

EAST BRANDYWINE TOWNSHIP MUNICIPAL AUTHORITY
Tuesday, February 14, 2006
7:30 AM

Those in Attendance:

Gerald Kirkpatrick, Vice-Chairman
David Summers, Treasurer
Joseph Anthony, Secretary
Sandra Moser, Member

Absent:

Michael Corbin, Chairman

Also in Attendance:

Scott T. Piersol, Township Manager
Matthew Vanlew, Roadmaster
John Spangler, Municipal Authority Solicitor
Joseph Boldaz, Municipal Authority Engineer
Mary Beth Smedley, Secretary/Treasurer

The Municipal Authority met on Tuesday, January 10, 2006 at the East Brandywine Fire Company. There were 11 visitors present. Mr. Kirkpatrick called the meeting to order at 7:35 AM.

Minutes: January 10, 2006

Mr. Kirkpatrick asked if there were any corrections or additions to the above minutes. There were none. Mrs. Moser made a motion to approve the January 10, 2006 minutes as presented. Mr. Anthony seconded the motion, with all voting Aye.

Treasurer's Report

Mrs. Smedley read the Treasurer's Report for January/February 2006. The Municipal Authority account balance as of February 14, 2006 was \$60,963.72. Mr. Anthony made a motion to approve the Treasurer's Report and authorize payment of the bills. Mrs. Moser seconded the motion, and the motion was approved by unanimous vote. Mr. Kirkpatrick asked if there were any delinquent customers that the Municipal Authority needed to be aware of. Mrs. Smedley said there were no serious problems for the Authority although one customer in the Keats Glen

Development has not paid any of their pre-dedication sewer fees. Mrs. Smedley will contact Southdown Homes about filing a claim against this resident so that the fees can be collected.

Watters/Spence Property

Ross Unruh, Esq., attorney for the applicant, Joseph Gambone, President of Gambone Development Company, Ted Kochen, Bill Palkovics from DelVal Soils and John Mahoney, Esq. discussed a proposed sketch plan and various sewage treatment alternatives for 51 acres of the Watters farm. The applicant is proposing 115 town homes and development of a 10 acre commercial area.

The applicant is proposing to develop the commercial area first. The land development plan for the commercial area will be submitted to the Planning Commission prior to submission of the proposed town home community. This commercial development would utilize the existing entrance at the traffic signal, and be provided with a western exit which would be a restricted "right-out only" traffic way.

The sketch plan presented shows two areas (Open Space A and Open Space B) where the applicant proposes to use drip irrigation for the town home sewer disposal. Mr. Palkovics estimated that 4 to 5 acres of the open space could be used for that purpose. The applicant plans to treat and dispose of the sewage from the newly proposed commercial area using the existing wastewater treatment plant currently serving the Brandywine Village Center. Mr. Piersol pointed out that it was his understanding that the package plant was to be decommissioned once public sewage capacity became available.

Because the length of the proposed street is well beyond the 1,000 foot limit allowed by Ordinance, Mr. Bruce Rawlings, Chairman of the Planning Commission and Mr. Piersol made recommendations with regard to the road system. These recommended changes may interfere with the sewage disposal as proposed although Mr. Piersol stated that the existing drip fields appeared to be to the west of the proposed road. Mr. Unruh noted that there would need to be ongoing discussion about this to clarify road location, drip field location, and the continued operation or decommissioning of the plant. Suggested plan changes included:

1. The entrance roadway should align with Bollinger Road. An easement would need to be obtained from the adjacent property owner to do this. Possibly Gambone could do a "land swap" with the property owner and then the driveway from that property could come out on the newly created road, rather than Rt. 322.
2. There should be a second entrance to the development from North Guthriesville Road at Firethorn Drive.
3. Re-direct North Guthriesville Road to the existing traffic signal in front of the Brandywine Village Center. This would require the cooperation of the owners of the shopping center.

4. Restrict the North Guthriesville Road intersection to “right in/right out”. Some signalization may still be needed at the Township municipal complex for emergency vehicles.

