MILFORD CITY COUNCIL
MINUTES OF MEETING
August 5, 2013

A Meeting of the Public Works Committee of Milford City Council was held in the Joseph Ronnie Rogers Council Chambers of Milford City Hall, 201 South Walnut Street, Milford, Delaware on Monday, August 5, 2013.

PRESIDING: Chairman Owen Brooks, Jr.

IN ATTENDANCE: Committee Members-Councilman Bryan Shupe

Council Members S. Allen Pikus and Douglas Morrow, Sr.

ALSO: City Manager Richard Carmean and City Clerk/Recorder Terri Hudson

Public Works Director Brad Dennehy and DBF Engineer Erik Retzlaff were also present.

Chairman Owen Brooks called the Committee Meeting to order at 7:06 p.m. He thanked those that were present adding that one of the reasons he had requested the meeting was to update committee members the status of a number of ongoing projects. He noted that Mr. Shupe is a new member of the committee and Mr. Gleysteen has only been on the committee for the past year.

Mr. Brooks then turned the meeting over to City Manager Richard Carmean who announced that Committee Member Dirk Gleysteen was absent.

Substation/138kV Transmission Line

Mr. Carmean said he asked Electric Superintendent Rick Carmean to bring council up to date on the 138kV transmission line coming down Route 113 to the new substation on the Milford-Harrington Highway.

Electric Superintendent Rick Carmean referenced a drawing showing the site of the new transfer station site south of Route 113. He reported that Delmarva Power placed a ring bus with three breakers at the site. They have a 138kV line that runs to Harrington and one to Milford so if they have a problem on either side, they can feed it from either direction. Milford taps off and will place a 138 breaker there and a small 100 x 100 substation. The line will come out to the highway, to the CVS site, go around the back and then west on the Milford-Harrington Highway and into the Fordmill substation property.

The superintendent reported the transmission line project went to bid last week. They will be opened on September 5th.

He said there are fifty-five 115-foot steel poles and 55 wood poles on the job. There will be a few steel-steel poles but most will be a steel-wood pole line. The 138 will be on top with the Delmarva line ten to twelve feet below. The city circuit will be ten more feet below and underneath will be the cable television and Verizon lines.

He reported that two weeks ago, Sumter Utilities out of South Carolina was awarded the bid for the 138-24.94/14.4 kV Substation and 138 kV Tap Station Installation.

The electric superintendent said if everything goes as planned, it should be completed sometime in October.

The workers from South Carolina are working eight days straight with six days off. The foreman is staying here for a month and all the concrete work will be done while he is here. There has been almost 100 yards of concrete poured and another 50 to 175 yards is needed at the tap station.

The city manager said there has been frustration over some of the easement and right of way problems and asked the superintendent to elaborate. Rick Carmean advised that one of the free standing poles that is frustrating right now is at Walgreens by the railroad track. It has 35 different angles and the 138 will pull it east; it has to be guided west which would be in the highway so that cannot be done. Therefore, a freestanding pole will be installed with no guides. The first portion of the foundation involved eight feet round and thirty-five feet deep. There is eight feet from the railroad right of way to the curb. When the job was inspected, it was determined it may have to buried more than 35 feet deep.

Rick Carmean explained the other three poles going around CVS will be eight feet by thirty feet.

Mr. Pikus asked if we have a right-of-way agreement; Mr. Carmean said he has the agreement which is recorded. He said it was obtained when the pipe plan was done on the entire block. Rick Carmean said they were always going to bring two circuits around that property so the right-of-way was already in place. They have only added three self-supporting poles. One will be on the highway in front of the plaza, one at the back corner of CVS adjacent to Wright's Auto and the last one will be over by Walgreens.

The city manager recalled this project was approved in 2008 and was part of the referendum approved that year. The entire project will be $8.6 million.

The city manager asked the electric superintendent to explain why this work is needed. Rick Carmean advised the city is peaking anywhere from 48 to 50 in the summer. Right now there are 4 circuits which only provides 4 MG of capacity. There are two circuits on one pole and if a pole goes down and knocks out both circuits, half the town will be out of electricity for four to six hours.

The new substation will basically split the town along the river. There will be an air-break switch by Pizza Palace and another at Jefferson Avenue by the hospital. Two circuits will come in from the old station and a circuit coming into the new station by the hospital. That will provide three circuits and more flexibility to ensure electricity is uninterrupted. There is a switch at the Fisher Avenue pumping station and another will be placed at the drawbridge at the river for the other circuits.

The superintendent said the old station is on the 240 line that Delmarva has which drops down to a step down transformer off the 240 line to 138 and feeds that station. The new station is on the 138 line that runs from Harrington to Milford. If the 240 line is lost, the 138 line can be used.

The new station will provide more options when a line goes down.

Mr. Carmean recalled obtaining permission from council to rent Joe Warnell's warehouse and asked the superintendent to explain the reason for that request.

Rick Carmean said this is the biggest project he has ever done. During the early planning stages, he was receiving e-mails about modular trailers. Before his consultant ordered all the material, he asked them to send a list. The list contained about 200 line items of materials. He explained that when the city moved out of the old warehouse, Downes Consultants (previous consultant) used to order material. One item was called a split bug. They found 985 of them in a box in the loft. There is a great deal of parts that have never been used. As a result, he has our current consultant send a material list and the city warehouse manager now orders the items. With all this material, he needs a place where he can go through it. A u-haul was rented to transport the materials associated with the substation from public works to the Warnell warehouse. On Thursday, another tractor trailer arrived that again filled up the warehouse. He expects another seven tractor trailer loads of materials.

The superintendent emphasized he is only renting the warehouse space for a month or two at the most. Once they go through the materials and sort them, he will give the contractor an option to rent the warehouse or rent trailers but that will be at his cost.

The city manager advised that the plan was to rent warehouse space in the Masten Park, but the go-cart business came along and took that building so they went to the Warnell warehouse.

Water System Improvements/Drinking Water State Revolving Fund Loan

City Manager Carmean said the next few items need to be considered and a committee recommendation made to council.

He turned the meeting over to P.E. Erik Retzlaff of Davis, Bowen and Friedel who had prepared a PowerPoint for tonight's presentation.

Mr. Retzlaff reported they had received favorable funding offers from the Drinking Water State Revolving Fund (DWSRF) program when they did the Washington Street Water Plant. They knew the money was going to be absorbed under one large body, which is now called the Water Infrastructure Committee. It is a combination of the DHSS and DNREC members. The actual group that will run the program is DNREC's Financial Assistance Branch. DBT applied, on behalf of the city, and were unsuccessful in receiving any favorable terms. Currently, their rates are approximately 3.875%.

