

**I. OPENING**

**CALL TO ORDER:** The Environmental Advisory Council meeting of Lower Saucon Township was called to order on Tuesday, October 8, 2013 at 7:02 P.M. at 3700 Old Philadelphia Pike, Bethlehem, PA, with Tom Maxfield, Vice-Chairman, presiding.

**ROLL CALL**

**Members:** Tom Maxfield, Vice-Chairman; Ted Beardsley, Laura Ray (arrived at 7:06 P.M.), Allan Johnson, Hazem Hijazi and Dru Germanoski (arrived 7:05 P.M.). Absent: Sandra Yerger.

**Associate Members:** Michael Boyle, Sarah Stanlick (arrived at 7:03 P.M.). Absent: Glenn Kaye.

**Hellertown Liaison:** Terry Boos (arrived at 7:04 P.M.)

**PLEDGE OF ALLEGIANCE**

**II. OPEN SPACE SUB-COMMITTEE**

**A. PROPERTY UPDATES**

Mr. Beardsley said things are moving forward with both the Martin and the Marson property. He doesn't know where they are exactly. He reported last month that Marson's bank is going to be reviewing his request for subordination. The interesting thing is he got a call from Savitske. There was a large farm there at one time and the properties have been all broken up into the relatives. When someone died, they divided it up. They have been paying taxes on it for years. A lot of it is vacant and some of it has a house and some acreage. He's a little confused about the names as there are a lot of different names, but one of the relative's lives locally, and he says a number of his cousins might be interested in selling off the property or putting conservation easements on it. Mr. Beardsley asked Mr. Savitske to get lot numbers and the names of owners, and he would get Chris Garges to put a map together so we can talk about it. That's what's going to happen and it might be a real nice chunk of open space. Some of it backs up on the Reservoir property. Some of it backs up to the park. We're waiting to see what we can find out and how it might benefit us.

Mr. Maxfield said Council did vote to expend money and go for the Savitske and Townsend properties. There's a small glitch with the Townsend, but hopefully that will work out. He'll let the EAC know as soon as everything goes through.

**III. NEW BUSINESS**

**A. ZACK BENEDETTO – GIS REPORT**

Mr. Benedetto said he's a senior at Lafayette College and studying Civil Engineering and Geology. He's here to talk to you about the senior thesis project he's doing. Some of you are familiar with GIS and it's a mapping software to incorporate geographic information and do different analysis on it. The extent of this project is not just the borders of LST, but including beyond the borders too. The borders of the watersheds that intersect LST, so Saucon Creek mainly, and pieces of Cooks Creek Watershed and some of the watersheds leading into the Lehigh River. The purpose of the project is to develop a GIS database of surface and ground water flow models within the watersheds to eventually use it to map potential contaminant travel within the township from points of sources of pollution that can be impacted. For example, sources of septic systems and underground storage tanks leading to water wells and natural preserved areas. Before looking at the actual contaminant source part of it, it's necessary to get a good picture of the kind of hydrologic model of the area and how the water flows above and below the surface. The GIS part of it is going to be determined from elevation data that is available digitally just using topography figuring out how the water flows and analyzing it and representing it in different visual ways

