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# APPENDIX E

# **TMDL Strategy Plan**

## **Public Participation Plan**

Whitpain Township provided a public comment period from November 20<sup>th</sup>, 2015 to December 20<sup>th</sup>, 2015 in order for the public to provide comments on the Township's TMDL Strategy Plan. The plan was available for download from the Township website, [www.whitpaintownship.net](http://www.whitpaintownship.net), and copies of the plan were also available for review at the Township Administration Office located at 960 Wentz Road, Blue Bell, PA 19422. As of December 21<sup>st</sup>, 2015, Whitpain Township did not receive any written comments on the plan either via email or regular mail.

The Township also held a public meeting at the Township Administration Office, 960 Wentz Road, Blue Bell, PA 19422 on December 3<sup>rd</sup>, 2015 to present the TMDL Strategy Plan. We had seven members of the general public attend the public meeting on December 3<sup>rd</sup>, 2015. The Township Engineer presented the Township's TMDL Strategy Plan at the meeting. We received over twenty questions from the public at the meeting. Attached you will find a copy of the presentation and a copy of all questions from the public at the meeting. In addition, we have included the answers that were presented to the public in response to their questions (Appendix E).

The Township placed an advertisement in the Norristown Times-Herald on November 19<sup>th</sup>, 2015 to advertise the public comment period with information on how the public could submit written comments on the Strategy Plan. The advertisement also included information on the Public Meeting that the Township held on December 3<sup>rd</sup>, 2015 to discuss the TMDL Strategy Plan. A copy of the Advertisement is included in Appendix E.

**AFFIDAVIT OF PUBLICATION**  
307 Derstine Avenue • Lansdale, PA 19446

**WHITPAIN TOWNSHIP**  
**960 WENTZ RD**

**PO BOX 800**

**BLUE BELL, PA 19422**  
**Attention:**

**STATE OF PENNSYLVANIA,**  
**COUNTY OF MONTGOMERY**

The undersigned *Maureen Schmid* being duly sworn the he/she is the principal clerk of The Times Herald, Times Herald Digital, published in the English language for the dissemination of local or transmitted news and intelligence of a general character, which are duly qualified newspapers, and the annexed hereto is a copy of certain order, notice, publication or advertisement of:



**Published in the following edition(s):**

The Times Herald                    11/19/15  
Times Herald Digital                11/19/15

**NOTICE OF PUBLIC COMMENT PERIOD AND PUBLIC MEETING**  
for the Whitpain Township Local Public Hearing, November 18, 2015. The Township will use to reduce participation encouraged from the Township's online public comment system (OACS) consistent with the state local ordinance contained in the Whittapain Creek MDC plan. The Township is seeking written comments on the MDC plan. Interested persons may submit written comments during the 30-day period of November 18 - December 18, 2015. The document may be reviewed during the comment period at Whitpain Township Administration Center, 200 West Main Street, PA 19422 (between 8:30AM - 4:30PM) or on the Township website homepage [www.whitpain.com](http://www.whitpain.com). Written and verbal comments will be accepted at a public meeting on December 1, 2015 (7:00PM) at the Whitpain Township Public Meeting Room, 200 West Main Street, PA 19422. Comments must be submitted in writing to the address above (with Township Manager) or by email to [publiccomment@whitpain.com](mailto:publiccomment@whitpain.com). Comments submitted by facsimile will not be accepted.  
MTH 11/18/15

Sworn to the subscribed before me this 11/24/15.

*Maureen Schmid*  
Notary Public, State of Pennsylvania  
Acting in County of Montgomery

COMMONWEALTH OF PENNSYLVANIA  
NOTARIAL SEAL  
MAUREEN SCHMID, Notary Public  
Upper Dublin Twp., Montgomery County  
My Commission Expires March 31, 2017

**Advertisement Information**

Client Id: 883121      Ad Id: 827230      PO: MS4 TMDL      Sales Person: 093302



NOTICE OF PUBLIC COMMENT PERIOD AND PUBLIC MEETING for the Whitpain Township MS4 TMDL Strategy. The MS4 TMDL Strategy outlines the plan the Township will use to reduce pollutants discharged from the Township storm sewer system (MS4) consistent with the waste load allocations presented in the Wissahickon Creek TMDL plan. The Township is soliciting written comments on the MS4 TMDL Strategy. Interested persons may submit written comments during the 30-day period of November 20 – December 20, 2015. The document may be reviewed during the comment period at Whitpain Township Administration Offices, 960 Wentz Road, Blue Bell, PA 19422 weekdays from 8:30AM - 4:30PM or on the Township website homepage [www.whitpaintownship.net](http://www.whitpaintownship.net). Written and verbal comments will be accepted at a public meeting on December 3, 2015 (7PM) at the Whitpain Township Public Meeting Room, 960 Wentz Road, Blue Bell, PA 19422. Comments must be submitted in writing to the address above (Attn: Township Manager) or by email to [rpronczak@whitpaintownship.org](mailto:rpronczak@whitpaintownship.org) and must include commentor's name and address. Comments submitted by facsimile will not be accepted.

# Questions & Answers from TMDL Strategy Plan Public Meeting

## December 3, 2015

The meeting began at 7pm and concluded at 8:30pm. The meeting was held in the Public Meeting Room at the Whitpain Township Administration Building. There were seven attendees from the public and three Township staff at the meeting. All of the questions from the public and the answers from Township staff are included below.

1. Q: Why are the Prophecy Creek and Willow Run not impaired?

A: Both Prophecy Creek and Willow Run (West) are tributaries to the Wissahickon Creek and neither are listed on the 303(d) list as impaired for sediment. In all likelihood this is due to the type of development that has occurred within both watersheds over the past fifty years. Both watersheds are primarily composed of large lot residential development with large tracts of preserved open space (Armentrout Preserve, Briar Hill Preserve, Prophecy Creek Park). Reduced amounts of impervious surfaces in these watersheds has led to reductions in urban stormwater runoff flows which impacts the amount of sediment entering Prophecy Creek and Willow Run.

2. Q: How certain are we that Whitpain is only responsible for 66% of the overall drainage area to the Wissahickon Creek within Whitpain Township?

A: Township staff developed a very detailed assessment of the drainage areas within the Township MS4 system to determine our overall responsibility. We utilized our ArcGIS mapping system which includes detailed information on our storm sewer system, topography, stream hydrology, floodplains, and other components of the stormwater management system. From our analysis, it was determined that 54% of the overall drainage area of the Wissahickon Creek Watershed is the direct responsibility of the Township (MS4 drainage area). This analysis is consistent with the guidance provided by PA DEP at their TMDL training sessions held in 2015. To provide further flexibility in addressing the TMDL sediment reduction requirements, we included several large drainage areas that are immediately adjacent the Township MS4 system. The privately owned "partnership" parcels include only two land uses : (1) golf courses and (2) preserved open space. These parcels present excellent candidates as locations for future sediment reduction BMP control measures. This will allow the Township to address additional sediment impacts in sensitive areas of the watershed as part of our

MS4 Area of Responsibility. As a result, the overall Township MS4 Area of Responsibility is approximately 66%. Although we feel that we have taken a very conservative approach to our MS4 drainage area analysis, the Township is open to working with the other land owners (private, County, State) to address their impacts to the watershed as well. These areas contain the remaining 34% of the Wissahickon Creek Watershed in Whitpain Township.