He said there is a significant amount of needs in the water system though it is not a dire situation. However, there are a few items that could become very costly over the next few years if not addressed.

He then applied for $3.5 million and the SRF program offered a 1.5% interest 20-year term. The main focus would be to get some control over the valves within the distribution system. There is also money in the proposed budget to investigate and find an additional water source which is directly linked to another issue that is somewhat in the works right now. This could also be used for the SCADA monitoring system upgrades.

The city currently has about 82 miles of water main in the city:

312,000 LF PVC	(72.5%)
87,000 LF Cast/Ductile IRON	(20%)
31,000 LF Transite	(7.5%)

The majority is fairly recent (since the mid 70's) and mainly PVC. However, there is also quite a bit of cast/ductile iron piping. Some areas have transite piping from the 1940's to 1960's which was commonly used because metal utilities were difficult to obtain because of the need by the war. Prior to that, unlined cast iron was used.

Accordingly, the material was the basis for estimating its age:

Late 1970's to Present – Mostly PVC
Circa 1940-1960 – Mostly Transite
Before 1940 – Unlined Cast Iron
75% of System Is less than 35 Years
15% Is Between 35 & 75 Years
10% Is over 75 Years

Mr. Retzlaff advised there are about 4,000 water services throughout the city, 2,500 isolation valves and approximately 600 fire hydrants.

The typical life span on a pipe is fifty years depending on the pH in the soil and whether or not there are corrosive or non-corrosive water within the pipe.

The 2,500 isolation valves are needed to shut off sections of the main in the case of main break or leaking service connection. They also help target the flushing of certain areas of the main to clean out sediment, debris or poor water quality. The valves also help future contractors to tie in without taking a significant amount of our customers off line.

Valves must be operated on a regular basis to ensure they will work whenever they are needed. Mr. Retzlaff explained that from recent history, the first valves that are needed often do not work. The valves are quite substantial and a twelve-inch valve has to be turned approximately forty times. It is a gate that goes down incrementally every time it is turned.

There has been discussions about an annual program over the next few years. Typically the valves need to be operated on a somewhat regular basis; however, there are only so many people that can turn 2,500 valves. As the program is started, we will have to determine which valves work and those that are problematic. Putting too much pressure on the valve can cause it to break.

The valves vary depending on the size and their location. Valve replacement on Route 113 and State Route 14 will be costly in addition to those on Front Street. Those areas have a significant amount of concrete and in some areas as much as eighteen inches of asphalt. There could be an additional $15,000 to $20,000 in site reconstruction costs.

Depending on the cost, the budget will limit the amount of valves that can be done each year. The SRF money will put a wrench on every valve in the city and determine how many need to be replaced. Because these valves have not been touched in several years, no one has any idea of what to expect at this point in time.

Mr. Carmean said the project will be difficult to be bid because there will be very few companies that want to address 2,500 valves at once.

He explained that initially, the plan was to piece meal the project by adding a couple hundred thousand dollars to the budget each year. The city manager is unsure how long it will take to do all 2,500 valves. They may find fifty that are fine or the first one turned on Route 113 could end up costing $75,000 with half the city out of water.

Mr. Brooks recalls working at DuPonts in Seaford where routine maintenance was performed on at least that number of valves. Each time they were turned, a tag with updated information was added. He confirmed that a lot of the valves were above ground or in pits.

When asked if the majority of the valves are new and associated with the new developments that were built over the past ten to twelve years, Mr. Retzlaff explained that the typical requirement is about one for every six to eight hundred feet. There are normally two, three or four valves in every intersection in the downtown area.

Mr. Pikus asked if all the valves are in manholes; Mr. Retzlaff said they are buried in the ground with four blocks that sit under a cast-iron cylinder that gives access to the operating nut that sits on top.

Mr. Retzlaff advised that this will allow a more in-depth flushing program. The flushing is performed to scour the pipes and remove scale and sediment that has accumulated over the ears. To do that, the fire hydrants are opened and valves are shut off in different sections to ensure specific sections can be isolated.

When this project begins, water will be shut off in different areas in order to do the work.

As this is done, data will be obtained on every valve. He said that each valve can be numbered to assist with mapping, maintenance and management.

EXISTING WELLS (SEABURY PLANT)

Well #	Year Constructed	Screened Interval (ft)	Design Flow (GPM)
9	1972	39-59	250
10	1987	444-466	100
11	1987	311-335	67
12	1987	215-254	450

Mr. Retzlaff said that because we do not know how much of the $3.5 million would be needed for the replacement of the valves, there was other money earmarked in the original application to allow the city to spend the money in a different way. One thing recommended was the replacement of unconfined well 9 (Seabury Plant) with the Redner's Market agreement. The city can use the money to pay for the other half of the agreement to abandon that well. This would determine how that source can be replaced and any supplemental treatment.

He further explained that well 9, it is only screened from 39 to 59 feet below ground. Wells 10 and 11 do not produce much water so it is beneficial to find a place to replace it. Well 10 was installed slightly out of plumb. When Wells 10 and 11 were drilled, they only came up to 100 and 67 gallons respectively. Presently, Well 10 is pumping 110 to 120 and Well 11 is pumping 100 gallons, but that is still not a significant amount of water.

Mr. Retzlaff advised that Well 12 was originally designed with a 250 GPM pump. One of the well drillers that is familiar with our system redeveloped it and actually increased the design flow up to 450. Treatment will need to be added to any significant increase.

The balance of the money would be used to complete the SCADA installation. SCADA is the controls and monitoring instrumentation and tracks our equipment to determine which is more beneficial to utilize. It also helps diagnose why a component fails.

The $3.5 million loan would result in an annual debt service of $203,000. The total metered sales from 2007 to 2011 were 717 million gallons/year; the residential metered sales over that period were $170 million gallons/year. Based on that amount of usage, the proposed rate increase will be 28 cents per 1,000 gallons.

The city has 3,450 residential accounts whose average use is 4,150 gallons per month. If the average monthly bill is $13.50, the proposed bill, with the rate increase will be $14.68 or a $1.18 increase per month.

This will help the reliability and ensure everything in the city is working as was originally intended.

Mr. Retzlaff confirmed this will require a referendum and the reason he was asked to present this tonight. He confirmed the full application has already been submitted and the offer made.

They have received environmental clearance from the program and the notice has been published in the paper for public comments.

Mr. Carmean advised we have the money in our water reserves; however, a breakdown of the numerous projects that are needed was provided during the budget hearing. Reserves would cover the cost of the SCADA system and we could do the valve project over a period of time by placing $200,000 each year in our budget over the next ten years. Reserves would also cover the $500,000 needed to get water services extended to Baltimore Air Coil.

