

TOWNSHIP OF LOWER MAKEFIELD
ZONING HEARING BOARD
MINUTES – FEBRUARY 4, 2014

The regular meeting of the Zoning Hearing Board of the Township of Lower Makefield was held in the Municipal Building on February 4, 2014. Vice Chairman Gruen called the meeting to order at 7:35 p.m.

Those present:

Zoning Hearing Board: Jerry Gruen, Vice Chairman
 Anthony Zamparelli, Secretary
 Mark Moffa, Member
 James McCartney, Alternate

Others: Bob Habgood, Code Enforcement Officer
 Nathan Fox, Township Solicitor
 Mark Eisold, Township Engineer
 Barbara Kirk, Zoning Hearing Board Solicitor
 Kristin Tyler, Supervisor Liaison

Absent: Paul Bamburak, Zoning Hearing Board Chairman
 Keith DosSantos, Zoning Hearing Board Member

APPEAL #13-1663 – GEORGE FOX III

Ms. Kirk stated the Application of George Fox had been continued several times. The last time was due to the weather. Mr. Harris, who is representing Mr. Fox, has provided letters waiving the time constraints; and Ms. Kirk provided copies of those letters to the Board, which have been marked as Exhibit A-6 and Exhibit A-7. Ms. Kirk stated Mr. Harris contacted her yesterday and indicated he was asking for a Continuance as Mr. Fox is purchasing the adjacent property next door to him which upon the closing of the purchase may resolve some of the Variance issues that he is requesting in his Application. Ms. Kirk provided a copy of this letter marked as Exhibit A-8 along with a copy of the proposed Agreement of Sale marked as Exhibit A-9. Ms. Kirk stated Mr. Harris and Mr. Fox are asking that tonight's Hearing be continued to the second meeting in April, April 15, which would give Mr. Fox sufficient time to go to the Closing for the purchase of the adjacent property and also give sufficient time to review the current Application to see what modifications or revisions need to be made before they proceed.

Mr. Gruen moved, Mr. Moffa seconded and it was unanimously carried to Continue the matter to April 15, 2014.

APPEAL #13-1686 – RICHARD AND HALLIE MICALI

Ms. Kirk stated this matter had been Continued from January 21 due to the weather. She stated that since that time the Township received a letter from the Applicant dated 1/31/14 asking that the matter be carried to an indefinite date as they are considering some potential modifications to the Plan. Ms. Kirk stated the Board did not yet officially open the Hearing, and for tonight's purposes she would recommend that certain documents be marked as Exhibits, and then the Board can act on the request for Continuance by the Applicant.

The Application submitted was marked as Exhibit A-1. A Site Plan provided was marked as Exhibit A-2. The letter just received dated 1/31/14 from the Applicant was marked as Exhibit A-3. Notice of the original Hearing was published in the Bucks County Advance, and the publication Notice as marked as Exhibit B-1. The property was also posted with Notice of the original Hearing, and that Posting was marked as Exhibit B-2. Letters were mailed to property owners as required by the Ordinance, and a copy of the letter with the listing of addressees was collectively marked as Exhibit B-3.

Ms. Kirk stated the letter from the Micalis indicated that they as the Applicants will notify the Township as to when they wish to have the Application submitted for a Hearing, and they are waiving open endedly any time constraints imposed by the Code. Mr. Habgood stated he did speak to the Applicant when they came in to drop off the letter requesting the Continuance; and Mr. Micali stated the only day that would not be good would be the second meeting in February, and they would like to come to one of the meetings in March.

Mr. Gruen asked that the Applicant and the residents be notified of the new date.

Mr. Moffa moved, Mr. McCartney seconded and it was unanimously carried to Continue the matter to March 18, 2014.

APPEAL #13-1685 – JOHN S. TRACEY

The Application submitted was marked as Exhibit A-1. A Site Plan was also submitted dated November 7, 2013 and was marked as Exhibit A-2. Notice of the Hearing that was originally scheduled for January 21, 2014 but Continued due to the weather was published in the Bucks County Advance, and a copy of the publication Notice was marked as Exhibit B-1. Notice was also posted at the property, and a copy of the Posting was marked as Exhibit B-2. Notices were mailed to property owners as required by the Ordinance, and a copy of that Notice letter and the list of addressees was marked as Exhibit B-3.

Mr. John S. Tracey was sworn in. Mr. Gruen advised Mr. Tracey that there are only four Board members present this evening, and he would need three members in favor for the Variance to be approved. Mr. Gruen also advised Mr. Tracey that the Township is opposing the Application. He offered Mr. Tracey the opportunity to postpone in case he would like to have an attorney with him at the next meeting. Mr. Tracey stated he would like to proceed.

Ms. Kirk stated Mr. Fox is present on behalf of the Township seeking Party Status.