within GIS and then for the ground water part of it basically developing a ground water table surface from water heights and different water wells, and then incorporating geology information as the different types of rocks in areas will influence the water flows below the surface. After looking at the main aspects of main surface and ground water flow, there could also be incorporating different aspects that could influence the flow such as sewer systems and production wells and aspects that could influence the flows such as sewer systems and production wells and springs and sinkholes and things like that which could also influence the flow. The first part of it is just creating this hydrologic model to see how water flows. After that, there's opportunity if there's interest in knowing about records of differentiating known water wells versus probable water wells so if there's a house that's not connected to the public water supply, then it must have its own private well so finding and locating where those probable wells and similar situations known and probable septic systems and things like that. Pretty much the work he's going to be doing is in stages of going through the analysis of using different and more increasingly complex software, so just starting out just using regular ArcGIS tools to do all the analysis, and then there's an extension of their GIS which can do it again, but a little more advanced. There are some other ground water modeling software that is more advanced and designed for this kind of work and it can be imported back into their GIS to make it more visually representative and easier to use because ultimately after he does the modeling and everything, it could be bundled into a digital package and given to whoever wants to use it to further assess the source contamination and where it could possibly flow to. As far as where he is right now with the project, he's still doing the basic first stages of it in ArcGIS. Starting with the surface water, he needed all the watershed boundaries, which is done using pretty accurate digital elevation models based on 1 meter or greater precision and then to make it more accurate, he's going to go through and adjust some of the drainage devices because although the digital elevation does a good job of detrainning where the devices are, there are cases where there are manmade effects that change it so for example, the topography in GIS might dictate a certain road access if drainage water flows down on each side of it, but in reality, there might be culverts that go under the road that allow water to pass through it, so that changes the shape of the watershed and changes the direction in which the water flows and he has to manually go in and adjust those drainage devices in the potential areas and there are different tools and GIS where you can just put in specific points of potential point sources and it tells you exactly the direction it flows on the surface. As far as the groundwater part of it, he's created groundwater table surfaces for both shallow water wells and deep water wells so water tables that are above and below the bedrock surface because the water will flow differently whether it's in the surficial geology versus the bedrock geology. As for incorporating the geology into all of this, the scale that he needs the geology to be in to be the most accurate is not available in digital form. It's available in paper map form, so he scanned versions of the maps into GIS and then traced over it and created his own database of the geology as accurately as possible. In cases like that, basically using the best data that he can that is available in order to make the best representative model, but how well he can create the models is dependent on the data. It will still be useful and representative, but not perfect. It won't have the resources to make it perfect, per se. After he finishes this, then he'll move on to the more advanced software and develop other databases of any other things that would be useful. That's where he's at right now. He will be working on this pretty much every day until May.

Mr. Maxfield said Zack mentioned man-made effects and judging groundwater levels from well levels. How do you adjust for things like cones of depression and things like that? How do you make that work out so it's accurate? Zack said that's definitely one of the things that would have to be taken into account for. Initially, just create the ground water model using the ground water table of the water wells and geology and then after that, incorporating like production wells and how cones of depression affect that. He's not sure exactly how he's going to be able to do that, but there's definitely a way that he could introduce that into the model somehow just incorporating the specific locations how the water level is dropping and then incorporate that into the groundwater surface, just adding extra points to it and decreased elevations depending on how much the pumping affects the table. He's not quite sure how to do it now, but a lot of this is a learning

process in teaching himself how to use the software's and using them to their best potential so he'll have to definitely to learn more how to incorporate that.

Mr. Johnson said it will be interesting to apply that to developments where there are a lot of houses and wells close together to see if the cone of depression of one well touches the cone of depression in the next parcel. That goes on all over. That's just something to keep in mind. Zack said that's definitely a big part of where this becomes the most important because the cones of depression can be what ultimately leads contaminants to end up in the wells so it definitely has to be incorporated.

Mr. Maxfield said if we have high capacity wells or a well that's associated with a banquet center or something like that where they are using a lot of water.

Mr. Hijazi said he wants to congratulate Zack for doing this project and encourages you to keep on going with it. It's a huge undertaking. For someone who worked in this field, he knows how much effort it's going to take. He thinks when you talk about ground water elevations, he's not sure how you are going to be able to obtain that from drinking water wells. From private wells, do you have an idea how you are going to get that? How are you going to obtain that information? Do you think private well owners will have that information? Zack said as for using the wells to create the table, the data that he has right now, the Dept. of Conservation and Natural Resources has on their website a PA information groundwater system information that has records of all existing wells in Northampton County. Parts of Bucks and Lehigh County he has to because some of the watersheds are extended to those counties also and got all of the well data he could from there which is pretty large number of wells. He was sorting through some of it getting the most relevant ones. There's some error in those wells as the location of them are not mapped perfectly. Mr. Hijazi said he would caution him to be careful of that database and any information that's on it. Some of the information is really old. Some of it is thrown by drillers. Things could have changed and so on. Another resource he may want to look at it is try to evaluate if there are sites within our Township that have ground water monitoring wells associated with some environmental investigation that's being conducted. You can get from DEP to see if there are underground source tank projects in the Township, look at the landfill, they have ground wells. This is a situation that he does encounter sometimes in his work in looking at ground water wells and information. He mentioned about contaminants, is that something of concern. Are you thinking this is an issue that's in existence or are you preparing the models if there is potential contaminants, we could use. Zack said it's more of developing the models so that the information can be there to be used if there are any concerns. He is aware of the ground water data that he was just talking about. He knows a lot of them are from older dates and unsure locations. He was going to look into finding potentially more different data sources, but that's what he has right now. He will look into different sources. He was planning on finding locations of springs, sinkholes and things like that which can affect the flow.

