

**TOWNSHIP OF LOWER MAKEFIELD
SEWER AUTHORITY
APRIL 28, 2011**

The regular meeting of the Lower Makefield Sewer Authority was held on Thursday April 28, 2011 in the Lower Makefield Township Municipal Building. Mr. Gauck called the meeting to order at 7:30 p.m.

Those Present	Sewer Authority	Richard Gauck, Chairman Phil Tyler, Secretary Robert Archibald, Member
	Others	Hank Hoffmeister, Sewer Administrator Danielle Farrell, Sewer Engineer Ernest Closser, Sewer Solicitor

MINUTES – MARCH 24, 2011

Motion made by Mr. Archibald approving minutes as presented. Motion seconded and carried.

PUBLIC COMMENT

Amy Nolan stated she is here this evening to express concerns about something happening in her neighborhood. She lives at the intersection of Esther Lane and Irving Drive where there is a manhole cover. Whenever there is a heavy rain the cover has a fountain of water coming out of it. When the rain subsides there is raw sewage, toilet paper, etc. all over the street. It has been this way for years. Mr. Hoffmeister has advised them that there is a problem down at Falls Township, but it has been going on for years. Although the sewer department comes out and cleans it up, she asked if they are the only area of the township that has this or is it a widespread problem. She noted when there is a heavy rain she can't flush the toilet in her house because it backs up into the house. Although Mr. Hoffmeister has assured her that the township would pay for the damage, she emphasized it shouldn't come to that.

Mr. Gauck asked Mr. Hoffmeister to provide background on why this may be happening. Mr. Hoffmeister stated there are a few reasons. Pointing out the location of Ms. Nolan's house as well as the location of the Derbyshire meter pit, he advised that everything that flows to this meter comes almost past her house and then goes into a long pipe through which Charles Boehm and Pennwood connect and then continues down to Makefield and Big Oak Road to the Rock Run Pump Station which is owned by Falls Township. A few years ago Lower Makefield lined approximately 1,300 feet of the Longmeadow/Derbyshire Interceptor. This was done for the fact that Ms. Nolan is talking about. The manhole in front of her house is notorious for blowing out. She is correct that this has been going on for years. After every heavy rain storm the sewer department goes down there and does whatever it takes to clean it up. The problem is that when

they lined 1,300 feet they didn't line the entire tributary basin. This system was installed in 1965/1966. Ms. Nolan's biggest problem is that there is a "T" manhole in front. Everything coming down from the Long Meadow Trunk; coming from Esther Lane in both directions; and portions of David Terrace before it makes two right angles to get to the meter pit. As indicated the township lined 1,300 feet of this pipe from Big Oak Road down to Stony Hill and down almost to David Terrace. This was done because of leaks in the line. Mr. Hoffmeister explained the other problem is that this pipe follows the creek bed so it is in a low spot. In addition to lining, years ago the township put in manhole caps to try to catch the water and try to slow it as it went into the main sewer system. To some extent this has worked. However because of the additional development as well as the age of the structure it was lined. TV work was done on the line from the meter pit to Irving Road. They know there are leaks at the joints. When the line was televised they had to block the line in order to get the camera through which means there are still problems up through the pipe.

Mr. Hoffmeister advised they are going to televise the inside of the line by Ms. Nolan and if necessary go back through the easement to see if there are any other problems. Unfortunately, this is not a quick fix. The problem is the system is 45 years old. The other problem is that right at the manhole Pennsbury put in a line that drains their downspouts from Charles Boehm, which was also very poorly constructed. This was looked at several years ago. None of the water is Lower Makefield's. Even though the line is Lower Makefield's, Charles Boehm and Pennwood are Falls customers. Mr. Hoffmeister stated he doesn't know what is going on in the line further down that they discharge into. He explained that although located in Lower Makefield this part of the system was built before the rest of Lower Makefield. When the system was built those homes connected. It wasn't until Lower Makefield built the trunk line that Pennwood and Charles Boehm connected back in 1964/1965. However none of the water is metered for sewage flow by Lower Makefield, but is metered by Falls Township Authority. This is only because of the way the construction was done. When Falls constructed their line into this portion of the Township, they made an arrangement with Lower Makefield to extend the line. This occurred in 1962/1963. Lower Makefield didn't do anything with its lines until 1964 and beyond.