3. Q: Are there plans to work with private landowners if the strategies for TMDL facilities aren't sufficient?

A: Based on the MS4 Area of Responsibility that has been established, the Township will be installing BMP control measures in areas (green and gray color on map) that are included within the MS4 drainage area or the Township partnership area. The Township is confident that we will be able to attain full compliance with the TMDL's sediment reductions as outlined in the TMDL Strategy Plan. However, the Township will continue to work with all land owners on methods to improve the health of the watershed. In the past, we have worked with private HOA's to improve the function of their stormwater detention basins. Although we feel that we have taken a very conservative approach to our MS4 drainage area analysis, the Township is open to working with other land owners (private, County, State) to address their impacts to the watershed as well.

4. Q: Does the TMDL map break down all the individual pipe segments as "points of interest" within the Township?

A: The MS4 Area of Responsibility Map was developed by analyzing all of the sub-watersheds in the Wissahickon Creek watershed. The drainage areas are calculated by establishing a point of interest which in most cases is a channel discharge point, outfall pipe or culvert pipe.

5. Q: Is the TMDL a "living document"?

A: The TMDL may be considered a "living document". Our TMDL requirements and strategy plan will be tied to our MS4 permit. The MS4 permit is reviewed on a continual basis by PA DEP and modifications have been required in the past. It is entirely possible for our TMDL requirements and Strategy Plan to change as we move forward based on future conditions. Currently, the TMDL Strategy Plan includes a fifteen year timeline. There is a potential for the plan to be modified over this time frame based on changes with permit requirements, BMP innovations/technologies, planning tools, etc.

6. Q: How are the “purple areas” within the TMDL map exempt from Township responsibility?

A: The “purple areas” shown on the MS4 Area of Responsibility Map are classified as private land. The stormwater runoff from these areas never flow across Township owned land or into the Township MS4 system. In most cases, all of the stormwater runoff from these areas flow directly into the Wissahickon Creek or one of its tributaries.

7. Q: What will the Wissahickon Act 167 add to our Ordinance in regards to stormwater management?

A: In January 2016, Whitpain Township will be adopting the new Act 167 Stormwater Management Ordinance for the Wissahickon Creek watershed. Once adopted, the ordinance will be included in Chapter 125, Stormwater Management, of the Township Code. The ordinance includes several new requirements: (1) additional site plan and stormwater management system requirements for any improvements that propose at least 1,000 square feet of additional impervious surface area and (2) peak rate reductions for any improvements that propose at least 5,000 square feet of additional impervious surface area. There are many additional requirements in the ordinance regarding inspections, fees, maintenance responsibilities, enforcement and penalties.

8. Q: Is the Act 167 available to view on the website?

A: The new Act 167 Stormwater Management Ordinance for the Wissahickon Creek watershed is available to be viewed on the Township website. It is located under the ordinance section of the township website, [www.whitpaintownship.net](http://www.whitpaintownship.net). Upon adoption in January, it will also be available for download from our partner website, [www.generalcode.com](http://www.generalcode.com).

9. Q: Are there any incentives being offered as part of the Act 167 to property owners to compensate for doing stormwater management?

A: At this time, there are no incentives being offered to private property owners who install stormwater management on their properties through the new Act 167 Wissahickon Creek Stormwater Management Ordinance. The Township will be enforcing the regulations of the ordinance primarily through the building permit and land development application process.

10. Q: Was the 2003/2012 TMDL plan the 20% plan?

A: The Township submitted a TMDL Strategy Plan to PA DEP in September 2012. In that plan, the Township determined that its MS4 Area of Responsibility was approximately 20%. This was based on the “parsing” guidance provided to the Township by PA DEP. However, since 2012, PA DEP has modified the parsing guidance and our revised TMDL Strategy Plan reflects the new guidance. With the new guidance, the Township MS4 Area of Responsibility has increased to approximately 66%.

11. Q: Since the inception of the TMDL in 2003, is EPA/DEP learning and adjusting their requirements?

A: The TMDL has not been revised since it was adopted in 2003. However, the approaches/ strategies that Townships may implement have changed. PA DEP has held numerous training sessions and meetings on the TMDL with the Townships over the past several years. As a result of the meetings, some requirements have been modified or clarified. For example, the parsing guidance has changed over the years.

12. Q: What is a basin retrofit?

A: Most of the Township’s above ground basins are considered “dry bottom” basins where the stormwater runoff flows into it during a storm event and then flows out over a certain period of time. Many of these basins were designed prior to the enactment of contemporary stormwater management regulations. A basin retrofit is a physical, structural upgrade that increases the basin’s overall efficiency through the installation of numerous water quality BMP’s. A naturalized basin may be considered a basin retrofit and Whitpain Township has constructed several in the past few years. Previous Township basin retrofits have included the following features: (1) the installation of a sediment forebay to remove sediment from the runoff; (2) a new outlet structure to reduce discharge flows from the basin; (3) the extension of the basin drainage flow paths to promote infiltration; and (4) the installation of naturalized landscaping/grasses to improve the overall removal efficiency of the basin. Basin retrofits provide water quality and quantity enhancements that help MS4’s meet the requirements of their NPDES and TMDL obligations.

13. Q: Who will pay for private developments to do basin retrofits on their basins?

A: The private development will have to pay for any improvements within their own community. The Township would be willing to provide technical assistance to these

land owners where possible. Grant programs administered by public and private agencies also may be utilized for financial and technical assistance. In the past, the Township, in conjunction with other watershed groups, has published and distributed public outreach information to home owners and various basin owners (HOA's, commercial property owners, etc.). The public outreach material contained useful information on stormwater management, basin maintenance and retrofit opportunities.

14. Q: Who paid for the streambank stabilization projects along the Wissahickon Park?

A: The Environmental Protection Agency (EPA) through their Superfund program hired contractors to construct the streambank restoration/ stabilization improvements in 2009 and 2011. Whitpain Township owns the park where the improvements were installed (along the Rose Valley Creek and Wissahickon Creek). The Township will be required to enter into agreements with the US EPA in regards to institutional controls and operations and maintenance of the streambanks in the future.