Mr. Germanoski said for those who aren't familiar with what Mr. Hijazi said, these well logs are done by drillers and they drill the wells. There will be wells that are drilled in 1998 that was a drought year so the water table is lower and other wet years, and as Mr. Hijazi pointed out, anyone who uses this database, there's a lot of unreliability in the data and Zack is aware of that and has been sorting through some of the data with that in mind. It's a situation of having something better than nothing and realizing the limits of that data set. That's something he's learning and is going to try and pull other data together. There's already the LVPC geology maps and so forth in GIS, but they are small scale data sets, so things are lumped together, bedrock units and so forth. Zack is working at the 7-1/2 minute scale which is the best geological mapping scale that we have. Fortunately, all of this Township has been mapped at that scale with some exceptions. It's kind of strange they mapped it at that scale, but presented it at the 1 to 250,000 scale. A little bit of the southern border he has to pull up by one to degree, Newark quadrangle but he's doing all of that and digitizing all of the maps. That by itself will be a fabulous contribution to the Township to have the geology map on GIS at the best scale available and his surface models, he's using the newly available LiDAR data, otherwise it was 10 grid is what they relied on in the past, now the

LiDAR, in terms of vertical elevations in one meter. It's a remarkable improvement. As he mentioned, Interstate 78 was one of the biggest example of a topographic change that he has to contend with in terms of adjusting drainage divides. He's off to a pretty good start. He meets with Zack every two weeks and David Brandis, Professor of Civil Engineering and a Hydrologist meets also. He's Zack's advisor from the Geology Department. He's doing two BS degrees which is pretty remarkable. Engineering and geology, he's doing his thesis in two departments. One semester his course credit is in Civil Engineering and the other it's in geology. It's an ambitious project, but he's off to a good start. You can get a sense that Zack has a command of what he's doing.

Mr. Maxfield said Dru, you are familiar with old well logs, where someone will have a well drilled and they'll hit a certain flow at a certain level and the driller says, we can do better, and they go deeper. Are all those little intermittent hits go into the well log too? Mr. Germanoski said unfortunately, they are highly variable to the quality of the well logs. Usually they give you a static well level, a sketch map of where they think the well is. Now they are starting to put GPS coordinates on them, but for the majority of the wells, they don't have that. Anybody who has worked with the well drillers, with all due respect, will see errors right off the bat. They just drilled a well in the industry that is known as a duster. It was a dry hole. They reported a static water level in that well and they've not had water in that well. It's a complete error, but that's what's going to go into the database. They do have error. The geology is worse. They have their own language and he's been on sites where he knows what they are drilling and they are calling it an entirely different rock type and they have been calling it different units of their own thing for years and they are convinced they are doing it perfectly, correctly. They don't have geologic training normally. It falls in the category of it's something that's an approximation based on physical reality. It's not probably precise or accurate necessarily, but better than nothing. Zack will treat it as such knowing the limits of the data. Hopefully they will be able to do something a little more detailed and see what they can do.

Mr. Johnson said if you know the actual water level if this is the well, will that indicate what the water level is in the surrounding areas? Mr. Germanoski said no, it tells you the water level in that well. The more of those data points you have if they are in the same rock units, you can start to perhaps correlate them to create the energy level or usually it's the same as the water table, but not always. Mr. Johnson said we have a bunch of people here who have wells and we know people who have wells, and we could go around and actually measure it with a string or however you do it and get that information if it would help to support other information. Mr. Germanoski said it depends on the well heads and you don't want your well pumping any time for a period of time before you do that as it does create a cone of depression. They have water level indicators, which is an electrode on a tape measure that you drop down a well and when it hits the water, it blows the circuit and beeps and you can read off what the water level is. That might be something that we could try to get some real data points. That would be leaps and bounds better than what we have in the well logs and something we might be able to pursue. Mr. Johnson said he's pretty familiar with springs and things like that, wetlands around where he lives. He knows Terry Boos has been all over the territory and knows where the wetlands, streams and springs are and other people who live out in the country probably know that too. That might be helpful to point out to Zack if he wants to do any field work.

