



Amelioration of waste water in the Town of North Hampton as a precursor for further economic development

Prepared for the Economic Development Committee.

February 7th, 2018

Contents

- Summary of recommendations
- Background
- Objectives
- Interviews
- Findings
- Recommendations

Attachments:

- Attachment 1: Agreement for treatment and disposal of wastewater (Between Town of Hampton and Town of Rye) dated October 1989

Links :

- Wastewater Facilities Plan for Hampton NH , September 2017,
<https://www.google.com/search?q=Waste+water5+facilities+plan+for+hampton+NH&aq=Waste+water5+facilities+plan+for+hampton+NH+&aqs=chrome..69i57.10374j0j7&sourceid=chrome&ie=UTF-8>
- New Hampshire Water resource Primer https://www.des.nh.gov/organization/divisions/water/dwgb/wrpp/documents/primer_front_matter.pdf
- Package treatment plants <https://www.samcotech.com/cost-wastewater-treatment-system/>

Rationale for recommendations

- The development of a waste water treatment line in the vicinity of Lafayette Road was considered as a means of increasing the density of construction in the area and creating a more focused center of business activity
- Additionally a waste water line along Lafayette might ease the present challenges faced by larger concentrations of dwellings (i.e. trailer parks etc.)
- In the short term the town of North Hampton is unlikely to identify a partner community with waste water treatment capabilities
- Collaboration by communities along the seacoast appears to be driven by state government direction as with the beach facilities along Route 1A

Summary of recommendations

- (Option 1) Business as usual
- (Option 2) For the short to medium term, the town to consider the feasibility of acquiring a package waste water treatment plant and constructing waste water treatment lines along the more urbanized sections of route 1.
- (Option 3) Alternatively, begin a dialogue with the Town of Hampton, recognizing that any collaboration will probably be predicated on the need to participate in the sunk costs of their existing investment
- (Take up the offer of the NHDES Environmental Division Water Division to mediate a meeting between North Hampton and Hampton to frame the issues and perhaps begin a dialogue)

Background

- A municipal sewerage system feasibility study was prepared by Underwood Engineers, Inc. in July 1991.
- Their findings included the following:
 - As waste water production increases and groundwater use expands, North Hampton will face the dilemma of waiting for degradation of groundwater, or undertaking a major capital investment for sewers as a preventative measure
 - Pollution from wastewater is not well documented, although there is a good understanding of the large amount of wetlands and soils with severe limitations for subsurface disposal systems
- Among its recommendations were the following:
 - Promote residential public education on the importance of maintaining septic systems.
 - Create waste water management districts to permit town review and enforcement of septic system maintenance
 - Develop a long term plan of action for the design, construction and implementation of a municipal sewerage system
 - Work on establishing a long term agreement for the disposal of septage
 - Initiate discussions with the town of Hampton regarding one or two connections to the Hampton sewerage system. Seek to reserve flow capacity in the Hampton interceptor sewers and waste water treatment facility
 - Apply for applicable state and federal funding programs

Objectives

- The North Hampton Economic Development Committee(EDC) was tasked with examining the possibility of business expansion, particularly along Routes 1 and 111 corridors
- It was agreed that one possible way to promote business development would be through encouraging higher density construction and more business activity
- To that end, the EDC needed to better understand the challenges faced in installing a sewer along a section of Lafayette that would permit higher density construction in the area

Approach

- The 1991 Municipal Sewerage System feasibility study was examined.
- Interviews were held with a number of counterparts including the following:
 - Milon Marsden, Deputy Building Inspector, Town of Rye
 - Jason Bachand, Town Planner , Town of Hampton
 - Jennifer Hale, Dep Director of Public Works, Town of Hampton
 - Chris Jacobs, Public Works Director, Town of Hampton,
 - Fred Welch, Hampton Town Manager
 - Fred McNeil, Chief Engineer, Manchester DPW, Environmental Division
 - Robert Beaurivage, formerly Manchester Water Works, now Vice Chair New Hampshire Environmental Council.
 - Sharon Nall, NH DES, Environmental Services, Water Division
 - Ted Diers, NHDES Water Shed Management
- Documents reviewed included the following:
 - Agreement for treatment and disposal of wastewater (Between Town of Hampton and Town of Rye) dated October 1989. (Attached).
 - NH DES Water Resource Primer, December 2008
 - SAMCO: How much does a Waste Water Treatment System cost?

