

October 20, 2011

A regular meeting of the Allendale Planning Board was held in the Municipal Building on October 20, 2011. The meeting was called to order at 8:08 p.m. by Mr. Quinn, Chairman, who announced that the requirements of the Open Public Meetings Act were met by the required posting and notice to publications.

The following members answered roll call: Mr. Quinn, Mayor Barra, Mr. Fliegel, Mr. Sirico, Ms. Sheehan, Mr. Zambrotta, Mr. Walters and Ms. McSwiggan. Mr. Strauch and Mr. Sasso were absent. Also present was Mr. Dunn, Board Attorney.

On a motion by Ms. McSwiggan, seconded by Mr. Zambrotta, the minutes of the meeting of July 21, 2011 were approved as submitted.

Continuation of Calvary Lutheran Church application

Bruce Whitaker, attorney for applicant, said at the last meeting there were still open issues with regard to finalizing the direction and concept pertaining to the overall drainage plan including issues that were raised and still needed to be addressed with regard to the drainage facility and the ground water table, etc. Applicant's engineer and the Borough engineer shared information and have had the opportunity to review various aspects of the ordinance, the storm water management requirements and the conditions that exist at the site. He said the bottom line is that they do have a direction and one of the issues that came up pertained to the drainage facility and as to whether it would be an infiltration or liner system. The direction taken by the plans dated October 18 that have now been prepared based upon that review is a system with a liner and that will be explained this evening. Some additional documentation has been prepared. There is a compliance statement with regard to the constructed storm water wetland with a revision date of October 18. The modifications made to both the storm water wetland compliance statement as well as to the site plan pertain basically to the liner situation. Also incorporated on the plans submitted tonight are those items that were agreed should be shown on the plan from prior meetings pertaining to sidewalks, curbing and landscaping. Revised plan was marked Exhibit A-33. Storm water wetland compliance statement revised through October 18 was marked Exhibit A-34.

Mr. Quinn said the Board has not had the opportunity to see any of these documents before this evening and it was agreed at the last meeting that the Board would receive them ten days prior to the Board meeting. Since that did not happen it puts the Board at a great disadvantage.

Mr. Whitaker said it is his understanding that the engineering that needed to be done took that amount of time and rather than postpone tonight's meeting he thought it best to have Mr. Latincsics provide an overview of the plan. He asked Mr. Latincsics to describe this proposal and indicate what the benefits are from a drainage perspective not only to the site but to the surrounding area. Mr. Yakimik can describe what his position is with regard to the plan and then we can have a more fruitful discussion at the subsequent meeting after everyone has had time to digest not only the testimony but the plans themselves.

Mr. Quinn said with that game plan we will carry on tonight with the understanding that there will probably be meetings at least in November. Mayor Barra said he is very concerned about the process. At the last meeting applicant agreed to extend the time to this meeting and at his request agreed to extend to November. That was predicated on the basis that we are going to have the Monday meeting where there would be presentations and then we would have this meeting which would give us the opportunity to review the plans ten days in advance. Secondly, this would give the public and their experts time to review it and then we would have a subsequent meeting in November for public comment and a vote. Now the Board is in a position where it is presented with a letter from Mr. Latincics and a letter from Mr. Yakimik which was sent out electronically today at 4:30. Now we will be into next month before we can really ask important questions and we will be back into the same corner again. Mr. Whitaker said when he made the extension it was promulgated on everything getting to the Board earlier. He added that he is not criticizing anyone because there was a lot to be done. He granted the previous extension based upon this being a meeting where everyone would have had the plans ten days in advance. Since that did not occur he suggested carrying it through December 13 which is the day after the meeting. Mr. Quinn said that means the Board will have a regular meeting instead of a work session on the 12th. Mr. Sirico requested that applicant grant an extension until December 16.

Mr. Whitaker asked Mr. Latincics to describe the revised plan as indicated on Exhibit A-33 dated October 18.

