



## TOWNSHIP OF FERGUSON

### Ferguson Township - Stormwater Advisory Committee (SAC) Meeting #3 December 6, 2017 (@ 12pm)

#### Attendees

**Ferguson Township:** Dave Modricker, Ron Seybert, Lance King

**Amec Foster Wheeler / Gannett Fleming Team:** Elizabeth Treadway, P. Eric Mains, Virginia Thornton

**Stormwater Advisory Committee:** As listed on attached Sign-In Sheet

The following minutes/notes are intended to be an overview of the presentation and discussion that occurred at the above referenced meeting. There are provided to document the general content of those discussions such that they can be used as a tool with future meetings and stormwater program discussions. They are not intended to be a transcript of the meeting. However, any noted differences, exclusions, or variations from personal notes of the meeting should be brought to the attention of the Township so that they can be considered for the final record.

The following minutes were captured;

#### **Introductions - Dave**

##### **Scheduling January and February Meetings - Elizabeth**

- Tuesday January 9, 2018
- Wednesday February 7, 2018

##### **Review Supplemental Questions from 2<sup>nd</sup> SAC Meeting - Elizabeth**

- Many new questions were sparked with the review of the supplemental meeting between the Amec Foster Team and the Township
- Which stormwater infrastructure components are more likely to fail and the failure of which ones has the greatest impact?
  - o There is a long-term risk associated with every type of failure and each failure does not have the same implications and risks that are not always one-to-one comparable. Failure to meet the requirements of a permit will have very different implications than an infrastructure failure.
  - o Typically, failures that have a personal liability/risk or property harm tend to be perceived as the highest risk by the community. For example, a road failure tends to be more “pressing” because of the exposure. Most stormwater failures don’t have any exposure until there is a collapse or a sinkhole, when a failure could have begun years prior to the collapse.
  - o Part of the goal of the SAC is to develop an understanding of what the community’s values and perception of stormwater management is, not just the specific infrastructure, i.e. “We don’t want flooding, we don’t want loss of life, etc.”, ‘failure preference’ - a pipe failure or a curb failure, etc.

#### **Presentation - Eric**

- A revised matrix was circulated with a new focus on assessment.
- Introduction of the assessment, inventory, and repair/replace cycle. Once a system has made it through its assessment, it is added to the queue for the next assessment cycle - the assessment process will not stop with one assessment.
- There is a concern that there will be ‘larger’ structural changes that need to occur either prior to or parallel with the system assessment. For example, the policy surrounding private basins



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and creating structural redundancy for projected climate change impacts are important issues that need attention and are not dependent upon a system assessment to take action.

### Capital Improvements Presentation - Eric

- These are larger efforts such as replacement of infrastructure.
- Inlets
  - o The township currently does not have a program to look at inlets proactively; an emphasis has been made by the SAC to prioritize assessment of condition before developing any replacement goals. Inlet failures cannot be identified by a “drive-by” review. Only the inlet grate or opening can be assessed visually in a “drive-by.”
- Pipes
  - o There is a Capital Improvement Plan (CIP) budget associated with the replacement of Corrugated Metal Pipe (CMP); however, it is not based on any assessment cycle and is currently a “funds placeholder” without a dedicated program strategy. The majority of the pipe system is corrugated metal pipe.
  - o Cured In Place Lining can be used to ‘repair’ pipes when the integrity of their original structure exists but have breaks or eroded sections.
    - Ron and Eric passed around two different examples of Cured in Place Pipe.
    - Curing can take about 1 ½ to 3 hours - there is a noticeable odor during the curing process
    - Can cost less than a full pipe replacement as there is no trenching, fewer safety concerns and less traffic control required
    - The pipe must be flushed and cleaned before the lining process can occur
    - The pipe must be inspected before and after lining, using televideo tools.
    - After lining, the pipe has an additional lifespan of 50+ years
    - There is no lineal foot limitation; however, the preference is to cure in lengths covering three manholes
    - Pipe Diameters between 8” and 48” are eligible for Cured in Place Lining
    - The cost is estimated to be approximately \$150 to 250 per lineal foot
- Curbing
  - o The Township would like an inspection program for this - compared to other assessment processes, it is not as extensive an effort.
- Channels
  - o Currently only being fixed at the time of a sinkhole or some other failure.
  - o The ‘issue’ could have been happening for a while before the failure is recognized or reported.
  - o Drainage channels with public runoff that are privately own are typically not be getting the maintenance they need.
  - o For the most part roadside channels are public and backyard channels are privately owned.
- Basins
  - o Fixed as complaints arrive, typically a sink hole is identified or an embankment erosion is occurring.
  - o Mandated to inspect 20% of all BMPS by the MS4 Permit (only BMPS constructed post 2003)
  - o All 23 Township-owned BMPs are inspected yearly.