15. Q: Was the Whitpain Township Engineering Department working with the EPA on the streambank restorations?

A: Township staff including representatives of the engineering department have been in constant communication with the EPA regarding the work at the Wissahickon Park site since it began eight years ago. However, the EPA has been responsible for supervising the project. The EPA through their Superfund program hired contractors to construct the streambank restoration/ stabilization improvements in 2009 and 2011. Whitpain Township owns the park where the improvements were installed (along the Rose Valley Creek and Wissahickon Creek). The Township will be required to enter into agreements with the US EPA in regards to institutional controls and operations and maintenance of the streambanks in the future.

16. Q: Is the maximum sediment load number going to increase over the years or is it set?

A: Tetra Tech under contract to the US EPA established the sediment waste load allocations and the waste load reductions for the TMDL Study in 2003. It is our understanding that the load calculations as stated in the TMDL study are not going to change.

17. Q: How much will the proposed basin retrofits cost?

A: The estimated cost has not been determined in its entirety. The Strategy Plan is only a plan of action and detailed engineering for all of the proposed BMP control measures has not yet been completed. At this time, we are able to provide a rough cost estimate based on our past experience with basin retrofit projects. Previous Township basin retrofits have cost between \$50,000 and \$150,000 (excluding land acquisition, engineering and permit costs) to construct and we expect the costs for the proposed basin retrofits to be in this same cost range. We are planning to pursue grant opportunities in order to minimize the overall costs of the plan.

18. Q: Are the proposed basin retrofits owned by the Township?

A: Most of the basin retrofits in our Strategy Plan will be owned by the Township. Three of the basin retrofits are located on land owned by the Township. These basins are maintained by Whitpain Township as well. The last four proposed basin retrofits are currently privately owned and maintained. However, the Township has plans to enter into easement or ownership agreements with these land owners prior to installing the improvements. Once completed, the Township would also provide long term operations and maintenance on these BMP control measures.

19. Q: Can some funding for the proposed projects come from a portion of the sewer/water bills instead of from the general fund?

A: The current funding for the initial projects listed in the Strategy Plan will be from the General Fund. In the future, it may be possible to obtain additional funding from other Township funding sources or grant programs.

20. Q: Why aren't other facilities considered in the plan? (Other than retrofits and streambank stabilization; such as public outreach, raingardens, trenches, etc.)

A: The Township reviewed a wide array of potential BMP control measures to determine the best projects for our TMDL Strategy Plan. The list included riparian buffers, basin retrofits, tree planting, streambank restoration, rain gardens, green roofs and new infiltration basins. The two that were selected – basin retrofits and streambank restoration/stabilization, offered the best cost-benefit to the Township. The sediment removal efficiency of both BMP control measures made them the best choices as well. The lack of real estate immediately adjacent the creek and its tributaries made riparian buffers a very expensive solution. Tree planting also posed a serious challenge in terms

of overall costs. Green roofs were not an option because the Township does not own any facilities that could be retrofitted with a green roof cost effectively. It also should be noted that the proposed BMP control measures will include substantial tree planting and rain garden design elements. In addition, all of our basin retrofits will have public outreach components. The Village Circle basin includes a public outreach component through a DCED grant. The grant will provide funding to install benches and educational signage detailing the project's benefits. We have provided more information on our public outreach efforts in the TMDL Strategy Plan as a result of the feedback we received during this question and answer period.

21. Q: Will the PowerPoint of this TMDL presentation be available on the Township website?

A: Yes. The power point for the TMDL Strategy Presentation was placed on the Township website on December 4<sup>th</sup>, 2015. The questions and answers from the TMDL Strategy Plan presentation will be posted on the Township website at the end of the public comment period. In addition, the entire TMDL Strategy Plan was posted on the Township website on November 20<sup>th</sup>, 2015. The public comment period for the TMDL Strategy Plan will end on December 20<sup>th</sup>, 2015.

Acronym	Definition
TMDL	Total Maximum Daily Load
MS4	Municipal Separate Storm Sewer Systems
BMP	Best Management Practice
EPA	Environmental Protection Agency
DEP	Department of Environmental Protection

# **Presentation on Whitpain Township's Wissahickon Creek TMDL Strategy Plan**



***December 3, 2015***

Whitpain Township Public Meeting

## QUESTIONS TO BE ANSWERED TONIGHT

- ▶ What is a TMDL?
- ▶ Why is a TMDL being enacted in the Wissahickon Watershed?
- ▶ What is in our TMDL Strategy Plan?
- ▶ How long will it take to complete the Strategy Plan?
- ▶ What are the next steps in the process?

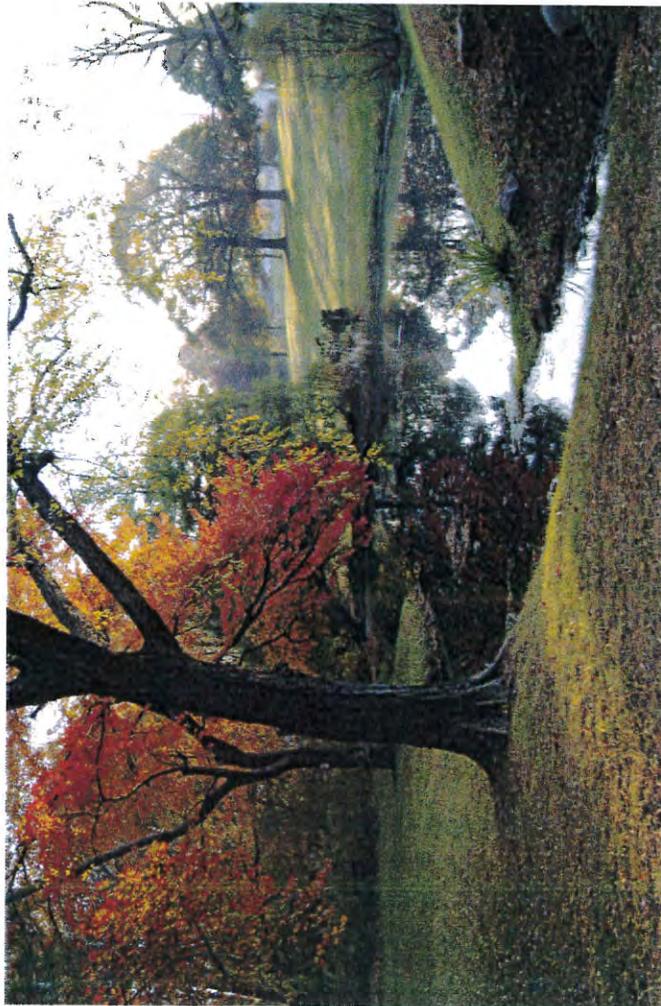


## What is a TMDL?

- ▶ TMDL is the abbreviation for Total Maximum Daily Load
- ▶ "A TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that load among the various sources of that pollutant." - U.S. Environmental Protection Agency, 2011
- ▶ Essentially, it is an environmental analysis that determines how much pollutant (in this case, sediment) is currently entering the creek and how much should be allowed to enter the creek based on the study's calculations