Mr. Tracey stated he constructed a retaining wall in a floodplain. He stated at the time he was unaware that he was in technical violation of the Ordinance. He stated he constructed the retaining wall to keep one of the banks where Silver Creek flows from continuing to erode and deposit bank materials in the stream and downstream. He stated it was also at the point where it was starting to impact tree roots, and tree roots were being exposed. He stated this was his way of providing energy dissipation so that the bank would not continue to erode.

Mr. Gruen asked when this was done, and Mr. Tracey stated the construction was done in September, 2013. Mr. Gruen asked if he did himself, and Mr. Tracey stated he had a contractor do it. Mr. Gruen asked if the contractor had not advised him that on many levels, it was an illegal project; and Mr. Tracey stated he did not. Mr. Gruen asked the name of the contractor, and Mr. Tracey stated it was Jeff Ellis Masonry.

Mr. Zamparelli asked Mr. Tracey if he considered any other ways to solve the problem. Mr. Tracey showed a picture taken after the wall was constructed, stating he tried to line the picture up down the centerline of where it crosses South Drive. He stated his property is at the corner of South Drive and Countess Drive. He showed a survey of his property showing his house and where the picture was taken from. He stated in the picture he was trying to show that the bank had been eroded out. He stated part of the reason was that the heavy storms they had in 2013 ate away at the bank. He stated there is a 24" RCP; and when there is heavy storm flow there is a lot of energy going into this part of the property. He stated the purpose of the wall is really for energy dissipation.

Mr. Fox presented Supplemental Plan, which was marked as Exhibit A-3. Photo #1 taken from Mr. Tracey's deck was marked as Exhibit A-4. Photo #2 was marked as Exhibit A-5. Photo #3 taken from South Drive was marked as Exhibit A-6.

Mr. McCartney asked Mr. Tracey how long he has owned the property, and he stated he has owned it since August, 1990. Mr. McCartney asked if he was required to have flood insurance in 1990, and Mr. Tracey stated he was not. Mr. McCartney asked if he was ever required to have flood insurance, and Mr. Tracey stated he was not because the actual floodplain is shown on the Plan on Exhibit A-3 which is toward the street. He stated he has never been notified in any way that they needed flood insurance. Mr. McCartney asked if there is a basement, and Mr. Tracey stated there is. Mr. McCartney asked if he has had any water damage, and Mr. Tracey stated he has not. He stated the only time water came in was June 12, 1996, and the water was above South Drive; and the one hundred year floodplain was where the water was. He stated the only water they had was because they have a large Pin Oak that covered part of their roof, and there was so much water coming off of it that it came in the front part of the house in the basement; but because they did not lose power, they did not have any flooding. Mr. McCartney stated it was not due to the creek, and Mr. Tracey agreed adding that it was basically due to run off from the roof and the tree.

Mr. Zamparelli asked Mr. Tracey since it did not seem to have any effect on the house, and there was no water in the basement did he consider any other options to correct the erosion at the creek since what he did could have effected someone else's property. He asked if he sought any advice from anyone else. Mr. Zamparelli stated he is questioning how he decided to just put a wall up. Mr. Tracey stated he did it mainly for energy dissipation.

Mr. Tracey showed another picture taken before the wall was constructed where you can see there is a lot of soil material in the stream, and he was trying to keep the soil material on his property. He stated the top of the wall is at 88', which is basically grade. He stated the wall that is farthest away from South Drive was put in at grade. He stated what he and the contractor agreed to was that he would snap a level line and put that level line and then went back toward South Drive. He stated they did not change the grade at that point. He stated that part of the property floods four to six times a year, and there is no way to avoid that. He stated the wall was not put in to protect his property from flooding, and the only reason it was put in was to protect it from soil erosion going into the creek.

Mr. Gruen asked if he did any research to arrive at this decision that this was a good idea to put a wall in since what he was basically doing was to transfer his problem to the neighbor. Mr. Gruen stated if everybody put in a wall like that it would create channels of water that would build up such force that they would not be able to control the water. He added the reason it is a floodplain is because in a 100 year storm or a rain event such as Hurricane Sandy, the stream is supposed to flood which is why it is a wetlands or floodplain. Mr. Tracey stated that part of the property still floods. He stated it has already flooded twice since he put the wall up.

Ms. Kirk asked Mr. Tracey what educational, work experience, or background he has to determine that a retaining wall would be appropriate at that location or was it just something visually he decided as a layperson. Mr. Tracey stated he is a registered professional engineer registered in both Pennsylvania and New Jersey. He stated in his professional opinion energy dissipation was needed. Mr. Gruen asked him what kind of engineer he is; and Mr. Tracey stated mechanical, but his background is fluid mechanics, thermal-dynamics, and solid mechanics. Mr. Gruen stated there is a difference between that and an environmental engineer; however, Mr. Tracey stated he respectfully disagrees because soil mechanics is basically a combination of fluid mechanics and solid mechanics.