Mr. Germanoski said that would be a great thing and he mentioned Lance Lenhart as there's interest in aquatic eco systems. There are probably a lot of folks they can pull this data from. Every one of us knows our little corner of the Township and that will be something when he gets to that point, we might try to pursue that. That would be great.

Ms. Stanlick said they just went through the house buying process. Is there a central database that realtors have? They had all that information. It's very well written out and tells you how big the wells are. Do they keep that or once you buy the house, is it off record? Mr. Hijazi said that's a problem he encounters in his work sometimes. In many township's, there is an environmental

problem and they are directed by the DEP to do an evaluation of sensitivity septic's around that area. You try to find out information and you'll be surprised that many, many Township's out there tell them they have no idea, you guys have to check, they go knocking on doors and ask are you on public water. Some of the times they get the general idea, but you'd be surprised how many times that information is not available. That's why he's saying the project that Zack is doing here if we have that in our Township, it's a tremendous achievement.

Mr. Maxfield said when he moved into his house, they said his house was 120' deep. There was no well head visible anywhere. He looked for two years for this before he found it. There was a corner of a cement block sticking out of the ground, dug it up, there was a cement block under it, and there was the angled well. There's no access to it at all. It was an old well, a 100 year old house. Who knows what's out there.

Mr. Maxfield said he wanted to echo what Mr. Hijazi said about the wells out by the landfill, the ones that were monitored. At one point, they've been decommissioning wells because at one point there was pollution and that has been reducing. He thinks there were 200 wells at one point being monitored, so DEP probably have records on them that go back quite some time. That could be good. They just drilled a couple new ones in the last couple of years. That might be a good source.

Mr. Maxfield said if you can get this done, it will be an incredible resource for the Township. It will be really good. We'll put your name out there on a plaque.

Zack said he lives in Long Island, NY. Mr. Germanoski said Zack already has employment upon graduation in NY at an engineering firm. That's a good sign he did a good job this summer. In the second week of December, Zack will have a presentation at the college and Mr. Germanoski will keep you apprised and anyone that can break lose is welcome to attend. It's a progress report that thesis students do.

#### **IV. DEVELOPER ITEMS**

##### **A. KREICHELT MINOR #MIN 01-13 – 4184 COUNTRY SIDE LANE**

Mr. Maxfield said he doesn't know a lot about this one other than it's a minor. Mr. Germanoski said this was the old Gardner property on the north side of Country Side Lane. He showed everyone where the property was. The plan as he understands it and in talking to the daughter-in-law of the person who bought this, but they just want to add, and he's not even sure what direction they are going on this, another residence to accommodate two brothers. It's a family member situation where they want to get two of the children in houses on this property. He doesn't know what the site specific details are. He sold two tracts of property when Route 78 went in. Mr. Maxfield said it looks like with six acres, there's no problem with secondary septic sites. Mr. Germanoski said they are going to end up putting a sand mound in. It's relatively low density in essence, three acres per lot. The EAC had no recommendations.

#### **V. UPDATES/REPORTS**

##### **A. HOUSEHOLD HAZARDOUS WASTE DROP-OFF EVENT, SATURDAY, OCTOBER 12, 2013 AT 8:30 AM TO 2:00 PM AT NORTHAMPTON COMMUNITY COLLEGE MAIN CAMPUS**

Mr. Maxfield said there is a household hazardous waste event as stated above. This is the second one they've had this year. The first one was in June.

**B. ADOPT-A-ROAD CLEAN-UP ON SATURDAY, OCTOBER 19, 2013 AT 9:00 AM AT OLD MILL BRIDGE**

Ms. Stanlick said she will pick up the supplies for this event. All EAC members who can make it will meet at the Old Mill Bridge at 9 am on Saturday, October 19<sup>th</sup>.

