



# Township of East Zorra-Tavistock

## Tavistock Flood Prevention Working Group

### *Update*

Since the severe storm in July 2005, the Township has undertaken the following steps:

- The Tavistock Flood Prevention Working Group was formed and has met several times.
- A summary of its progress and work to date can be found at: <http://www.twp.ezt.on.ca/tpwpg/default.asp>
- The Township and County have engaged R.J. Burnside to investigate the severity of the storm and impact on properties in Tavistock
- In addition to meeting with residents at an Open House, R.J. Burnside has met with over 40 property owners to undertake a detailed examination of what happened and make suggestions to protect their property
- The Township has initiated a petition under the Drainage Act for drainage improvements in and around the Bender Subdivision. Dietrich Engineering is working on this petition and should be in a position to submit a report shortly.
- The Township cleaned out the Shakespeare Drain
- Township staff have investigated, assisted and provided advice to many property owners concerned with lot grading issues and drainage matters

Significant findings to date include:

- The sever storms in 2002 and 2005 were 100 – 250 year storms.
- A 100 year storm doesn't mean that a storm of that magnitude is only expected every 100 years. It means that there is a 1% chance of getting a storm of that magnitude each and every year. Having a storm last year does not lower the 1% chance this year.
- Storm water management systems for villages such as Tavistock are designed based on a 2 - 5 year storm. A two year storm has a 50% chance of occurring each year, while a 5 year storm has a 20% chance of occurring each year.
- In storms such as those in 2002 and 2005 there would be significant surface flooding and overland flow routes would be utilized. The underground Storm Sewer System was not designed to accommodate events of this magnitude.
- The storm and sanitary systems in Tavistock are similar in design and capacity to other small communities in Ontario
- Investigation to date has not found any flaws, breaks or deficiencies with the Township's Storm Water Drainage System or the County's Sanitary Sewer System.
- A survey following the May 31<sup>st</sup> storm has indicated that properties that were disconnected from the Storm Sewer as recommended by R.J. Burnside did not have basement flooding problems

Over time, design standards change. Usually, as a result of severe storms. New thoughts and standards on Storm Sewer Design require the complete isolation of a property's underground storm system (weeper tiles, sump pump, etc.) from the municipality's road storm system. Changing standards affect many public services and household systems. For example, at one time a 60 amp electrical service was considered adequate; however, today the standard is a 200 amp service. Lifestyles and use of space in homes has changed. Today, basements are family living space and a flood has a significant impact. Many years ago, basements were not living spaces and water problems could be tolerated. At one time lead pipe was used for plumbing and asbestos for insulation.

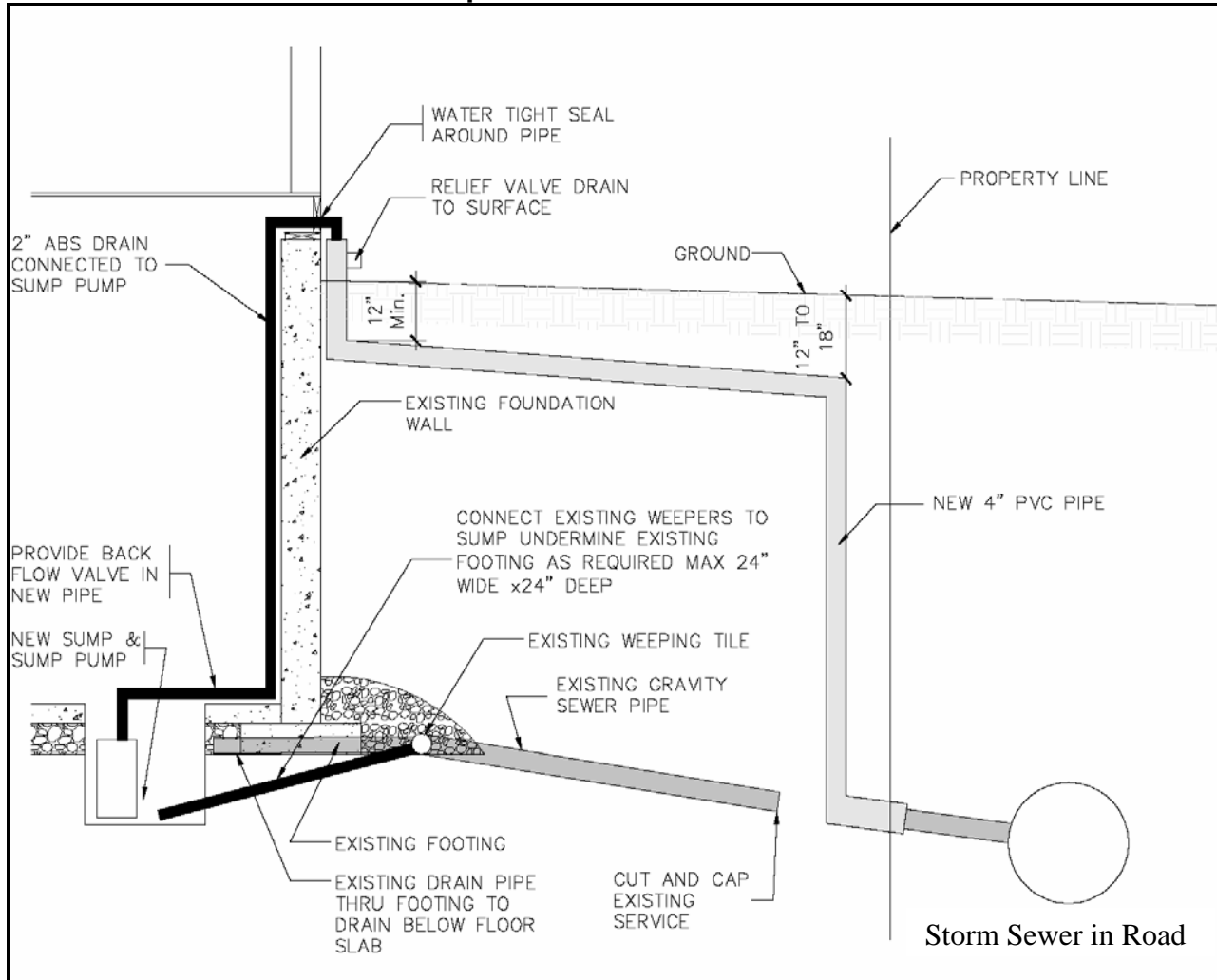
Increased knowledge of weather patterns and better weather tracking have also contributed to changes in design standards. Many years ago, design standards were based on provincial storm data, whereas today, regional data is available. There is also more information being tracked such as storm intensity (quantity over time vs. just quantity). Current research into the effects of global warming and whether storm events are more severe than in the past will also play a role in designing storm water management systems for future.