Mr. Gruen asked Mr. Tracey as an engineer did he not feel it was right to go on the Internet and do research to see what he was allowed to do. He asked if he had not considered putting plants on the bank to keep it from eroding by planting wet-loving plants so that the roots would keep the stream from eroding. Mr. Tracey stated the roots were already being eroded.

Mr. McCartney stated when you do something in a floodplain, FEMA might have a problem with it; and Mr. Tracey agreed that this was his mistake. Mr. McCartney stated if FEMA comes in and sees that there is an illegally-built retaining wall, they might require that it be taken out immediately. Mr. Tracey stated he was trying to address the issue the way he saw it from an engineering perspective. He stated he admits that he did not follow the formal procedures of Permits, etc., and in that respect he was wrong. He stated from an engineering perspective, energy dissipation is the right thing. He stated he is not trying to retain water from going on his property, and it has done it twice since he built the wall. He stated he was trying to prevent soil from eroding away.

Mr. Fox stated he is representing the Board of Supervisors, and the Board of Supervisors' objection is primarily based upon the sensitive lands on which the retaining wall was constructed. Mr. Fox asked Mr. Tracey if he has Plans or specifications for the type of wall that was constructed, and Mr. Tracey stated he does have these. This Plan was provided and was marked as Exhibit A-7. Mr. Fox stated Mr. Tracey was the PE who stamped the Plans, and he asked what has been presented. Mr. Tracey stated at the mid point of the wall before the wall was there, there was approximately a 2' drop off; and they did not want to build the wall up, but wanted to keep it at the average grade where the grade was at the time. He decided they decided to use EP Henry Diamond Pro, which he liked because it is a large block with each block weighing about 84 pounds. He stated they used three courses, which is 24" high. He stated on the side of the stream if you dig down and get to clay, you can get to the point where you can put in a base, a block, three courses of the Diamond Pro, and then a top cap and what you end up with is at grade. He stated he liked the Diamond Pro because it had a lip on the back so when

you get water pressure pushing against it, it retards the overturning. He stated what they also agreed to was at the corners where the returns are and at three intermediate points, they filled the courses up with concrete and at least two pieces of #3 or #4 rebar to retard any type of overturn.

Mr. Fox asked Mr. Tracey when he referred to “they agreed to” did someone tell him to do this or was it recommended somewhere; and Mr. Tracey stated the contractor is a stonemason, and he was the one who made the recommendations as to the type of blocks to use, but they agreed that they did not want it come above where the existing grade was because then you would be retarding water flow on the property, and it was meant for energy dissipation purposes. He stated EP Henry’s spec calls for river stone with 4” perforated pipe behind it which is fine for a higher wall; but the problem is their property, because it floods so much, there is only a certain amount of water retention there. He stated they did not want to have the drainpipe there because it would drain the water too fast, and the soil would start to compact. He stated they did not put the 4” drainpipe in, and they used crushed stone. He stated they wanted to make sure that whatever water pressure there was behind it would be no more than 50’ long because you have drainage on either side; and also the fact that they did not want to have it to drain water too fast, and they wanted to have some retention areas for water because of the fact that it floods so much. Mr. Tracey stated they also used an acrylic adhesive, which binds the courses tightly.

Mr. Fox stated asked Mr. Tracey about the topography of his property from the back door to the retaining wall, and he asked if the retaining wall creates any standing water; and Mr. Tracey stated it does not create any standing water. Mr. Fox asked if the retaining wall prevents water from going into the stream, and Mr. Tracey stated it does not.

Mr. Fox stated the Board of Supervisors wanted to understand the facts, and he asked that there be a Continuance so that he can take the information and review it with Mr. Eisold, and then go back to the Board of Supervisors to evaluate their position that would be most appropriate to the Application. Mr. Gruen asked if it is possible they might withdraw their objection so that it would be out of the Zoning Hearing Board’s hands, and Ms. Kirk stated that is incorrect. Ms. Kirk stated the Township wanted to secure as much information as possible as to the construction and type of retaining wall, and Mr. Fox will go back to the Board of Supervisors and provide that information to them. The Board of Supervisors will then decide if they want to continue to oppose the Application or let the Applicant proceed on his own and have the Zoning Hearing Board make their decision.

Mr. Fox stated Mr. Tracey had indicated he had not obtained all of the proper Permits, and he asked Mr. Tracey if he is willing to tell the Zoning Hearing Board and the Township that he will obtain whatever Permits are appropriate; and Mr. Tracey agreed.