Mr. Latincics said Exhibit A-35 is a photograph of a constructed wetland in Saddle River which is very similar to what is proposed. At the last meeting there were two primary questions – the first regarding concerns on impacts to ground water in the immediate area due to the infiltration component of the municipal ordinance which requires that the two year storm be infiltrated into the ground. He added that there is a proviso that allows for a waiver of that standard. He said they addressed that concern by specifying a polyethylene liner at the bottom of the constructed storm water wetland as well as a layer of impervious surface essentially sealing the bottom and eliminating any infiltration of the detention basin into the ground. He said that does trigger a waiver request of the 2 year storm water ground water recharge standard. He believes that addresses the concerns of potential adverse impacts to ground water levels in the immediate area.

Mr. Latincics said the second question presented was a concern as to whether there is sufficient hydrology in the drainage area to support the constructed storm water wetland so they prepared a compliance statement and what is known as a water budget for constructed wetland. First they had to identify 40 years of rainfall records and identify an average dry year and an average wet year. The average rainfall in 2005 was a typical year with 46.4 inches of rain. 2007 was a wet year with 58.9 inches of rain and 1995 was a very dry year with 29 inches of rain. The next step of the process was to identify which of those 1080 days would have sufficient rainfall to produce runoff. Typically there will be a rain storm every 7 days that will result in runoff in this watershed. The results show that on average in wet years there is more than sufficient rainfall and runoff to keep the wetlands wet. In a dry year in late July and August the water level could drop as much as 20 inches. 12 inches is identified as an area of concern, so in a drought condition in late August it might be necessary to supplement the wetlands with water or replant it. Mr. Latincics said it is his opinion that in typical years and certainly in wet years there is

sufficient water runoff to keep the wetlands wet and the liner helps in that regard. He added that the calculations are conservative because the best methodology presumes a 24 hour rainfall. In this watershed you need one inch of rainfall to produce any runoff. The presumption in the methodology is that this rainfall falls over 24 hours and 40% in the middle two hours. He said that absent extreme droughts there is more than sufficient runoff to support the constructed wetland. He added that the constructed wetland is a preferred best management practice for water quality purposes in the Borough ordinance and the State's guidance documents and it has the highest pollutant removal at 90%. Others are at 80% or lower.

Mr. Latincsis said after they fine tuned the constructed wetlands it is slightly bigger than previous designs and that is to the benefit of the storm water management with slightly reduced flows downstream which is a benefit. He said there were concerns at previous meetings over potential mosquito breeding and that is why a low marsh was chosen. He said a low marsh has deeper water – from 8 to 18 inches. A high marsh has 6 inches or less. Mosquitoes prefer to breed in stagnant waters less than 6 inches deep. They specifically chose a low marsh which has deeper water for the constructed wetland. In addition they specified two bat bird houses at either end of the constructed wetlands recognizing that a single brown bat will consume 600 mosquitoes in an hour each evening. They also specified a purple martin bird house – another carnivore of mosquitoes.

Mr. Whitaker said at previous meetings there was a discussion of curbing. The plans specified granite block curbing. They stipulate that the sidewalk along Ivers will be added to the plan. Another thing they still have to put on the plan is additional landscaping by the parsonage on Couch Court. Mr. Latincsis said the constructed storm water wetland detention basin will reduce peak runoff to downstream by approximately 30%. That is not just for the project site but the entire 11.6 acres that drains to the detention basin. That runoff enters the 24 inch RCP and is piped directly under the railroad embankment. The reason the basin is a little larger is that there are certain standards in designing the constructed wetland. They want to keep a certain size to the pool for aesthetic and ecological benefits and that is why the basin is slightly larger for the benefit of runoff downstream.

Ms. McSwiggan asked what is the average life of the vinyl liner. Is there a concern about it degrading or being eaten. Mr. Latincsis said the biggest danger to the liners is UV light and this liner is at the bottom of the pond. There is a 6 inch layer of soil on top of the liner. He said the soil probably seals the pond on its own but the liner is added as a precaution and then another 6 inch layer of soil and then there is another 18 inches of soil. Mr. Walters asked if the life is indefinite so it does not have to be replaced every 10-20 years. Mr. Latincsis said that is correct.