# MAP OF WISSAHICKON CREEK WATERSHED



## Nutrient and Siltation TMDL Development for Wissahickon Creek, Pennsylvania

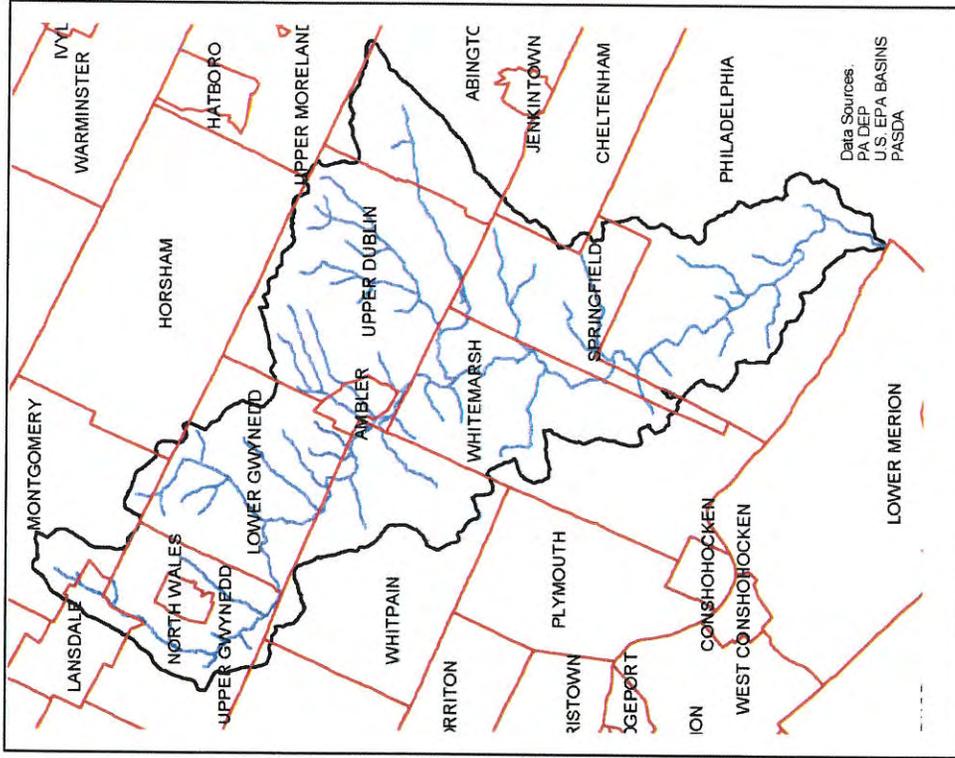


Figure 2-2. Municipal boundaries in the Wissahickon Creek watershed

2-8

## Why is a TMDL being enacted in the Wissahickon Watershed?

- ▶ EPA first established need for TMDL study following 1997-1998 PA DEP Unassessed Waters Project
- ▶ Wissahickon Creek primary sources of impairment:
  - Urban stormwater runoff
  - Municipal point sources
  - Low base flow
- ▶ Wissahickon Creek nutrient and sediment TMDL's established by EPA on October 9, 2003



## Why is a TMDL being enacted in the Wissahickon Watershed?

- ▶ Whitpain's land use and stormwater management planning has benefitted the Wissahickon Watershed - **Prophecy Creek** and **Willow Run West tributaries** are **NOT** considered impaired for sediment
- ▶ However, the Wissahickon Creek main stem is considered impaired due to sediment & this is the reason that we must comply with the TMDL
- ▶ Township TMDL Strategy Plan must specifically address the sediment TMDL for the Wissahickon Creek



