

Village of Bald Head Island Wastewater Treatment Plant Expansion Project

As of July 2022, Village of Bald Head Island Utilities served 1,296 residential customers, 165 REUs (Residential Equivalent Units), and 19 on-site systems, with a total of 1,461 REUs or 59.3 percent build-out. The Village's permitted waste treatment capacity is 300,000 gallons per day. It is projected that approximately 35 REUs will be added to the system annually. The estimated waste treatment capacity required for Island build-out is 650,000 gallons per day.

The state of North Carolina's 80/90 rule ([15A NCAC 02T.0118](#)) ensures that treatment facilities do not exceed their hydraulic treatment capabilities and details what actions must be taken when treatment plants reach average flows of 80 percent and/or 90 percent of their permitted capacity, based on the average flow during the last calendar year. Prior to exceeding 80 percent capacity, a utility must submit an engineering evaluation of its future wastewater treatment, utilization, and disposal needs. Prior to exceeding 90 percent capacity, a utility shall obtain all permits needed for the expansion of the wastewater treatment, utilization, or disposal system and, if construction is needed, submit final plans and specifications for expansion, including a construction schedule. If these actions are not taken, a moratorium on sewer line extensions shall be imposed by the NC Department of Environmental Quality, which means no new homes will be built.

The Village of Bald Head Island is looking closely at the average flow and bases its averages, not on the year prior, like the State does, but on the prior peak months of usage which are the months of June, July, and August. Eighty percent capacity is 240,000 gallons per day. Ninety percent capacity is 270,000 gallons per day. The gallons per day average for July 2022 and 2023 had reached 80 percent capacity (261,237 and 263,910).

So far, the Village has hired an engineering firm to design the wastewater treatment plant expansion. The engineer of record, McKim and Creed has submitted pre-engineering reports (in 2015 and 2019) that satisfy the actions that must be taken at 80 percent capacity, while the Village has reached 80 percent capacity a few times, this is a proactive measure. McKim and Creed projects that an additional 120 to 140 REUs will be added to the system prior to reaching 90 percent capacity, requiring permits and a construction schedule. An Aqua Aerobics Aqua Nereda (Aerobic Granular Sludge) design is proposed which will utilize close to the same footprint as the current plant and double the plant's capacity. The construction window for an expansion project is 24-30 months.

The Village is pursuing grants and no-interest loans to pay for the project. An Asset Inventory Assessment grant was obtained to improve the Village's score as it competitively seeks grants. A capital improvement plan and asset inventory are currently underway. The Village hopes to be on target to start on its wastewater treatment plant expansion project well ahead of build-out with plans and permit applications completed by late summer/early fall 2024. The Village's goal is to be "shovel ready" with permits in hand as it seeks potential grant funding sources.