

Lewes BPW
November 30, 2022
Special Board meeting minutes

The Wednesday, November 30, 2022, special Board meeting was held at 3:00pm at the City Hall Council Chambers.

1. Welcome, call the meeting to order.

President Panetta called the meeting to order at 3:00pm.

2. Roll Call

Board Members

Thomas Panetta
Earl Webb
D. Preston Lee, P.E.
Richard Nichols
A. Thomas Owen

Ex- Officio Members

Austin Calaman, BPW General Manager
Robin Davis, BPW Assistant Manager
Michael Hoffman, Legal Counsel
Andrew Williams, Mayor

Others

Sumner Crosby
Barbara Curtis
Ben Hearn, GMB
Hans Medlarz, Sussex County
Tim Ritzert, City Councilperson
Sharon Sexton, BPW
Tom Biagioli, GHD
Jeff Sturdevant, GHD
Josh Gritton, BPW

3. Executive session

ACTION: *Mr. Owen motioned to adjourn to executive session. Mr. Nichols seconded the motion, which passed unanimously.*

President Panetta adjourned to executive session at 3:00pm.

4. Presentation of the wastewater treatment plant long-range plan from GHD. No action will be taken at this meeting. The purpose of the meeting is for the Board to receive the report.

ACTION: *Mr. Lee motioned to return to open session. Mr. Owen seconded the motion, which passed unanimously.*

Return to open session at 3:57pm.

Mr. Sturdevant, GHD, stated that GHD is here to present the report to the BPW Board.

Mr. Biagioli, GHD, presented a PowerPoint that can be found on the BPW website, as well as the report. Mr. Biagioli will review the Project Background and Scope, Concept Development, Concept Evaluation, and the Next Stages.

Project Background and Scope:

- The Lewes BPW Wastewater Treatment Facility (WWTF) is located at a low elevation site and is vulnerable to sea level rise and flood damage. The BPW would like to evaluate options to mitigate flood risk and/or relocate the facility.
- Sussex County has an existing agreement in place with the BPW to transfer wastewater flows to the Lewes WWTF when demand is lower in Lewes during the winter months. The County has indicated that they may be interested in working with the BPW to establish additional shared facilities for wastewater treatment.
- GHD was appointed to develop and evaluate upgrade options that will provide increased resilience for wastewater treatment within the BPW's service area, including options for further collaboration with Sussex County.
- GHD's analysis has been summarized in the Lewes WWTF Long Range Planning Study Conceptual Evaluation Report, which has been provide to the Board for review.
- GHD evaluated a total of six options to increase the resilience of the wastewater treatment to storm events and sea level rise. The following options were evaluated:
 1. Hardening of the existing WWTF site
 2. a. Relocation and spray irrigation and/or RIBS
b. Relocation And utilization of the existing WWTF outfall
c. Relocation and new ocean outfall
 3. a. Partnership with Sussex County and utilization of existing WWTF outfall
b. Partnership with Sussex County and constructed wetland

Concept Development, Option 1:

Mr. Biagioli referred to the top left diagram on slide five, that shows the BPW collection system. Option one would keep the basic network the same.

Upgrades to the following treatment facilities would enable the existing Lewes WWTF to meet the Basis of Design Criteria to 2050:

- New headworks facilities (screening and grit)
- Demolish existing flow EQ tank and install a new 3.03 MG tank
- Expand Aeration Basins to provide 12-hours storage at average daily flow
- Install a fourth MBR cassette to increase the treatment capacity to 2.16 mgd
- Replace the existing UV reactors (2) like for like

Flood Mitigation components:

- Construction of a new Perimeter Flood Barrier and Vehicle Access Ramp to protect the facility from runoff from the surrounding areas. The light blue shading in the top right diagram is the conceptual barrier with the compacted fill. The slope in some areas is not possible with the compacted fill so a sheet pile wall will be used.
- Construction of a Stormwater Discharge Pump Station is shown by the dark blue shading.