There are three options to treat the sewage for this property.

1. On-site treatment and disposal.
2. Treatment at the Applecross sewage treatment plant with return of the effluent for onsite disposal.
3. Treatment and disposal at the Little Washington Wastewater Treatment Plant.

Mr. Palkovics stated that an on-site soil testing program had been completed with PADEP coordination to evaluate the suitability of soils in Areas A and B for onsite disposal. The next step would be to complete groundwater hydrogeology testing. Mr. Palkovics stated it isn't certain whether infiltration tests would need to be done.

The Applicant is projecting the development will generate sewage flows of 30,000 gpd. Mr. Palkovics stated that they would be looking to lower the projected flow for the townhouses from 250 gpd to between 175 gpd and 210 gpd. The Municipal Authority stated that it is too early to discuss flow rates and would require the applicant to provide data to support allowing lower flows than 250 gpd. Mr. Gambone stated that all town homes will have three bedrooms and their data shows that typically 70% of the sales are to homeowners with no children. Mr. Ray Grochowski from Pulte Homes stated that their Sewage Facility Planning Module to PADEP used 175 gpd for the townhouses in that development. Mrs. Moser stated she wouldn't be comfortable with using that number without the applicant providing a backup (contingency) disposal area. Mr. Grochowski stated that PADEP required Pulte to provide a 15% backup area for their development.

The owners of the Brandywine Village Shopping Center are interested in purchasing a portion of the Gambone property in order to expand the existing Croppers Market. It was pointed out that when AWI first discussed expanding the store they also discussed with Township officials the possibility of having a small eating area. This area will increase sewage flows for the store. Mr. Gambone stated that he spoke to someone from the shopping center about the purchase of property. He is willing to have discussions with them about this, but needs more information before proceeding.

The Applicant would like to use the existing treatment system at least temporarily to treat the sewage from the commercial piece of their property. It is the Municipal Authority's ultimate preference for disposal to decommission the existing package plant and to treat all flows in one place, most likely the Applecross Development.

The flows for the Gambone property would be subtracted from the additional capacity allocated to the Municipal Authority. Again, it was noted that there is no additional capacity at the Little Washington Treatment Plant at the present time, although some or all of the flows from

Guthriesville might be redirected to the Applecross treatment plant. Mr. Unruh asked when that capacity might be moved. The Municipal Authority could not give a timeframe for when the Guthriesville flows might be diverted.

The Township is currently sending approximately 25,000 gpd to the Little Washington Treatment Plant from the Guthriesville Sewer District. Once all the connections are made in the Guthriesville Sewer District, this flow could increase to between 46,000 and 50,000 gpd. Mrs. Moser stated she would be opposed to a stream discharge for the Gambone development at the Little Washington plant although this is allowed under their current permit.

The Applicant is proposing to have Aqua Pennsylvania provide water, possibly via water purchased from the Downingtown Municipal Water Authority, although the source of the water supply was unclear. The Watters/Spence property is in Aqua Pennsylvania's existing franchise territory. The Municipal Authority asked that Aqua Pennsylvania provide a letter stating they have sufficient water to service this development, and to identify the specific source of the water supply for this development (e.g. Downingtown Municipal Water Authority purchase, increase water production from Kay wells, etc.)

The Municipal Authority asked the developer to provide the following information prior to making any decisions about water or sewer for their development.

1. Provide a letter from Aqua Pennsylvania stating they have sufficient water to serve the development.
2. Ask Aqua Pennsylvania to identify the source of the water, i.e., Downingtown Municipal Water Authority, the Kay Wells, etc.
3. Look at reconfiguring the disposal beds to accommodate the road system suggested by Mr. Piersol and Mr. Rawlings.
4. Calculate how much effluent can be disposed of in Open Space A and Open Space B.
5. Test Open Space D to see if this might be a potential area for disposal.