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- o Increase inspections - not all basins are on the MS4 Permit Inspection Cycle and inspections of those additional stormwater facilities is required to ensure they're all operating as needed.
- o Common ways of basin failure
  - Infiltration based facility - not infiltrating as designed - water is laying and not draining.
    - The Township's Ordinance has been updated and requires Post-Construction Infiltration Testing to avoid infiltration failures.
  - Failure is brought to the Township's attention based on complaints.
  - Large storms may blow out physical infrastructure.
  - Areas can be eroded such as embankments.
  - Sinkholes occur and require assessment and stabilization.
  - Example of a Basin Failure: Old Gatesburg Road - Basin is still the subject of litigation between the contractor and Township six years later.
- o Basins have O&M Plans which are often ignored except for mowing the grass. During the 20% Inspection Program the Township issues a Notice of Violation for failure to complete all portions of the O&M Agreement.
- o Basin maintenance is often more intensive than the owner realizes. There are a few consulting firms being developed to specialize in basin management throughout the State because this is not just a Ferguson Township issue.
- o The current Privately Owned Basins model is not working. There are too many basins that are not operating as designed.
- o Basins that are already installed are sometimes set-up for failure if they're not sited with the entire developed area in mind and are just placed where there is leftover room within the development.
- Green Infrastructure - mimicking natural processes
  - o Currently only occurring during new development.
  - o Is there enough interest in this by the Township and community for this strategy?
  - o The SAC is optimistic about the use of curb cuts to allow runoff to reach trees and islands that are disconnected by curbing but concerned about areas where curbs do not exist. The runoff has complete access to the island as they're often damaged by traffic.
  - o The Medical Center has curb cuts that seem to function well.
  - o Tree Canopy goals would be related exclusively to Township owned lands (i.e. the "Community" or Urban Forest) as there is no 'control' over private tree management. Rather than a blanket increase, it would be advisable that the increase of tree canopy in areas that can support the development is preferred over planting trees without a plan.
  - o The Township does not have an ordinance requiring removed trees be replaced.
  - o This could be an opportunity for collaboration between the Planning Commission, Tree Commission, and Stormwater Program.
- Reg/Enforcement - Private/ Orphaned Facilities
  - o Resource requirements are often too much for actual O&M to happen by the owner.
  - o Some of the backyard ones face yearly fines and court orders and the Township ends up doing to maintenance eventually.