Mr. Webb questioned how comfortable GHD is with 100-year flood elevation plan given recent storms in the area. Mr. Biagioli stated that in order to establish the elevation, a combination of things were looked

at, including the FEMA mapping (100-year flood) and the expected sea level rise, and coastal subsidence. This will give an idea of what the net flood elevation will be in the future. It is best practice to include freeboard, two feet for buildings and three feet for equipment. Mr. Webb questioned other areas where storms have hit north and South of Lewes and if they have gone above that 100-year flood plan. Mr. Biagioli stated that with storm surges, the levels can be above the flood elevation. Mr. Webb questioned if the numbers presented are the right numbers to look at. Mr. Biagioli stated that these are the numbers that can be realistically planned for and provide resilience for. If a 200-year storm occurs, this would be inadequate.

Mr. Nichols questioned if there is a major flood event, is it possible to result in a rising water table within the site with the perimeter suggested. Mr. Biagioli stated that GHD has a conceptual arrangement for the barrier that allows for a trench below the trapezoid to cut off the below ground flow path to stop a driving flow path into the site. It would be the same for the sheet pile wall.

Mr. Owen stated that the State of Delaware made a presentation 4-5 years ago and estimated sea level rise of 4.6 feet. The WWTF was fine but there would be two feet of water between the beach and access. Mr. Biagioli stated that accessibility was factored into the evaluation of the options. Mr. Sturdevant stated that the report allows for fuel for the generator to run 3-5 days. Mr. Nichols questioned the availability of a boat, high wheel truck, or other means to grant access. Access does not seem to be addressed. President Panetta stated that access is discussed in the MCA portion of the report as pros and cons. Once an option is chosen, then access would need to be addressed. Mr. Sturdevant stated that if it was forecasted that a hurricane was coming then, a plan would be created by the operations team to have food and sleeping arrangements for staff, with access by boats. Mr. Owen stated that the in the presentation from the state, the 4.6 feet of sea level rise was permanent, not just a few days because of a storm. Mr. Sturdevant stated that this report takes into effect until 2050. For facilities like the WWTF, the plan would not be for 100 years because the equipment would only last so long.

Mr. Lee stated that this number is the high curve of the state's prediction. Mr. Biagioli stated that the BPW can harden the facility, but the area around will still be an issue.

Concept Development, Option 2a:

- Collection network to remain the same, but the flows would be consolidated in a different way.
- Reconfiguration of Lift Station LS-4 and LS-8 piping to consolidate all Lewes wastewater collection network flows at LS-8. A new pump station at the LS-8 site would be constructed and transfer to a new site.
- LS-8 modifications to create new raw wastewater pump station.
- New Tertiary Treatment WWTF at high elevation, discharging via spray irrigation.
- Diagram is a schematic to show what a new facility would look like: A new headworks building, aeration basins, EQ basins, clarifiers, effluent filters, etc. The four large boxes are for spray irrigation discharge only.

Mr. Calaman stated that LS-8 is at the end of American Legion Road. LS-4 is on Gils Neck Road at Savannah Road.

Mayor Williams questioned if option 2a requires a land purchase. Mr. Biagioli confirmed that it does require a land purchase. Mayor Williams questioned what was used as a proxy for the real estate cost. Mr. Biagioli stated option 2a requires more land and would be farther outside of Lewes and the BPW provided figures. Mayor Williams questioned how many acres \$12.5 million would buy. Mr. Calaman stated that it depends on the area. The closer to the city limits, means less acreage. Mr. Biagioli stated that for option 2a, it is 250 acres for spray irrigation and treatment facility. 230 of the acres is for the land application. Mr. Medlarz stated that this is on the light side of acres needed, in his opinion. Mr. questioned the amount for 20 acres just for the treatment facility. Mr. Biagioli stated that \$1 million is estimated for 20 acres.

