

TOWN OF NANTUCKET



SEWER PROJECT UPDATE *Frequently Asked Questions*

Please also see FAQs dated March 25, 2016 prepared for Nantucket Harbor Project public outreach for additional information

FAQ's from Madaket Public Outreach Meeting, Wednesday, July 13, 2016

1. *What is the sewer project that will come before the voters for the October 17, 2016 Special Town Meeting?*

At the fall Special Town Meeting, voters will be asked to approve funding for one sewer project with two phases, as well as to add the parcels proposed for sewer in the project to the Town sewer District. The sewer project includes the following Needs areas from the Comprehensive Wastewater Management Plan Update <http://nantucket-ma.gov/259/Wastewater-Action-Plan>.

- Phase 1 - Somerset
- Phase 2 - Madaket and Warrens Landing

There will be two warrant Articles relating to this project, which will be further detailed as soon as the information exists: **Article 2** seeks approval to borrow the funds needed to design and construct the project. **Article 3** will require the Town Meeting approval to add all of the properties in the above areas into the Town Sewer District. The Town Sewer District is the area served by the Surfside Wastewater Treatment Facility.

2. *What is the sewer plan for homes west of Millie's Bridge?*

This area was delegated as a Tight Tank District in 2015 through Local Regulation 49.00 with approval from MassDEP due to the location of the area subject to erosion and within the Velocity Zone. The Board of Health, Department of Public Works and MassDEP deemed this location in the velocity zone as unstable to construct municipal sewer. Concerns for impacts to the overall sewer system resulted in identifying this area as a Tight Tank District. Refer to Local regulation 49.00 for specific information.

3. *Can the Town reconsider extending sewer over the Bridge?*

See response to No. 1 above. At the time of the CWMP, discussions with the state regulatory officials resulted in a decision to not extend sewer over the bridge due to concerns with potential impact to sewer infrastructure that would impact the entire sewer system.

4. *The percentages on the nitrogen pollution contributions is confusing.*

While numerous summaries have been written to present the results and recommendations, the science is very complex and not easily understood. The numbers and percentages refer to very specific items. What is important to understand is that the largest locally controllable contributor to the Watershed is the nitrogen pollution coming from septic systems, with over 58%, which is a very large amount. The landfill contributes 24%. Fertilizer and stormwater are 8% and 10% respectively.

5. Summarize the 2015 Water Quality results for Madaket. Did they meet the TMDL?

No, they did not meet the TMDL. While Station 6 in Long Pond is showing improvement, the numbers are still above the established TMDL with the Pond classified as eutrophic (rich in nutrients and so supporting a dense plant population, the decomposition of which kills animal life by depriving it of oxygen). The Hither Creek stations are all above the TMDL. The outer Harbor area where there is a continual flushing with tides is in better and improving condition.

6. What is the status of the landfill mining operation?

The landfill is continuing to be mined with the addition of a new cell being constructed at this time. The landfill has been mined for the past 6 years. Each year, 100,000 cubic yards of material has been removed. The waste is baled and placed in the lines cell and the cover material is stockpiled on site awaiting usage elsewhere. The mining program will continue for four more years. The total amount of acreage that is projected to be removed is 14 acres of the original 20 acres of historically filled area.

7. Will a new cell affect water quality?

The Town will need to do some additional water quality testing specific to this location and Long Pond to finitely determine the impact. At this time, prior to scientific evaluations, it appears that the mining is having a positive impact in Long Pond at Station 6.

8. What about capping the landfill?

At this time, there is no plan to cap the landfill. The mining is removing materials that potentially leach nutrients into the groundwater, which is better than capping.

9. What is the debt of the landfill to the Town's overall debt?

There is budget set aside for construction of another cell-3A. Bids are due August 26 and this information will be published on-line as soon as available.

10. Will the Town close the landfill?

Costs for this are being reviewed at this time.

11. What about the former FAA land option?

Engineering was done to show that the need for the FAA land as a wastewater site-package treatment plant and discharge beds, was no longer needed as the Town's Surfside Wastewater Treatment Facility could accept the wastewater from Madaket and Warrens Landing. This is the highest and best use for the existing Surfside Wastewater Treatment Facility and saves the Town millions of dollars of construction and ongoing maintenance costs for a third major WWTF. The FAA land continued with the federal land disposal process, with a Nantucket conservation group purchasing and holding as open space.