Mr. Zambrotta asked what is the depth of the new constructed wetland at the lowest point of the wetland surface or what is the elevation of the impervious liner. Mr. Latincsis said it is going to be at approximately elevation 297. The surface elevation is 304. Mr. Zambrotta asked if there is a concern that it will be below the high water mark for a certain portion of the year and that will push the liner up. Mr. Latincsis said there will be soil and water that will equalize that. Actually the real concern is air bubbles which is why they specified the polyethylene. He said

they will under normal circumstances have water sitting at the high water mark at about elevation 301. He added that the concern would be legitimate if this was a dry basin with a liner.

Mr. Zambrotta asked what is the average depth of the water. Mr. Latincics said at the edge it is 8 inches deep. It goes to 18 inches and at the pool area it goes to 2-1/2 ft. Mr. Zambrotta asked if it is designed to maintain that water level. Mr. Latincics said it is. Mr. Fliegel said in last month's testimony we heard about the concept of mounding. He asked if that concern will be taken away with the impervious liner. Mr. Latincics said that concern should be eliminated.

Mr. Fliegel said in the past the testimony has been that the high point of the ground water mark is 2 ft. below the current surface. Mr. Latincics said he would have to check that number but he believes is about 3.01.

Mr. Fliegel asked if with the new configuration the ground water would be lower than it currently is. Mr. Latincics said by placing the liner lower the answer would have to be yes. It is generally recognized that the introduction of impervious surfaces decreases infiltration. This project will reduce the infiltration in this immediate area.

Mr. Zambrotta said since the storm water is going to be held in the impervious basin and released slowly into the storm water management system so there is a lot more water going through the storm water management system over time. He asked if that is a fair statement.

Mr. Latincics said they are eliminating the infiltration component but there is more water being put into the storm sewer system. He said there is a major benefit to the storm sewer system downstream due to a reduction in the peak runoff from the site on a watershed based design. Originally this detention basin was just designed for the 1.9 acre site. In dialog with the Board earlier in the hearings they were asked to do better and the church authorized them to shift gears and provide not just a project wide design but a design for the entire 13 acre water shed. The watershed design which now is handling greater volume provides reductions on the order of 30% to the downstream watershed system which is a significant benefit. Mr. Zambrotta asked if infiltration is not an issue any more based on this design. Mr. Yakimik said this design takes away the unknown associated with ground water infiltration.

Mayor Barra said there was testimony about the peak runoff being reduced by 30%. He said he recalls that there was testimony that there would be twice as much water coming off the site as presently. Mr. Latincics said yes, but over a longer period of time. He added that this is a major benefit to both upstream and downstream property owners. Mr. Quinn asked Mr. Yakimik if he agrees with that statement and he said that he does.

Mayor Barra asked what would be the consequences if there was a drought situation. Mr. Latincics said there will be 8 to 18 inches of water sitting in this basin. In a dry year in late August you could have a 20 inch deficit but there would still be water in the center pool so that could be used for irrigating what is called the aquatic shell. In the worst case you could reseed or replant but the wetlands tend to regenerate themselves. In the extreme case the plants may die. The following season they will probably regenerate themselves or you can reseed it and re-establish the marsh. Mayor Barra asked what happens if you have a drought and the plants die and in a month or so we have our typical floods. Is the basin compromised because it doesn't

have any plantings or does it still function as designed? Mr. Latincsics said from a storm water management perspective actually the drought will increase the capacity of the basin early on in the storm so if you have a flash flood at the end of a drought which is what we had during Hurricane Floyd in that case it is a benefit from a storm water management perspective. From a water quality perspective the main function of the basin is sedimentation. Pollutants adhere to soil particles that settle at the bottom of the basin. With plants, this basin will still provide that function. Mayor Barra asked Mr. Yakimik if he agrees with that. Mr. Yakimik said we need plants from a water quality aspect of the basin where it is removing 90% of pollutants. In addition, we want it to be pleasing and not look like a mud hole. From an aesthetic standpoint we would want re-planting. One of the recommendations in his latest report and in previous reports is to have a 5 year maintenance period knowing that a drought could occur after that 5 years. If that were the case, the Borough would go after the owner of the property and ask them to re-establish the plantings. He does not think it is reasonable to have a maintenance bond in place in perpetuity.