Concept Development, Option 2b:

- Refiguration of Lift Station LS-4 and LS-8 piping to consolidate all Lewes wastewater collection network flows at LS-8. A new pump station at the LS-8 site would be constructed and transfer to a new site.
- LS-8 modifications to create new raw wastewater pump station.
- New Tertiary Treatment WWTF at high elevation, discharging to existing (relocated outfall) at Lewes and Rehoboth Canal.

Mayor Williams questioned if option 2a increases the footprint in the flood plain. Mr. Biagioli confirmed and stated that a new pump station would be built to be resilient and higher.

Concept Development, Option 2c:

- Refiguration of Lift Station LS-4 and LS-8 piping to consolidate all Lewes wastewater collection network flows at LS-8. A new pump station at the LS-8 site would be constructed and transfer to a new site.
- LS-8 modifications to create new raw wastewater pump station.
- New Tertiary Treatment WWTF at high elevation, discharging via new ocean outfall.

The new pipe will go under an existing state park road and out the new ocean outfall. This option is consolidating the flows to a new higher elevation site.

Mr. Calaman clarified that land parcels do not have to be contiguous.

Mr. Biagioli stated that option 2c would have challenges to be permitted but is a feasible alternative.

Concept Development: Option 3a:

Option 3 involves a partnership with Sussex County.

Mr. Biagioli stated that the key to option 3a and 3b is the BPW/Sussex County scope boundary. Each party pays for their responsibilities. Mr. Lee clarified that this will be a county facility and will have shared use of the county and the BPW. President Panetta stated that option 2 would be BPW facilities with shared use. President Panetta stated that Option 3a would relocate the outfall to the other side of the canal and the permit would be transferred to the county.

- Lewes BPW responsibility:
 - Upgrade raw wastewater pump station (LS-8).
 - Raw wastewater force main from the pumping station to the scope boundary.
- Sussex County responsibility:
 - Raw wastewater force main from the scope boundary to the Wolfe Neck site.
 - New combined wastewater treatment facilities at the Wolfe Neck site.
 - Treated effluent pump station.
 - Treated effluent force main from Wolfe Neck to relocated outfall location.
 - Relocated outfall.

The red line in the diagram is the existing transfer pipe. This pipe will be replaced under option 3a and 3b. The county currently has other piping not in use, purple dashed line and could be used for a portion of the treated effluent force main.

Mr. Webb stated that the BPW has a permit and the BPW WWTF operates well below the standard. Mr. Webb questioned how the county's effluent compares. Mr. Biagioli stated that with the type of treatment that is being proposed, the flow can be increased but still be within the permit limits. President Panetta questioned the nutrient loading. Mr. Sturdevant stated that the plant currently has a waste load allocation for nitrogen, phosphorus, BOD, and TSS. It was decided that the flow is currently 1.5 million gallons a day (mgd) and in 2050 will need a capacity of 1.75mgd. The plan is to keep the waste load of 1.5 mgd and do better treatment for the city. This was for options 1, 2a, 2b, 2c. For option 3a, both the city and the county need 1.75mgd, so the facility has been designed for 3.5mgd. Mr. Sturdevant stated that under option 3a the effluent capability would meet or exceed the current treatment levels of the BPW facility, at this time. The volume would be double, but the nutrient load would be the same. Mr. Medlarz stated that the county is committed to meet the permit limits and TMDL (total maximum daily load) as they exist today. Mr. Lee stated that the volume will go up but will be below the permit. Mr. Webb is concerned with the quality of what will be coming out will not be as good as what will come out in the future. Mr. Medlarz stated that the level of treatment will stay the same. Mr. Biagioli stated that the concentration will stay the same.

Mr. Owen referred to option 1 of hardening the plant. With the projected 1.75mgd estimated in 2050, can the current plant handle this capacity. Mr. Biagioli stated that it does not and therefore is why a schedule of process upgrades is recommended.

Concept Development, Option 3b:

- Flows are consolidated in Lewes.
- BPW cost same for 3a and 3b. Lewes BPW responsibility:
 - Upgrade Raw wastewater pump station LS-8.
 - Raw wastewater force main from the pumping station to the scope boundary.
- Sussex County responsibility:
 - Raw wastewater force main from the scope boundary to the Wolfe Neck site.
 - New combined wastewater treatment facilities at the Wolfe Neck site, including a constructed wetland with vertical discharge.