He explained that Finance Director Jeff Portmann asked why we should borrow money if we have most of the money to do the project. Mr. Carmean does not believe we will have another opportunity for a 1.5% loan. He believes the only way to get the valve work done is to hire someone to come in and do the work. They would already have the equipment and materials required to accomplish this work which is a substantial savings to the city.

The decision needs to be made whether to deplete the reserve account down to the $1 million or take advantage of the low interest rate and hire an outside contractor.

Public Works Director Brad Dennehy then recalled a water main break last year across from Mills Brothers Market. It took them three to four hours to do the repairs and they could not shut down the entire water line. As a result, they ended up shutting down Mills Brothers Market at nine o'clock at night.

Because they were unable to shut down several valves and instead of taking two to three hours on a regular workday, the crews had to work on a Friday night which resulted in a great deal of overtime. He feels the overtime paid that night far exceeded the $1.18 increase that will be paid by each residential customer.

Mr. Brooks referenced the recent sewer rate increase of seven cents per thousand or thirty-five cents a month. He feels if we can take care of a major, potential problem for a $1.18 increase, he feels it is worthwhile and our residents will have no problem with it.

Mr. Shupe said he cannot imagine our public work's crews having to exercise 2,500 valves. He agrees it would take several years and by the time it is completed, we would have to start again with the first ones that were done.

Mr. Dennehy said there are only six employees in the water and sewer department. After a heavy rainfall last week, the employees were all being used in the pump stations that take on a lot of water to ensure any sewage does not pump out into the street. He said our crews have never had to replace any valves and our crews work repairing sewer and water lines instead. He agrees that outside contractors will have to be hired to do this work. Once they come in, our employees can

learn from them and will be able to handle the smaller valves. However, it is going to take some time to learn the skill.

Mr. Dennehy also pointed out the city does not have the equipment to exercise these valves.

South Washington Street Water Plant Status

Mr. Retzlaff advised that the asbestos and hazardous materials have been removed from the site.

The project will require five different contracts. The first contract is the demolition which is currently underway. The end date is the beginning of October though Mr. Retzlaff anticipates it will be completed prior to that time.

The second contract is the construction of the production well. The original plan placed the well on the property purchased behind city hall (opposite side of South Washington Street). The purchase of PNC Bank allowed the relocation of the well to its original site by the South Washington Street water tower. Electric service exists at that location and utilities would need to be extended to the South Washington Street site. Back in April, council awarded the drilling contract on the original site to AC Schultes. However, that was put on hold pending the settlement on the PNC Bank properties which occurred this past Friday. In the meantime, they will proceed with the investigatory work at the water tower site.

Once the site is finalized, we will proceed with the installation of the main and from there, will do a pump test on the well to determine the production capacity. The equipment will then be sized to match the treatment plant which will be the next contract.

Mr. Retzlaff explained the fifth contract was for the construction of the administration building which has since been removed from the Water Treatment Facility Plant Project and allow other work to be done. He noted that one new item involves some piping work that is needed at the tower site to accommodate the new well.

Southeast Milford Water Project/Water Tower & Water Main Extension

Mr. Retzlaff advised the water main work that was required to get ahead of the DelDOT work has been completed. Right now, the contract is in a closeout phase and we are awaiting paperwork back from the contractor.

Phase II involves the tower, water main extension, new well and associated treatment. Currently, we are waiting on the environmental clearance from USDA. The Wickersham property dedication still needs to be finalized as well as the Hall property easements to ensure we have the ability to do the work.

This also involves four contracts–well, treatment facility, storage tank and piping (main extension). The well was submitted to the USDA who approved it. Once everything is in place, the project will be bid.

The city manager reported that Wickersham has accommodated us by permitting the city to place the tower and treatment facility on their property. Having this water tower out of sight is beneficial to all residential properties in that area. In addition, it will provide Wickersham with a close connection to the water though he is very pleased they agreed to donate the property to the city.

South Washington Street Sewage Pumping Station

Mr. Retzlaff referenced the three large bypass (orange) pumps in the parking area next to the pumping station. They take the flow completely around the pumping station in order to get in and work out the new components that are on site to be installed.

All the roof panels have been removed and the equipment pulled out. The contractor is currently cleaning the site up. The anticipated completion date is January 2014.

He advised that during the heavy rainstorm last week, only one pump actually came on; the backup pump never had to be activated.

North Washington Street Mill & Overlay/NE Sixth Street to Rehoboth Boulevard

Mr. Retzlaff reported this paving project will be completed as part of the annual maintenance program. Mr. Carmean added that most of these projects are paid by funds from local legislators.

Mr. Retzlaff then explained that money received from the Municipal Street Aid program comes with a number of regulations. He was just informed late last week that ADA-compliant handicapped ramps are required on city paved streets paid with these funds. This will increase the cost by approximately 50%.

Mr. Morrow asked if the stormdrain that creates the flooding issues on this street will be repaired; Mr. Carmean said it is better than it previously was.

Public Works Director Brad Dennehy recalled a tree root getting into a stormwater drain in the North Washington Street area. The street was dug up last year and two sections of pipe were repaired so the street no longer floods.

However, there is a catch basin in the area that Mr. Dennehy said needs replacing before the street is paved.

Southeast Front Street Water/Sewer Stormwater Repair
Mill, Overlay and Sidewalk
Southeast Front Rehabilitation Project

Mr. Carmean verified that in 2009, DelDOT provided almost $900,000 in funding to cover improvements to Southeast Front Street. They approved funding for the mill and overlay as well as the handicapped accessible sidewalk work. Unfortunately the majority of the sidewalks on that street are in terrible condition. The intent was to replace all sidewalks and curbing on the street. Unfortunately, the city does not have the money for the sidewalk repairs and he is unsure how long it would take to force the property owners to pay for it though that is required by our ordinance.

He said the city has occasionally paid for sidewalks in certain areas through legislative funds.

The city manager reported that $200,000 is needed for the sidewalk work. He said the hold up goes back to the former city manager and involved placing the utilities underground.

Mr. Carmean explained that Councilman Grier then came to him with some problems on Columbia Street that the city manager felt could be added to this project. Then the infrastructure problems on the west end of the project were asked to be considered. They include stormwater, sewer and water aging systems. So they went back and engineered that work.

Mr. Retzlaff noted that part of the sewer work was identified during the previous I&I study. A few stormdrain pipes need replacing besides some water system improvements.

They made the elevation correction between the two water mains because they were not originally laid at the same depth and the valves that isolate them are actually at the hydrant.