12. What is the possibility for additional development in Madaket if sewers are built?

The zoning has been changed to minimize impacts of growth. There are not many undeveloped parcels that can be developed; there are no large lots to support large development such as 40bs, which is a concern for every neighborhood. Sewers allow the elimination of septic systems, which frees up room for possible pools, additional bedrooms, etc. The Town is actively working with its Housing Production Plan and Safe Harbor Provisions to address affordable housing. These are in review at this time.

13. Could we eliminate sewerage and be more aggressive with other measures such as landfill mining, fertilizer reduction and stormwater management?

No, sewerage is necessary to remove the largest, locally controllable pollution, which are the septic systems. The Town is already aggressively working with the fertilizer, stormwater and landfill mining and the water quality results continue to be in excess of the TMDL. These contributions are not high enough if removed entirely, to meet the TMDL on their own.

14. Is the 0 Percent SRF guaranteed?

The Town has been approved for State Revolving Funds (SRF) for this project for the last two years. The Town will reapply again this year, with the goal of meeting the MassDEP rating criteria to be included for CY2017. There have been discussions with the MassDEP regulatory officials on the intent of Nantucket to move forward with this project at the 2017 fall Special Town Meeting and all are prepared to rate this as in past year's submittals.

15. What plans do the Town have in place for those that installed I/A systems?

This is currently under discussion with the Board of Selectmen.

16. Could we consider pushing the fertilizer regulations and septic management and monitor to see if we meet water quality limits?

The Town is aggressively pursuing compliance now and has been over the last few years. The water quality numbers continue to be higher than the mandates in the TMDL. With the nitrogen contributions from these sources at 8 and 10 percent respectively, it is clear that on their own, these two contributors cannot meet the TMDL.

17. Does the EPA mandate that property owners remove the septic systems?

No, EPA does not mandate removal of septic systems when sewer is available. There are, however, requirements to abandon the septic system by pumping, cracking the bottom and filling with materials to completely eliminate use of the system. It is a property owner's choice whether to completely remove the system for another use on the land; i.e. a pool, etc., or to simply abandon the use.

18. What is the property owner responsibility to do with the septic systems once sewer is available?

Under the Board of Health directive, a system must be formally abandoned by either removal or pumping of the septic tank, cracking the bottom and filling with an approved material to make the system unusable. See No. 16 above.

19. Has the Town issued any fines or enforcement actions to property owners that fail to meet mandates?

Yes, to date, approximately \$5,000 in fines have been assessed.

20. Speaker's comment on family support for the Project, Hither Creek is "disgusting"; doing nothing is not an option.

General comment from resident of Madaket on the water quality in Hither Creek, family is in support of sewer and wants sewer to address on-going, chronic issues.

21. Should Madaket be concerned about 40b development?

See response to No. 12 above.

22. Are there reassurances this plan will meet the TMDL?

The Town completed numerous, comprehensive studies with the science showing the plan approved in the CWMP update will meet the TMDL. The Town has utilized the most up to date science and engineering to develop the project as it stands.

23. If we do not get 0 Percent SRF, what will the project costs?

Finance is currently working on this to get this uploaded to the Town's website for public access, but at present day borrowing costs, the project will cost approximately \$44 million more over the life of the loan if we do not take advantage of the SRF.

24. What about the many "sliver" lots in Madaket will the Town hold on to its lots?

Based on the current zoning, there would have to be multiple "sliver lots" joined to be able to initiate a Land Use Code change from undevelopable to developable. At present, Town has no plan to sell the lots under municipal ownership.

25. Will the plan for Madaket include all that is shown on the map?

Yes and the map will be part of the October STM Warrant Article.

26. How many parcels will require individual pumps?

This will all be identified during the design phase when a topographical survey is done and elevations are documented and evaluated. At present, no survey has been done, so this is an unknown.

27. When was the last time Hither Creek was dredged?

This was unknown-Jeff Carlson will investigate.

