

**RYE TOWNSHIP  
SUPERVISORS' SPECIAL MEETING  
TROUT LANE STORMWATER PROJECT  
May 12, 2009**

**PAGE 1 OF 6**

**PRESENT:** Chairman Robert Lightner, Vice-Chairman, Ronald Evans, Supervisor Sharon Cole Engdahl, Daisy Lightner, Secretary/Treasurer, Daniel J. and Kelly Miller, Doug Chattin, Steve Hawkins, James and Kelly Lynam, John D. Walker, Peter and Cindy Ambrose, Michael Peck, Brenda Erdman, Jo-Ellen Szekeres, John Brennan Patterson, Tony and Kelly Intreri, and Tom Graupensperger of GTS Technologies, Inc.

This meeting was advertised in the Duncannon Record and proof of publication is on file. The meeting was held at the municipal building and called to order at 7:31 PM. Chairman Robert Lightner convened the meeting with the pledge of allegiance to the flag. The meeting was tape recorded to aid with the preparation of minutes.

**CITIZEN PARTICIPATION:** Chairman Lightner asked if there was any citizen participation at this time. However, he clarified that all in attendance would be given an opportunity to ask questions of Tom Graupensperger during and after his presentation. None was offered at this time.

**ANNOUNCEMENTS:** Chairman Lightner announced the following upcoming events:

- May 16, 2009 Fishing Derby rescheduled from last Saturday. Registration at 8:30 AM; event begins at 9:00 AM; ages 3 to age 13 years old.
- May 19, 2009 Election Day; 7:00 AM to 8:00 PM
- May 25, 2009 Memorial Day – Office Closed; Office will reopen and trash will be collected on Tuesday, May 26, 2009
- June 1, 2009 Effective June 1st no glass of any kind will be collected for recycling. Unfortunately, this is a County-wide change.

Chairman Lightner introduced **Tom Graupensperger of GTS Technologies, Inc.** to the group of Trout Lane residents in attendance. It was noted that Dave Bailey, P.E. was unavailable to attend due to a conflicting commitment.

Graupensperger began by explaining the purpose of his presentation tonight as twofold:

- 1) To reveal the scope of the studies completed and the findings to date, and
- 2) To gain input and feedback from the residents who live within the Trout Lane development.

Graupensperger commented that the drainage and runoff issues are located within two interrelated areas:

1. The Township roadway, (Trout Lane) and the rock-lined swales along the Township's R-O-W; and
2. Drainage easements at several locations where water leaves the Township's R-O-W and flows onto residents' property.

• **A SUMMARY OF THE SCOPE OF STUDIES COMPLETED**

- **Soils information gathered and analyzed**
- **Problematic poor draining soils exist on lots and under Trout Lane**
- **Hydraulic/Hydrology capacities were analyzed revealing high water tables on the south side of the Mountain**
- **Reviewed infield drainage measures in place**
- **Identified problem driveways in the upper portion of Trout Lane with undersized pipes located at 15, 17 and 19 Trout Lane respectively**
- **Drainage swales capacities are too small; size of rock within swale is too small**
- **Identified that the “as built condition” of the rock-lined swales is incorrect. The swale constructed on the west side of the roadway should have been installed on the east side. The swale on the east side of the roadway should have been installed on the west side.**
- **Verified original stormwater runoff computations; updated calculations which determined that the size of the swales, particularly at 19 Trout Lane, needs to be increased.**
- **Identified grade line of cross pipe at 12 and 13 Trout Lane, which is set too flat hindering the flow of water that is crossing the road to the western side.**
- **15 cfs of flow coming down Trout Lane**
- **Swale at 14 Trout Lane is not functioning; a cross drain is under consideration**
- **Inadequate compaction during roadway construction resulted in reflective cracking where underground utilities cross under Trout Lane**
- **Inadequate swale near 8 and 10 Trout Lane with a possible driveway pipe replacement at 8 Trout Lane**

Graupensperger displayed two visual posters: one large, colored aerial photograph of the lots and roadway and the other a large, detailed roadway drawing of Trout Lane, which he repeatedly referred to during his presentation (11x17 versions are attached). Graupensperger said that the Trout Lane development was approved as the Fishing Creek Estates Subdivision Land Development in 1992.

During the development process, soil samples were taken as part of the on-lot sewage disposal system approval process. Graupensperger said information was gathered from the soil samples taken, which were analyzed along with the geology on this side of the ridge of the mountain. Soils in this area are generally poor drainage soils, which are indicated by the on-lot disposal systems and the elevated sand mounds that are required. Along with poor soils, the water table on this side of the mountain is high especially during the spring of the year saturating the soils and attributing to the increase in surface run off. These same problematic soils are found under the roadway resulting in saturation under the road pavement. The saturated soils in turn cause a weak base and subgrade failure resulting in surface cracking and dips. Graupensperger explained the findings of an in-field inspection of the driveways' entrances located within the upper portion of Trout Lane. Main concerns involve driveway entrances located at 15, 17 and 19 Trout Lane respectively. Township Subdivision Ordinance requires a minimum of an 18" pipe. However pipes along the driveways vary. Graupensperger said the inadequate swales and rock size contribute to the swale stability problem. Since 1992, the method to compute rock size has also changed.

