbon neutrality goals and developed climate action plans to address climate change, however the magnitude of greenhouse gas (GHG) emissions from Water Resource Recovery Facilities (WRRFs) are uncertain and emission sources vary from plant to plant. Additionally, once emission sources are identified mitigation can be complicated and costly. This presentation will provide an overview of GHG emissions from WRRFs, feature multiple case studies, and discuss opportunities for mitigation. GHG emissions from biosolids, energy production, and nutrient removal will be discussed, with an emphasis on the critical and emerging topics of fugitive methane and process nitrous oxide. The low- vs. high-hanging fruit of emissions reduction will be discussed to provide a toolbox for decision makers and planners as the grid decarbonizes and energy efficiency improves onsite for WRRFs.

Agenda:

- 11:00 AM -Introduction
- 11:05 AM – Presentation
- 11:45 AM – Q&A Session

Presenter:

Name: Shannon Cavanaugh, PE

Company: Brown and Caldwell

Position: Process Engineer

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Bio: Shannon is a process engineer at Brown and Caldwell focused on wastewater treatment, biosolids, and greenhouse gas emissions from treatment processes. She has experience in wastewater, nutrient, and biosolids planning projects and design for both liquid and solids treatment. She specializes in GHG accounting and measurement and serves as vice chair of the WEF GHG Focus Group. As part of the focus group she has contributed to several WRF projects and initiatives focused on wastewater GHG accounting and monitoring. She is a technical leader in Brown and Caldwell's Climate Change and Resilience practice and active contributor to process nitrous oxide and fugitive methane projects. She is a licensed professional engineer in Washington state and joined Brown and Caldwell after completing her graduate studies focused on nitrous oxide emissions from wastewater treatment at the University of Washington.