Lewes BPW
Mitigation Committee Minutes
August 3, 2022, at 9:30am

The Wednesday, August 3, 2022, mitigation committee meeting was held at 9:30am in the BPW conference room.

1. **WELCOME AND CALL TO ORDER**

   Chairman Lee called the meeting to order at 9:32 am.

2. **ROLL CALL**

Committee Members	**Others**
D. Preston Lee, P.E., BPW	*Thomas Panetta, Board member*
Austin Calaman, General Manager BPW	*Robin Davis, BPW*
Bob Heffernan	*Sharon Sexton, BPW*
Sumner Crosby	*Aaron Mushrush, Cape Gazette*
Barbara Curtis	
Mark Prouty	
Candace Vessella, City Ex-Officio	

3. **REVISIONS OR DELETIONS TO THE AGENDA**

   None.

4. **APPROVAL OF MINUTES OF THE JULY 6, 2022, MEETING.**

   There are minor changes needed. Mr. Lee suggested clarifying the time frame used for storms, seal level rise, etc. Minutes reflect a 30-year term, but committee would like to use 2050. Ms. Sexton will make changes and resubmit to the committee at the next meeting.

   Mr. Crosby stated that since a number of different assets are being discussed, should different timeframes need to be considered with the individual asset useful life. Ms. Curtis stated that Mr. Calaman was compiling an asset spreadsheet with the useful life. Mr. Calaman stated that the assets can be looked at from a depreciation aspect. Mr. Lee stated that the BPW already does depreciation that every month the capital assets are depreciated according to the useful life. Mr. Panetta stated that if the BPW builds a new WWTP, it would certainly be designed for outside of 2050 and this is just benchmark.

   Mr. Crosby referred to curves and different scenarios at 2050, 2100, etc. With the kinds of assets that are at stake here (BPW) and risk tolerance, it may be better to consider one of the higher curves. Mr. Lee stated that it was agreed at the last meeting to use the high curve.

5. REVIEW OF BPW ASSETS TO EVALUATE POTENTIAL DAMAGE DUE TO SEA LEVEL RISE, INCREASE IN STORMS, ETC.

Mr. Calaman has drafted a list of assets. The committee reviewed the asset list. Cleanouts and outfall piping were added to the wastewater utility assets. Mr. Lee stated that outside faucets were included because they are low and have potential for backflow. Mr. Crosby questioned if there are any requirements on the outside faucets. Mr. Lee stated that there are requirements on irrigation. Mr. Calaman stated that requirements on outside faucets are coming in the next month or two. Mr. Panetta stated that the IBC requires that there are vacuum breakers. Mr. Davis stated that all new outside faucets come with an anti-siphon vacuum type device on them. Ms. Vessella questioned outside faucets and backflow. Mr. Lee stated that even though the outside faucets are not part of the BPW issues, they are typically low. If there were to be a flood to the level of the faucet, there could be suction back into the house. Backflow preventers are being required and is retroactive. Ms. Vessella questioned if irrigation systems are looked at in the same regard. Mr. Lee confirmed that irrigation is and should be added to the list. Mr. Panetta questioned basements and gave an example of the laundry faucets being two feet below grade. Mr. Davis pointed out that older homes were grandfathered in, but the newer ones must follow ordinances. Mr. Prouty stated that in case, it would be negative pressure in the water system. This assumes the water system stays intact during a storm event.