Dilworth Tract

Mr. Stephen Gallo approached the Municipal Authority to discuss ownership, operation and maintenance of the proposed community system on the Dilworth Property. Mr. Gallo wanted to know whether it was the Municipal Authority's preference to own the system or have it owned by a public utility. He also said that he submitted a copy of the Sewage Facility Planning Module to Mr. Boldaz so that technical aspects of the Planning Module could be reviewed prior to sending it to PADEP. Mr. Kirkpatrick asked that a copy of the Planning Module be sent to him as well.

The property is 71 acres on the western side of Dilworth Road, in the R-2 Zoning District. It has an existing barn and equipment shed. The parcel is bordered by the Hide-A-Way Farms subdivision and the Okie property to the north, the Cross Keys development to the west and the Clavier property and the East Brandywine Township Community Park to the south.

It is the applicant's intention to design the subdivision using the R-2 Cluster option. The revised plan shows 38 single-family homes. The plan proposes over 40% open space including 14.6 acres of private open space that will include the existing shed, barn, and one future dwelling. The public open space will be maintained by a Homeowners Association. The homes will be between 3,200 s.f. and 4,200 s.f. in size.

Mr. Boldaz stated that the community system may be required to have a license operator. He wasn't sure how much time would be required for operating this facility on a daily basis. Mr. Gallo was asked about the cost to run the system. He wasn't certain, but stated he would begin to prepare a cost spreadsheet for Mr. Boldaz to review.

Based on a preliminary evaluation it would be the Municipal Authority's preference to own the system. If that is the case, the Municipal Authority will be the permittee for the system. Mr. David Englund, President of Rouse/Chamberlin Homes stated they would begin working on a draft agreement for the Township to review. Mr. Piersol will send Mr. Gallo a copy of the agreement done for Keats Glen and the Community College to use as a guide.

Mr. Gallo was asked about dedication of Phase IV of the Guthriesville Sewer System. Mr. Gallo stated that Mr. Brown has recently provided a review letter of the As-builts for Phase IV and for the Wright Agency and Fling/Neff property. He thought that dedication could take place within the next month or so. Mr. Piersol stated Mr. Wright from the Wright Agency was told by a Rouse/Chamberlin representative that there was no reason his property couldn't connect to the sewer system. Mr. Englund stated he erroneously told Mr. Wright he could connect. He stated he would call him later in the day to clear up this misunderstanding. The Wright Agency cannot connect to the sewer system until the Municipal Authority accepts dedication for that portion of the Sewer District. As stated above, that should be done within the next few months.

Applecross Development (AKA Overlook Road Farm)

The applicant is proposing to build a combination of single family homes, carriage homes, and townhouses for a total of 655 units on both the north and south side of East Reeceville Road. The plan also shows an 18-hole Jack Nicholas-designed golf course with a clubhouse. The property encompasses approximately 621.74 acres of land, comprised of 307.58 acres north of East Reeceville Road and 314.16 acres south of East Reeceville Road. The southern portion is a 310 acre tract located in the R-2 Zoning district and proposes single family homes on individual lots and approximately half of the golf course. The portion of the property north of East Reeceville Road was part of a settlement agreement that concluded in April of 2004. The

applicant submitted a subdivision plan for the south side of East Reeceville Road based on the requirements of the R-2 Zoning District and was granted preliminary plan approval in March of 2004.

The “North Tract” is being reviewed under the “Clustered Residential Development” regulations of the R-3 Residential Zoning District in conjunction with the Settlement Agreement dated April 1, 2004. The “South Tract” is being reviewed under the “Clustered Residential Development” regulations of the R-2 Residential Zoning District. The project is proposed to be constructed in five phases.

Ray Grochowski, John Curtin, Fred Ebert and Theresa Lemley, Esq. attended the meeting on behalf of Pulte Homes to discuss several issues regarding the proposed sewage treatment plant. Mr. Grochowski stated he wanted to provide an update to the Municipal Authority on outstanding issues related to the treatment plant including the Act 537 plan, the sewer design, the Part II Permit and treatment plant design and the Intermunicipal Agreement.