Mr. Gruen asked Mr. Tracey if he meant himself and the contractor when he used the term “we,” and Mr. Tracey agreed. Mr. Gruen stated he has shown on the drawing a 4” concrete base, and he asked if this is like a footer; and Mr. Tracey stated it is a standard 3” or 4” concrete block. He stated there was also concrete underneath of that which was poured in, and then it is block on top. He stated the three courses are then on top of that. Mr. Gruen asked how much stone was put behind the wall, which was backfill. Mr. Tracey stated it was crushed stone, and the reason he used crushed stone is because it has sharp edges which lock up well. Mr. Gruen asked how much he used and how high. Mr. Tracey stated the wall that is farthest away from South Drive was the part that was eaten away pretty much, and there was a lot of backfill there. He stated as you get closer to South Drive, there was less and less backfill.

Mr. Gruen stated he took a stream that was meandering and made it a straight line; however, Mr. Tracey stated while the wall is straight, it is not in the path of the stream and is actually off to one side. Mr. Gruen stated he has seen it, and it is a straight wall, and he backfilled behind the wall so he backfilled part of the stream; however, Mr. Tracey stated that is incorrect, and he backfilled part of his property. Mr. Tracey stated he would argue that it was not the stream, but the effluent from the 24” RCP that was actually eroding away his property.

Ms. Kirk stated if the Zoning Hearing Board is inclined to Continue this matter as requested by the Township, possibly Mr. Eisold could go out to the property to get a better sense of the depth of the crushed stone behind the wall. Mr. Eisold stated he has been to the property and taken a number of pictures. He stated they were sent out there initially by the Township to stop the work. Mr. Gruen asked if there was a Stop Order, and Mr. Eisold stated it was almost done by then when they were requested by the Zoning Department to go out to find out what was going on.

Mr. Zamparelli asked Mr. Eisold if he feels this was done properly and whether it will hold up over the long term. Mr. Eisold stated from a pure structural standpoint he believes it is more structurally strong than the recommendation for some of those walls as often they are just put on a bed of stone; and with the footer and block it actually seems that the construction is structurally sound.

Mr. Gruen stated if they get a heavy storm again, the water could come behind the wall and erode the bank. Mr. Eisold stated while anything is possible and there could be a bigger storm with more water, he feels for the common storms the wall appears to be strong enough. He stated he did not understand at that time what kind of stone was behind the wall; but other than that, he could see what was built. Mr. Eisold added that it would have been best to see what the pre-existing conditions were which is why Permits are requested; but given that, they have to try to determine what was there, and what the impact and change was.

Mr. Eisold was asked why he feels the impact is. Mr. Eisold stated he feels structurally there is not an issue provided it has been constructed as Mr. Tracey describes. He stated his initial concern was how the grade changed on the back of the property from what it was initially to what it is now. He stated it appears from the pictures that there was somewhat of a bank there if not vertical then very close to a vertical bank on that side of the channel so it does not look like the topo has changed all that much. He stated from a FEMA standpoint, provided they do not change the topography of the grade substantially, FEMA should not have an issue.

Mr. Eisold stated he did contact the Bucks County Conservation District, and one of their representatives came out to look at it. The representative sent an e-mail to Ms. Frick at the Township stating that it appeared that the disturbance area was under 1,000 square feet; therefore the Bucks County Conservation District would not require any Permits for this work. However, the representative from BCCD did state that the Applicant would be required to file with the Department of Environment Protection (DEP) a Chapter 105 GP3. Mr. Eisold stated the title of that General Permit is Bank Rehabilitation, Bank Protection, Sand Bar Removal. Mr. Eisold stated this is a General Permit that addresses this kind of work that Mr. Tracey should have filed, and he would be required to file this for this type of work. Mr. McCartney asked if they would issue this for an existing project, and Mr. Eisold stated obviously they would want to have issued it before the project was done. Mr. Eisold stated for a General Permit as long as you meet their Permit requirements, you can do this type of work. He stated it is not a Permit that is particularly hard to obtain so he does not feel there would have been that much opposition to get it although you never know. He stated provided he met certain requirements, which he assumes Mr. Tracey could for the General Permit, DEP would likely issue the Permit.

Mr. Moffa stated the Applicant indicated his concern about the need for energy dissipation in this area versus the fact that the construction was done in the floodplain so close to the stream, and he asked Mr. Eisold's opinion about this.

Mr. Eisold stated Mr. Tracey spoke of the 24" pipe and the culvert coming under the road under South Drive, and Mr. Eisold stated it looked like there was some erosion where the pipe discharged, and he can see that the 24" pipe does go toward Mr. Tracey's property. He stated while he does not know what the existing conditions were, it is not uncommon to protect stream banks with these types of projects. He stated there are a number of things that could have been done, but this type of wall is one of the solutions; and he has designed things like this in other Municipalities to protect certain areas from additional erosion so it is not uncommon. He stated if it were a 6' or 8' wall with a lot of fill behind it, he would be a lot more concerned. Mr. Eisold stated the height of the wall is approximately 22" to 24". He stated if you look at the pictures, the soil on the edge of the stream actually comes almost to the top course of the lowest block wall so approximately 8" to 12" to 15" is actually under the ground which is how you typically construct these types of walls so that the water cannot get underneath.