Mr. Lee questioned if any other assets should be added to the list. Mr. Panetta stated that underground wiring should be added to the electrical assets under power poles. Mr. Crosby stated that someone was asking why everything was not being undergrounded and he assumes there is a standard response. Mr. Panetta stated that it mainly due to cost and the floodplains. Transformers would need to be elevated. Mr. Lee questioned if there is any transformer elevation requirement. Mr. Calaman shared an example of what is needed for a pump station in Bishopville that is in the floodplain. On California Avenue, a BPW wet well sits in the middle of the road and because of the grade of the new construction, water flow always covers that pump station lid. This is a watertight seal. If a rehab is needed, the issue would not be the wet well, but the control panel must be built to the floodplain and would be an eyesore. Mr. Panetta stated that the alternative is to build a watertight structure with a watertight door. Ms. Vessella questioned the maintenance/troubleshooting of underground electrical difficulty. Mr. Calaman stated that it is much easier to fix overhead versus underground. Mr. Panetta stated that the tradeoff is there are less incidents with underground electric. Mr. Calaman stated that Rehoboth just rehabbed one or two blocks to underground areas with Comcast, Verizon, etc. for 26 million dollars. If this is done part of new construction, the cost would be completely different. Mr. Panetta stated that more and more in the industry in susceptible areas underground is being done. Mr. Calaman stated that another issue is supply chain issues. DEC has stopped all implementation of new services and is adding customers to a list. Pad mount transformers are multiple times harder to get than pole mount transformers. Mr. Crosby questioned the policy for all new developments, particularly major subdivisions, and if they are all required to be underground. Mr. Calaman stated that the BPW puts the burden on the developer to procure and build to the BPW spec. Everything is turned over to the BPW at the end of construction. If supply chain is an issue, it is the developer's issue. Mr. Panetta stated that all new developments

have to have underground. Mr. Crosby questions if at some point the BPW will be approached to go completely aerial, given Mr. Calaman's previous comments. Mr. Calaman stated that it has not come up to build an entire development out as overhead. There is a discussion to put one temporary overhead at Lewes Waterfront Preserve to put models online. Mr. Calaman stated that the supply chain could be disrupted by one natural disaster like the Texas storm and tornados last year. Transformers were unavailable because the federal government sent all equipment to the disaster areas. Delaware Electric Co-Op is trying to change the legislation to reduce the steel and increase domestic production. Mr. Panetta stated that it is cheaper, quicker, and domestic production is increased, but the transformers are less efficient.

Mr. Lee questioned the next step is to pinpoint the primary issues in Lewes now that the list of what to mitigate is compiled. Mr. Davis provided maps from the vulnerability study that GMB did in 2016. Mr. Lee questioned what elevation the committee would have to design to with the freeboard requirements. Mr. Davis stated that the city code has 18-inch freeboard right now. The resiliency committee gave a recommendation of increasing the height but was not one of the two topics discussed. Mr. Lee questioned what the elevation would be if a two-foot rise is assumed by 2050. Mr. Crosby stated that higher water is 2.63 feet above NAVD 88. Mr. Crosby reminded that it needs to be kept in mind is the frequency of reaching this elevation and that those numbers are predicted to go way up. Mr. Lee stated that this was discussed in the West Cedar study. Mr. Panetta stated that it is expected to see this flooding 100 days out of the year. Mr. Lee questioned at what point do residents still live on that side of the beach. This is a city concern. Mr. Heffernan stated that hopefully the city will do the West Cedar Street Floodgates and will help flooding for 10-15 years. Mr. Crosby stated that the WWTP has recent elevation certificates. Mr. Calaman stated that the BPW has the certificates for some elements, not all. There are elevation certificates for the drying beds, flood surge for the headworks building, and data points for the oxidation ditch. Mr. Crosby stated that the flood maps could be overlayed with a series of points to come up with a set of scenarios. Mr. Lee questioned what the design would have to be and is it realistic. Mr. Panetta stated that the resiliency committee recommendations given to city council does not have anything to do with the BPW mitigation concerns. Ms. Vessella stated that one the two recommendations that were proffered for consideration is that a disclosure should be given to property buyers of the flooding that happens in roadways. This is has not been written yet. Mr. Panetta stated that the more detail put into the disclosure becomes onerous to update versus going to substantial source, website. The questioned becomes how many people will visit the website. Ms. Vessella stated that the other concepts that were not approved should be looked at and not just dismissed.

