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 the 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/Odorisio 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)*