Mr. Gauck noted even though they will explore with the internal TV the system in and around where the problem is, and even if they find something and correct it by sealing and/or lining it, there are problems downstream from Ms. Nolan's system that Lower Makefield doesn't control. Mr. Hoffmeister agreed and pointed out the section of the system controlled by Falls service area. The problem is not that Lower Makefield's system hasn't been addressed, but he doesn't know what, if anything in the Falls system has been addressed. This is not just in Lower Makefield but in developments in Falls Township which feed into the Rock Run Pump Station.

The biggest problem is that this is clay pipes installed 45 years ago. Regardless of what people have said there are joints every 4 to 6' and has a tendency to leak now. Ms. Nolan asked where the leak goes, noting it is the same amount of water going through. Mr. Hoffmeister informed her it is not the same amount of water going through. Once you seal it you keep the ground water out. The ground water entering the system is causing the additional amount of water, in addition to her neighbor.

Mr. Tyler explained that when it rains the creek rises and the gutters from the school now slow down the flow so it backs up. Mr. Hoffmeister stated the other problem is the number of turns in the line. In front of Ms. Nolan there are three pipes entering a pipe which is going out. When it gets to Derbyshire there is another right turn and then again at the Derbyshire trunk. This is the same situation that was run into on Sandy Run Road when they had the floods in 1996 after which the flow was redirected. Mr. Hoffmeister felt this might be able to be done in the area being discussed. However because he doesn't know what is going on downstream in Falls Township it may not solve the entire problem.

Ms. Nolan asked if Lower Makefield can put pressure on Falls Township to fix the problem in their system. Mr. Hoffmeister felt they could pressure them, but Falls is in a worse situation with Bucks County Water & Sewer regarding improvements to the BCWSA system. They also have to pay back \$15,000,000. He explained that Falls Authority was an existing authority for years. Then the Township bought the Authority and all the assets which lasted for 8 years. Thereafter the Authority was reorganized and bought the system back at a higher price than what they were paid for it initially. The Township of Falls Authority owes Falls Township \$15,000,000. In addition, they no longer have their own treatment plant and everything goes through BCWSA to the City of Philadelphia. In addition to paying Falls Township \$15,000,000 they also owe Bucks County Water & Sewer Authority for transmission and treatment costs plus they now have to contribute to the surge tank to control the flows into Philadelphia at \$2,800,000. With these costs it is unlikely any substantial work will be done on their system.

Lower Makefield has three locations where the sewage ends up in Philadelphia at some point – the area in question; the western section of Big Oak Road (Kohls); and off of Lindenhurst Road.

Mr. Gauck told Ms. Nolan that Lower Makefield is looking into something they can do to their system. Mr. Hoffmeister agreed noting they have already had some televising of the line done and will do additional televising above Ms. Nolan's connection. He explained that Ms. Nolan can also excavate her fresh air vent and make sure that is above ground so it can vent to the outside before it gets inside. Ms. Nolan stated she didn't even know she had one until Kelly came out and found it. He explained to her that she should at least be able to flush the toilet. Mr. Hoffmeister explained the fresh air vent not only allows air into the system but it is also a release valve. Ms. Nolan stated that although this will allow her to flush it still will not help with the fountain of raw sewage on the street.

Ms. Nolan advised that after the last incident she called non-emergency number and was advised that they were too busy to come out. Mr. Hoffmeister stated he did not get the message. She noted she has Kelly's number and asked if this is what she should call in the future. Mr. Hoffmeister advised they will come out. He doesn't know if they will be able to do anything but they will investigate the system.

Mr. Hoffmeister advised there are other problems in the area which he and Ms. Nolan have discussed which needs to be rectified. There is storm water getting into the system from residential homes which needs to be corrected. This has been this way almost since the inception of the system. This includes sump pumps, downspouts, etc that people connect. Mr. Tyler advised

in Falls Township they went into the homes and inspected for this. Mr. Hoffmeister advised Lower Makefield has done this in the past but probably needs to do this again. This area, because of where it exists and where the line exists it is subject to more inflow than infiltration. The meter at Derbyshire shows spikes on any day. If the rain stops and nothing else is going on it drops back to 250,000 which tells him it is mostly inflow. This is why they put some of the manhole liners in this area.