Mr. Gruen stated he saw it, and it looked like they backfilled into the stream as the gravel matches the rest of the stream unless it is run off that went against the wall. He stated there is a little beachhead between the wall and the water. Mr. Eisold stated it appears to be natural, but he cannot say for sure as he does not know what it previously looked like.

Mr. McCartney stated it is a 24" storm drain, and Mr. Eisold agreed. He stated it is collection from inlets he presumes off South Drive. Mr. Gruen stated there is a tunnel under the road and there is an additional 24" pipe that comes from the side. Mr. McCartney noted another pipe, and Mr. Eisold stated he did not know what that was.

Mr. Moffa stated the Applicant testified that the majority of the backfill was done at the north end of the retaining wall, and as you go toward the south toward South Drive, he needed less and less backfill; and Mr. Tracey agreed. Mr. Moffa stated Mr. Tracey attributed a lot of the erosion at the north end of the retaining wall to the water being discharged into the stream by the 24" RCP; however, Mr. Moffa stated he feels this would be unlikely since it is 50' downstream. He asked how would the water being discharged into the stream by the 24" pipe cause erosion 50' upstream at the top of the retaining wall. Mr. Tracey stated while he cannot prove it as he would have to calculate it, approximately five to six years ago there were additional inlets cut into the 24" RCP so from a fluid mechanics point of view he thinks a lot of volume of water is coming down Silver Creek with lots of volume; and what happens is when the 24" RCP fills up, there is enough energy from that pipe from head pressure and flow that it pushes the whole thing over toward that side. He stated this would be about the point where you would see it most. He stated closest to South Drive all the flow would be from Silver Creek flowing through, and it picks up additional volume and additional energy as it comes down stream from the RCP pipe.

Mr. Eisold was asked his opinion of this, and Mr. Eisold stated whenever you have water coming together from different angles, there is turbulence and loss of energy which creates the scour motion in the channel.

Exhibit T-1 was marked which is the photo submitted by Mr. Eisold.

Mr. Geoffrey Goll, 5 S. Homestead Drive, was sworn in. He stated he was the person who reported the wall to the Township. He stated he is a Water Resources Engineer, and he reviewed his educational background. He stated his business is Water Resource Engineering, and he restores rivers, works with stormwater, and works with stream modeling and flood modeling on a day-to-day basis. Mr. Goll stated he is a fact witness and an expert witness although he just a member of the public right now. Mr. Goll stated the reason that he reported the wall is because retaining walls are currently considered “old school,” and there is current state-of-the-art types of energy dissipation that could have been utilized instead of a 60’ retaining wall. He stated he also hardly believes that a 60’ retaining wall was necessary to dissipate the energy from a 24” pipe.

Mr. Goll stated if he were hired to analyze this wall to determine whether or not it was appropriate or even permissible, normally he would be required to run a Hec-Ras Analysis which is a Corps of Engineers program that he is sure Mr. Eisold is familiar with. He stated the reason you use that program is you model floodwaters pre and what you are proposing to put in to determine whether or not the structure to be installed will interrupt flow and interrupt the capacity of the stream. Mr. Goll stated he has reviewed the Application and none of that information has been provided.

Mr. Goll stated he is very familiar with the area, and he knows that the retaining wall was built and filled the floodplain. He stated most likely as well the wall is within what is called the floodway. He stated a floodplain is broken up into different areas - the flood fringe which is essentially where the water spills out over into the floodplain and the floodway which is that section that is within the stream and adjacent to the stream that actually can convey the water. Mr. Goll stated the floodplain is essentially storage. He stated he feels the flood fringe was filled which reduces the floodplain storage. He stated while it might be indicated that this is a minor amount of fill, he asked that they consider what would happen if everyone put in a wall and filled in the floodplain in this way. Mr. Goll stated what has happened is the storage has to be handled by a property downstream for that storage that has been displaced, and it will increase flood impacts downstream.

Mr. Goll stated with regard to the impact to the floodway, it actually reduces the ability of the stream to convey the water. He stated this is similar to having a 6" diameter pipe; and if you make a 4" diameter pipe, you are not going to get as much water through. Mr. Goll stated the third issue is that it is downstream from the South Drive bridge; and while normally that water would be able to spread out and dissipate across the floodplain, the wall now hinders the capacity of that stream to convey the flow. Mr. Goll stated this all means that the conveyance will now be shifted to the right bank across the stream, and it is actually starting to cause erosion over there. He stated it also reduces the floodplain capacity now putting the burden on downstream properties. He stated as part of the review, he feels the Board needs to look at the impact to the public.

Mr. Goll stated the term "energy dissipation" keeps being used, but a vertical retaining wall actually does not dissipate energy - it reflects it. He stated this makes it go someplace else. Mr. Goll stated most likely this reflected energy will go on the opposite bank. Mr. Goll stated while this is still Mr. Tracey's property, it will now start eroding the bank and start sediment discharges.