The cost of removing the redundant water main is included in the Southeast Front Rehabilitation Project budget as follows:

	DelDOT	CITY	TOTAL
Road & Sidewalk	$785,400	$262,500	$1,021,000
All Sidewalk	$0	$269,500	$269,500
Storm Drain	$49,500	$145,000	$194,500
Sewer	$11,500	$227,500	$239,000
Water	$13,500	$219,500	$233,000

TOTAL	$833,500	$1,123,500	$1,956,500

The costs include construction contingency, engineering & inspection fees.

Mr. Retzlaff advised that when this project was initially discussed, DelDOT committed $890,000. The cost estimate has been revisited. There was some money earmarked for a signal though there are no signal modifications. As a result, DelDOT is currently updating their cost estimates because the costs have changed. He will then review their contributions from that point.

DelDOT has reviewed the plans and understands what the project entails, including the amount of sidewalk work related to the handicapped ramps.

Mr. Pikus asked if they will be responsible for an upgrade in the storm drains, water and sewer work considering it is a state road; Mr. Retzlaff stated no. He explained there are drainage structures but some are redundant stormwater collection pipes because that is where a lot of the water and sewer used to flow. It was a combined sewer system that basically ran up and down Front Street and a portion went into the river and portion went into the system. As a result, there is a significant amount of pipe in the street including two water mains, two sewer mains and a storm drain ditch.

The city manager said it is very aggravating because the city is unable to put up a no parking or speed sign on the streets owned by DelDOT without ten weeks passing before we get permission and many times the request is not granted. On the other hand, the city is responsible for all the snow removal and the majority of repairs.

Mr. Pikus asked if we receive Municipal Street Aid for Southeast Front Street even though it is a DelDOT street; Mr. Carmean said yes we receive funding for those streets though the fund is shrinking.

Mr. Brooks noted that in the past, we had considered making Southeast Front Street a bicycle route. Mr. Carmean asked Mr. Retzlaff to address that matter because of the problem with the width of the street and particularly in the six-block area of Calvary Church/Salvation Army.

Mr. Retzlaff said that was considered, but unfortunately the varied width of the entire street does not allow it. They tried to accommodate a request to make certain areas no-parking. It was basically impossible and even if specific areas were made no-parking, in other sections, there would be no room for a bike path.

Mr. Brooks agreed that as you get closer to town, the street narrows.

Mr. Retzlaff said there is some money to do some work on Columbia Street to accommodate the request to add a sidewalk to connect the riverwalk through the church property. The estimated costs are as follows:

COLUMBIA REHABILITATION WORK

	DelDOT	CITY	TOTAL
Road & Sidewalk	$0	$89,500	$89,500
All Sidewalk	$0	$27,000	$27,000
Water	$0	$79,500	$79,500
Total	$0	$196,000	$196,000

The costs include construction contingency, engineering & inspection fees.

At this time, water would also be extended beyond the limits of the road restoration. This is one of the few bottlenecks within the entire city related to potential fire protection.

He noted there is an area of Mispillion Street that is zoned commercial but doesn't have water infrastructure in place to provide fire protection for commercial use. The only way to get that is to install a larger main and tie it into the existing one on Front Street. Installing stubs for future connection by the developer would keep them out of the new street.

Mr. Pikus reported there are only seven people on Southeast Front Street that park their cars on the street and have the ability to park in the rear of their properties. The rest of the residents have access to their driveways. He asked if we could eliminate parking on the street to accommodate a possible bike path. Mr. Retzlaff reiterated the city would have to petition DelDOT.

Mr. Pikus said that Sudler Lofland and he counted the number of houses whose residents park on the street. Mr. Retzlaff said that may be considered after the curb and sidewalk is installed. He said the last thing the city would want is for those residents to start parking on the sidewalks again.

Mr. Carmean said he has also heard Mr. Lofland's argument about making that area a no-parking area. A lot of the homes have room for only parking two cars off-street. The problem is the times that more than two vehicles are parked at a house. At his home, this occurs frequently. Not allowing parking in these areas would definitely cause an uproar.

Mr. Retzlaff advised that including the Columbia Street work, the total city contribution would be $1.32 million:

TOTAL REHABILITATION WORK

	DelDOT	CITY	TOTAL
Road & Sidewalk	$758,500	$351,500	$1,110,500
All Sidewalk	$0	$296,000	$296,000
Storm Drain	$49,500	$145,000	$194,500
Sewer	$11,500	$227,500	$239,000
Water	$13,500	$299,500	$313,000
Total	$833,500	$1,319,500	$2,152,500

DelDOT is currently updating their cost estimates and will review their contributions from that point. Costs include construction contingency, engineering and inspection fees.

Mr. Retzlaff reported that portions of the city's contribution can come from sewer reserves and water reserves.

Mr. Brooks expressed concern about the Southeast Front Street portion closer to Charles Street on the north side where there is no or very damaged bricked sidewalks.

Mr. Pikus asked if we can use the sewer or water reserves to do sidewalk work; Mr. Carmean answered no. He pointed out that because of the way it has been established over the years, all electric communities earmark electric reserves for general fund expenses. A year and a half ago, Milford signed an agreement not to increase transfers over $2.5 million. So an item has to be electric-related to use funds from the electric reserves.

Mr. Retzlaff concluded by stating that once DelDOT reviews the plans and provides new numbers, he can provide a more accurate direction on how to proceed. Presently, we are going to bid the project with the base amount of sidewalk. Once the bids are received, it will be presented to council to make a determination on whether or not to include the sidewalks.

Purchase of PNC Building

Mr. Carmean reiterated that we finalized this purchase last week. He will be back as soon as they do some layouts of the interior though he will try to keep the cost down as much as possible. Regardless, this will be a savings considering the

administration building at the Washington Street site was going to cost more than $1 million.

Infrastructure Strategy

Mr. Carmean recalled the presentation made by our city planner and economic development about the infrastructure needs west of Milford but particularly, the needs in the southeastern area. At that time, State Planning Director Connie Holland reported that $28 million had been placed in a fund that could be used for infrastructure. Unfortunately, those funds were moved back into the general fund and not available for economic development.

The city manager has not been able to find any funding at the state level to cover the cost of extending our utilities under Route 1 to the Innovation Park area. Because there is not a lot of capacity left at the Shawnee Acres pump station, upgrades are needed to accommodate future growth in the southeast area.

Mr. Retzlaff then reported on exactly what it will take to get sewer out to the Innovation Park property. He referenced a map showing highlighted properties that are approved subdivisions (Hearthstone 1, West Shores, Matlinds Estates, Shawnee Acres, Orchard Hills and Meadows at Shawnee). He explained that the sewer is in place to provide services to those existing properties. However, the Shawnee Acres pump station as it exists is unable to handle the full build-out of all the developments and would not allow further growth in the southeastern area.