With this new process the capacity of the channel with the amount of water running into it based on the slope will determine the size of the rock needed. Graupensperger indicated rocks around the eighteen (18") inch size are needed and not the R-4, R-5 rock that is currently installed.

Graupensperger continued to discuss the deterioration of Trout Lane, which is 16 years old. Graupensperger noted that everywhere there is an underground utility crossing, reflective cracking occurs which indicates inadequate compaction during road construction. The crown of the roadway is totally deteriorated to where it is actually an inverted crown and the storm water runs down the middle of the road. The roadway is significantly deteriorated in the upper corner due to the saturated soils and inadequate swales which allow the water to get under and saturate the soils underneath of the pavement.

Graupensperger discussed the cross pipe and inlet #1 and inlet #2. Field surveys revealed the cross pipe was set too flat to carry large amounts of runoff. He discussed the possible installation of another inlet and cross pipe at 21 Trout Lane. Preliminary estimates to rework the inlets & piping range from \$39,000 to almost \$100,000.

Graupensperger discussed the resurfacing of Trout Lane and the use of two different asphalt mixtures: FB and Super Pave. He recommended the FB material, because it is softer and will heal itself in the heat of the summer particularly in an area with low traffic volumes.

Considering the results of the studies to date, the following **preliminary recommendations** were suggested during the presentation by Graupensperger:

1. **Resize and reset the driveway pipes at 15, 17, and 19 Trout Lane.**
2. **Increase the size and regrade the eastern swale along the upper portion to 19 Trout Lane; and install 6" perforated PVC pipe wrapped in geotextile fabric lower than the subgrade material along the road so the water does not flow under the road and saturate the soils.**
3. **Re-work 320 feet of rock-lined ditch to Culvert #1.**
4. **Install inlet and cross pipe at 21 Trout Lane, which would better distribute the storm water into the western swale.**
5. **Grade line at inlet #1 and #2.**
6. **General re-pavement of Trout Lane to re-establish a crown and positive drainage.**
7. **Meet on site with property owners where drainage easements are located.**
8. **Purchase a commercial leaf loader/vacuum to better maintain the drains with the leaves falling from the surrounding mountainside.**
9. **Install a bioretention system in the center of the cul-de-sacs (see attached graphic). Take out the center of the paving and plant vegetation in the center. (If property owners are willing to maintain.)**
10. **Saw cut and reduce the width of the Township roadway, which is currently 27 feet to 25'. Install a 6" diameter underdrain in this 2-foot-wide area. This would also allow room to increase the size of the swale without encroaching onto the property owner's land (see attached detail).**
11. **For future developments- Update the Township Ordinances to require the developer to install the driveway entrances at the time the roadway is constructed to ensure consistency and compliance with regulations.**
12. **Re-install rock dikes at inlets where missing.**

- **RESIDENT PARTICIPATION AND DISCUSSION**

**Brenda Erdman of 15 Trout Lane** offered that their residence was the first home built on Trout Lane and Trout Lane was under construction while their home was being built. She indicated that the employees constructing the roadway were totally incompetent. The Erdmans observed that trees that were cut down were not removed from the site, but buried under the roadway, which would attribute to the failure of the roadway from the rotting trees underneath.

Brenda Erdman also commented that a requirement on the Fishing Creek Subdivision Plan was that a dry well must be installed to provide for drainage from the storm water run off from roof top areas with gutters leading directly into the stone filled reservoir area below the overlying soil. Erdman questioned whether other homes met this requirement and if this in fact was attributing to the run off concerns.

Brenda Erdman indicated that a lot of water flows across their driveway. And with the direction of the wind flow down the mountain leaves are blown onto her lot. In addition, Erdman questioned if the grade of the Township roadway exceeds permitted limits.

Graupensperger said the concern with the installation of dry wells is an enforcement issue involving different driveway and code enforcement officers over several years. The SDLD Ordinance is currently being updated and driveway entrances will be constructed in the future by the developer at the time the roadway & drainage is being constructed to ensure consistency and compliance with the Ordinances.

Graupensperger agreed he observed a concern with the driveway at Erdman's lot. The size of the pipe and the swale will be addressed from a location above 19 Trout Lane drive to inlet #1 at 13 Trout Lane.

The concern with the accumulation of leaves from the surrounding mountain is shared by the road crew. Graupensperger recommended the purchase of a commercial leave vacuum by the Township to better maintain these areas.

Graupensperger offered that the grade of a roadway is variable. The grade is computed by the overall average grade. The overall average grade of Trout Lane is in compliance with the Ordinance. However, the steepness of a roadway does attribute to determining the runoff velocity and the size of the rock within the swales. So if the roadway was not constructed to grade, this would attribute to the drainage concerns.

**Dan Miller of 4 Trout Lane** asked if residents will be losing a part of their property and if the dry wells are a requirement.

