

Radnor Township
Stormwater Management Advisory Committee (SWMAC)
Agenda
7:00pm, Thursday, January 12, 2017



1. Call to Order.
2. Pledge of Allegiance.
3. Nomination and appointment of SWMAC Chair and Vice-Chair.
(5 minutes)
4. Review / approve meeting minutes of December 8, 2016 SWMAC Meeting.
(5 minutes)
5. Public comment.
(15 minutes)
6. Discussion of revisions to MS4 permit scope/fee proposal. Consider MS4 proposal for recommendation to BoC.
(30 minutes)
7. Township Wide Assessment update (CH2M).
(15 minutes)
8. Discussion of possible recommendation to BoC for RFPs for Maplewood and Highview projects. This considers the potential matching grant for Maplewood project mentioned at recent BoC meeting.
(20 minutes)
9. Old/New Business – Update on current repair projects, North Wayne Basin status, Storm Sewer Inspection/TV status, Mill Dam legal research, North Wayne Train Station/SEPTA.
(30 minutes)
10. Set the date and time for the next meeting and adjourn.

ATTENDEES: SWMAC: Paige Maz, Regina Majercak, Heather Gill, Joe Schanne,
Charles Boschen
CH2M: Daniel Wible

PREPARED BY: CH2M

MEETING DATE: December 8, 2016

SUBJECT: December 2016 meeting

YouTube link: <https://www.youtube.com/watch?v=nbTsPWpFUSM&t=135s>

Review of Previous Meeting Minutes

- NOVEMBER 10, 2016 SWMAC meeting minutes – approved with several minor typographical edits

Public Comment

- No public comment

Update on Banbury Stormwater Management System Design by T&M

- Richard Young and Greg Duncan from T&M presented their preliminary design for the Banbury project
 - After considering both reinforced concrete and modular (plastic) block storage systems, T&M settled on modular blocks for the underground storage/infiltration system
 - The system footprint is slightly larger than the original conceptual design; this is the result of more realistic sizing, spacing, and required aggregate cover for the proposed storage blocks
 - The modular block system allows greater flexibility with respect to the system footprint, as well as working around existing utilities; modular blocks are always easier and quicker from a construction perspective
 - The sanitary sewer would be relocated as part of this project; the cost of this would likely be part of the project cost
 - Closing off the southern most of the two connections between Windsor Ave and Banbury Way makes sense from a traffic perspective; this creates an opportunity for the green infrastructure (i.e. rain garden) shown on the original concept plan
 - The rain garden would include a 1-foot deep ponding area, 2 feet of bioretention soil, an aggregate layer and a modular block layer (part of the larger underground storage/infiltration system)
 - Richard noted that the preliminary design configuration, which includes modular blocks extending beyond the Township right-of-way and onto private property (e.g. Wawa), will be modified based on Township staff comments
 - If the system must be kept entirely within the right-of-way, it will likely have to be extended up Windsor, Banbury, and/or Francis Ave
 - The preliminary design configuration is capable of eliminating flooding for the 25-year storm event, per the design RFP
 - Based on mottling, groundwater is 8-10.5 feet below the ground surface (actual groundwater was observed at around 13 feet below the ground surface); bedrock was not encountered in the borings
 - The stormwater system footprint was minimized within Banbury Way due to the existing utilities