# MAP OF WISSAHICKON CREEK WATERSHED - IMPAIRMENTS DUE TO SEDIMENT

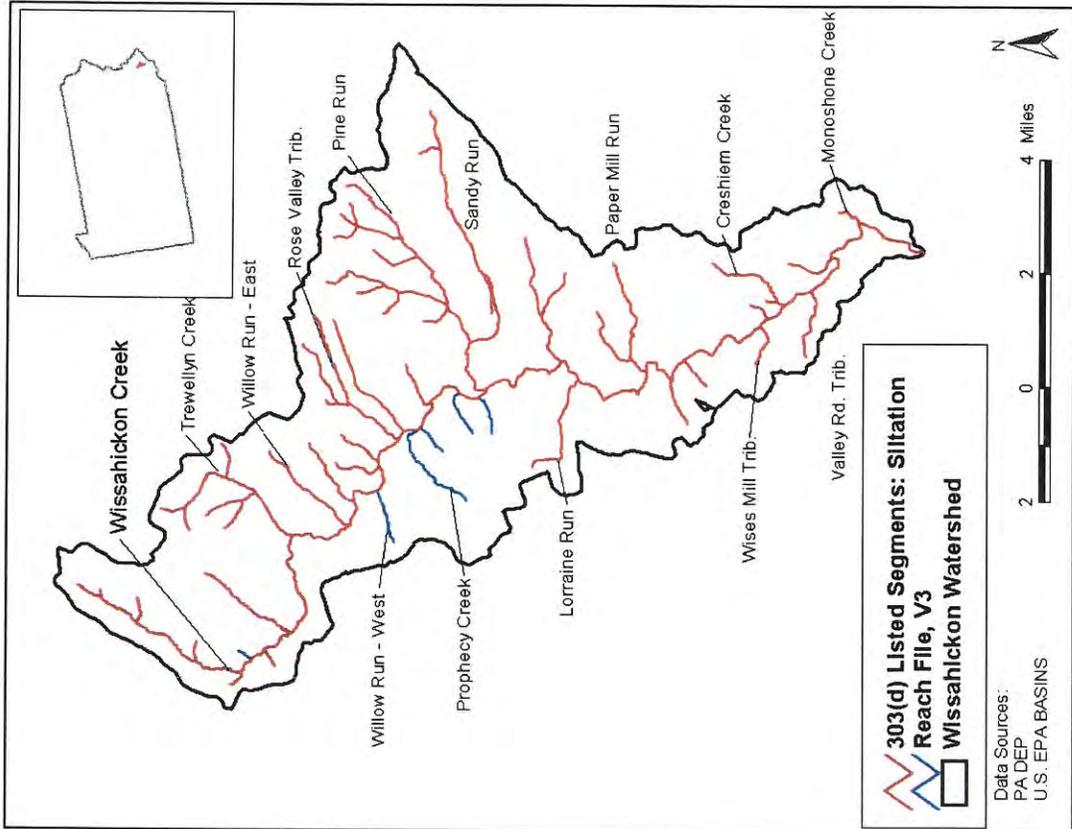


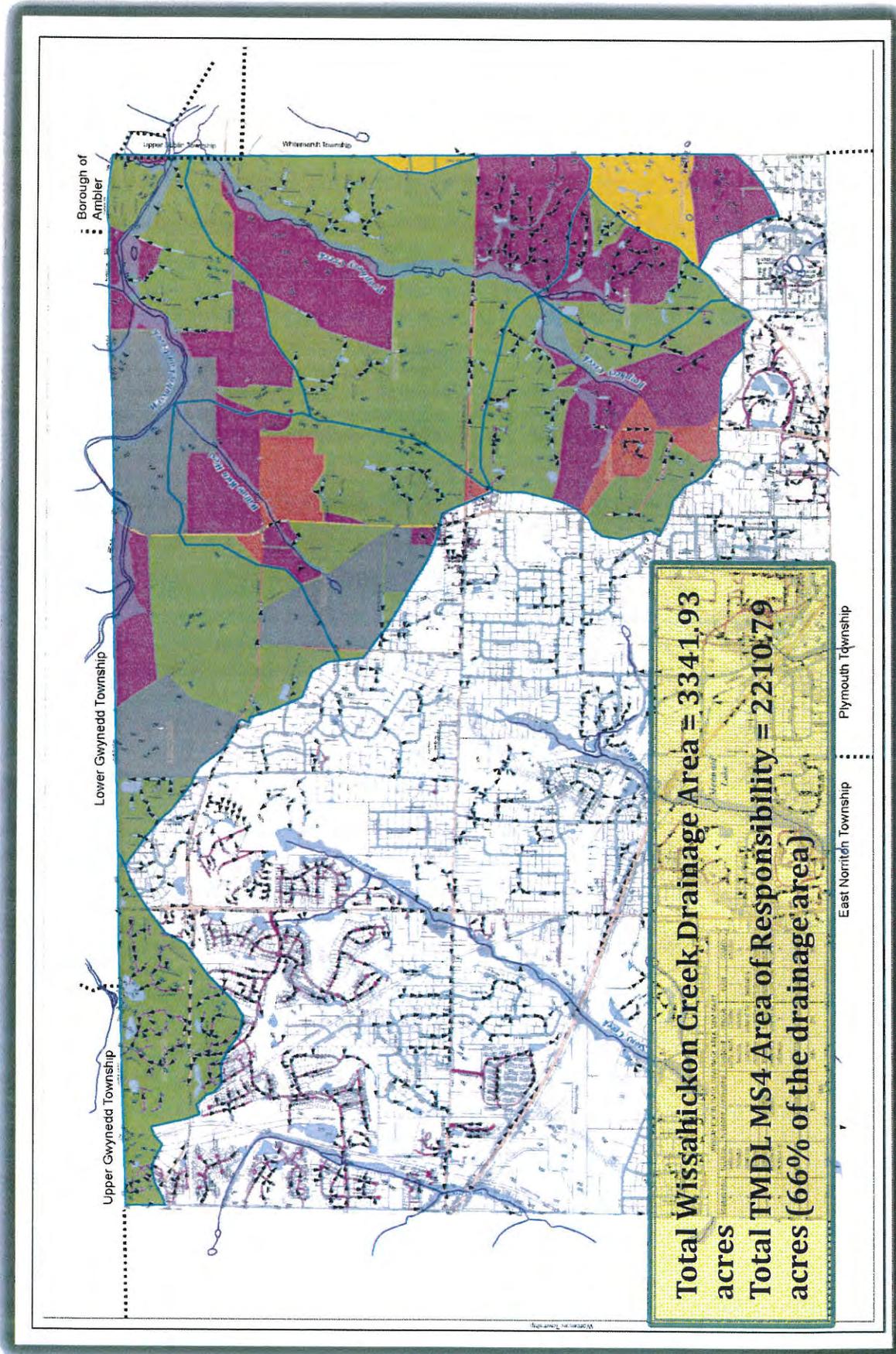
Figure 1-3. Wissahickon Creek segments impaired due to siltation

## What is in our TMDL Strategy Plan?

1. DESCRIPTION OF TMDL STUDY
  2. ESTABLISHMENT OF TOWNSHIP MS4 AREA OF RESPONSIBILITY
  3. DETERMINATION OF POLLUTANT LOADINGS AND REQUIRED REDUCTIONS
  4. IMPLEMENTATION PLAN WITH APPROXIMATE TIMELINE
- ▶ TMDL Strategy Plan was originally submitted to PA DEP in September 2012
  - ▶ Whitpain Township received a review letter from PA DEP in 2015 and we are required to submit a revised Strategy Plan to PA DEP by the end of December



## 2. Wissahickon Creek TMDL MS4 Area of Responsibility Map



## What is in our TMDL Strategy Plan?

### 3. DETERMINATION OF POLLUTANT LOADINGS AND REQUIRED REDUCTIONS

- ▶ TMDL REQUIRED SEDIMENT REDUCTIONS FOR WHITPAIN TOWNSHIP  
STREAMBANK EROSION COMPONENT      49,989 LBS/YR.  
OVERLAND RUNOFF COMPONENT      + 121,076 LBS/YR.  
TOTAL REQUIRED SEDIMENT REMOVAL = 171,065 LBS/YR.

TOWNSHIP MS4 AREA IS APPROXIMATELY 66%; THEREFORE,  
**TOTAL REQUIRED SEDIMENT REMOVAL FOR WHITPAIN MS4 =  
113,540 LBS/YR.**



# What is in our TMDL Strategy Plan?

## 4. IMPLEMENTATION PLAN

- ▶ THE TMDL INCLUDES A LIST OF BMP CONTROL MEASURES THAT MAY BE INSTALLED TO MEET SEDIMENT LOAD REMOVAL REQUIREMENTS
  - BMP's that were considered include riparian buffers, basin retrofits, tree planting, streambank restoration, rain gardens, green roofs, new infiltration basins
  - Ordinance modifications may also be considered such as revising the Township's stormwater management ordinance to allow more restrictive stormwater systems. In January 2016, Whitpain Township will be adopting the Wissahickon Creek Act 167 model stormwater ordinance.