Mr. Goll stated this Application had no flood calculations so he does not understand how the Board can approve this if there is no understanding of the impact this wall has had to the floodplain and the floodway. Mr. Goll stated the Ordinance specifically disallows any structures in the floodplain specifically for flooding reasons and also for environmental impacts. Mr. Goll stated the home has been lived in since the early 1990's, and the stream is 120' from the house and within the floodplain; and he questions what other possible purpose this wall could have provided other than to maybe create a more level yard area. He stated this is his opinion as a fact witness. He stated the existence of the wall literally has no bearing on the protection of the life and property on that land.

Mr. Goll stated there are already properties upstream that built walls years ago and someone upstream built a retaining wall right in the stream. Mr. Goll asked what will happen if everyone starts building walls and enclosing the stream. He stated this will set them back decades in floodplain protection. Mr. Goll stated they also need to consider the downstream recipients including Silver Lake which is already highly impacted by sediment discharges, and the increased flow will increase this. He stated Yardley Borough also already suffers from flooding impacts.

Mr. Goll stated as a Water Resource Engineer who lives in this area, he could not stand by and let the wall stand as it was which is why he reported it to the Township. Mr. Goll stated Mr. Tracey did not have a Permit from the Township or the DEP; and as a professional engineer familiar with these types of projects, he feels Mr. Tracey should know the law and what type of Permits and Approvals are needed. Mr. Goll stated he should also have known what type of impact this wall would have on the stream corridor.

Mr. Goll stated alternatives could have been considered. He stated the stream was mowed right up to the edge. He stated grass roots have a very shallow depth as opposed to willows or other type of bio-engineered vegetation which have deep roots which would hold up the bank; and because of their flexibility, they would dissipate the energy and not reflect it like this wall is doing. Mr. Goll stated the issue is that if you keep mowing up to the edge, you are going to get erosion. He stated in this case, the erosion was not that dramatic; and it did not threaten the house.

Mr. Gruen asked if he could have put in large boulders to dissipate the energy as a remedy rather than the wall; and Mr. Goll stated if it was truly for energy dissipation, you would not need a 60' wall. He stated there could be rip rap or they could armour the bank with a sloped revetment which actually dissipates energy, but the retaining wall reflects it so it does the opposite.

Mr. Zamparelli stated Mr. Goll's comments are based on going past the property as opposed to going onto the property and doing any kind of testing or measurements. Mr. Goll stated the wall starts 5' off the road, and he had a good view of everything on the property. Mr. Goll stated he does not feel walking onto the property would make a difference. Mr. Goll stated he has looked at the creek as his professional tendencies cause him to look at basins, sewers, streams, etc.; and he had observed that stream even before the wall was built. He stated he agrees that there was some erosion, and he had felt that they should stop mowing next to the stream as that would have stopped it from eroding. He stated downstream there is English ivy growing into the stream which while it is not the greatest vegetation, in that area there is no erosion. Mr. Goll stated in certain instances he agrees you would need a retaining wall if there was a house, road, or parking lot right adjacent to the stream; but this house is 120' away. He stated he feels the Township is probably opposed to this because they have done a lot of work to protect the stream corridors to protect the health of the streams, EAC members are present this evening.

Mr. Eisold stated he agrees with Mr. Goll on many of his points; and he feels this is not really energy dissipation, but is more of a slope stabilization or channel stabilization project. He stated the real question is how much of a difference is there from what was there before to what it is now. He stated the concern is that they do not know exactly what the change is. He stated it appears that it was a minimal change although he was not aware that it was backfilled with stone or how much stone is in there. He stated if it is a minimal change, it will probably have very little effect even though it is a wall which is a hard material; and it would have been better to have a "soft material."

Mr. Goll stated downstream if you look at the photo downstream, they are mowing up to the edge which is not a good practice; but even though it is a vertical bank, it is not completely destabilized, with whole areas falling in. Mr. Goll questions if it is endangering his property enough to cause them to provide a Variance from the Zoning. He asked if it is really protecting Mr. Tracey's property, and they should consider what impact this has on the public. Mr. Goll stated he agrees with Mr. Eisold that this may not have a significant impact; but now if they grant this Variance, other people will come in with the same questions and it will continue as it has upstream, and it will set a precedent.

Mr. Gruen stated his concern is that people may not come before the Township for the Variance or go to DEP. He stated his concern is that people in the Township build things and do not ask for a Building Permit as it is easier to get forgiveness than it is to get Approvals. He stated when somebody comes in for an Approval, it may get approved or it might not. He stated in this case where it is already built, there is no fine system in the Township. He stated when you go for a Building Permit it takes forever and is not user-friendly in the sense that it is not computerized. He stated people therefore do things without approval.