Ms. Nolan asked what the timeframe would be on this type of project. She asked if after televising it is then put on the schedule for lining. She asked when this would take place and whether they are talking one or two years. Although this is not an emergency which needs to be fixed immediately she assumes the Authority is not comfortable knowing that on a heavy rain raw sewage flows into the street. Ms. Farrell asked if this situation has subsided at all over the past few years between 2008 and 2010. Ms. Nolan stated this is difficult to answer because the whole street used to flood back in 2006. At that time the street was torn up and a new pipe installed into the creek. Mr. Hoffmeister stated he was not involved in that because at that time he was strictly involved in the Sewer Department. Mr. Hoffmeister advised this was a contracted job that was done at David Terrace as well as at Esther Lane.

He agreed in the past the spout of water coming out was about 12" higher. This has been reduced by the lining. It is still irritating that it is occurring at all. A lot of this has to do with the 90 degree turn as well as whatever is going on downstream. He agreed with Ms. Nolan that Pennsbury put in the downspouts but it was not done correctly. This is up to Falls Township to address with Pennsbury but to his knowledge this has not occurred. Falls Township has had arguments with Pennsbury about this. Mr. Hoffmeister emphasized this is contributing to the system. Downstream of Ms. Nolan the pipe was televised several years ago. This pipe was in good shape. The problem was the manholes were low. When Metra was doing the work for the Canal Interceptor in 2006, they went over and raised these manholes. Since then the only time he is aware the manholes were underwater was a week ago. This is Lower Makefield's line even though it is not their water.

Mr. Gauck asked what will be done to investigate Lower Makefield's system and come up with a plan to do whatever the Township can do. Ms. Nolan asked if they are the only area in the Township where this is occurring. Mr. Hoffmeister advised they are. This is one of three areas where this situation occurred but two of the areas have been addressed. Regardless of what Lower Makefield does they may alleviate it but not eliminate it because of where it flows. Mr. Gauck noted this is a step in the right direction. Mr. Hoffmeister stated it will not be inexpensive but it can be done to create a better flow co-efficient because they would be making curves rather than 90 degree angles. Mr. Gauck noted the situation is against public health. Ms. Nolan agreed noting there is a bus stop at that corner. Mr. Hoffmeister agreed, noting it is frustrating.

Mr. Hoffmeister laid out a possible timeline for this project. Ms. Nolan asked if they would try to line the pipe first and Ms. Farrell stated this would depend on what is found. Mr. Hoffmeister stated this would be the most logical but it would depend on what is found upstream. They know there are some leaks in Irving and Mr. Hoffmeister is looking into grouting the joints. This would only be a stopgap for 4 or 5 years. Also, Ms. Nolan has to convince her neighbors to do what they

have talked about. Correcting any water away from the sanitary system would be a big help. Philadelphia is a combined system but no suburban system is. There are two – storm water and sanitary.

Mr. Gauck asked if there is a way to keep Ms. Nolan informed. Ms. Nolan stated she has been in contact with Mr. Hoffmeister. Both he and Kelly have been very helpful. She is here this evening because she wants the concerns made official and also to find out how widespread the problem is.

Mr. Gauck stated eventually fixing the problem will cost money and the Supervisors need to know she was here and outlined the problem for the Sewer Authority so they can tell the Supervisors what is needed. Mr. Hoffmeister noted they now have a capital reserve fund to address this type of matter. This is a health hazard that needs to be addressed. With the aging of the system this situation is only going to get worse. Ms. Nolan asked if larger pipes can be installed. Ms. Farrell explained they prefer not to have the extra water in the pipes than to convey the extra water. It is more ideal not to take on the storm flow. Larger pipes would convey additional flow. If there are roof leaders and/or sump pumps tied in it would be more preferential not to have those. Once this water is taken into the system everything downstream needs to be pumped and treated. Lower Makefield is paying transmission and treatment fees at a high price to other entities to treat that water. Ms. Nolan asked if Lower Makefield would ever consider knocking on resident doors and inspecting the homes for sump pumps. Mr. Hoffmeister advised this has been done in the past. For whatever reason some homes may have been missed. When this was done they got rid of a number of homes who were hooked in. He noted there are several easy fixes for handling water from sump pumps. He noted Ms. Nolan and her neighbor have discussed installing yard drains to come out to the street. This is another thing the Township offers. This adds water to the storm water system, not the sewer system.