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- o Looking at facilities that are receiving public runoff only to ensure that the drainage system functions well. There is no reason/incentive for the Township to take ownership for any facilities that do not receive public runoff.
- Outfall screening
  - o Potential interest to increase frequency at 'higher' risk outfalls.
  - o Illicit Discharge - evaluated during dry weather, looking for instances when someone illegally discharges to the storm sewer (i.e. grease from catering operations, carpet cleaning service discharge, other thermal pollution). Often can be groundwater that is seeping into the system or a cross-connection between potable/sanitary lines.
  - o There is not a lot of illicit discharge in the Township that has been documented.
- Post Construction Management
  - o Required by the MS4 permit to ensure that public and private facilities are operating as designed.
  - o Ordinances should be reviewed for updating to include Green Infrastructure.
- LID - It is important to review the site for the best place for a BMP and not place wherever it fits.
  - o General note that LID is often very attractive.
  - o The Stormwater Ordinance has some elements to encourage BMPS with infiltration and disconnection, but it could probably be 'better'.
  - o Often SWM is the last thing to be designed and not often a collaboration of soil scientists and landscape architects. This can be addressed in an ordinance review and/or an adopted Design Manual.
  - o Dave is optimistic that this type of development is gaining popularity as people recognize it's a better way to manage stormwater and has a return on investment, increasing property values.
  - o EXAMPLE: The movie theater off of Shiloh Road - this is 'very well done' BMP/Facility.
- Staffing - Agreement was expressed that full-time staff should be assigned to address the issues identified.
  - o Educating the public and the development community is a recognized need.
  - o Full-time staff is needed to address issues.

### Questions for Discussion:

- Feedback on - Public Water being Managed in Private Facilities
  - o What is the appropriate expectation of the owner of a private facility that serves a public function (manages stormwater flows from public properties)?
  - o The Township 'ought' to take all of them, but how do you compensate someone to take the land? Some properties may even pay the Township to take the facility. Can the Township provide maintenance but not "own" the facility? What agreements could be developed to share responsibilities? There may be a reason that the property needs to keep the land but there may be an easement/maintenance agreement.
  - o Some property owners are trying to 'build' a fund to take care of basins; is there a role for the Township in supporting those efforts?
  - o When roads are taken, they are not transferred until meet the township's standards. Should this be the same for basins? In another township, they took over 'under standard' with an 'agreement' for it to be funded by the Township with the owner paying for it eventually (payment over time to correct the failures).



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- o Concern that folks will turn over failing basins as a get out of jail free card; must be sure that the Township is not burdened to correct failures. Are some failures due to public runoff (erosion for example)? Perhaps part of the agreement to provide O&M is some cost share to correct basin issues.
- o Emphasis will be to evaluate after an inventory assessment has occurred.
- o What % of the entire system is private - are most known problems in private or public systems? The assessment is important to determine the cause of failures.
- o Do we have any blueprints from other townships regarding this public/private issue?
- o There is not a clear picture of the basins if they were installed before 2003. No inventory is complete and condition of all facilities is not known. Should be a priority.
- o Thinking about the whole stormwater system we can come up with a more holistic/LID or better solution? Should the Township adopt design standards for the future?
- o PSU has a centralized structure for managing stormwater; the nature of the Township does not allow for this approach.
- o Prioritization on the drainage area, different types of basins and structures and the ability to inventory is a big job (a lot of things that need to be characterized by each basin).
- o Would there be a way to have the basins being disconnected from the Township? It's not likely for a property to be completely disconnected because the runoff needs to be managed to the final point of discharge to creeks, streams or infiltration into groundwater.
- o The concern is where systems are interconnected between public/private - indicating that the public system is relying on the functioning of a private system.
- o Want to make sure that the folks doing inventory know how to input everything.
- When Inlets are being cleaned, a visual inspection in the end of the pipe without the CCTV can occur. It can determine if there is an immediate problem with the flow from the inlet to the pipe.
- Noted there has been no discussion of streams/streambanks/riparian zones. Focus has been on the physical structure noting that the PRP is focused on streambank restoration projects. The management of streams and rivers is the responsibility of the Commonwealth. The natural system is not "owned" by the Township.
- The staff would like to see the potential fee cover part of the Streambank PRP.

### Next Steps:

- The form to evaluate preferences will be sent out via email.
- This has been about values; next step is what are the different costs and timelines to achieve the goals and outcomes defined by the review of the program and discussions of the SAC.