- By setting the bottom of the stormwater system equal to the existing discharge pipe invert, water within the system will be able to drain out over time; however, the system also includes “dead” storage below the invert out, which will promote infiltration of runoff
- The modular blocks are designed to support HS-25 loading (i.e. 25% larger than a tractor trailer)
- Richard stated that having only one connection between Banbury and Francis is an improvement over current traffic flow at the site
- T&M also presented several preliminary details and cross-sections
- Regina asked if there are opportunities on Windsor for green street elements, including measures that promote traffic calming and pedestrian safety
 - Greg stated that bioswales and additional areas of modular blocks could be implemented on Windsor
 - Richard stated that traffic calming and pedestrian safety elements were outside of their current design scope, but that they would look for such opportunities
- Greg noted new sidewalks could be integrated with continuous tree infiltration trenches with structural soils
- Most of the runoff to the system comes down Windsor
- T&M plans to have a more detailed and revised design plan by the January 2017 SWMAC meeting; the project should be ready for bidding by the spring
- Greg noted that supplemental survey may be required if the project scope is to extend beyond the Banbury/Windsor/Francis intersection and that this may necessitate additional time (and budget)
- Regina noted that T&M should probably present to the Board of Commissioners (BOC) before the project is advanced much further (and before presenting to the SWMAC for a second time)
- Daniel noted that the project capture goal could possibly be reduced from the 25-year storm to say, the 10-year storm and that this might preclude the need to extend the system much further than its current location
 - the Board of Commissioners would have to approve such a decrease
 - Going from a 25-year storm to a 10-year storm, the design storage would likely decrease around 33%
- Charles stated that he would rather keep the 25-year storm as the project goal, unless it was proved cost-prohibitive to do so
 - Regina noted that it might make the most sense to maximize the storage volume within the current project limits, which would likely fall somewhere between the 25-year and 10-year storms
- Regina asked if the receiving pipe could be included in the on-going storm sewer cleaning and televising work
- T&M stated that all of the stormwater systems had the same bottom elevation
 - Daniel asked if they would consider a system with multiple elevations (i.e. terraced approach)
 - Greg stated that this is something they would look at
 - Greg also stated that the surface storage volume in the rain garden was not included in the total storage volume
- Richard noted that the construction cost of the preliminary design was estimated at \$500,000, including utilities, pavement, etc.
 - Greg noted that the additional storage will likely add another \$100,000
 - Other ancillary costs not yet accounted for can also be expected

- Daniel noted that the project will require robust pretreatment measures to keep the modular blocks clean; T&M noted that they are looking at several pretreatment options to keep sediment and trash out of the system

Discussion of Potential Stormwater Ordinance Revisions and Possible Formation of Subcommittee

- The BOC is looking for the SWMAC to provide 3-4 high level ideas for ordinance revisions; the BOC's request was documented in a memo titled "Stormwater Ordinance" by Commissioner Curley on 11/2/16
- Heather noted that there is currently no incentive for removing impervious cover
- Paige noted that the SWMAC had previously prepared several memos to the BOC over the past couple years summarizing their recommended revisions
- Regina would prefer to move forward with the SWMAC's previous recommendations to the BOC rather than start over from scratch
- Daniel noted that the new MS4 requirements likely necessitate an additional look at the proposed ordinance revisions
 - Regina stated that revisions based on the new MS4 requirements should probably happen later in 2017, once the Township Wide Assessment and 5-year plan are complete, while the SWMAC's other previous recommendations could and should be implemented immediately
- In May 2014, the SWMAC had issued a memo summarizing their recommendations for ordinance revisions
 - In September 2014, the SWMAC issued another memo to the BOC that included such specific recommendations as reducing the 1-inch infiltration volume to only the developed area and returning 25% of the existing site to meadow in good condition
 - The above revisions were later made by Gannett Fleming
- In May 2015, there was additional discussion of the revised ordinance by Gannett Fleming
 - Paige noted that the SWMAC passed on additional recommendations in June 2015, including incentives for impervious reduction (particularly for residential parcel owners), incentives for commercial sites using permeable pavement, recommendations having to do with hydrologic computations (e.g. Rational Method), reconciling different definitions of "impervious cover" in different Township ordinances, etc.
- Paige noted the possibility of a "fee in lieu" option (i.e. owners could elect to pay a fee in lieu of installing a stormwater system as part of their project)
- Regina noted that there should be a credit/incentive for either reducing impervious surface or replacing it with a different impervious surface (same footprint)
- The SWMAC will state the following short-term recommendations in a memo to the BOC (the SWMAC passed a motion approving this):
 - 1. Adopt Gannett Fleming's May 2015 revisions of the SWMO, with minor typographical corrections;
 - 2. Provide credit for removal of existing impervious surfaces and for replacement of existing impervious surfaces, in particular for residential properties;
 - 3. For residential properties, where infiltration is not feasible or is cost prohibitive, provide an option for a fee in lieu of infiltration, with the fee deposited in the stormwater fund; and
 - 4. New MS4 requirements and the five-year plan to be developed by September 2017 may require further revision of the ordinance in order to fully implement the plan and achieve the MS4 goals
- Heather wants to make sure that the SWMAC will be involved in the ordinance review and modification process as the staff develops the revisions
- will still be involved in the ordinance revision process
- SWMAC suggests that, going forward, the Stormwater Administrator be a point of contact for the development of ordinance revisions