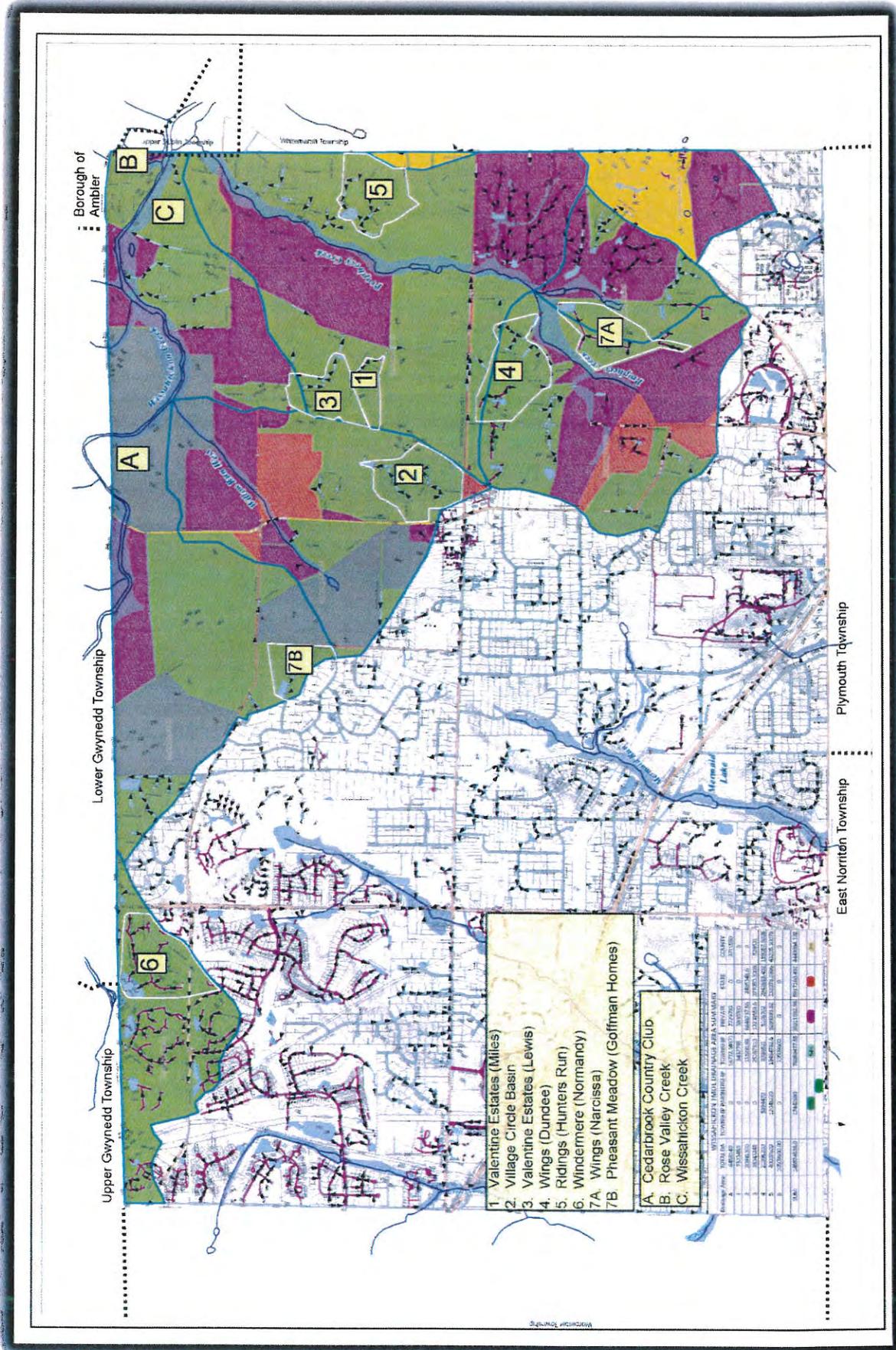
# What is in our TMDL Strategy Plan?

## 4. IMPLEMENTATION PLAN

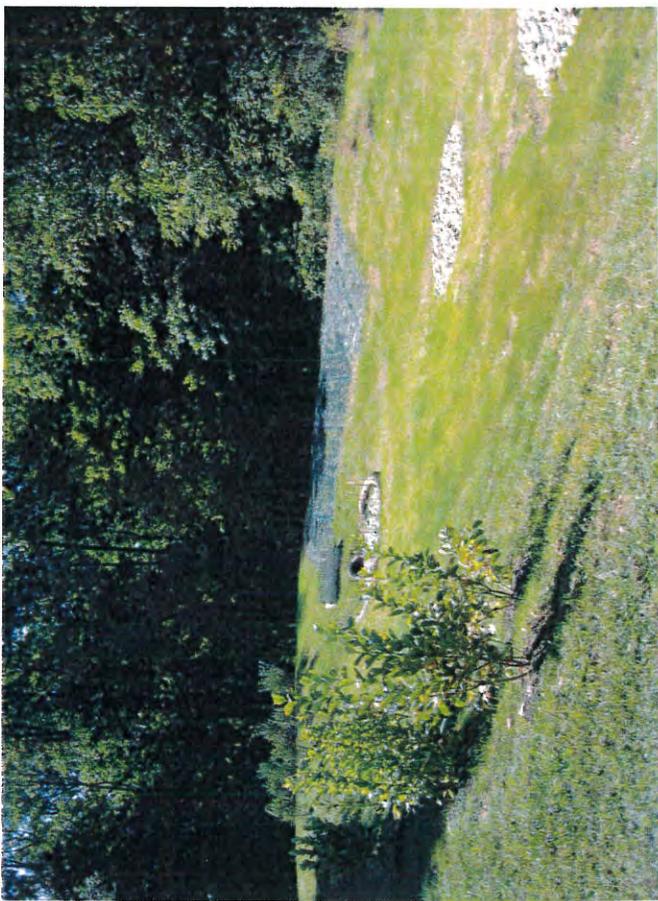
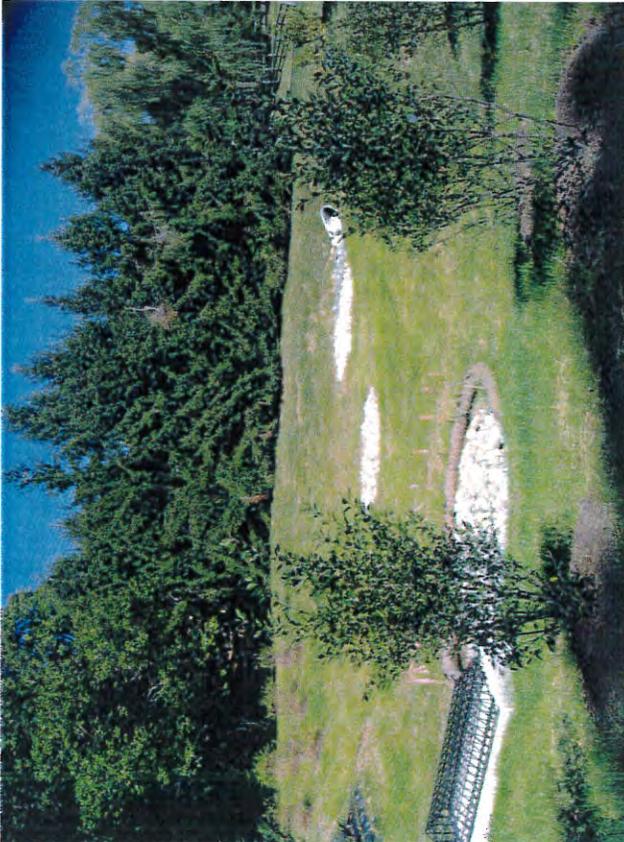
- ▶ **SELECTED BMP CONTROL MEASURES FOR WHITPAIN TOWNSHIP MS4**
  - **ALREADY INSTALLED & MAINTAINED BY TWP.**
    - Valentine Estates detention basin retrofit (completed in 2010)
    - US EPA streambank stabilization along Wissahickon Creek and Rose Valley Creek adjacent Wissahickon Park (completed in 2009 and 2011)
  - **TO BE INSTALLED & MAINTAINED BY TWP.**
    - Detention basin retrofits (public & public/private)
      - Village Circle, Valentine Estates, Wings Field, Ridings, Windermere, Pheasant Meadow
    - Streambank stabilization along Wissahickon Creek at Cedarbrook CC