#### ***Update From R.J. Burnside & Associates:***

***We have conducted 41 site visits to date. Our investigations indicate that most of the flooding problems arose from a backup of storm waters within the private drain connection (PDC) to the home. The storm water would fill the weeping tiles around the house saturating the area of the footings and under the basement floor. The storm waters would then seep into the basement through cracks, along the edge of the floor or from openings such as the sanitary sewer clean-out. Different construction techniques and soil conditions may explain why some houses were affected while others were not. For example, use of stone under footings vs. clay may affect the time for the water to travel.***

***The suggested option for minimizing the possibility of future flooding would include a complete disconnect from the gravity storm system. With this option the existing private drain connection would be cut at the streetline and rerouted to the outside foundation wall with a relief outlet at grade. A sump pit and pump would be installed in the basement floor with an outlet plumbed over the foundation wall to new PDC. This arrangement is now the design standard for any new development within the Township where storm drainage is provided. The diagram to the right illustrates this recommendation.***

## Recommended disconnection option from R.J. Burnside & Associates



As properties disconnect from the storm drain in your area, future storms could affect other properties in the area as water will go to the next relief point. That means properties not affected in the past may be affected in the future. For this reason, all property owners should consider the benefits of the disconnection options recommended by R. J. Burnside. The program to access engineering advice is still available to homeowners in Tavistock. To access the service, please contact the Township at 519-462-2697 or email [ezt@twp.ezt.on.ca](mailto:ezt@twp.ezt.on.ca) with your name, address and phone number.

There may be drawbacks to the proposed connections in some areas. Areas that have a high water table may notice their sump pump running more frequently. This option also creates a reliance on electricity; however, if the footing tile is properly disconnected and ground is sloped away from the house, the water getting to the footing tile in most cases will be gradual and take time.

This option, recommended by R.J. Burnside would provide the highest level of protection to homeowners. While other options such as backwater valves exist, they must be maintained on a regular basis and have the potential to fail.

Local plumbers and contractors are familiar with this connection method. They include:

Scott Ramseyer Plumbing  
40 Henry  
Tavistock, ON N0B 2R0  
519-655-6829

Schultz Plumbing & Heating  
27 Woodstock N,  
Tavistock, ON N0B 2R0  
519-655-3111

The Township should be notified if you plan to proceed with disconnecting from the storm drain. Depending on your location, the Township may be able to locate the drain. The Township has records for most new parts of the village; however, records for older areas where there has not been any recent construction may not be available. The Township also needs to update it's records on the connection status for each property, so please contact the Township if you are making any changes.

Other points to keep in mind are:

- Ensure there is a working back water valve on the sanitary sewer connection or in low lying areas it may be beneficial to disconnect lower levels from the Sanitary Sewer System
- Ensure downspouts are not connected to underground system and are directed away from the house (and not situated so they flood your neighbour!)

In addition to disconnecting from the storm system, property owners should ensure their lot grading has not been changed in a manner that could create problems. The swales on properties and grading away from houses is there for a reason. Planting gardens, building sheds and fences, installing pools and other changes to your property can adversely affect the storm drainage pattern. This may cause water damage on your property or your neighbours. In newer parts of the Village there are approved lot grading plans for your property. It is imperative the intent of these plans be maintained. The Township can provide information and advise on whether your property has a lot grading plan. It is the homeowners responsibility to ensure that the plan is maintained and any changes do not adversely affect neighbours. The Township will investigate and act on complaints about lot grading issues. If your property does not comply with the intent of the lot grading plan and is found to be negatively affecting other properties, you will be responsible for making changes at your cost.

Any information you can share with the Township and the drainage engineers is useful. If you have photos or records of how the severe storms affected your property, they would be useful in helping the engineers understand exactly what is happening and how to best prevent damages in the future.

This update flyer was prepared and distributed by the Township of East Zorra-Tavistock. If you have any questions please contact the Township at 519-462-2697.