Mr. Retzlaff said the first item needed before any improvement can be done is the replacement of the Shawnee Acres pump station. We would then need to go downstream and behind Watergate where some of the undersized 6"and 8" force main would be replaced with a new 10" force main. We would then go up Charles Street. Some sections of the 8" and 12" gravity sewer would also need to be replaced with an 18" main that would flow to Fisher Avenue.

He said before any consideration can be given to the southern or southeast area east of Route 1, Shawnee Acres Pump Station would need to be replaced.

Mr. Pikus asked if that needs to be done before we can service anything new in town limits; Mr. Retzlaff stated no, this is needed to accommodate the full build-out of subdivisions already approved.

Mr. Pikus asked why this was not done before; Mr. Retzlaff advised there have been discussions during the approvals of various projects about their responsibility to pay portions of the upgrades and replacements that are needed.

He said this would require installing 2,700 linear feet of force main and 970 linear feet of gravity main at a cost of $1,185,000.

Southeast Milford Pumping Station

Mr. Retzlaff reported to include the Hall Property, Cedar Creek Commercial Development, Wickersham and Milford Housing subdivisions, the preliminary design incorporates a large volume within the storage of the wet well and electric service to accommodate the other properties outlined in blue (Vreeland and Wilkins Farms initially did not want to participate in the evaluation). The preliminary cost estimate would have required a smaller pumping station and a temporary 6" temporary force main that would come up Route 30 and over and into West Shores. The connection is not yet in place. The cost of the project referred to as the "Southeast Milford Pumping Station" is $1,495,000.

He advised the Wickersham developer has agreed to install those improvements though we are not at the point of determining whether or not Wickersham will request any type of recoupment agreement.

Mr. Carmean explained that Wickersham will be given the right to collect an EDU cost for anyone that extends to that pumping station. The new developments will also be paying to tie into the force main.

Mr. Retzlaff reported the other area is east of Route 1 and would involve the Innovation Park pumping station.

He emphasized this is a much larger phased out approach; however, the number of EDU's added to the city would triple the existing population. He explained that long term planning would need to happen to allow these things to occur without

rebuilding or upgrading again.

Mr. Retzlaff said the installation of a new pumping station east of Route 1 would need to be sized for all the areas east of Route 1 outlined on the map in purple including the McColley, Dugan, Isaac and Innovation Park area. With that, 8,700 linear feet of 8" force main would be constructed to cross Route 1 and connect at Meadows at Shawnee.

Mr. Pikus asked if the developer would be responsible for the new pumping station; Mr. Retzlaff said yes.

Mr. Pikus asked if the only cost the city would incur would be to run the sewer line beneath Route 1; Mr. Retzlaff said only if the city decides to do that. Typically, all improvements necessary to serve a developer are their responsibility. That developer would then enter into an agreement with the other property owners who would share the benefit in order for him to recoup some of his investment.

Mr. Pikus then asked about the city running a sewer line out to this area with no pumping station; Mr. Retzlaff explained the force main is a significant cost in itself and estimates are roughly $900,000.

Mr. Pikus asked if the city would be responsible for the pumping station; Mr. Carmean said the property owner has said the whole plan should be to make this area shovel ready. Mr. Retzlaff explained that before any of that can be considered, the main can be placed in the ground, but it cannot be turned on until the $1.2 million is spent to upgrade the Shawnee Acres Pump Station. It can be placed in the ground but the developer is unable to serve anyone.

Mr. Retzlaff explained that to get that sewer main all the way to Innovation Park, there is a cost of $2.7 million.

Mr. Pikus asked if we made it shovel ready and something went out there, we would then need to upgrade the Shawnee Acres pump station. Mr. Retzlaff clarified that the Shawnee Acres pump station must be done before it is turned on. He then asked what will happen when Wickersham developer who is paying for the pump station and force main questions why he had to pay for their improvements but another developer did not.

Mr. Retzlaff said if the city wants to take something on to encourage development in the southeast area, an investment must be made in the existing infrastructure before dry pipes are laid in a field that will never be used. He said the Shawnee Acres pump station will benefit everyone in the area.

Mr. Pikus confirmed that by upgrading the Shawnee Acres pump station will provide the capability of servicing a lot of developments. Mr. Retzlaff stated yes, all the properties shown in blue and purple on the maps. The properties shown in yellow were initially not on board, but have since changed their minds. He emphasized this is a huge area.

Mr. Pikus asked if it is imperative we upgrade the pumping station to supply the people that are already here; Mr. Retzlaff said that depends on when the full build-out is reached. He explained there is still capacity left within the Shawnee Acres pump station. He said there is the possibility the city could spend a little money to upgrade and buy some additional capacity to handle some of the smaller developments as they build out. But to get sewer across to Route 1, there is no reason to even discuss a minor upgrade.

Mr. Pikus feels we need to serve the people that are already here. They came in for sewer and something needs to be done out there. In his opinion, we need to service all the people who are already in Milford and paying taxes.

Mr. Carmean said when approving these, we basically said the capacity would be there as they built though we did not tell them the city would pay for it.

Mr. Retzlaff also pointed out that it needs to be taken into consideration that when some of these properties came in, they got approvals for certain things. But the city cannot earmark capacity within a station to something that may or may never occur. He said that basically, that capacity is reserved but it is not theirs until they actually connect into the system.

Mr. Pikus said that in order to plan for the future, we need to upgrade the Shawnee Acres pump station first. He is confident they will be building in those areas.

Mr. Pikus then pointed out that Matlinds Estates does not have sewer and he does not believe the city is capable fo providing them with sewer at this time. Mr. Retzlaff disagreed stating the city is able to provide Matlinds Estates with sewer because they are within the current capacity at the Shawnee Acres pumping station.

Mr. Pikus said but we will need to upgrade that whole area to get sewer to these other properties. He said there is new development just west of Matlinds. Mr. Retzlaff referenced West Shores and noted they already have sewer in the ground.

Mr. Retzlaff emphasized that the properties in yellow can be accommodated except for a complete full build-out of some properties. He noted that Hearthstone originally came in with 800 units, then increased to 1,100.

For future expansion, Mr. Pikus said we better be ready; Mr. Retzlaff agreed that if any upgrades are done, it should be done to accommodate all the properties. Mr. Pikus emphasized that to band-aid the problem would be ridiculous. Mr. Retzlaff said that does not mean the city is not prepared, because currently the ability is there to provide service to everyone that is connected to the system. Mr. Pikus pointed out that any major expansion in the undeveloped areas would require upgrading the system; Mr. Retzlaff stated that is correct and the cost is normally born by the developer.