Construction and Operations Agreement

A meeting will be scheduled within the next several weeks with representatives of the Township, Municipal Authority and Pulte Homes to discuss outstanding comments and concerns raised by the Municipal Authority.

Sewage Facilities Planning Module

According to Mr. Ebert, all outstanding items in the PADEP review letter of February 6th have been addressed to the satisfaction of Donna Ulan Smith at PADEP. Ms. Ulan Smith hadn't seen Mr. Ebert's latest revisions when she issued the letter and verbally told Mr. Ebert that the items in the letter were resolved. Mr. Ebert stated the resubmission did show a complete design. He also stated that PADEP offered no resistance to permitting the use of effluent from the treatment plant at the golf course for irrigation as a “beneficial reuse”.

Mr. Grochowski stated that the Planning Module would need to be amended for the flows to be treated from West Brandywine Township or for the Gambone project if their sewage were to be treated at the Applecross treatment plant. Initially, the amended Act 537 plan will just show the Pulte East flows, the temporary Pulte West flows, the K. Hovnanian development and additional capacity allocated to East Brandywine Township. A Sewage Facilities Planning Module will also need to be submitted to PADEP for the Pulte West project in West Brandywine Township. Mr. Grochowski anticipates starting construction on the Pulte West project within the next twelve months.

The anticipated flows from the developments in the area are as follows:
Pulte East 137, 680 gpd

Pulte West 56,250 gpd
K. Hovnanian 48,300 gpd
Gambone Development 32,000 gpd (using 175 gpd for the townhouses)
Guthriesville 50,000 gpd (at buildout)
Total: 324,230 gpd

This would leave no additional capacity for the Township to use, and Phase I of the treatment plant is being built for 300,000 gpd. There have been no decisions made about treating the Gambone or Guthriesville flows at the Applecross treatment plant yet.

Intermunicipal Agreement with West Brandywine Township

Mr. Grochowski reported that the Bentley developments proposed for West Brandywine Township would be sending their flows to the Pennsylvania American plant in Coatesville. In addition, Mr. Grochowski only plans to send the Pulte West flows to the treatment plant in East Brandywine Township until 2009 when Pennsylvania American will be expanding their treatment plant. The flows would then be diverted to Pennsylvania American's Coatesville plant. The Intermunicipal Agreement currently being written by Mr. Riper will need to be revised to reflect this change of events. Mr. Boldaz provided Mr. Riper with a sample Intermunicipal agreement. Mr. Grochowski would like to try and resolve the Intermunicipal agreement issue within 60 to 90 days.

The temporary flow strategy means that the Guthriesville flows, if they were to be diverted to the Applecross treatment plant, would not be disposed of in West Brandywine Township. Although Pulte had backup fields north and west of the driving range, and can use the driving range area temporarily (roughly 18 months) to dispose of some flows, (approximately 30,000 gpd) there isn't room to dispose of the 50,000 gpd projected when all of the Guthriesville Sewer District is connected to public sewer.

As a result, the Municipal Authority needs to determine where to treat the anticipated flows from the different proposed developments along the Rt. 322 corridor as well as the Guthriesville flows since the decisions made will impact the three developers (Pulte, K. Hovnanian and Gambone) as well as the East Brandywine Township Municipal Authority and the Little Washington Wastewater Treatment Plant.

As part of the review process for the Intermunicipal Agreement it was pointed out that residents of Guthriesville could not be charged an additional tapping fee if those flows were moved to Applecross since they have either already paid those fees, or will be paying the tapping fees to Rouse/Chamberlin Homes via East Brandywine Township.

The Authority will require there to be a provision in the Agreement that if West Brandywine Township fails to pay their bulk sewer rate that East Brandywine Township will have the legal

recourse of creating a franchise territory in West Brandywine Township. Of course, this would likely mean that either East Brandywine Township or the East Brandywine Township Municipal Authority would incur large legal bills if steps needed to be taken to create a franchise territory. It was noted that this clause in an agreement hasn't been formally discussed with representatives of West Brandywine Township yet.