President Panetta stated that on option three, regardless of the treatment, only discharges on the outgoing tide. This is different from BPW's current process. Mr. Medlarz stated that the county has committed to a more in-depth study of the canal with DNREC.

Concept Evaluation MCA:

- A multi-criteria analysis (MCA) was performed to evaluate the concept options based on a series of non-cost criteria.
- Criteria were assigned a weighting to reflect the relative criticality of each item
 - Longer term impacts, water quality issues and treatment facility resilience were generally assigned a higher weighting
 - Shorter term impacts were assigned a lower weighting.
 - A high score is good, more favorable concept.

Mayor Williams questioned if MCA scoring is based on the GHD's experience. Mr. Biagioli confirmed.

Mr. Biagioli stated that there are three sections of evaluations.

- Permitting & scheduling
 - Permitting Complexity
 - Delivery Schedule
 - Property & Easement Acquisition
 - Interagency & Regulatory Coordination
- Community & Environmental Impacts
 - Stakeholder Impacts- Construction Stage
 - Stakeholder Impacts- Long Term
 - Water Quality Impacts for Inland Bays
 - Overall Environmental Risk
 - Sustainability and Energy & Chemical Use
 - Land Use within city of Lewes
- Operation & maintenance
 - Impact of the WWTF Operations During Construction
 - Operational Complexity
 - Future Flexibility

Key findings of the MCA:

- Option 3a and Option 3b have the joint-highest MCA scores
- Option 3a scores higher for the Permitting & Schedule category,
 - Due to the relative uncertainty associated with the constructed wetland discharge arrangement under Option 3b
- Option 3b scores higher for the Community & Environmental Impacts
 - No requirement to pump treated effluent back to Lewes
- Option 1 and Option 2 concepts have very similar overall MCA scores
 - Option 1 scores lower for Community & Environmental Impacts due to the residual flood risk at the existing site

- Option 2 concepts score lower for Permitting & Schedule due to land acquisition and significant lengths of transfer force mains in public roads
- Option 2c scores particularly low in this category due to the permitting complexities associated with constructing a new ocean outfall
- Option 2c scores higher in the Community & Environmental Impacts category as treated effluent no longer discharged to the Canal

Although the overall scores are the similar, the buildup is different. Option 3a and 3b are the most favorable concepts.

Concept Evaluation (Cost)

Costs presented today and in the report are costs incurred by the BPW only. Costs incurred by the county are not included in the scope of the estimate. There are two components of cost: capital cost estimate and 2050 operation and maintenance (O&M) costs. Capital costs are the construction of new facilities. O&M costs includes cost of equipment replacement and energy and chemical use with inflation up to the 2050 planning horizon. The two components added are added to give the total for the project life cycle.

Project Life Cycle Totals:

Option 1- \$98,500,000

Option 2a- \$196,000,000

Option 2b- \$154,000,000

Option 3c- \$227,000,000

Option 3a-\$56,000,000

Option 3b- \$56,000,000

Mr. Biagioli stated that the project life cycle total is divided by the MCA score to produce the cost per MCA scoring point. Option 3 concepts are the lowest cost and highest MCA score and provide the best value for money for the BPW.

Mr. Biagioli stated that the report does not include recommendations but provides analysis.

Mr. Owen referred to option 1 and the capital cost of \$23 million. Mr. Owen questioned if the cost includes the upgrade for to the 1.75mgd and pump station upgrades. Mr. Biagioli confirmed that option one does include the upgrade for to the 1.75mgd and pump station upgrades. President Panetta stated that option 1 also includes an additional cassette and oxidation ditch.

Mr. Webb questioned if options 3a and 3b includes dismantling the plant. Mr. Biagioli stated option 2 and 3 concepts do include the decommission the current plant.

