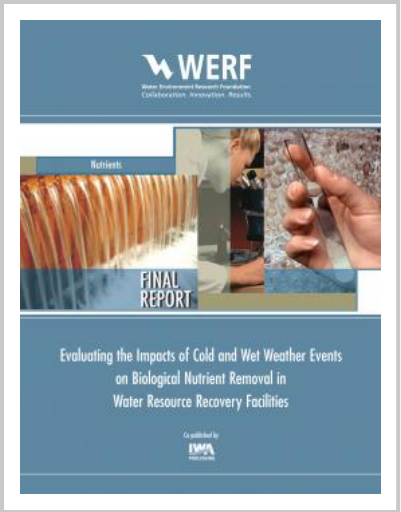
Evaluating the Impacts of Cold and Wet Weather Events on Biological Nutrient Removal in Water Resource Recovery Facilities Nutrients



Maintaining effective biological nutrient removal (BNR) capability during adverse weather events can be challenging for water resource recovery facilities (WRRF). Mitigation of the impact of these weather events on BNR requires focused strategies that are known to be effective. In this study, we have worked with twelve WRRFs that experience cold wet weather events to identify critical challenges they face when attempting to maintain optimal BNR performance during these weather events. As part of this work, the project team has also compiled and evaluated strategies that are currently implemented by BNR facilities for mitigating these impacts. Results from these evaluations indicate that resistance to and recovery from cold wet weather events is closely linked to plant ability to protect and maintain sufficient mixed liquor concentrations and solids retention times for biomass growth. Therefore, strategies that employ biomass storage and recirculation are effective for helping plants maintain BNR capacity during and after cold wet weather events.

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