Ms. Nolan thanked the Sewer Authority for their time. Mr. Gauck suggested that she continue to attend Sewer Authority meetings in order to keep current on this matter as well as contact Mr. Hoffmeister. Ms. Nolan noted she has been in touch with Mr. Hoffmeister.

ENGINEER'S REPORT

A) Discuss Flow Rerouting from Township of Falls Authority

Ms. Farrell discussed some points which would need to be considered should the Authority consider redirecting flow from the Derbyshire Meter Pit from Falls Township into a tributary to Morrisville.

Lower Makefield pays \$5.80 per 1,000 to the Township of Falls Authority and approximately \$1.85 per 1,000 to Morrisville. The capacity allocated at the Morrisville plant is 3.097 million gallons per day. In 2010 2.4 million gallons per day were sent there. This leaves approximately 500,000 gallons per day capacity available. The amount of flow going through the Derbyshire meter pit is about 200,000/220,000 gallons per day. There is ample flow capacity at Morrisville to take both Derbyshire in addition to what is planned with the 537 areas that would be connected in the future.

Assuming Falls does not increase their transmission fee, knowing they owe \$2,800,000 of the holding tank that Bucks County is going to construct, it is approximately \$310,000 per year difference in treatment/transmission between Falls and Morrisville.

Different alignments of where flow could go were looked at by both Ms. Farrell and Mr. Hoffmeister. If they go to the northwest they would be within the Silver Lake pump station. If they go north they would be within the Sherwood Park pump station. Ideally they would not want to make any changes or improvements in the pump stations. Ms. Farrell advised that to the east there are two areas where they could connect into, however one is where the Sherwood park pump station also discharges into and they don't want to have to worry about the two pump stations going on at the same time and upsizing downstream lines from that discharge point. There is a manhole due east on Big Oak Road about 10,000 feet at the intersection of Ferry Road and Wood Street. From that point there is an 8" gravity collection line and one siphon chamber under the canal which would lead into the Morrisville system.

Ms. Farrell explained that taking approximately 200,000 gallons per day at the pump station, putting in a 2.5 peak factor and dividing by 1,440 minutes in a day, the pump station would be 375 gallons per minute pump station. It is anticipated they would get 4' per second velocity in a 6" force main and therefore, felt comfortable with this. This would give about 1.75 feet of headloss per 100 linear foot of run. Over 10,000 feet they would be looking at a pump station size for 375 gallons per minute at 175' tdh.

Ms. Farrell advised they looked at some pump stations they put out to bid in 2010 and found three to help come up with a preliminary cost estimate. One was a 300 gallon per minute station; one was a 125 gallon per minute station; and one was a 545 gallon per minute station. For the 300, bids came in at \$685,000. The 545 came in at \$735,000. The anticipated rate would be between the two and assume about \$700,000 for the pump station.

In 2011 bids were also received for directional drill on two projects. One was 3,000 linear feet of 12" main and the other was 1,200 linear feet of a 6" diameter main. Lower Makefield is the 6" diameter but larger quantity (10,000 linear feet). These prices came in at about \$100 and \$115 a linear foot. If they estimate approximately \$90 a linear foot they felt this would be appropriate for 10,000 feet which puts them at about \$900,000.

The cost would be \$700,000 for the pump station and \$900,000 for the force main, putting on about 20 to 25% contingency as well as engineering and permitting, bring the total cost to \$2,000,000. The payback would be 6 ½ years. There would be some additional O & M costs for the pump station, for electrical costs, labor costs, cleaning of the wet well, etc.

Ms. Farrell explained this ultimately goes through discharge point 10 but is upstream of it. As mentioned by Mr. Hoffmeister, between the meter pit and discharge point 10 there is some additional piping.