Discussion of Stormwater Administrator Proposals and Recommendations to Board of Commissioners

- Since the interviews for the Stormwater Administrator have not yet taken place, this item was not discussed

Old/New Business

- Storm sewer cleaning and televising: Steve will prepare a project list based on the provided paper reports and videos
 - Regina recommended that the next contract for this work include a final report summarizing the observations and findings
 - Daniel noted that this effort is around 60% complete
 - Daniel also noted that the areas targeted for cleaning/televising were based on the priority problem areas identified in the Township Wide Assessment
 - Daniel will coordinate with Steve about cleaning/televising the pipes in the vicinity of the Banbury project
- Joe asked about the Highview Road outfall project, specifically whether there was an updated cost yet
 - Daniel noted that the design is 50% complete and that Gannett Fleming is supposed to be providing final plans, specifications, and cost estimates by the end of 2016
 - Daniel also stated that he believes the updated cost estimate for this project will likely be somewhat lower than the conceptual budget cost
- Joe asked if the Township is doing its due diligence with respect to the Maplewood/Odoriso Park outfall problem (i.e. eroded channel next to park)
 - Steve had requested that this problem be addressed in 2017
 - Regina noted that the SWMAC must be prudent about how it prioritizes problem locations, as there are many of them and there are limited funds for addressing them
- Septa Train Station: the project is still being held up by access issues
 - Daniel noted that this project has been added to the Township Wide Assessment and that it may prove beneficial for flood reduction, though it may have to be expanded beyond its current scope/budget
- Heather noted that Matt Holtman (Radnor EAC) is starting a Citizens Science Water Quality Monitoring Program and will be applying for a grant that will fund an effort to work with Radnor Middle School students to collect water quality samples in the Township; this will help meet some of the MS4 requirements; Regina suggested that Matt present to the SWMAC at the appropriate time
- Daniel noted that STEM night at the Radnor Middle School will be taking place in April 2017 and encouraged the SWMAC to volunteer; Daniel participated in this effort in April 2016 and found it to be a great event
- Regina suggested that STEM night and/or the Citizens Science Water Quality Monitoring Program be included in an upcoming Township newsletter; Joe suggested that a brief article about the Township Wide Assessment could be included in the upcoming Township stormwater bills
 - Daniel will check to see if it's not too late to include something in the upcoming bills (*Note: it was later determined that it was too late to do this; in the future, something will have to be prepared by mid-November to be included in the stormwater bills*)
- SWMAC officer nominations/appointments should be included on the January 2017 SWMAC meeting agenda
- See December 2016 Stormwater Tracking Table for detailed information