28. What is the difference between a pressure sewer and gravity sewer?

Gravity Sewer - A sewer pipe that is constructed with a constant down- hill slope so waste moves under its own mass-flows by gravity.

Low-Pressure Sewer - A small diameter sewer pipe that is constructed with the use of individual grinder pumps that helps move waste through the system.

29. Is it a goal to reach 0 percent nitrogen?

No, the TMDL has set the percent based on the water quality standards for the water resource. It is not possible to reach 0 percent, as there are contributions, such as nitrogen from the atmosphere that is not a locally controllable source. The Clean Water Act mandates that the locally controllable sources be eliminated and/or reduced to meet the federal and state statutes.

30. If we meet the TMDL, do we negate those results by not reducing fertilizer and stormwater?

No, as the majority of the TMDL is concentrated on reducing the largest load-septic systems.

31. If we continue to use I/A systems west of Millie's bridge, will this cause issues with meeting the TMDL?

No, as the flow in the area over Millie's Bridge mostly runs towards the open ocean and not back in towards Hither Creek where it could impact overall results.

32. Has every property in Madaket been inspected?

Yes, all have complied.

33. If all septic systems were converted to I/A and we continued to mine the landfill, would that meet the TMDL?

No, the science states that 100 percent of the wastewater must be removed to meet the TMDL and I/A systems only remove an average of 50 percent of the nitrogen they treat.

34. Would a plan to accelerate the landfill mining, use of I/A systems, more tight tanks along Hither Creek (would work harder with MassDEP to approve), removal of compost at landfill and opening of Long Pond to meet TMDL?

This was stated more as an opinion by a citizen at the Civic League sewer presentation. The Town conducted multiple scenarios using the science and engineering approved by the MassDEP. This shows the only plan that meets the TMDL is to remove 100 percent of the wastewater (I/As only reduce 50 Percent) and the percentages of fertilizer and stormwater only account for 8 and 10 percent respectively. Accelerating the mining of the landfill could make headway to meet the water quality standards in Long Pond, which will help the Watershed as water from Long Pond flows through Madaket Ditch to Hither Creek and then Madaket Harbor. Tight tanks are not an option under Title 5 Regulations on this level of use. The CWMP Update, which was adopted by the Board of Selectmen and approved by MassDEP, contains the plan to sewer the Watershed, continue to mine the landfill while also managing stormwater and fertilizer Island-wide. Any change to this approved plan will require additional study, additional filings with the state, and final approvals before consideration of a change. MassDEP stated it would NOT approve tight tanks beyond the state regulations.

35. What about the "character" of Madaket if sewers are built?

Refer to the response in No. 12 above. This was in relation to the potential for build-out conditions, which the Town Planner addressed as a non-issue other than the potential for adding additional bedrooms. The Planner also stated that this could happen now with septic systems with adding "family rooms" versus bedrooms.

36. Don't the boats in the Harbor contribute to the pollution?

The Town has a program for boat discharges.

37. What about I/A compliance?

This is managed through Barnstable County, which has set mandates for managing.

38. What is the definition of "compliance"?

Meeting state and local regulations. There are two forms of failure; 1) hydraulic; and 2) technical:

Hydraulic Failure Explained:

Ponding of surface water

Back-up of sewage into the dwelling

Evidence of flooding within the wastewater system's distribution box, septic tank, cesspool or metal tank

Repair Allowed for Hydraulic Failure Under Town's ACO Program:

Temporary repair to meet minimum Title 5 Regulations

Will NOT require nitrogen-reducing system

"Band-Aid" repair to keep system functioning until municipal sewer is operational

NOTE: Title 5 mandates an immediate repair of a hydraulic failure to eliminate any public health threat.

Technical Failure Explained:

Diminished distance to groundwater

Less than 6' in watershed protection zones

Less than 5' in non-watershed protection zones, within 100' to private well

Missing or undersized components

Leach field within 100' of private well

Repair Allowed for Technical Failure Under Town's ACO Program:

A minimum 2' separation from groundwater

No repair mandated as long as system is functioning

NOTE: Title 5 requires full repair within two years

39. Why not wait until we see how the sewer in Nantucket Harbor fares?

The Nantucket Harbor sewer project, while based on nitrogen pollution, is a totally different scenario than Madaket Harbor, so there is no comparison. Nantucket Harbor’s TMDL is set at two locations, with Polpis Harbor being one and the outer Nantucket Harbor the second. Nitrogen pollution is coming from different sources and at different ratios. Both projects have independent solutions to meet the TMDL and eliminate the nitrogen pollution, so there is no comparative data.