Mayor Barra asked what would be the cost to construct this. Mr. Latincsics said there are two components – the basic detention basin and the plantings. The total cost is probably in the order of \$40,000 including the plantings.

Mr. Yakimik said that a tremendous amount of work was done by the applicant's engineer to create the water budget graphs. He said he met with the applicant on October 13 with his wetlands specialists in Parsippany. As a result of that meeting he received the latest set of plans on October 19. He said he just wanted to confirm that it was a tremendous effort done by the applicant's engineer.

Mr. Yakimik said the use of the created storm water wetlands will require an impermeable liner. The applicant has requested a waiver from the storm water management code that requires ground water infiltration. He recommends acceptance of this waiver by the Board since a CSW appears to be the most feasible storm water control device for the site due to the existing high ground water conditions. Because of the high ground water conditions it will be difficult for any other type of storm water control device to function at this site. Secondly, the CSW will most likely not be successful without the use of the liner. In his previous report he had indicated that their contacts at the NJ Dept. of Environmental Protection know of no successful CSW's in northern New Jersey. However, Conklin Associates has demonstrated that they have successfully created two such basins in the immediate area. Mr. Yakimik continued that the people he talked to at DEP on this issue deal with large Dept. of Transportation roadway improvement projects, Turnpike improvement projects and not necessarily people that are involved with private wetlands development and that they would not know of these created wetlands that Conklin Associates had described. He said his experts are pretty much satisfied with the representations made by Conklin that this would be a successful created wetlands. His last point is that the liner may actually improve existing ground water conditions in the proximity of the site. He said it takes away that unknown with regard to what effect this would have on ground water conditions and it could actually improve ground water conditions because the liner is there. With the use of an impermeable liner we no longer have concerns regarding the possible adverse effects regarding ground water at or near the site. As a result of designing the CSW the storage of the basin has slightly increased and it has increased enough and probably

was sufficient to begin with to offset any concerns about loads to the basin from sump pumping or lost infiltration. He knows there was testimony given with regard to a large amount of sump water being pumped into the previously designed basin. He took a more careful look at that and believes that even with the previously proposed impact it would have no detriment impact on the capacity of the basin.

Mr. Yakimik said Conklin has demonstrated through extensive analysis and in general accordance with the NJ DEP Best Management Practices Manual that the CSW will have an adequate water supply except in a year of extreme drought. In this case the intermediate large vegetation may die and if so, will need to be replaced. The introduction of invasive species and siltation also remain as residual concerns for this CSW. He said he expects siltation maintenance will have to occur perhaps every 2-5 years in accordance with the DEP manual. Mr. Latincsics said he would expect the latter because the majority of the watershed is draining via this upper wetland which is a natural sump for any silt coming from the larger watershed. He said the plans call for cleaning that out so that is a pre-treatment for this basin so the church will be receiving a clean basin. Mr. Latincsics added to keep in mind that some of the silt is actually very beneficial to the planted wetlands as that is where the nutrients and topsoil is coming from.

Mr. Yakimik said he wants to bring it to the Board's attention that this basin will require maintenance on a 3-5 year period regularly and not just in a condition of extreme drought and that would be the property owner's responsibility. He added that he still maintains his recommendation that we will need a 5 year monitoring period if this application is approved to monitor the performance of the basin. He said the costs for the bonding could range from a few thousand dollars to the high level of \$10,000 to maintain or get this basin back to where it was after construction. Mr. Walters asked if that would be annual or every 2 to 5 years. Mr. Yakimik said annual or a 2-5 year type of maintenance would just be to clean out the siltation which would cost a couple of hundred dollars but there is always the danger of a severe drought within a 5 year period or you could get an invasive species within that 5 year period. His experts feel that one failure episode within a 5 year period is conservative and reasonable.

