

Date: **March 17, 2023**

Project No.: **20985**

To: **Orleans Wastewater Management Advisory Committee (WMAC)**

From: **Mike Giggey**

Subject: **Orleans Wastewater Management Planning
Overview of Town-Wide Nitrogen Removal Needs**

At the March 9 WMAC meeting, we discussed the Wright-Pierce memo dated March 8 that summarizes the nitrogen removal needs in the portions of Pleasant Bay impacted by Orleans. To put those Pleasant Bay removals in perspective, we must also look at town-wide nitrogen removal needs, including the Nauset Harbor and Rock Harbor watersheds. I have reviewed the MEP reports for those two systems, and the associated removal needs are summarized herein.

The other two nitrogen-sensitive areas in Orleans are the watersheds of Nauset Harbor and Rock Harbor, both shared with Eastham. The MEP reports indicate attenuated load removals of

- Nauset Harbor: 9,000 kg/yr (Orleans' share about 5,000 kg/yr)
- Rock Harbor: 2,000 kg/yr (Orleans' share about 1,500 kg/yr)

Although both of these MEP reports are called "final" by SMAST, it is our understanding that neither has been accepted by DEP, and that TMDLs have not been established in either case. Further, the total removals have not been separately estimated for Orleans and Eastham; the Orleans shares noted above are my rough estimates. As we have discussed at prior WMAC meetings, the MEP report for the Nauset system does not include any nitrogen removals for Mill Pond, an item that will likely be updated and will add to Orleans' removal needs.

With these caveats, Orleans' total removal obligations will likely be approximately

- Pleasant Bay 7,000 kg/yr
- Nauset Harbor 5,000 kg/yr
- Rock Harbor 1,500 kg/yr
- Total 13,500 kg/yr