Mr. Hoffmeister explained there is a discharge point at Stony Hill Road for the Woodlands which is unmetered; there is a discharge point on Elbow Lane which is unmetered; and there is a discharge point at Norman and Big Oak Roads which is also unmetered. These are areas the Township tried to meter but because the meters being used have head in the bottom reading up rather than ultrasonic reading down, if there isn't enough flow to cover the heads you don't get a reading. This is part of the problem that was run into. Mr. Hoffmeister stated he is waiting for the calibrationist to come in June to see if there are any portable meters available that can read from above. At River Road/Robinson Place this was also tried but again, not enough flow to get readings. This was also tried at two other locations with the same result. He explained the primary purpose for wanting to do this is because the Township is paying on actual sewage flows not water meter readings.

Besides the Falls flow and obviating the cost through Bucks County and ultimately Philadelphia which they are avoiding, Mr. Gauck asked what this does for the rest of the system. He asked if this is the only flow, other than Yardley, in the Township system that they are averting by doing this. Mr. Hoffmeister stated economically yes. He advised that diverting from Bucks County Water & Sewer is extremely expensive. In the 1970s there was talk about putting in 2 or 3 pump stations to divert the flow from north of Yardley, around Yardley to Silver Lake. Silver Lake would have been upsized to the point that it would have carried all of the north end flow and then discharged into the Canal Interceptor thereby bypassing Yardley, except for Belmondo. Mr. Gauck asked why this wasn't explored. Mr. Hoffmeister he doesn't know but assumes it was a cost factor.

Mr. Archibald asked what the Township says about payback on capital expenditures, noting 6 years is questionable. Mr. Gauck stated it is feasible and suggested they look beyond 6 years and what they are avoiding through BCSWA and Philadelphia. They don't know what can happen in the future in Philadelphia. The Authority discussed the future of Morrisville. Mr. Hoffmeister advised they have an 8.7 million gallon per day ultimate capacity plant. Currently it is rated at 7.1 so there is 1.6 million available. He doesn't believe there will be any development in Falls Township beyond what is current. Lower Makefield is slowing down. He felt Morrisville system is stable, as is Philadelphia. He explained that the monies received by Philadelphia are spread across all costs for that City, not just water and sewer.

Mr. Hoffmeister was asked if an actual transaction occurs monthly between Yardley and Lower Makefield's costs. Mr. Hoffmeister advised this is done annually based on the flows. Lower Makefield pays Yardley for the use of the pump station and Yardley pays Lower Makefield for the use of the Canal Interceptor. Lower Makefield's costs to Yardley are higher than their costs to the Township. Lower Makefield pays close to 70% of the Yardley pump station with Yardley Borough paying 13% of the Canal Interceptor. This translates into Lower Makefield paying Yardley approximately \$57,000 with Yardley paying the Township approximately \$400. The only time Yardley pays more is if there is something "special" needed such as a new meter or a major reconstruction.

Question raised about payment for engineering services. Mr. Hoffmeister explained this is paid out of the Sewer Revenue Account. The Sewer Authority is within the Sewer Revenue Account

and that line item pays dues, advertising for meeting, Chapter 94. In the Agreement of Lease, he believes there is a stipulated amount of money to go into the Sewer Revenue Account for the Sewer Authority.

Mr. Gauck noted there would be a 6 year payback of that facility for avoiding that flow from going through Falls to Bucks County to Philadelphia. Mr. Hoffmeister advised Lower Makefield pays Falls \$5.83 per 1,000 who in turns pays Bucks County Water & Sewer to pay Philadelphia. Mr. Tyler noted that although they are talking about 6 years based on today, with rate changes this could be less. Morrisville costs will not increase as much a Falls. Falls will pass on the cost for the BCWSA holding tank to its customers. It was felt a 5 year payback would make sense.

B) Edgewood Village Sewer Extension

Ms. Farrell advised last week a meeting was had with DEP which she, Mr. Closser, Mr. Triolo and his engineer attended to discuss the schedule proposed for the Edgewood Village Sewer extension. Ms. Farrell was asked how this project is progressing. She advised they have received the PennDot Permit for the project as well as the Soil Erosion Permit from the Bucks County Conservation District. The last thing they are waiting for is the Planning Module from the DEP. The DEP would like Lower Makefield to revise their schedule to more clearly state that Phase 1, which takes them to the corner where Edgewood Crossing is proposed, to be completed within 3 years, sooner as funding and permitting allows. Phases 2 and 3 which balance out the runs on Stony Hill Road and Flowers Field as well as the pressure piece going in front of the CVS on Yardley-Langhorne Road will be completed within 8 years or sooner as funding and regulatory permitting allows.