Mr. Crosby questioned if there was a way to grade the BPW assets. For example, manhole covers could be marked when they are wet, when they should not be, or when there is intrusion of water into the water pumps. A grading system could help to determine the assets that can afford to withstand flooding and the others that may need rebuilding. Mr. Lee stated that the water system is a pressure system and can be watertight. A sewer system could be built, and pressure tested just like a water system. Mr. Crosby stated that looking at monthly reports and precipitation it appears that there is an intrusion somewhere. Mr. Lee agreed and stated that the BPW still has some clay sewer pipe. As new pipe is put in, the clay is replaced with PVC. Theoretically, a

tight sewer system could be built. Mr. Prouty stated that it would need to be ventilated. Mr. Lee stated that the all houses have vent pipes which vent the system. Mr. Panetta stated that the BPW is currently using the watertight manhole covers and using “salad bowl” inserts. Mr. Crosby questioned if this is irrespective of which way the water comes into the manhole. Mr. Lee stated it is just surface water running into it. Mr. Crosby is concerned with the groundwater. Mr. Calaman stated that it is in the budget to fix or line manholes. When doing a project, the BPW cameras the sewer lines. Lining has been successful. The BPW can currently look pump runtime because not all pump stations have flow meters. Mr. Crosby stated that most of these analyses only look at surface water overlaying flooding relating to sea level rise and do not account for the groundwater issue. Mr. Lee stated that with new pipe and new construction the sewers are pretty much watertight. Mr. Prouty stated that the effort being discussed goes to the property line and the laterals take in water. The remedies must go beyond the limit of the utilities and will be extensive. Mr. Prouty pointed out that with high the water, the flooded water will be saline. If the saline water gets into the sewer system, it heavily impacts the treatment system. The groundwater may not be as saline, but flow will be the problem. Mr. Panetta stated that the interface changes with sea level rise and the graphic does not take into account a “bathtub” model of seal level rise. Precipitation will exacerbate the model. Mr. Lee stated that the BPW has a tight system and upgrades to replace older infrastructure is happening all the time with construction.

Mr. Crosby questioned how everything inside a property boundary is handled. Mr. Calaman stated that the liner is installed all the way to the clean out. Mr. Prouty stated that it is not impossible to take the sock into people’s property line. Mr. Lee stated that this is something that could be put into the plumbing code or building code when renovating. Mr. Prouty stated that this would slowly erode the problem. Mr. Panetta questioned where the plug is put for the pressure test for the sewer system in accordance with current code. Mr. Davis stated that sometimes it is outside the house or under the house where the laterals drop down. It does not include from the house to the cleanout. This disconnect is because the code references everything inside the house. There is a dead zone between the house and the clean out. Mr. Prouty questioned if with new construction, does the BPW watches the lateral go in. Mr. Panetta stated that it is an open trench inspection. Mr. Prouty stated that a pressure test could be added at this point without being a hassle. Mr. Calaman stated that almost in cases there is a clean out. If there is a project where the clean out does not exist, the BPW coordinates with the property owner where to install it in the right-of-way.

Mr. Lee questioned what elevation the committee is mitigating to by building code. This is assuming two-foot rise between now and 2050. How would this impact city’s code and where does the BPW need to mitigate to. Mr. Davis stated that FEMA references the first-floor level. When talking about transformers, pump stations, etc. there is not a first-floor level and freeboard may not come in to play. Mr. Davis suggested using mean high water and three feet of sea level rise as an example. Mr. Lee feels that freeboard should be used in some places. Mr. Davis stated that freeboard references more so the first-floor level of a home. Mr. Panetta questioned critical infrastructure and is unsured if it was referenced in the flood code or by FEMA. Critical Infrastructure must be designed to a higher standard and the BPW could be more

stringent. FEMA is only concerned with structure dwellings and not infrastructure. Mr. Lee stated that since mitigating to 2050, the installation of new transformers should be higher. Mr. Calaman stated that process should also be considered. At what point during sea level rise and a storm event should the water, sewer system, etc. be shut off. Mr. Crosby stated that there could be a localized flood-plane blackout while the waters are high and may be a short-term solution. Mr. Calaman stated that the BPW has that capability.