Township Wide Assessment (TWA) - Update

- Daniel provided an update on the TWA, which is approximately 90% complete

- CH2M is currently modeling the various flood mitigation projects, making feasible assumptions with respect to sizing
- CH2M has also been reviewing available plans/info for existing detention basins that are proposed to be retrofitted
- CH2M has been exploring ways to model the West Wayne Preserve concept; the plan is not to create a giant detention basin at that location
- The tentative schedule is that all final TWA deliverables will be submitted in January 2017
- Daniel noted that in the absence of a public workshop on project prioritization, CH2M has proceeded to assume weights for the various prioritization criteria and further define its scoring approach
 - Daniel noted that some criteria are qualitative (e.g. aesthetics), while others are quantitative (e.g. flood reduction)
 - The result of this will be a ranked list of flood mitigation projects (overall and by watershed)
 - Daniel will provide CH2M's list of assumed criteria weights to the SWMAC, as the SWMAC would very much like to review and make their own recommendations
- SWMAC will provide feedback to CH2M at the January 2017 meeting and then CH2M will present final results to the BOC in February

Next SWMAC meeting: 1/12/16 (Radnorshire room)

Action Items

- **CH2M** to coordinate with Steve about including the pipes in the vicinity of the Banbury project in the on-going storm sewer cleaning and televising work (*Note: completed on 12/9/16*)
- **SWMAC** to draft memo summarizing their recommended revisions to the Stormwater Management Ordinance (*Note: draft version distributed on 12/11/16, with the final version on 12/20/16*)
- **CH2M** to send their project prioritization assumptions to SWMAC (*Note: completed on 12/9/16*)

MEMORANDUM SWMAC-2016-04

TO: RADNOR TOWNSHIP BOARD OF COMMISSIONERS
FROM: STORMWATER MANAGEMENT ADVISORY COMMITTEE (SWMAC)
SUBJECT: RECOMMENDATIONS FOR STORMWATER MANAGEMENT ORDINANCE REVISIONS
DATE: DECEMBER 12, 2016
CC: FILE

At the December 8, 2016 Stormwater Management Advisory Committee (SWMAC) meeting, SWMAC voted 5-0 on the following recommendations for Radnor Township Stormwater Management Ordinance (SWMO) modifications to achieve the goals of Commissioner Curley's November 2, 2016 memorandum titled, "Stormwater Ordinance":

1. Adopt Gannett Fleming's May 2015 revisions of the SWMO, with minor typographical corrections;
2. Provide credit for removal of existing impervious surfaces and for replacement of existing impervious surfaces, in particular for residential properties;
3. For residential properties, where infiltration is not feasible or is cost prohibitive, provide an option for a fee in lieu of infiltration, with the fee deposited in the stormwater fund; and
4. New MS4 requirements and the five-year plan to be developed by September 2017 may require further revision of the SWMO in order to fully implement the plan and achieve the MS4 goals.

SWMAC suggests that, going forward, the Stormwater Administrator be a point of contact for development of SWMO revisions. Additionally, SWMAC would like to be involved in the SWMO review and modification process as the staff develops the revisions.



CAPITAL BUDGET REQUEST

Requesting Senate Member Senator Daylin Leach Date Submitted 12/21/16

Eligible Grantee: Radnor Township, Delaware County PA
(City, Borough, Township, County, Public Authority, Local Industrial Development Agency, Redevelopment Authority, etc.)

Project / Facility Name SR30 Sidewalk Improvement Project

Project Contact Person: Name, Phone, E-Mail address: Robert A. Zienkowski, Township Manager 610-688-5600, extension 123, rzienkowski@radnor.org

Total Project Cost: \$400,000 Authorization Request: \$200,000

Municipality: Radnor Township County: Delaware

Project Category: Please check all those that apply

Public Improvement

- State-owned facility
 State University
 State-related university
 Community College

Redevelopment Assistance

- Regional Economic
 Cultural or Civic
 Historical

Transportation

- Mass Transit
 Air
 Rail

Flood Control

- Federally Designated District
 Non-Federally Designated District

Nature of Project: Please check all that apply.