Mr. McCartney stated Mr. Tracey had indicated that there were two storms since he installed the retaining wall, and Mr. Tracey stated they were significant to the extent that the water came above the retaining wall. He stated the bank opposite the retaining wall is the same as it was before. Mr. McCartney stated he does not feel that two storms would be enough to determine if there is going to be erosion, and Mr. Tracey agreed. Mr. Tracey stated he agrees with Mr. Goll that you really will not know until probably late spring of next year whether there will be erosion. He stated he does disagree that the bank on the other side has already eroded.

Mr. James Bray, 12 Terracedale Road, was sworn in. He stated he is the Chairman of the Environmental Advisory Board, and has been involved with this Board for ten years. He stated one of the reasons he is present is because the EAC is very upset about this project. He stated they discussed it at their meeting and unanimously opposes projects like this to streams in the Municipality. He stated six years ago he Chaired a Committee that prepared the Low-Impact Development Stormwater Management Ordinance for Lower Makefield Township. He stated it is a very innovative Ordinance, one of the first of its kind in the State. He stated Stormwater Management Ordinances like this have two cardinal tenets. He stated the first is that you do not build structures in floodplains, and the second one is you religiously guard the buffers around watercourses. He stated these are the two tenets of stormwater management, and these are both reflected in the Ordinance.

Mr. Bray stated what Mr. Tracey is attempting to do contradicts completely what is happening in Lower Makefield Township. He stated flood control is a very important topic in the Township. He stated several years ago they had three one hundred year floods in an eighteen-month period, so flood control is a vital topic in Lower Makefield Township. He stated the Municipality has expended untold dollars and time in flood control projects. Mr. Bray stated at the last Board of Supervisors' meeting, Scott Burgess, President of RAFT, commented about the fact that because of the flooding, the insurance rates are going to be raised dramatically.

Mr. Bray stated it is projects like this wall that actually create flooding issues in Lower Makefield Township. Mr. Bray stated a wall like this does not dissipate energy, and what it does is concentrate energy. Mr. Bray stated he walked by this area this morning, and he observed that there is siltation occurring which is what happens when you have a wall like this. He stated when the water hits the wall it slows down and deposits silt and the energy is directed across from the wall and starts scouring the other bank.

Mr. Bray stated the EAC is a Land Use Review Board, and over the last seven to eight years they have probably reviewed seventy to eighty Land Use Review Applications; and every one of them had a stormwater management feature that they commented on, so they have a great deal of experience in issues of this nature.

Mr. Bray stated with regard to FEMA, he feels they would be very upset about a structure like this and would want the structure removed.

Mr. Bray stated he is concerned that a Township resident could suffer economic damage; but before he spent money, he should have known what he was doing. He stated he feels residents in Lower Makefield should do their "homework," before spending money, and this was not done in this case. He stated he is concerned that if there is severe flooding, the floodplain will go beyond that wall. He stated when a stream overflows its banks, it is not an unnatural process. He stated when you have a situation like this occurring, you concentrate that energy. He stated in New Orleans in the thirty years prior to the occurrence of Katrina, 500,000 acres were lost to development in the Mississippi Delta in that area. He stated when Katrina hit New Orleans, the one area that was not damaged was the Old Quarter because that was the high ground, and all the rest of it was literally floodplain.

Mr. Bray stated the EAC feels projects like this are "death by a thousand cuts;" and the question is which "cut caused the death." He stated their answer is each and every one of them. Mr. Bray stated he is sorry that someone has to suffer economic damage, but they cannot build structures like this in the floodplain in the Township.

Mr. Jack O'Hara, 576 Countess Drive, was sworn in and stated he lives downstream going toward Queens. Mr. O'Hara stated he is concerned about the potential impacts that could be created not just to his property but to other properties around them. He stated when the wall was being built, he assumed Permits had been applied for. He stated he is concerned about the erosion and changing the velocity of the stream. He stated he is also concerned that it may change the course of the stream. He stated it is also causing sandbars. He stated he feels they need to get input from an expert. Mr. O'Hara stated he is concerned that if the stream moves faster, the debris will go down faster to other downstream properties. He stated they do not really know what effect the wall will create. He stated the Zoning Hearing Board should engage expert witnesses to gauge the impact. He stated he also feels that FEMA, DEP, and the Conservation District should review this project. Mr. O'Hara stated while the Applicant could be caused economic harm, it is also true economic harm could be pushed downstream. He asked that they get an expert's opinion on what impact this could have before they make a decision. Mr. O'Hara stated he knows that some fill was brought in although he does not know how much. He stated they should also consider the sheet flow coming off the street.

Mr. Moffa stated Mr. O'Hara's property is immediately north of this property on the same side of Countess, and he asked if this stream goes through his back yard as well; and Mr. O'Hara stated it does. Mr. Moffa asked Mr. O'Hara if he has built anything along the stream, and Mr. O'Hara stated he has not.