Mr. Brooks asked if the state has funding for economic development; Mr. Pikus said they always say they have the money but when we ask them for it, it is gone. It was confirmed the $28 million was moved into their general fund; Mr. Pikus said there is always money until some senator needs it.

Mr. Pikus wants to look at upgrading the pumping station as the first step in preparing for future expansion.

Mr. Carmean said he discussed this with our finance director. He reported the city has the funds to cover the cost of the downstream upgrade. We would still maintain the $1 million balance minimum.

The city manager noted that these developers have to pay one impact fee per EDU to the city and to the county. The city could do this work through our reserves, then each developer would reimburse the city per EDU (above the normal EDU cost) toward the payment of that debt.

Mr. Carmean said if a hospital went across Route 1 and needed 400 EDU's, they would reimburse the city for the 400 EDU's above the normal EDU fee.

Mr. Retzlaff emphasized that would make the project more ready because these improvements will not be ready in six months. Mr. Brooks confirmed this would be paid from the sewer reserves.

Mr. Carmean said this would be put into a separate account from our impact fees. He noted that the Wickersham and other area developments will pay up to West Shores. He said we still have to take their capacity so they owe us for any improvements.

He feels that paying a 'per EDU amount' would be the most fair way of reimbursing that $1.1 reserve fund.

The city manager also noted that the city will be able to extend sewer across Route 1 much faster if we go ahead and make the upgrades to the pump station. The sewer could then be at Innovation Park within a three or four month period. Mr. Retzlaff said that depends on the timeliness of their pump station.

Mr. Pikus confirmed that Innovation Park would do the force main; Mr. Retzlaff stated yes and they would enter some kind of recoupment agreement with any other property that would benefit. He agrees they could install the force main within possibly six months. The pump station will take some time and they will also have to construct the gravity sewer so that it will flow to the pumping station.

Mr. Retzlaff reiterated that normally, it is not just the pump station that is born by the developer. There are also force main costs to get to the existing system. The location of the pump station is determined by the properties that flow to it.

Mr. Pikus confirmed that putting a line under Route 1 to Bucks Road to go out to Innovation Park would that make that area shovel ready; Mr. Retzlaff said that would not make it anymore shovel ready; he said when you are comparing it to the

timeliness of everything else, then no.

Mr. Pikus again asked if a line can be run to the hole in the ground at the site of the pumping station without putting a pumping station in. Mr. Carmean said that cost would be $900,000. Mr. Retzlaff said that is a significant commitment of money and what happens if other area properties want sewer and are willing to pay for it. He said particularly if there was a pipe that was extended to another property that may never be used.

Mr. Pikus asked what would happen if the pipe was extended to that area but not into the property. Mr. Retzlaff said that once these developments occur, the city then knows exactly what is needed. A pipe could be installed out there for extensions, but exactly who gets it is the question. He explained that one developer may want it but another developer may not agree to provide them an easement. He said it is much more complicated than simply installing a pipe in a random area in hopes that all the properties will tie into it.

Mr. Carmean clarified that the Thawley and Dugan properties are in the city but right now, we have no idea what they want to do based on their different zonings. He knows that Innovation Park is institutional zoning and that the owner of the Mills Farm wants commercial zoning though presently it is zoned R-3.

Mr. Shupe said he understands the new Shawnee Acres pump will benefit the city and it is already in use. In addition, we know the areas where sewer is already in ground and eventually will be developed. However, he does not want to commit taxpayers' money to put infrastructure out to a green piece of land that has nothing on it. He said if we want to go out there, we will need to do the Shawnee Acres pump. Mr. Pikus agreed the Shawnee Acres pump needs to be done one way or another.

Mr. Brooks said he agrees with Mr. Shupe.

Mr. Pikus emphasized the need to upgrade the Shawnee Acres pump station to be prepared for future expansion. Mr. Carmean said we do have money in reserves. In all probability, we will see the return of that money through growth. The people who will pay for it are the people who will require it. He stressed that the current users do not need that pump station upgrade. The southeastern area will definitely need it and will have to pay for it.

Mr. Pikus said by upgrading that pump station, the city is looking toward the future. Mr. Retzlaff said that will allow development to occur in the different areas.

Mr. Carmean pointed out that the blue line going through the Meadows at Shawnee is in place. Currently Shawnee Acres is not in the city but there are homes out there on that line. In the future, we will see more failed systems in Shawnee Acres. The city will need to be a good neighbor and allow them to connect though they would have to pay for it. If not, they could end up having to put in a mound system in their front yard.

Mr. Dennehy said at the time the city ran the line out to the Meadows at Shawnee, we had a commitment from the developer to build that development. The city paid a portion of the cost to install the sewer and at the time he was the city building inspector, every permit issued included both an impact fee and a developer contribution fund to reimburse the sewer costs paid by the city.

He stressed that the city did not commit to running the sewer pipe to that development until the developer committed to developing the land and to the development itself.

Mr. Carmean agreed the idea of paying for it and collecting the additional fee is something we have done.

Mr. Pikus asked if there is a commitment to upgrade the pumping station; Mr. Brooks reiterated he agrees with Mr. Shupe's comments. Mr. Pikus said he concurs with upgrading the pumping station. If that does not occur, we have nothing for expansion.

Mr. Brooks verified the current pump station can accommodate the areas that currently have sewer or even a sewer pipe and some additional growth. But as these other developments build or request to be annexed in the southeastern area, we could end up with that entire area on our sewer system.

Mr. Carmean stated that if we give the properties east of Route 1 the right to use the capacity, that would create a problem with the developments who have already been told there is sufficient capacity. Then as they build out their developments, they find out there is no more capacity. He reemphasized that we cannot say there is insufficient capacity there now. Currently, there is enough capacity to accommodate somewhat more than what is already planned. He said we were able to allow Wickersham to come on because we know that all the other developments on the horizon will not be built out at once.

Mr. Retzlaff advised that before the others build out, the upgrades need to be done. He said that goes back to the fact that if there was a plan approved years ago, the fact they have not tapped into the main cannot be put on hold forever. The capacity will be utilized and once it is used, it is gone.

Mr. Brooks said if the Wickersham developer is willing to spend $1.5 million, he feels we need to upgrade the pumping station so that he has sufficient capacity to build out. Mr. Carmean pointed out that even Wickersham will have to pay that 'per EDU cost' for the upgrade.