- Construction Acquisition (buildings/land)
 Infrastructure (related to project) Renovation/Rehabilitation
 Abatement of Hazardous Materials Other (specify)

Project Description: Please include a brief description of the project:

Maplewood Avenue/Odoriso Park Outfall Project: This project entails mitigation of a severely eroded swale, created by a storm sewer outfall. The severely eroded swale causes a significant safety issue on residential and Township owned property. The mitigation plan will also increase water quality, and decrease sediment loading in the receiving stream.

Please return this form to:
Sen. Daylin Leach's Office
Attention: Zachary Hoover
610-768-4200
E-mail: zhoover@pasenate.com

**Radnor Township
Public Works &
Engineering
Departments**

Memorandum

To: Stormwater Management Advisory Committee (SWMAC)
From: Stephen F. Norcini, PE *SFN*
Cc: Robert A. Zienkowski, Township Manager
Daniel Wible, PE, SPA
Leah McVeigh, Public Works Administrative Assistant
Date: January 10, 2017
Re: January 2017 Update

I hope the new year is finding the SWMAC members well. Following are updates on a few items:

Cleaning and Televising Project

Contract awarded August 15th, 2015 by virtue of Resolution 2016-84
Award Amount: \$109,045.00
Amount of Final Payment: \$108,465.53
Final Quantity: 62,118 LF of storm sewer cleaned and televised.

As you can see by the tallies above, the project is complete. All videos have been submitted, and will be reviewed by staff to prepare a repair/replacement priority list, to be presented to SWMAC.

Stormwater Ordinance Revisions

I again thank the SWMAC for its quick turnaround on the items requested by the Board of Commissioners on this topic. The Board of Commissioners is currently working on further criteria. I will keep the SWMAC updated with any news on the subject.

SWMAC Memoranda

Based on Paul Burgmayer's email, and a follow up email with him, we discussed a format for reporting SWMAC memoranda sent to the Board of Commissioners. I concur with Paul in that a separate heading on the SWMAC sight (to be labeled Memoranda, etc. -- whatever the SWMAC wishes to call it) will be set up, and all memoranda from the SWMAC to the Board of Commissioners will be posted, in chronological order, with their title as the reference. Leah McVeigh will be working with Jim Doling to set this up. I would then request staff receive all SWMAC memos in one email, and in that way we will make sure all are posted, and will continue doing so moving forward.

Stormwater Project Administrator

The previous interviews were cancelled, and will be rescheduled shortly. I am hoping that the Regina, Heather, and Paige will be able to attend, along with the Township Manager to participate, and make a final recommendation.

Highview Road Outfall Project

As of the righting of this email, 75% complete drawings are to be sent to my office by Gannett Fleming (GF), today. I will review them and supply comments to GF ASAP. If the SWMAC wishes, the near final plans can be represented to SWMAC, or a copy provided for your use as you see fit. Please just let me know. Once finalized, the project will be posted.

SEPTA Regional Rail, Wayne Train Station, Stormwater Project

GF has reported that there is hold up with the drilling contractor and AMTRAK. I believe we will have to obtain a new contractor. I will provide more detail as GF submits its update.

SWMAC Members

As you are aware, with the resignation of Mr. Sass, the SWMAC is now comprised of six members. The Board of Commissioners voted at their last meeting to keep the number of SWMAC members at six, for the time being.

CH2M Township Wide Study

As Dan finalizes the above referenced study, I will be requesting he present the final version at a Board of Commissioners meeting. I am hoping this can be done at the January 23rd or February 13th meeting. Upon presentation of the final version, CH2M will be providing the Township with all past presentations, reports, data, and the final version of the project. The submission to the Township will be paper and electronic. All will be posted on the website.

Future Projects

I know the SWMAC has been waiting for the final CH2M report, to rank and prioritize projects moving forward. I am hoping at that time, we can move forward as was once discussed, with several projects in the queue; one project being designed, one project being constructed, and one project in the preliminary design stages. I look forward to your recommendations and will provide any assistance as needed.