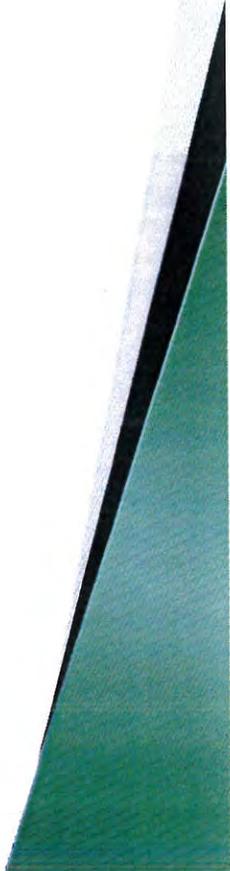
# What is in our TMDL Strategy Plan?



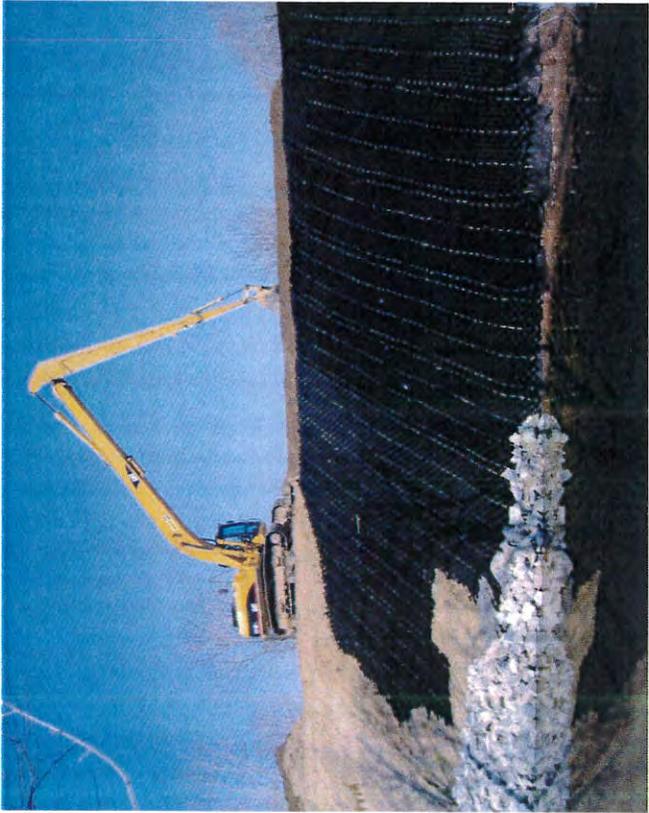
# Installed BMP Control Measures – Basin Retrofit