Mr. Heffernan questioned what the standard is. Where is the NAVD 88 plus six. Mr. Crosby stated that the NAVD 88 is zero for just about every surveyor. Mr. Heffernan confirmed that the level needs to be at the NAVD88 level plus something that approximates the chance of a big storm. Mr. Heffernan reiterated that FEMA and the building code deals with freeboard, but that does not have to be the BPW number.

NAVD88 + high water + sea level rise + insurance factor

Mr. Heffernan stated that this calculation could be used against BPW assets to see if they fall below the desired height. Mr. Crosby stated that a NOAA updates high tide and flooding predictions. These reports have all the necessary data for the committee to figure out that calculation. Mr. Crosby stated that each of the assets listed has a different vulnerability and risk tolerance for getting wet. If the elevations of all the assets are known, then some estimates could be calculated and weak points in the system could be identified. This will help to prioritize the assets. Mr. Lee stated that the simplest is the water system because it is pressurized. The wastewater is troublesome as well as portions of the electric system. Mr. Lee stated that the wastewater should be concentrated on.

Mr. Prouty stated that if it was known that a new wastewater treatment plant was going to be built, the question would be what the high water is and build 18 inches higher, according to 10 state standards. Mr. Heffernan stated that the top curve should be used not the median. Mr. Lee stated that the committee agreed to use the higher curve at last meeting. Mr. Lee stated that the top curve was 23 inches. Mr. Crosby questioned the publication date because the numbers change. Mr. Panetta stated that the water system has its own set of risks with mitigation, such as wind. Mr. Lee stated that by that time the BPW will have two elevated tanks. Mr. Prouty questioned if there will be controls on the tanks. Mr. Lee confirmed that there would be controls. The treatment facility and the wells are far out of town, and Mr. Lee is not as concerned with those. Mr. Crosby stated that he is starting to look more at temperature information because he believes it is relative to electrical demand. Climate change plays a role in precipitation. Is there a projection on wind and how the intensity changes through time. Mr. Panetta stated that wind is more related to the frequency of nor'easters and hurricanes and speeds that they are moving at versus historical trends. Rain and wind events are becoming longer and more unpredictable and more frequent. NOAA has been tracking storm information.

Mr. Lee questions if an estimate can be calculated for the high water design that needs to be addressed.

Mr. Panetta suggested:

NAVD88 + 100-year storm event + 2 feet

Mr. Heffernan questioned if freeboard should be added as well. Ms. Curtis agrees.

NAVD88 + 100-year storm event + 2 feet + freeboard = about 12.5 feet

Mr. Panetta stated whether freeboard is added or not these are engineered structures as opposed to home buildings. Mr. Crosby stated that since the highest curve was chosen from the beginning, not has much latitude is needed like the freeboard. Mr. Panetta stated that the insurance requires a minimum of 12" of freeboard. Mr. Lee questioned if that applies to utilities. Mr. Panetta is unsure and the BPW will have to ask the insurance company. Mr. Panetta stated that his last conversation with FEMA, a few months ago, was to not expect and changes to the flood maps in next five years. Local should accept the 500-year plan or increase the freeboard, or fudge factor and going on their own for now.

Mr. Crosby referenced Executive Order 41, which directed at least state agencies that managed and build critical infrastructure. Other agencies were a part of this as well, but Mr. Crosby is unsure if it extends to municipalities. This looked at the flood plain and added three feet of sea level rise on top. **Mr. Crosby will send the Executive Order 41 to the committee**.

Mr. Panetta stated that the BPW would have GMB or GHD give comments considering there is a safety factor when engineering. The insurance companies would help dictate this as well. Mr. Prouty questioned if the state should be asked if they would make a requirement of 18 inches. Mr. Panetta questioned if the 10 State Standards specifically states 18 inches of freeboard. Mr. Prouty believes that it is industry standard. Mr. Panetta stated that the state does not actually dictate freeboard from a building code perspective. Mr. Davis stated that FEMA changed the method flood insurance was determined. It does not just use maps but individual properties, proximity to storms, etc.