Mr. McCartney asked Mr. O'Hara how long he has lived there, and Mr. O'Hara stated he has lived there seven years. Mr. McCartney asked Mr. O'Hara if water has gone into his basement; and Mr. O'Hara stated it has not come in from the stream rather it was groundwater. He stated his house is not in the floodplain, and he is not required to have flood insurance. Mr. McCartney asked Mr. O'Hara if he noticed any change in the water levels during the last two storms since the wall was built; and Mr. O'Hara stated it appears that the water is running faster, although he added this is just an observation, and he has not tested it.

Mr. Zamparelli asked Mr. O'Hara if he has a 24" pipe going through his area, and Mr. O'Hara stated he does not.

Mr. Gruen asked Mr. O'Hara if he stated that he noticed additional silt in the stream since the wall was built, and Mr. O'Hara stated he has.

Mr. Gruen asked Mr. Habgood if Mr. Tracey had come in to the Township for Approval what would have been the process. Mr. Habgood stated they would have submitted an Application which would have been reviewed and this retaining wall would have been reviewed by the Township engineer. Mr. Habgood stated during the review process it would probably have been determined, as it was after the fact,

that this was in a natural resource area, and the Permit would have been Denied. He stated Mr. Tracey would have had to come before the Township Zoning Hearing Board to request Variances due to disturbance in the natural resource area.

Mr. Gruen asked Mr. Habgood if he would have advised Mr. Tracey that he would have to go to any other State Boards or other organizations, and Mr. Habgood stated this would have been left to the Township engineer to do this as he would rely on his expertise on that. Mr. Eisold stated they would have known the pre-existing conditions which would have made a difference as they would have known what it was like before the wall was built. Mr. Gruen asked Mr. Eisold if he would have sent him to an engineer or the DEP or any other Boards, and Mr. Eisold stated he would have had to go to the DEP to get the GP3 permit regardless. Mr. Eisold stated he would have seen the before an after conditions and what the difference was; and depending on his judgment as to how much Mr. Tracey was changing the topography, he would have know how much of a change there was going to be a flow and whether it was causing an appreciable change. He stated this is what they are having a hard time determining because they do not know exactly what the pre-existing conditions were.

Ms. Kirk stated it would have been the Zoning Hearing Board's decision as to whether or not the conditions were such that required a Variance to be granted to allow the structure to be built within the protected area. She stated this would been regardless of what DEP stated. Ms. Kirk stated the Zoning Hearing Board is to decide whether the Variance should be granted based upon the condition of the property and whether those conditions rendered a hardship that required a Variance to be granted. She stated DEP would look at it from a different set of regulations and requirements. Mr. McCartney asked if DEP could still deny the GP3 Permit, and Ms. Kirk agreed.

Mr. Moffa stated the Township is requesting that this be Continued, and Mr. Fox stated they want to go back to the Board of Supervisors to see if the Board of Supervisors wants their opposition to continue taking into account the testimony tonight, the questions the Zoning Hearing Board had, and the comments of the various objectors. Mr. Moffa asked if the Township would be bringing in additional experts, and Mr. Fox stated they may ask Mr. Eisold to present some additional facts and information if he goes back out to the site and to answer some of the questions that were raised by the Board tonight. He stated the Board of Supervisors would then determine whether they want to continue their opposition or withdraw their opposition.

Mr. Moffa asked Mr. Fox what are some of the questions he feels Mr. Eisold can answer, and Mr. Fox stated questions were raised about how much fill was behind the wall, changes downstream, etc. Mr. Moffa stated he feels Mr. Eisold has already told them what he can tell them since he does not know what it looked like before the wall was built.

Mr. Gruen asked for a short recess so that the Board could consult with their Solicitor.

When the meeting was reconvened, Ms. Kirk stated they are not closing Testimony. Mr. Gruen advised Mr. Tracey that if he wants to bring an expert to the next meeting, he could do so. Mr. Goll asked if Mr. Tracey brings in a new Witness, would they have the opportunity to question the Witness; and Mr. Gruen stated they would.

Mr. Gruen moved, Mr. Moffa seconded and it was unanimously carried to grant a Continuance to March 4, 2014.

OTHER BUSINESS

Mr. Gruen stated it was brought to his attention that the Township feels that there are two vacancies coming up on the Zoning Hearing Board. Mr. Gruen stated he has looked at the list, and it seems that a lot of the term dates are wrong. He stated the Alternates are to be appointed for three-year terms and the regular Board members are to be appointed for five-year terms. Ms. Tyler stated she recalls that the terms were staggered so that they would not lose so many members at the same time. Ms. Kirk agreed to discuss this matter with Mr. Fedorchak.

There being no further business, Mr. Zamparelli moved, Mr. McCartney seconded and it was unanimously carried to adjourn the meeting at 9:30 p.m.

Respectfully Submitted,

Anthony Zamparelli, Secretary