Lastly, thank you for your tireless work. Being on a volunteer committee is a lot of hard work! Thank you for the time you put into SWMAC and your diligence.

Project Description	Status	Type	Watershed	Planning Cost	Estimated Expenditure FY 2016	YTD (Actual) Expenditure FY 2016	Estimated Expenditure FY 2017	Estimated Expenditure FY 2018	Estimated Expenditure FY 2019	Estimated Expenditure FY 2020	Estimated Expenditure FY 2021	January 2017 Update
Earles Lane Culvert	Report completed	Repair/Maintenance	Darby Creek		\$179,993							
Eagle Road Culvert	Report completed	Repair/Maintenance	Gulph Creek		\$266,300			\$ 71,759	\$ 121,438			
South Devon Avenue Culvert	Report completed	Repair/Maintenance	Darby Creek		\$142,321							
Maplewood/Odoriso Park Outfall	Problem identified	Repair/Maintenance	Darby Creek		\$347,000							Township submitted a capital budget request to PA Senator Daylin Leach's office for \$200k; description: This project entails mitigation of a severely eroded swale, created by a storm sewer outfall. The severely eroded swale causes a significant safety issue on residential and Township owned property. The mitigation plan will also increase water quality, and decrease sediment loading in the receiving stream.
Malin Road Culvert	Report completed	Repair/Maintenance	Darby Creek		\$400,000			\$ 206,927				
Highview Road Outfall	Problem identified	Repair/Maintenance	Gulph Creek		\$342,177	\$ 42,177	\$ 1,620	\$ 300,000				Update from Steve Norcini: Gannett Fleming is submitting 75% design drawings to Steve on 1/10/17; Steve will review the drawings and send comments to Gannett Fleming ASAP; if the SWMAC wishes, these drawings can either be presented to the SWMAC or sent to the SWMAC for review
Maplewood Ave/Mill Dam Embankment	Report completed	Repair/Maintenance	Darby Creek		\$265,000							
Chamounix Road Culvert	Report completed	Repair/Maintenance	Ithan Creek		\$333,500							
Sawmill Road Culvert	Report completed	Repair/Maintenance	Darby Creek		\$54,475					\$ 83,415	\$ 193,544	
Septa Train Station - Authorizing Gannett Fleming to provide design services for stormwater management at the N. Wayne Train Station (north side)	Design	Capital Improvement	Gulph Creek			\$ 30,000	\$ 1,648	\$ 100,000				Update from Steve Norcini: Gannett Fleming reported that there is a hold up with the drilling contractor and AMTRAK. A new contractor may be required. More detail to follow shortly.
Banbury Way Flood Mitigation Project: design	Design	Capital Improvement	Ithan Creek			\$ 95,236	\$ 5,634	\$ 1,200,000				Steve Norcini and Daniel Wible had a conference call with T&M to discuss the design status on 12/20/16. T&M has updated the plan and the current storage is 45,675cf (5-year storm). The storage required for a 25-year storm is around 93,000cf, but the site has limited space due to utilities, existing pipe invert, and heritage trees. (Under current conditions, there is approx. 14,275cf of storage at the site.) T&M noted that additional pockets of storage could be placed further up Windsor Ave, bringing the total storage up to 73,475cf (10-year storm). T&M also noted that porous pavement with a 3-ft deep stone bed could be placed further up Windsor, which when combined with the other storage elements will provide capacity for the 25-year storm. These additional items will require additional budget for design, survey, and geotechnical work. Steve/Daniel have asked for additional clarification, including a sketch plan of the additional proposed measures, more information on the proposed porous pavement concept, and a high-level cost for the additional services. Steve/Daniel will keep the SWMAC informed of new information.