Mr. Crosby questioned what the floodplain designation for the treatment plant is. Mr. Calaman and Mr. Davis believe it is six and seven. Mr. Panetta stated that the there is a portion of the land that is a six and the plant is a seven.

Mr. Crosby calculates the plant at:

NAVD88 + 7 feet + 1% storm for the 100-year storm + 24 inches (sea level rise) + freeboard= 10-10.5 feet

Mr. Lee stated that rounded to 11 feet. Mr. Crosby questioned how that compares to the elevation certificate that was just done. Mr. Lee stated that there is meeting with the GHD engineers working the long range plan for the WWTP tomorrow. The engineers are looking at the long-term capability of keeping this plant at it's present location as one of the options. Mr. Crosby referred to the drying beds and concern of flooding. Mr. Calaman agrees that flooding should not be in the biological process. The drying beds are anywhere from elevation 5.8" to 6.5". Mr. Panetta stated that there are mitigation plans, such as emptying the drying beds before a storm. Mr. Prouty questioned if there are other ways to isolate drainage. Mr. Calaman stated that it could be plugged but it could also pump it back to the clarifier. Mr. Calaman stated that a belt filter press that can do six drying beds worth of material. If there is a chance of flooding, the plant would not use the drying beds. Mr. Lee stated

going forward the BPW could eliminate the drying beds. Mr. Crosby questioned if the press was expensive to run and maintain as opposed to the drying beds. Mr. Calaman responded no but should stay in place for redundancy. If the BPW relies on a mechanical process, what happens when that process fails. Mr. Heffernan questioned what kind of capital investment this would be. Mr. Calaman stated that a belt filter press would be $250,000 to $400,000 and is in the budget. Mr. Crosby questioned if contractors are planning for nine and half feet elevation. Mr. Calaman stated that the contractors are planning for the future, if the plant stays where it is. Mr. Crosby questioned the elevation of American Legion Road. Mr. Calaman stated that the lowest point of the road is two feet and used the DE Flood Plan tool. Mr. Prouty stated that he noticed at the WWTP that the sludge tank, has blowers, and electric where the digesters are, are low. Mr. Crosby questioned the elevation. Mr. Calaman stated it is whatever the grade is, as they are not lifted at all. Mr. Prouty stated that the sludge digester building is at risk. Mr. Lee stated that this is being studied by GHD now.

Mr. Crosby stated that with GHD looking at the WWTP, that leaves all the other BPW assets. Mr. Crosby questioned if the WWTP is the most important and figure out the other assets later. Mr. Lee stated that figuring out what elevation to design to is the first step and then look at all other assets. Mr. Lee stated that it sounds like an elevation of 11 feet is the number the committee is heading towards. Mr. Crosby is interested in hearing what GHD has to say, but 11 feet seems like a reasonable number. Mr. Panetta stated that GHD is only looking at the WWTP. Mr. Lee stated that GHD should be looking at what the conditions are going to be in 2050. Mr. Heffernan stated that once the number is established, the assets can be prioritized based on the current elevation above or below the design number. Mr. Crosby questioned if the BPW routinely collects the elevations of assets as they are put in. Mr. Calaman stated that the BPW collected this data for the asset management program, but once the number is determined, the BPW can go out and get the elevations with a Trimble unit.

Ms. Curtis stated that she is concerned that 11 feet is not enough and does not allow for freeboard at all. Mr. Crosby stated that the rough calculation that was given was

NAV88 + 7 feet (WWTP) + 2 feet sea level rise + 18” freeboard = 10.5 feet

Mr. Davis stated that if FEMA floodmap AE numbers are used, then some could be 5,6,8 feet etc. depending on the location of the zone. Mr. Crosby based the calculation on the WWTP. Ms. Curtis questioned the AE numbers. Mr. Crosby stated that in the FEMA flood studies the general blue color over the satellite map is the 1% storm, also referred to as the 100-year floodplain. AE is one of the several classifications that is based on where the flooding is occurring. AE is considered still water flooding. FEMA used historical analysis to develop a probability that does not include sea level rise consideration. There are considerations for the topography, wind directions, etc. Ms. Curtis questioned what do the numbers mean? Mr. Crosby stated that the numbers are the elevations, like a buffer above the NAVD88.