Mr. Pikus asked how long it will take to upgrade the Shawnee Acres pump station; Mr. Retzlaff said if the approval was granted today, another six to eight months would be needed to ensure everything can be added and to finalize the design. Construction would require another twelve to eighteen months.

Mr. Pikus then asked a hypothetical question and if utilities would not be available for two years if a huge project was coming to Innovation Park; Mr. Retzlaff said there is capacity now and unless they come at one time with a huge demand, by the time they build their facility, it could be built and ready at the same time. However, it may cost a little more but at least the city would know what was occurring. Their schedule would be accommodated as long as we received the go-ahead.

Mr. Brooks pointed out that the city has annexed a great deal of property over the years and approved a lot of developments that never were built. The city could be spending money to put utilities in and ten years from now, there is a chance no one had ever connected.

Mr. Shupe agreed the city does not want another bridge to nowhere.

Mr. Carmean also agreed and compared that situation to Route 9 at the Georgetown Race Track where a $2 million pump station was built that does not have one pipe running to it. Mr. Retzlaff agreed adding the pump was finally pulled and the generator moved from that pump station.

Mr. Pikus said that Mr. Brooks' committee would have to make a recommendation to council. Mr. Brooks said he needs a consensus from Mr. Shupe and Mr. Gleysteen first. Mr. Brooks asked Mr. Shupe's opinion; Mr. Shupe asked the budget to upgrade the Shawnee Acres pump station. Mr. Brooks said it is $1.185 million. Mr. Carmean verified we have the reserves to pay for that upgrade.

Mr. Shupe noted on the other end, he believes this is an easy sell as well because there are already people there and developments that still need to build out. Those developments already have the sites and the sewer in place. Mr. Pikus agrees it will be an easy sell.

Mr. Brooks asked Mr. Carmean to confirm that as these developments occur, the reserve fund would be reimbursed; Mr. Carmean stated yes, that is correct. The city manager said the finance director would set up a special account to deposit these fees. Periodically, those fees would be moved back into the reserve account.

Mr. Carmean said if we set up this reimbursement, we need to earn some interest off the money that was used. In that way our customers, who have paid into the sewer fund through their fees, have a right to see a return on their money.

Mr. Brooks confirmed this would not be any cost to our current customers and taxpayers; Mr. Carmean stated that is correct.

Mr. Carmean said we are on solid ground as far as adding that fee onto new construction; Mr. Retzlaff stated yes.

Engineering On-Call Services

COMMITTEE MEETING
AUGUST 5, 2013

PUBLIC WORKS COMMITTEE
CITY OF MILFORD

Water System Improvements / Drinking Water SRF

ITEM 2

WATER SYSTEM IMPROVEMENTS
Drinking Water SRF Loan

- $3.5M Loan, 1.5% Interest, 20-Year Term
- Distribution System – Valve Replacement
- Water Supply & Treatment
  - Well Redevelopment, Groundwater Investigation for additional supply (Seabury Plant)
  - New Production Well & Associated Treatment Upgrades (Seabury Plant)
  - Treatment Improvements (10th Street Plant)
- SCADA – Controls & Monitoring Equipment

DISTRIBUTION SYSTEM

- 430,000 LF (82 miles) OF WATER MAIN
  - 312,000 LF PVC (72.5%)
  - 87,000 LF CAST/DUCTILE IRON (20%)
  - 31,000 LF TRANSITE (7.5%)
- OVER 4,000 WATER SERVICES (ACTIVE)
- 2,500 VALVES
- 600 FIRE HYDRANTS

DISTRIBUTION SYSTEM CONDITION

- AGE OF PIPING CAN BE ESTIMATED BASED ON PIPING MATERIAL
  - LATE 1970'S TO PRESENT – MOSTLY PVC
  - CIRCA 1940-1960 – MOSTLY TRANSITE
  - BEFORE 1940 – UNLINED CAST IRON
- 75% OF SYSTEM IS LESS THAN 35 YR OLD
- 15% IS BETWEEN 35 & 75 YR OLD
- 10% IS OVER 75 YR OLD

ISOLATION VALVES

- 2,500 VALVES ARE INSTALLED THROUGHOUT THE SYSTEM FOR THE PURPOSES OF ISOLATING SECTIONS FOR
  - MAIN BREAKS
  - LEAKING SERVICE CONNECTIONS
  - FLUSHING
  - TIE-IN'S

VALVE EXERCISING

- VALVES MUST BE OPERATED ON A REGULAR BASIS TO ENSURE THEY WILL WORK WHEN THEY ARE NEEDED.
- "REGULAR" BASIS WILL DEPENDS ON THE NUMBER OF VALVES & STAFF AVAILABLE
- VALVES THAT CANNOT BE EXERCISED WILL REQUIRE REPLACEMENT
- REPLACEMENT COSTS WILL VARY BASED ON SIZE & LOCATION OF VALVE

DISTRIBUTION SYSTEM FLUSHING

- FLUSHING IS PERFORMED TO SCOUR THE PIPES AND REMOVE SCALE & SEDIMENT DEPOSITS THAT ACCUMMULATE OVER THE YEARS
- FLUSHING IS PERFORMED USING THE FIRE HYDRANTS TO QUICKLY RELEASE THE WATER & GENERATE THE VELOCITIES NEEDED TO SCOUR THE MAINS
- FLUSHING ALSO REQUIRES THE USE OF VALVES TO ISOLATE SPECIFIC SECTIONS OF WATER MAIN

WATER SUPPLY

- SEABURY PLANT – WELLS 9, 10, 11 & 12
- WELL 9 IS UNCONFINED (SUSCEPTIBLE TO CONTAMINATION FROM APPLICATION OF PESTICIDES, HERBICIDES, FERTILIZERS, ETC OR FROM CHEMICAL SPILLS AT SURFACE)
- WELL 9 ALSO REQUIRES BLENDING & SUPPLEMENTAL TREATMENT.
- RECOMMENDED FOR REPLACEMENT

EXISTING WELLS (SEABURY PLANT)

WELL #	YEAR CONSTRUCTED	SCREENED INTERVAL (ft)	DESIGN FLOW (GPM)
9	1972	39-59	250
10	1987	444-466	100
11	1987	311-335	67
12	1987	215-254	450

SCADA SYSTEM

- CONTROL & MONITORING INSTRUMENTATION
- AUTOMATE PROCESSES FOR IMPROVED EFFICIENCIES
- MONITORING PRODUCTION & TREATMENT FOR REPORTING PURPOSES & DIAGNOSING CAUSES OF COMPONENT BREAKDOWNS