40. If the sewer project were approved, when would Madaket be operational?

It is estimated that sewer will be operational in Madaket and Warrens Landing in approximately 2024.

41. What about breaching Hither Creek-would that meet the TMDL?

Initially this question did not have a definitive answer. Further research and discussions with the water quality team deemed this option as not feasible due to a number of reasons. Hither Creek currently receives tides and flushing from inner Madaket Harbor. The water quality testing and resulting model runs took this into consideration when establishing the TMDL. With this flushing, Hither Creek water quality did not meet the TMDL requirements. The pure physics in this case; the location of a potential breach on the open ocean of Hither Creek would not be possible because due to its location with the continually shifting sands in this area that make it impossible to maintain an opening here. There are concerns for impacts to low-lying areas-Smith’s Point and properties near the potential breach for flooding, etc. The environmental constraints are extensive, including difficulty in obtaining permits from MassDEP, the Natural Heritage and Endangered Species Program, Mass Historical Commission, The Army Corps of Engineers, Conservation Commission just to name a few. Issues related to the dune habitat, the salt marsh habitat on the backside of the dunes, the shorebirds and the permitting mandates they would have to meet, not even considering the physics, make this option unfeasible.

42. What are the project costs?

The project costs are estimated below based on the proposed timeline for construction with Somerset proposed to start in 2017 and Madaket and Warren’s Landing to follow in 2019. These costs will be further refined during the design and construction phases.

Phase 1 – Somerset-(2017 estimate)		Phase 2 – Madaket and Warrens Landing (2019 estimate)	
Design -	\$1,753,430.	Design -	\$ 6,109,648.
Construction -	\$15,780,867.	Construction -	\$54,986,828.
Total -	\$17,534,297.	Total -	\$61,096,475.

FAQ’s from Madaket Public Outreach Meeting, Sunday, July 24, 2016

1. Does the sludge or any other WWTF bi-product get returned to the landfill? What is the point of sewerage if the material is going back into the watershed.

Sludge, the waste that has been dewatered before leaving the WWTF and arriving at the landfill to be combined with solid waste through an intensive process for reuse, is processed at the landfill. The sludge is void of wastewater liquids, which contain the major portion of nitrogen-up to 90%. The process by which the resultant sludge goes through is a decomposition/digestion process, which renders the resultant mulch free from public health issues. This process is under MassDEP Permit. The Town is evaluating additional testing to determine the overall landfill impacts to Long Pond and will reassess when results are in hand. At this time, we do not see impacts from the mulch alone. *The overall landfill contribution to the Watershed is 24 percent and scenario runs completed as part of the estuary study show that completely removing the landfill-ALL contents, did NOT meet the TMDL.*

2. One resident felt strongly that his well water supply could contain high levels of nutrients and other pollutants from the landfill operations.

If this is a concern, it is advised for the resident to have the well tested.

3. ***The fact that 60% of the nutrient load is “not locally controllable” makes it a lot to ask residents to spend so much money to manage such a small percentage of the total loads from wastewater.***

The MEP studies completed for all embayment areas identified the TOTAL nutrient load to the resources. There are areas where contributions cannot be controlled, such as the question implies. However, there ARE many areas where the loads are a direct result of land uses and the federal and state entities, under the Clean Water Act, mandate that these “locally controllable loads” be reduced and/or eliminated, as it is direct pollution to the water resources. The studies done resulted in the Total Maximum Daily Loads (TMDLs) that take into consideration that there are areas that cannot be controlled. The TMDLs are set on the “locally controllable” items, that when addressed will result in meeting the TMDL and restoring water quality.