Valentine Estates Infiltration Basin

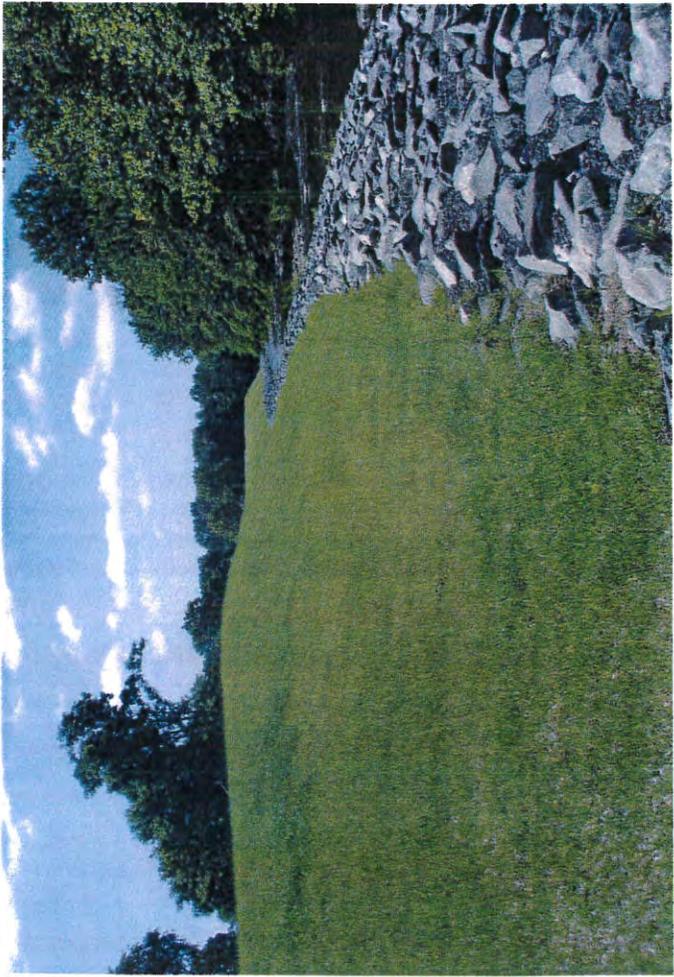


# Installed BMP Control Measures – Streambank Stabilization



Wissahickon Creek Streambank  
Geocell & Rip-rap Installation

Wissahickon Creek Streambank  
UPON PROJECT COMPLETION



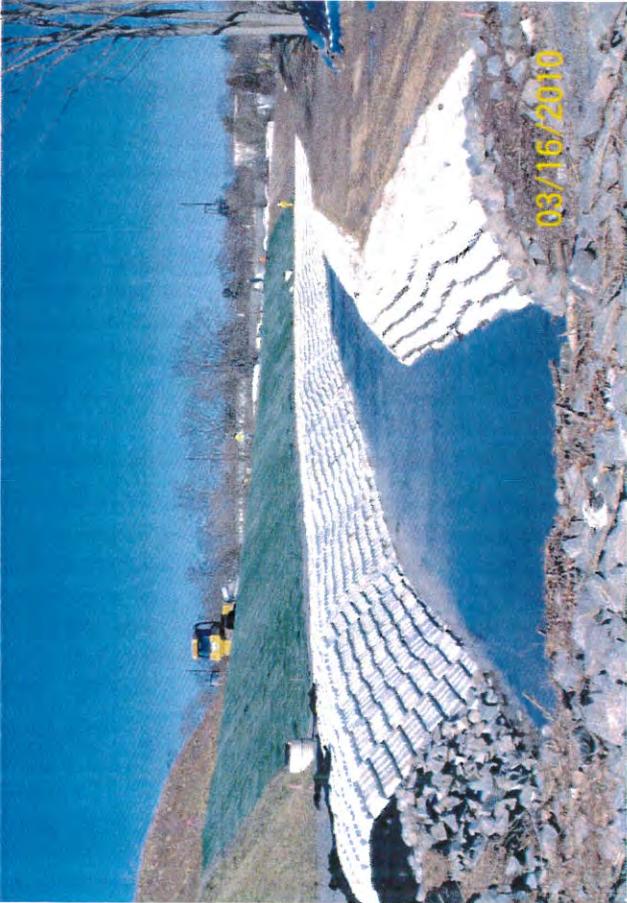
# Installed BMP Control Measures – Streambank Stabilization



Rose Valley Creek Streambank  
PRIOR TO STREAMBANK  
STABILIZATION PROJECT

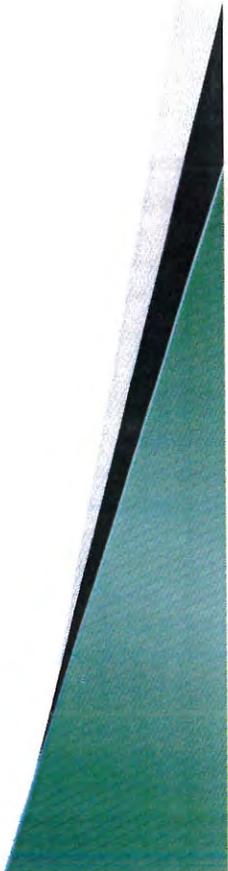


# Installed BMP Control Measures – Streambank Stabilization



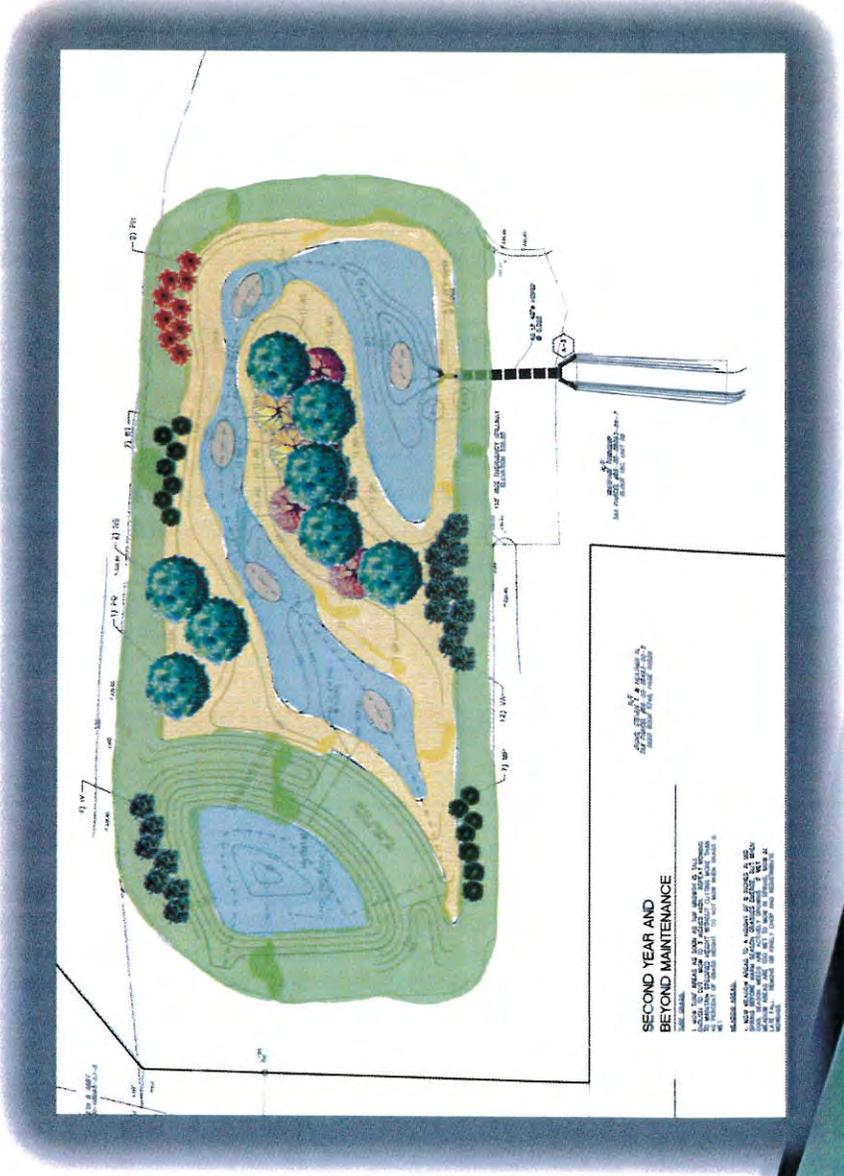
Rose Valley Creek Streambank  
DURING STREAMBANK  
STABILIZATION PROJECT

Rose Valley Creek Streambank  
AFTER STREAMBANK  
STABILIZATION PROJECT



# Examples of “On-The-Ground” Improvements

- ▶ Valentine Estates Detention Basin Retrofit & Wissahickon/Rose Valley Creek Streambank Stabilization
- ▶ Proposed Village Circle Detention Basin Retrofit
  - TO BE CONSTRUCTED IN SPRING 2016



## How long will it take to complete the Strategy Plan?

- ▶ The overall implementation plan has a twelve to fifteen year timeline with several “on the ground” improvements already completed or scheduled to be completed within the next five years
- ▶ We expect to have addressed 36% of the overland flow sediment component and 100% of the streambank erosion sediment component of the TMDL within the next five years
- ▶ Township plan will achieve full TMDL compliance by 2031



## What are the next steps ?

- ▶ Address any public comments from public comment period – written comments will be accepted until December 20<sup>th</sup>, 2015
- ▶ Submit Wissahickon Creek MS4 TMDL Strategy Plan to PA DEP for review by the end of 2015
- ▶ Obtain PA DEP approval of the Wissahickon Creek MS4 TMDL Strategy Plan
- ▶ Submit MS4 TMDL Design Details by required date (may be one year from Strategy Plan approval date)
- ▶ Construct projects included in Implementation Plan



**THANK YOU.  
ANY QUESTIONS?**