Sewer Design

Mr. Ebert reported that the Chester County Water Resource Authority is concerned that one of the sewer lines near the townhouses in the western portion of the property is too close to the dam spillway. However due to existing grades, the sewer line is now twenty-four feet deep and the further the sewer line is moved from the spillway, the deeper the line will become. Given the depth of the influent sewer lines the design engineer is recommending an influent pumping station be placed upstream of the wastewater treatment plant. This will allow the treatment to be raised and reduce the amount of rock extraction. This change won't affect the Act 537 plan, but will affect the Part II permit. This revision was sent to Mr. Boldaz last week for his comments. Mr. Boldaz doesn't see a problem with this change and stated it could potentially help gain operating flexibility. Mr. Ebert discussed potential benefits from this change. The downside is that additional pumps will need to be maintained. It was suggested that low pressure grinders might help this situation. Mr. Grochowski stated this would be a problem from a marketing point of view. He also stated that a pump station on the western portion of the property wouldn't help the situation. There will need to be additional discussions with Jan Bowers at the Chester County Water Resource Authority since she is concerned that the trench may not be stable with a sewer line that deep.

PADEP provided preliminary treatment requirements for a discharge to Beaver Creek, as well as discharge by drip and spray irrigation for the development. These technology limits have been adapted to meet the discharge scenarios of the proposed project. Mr. Ebert stated that these limits are what the treatment plant is design for except for phosphorus. These limits allow the applicant to avoid treating the wastewater as a discharge to the "Waters of the Commonwealth" and forcing strict phosphorous limits and subjecting the effluent to total maximum daily loads (TMDL's).

Preliminary Treatment Requirements

CBOD₅ = 10.0 mg/l

TSS = 10.0 mg/l

Ammonia (as N) = (05/01 to 10/31)

Ammonia (as N) = (11/01 to 04/30)

Total Nitrogen = 10 mg/l

DO = 6.0 mg/l, minimum*

Fecal Coliform = 50/100 ml geometric mean

Ultra-Violet disinfection or Non-Detectable Total Residential Chlorine

Total Phosphorus = 0.5 mg/l*
*Monitor only for land application

Mr. Ebert will be sending a 100-sheet plan to PADEP showing the design of the effluent pump station once Mr. Boldaz has had an opportunity to review it. This will take some time since the drawings are so large. The construction design is between 85% and 95% complete.

Treatment Plant Buildings

Mr. Grochowski showed drawings of the sewer buildings. There will be a building designed to look like a Pennsylvania Farmhouse that will be shielding a building that will look like a barn. The applicant may need zoning relief since the height of the barn structure will be over the 35 feet allowed by Ordinance. It may only be the cupola on the barn that is over 35 feet and this is needed for lightning protection.

On-site Nitrogen Removal from Groundwater

Mr. Boldaz discussed a brief study related to private on-site nitrogen removal from groundwater in East Brandywine Township. This study is intended to provide information related to background nitrate issues, impact of the use of on-lot systems on groundwater nitrate nitrogen levels and guidance of on-lot wastewater disposal system with consideration of denitrifying technologies.

He discussed three different methods available for reducing nitrate nitrogen concentrations in residential wastewater:

1. **Biological Denitrification:** The biological reduction of nitrate to nitrite and finally to nitrogen gas. Biological denitrification occurs as the bacteria use nitrate to oxidize organic carbon to obtain energy. This can only occur if oxygen is not present. System components may eliminate nitrates from sewage by mechanical means prior to disposal by subsurface absorption systems. These systems require operation and maintenance activities and are components of treatment plant systems.
2. **Removal of Total Suspended Solids:** The physical removal of particles with nitrate attachments. This is generally not a conclusive method, as the several forms of nitrogen are soluble in water.
3. **Dilution and Dispersion of Contaminants in Groundwater:** Nitrates generated in subsurface disposal systems enter the groundwater at levels of approximately 45 ppm directly under the absorption field. Dilution and dispersion reduce the nitrate nitrogen concentration from sewage effluent as groundwater travels through the soil. Some agencies estimate 1.4 acres per system are necessary per single family dwelling in a subdivision to provide sufficient dilution of nitrate. The potential for nitrate nitrogen contamination increases as the density of the subdivision increases. Due to the large