**VI. APPROVAL OF MINUTES**

**A. REVIEW AND APPROVAL OF SEPTEMBER 10, 2013 MINUTES**

Changes made by Mr. Germanoski and Mr. Johnson:

Page 1, line 37, change the word “advises” to **advise**. Line 40, the word “used” should be **uses**. Line 49, the word “nice” should be **gneiss**.

Page 2 , insert a word on page 2, line 1, “to her by **not**” having the exact wording. Line 28, the word “used” should be **uses**”.

Page 8, line 18, change the word “in” to but we’re still living **an**” experiment. Line 26, change the word “encouraged” to **encouraging**”.

Page 13, line lines 20 and 21 should read **Mr. Boyer said Wassergass? Mr. Johnson said absolutely, you just come down whatever road that is – Ringhoffer Road.**” Line 27, after the word philanthropic, add **endeavor**”. Line 34, after the word Easton, add **Road**”.

Page 15, line 40, change the word “Hater Lane” to **Hader Lane**”.

**MOTION BY:** Ms. Ray moved for approval of the September 10, 2013 minutes, with changes.  
**SECOND BY:** Mr. Beardsley  
**ROLL CALL:** 6-0 (Mrs. Yerger – Absent))

**VII. OLD/MISCELLANEOUS BUSINESS**

- Mr. Johnson said on September 30<sup>th</sup>, he attended the Northampton County EAC meeting at the Greystone Building in Nazareth, PA. The presentation was given by Maria Benzoni”, the farmland preservation person for Northampton County, also Brien Cope, a new employee of the Northampton County was present. His area is natural areas preservation and open space. It seems that there is money available from the Marcellus Shale Legacy Fund program of Act 13 that has become available to those two offices of Northampton County and they are going to use that money to write up a new open space and farmland preservation plan for the whole county. The title of the plan is “The Livable Landscapes Strategic Open Space Plan”. They said that the County Council had pretty much agreed to go along with it, but they had to wait until the first Northampton County Council meeting of October for the Council to vote and approve it at a meeting. They are pretty sure this is going to go through. What they want to do is partner with primarily LVPC and then they are going to partner with other organizations like Wildlands, Heritage, William Penn Foundation, and Natural Lands Trust, plus they want to partner with all the townships and municipalities in Northampton County to look at everybody’s past open space and farmland preservation plans and combine them into one modern master plan for the whole county. They believe this will take a year to a year and a half to do. During the creation process, they want to interface with all the different EAC groups, watershed groups and other types of groups that are concerned with natural areas and preserving natural resources, streams, fishermen, all those people they want to get their opinions of and combine their thoughts into this strategic plan which sounds to him like a good idea. Mr. Hijazi said how is that funded? Mr. Johnson said they got money from Act 13 Marcellus Shale Legacy programs. There is a certain portion of that money from the drillers that is designated to areas in the state that do not have gas wells in their counties and that’s where we are getting some of that money. Mr. Maxfield said they applied for that money for the