Inquiry was made on the progress of the Edgewood Crossing Development. It was noted that although it is progressing it was held up due to weather.

C) Bucks County Water & Sewer Authority

Ms. Farrell and Mr. Hoffmeister will be meeting next week with the Bucks County Water and Sewer Authority for their next update on the Neshaminy Interceptor surge tank. At that time they will also discuss other open items

SOLICITOR'S REPORT

A) Discuss Yardley Borough Sewer Authority

Mr. Closser advised at the last meeting he indicated they were trying to schedule a meeting with the Yardley Authority to discuss the proposed agreement and issues surrounding it. Yardley advised they would prefer to have Lower Makefield's proposed revisions to the agreement before any meeting would occur. He, Ms. Farrell and Mr. Hoffmeister met to discuss the agreement and he will prepare a draft.

Question raised about who in Yardley Borough was holding the matter up. Mr. Closser advised the information he received is coming through their solicitor and doesn't know who in Yardley

was raising the issue. Mr. Closser stated he will prepare a revised agreement and thereafter have the meeting.

Mr. Gauck advised that a member of Yardley Borough Authority explained that because Lower Makefield did not respond to Yardley's request for what Lower Makefield was going to discuss at the meeting that Yardley thought that the meeting was too premature to have. Yardley wanted to be prepared to address the questions and issues Lower Makefield would raise. Although Mr. Gauck indicated that wouldn't work, he was advised that is how Yardley Borough feels.

Mr. Hoffmeister noted that Yardley Borough will have Lower Makefield's response from Mr. Closser. As the Authority discussed two months ago one item is a potential customer swap, which he doesn't even know if Yardley has considered. Yardley's focus has been on getting money from Lower Makefield for joint use facilities.

Mr. Hoffmeister was asked how much Yardley Borough's system is worth. Mr. Gauck noted they did a lot of flood related new lines, etc. Mr. Hoffmeister noted that Yardley tried to make the case that the problems with the system were due to flooding but FEMA did not agree and only gave them 10% of the costs. Mr. Gauck felt this was the only value to the system because the remainder is old. Mr. Hoffmeister explained a problem with the Yardley system is that a good portion of it is extremely deep. In addition, their maps and scales were off. Anything east of the canal is a big problem. The only portion of this that affects Lower Makefield is Longshore Avenue and Delaware Avenue. It was noted that Longshore is downstream of Belmondo. Ms. Farrell advised this is the area Lower Makefield does not consider to be jointly used. Mr. Hoffmeister agreed. Based on the Agreement of Understanding Lower Makefield's responsibility stops at the connection to the manhole. Ms. Farrell stated she just wants to make sure Lower Makefield has not agreed to being a partner with Longshore Avenue.

NEW BUSINESS

A) Approve 2011 PMAA Dues of \$200.00

Motion made authorizing payment of the 2011 PMAA dues in the amount of \$200.00. Motion seconded and carried.

OLD BUSINESS

Mr. Hoffmeister advised the Chapter 94 Report has been submitted to the State. Ms. Farrell has discussed Edgewood Village.

OTHER BUSINESS

The Sewer members received a copy of the PMAA Region 1 information. Invitation was also received from the Bucks County Commissioners and Bucks County Planning Commission inviting

the Authority members to attend workshop regarding Bucks County Comprehensive Plan update. If interested the members should contact the Bucks County Planning Commission.

Mr. Hoffmeister again advised that he and Ms. Farrell will be meeting with John Butler of Bucks County Water and Sewer Authority to discuss the surge tank and also what they consider to be Lower Makefield's flows at Lindenhurst Road through BCWSA's pipe. He does not believe Mr. Butler comprehends where the meter was located and where it is now and therefore the differentiation in the flows. Hopefully this can be straightened out. Mr. Hoffmeister advised this will reduce the Township's monthly costs but could also reduce the Township's exposure to the surge tank.

There being no other business motion was made to adjourn. The meeting adjourned at 8:49 p.m.

Respectfully submitted,

Phil Tyler, Secretary