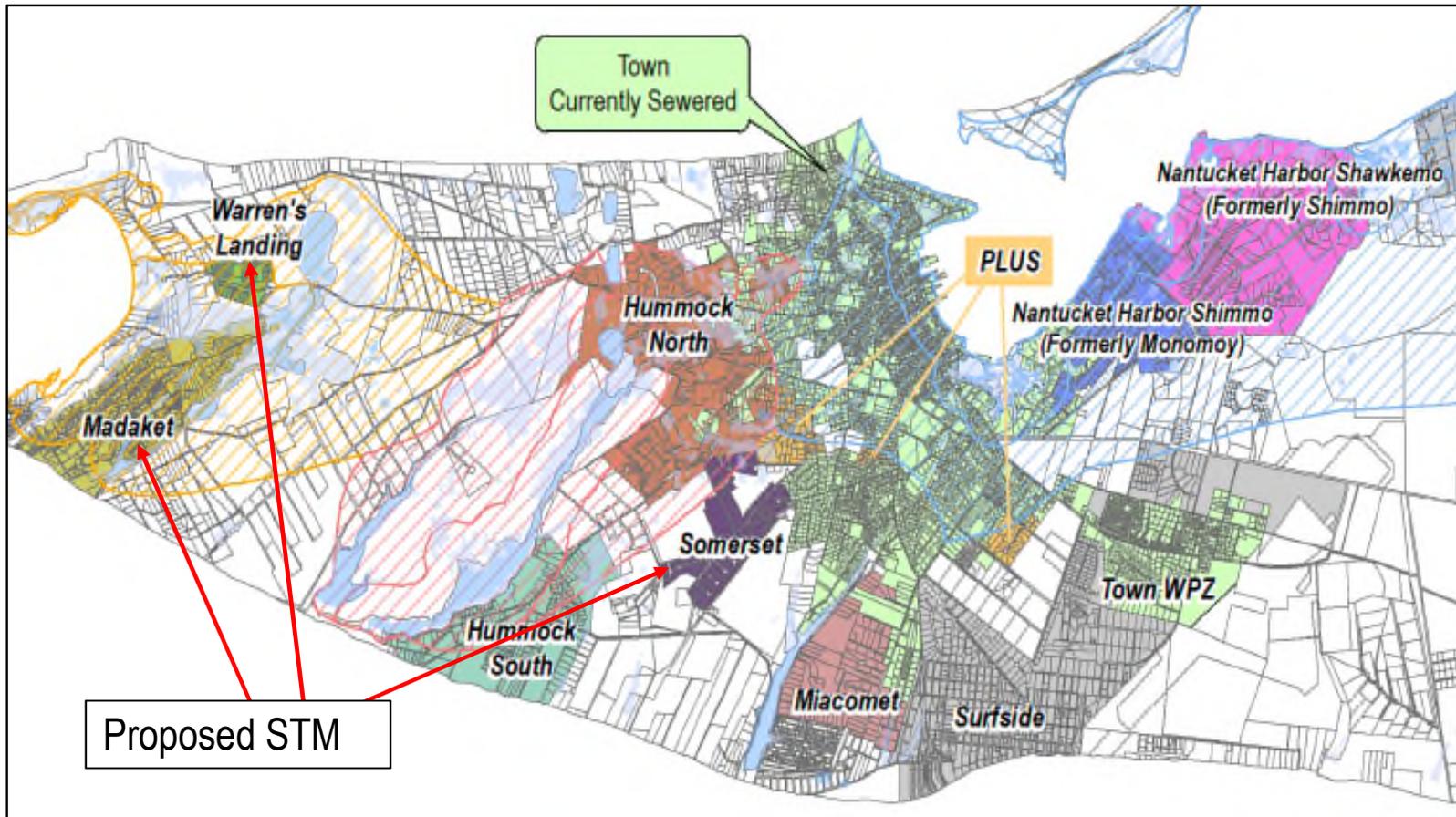
4. ***How will sewerage impact growth in Madaket?***

Refer to Question 12 above.

