

\$45k Water Quality Committee Proposal to:

- Survey Canals, Determine Sludge Depths and Test Sludge Samples
- Determine Best Remedial Efforts to Remove Nitrogen and Phosphates
(To Skim Dredge All or Part of Our Canals)

Discussion - The rest of the story.....

It took a lot of time for me to determine what I felt was wrong with the \$45k proposal. I am very much in favor of the Council funding water quality efforts on a regular basis, and part of me says that some of this should be funded. Problems I found are – some misrepresentations, not addressing root problems and not resulting in sustainable long-term solutions. Let me explain.

1. More information is good.
 - a. Wasting tax dollars is bad.
 - b. Study goals are unclear.
 - c. Only limited study data is produced.
2. I understand the Committee proposes to **suction-dredge** all or part of the canal bottom to remove the sludge (muck). If so,
 - a. **Dredging will cost hundreds of thousands or millions of dollars.**
 - b. Dredging will not solve basic causes of the problems and long-term solutions.
 - c. We dredged sections of our canals in 2008, and it did not rid us of nitrogen or phosphates in our canals. Unless there is something urgent to address – why would this dredging result be different?
3. To go forward, we need - A clear definition of realistic goals and objectives, including costs and a schedule to implement on a methodical basis.
4. Good news – Although our canals are not perfect, relative to other surrounding areas, our canal water quality is not as bad as being represented.
 - a. You may be vaguely aware of the basic problems and different mitigation options.
 - b. Much of the talk about our canal water quality has been reactionary and exaggerated.
 - c. Misrepresentation and scare tactics about our canals **need to be avoided**.
 - d. When our canals were built, little poultry and pollution was not as bad in the inland bays
 - e. Fund and take action - should be based on science and accurate facts.
5. Following are some relevant facts:
 - a. Town Canal Water Quality - Our canal water quality can **never** be better than the waters in the surrounding bays.
 - i. Public concern is inflated.
 - ii. Long-term solutions for problems need to be identified, prioritized, undertaken and publicized.
 - b. Canal Nutrients – Except at dead ends, muck or silting does not appear to be **causing significant** water quality problems.
 - i. *Silting at canal-ends is from floating debris and dumping untreated storm water (roads).*
 - ii. Mid-canal tests are consistently better than end-canal tests.
 - c. Safe swimming – our canal waters are tested at 11 locations on a regular basis (14 to 15 years)
 - i. Lot of data is available.
 - ii. Our canals are not the worst in the UD program (by far).
 - iii. You need to understand that we will **never** get DNREC approval for safe swimming water – due to periodic bacterial problems happening throughout the inland bays.
 - iv. These bacteria are only periodic in our canals. We cannot control this.
 - d. Fish in our canals – There have been a lot of fish in our canals.
 - i. Carlisle is one of the **least good** in South Bethany, - we have schools of minnows, shad, white perch and some rockfish.
 - ii. Fish kills in our canals are rare.
 - iii. DO is measured at the lowest point - the minimum daily level.
 - iv. In two hours of sunrise, the DO levels raises – normally well above 4.0 mg/l needed for sustained fish life – a little known or advertised fact.
 - e. Algae growth – Normally happens in the spring in clear water is clear with presence of phosphates
 - i. Storm water run-off from phosphate saturated agriculture lands flow into the inland bays.
 - ii. With diminished water circulation – we get algae blooms.

- iii. 2012 – serious bloom
- iv. 2017 – some algae
- v. Abated by DNREC with algae harvester. Their timeliness - a problem.
- vi. Solution: Spend Town funds in partnership with DNREC and pay their overtime? (Win/Win).

Recommended Actions That Should Be Considered To Improve Our Canals

1. There are only 2 basic strategies we could undertake to mitigate the root causes of the long term problems:
 - o Limit pollutants entering our canals; and
 - o Improve canal water circulation (for enhanced flow and flushing).
2. What should we pursue?

You should consider the following as first priorities: -

 - a. Treat all the storm water entering the Forebay at Anchorage. Increase the size and capacity of the retention pond (now functioning at only 30 %); and/or
 - b. Divert storm water from the Rte. 1 (especially south of the Forebay) and dump the effluent into a wetland treatment system in the Little Assawoman Bay south of Town. Obtain DNREC support and State and/or Federal funds to do this;
 - c. Increased water circulation (to flush canals and increase oxygen levels).
 - i. Do the water circulation study proposed in 2014 (\$20k)
 - ii. The proposed canal survey would be helpful.
 - iii. The early canal circulation study model is inaccurate - (example: York Canal).
3. Are the above feasible?
 - a. Explore the possibility to obtain land from the Goodie Taylor estate to expand the Forebay. (Create the Goodie Taylor Memorial Park).
 - b. Use State and/or Federal grant funds for construction. (Win/Win)
 - c. Note: New Sea Colony storm water pond will **not** treat all the storm water coming to the Forebay
 - d. Cost to expand the Forebay would be less than the Sea Colony pond. (We lost on the political end of this)
 - e. Obtain grants to divert some or all the Route 1 storm water south to the Assawoman Bay.
 - i. A real long-term solution.
 - ii. Would provide the State and Federal officials the opportunity to provide a treatment outfall wetland with additional **barrier island protection** for the State Park areas south of our Town (Win/Win).
 - iii. Question? - What right does the State (DNREC and DelDot) have to drain its polluted storm water into our canals without treatment? Address and correct this.
 - f. A new canal circulation study would cost less than the current (\$45k) proposal
 - i. The results could indicate sustainable longer-term actions. (dredging could be part)
 - ii. Opening at the ends of the Carlisle and York canals (the min. effort) to the outer bays would cost far less than skim dredging.
 - iii. Use grant funds for the construction work.
4. What is working on a limited basis?

Rain Gardens, bubblers and floating wetlands (all limited results)

Final Conclusions

Unless some grant funds are available for \$45k proposal, the Council should reject it until the Committee has developed a comprehensive, sustainable and long-term approach to address canal water quality issues. When a plan is developed, it should be presented, reviewed and vetted by the Public.