Mr. Crosby stated that all the data for Lewes is taken from a water level gauge on one side of the beach at the ferry terminal. The other side is a different story and there are no gauges to

collect data. It may be beneficial to have gauges throughout town in critical areas. Mr. Panetta stated that the back bay flooding tends to me more severe for Lewes because of the duration, frequency of storms, and the direction of the storm. Historically Lewes has been more affected by nor'easters. Mr. Crosby stated that this is not something FEMA looks at when developing the flood plain. Mr. Panetta stated that there is a tremendous amount of uncertainty.

Mr. Lee questioned if the committee should use 10.5 feet or 11 feet for design, for now. Mr. Lee is comfortable with 11 feet but would like to see what GHD has to say. Mr. Panetta stated that he is supportive of being conservative, but it must also be livable. Mr. Crosby agrees that it not that simple just to raise elevations. For example, with raising roads, it confounds the stormwater system. Ms. Vessella stated that raising roads could create unintended consequences of flooding. It may help egress but not other property owners. Mr. Crosby cautioned that beach sand allows water to move through it well.

Mr. Lee questions where the committee goes from here. Livability may be answered on its own if in 2050 a major storm event occurs. Mr. Crosby stated that many property owners buy homes and only visit in the summer. Ms. Vessella agreed and stated that those owners have not experienced winter storms and how it affects Lewes. What is the owner's tolerance of high tides and flooding up to the house and how often are they willing to muck out the basement. Depending on the elevations, nuisance flooding may happen five or six days a year in Lewes. By 2050, there will be 65 to 90 days a year with nuisance flooding. Mr. Crosby recommends after the WWTP is mitigated, the other BPW assets should be considered. The nuisance flooding increase would also affect the storm water system. Mr. Calaman stated that the BPW and the city are doing a study of all of Cedar Street to assess the replacement of water, sewer, and possibly stormwater. There is also coordination with DelDot. Mr. Calaman referred to the new Pilottown Road project. Mr. Panetta stated that this project would pick up from Lewes Dairy to the bridge to reduce the low spot. Mr. Crosby reiterated the question what life will look like in 2050, how long can businesses make it there. Mr. Panetta stated the goal is not to evacuate or retreat now, but to have plan for a future storm event and be able recoup or recover or maybe not at all. Mr. Panetta is hopeful that the mayor and city council will take up with the seal level rise committee. Ms. Vessella stated that she sees that a challenge with the city council is that expertise is required and collaboration with the BPW and some outside experts. Ms. Vessella stated that there is nothing that speaks to rebuilding of homes in the event of a disaster in the city code.

Mr. Lee stated that the committee now has an idea of an elevation to mitigate to. The committee is not designing but coming up with concepts and will have to get the engineers involved. Mr. Crosby stated that the committee has mostly discussed sea level rise, but other changing conditions affected by climate change need to be considered. Mr. Crosby referred to the Delaware Climate Action plan that discusses temperatures and storm durations. Average temperatures will increase by 2-4 degrees and will exercise some burden on the BPW. Mr. Panetta stated that those temperature increases are just averages and could be much larger. Mr. Crosby stated this speaks to the ability to handle the electrical demand. Ms. Curtis stated the increased temperatures could cause sagging wires. Mr. Calaman stated that Lewes has one

transmission line coming in from Delmarva Power, but Lewes is unique in the aspect of being on the coast. Mr. Calaman showed examples of transformers from Fenwick Island and Dewey Beach. At Dewey Beach, the transformers are at about two feet. Mr. Crosby stated that the tides fluctuate differently there.