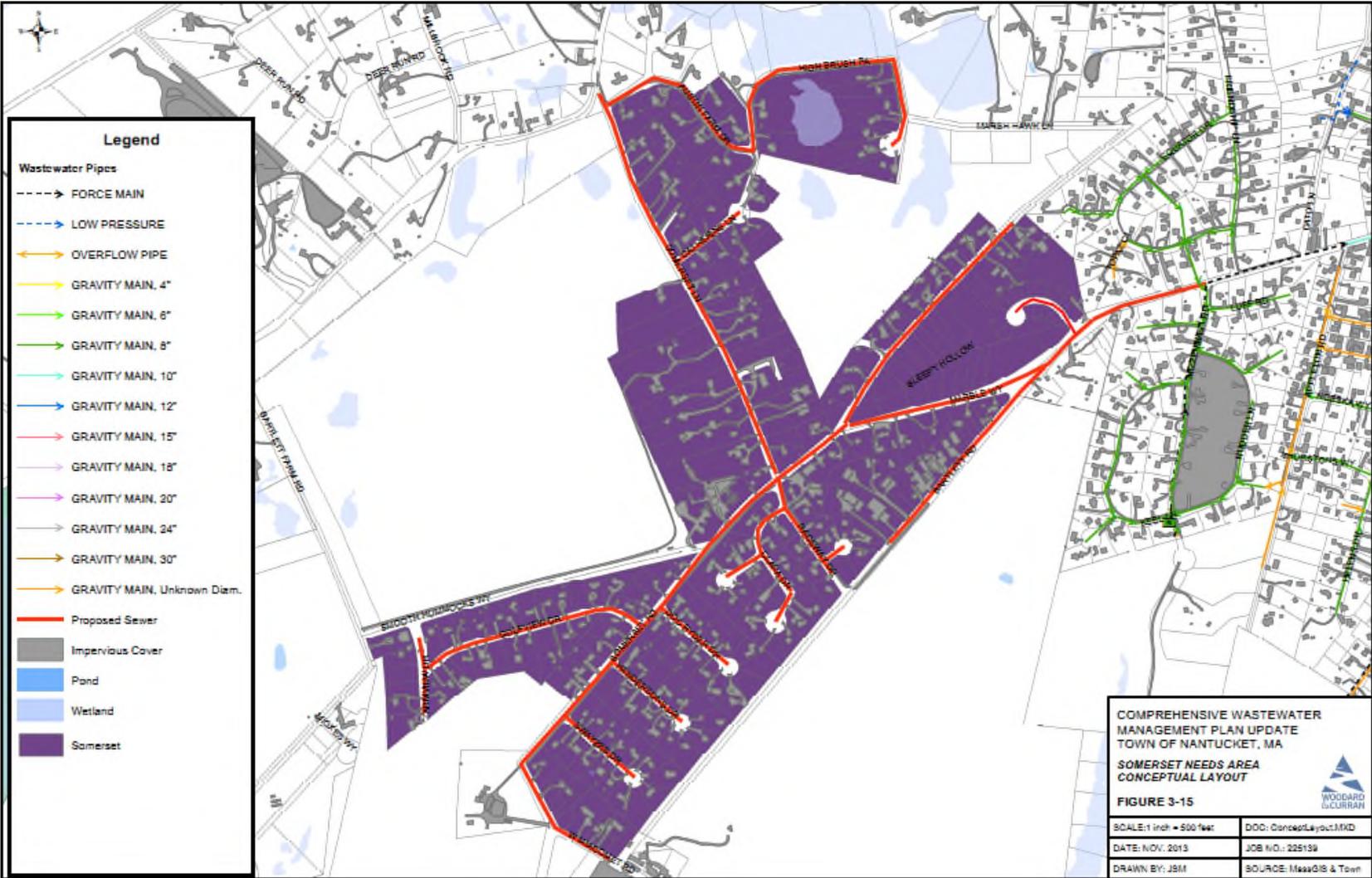
5. ***Could the birds in the watershed be impacting the loads?***

Animal contributions were evaluated and they do not impact to the degree of existing pollution. By and large the biggest polluter in Madaket is the septic with over 58% of the nitrogen contribution.

Geographical Areas of Sewer Projects for Fall Special Town Meeting



Phase 1 – Somerset Needs Area Conceptual Map



Phase 2 – Madaket and Warrens Landing Needs Area Conceptual Map