Findings (Existing/mitigated soil and water contamination)

- N.H. Association of Conservation Commissions, 2010, reported: deterioration of Little River and classification as a impaired water resource
- in 2010 the Commission found high levels of e-coli contamination, at the intersection of Mill Road and the Little River, just below the Mill Pond Dam.
- Failures of septic systems, including 2010 problem at the Shell-AI mobile home park
- In June 2011 routine testing of water quality at the North Hampton Beach indicated that e coli levels exceeded the standard of 104 counts per 100 ml, which is the maximum level considered safe for recreational use.
- Only very small percentage of town classified as very high, or high soil suitability for installation of septic systems
- Recommendation: Need for town to plan about future load that waste disposal places on our soils

(Further details on current contamination levels from : Ted Diers, NHDES Water Shed Management)

Findings (North Hampton town characteristics)

Town:

- At present the town maintains its suburban/rural community character
- Approximately 42% of town is classified as wetlands with limited growth potential

Population

- Sewer masterplan anticipated permanent population growth rate to 5757 in 2010.
- Actual population of 4,301 reported in 2010 increased to 4,361 in 2015, thus population projections from former master plans excessive
- In 2015, largest population cohort 55 and over at 1,598; traditionally the most conservative segment of the population

Traffic density:

- Traffic counts in January along US 1 North of North Road averaged 14,500/weekday in 2015 and 15,837/weekday in 2016
- Traffic counts in July along US 1 North of North Road averaged 19,799/weekday in 2015 and 19,221/weekday in 2016
- Traffic density suggests possibility for further business growth along the Lafayette /Route 111 corridor

Findings (Hampton sewer system)

- Leavitt E. Magrath Wastewater Treatment Plant (WWTP) is owned by the Town of Hampton
- The Town has approximately 68 miles of sanitary sewer lines, 1500 manholes and 10 lift stations within its sanitary sewer system
- Main sewer line follows route 1A connecting Rye and Hampton
- Connection mandated by State of New Hampshire
- Two of the potential connections to the town of North Hampton lie along the town line on Woodland Road and Lafayette Road
- Design capacity of current sewage plant at around 3.9 mgd., although it is sized to process up to 7.8 mgd. when needed.
- The plant currently operates either at or above 80% of the plants design loading capacity for at least 3 consecutive months out of the year(2014-2016)
- Current plans include investing up to \$ 41million in upgrading the system, of which the first phase costs were \$13.8million
- Hampton residents reduced the proposed costs to \$11.7 million following a deliberative session in February 2018 at which two proposed aeration tanks were postponed.

Findings: (Hampton, Rye and possible connection for N. Hampton)

- The state of New Hampshire mandated the town of Rye to provide sewerage services to a portion of its residents
- Agreement was signed between Rye and Hampton in 1989 although not without protest.
- Under the current agreement Rye residents compensate Hampton WW's quarterly in two parts as follows(see Attachment 1):
 - 19.23% of the costs to operate and maintain the High Street East pump station
 - Treatment and transport per 1,000 gallons.
- According to the Hampton Town manager, the last renewal of the Hampton Rye sewerage agreement barely passed approval by the town
- At present, many interviewees have indicated that Hampton town selectmen are ill disposed to further extensions of the current WWTP and sewerage system
- The selectmen are anxious to retain full control over the system
- Any addition to the existing sewer lines will require re-dimensioning of the system at additional expense.
- Hampton selectmen see no benefit to themselves from further expansion of their system
- Absent metered water and waste water, additional costs will be recovered through taxes
- Finally, Hampton administrators see potential PFC liabilities from processing sewage from the car wash on Lafayette, which would require possible WWTP plant upgrades of approximately \$2.0 million