volume of effluent being discharged in relation to the area for disposal, nitrate nitrogen loading is increased relative to the dilution/dispersion capabilities of the groundwater system. The capability of the local ground system to dilute and disperse these increased nitrate loads must be determined before the approval of these discharges.

PA DEP currently does not require any discharge limitations where subsurface sewage disposal systems are discharging to groundwater with nitrate concentrations less than 5 ppm. If the background nitrate concentrations exceed 5 ppm, DEP require site specific testing and hydrogeologic studies to determine the potential of groundwater contamination from the proposed subsurface systems. Such studies can also identify existing and potential water supplies that will be affected by nitrate nitrogen levels in excess of 10 ppm. Velocity and direction of groundwater movement is also estimated. DEP required the nitrate nitrogen concentrations to be reduced less than 10 ppm at the property boundary by plume analysis technique.

Mr. Kirkpatrick stated that this information will be kept on file so property owners are aware of alternatives to connecting to public sewers if a nitrate problem is detected in their groundwater supply system.

Sewer Odor Issues

Mrs. Smedley reported that Mrs. Paula Noebes of 300 Little Washington Road was still experiencing problem with sewage odors. Mrs. Noebes stated she notices the problems more in the evenings. Mr. Boldaz suggested using a hydrogen sulfide meter near Mrs. Noebes homes to try and determine the origin of the odors. He and Mr. Piersol will determine where the meter should be used.

If the odors are determined to be in the sewer line Mr. Boldaz suggested several solutions.

1. Place a "bucket" of activated carbon suspended inside the manhole.
2. Inject chemicals into the wet well.
3. Make a control change at the pump station to empty the wet well at different times.

If it proves necessary, the Municipal Authority would prefer to try the activated carbon in manhole solution since the second two solutions would be very expensive. The specific source of the odor has not been fully identified, and as such, there are still questions as to whether or not the odors are the responsibility of the Authority, or of the Little Washington Treatment Plant.

Projected Sewer Discharge

Mr. Boldaz will provide the Municipal Authority with a spreadsheet showing current and proposed developments and their anticipated discharge volume. This should help the Municipal

Authority determine the amount of expected flows and where they should be treated and what excess capacity (if any) for disposal will be available.

Downingtown Area School District

Mr. Anthony noted that an article in the February 10, 2006 Daily Local News stated that the Downingtown Area School District plans to renovate the Brandywine Wallace Elementary School. Mr. Piersol stated that he sent a letter to the School District in December to make them aware of the *potential* availability of sewage treatment and disposal and to determine their interest in the potential opportunity. To date, they have not responded to his letter.

Other Business

It was suggested that the Municipal Authority consider developing criteria for allowing residents to connect to public sewer, similar to the criteria developed for connecting to public water. This will be discussed at a later meeting.

Mr. Boldaz will be looking at what should be standard design flow rates for different types of homes in this Township. Once the rates are determined they can be set by Resolution and they can be used as a guideline for developers. It was noted that when flow rates are lower, such as was done for the Pulte townhouses, a backup disposal area will be required.

Mr. Boldaz will begin working on a map showing current and projected areas for public water and sewer. He may work with Yerkes so that this information can be plugged into the GIS system. He also suggested that as the Township begins to grow the Act 537 plan may be in need of revision.

Adjournment

There being no further business, Mr. Summers moved to adjourn the meeting at 10:20 A.M. Mr. Anthony seconded the motion, and the motion was approved by unanimous vote.

Respectfully submitted,

Mary Beth Smedley
Secretary/Treasurer
East Brandywine Township