Graupensperger said the Township R-O-W for Trout Lane is fifty (50') feet and the roadway is twenty-seven (27') feet. So the Township has twenty-five (25') feet from the center of the roadway on either side plus the area around the cul-de-sacs. The proposed update to the Ordinance is for the future and not for already established driveways. Graupensperger said the dry wells were a requirement of the Fishing Creek Subdivision Land Development Plan.

**Doug Chattin of 7 Trout Lane** expressed concerns with water run off on the lower end of Trout Lane, which continues to flow down to his residence. Chattin noted there is a swale on his lot that extends into a rock lined ditch and offered to permit access to maintain this swale.

Graupensperger offered that the drop off of the roadway and its instability with poor soils and soil material clogging the inlet continuing down and clogging the next pipe at 13 Trout Lane allows for more water than designed to flow down onto the next corner involving the area near Chattin. Graupensperger said the original subdivision plan provided for rock diversion dikes to be built on the downstream side of the inlets. The rock dikes do not exist any longer because of the failure of the overall drainage measures. These rock dikes should be re-installed.

Graupensperger offered to meet with Mr. Chattin tomorrow evening to walk onsite along the easements. Graupensperger recommended annual maintenance of the easements.

**James Lyman of 12 Trout Lane** asked which driveways will need to be repaired and possible access denied during repair.

Graupensperger said 15, 17 and 19 Trout Lane are the main concerns with a possible resizing of 8 Trout Lane. However, the repairs for each driveway should be completed within several hours and minimally impede the use by the resident.

**Mike Peck of 19 Trout Lane** offered that during larger downpours he observed that the runoff water is flowing down the eastern side of Trout Lane. Peck said he is the one responsible for adding a storm sewer to assist with eliminating run off and debris from clogging his driveway pipe. Peck offered that he was in favor of attempting to add a cross pipe south of his lot in the upper end of Trout Lane to distribute the runoff to the western swale.

Graupensperger said the additional upper cross pipe is one of their recommendations. The only concern is that once the water is directed to the western swale it ends up at the cross pipe that was basically set too flat with only a .5% grade. Graupensperger suggested that a larger swale still needs to be constructed along the Peck's driveway at 19 Trout Lane and the pipes under 15, 17, and 19 replaced.

**Brenda Erdman of 15 Trout Lane** asked if any driveways would need to be relocated. Graupensperger indicated that no driveways would need to be relocated, but that adjustments are required for proper drainage.

Graupensperger again noted the concern with the reverse or the inverted crown in the roadway. The low point should be at the edge of the roadway instead of in the middle. When this is corrected, it would divert the runoff water flowing from driveways into the swales.

Chairman Lightner asked what methods were under consideration for the repair and resurfacing of Trout Lane.

Graupensperger said several alternatives are under consideration. Fiberglass reinforcement, which is a fabric within asphalt material with a surface treatment on top. Daniel B. Kraig of Harrisburg provides this product. Another alternative is to add a base material to the existing pavement with a surface treatment on top. It was Graupensperger's recommendation that the drainage issues are first addressed prior to or in combination with correction of the pavement.

**Peter Ambrose of 6 Trout Lane** asked if the lower drainage would also be addressed. He commented that the home and driveway at 8 Trout Lane has caused nothing but additional drainage issues since it was constructed.

Chairman Lightner said the Board intends to address all drainage issues from New Valley Road to the upper cul-de-sac of Trout Lane.

**Dan Miller of 4 Trout Lane** offered that he lives in the lower end of Trout Lane and both he and the previous owners have had problems with this home due to water runoff. Miller asked if Rye Township intends to complete this project with in-house labor.

Chairman Lightner said the Township employees will complete a majority of the work with the assistance of Graupensperger. If a larger piece of equipment is needed, an independent contractor would be hired to assist with the job.

**Brenda Erdman of 15 Trout Lane** asked when GTS intends to finalize plans.

Graupensperger said his time line is as follows:

1. Meet with property owners on site who have easements located on their properties
2. Once the onsite meetings are completed, a final listing of recommendations with cost estimates will be compiled
3. Meet with the Board of Supervisors to discuss recommendations and funding
4. Develop the plan of attack in phases

**John Walker of 13 Trout Lane** asked what would happen at his address.

Graupensperger said the underdrain would continue to the cross pipe at his lot 13.

**John Brennan Patterson of 2 Trout Lane** asked about a steel pipe located on his lot. Graupensperger explained that this is the control works for the one retention pond.

Chairman Lightner assured the residents present that they would not be financially responsible for the repairs recommended. The current Board was not involved with the approval of Trout Lane. However, they will deal with it in phases and budget accordingly. Tentatively, following final study results- some drainage repair will begin this year 2009 on the upper portion of Trout Lane with the remainder completed in 2010 and final resurfacing in 2011. There are variables and alternatives. Decisions may be made to complete the paving in two sections instead of one. But basically you are looking at a three year plan to complete the drainage repairs and resurfacing on Trout Lane.

The Board and residents appreciated the presentation given by Graupensperger.

**ADJOURNMENT OF THE MEETING:** With no further business or discussion before the Board, Cole Engdahl made a motion and Lightner seconded to adjourn the special meeting at 8:45 pm. Motion carried unanimously.

Respectfully submitted,

---

Daisy Lightner  
Secretary/Treasurer