Township-wide SW Eng. Assessment: Authorization for CH2M RFP & Approval for Professional Services for an Assessment of the Gulph Creek, Meadowbrook Run, and Darby Creek Watersheds	On-going	Eng & Admin	Various		\$258,107	\$258,107	\$176,911					CH2M progress: completed development of existing conditions model; completed modeling potential flood mitigation projects and typologies in the priority problem areas; currently conducting QA/QC of model and cost estimates; results for areas A, I, J/K, and possibly B to be presented at 1/12/17 SWMAC meeting (results for areas G, T, and U will be distributed 1-2 weeks after that meeting); final deliverables (model files, maps, project summary tables, etc.) will be submitted in late January or early February 2017; CH2M will likely present to the Board of Commissioners at their 2/13/17 meeting; budget is approximately 96% spent
Stormwater Administrator: Authorization to Contract for Program Billing, GIS, and Professional Eng. Services	On-going	Eng & Admin	Various		\$202,400	\$80,840	\$76,068	\$ 80,000	\$ 80,840	\$ 80,840	\$ 80,840	The first round of interviews for the 2017/2018 Township Stormwater Program Administrator were conducted on 12/12/16; the second round of interviews will be conducted in January 2017 (date TBD)
MS4 Compliance (2016 Annual Progress Report and MS4 Permit Support for New DEP Requirements)	On-going	Eng & Admin	Various		\$ 55,040	\$12,041.96	\$ 122,362	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	On 11/9/16, CH2M submitted its revised proposal to plan for and implement new MS4 permit requirements; the Township is looking for a recommendation from the SWMAC in the very near future.
Homeowner (SFR) Stormwater Facility Rebate Program	On-going	Rebate/Credits/Grants	Various		\$ 2,000	\$200.00	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	
Cleaning, Telesizing, and Mapping of Storm Sewer in Radnor Township	On-going	Repair/Maintenance	Various		\$ 109,000	\$56,451.36	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	Update from Steve Norcini: project is complete; amount of final payment: \$108,465.53; final quantity: 62,118LF of storm sewer cleaned and telesized; all videos have been submitted and will be reviewed by staff to prepare a repair/replacement priority list, which will be presented to the SWMAC
North Wayne Basin - Inspect/Repair Existing SW System based on Township-wide Study results. Pending BOC approval	Problem identified	Repair/Maintenance	Gulph Creek		\$185,000							
Stormwater Management Ordinance Update	On-going	Eng & Admin	n/a		\$5,000	\$4,805.00						In a memo to the Board of Commissioners dated 12/12/16, the SWMAC summarized its recommendations regarding the updates to the Township's stormwater management ordinance. According to Steve Norcini, the Board of Commissioners is currently working on further criteria. Update from Steve Norcini: once the Township Wide Assessment is complete, Steve hopes that several projects can be placed in the queue: one project in the preliminary design stages, one project being designed, and one project being constructed
TBD Flood Mitigation Projects (Design and Construction)	Planning	Capital Improvement	Various				\$ 200,000	\$ 1,400,000	\$ 700,000	\$ 700,000	\$ 700,000	
Total costs in a year					\$ 1,299,152	\$ 771,377	\$ 2,063,862	\$ 1,826,026	\$ 968,778	\$ 930,755	\$ 1,040,884	
Repair costs					\$ 760,369	\$ 466,256	\$ 351,500	\$ 330,186	\$ 172,938	\$ 134,915	\$ 245,044	
Repair % of total					59%	60%	17%	18%	18%	14%	24%	
Yearly revenue from Stormwater Fee					\$ 1,010,500	\$ 1,092,439	\$ 1,010,500	\$ 1,010,500	\$ 1,010,500	\$ 1,010,500	\$ 1,010,500	
Other Revenue						\$ 100,000						
Previous balance					\$ 2,267,442	\$ 2,267,442	\$ 1,978,790	\$ 1,025,428	\$ 209,902	\$ 251,624	\$ 331,369	
End of year balance					\$ 1,978,790	\$ 2,588,505	\$ 1,025,428	\$ 209,902	\$ 251,624	\$ 331,369	\$ 300,985	