Townsend property and waiting to see if we get it. Mr. Johnson said there's a couple of activities he learned about that he didn't know about. There's a group or people or an activity trying to combine all the trails in the township. There's a thing called trail gaps. A trail goes and there's a gap between two existing trails. They'd like to work to build a trail between those gaps. It's not a county organization but another group, independent groups. There are a lot of different organizations in the county he heard about. It sounds like a good idea. They will probably contact us during the year for our input. Mr. Maxfield said the intent to connect trails down through Springfield area was Appalachian Mountain Group and they ran into a problem as a lot of the connecting areas were in large lots of private property and weren't able to connect. We can try. Mr. Johnson said they realized there is a problem as Northampton County requires there be public access to conservation easements in order to get any Northampton County money. They are working to change that. There is some kind of requirement in the farmland preservation area that a farm has to be of a certain size and they only look at actual productive farmland. There are a lot of farms that have a certain amount of productive farmland and then they have woodlands, wetlands and something called waste. He's not sure what that is, but knows it exists because some of the land was designated as waste land from his uncle's property when he went for the clean and green tax break thing. They are working to try to get that part of the county law changed so that they can use farmland preservation money and natural resource money also to bring in smaller farms that don't currently require the amount of tillable acreage. She was excited about that as there must be a lot of smaller farms like that which are in that category. She called them tweenies, in other words, between the two existing categories. Mr. Maxfield said there's starting to be a different kind of farm, probably falls under that classification of specialty crops that people are selling to local restaurants. That's really interesting. He'd love to see that happen. He asked if there was anything that we can do other than just wait? Mr. Johnson said anybody who wants can call her and talk to her. He might do that as time goes on to see how this has progressed. Mr. Boos said it has come up in the past that the electorate voted to impose a quarter percent EIT or some sort of tax increase specifically to be put into open space. However, those funds are not strictly dedicated for that. It's at the discretion of County Council. Those funds are going into general treasury than going for open space as it is designated. It was four or five years ago that it was passed. The resolution was that it may have been designated at the way Council has appropriated those funds. He's not sure exactly sure what the specific wording was, but Council has been trying to wiggle out of those designations. It might be worth some sort of effort to make sure those funds are specifically dedicated rather than discretionary. Mr. Maxfield said they toyed with all different kinds of scenarios. There have been people protesting year after year at budget time when they tap the open space fund for general fund. The last couple of years they limited it to no open space and strictly agricultural purchases. Maybe as a Township, we should recommend to Council to write a letter to the County and open this thing up and make it be what it was supposed to really be which was open space which included agricultural. If we can put funds together to purchase some of these larger properties that have multiple types of areas on them, they could be really valuable and open things up. Maybe we want to make that as a recommendation as time goes on and ask Council to send a letter. Mr. Johnson will stay in contact with these people. Mr. Maxfield said he did see we had a notice of when that meeting was scheduled. He was unable to make it. If Mr. Johnson finds out there will be another meeting, let the EAC know in advance. Mr. Johnson said there was a state-wide EAC organization and it doesn't exist anymore, so there's really no regional EAC group anymore. He thinks we have to do things on our own initiative to know what's going on. Mr. Maxfield said the SE Region PA has been going strong for a few years. That's where they used to go to those meetings, and then they tried to form a NE Regional, and it never got going.

Mr. Hijazi left the meeting. The time was 8:03 PM.

Mr. Boos said maybe we could get the same sort of strategic planning from the LV Coalition of Watersheds since the SE Region isn't existing. That might be a way of perpetuating it. They meet monthly and Perkiomen Creek is even included in that as there must be some tributaries through there and Lower Lehigh County. After considerable discussion about this group, they concluded that if there is an initiative floating around, we need to start assembling groups for when they get to

County Council, it's a block. They can't ignore it anymore. It's a good source. Mr. Johnson said Maria Bentzoni said there's going to be a big change at election time. The Manager of the whole County is stepping down. She said when new people get in, it'll be a new learning experience. Mr. Maxfield said Stoffa was pretty friendly to environmental concerns.

**VIII. TERRY BOOS – HELLERTOWN REPRESENTATIVE – REPORT**

- He said to follow up on his report from last month; the Tumminello planting they started has been completed. Over 500 plants have been installed within a very short period of time. They started auguring holes on Friday and by Sunday, they had holes in and 135 plants were in. With the assistance of County Work Release gentleman, they completed the rest of the plantings by Friday. It went really well and the men were hard workers. It was a great project.
- He said the Harris Street Bridge off of Silver Creek last time he said the foundation was up and the decking had been installed. Evidently one of the trusses of the decking has a defect so there's a depression. He hasn't been by to see it, but from what he's read, one of the Council people who work with pre-fab concrete said they would have to jack hammer that section out and re-pour it. The alley way is still blocked over so you can't pass over the creek. He's not sure what's taking place right now. Everyone is trying to get it squared away as soon as possible.

**IX. NON-AGENDA ITEMS/PUBLIC COMMENT – None**

**X. ADJOURNMENT**

**MOTION BY:** Mr. Beardsley moved for adjournment. The time was 8:12 P.M.

**SECOND BY:** Ms. Ray

**ROLL CALL:** 5-0 (Mrs. Yerger – Absent; Mr. Hijazi – Left at 8:03 P.M.)

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Sandra Yerger, Chair