Mr. Walters asked if his definition of failure is when all of the plants die. Mr. Yakimik said it is if all of the plants die, there is a large amount of siltation and it looks like a mud hole.

Mr. Yakimik said to sum it all up he is prepared tonight to make the statement that the CSW basin has been designed in general accordance with the NJ DEP BMP manual and the Borough Code with the understanding that the waiver for the impermeable liner is approved. He believes that for the most part the applicant has done a good enough job for him and his experts to advise the Board that the applicant has met the general intent of the code and that this basin will be successful if approved by the Board.

Mr. Quinn said that essentially our professionals are in agreement with the applicant's professionals. Applicant was asked to re-study this last month and it seems they have come back with a plan that is satisfactory to the Borough Engineer. Mr. Yakimik said that is correct.

Ms. McSwiggan said some members of the public testified about how many sump pumps they had going during heavy storms. She asked if Mr. Yakimik is now saying that this problem is

now going to be solved. Mr. Yakimik said he cannot guarantee that this is going to work. All of these calculations and analyses are based on empirical data and years of study and research but at the end of the day it is still a model. He said "This is the best analysis and best way of modeling mother nature that we know of at this point in the year 2011." He added that neither he nor the applicant's engineer can guarantee that something unexpected might not happen and there are no absolutes in this analysis. The applicant has met the intent of the code, the calculations that needed to be done. He said the sump pumps will continue pumping but he would venture to say they might continue less often. He believes the ground water elevation is going to be lowered as a result of this improvement.

Ms. Sheehan asked what would happen if one of the new home owners built a swimming pool. Mr. Yakimik said if they built a swimming pool they are adding to the impervious area so they would most likely have to construct a separate seepage pit to address a zero net increase in runoff from the site. Those seepage pits would be located far enough away and in an uphill situation that would not have any detrimental effect except perhaps at lot 2.02. It is quite possible that a seepage pit might not be able to work there because of soil conditions or high ground water. They probably would not have the opportunity to put in a swimming pool without a permit from DEP.

A Board member asked if seepage pits could be made a requirement if someone wanted to put in a pool. Mr. Yakimik said if somebody comes in for a pool for any one of these lots they would have to follow the Borough code with regard to storm water management and as a result of that there is a chance they will need to build a seepage pit. It is difficult to say whether that seepage pit will have a detrimental effect on the surrounding properties.

Mr. Zambrotta summarized the testimony presented this evening that will result in a benefit to the storm water management system resulting in the potential for some relief downstream. He said the cost of the benefits to the neighbors is the actual basin which will be a permanent water feature. It will be landscaped and has sloping sides so the water might not be visible and it will be fenced for safety. There is a potential for water breeding insects but there will be two bat houses and a purple martin house for mosquito control.

Mr. Quinn opened the meeting to the public for comments.

Jim Wright, 498 Franklin Turnpike, asked if there is a picture to show what the fence will look like. Mr. Latincsics said it is a split rail fence with wire mesh at the bottom.

John Pastore, 77 Ivers Rd. thanked Mr. Latincsics and Mr. Yakimik for the amount of time they put in with their collaboration to change the plans. He also thanked the applicant for including the hedge along the part of the property adjacent to Ivers Rd. Mr. Pastore said there was testimony about the sediment in the 24 inch pipe that runs under Ivers Rd. and under the trolley embankment. He asked if there are plans to remediate that pipe. Mayor Barra suggested contacting the DPW about that.

Mr. Pastore said at the September 15 meeting testimony indicated that some of the soil reports were relatively generic and the Borough Engineer felt that more site specific soil analysis would

be important. He asked if in light of the design changes in the latest plans that is no longer important. Mr. Yakimik said that is correct because of the introduction of the impervious liner. Mr. Pastore asked if the church has been provided with information about the funding that will be required for the maintenance plan that was discussed. Mr. Latincsics said there is a maintenance plan with regard to routine maintenance after each major storm.