Mr. Lee stated that there are many factors that can be considered not related to climate change, such as EVs, electric ferries, etc. Mr. Crosby referenced the windmill. Mr. Calaman stated that the windmill is not currently operational but does not hinder the BPW. It is a benefit when it does run.

Mr. Calaman stated that if Delmarva Power goes down, Lewes is black. There have been discussions about bringing in a second line, but it is very costly and there is no capacity in the grid outside of Lewes. Mr. Heffernan stated that if the BPW does not bring in a second source of supply, the issue of mitigation has not been addressed at all. Mr. Calaman stated that the BPW used to have two generation units, two diesel powered units. This is where pros and cons come in. Bringing in another transmission line also has the issue of gaining right-a-way. Mr. Crosby stated that this is no small feat. Mr. Panetta referred to the battery storage project and that with current market conditions it was not cost effective. The batteries were meant for peak shredding not long duration. Mr. Panetta referred to islanding, where the utilities can be separated from the grid so that areas can be run independently. The community could be segregated into different utilities. Mr. Calaman stated that Lewes has four circuits and can island one circuit with battery but there will come a point there will not be capacity of the battery because there is no generation. Mr. Panetta stated that diesels are less reliable than power. Ms. Vessella stated that the library has a diesel back up system but does not power the entire building but powers critical segments. Mr. Calaman stated that there is a solar system as well. Mr. Lee stated he is unsure that the committee should get into this because of the complication. Mr. Calaman stated that the committee could provide a recommendation to find a redundant feed, backup generation, etc. Mr. Calaman stated that with the solar applications, he sees many people switching to Lp gas and electric or all electric. Mr. Crosby stated the environmental field is seeing a lot of cities banning natural gas. Mr. Lee stated that this is such a big issue the committee could spend a lot of time on the options, and most is unrelated to BPW needs. Mr. Panetta recommends focusing on water and wastewater as electrical is changing rapidly, specifically with legislation. Mr. Crosby agrees and that the BPW needs to build more resilience and preparing for some duration of no power coming in from Delmarva Power. Mr. Lee and Mr. Panetta agree that focusing on water and wastewater should be the primarily and electrical farther down the road.

Mr. Lee questioned what Mr. Calaman is seeking from the committee. Mr. Calaman stated that a significant amount of money has been allotted in the capital budget to start upgrading pump stations, etc. The question is what other work will be done as the pump stations are upgraded, such as moving wet wells out of the road and control panels below or above ground. Mr. Lee added that if the elevation recommendation of 11 feet, when should the BPW start implementation. If a control panel is placed 11 feet in the air now, homeowners will not be happy. Mr. Panetta stated that the alternative would to be to put the control panels in

watertight enclosures. Ms. Vessella questioned if the technology available to create a watertight enclosure for this type of equipment. Mr. Panetta explained that there is a way to make it watertight. Mr. Calaman stated that the BPW does not have to be the first to design something like this. The county, Delmarva Power, and Delaware Co-op have built in the flood zone. Mr. Calaman showed a WWTP in Charleston, SC that is surrounded by water. The BPW can utilize others that have gone through this process.

Mr. Prouty questioned if the BPW would move to submersible pumps in the pump stations. Mr. Calaman stated that if pump station three is rebuilt, the BPW plans to switch to submersibles. Mr. Lee stated that in the future all pump stations will be submersible pumps and flow meters. Mr. Panetta and Mr. Calaman agree. Mr. Calaman stated that a bypass will be put in every pump station in case of a failure. Mr. Prouty questioned if there are screens on the larger pumps. Mr. Calaman stated that there used to be a screen at pump station four but was decommissioned and is under discussion of which direction to go at the larger pump stations. Mr. Prouty stated that screens are harder to waterproof. Mr. Lee added that the screens are harder to maintain as well.