Findings: Choices for North Hampton(1)

- Given North Hampton's geographical location, at present there is no nearby community with the requisite WWTP willing to pair with the town.
- That situation may change following the next town elections, but for the foreseeable future the only potential candidate community is struggling with the need to finance required upgrades to the WWTP and maintaining its own existing sewer infrastructure.
- Thus at present the plan to stimulate business activity along the Lafayette-Route 111 corridor by laying sewerage lines and increasing the density of construction is moot.
- However, the town could consider the acquisition of a so called package treatment plant at a cost of between \$500,000 to \$1,500,000 (see SAMCOTECH attachment) dependent on the levels of BOD and discharge limits
- Running a sewer line for a mile on both sides of the Route 111 intersection would result in approximately $5280 \times 2 = 10,560 \times \$300.00/\text{foot} = \$3,168,000.00$
- Assuming the town has suitably placed land for the treatment plant location, a high end estimate of the total cost for the lines and treatment would be \$4.6 million
- The downside of a package plant is that the state requires technical redundancy as well as the NPDES permit, while running a lone along Lafayette will require further state permitting.

Findings: (Choices for North Hampton (2))

The town faces three possible choices:

- Option 1. Do nothing
- Option 2. The town could consider the acquisition of a so called package treatment plant at a cost of between \$500,00 to \$1,500,000 (see SAMCOTECH attachment) dependent on the levels of BOD and discharge limits
- Running a sewer line for a mile on both sides of the Route 111 intersection would result in approximately $5280 \times 2 = 10,560$ *
 $\$300.00/\text{foot} = \$3,168,000.00$
- Assuming the town has suitably placed land for the treatment plant location, a high end estimate of the total cost for the lines and treatment would be \$4.6 million(excluding any redundancy requirements and the NPDA permitting procedure)
- Option 3. Begin a dialogue with the Town of Hampton with a view to extending a sewer line from the Lafayette/Route 111 intersection 2 miles to the Hampton sewer line.
- To sweeten the deal, offer to participate in defraying a part of the sunken costs of the existing WWTP and any necessary upgrades in sewer lines.

Recommendations (1)

For the short term, North Hampton will be left to its own devices to address its waste water needs

Due in part to the slower population growth than predicted in the Town of North Hampton master plan(1989), the pressure to address the construction of a sewer system and WWTP in North Hampton is less critical

Recommendation 1.

North Hampton can continue to rely on septic systems to meet its development needs in the short run, but it must remain reconciled to a attenuated growth rate especially in the business corridor around Lafayette and Route 111.

Recommendations (1)

Recommendation 2.

- To mitigate future problems, the town of North Hampton must develop a long term plan of action for the design, construction and implementation of a municipal sewerage system

Recommendation 3.

- One approach that has been utilized successfully elsewhere is the acquisition of a so called “package treatment plant.” Preliminary estimates for such a plant and two miles of sewer lines would be \$4.6 million in investment(assuming the town donated land), which would enable higher density construction and business activity in the 2 mile corridor around the Route 111/Lafayette intersection A benefit cost estimate would need to be determined to weight the impact of greater business activity , greater housing density and the potential for more out of town generated business visitors vs the costs of the WWTP, attendant sewer lines and permitting

Recommendations (1)

Recommendation 4.

- Commence a protracted dialogue with the Town of Hampton over the construction and connection of a sewer line that would serve the Lafayette/Route 111 corridor in return for an offer to participate in the existing sunk costs of existing Hampton WTP infrastructure investments and to provide quarterly payments for waste disposal as per the current Rye agreement
- This option seems to be the lowest cost option since unlike recommendation 3, it does not require the acquisition of a National Pollution Discharge Elimination System Permit or addressing the O&M of running the package facility
- Further, NH DES Environmental Services Division Staff have offered to bring together a team comprising technical financial and permitting experts to mediate a meeting between North Hampton and Hampton to try to kick start the process.
- In the alternative they are willing to meet with North Hampton town representatives to discuss the issues surrounding such an option.