WATER RATE IMPACT

- $3.5M Loan, 1.5% Interest, 20-Year Term
- ANNUAL DEBT SERVICE – $203,000.00
- Total Metered Sales (2007-2011) – 717M GPY
- Proposed Rate Increase – $0.28 per 1,000 gallons
- Residential Metered Sales (2001-2011) – 170M GPY
- Residential Accounts (2007-2011) – 3450
- Average Monthly Residential Usage (2007-2011) – 4,150 Gallons
- Average Monthly Residential Water Bill (2007-2011) – $13.50
- Proposed Monthly Residential Water Bill – $14.68

SOUTH WASHINGTON STREET WATER PLANT STATUS

ITEM 3

WASHINGTON ST WTF STATUS

- 5 DISTINCT TRADES – 5 CONTRACTS
- CONTRACT A – DEMOLITION
  - CURRENTLY UNDERWAY
  - COMPLETE OCTOBER 2013
- CONTRACT B – WELL
  - CURRENTLY UNDER CONTRACT
  - WELL RELOCATION PENDING PURCHASE OF BANK

WASHINGTON ST WTF STATUS

- CONTRACT C – RAW WATER MAIN
  - AWAITING LOCATION OF WELL TO FINALIZE PLANS
- CONTRACT D – TREATMENT PLANT
  - AWAITING CONSTRUCTION OF WELL TO SIZE TREATMENT EQUIPMENT
- CONTRACT E – ADMINISTRATION BLDG
  - TO BE REMOVED FROM SCOPE UPON PURCHASE OF BANK PROPERTY

SOUTHEAST MILFORD WATER PROJECT / WATER TOWER & WATER MAIN EXTENSION

ITEM 4

SOUTHEAST MILFORD WATER

- PHASE I – EXTENSION AHEAD OF DELDOT'S OVERPASS PROJECT
  - WORK COMPLETE
  - CONTRACT IN CLOSEOUT PHASE – AWAITING DOCUMENTS FROM CONTRACTOR

SOUTHEAST MILFORD WATER

- PHASE II
  - AWAITING ENVIRONMENTAL CLEARANCE FROM USDA
  - FINALIZE PROPERTY DEDICATION WITH WICKERSHAM
  - FINALIZE EASEMENTS ACROSS HALL PROPERTY
- 4 DISTINCT TRADES – 4 CONTRACTS
  - CONTRACT A – WELL
  - CONTRACT B – TREATMENT FACILITY
  - CONTRACT C – ELEVATED STORAGE TANK
  - CONTRACT D – MAIN EXTENSION

SOUTH WASHINGTON STREET SEWAGE PUMPING STATION STATUS

ITEM 5

WASHINGTON ST PS STATUS

- BYPASS PUMPING IS ACTIVE
- NEW COMPONENTS SHIPPED TO SITE
- EXISTING EQUIPMENT REMOVED
- CLEANING STATION FOR REPAIR
- COMPLETION JANUARY 2014

NORTH WASHINGTON STREET MILL & OVERLAY / NE 6TH TO BR 1

ITEM 6

N. WASHINGTON ST REPAVING

- TO BE COMPLETED AS PART OF THE ANNUAL PAVEMENT RESTORATION PROGRAM
- REGULATIONS REQUIRE ADA-COMPLIANT HANDICAPPED RAMPS BE INSTALLED ON ALL PAVING PROJECTS
- CAN INCREASE COSTS BY NEARLY 50%

SOUTHEAST FRONT STREET WATER/SEWER/SW REPAIR MILL & OVERLAY AND SIDEWALK

ITEM 7

SE FRONT REHABILITATION WORK

	DelDOT	CITY	TOTAL
ROAD & SIDEWALK	$758,500	$262,500	$1,021,000
ALL SIDEWALK	$0	$269,500	$269,500
STORM DRAIN	$49,500	$145,000	$194,500
SEWER	$11,500	$227,500	$239,000
WATER	$13,500	$219,500	$233,000
TOTAL	$833,500	$1,123,500	$1,956,500

DelDOT is currently updating their cost estimates and will review their contributions from that point.
Costs include Construction Contingency, Engineering & Inspection Fees

COLUMBIA REHABILITATION WORK

	DelDOT	CITY	TOTAL
ROAD & SIDEWALK	$0	$89,500	$89,500
ALL SIDEWALK	$0	$27,000	$27,000
WATER	$0	$79,500	$79,500
TOTAL	$0	$196,000	$196,000

Costs include Construction Contingency, Engineering & Inspection Fees

TOTAL REHABILITATION WORK

	DelDOT	CITY	TOTAL
ROAD & SIDEWALK	$758,500	$351,500	$1,110,500
ALL SIDEWALK	$0	$296,000	$296,000
STORM DRAIN	$49,500	$145,000	$194,500
SEWER	$11,500	$227,500	$239,000
WATER	$13,500	$299,500	$313,000
TOTAL	$833,500	$1,319,500	$2,152,500

DelDOT is currently updating their cost estimates and will review their contributions from that point.
Costs include Construction Contingency, Engineering & Inspection Fees

INFRASTRUCTURE STRATEGY

DOWNSTREAM IMPROVEMENTS

- TO SERVE EXISTING PROPERTIES SHOWN IN YELLOW AND ALLOW FURTHER GROWTH
- REPLACE EXISTING SHAWNEE ACRES PUMPING STATION
- INSTALL 2,700 LF OF 10" FORCEMAIN TO REPLACE EXISTING UNDERSIZED 6" & 8"
- REPLACE 970 LF OF EXISTING UNDERSIZED 8" & 12" GRAVITY SEWER WITH 18" MAIN
- TOTAL COST = $1,185,000

SE MILFORD PUMPING STATION

- TO SERVE PROPERTIES SHOWN IN BLUE
- CONSTRUCT NEW PUMPING STATION WITH STORAGE CAPACITY & ELECTRICAL SERVICE FOR OTHER DEVELOPMENT WEST OF RTE 1
- CONSTRUCT 3,850 LF OF TEMPORARY 6" FORCEMAIN TO WEST SHORES GRAVITY
- TOTAL COST = $1,495,000
- WICKERSHAM DEVELOPER HAS AGREED TO INSTALL THESE IMPROVEMENTS

INNOVATION PARK PUMPING STATION

- TO SERVE PROPERTIES SHOWN IN PURPLE
- CONSTRUCT NEW PUMPING STATION WITH STORAGE CAPACITY & ELECTRICAL SERVICE FOR OTHER DEVELOPMENT EAST OF RT 1
- CONSTRUCT 8,700 LF OF 8" FORCEMAIN TO MEADOWS AT SHAWNEE GRAVITY
- TOTAL COST = $1,420,000