Mr. Heffernan stated that if the committee recommends 11 feet elevation, the BPW Board agrees and notifies city council, it becomes fact at some point. Mr. Lee questioned when the right time is to start building to that elevation. Mr. Heffernan stated that planning to build to that elevation should be done in the near term. Mr. Crosby stated that each of the assets has a life expectancy. Mr. Lee stated that if pump station three is rebuilt, it could last 30 years easily. Mr. Crosby questioned if it is worth putting a lifespan on each of the assets. MR. Calaman stated that he has this information. **Mr. Calaman will send the asset management report to the committee members.**

Mr. Crosby stated another method would be to start with the assets at the lowest elevations and working up. Mr. Heffernan stated that a matrix will be needed because there will be machinery that needs improvement. Mr. Crosby is thinking in rising water terms. Mr. Lee was thinking in simpler terms like installing customer's meters higher. Mr. Crosby questioned if meters are subject to first floor elevation. Mr. Davis stated the issue will be working on them if the box is 10 feet in the air. Mr. Panetta stated that first floor is interpreted to mean auxiliary equipment, like heating and air and the electrical system must be above that. Mr. Panetta assumed that the meter must be as well. Mr. Davis stated that FEMA is not concerned with the outside of a home.

Mr. Prouty questioned impacts on the water treatment plant with a possibility if water is up five feet. Mr. Calaman stated with the reallocation permit (just renewed) the BPW must have a saltwater intrusion plan. This includes putting in monitoring wells. The BPW is discussing putting in a monitoring well to monitor the Ebenezer Branch. When talking to DNREC about putting a well on New Road, the biggest concern was Canary Creek and the influence that Ebenezer and Canary Creek played. Mr. Lee stated the BPW is concerned with other things getting into the groundwater with all the development going on. Mr. Crosby stated that the current wells are perfectly placed and will be hard to replicate. Mr. Panetta stated that the BPW will end up with three monitoring wells, one on Ebenezer Branch and two on the Mitchell Farm development.

Mr. Heffernan questioned what a water treatment plant would cost. Mr. Lee stated it is expensive and will be difficult to find a location to put it. Mr. Calaman stated that there is an interconnection with Tidewater. Mr. Prouty stated that it may be worthwhile to have a study done. Mr. Panetta stated that the BPW has authorized DNREC to do a wellhead protection study. Mr. Prouty questioned if the study includes the possibility of saltwater intrusion. Mr. Calaman stated that he is unsure if saltwater intrusion is under consideration in the study. **Mr. Prouty recommends pushing to get some additional information. Mr. Calaman is waiting on a response.**

Mr. Lee recommends at next meeting to look at each asset. Mr. Calaman and Mr. Davis will look at the pump stations that are more vulnerable and prioritize those stations. Mr. Lee stated that most of those will be on the beach side. Mr. Crosby stated that it will be based on elevation and work from the bottom up. Mr. Lee stated that it may be a more watertight issue. Mr. Panetta stated that the committee should determine the risk of the elevation and then look to the engineer for an elevation or watertight enclosure is the solution that is appropriate for the area. Mr. Crosby stated that sea level is very dynamic and becomes the matter of thresholds.

Mr. Panetta stated that in addition to the asset management, he was hoping to the committee would come up with a disaster preparedness plan. When should electric be shut off. When should areas be isolated. What should be done in advance of a storm event.

Mr. Crosby spoke to the nourishment of the dune. Ms. Vessella stated that there is state and federal regulations that go well beyond the city. Mr. Crosby hopes that all parties will work together for the protection of the dune.

Mr. Lee stated that at the next meeting GHDs information will be reviewed. Mr. Lee would like to discuss a disaster response plan at the next meeting as well. Mr. Heffernan stated assuming Lewes sees a 11-foot flood, what would be left and how would the utilities recover.

6. **SCHEDULE DATE FOR NEXT MEETING.**

Next meeting was scheduled for Wednesday August 31, 2022, at 1:00 pm.

7. **ADJOUNMENT.**

Chairman Lee adjourned the meeting at 12:11 pm.

Respectfully Submitted
Sharon Sexton
Executive Assistant