Mayor Williams questioned if the rates should go down because of the increased volume and sharing the costs or have the opposite affect because taking treatment farther away. Mr. Calaman stated that all the improvements have a cost associated with them and there will be an impact on the rates. For options 2b and 2c, if the county has influence for the capacity portion, this would affect the rates. Mayor Williams referred to an article where a city in Pennsylvania turned their plant over to private entity and now rate payers are payer twice the rate for the same service. Mayor Williams is concerned

with what the end user will pay. Mr. Calaman stated that there is money associated with every option. Should the plant be relocated? Should the BPW partner with the county? There is a capital portion with option 3 concepts but shift more of an annual cost and a share of the O &M.

Mr. Webb questioned how the county costs for individual customers compare to the BPW's. Mr. Medlarz stated that the county has an unmetered cost based on an EDU and is \$80 per quarter across all accounts. Mr. Calaman stated that if there is an extension of service then the individual or community carries the debt service payment plus the \$80 per quarter. If a new plant is created, the debt is carried by all 80,000 customers. Mr. Webb questioned how the costs change from year to year for the county. Mr. Medlarz stated that over the last 12 years, the uniform rate annualized less than 2% until last year. Mr. Medlarz stated that if both entities put the same gallons in, then both would pay half. Mr. Webb questioned what the process for rate increases for the county is. Mr. Medlarz stated that the process is like looking at current agreements with the city of Rehoboth and the city of Seaford. Strictly based on eligible cost operating the cost of the facility. County Council impact would be minuscule. Mr. Webb stated that this information will be helpful for the next public meeting. Mr. Medlarz stated that a real-life example, city of Rehoboth, was used to develop cost. The county has solution regardless of what the BPW does and is still very happy with the current agreement with the BPW. If nothing changes, the Wolfe Neck facility will be upgraded and reforested, and trail will be built. This is already agreed with the State. Mr. Owen stated that all options will require rate increases. At the least the interest rate would have to go back into the rates for as long as the debt service payment is held. President Panetta stated that the difference between option one and three under the O&M is threefold because of the cost of operating the BPW plant and the energy costs are higher. Mr. Webb would like to have some sort of gauge of how each option will affect consumer bills. Mr. Webb stated that the BPW is still paying for 2008 upgrades. Mr. Calaman stated that the 2008 debt will be paid in 2027.

Mr. Lee stated that there must be a plant of some sort and the BPW must do something. Mr. Owen agreed and stated that the plant capacity will have to increase with the growth happening in the area. Mr. Lee stated that the plant must be hardened the capacity is not the main issue.

Next Stages: Identify Preferred Option

- Sussex County will present the findings of the study to the County Council, December 6, 2022.
- BPW will arrange a special meeting to present the findings to the public, engage with the community stakeholders and provide an opportunity for stakeholders to comment on the findings before a preferred option is identified by the BPW Board.
- BPW will include the Long-Range Planning Study on the agenda for a further Board meeting and at that time the Board will make its final decision on a preferred option for further design development.
- The preferred option will advance for further development, including (but not limited to): field investigations, modeling, conceptual design and permitting design stages.

5. Open forum/general discussion on the selection of a date to hold a public workshop on the WWTP long range plan. INFORMATION/DISCUSSION/ACTION (Austin Calaman and Tom Panetta)

Tom Biagioli is available until December 15th and will not return until January 20th.

A notification will be sent out to all customers for the workshop and will be public participation.

The public workshop for the wastewater treatment plant long range plan will be held on December 14, 2022, at 6:00pm, at the Margaret Rollins Community Center.

The Board will receive/accept the GHD report at the next meeting.

ACTION: *Mr. Owen motioned to adjourn. Mr. Nichols seconded the motion, which passed unanimously.*

6. Executive Session

None.

7. Return to open session.

None.

8. Discussion and action on items from the executive session, if applicable.

President Panetta adjourned the meeting at 5:28pm.

9. Adjournment.

Respectfully Submitted
Sharon Sexton
Executive Assistant