Mr. Pastore asked about the sedimentation removal. Mr. Latincsics said this will catch the heavy sediment. The fine sediment is actually a benefit to the planted wetland. They have a similar basin in Rio Vista in Mahwah and it is much larger. That has been in for 12 years and this is the first year they have had to do a major cleaning. They actually had a mound of roadway grit in the basin. With this basin the only major roadway would be Couch Court.

Margaret Onesios, 133 W. Crescent Ave. asked if there is any chance of having an aerator for the pond. Mr. Latincsics said there is no aerator. Ms. Onesios said there was discussion that the bottom of the pond would potentially irrigate the top shelf. She asked if someone would physically have to do that. Mr. Latincsics said it is done by the pump. Mr. Whitaker said that is part of the management plan. Ms. Onesios asked who would do the review that is to be done every 5 years. Mr. Yakimik said it would probably be done by the Borough Engineer. Ms. Onesios said Mr. Yakimik indicated that the pond is sufficient for the sump pump drainage that would be coming into it. She asked if that includes any sump pumps that the new houses would have. Mr. Yakimik said he looked at that with his experts and came to the conclusion that the amount of water was negligible compared to the amount of water that this basin is going to be seeing as a result of the rainfall events it has been designed for.

Mr. Latincsics said if you look at the planting specifications they specify two seed mixes. One is a very wide array of wetland plants and then a heavy dose of bull rushes and they should do very well. After the first season when they know what is going to do well in this basin, they will cull out specific plantings and fill in the bare areas and that is going to be the key to the establishment, future maintenance and keeping out the invasives.

Mr. Quinn suggested that Mr. Snieckus look into this and come up with some suggestions for next month's meeting.

John Workman, Ridgewood, said he is a volunteer for the Fyke Nature Association. He heard the discussion regarding the establishment of purple martin and bat houses. He said that is not really a habitat that purple martins will come anywhere near. They need a lot of wide open space and not just water. At the Celery Farm which has a fair amount of wide open space, they have been trying to attract purple martins for the past 4-5 years. One of their members goes out every morning during the migration season to play recordings to draw the birds in but after attempting this for five years they have given up on this effort. On the bat issue, there is a virus that has been going around that has pretty much wiped out the bats in the area. He added that if you are relying on a so-called natural system, you had better have some back up plans, not only on the animals and the insects but also the plants, and if it doesn't work, and it won't for the first year or two, you will have mosquitoes and you will have invasive plants and then you will need herbicides and pesticides. He added that these issues are extremely complex and he would hope

that the Borough could get someone to look into this a bit more. It is a far more complex issue when you are thinking about relying on bats or birds for pest control.

Mayor Barra asked if he has any recommendations. Mr. Latincsics said he has contacted the Bergen County Mosquito Commission and they have a program with a type of fish that is a predator of mosquito larvae and has a voracious appetite. They offered to provide them with the provision that at a later date they can come back and take fish. He doesn't know if two and one-half feet is deep enough to support this fish but he will investigate. He said that is his Plan B.

Mr. Quinn asked that Mr. Snieckus look at some of these suggestions and come back with his comments next month.

Mr. Yakimik commented that it seemed that the bats and purple martins were a primary solution to the mosquitoes but the comment from the expert was that they help but we cannot rely upon them. He said this is a very complex eco-system we are trying to create. He said he would certainly welcome any suggestions to make this basin even better. Mr. Quinn said any recommendations he might have from an engineering perspective going forward would be appreciated.

Mr. Whitaker said only one meeting is scheduled for next month for this matter, November 14, since he has a prior commitment for the November 17th date. Mr. Quinn said the Board will have further questioning from the Board and the Board's professionals as well as public comment. If necessary, this matter will be carried to December.

On a motion by Mr. Fliegel, seconded by Mr. Walters, the meeting adjourned at 10:02 p.m.

Respectfully submitted,

Barbara Knapp