NPDES Stormwater Discharges from MS4

Total Maximum Daily Load (TMDL) & Pollutant Reduction Plan (PRP) for the Neshaminy Creek

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Last Revised: January 2024

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MS4 Pollutant Reduction Plan
for
New Britain Township
Bucks County, Pennsylvania

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A. Executive Summary

Background

- Section 303(d) of the Clean Water Act (CWA) and its implementing regulations require a TMDL to be developed for those waterbodies identified as impaired by the state.
- Based on biological assessments for the Neshaminy Creek, the creek and its sub-watersheds were listed as showing aquatic life use impairments due to sediment and nutrients ostensibly as a result of growth and land development within the watershed.
- The Neshaminy Creek Watershed TMDL was prepared by DEP and approved by EPA on December 9, 2003.
- On April 5, 2008, the Nutrient (including organic enrichment, DO/BOD) portions of the TMDL were withdrawn by DEP, with EPA approval.
- The Township submitted a TMDL Strategy in 2012 noting the intent to reduce sediment by 50% via increased street sweeping. Under the new regulations, street sweeping may not be the only measure in place.
- The Township is required to apply for an Individual Permit for 2018-2023 which is required to include a combined TMDL/PRP Plan.

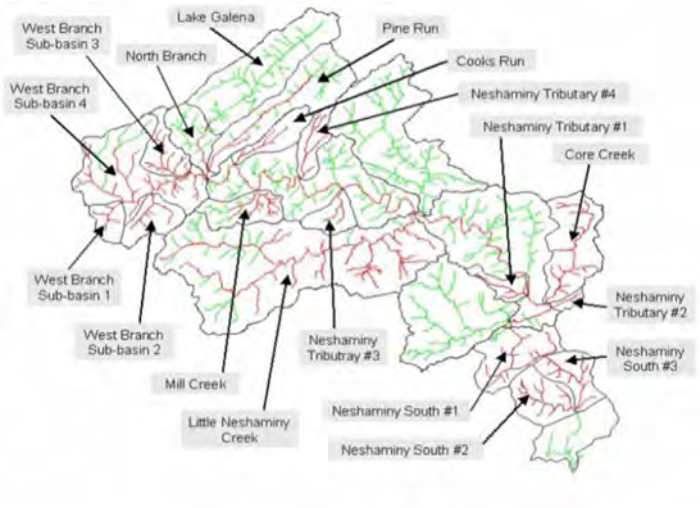

Figure A- 1: Neshaminy Creek Sub-Watersheds Analyzed in the TMDL

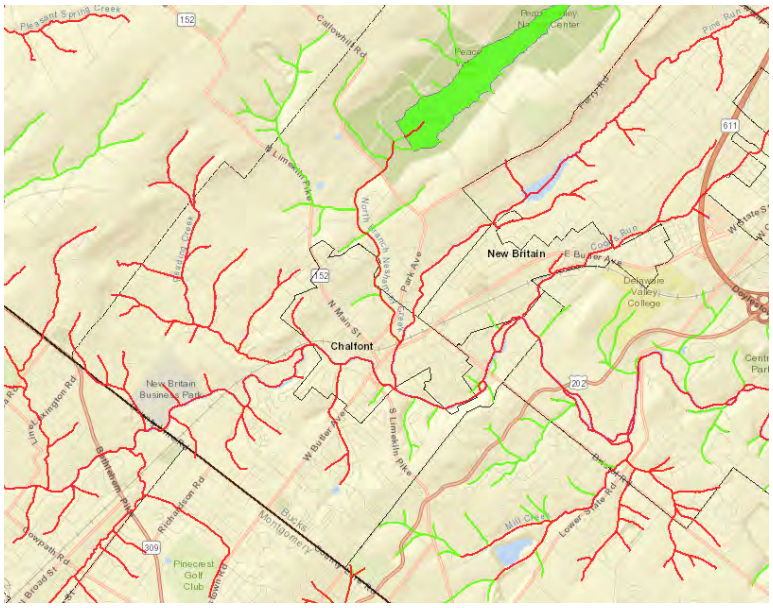

Figure A- 2: eMap PA Listing of Impaired Streams (Green = Attaining, Red = Impaired)

Therefore, New Britain Township, Bucks County, is submitting this Total Maximum Daily Loading (TMDL) and Pollution Reduction Plan (PRP) in accordance with the requirements of *Individual Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems* (MS4); specifically, in accordance with the *MS4 Requirements Table (Municipal) Anticipated Obligations for Subsequent NPDES Permit Term*. New Britain Township must create a TMDL and PRP due to discharges from their MS4 to Impaired Downstream Waters, which are listed as impaired in Appendix A and as follows:

Table A- 1: Water Impairment Requirements (Last Revised 2018-07-31)

Impaired Downstream Waters or Applicable TMDL Name	Requirement(s)	Other Cause(s) of Impairment
Neshaminy Creek TMDL	TMDL Plan-Siltation, Suspended Solids (4a)	
Pine Run	Appendix E-Excessive Algal Growth (5)	
Reading Creek	Appendix E-Excessive Algal Growth (5)	
Unnamed Tributaries to West Branch Neshaminy Creek		Flow Alterations (4c)
Warrington Lake	Appendix E-Nutrients (5)	Exotic Species (5)
West Branch Neshaminy Creek	Appendix E-Excessive Algal Growth, Nutrients, Organic Enrichment/Low D.O. (5)	Water/Flow Variability (4c)
North Branch Neshaminy Creek		Water/Flow Variability (4c)
Neshaminy Creek	Appendix B-Pathogens (5), Appendix E-Nutrients, Organic Enrichment/Low D.O. (5)	
Mill Creek	Appendix E-Nutrients (5)	
Little Neshaminy Creek	Appendix B-Pathogens (5), Appendix C-PCB (5), Appendix E-Nutrients, Organic Enrichment/Low D.O. (5)	Water/Flow Variability (4c)
Cooks Run	Appendix E-Nutrients (5)	

The Total Maximum Daily Load (TMDL) Assessment for the Neshaminy Creek Watershed last revised December 2003 was referenced for preparation of this report. The intent of this MS4 TMDL/PRP is to establish the existing loading of sediment and pollutants discharged from the MS4 to Impaired Downstream Waters, and to present a plan to reduce these loadings. Since all tributaries within the Township Urbanized Area (UA) ultimately drain to the Neshaminy Creek, a township-wide, presumptive approach was taken to assume a reduction in Total Phosphorous (TP) loading in conjunction with the proposed sediment load reduction. This Plan is organized to follow the “Required PRP Elements” presented in the PRP Instructions included as part of the MS4 Individual Permit instruction packages. This Plan will be evaluated and updated by New Britain Township on an as-needed basis, based on 1) its effectiveness in reducing pollutant loads in discharges from the regulated small MS4, 2) the reasonableness of achieving the reductions, and 3) the cost/benefit of the BMPs under consideration. If this occurs, New Britain Township will work with the Department of Environmental Protection (DEP) for review and approval of any revisions or updates. Additional measures will be installed at an average rate of 10% reduction per each subsequent 5-year term until the assigned Wasteload Allocation (WLA) is met.

Each MS4 PRP must include the following Required PRP Elements:

Section A: Executive Summary
Section B: Public Participation
Section C: Map
Section D: Pollutants of Concern
Section E: Determine Existing Loading for Pollutants of Concern
Section F: Select BMPs to Achieve the Minimum Required Reductions in Pollutant Loading
Section G: Identify Funding Mechanisms
Section H: Identify Responsible Parties for Operation and Maintenance (O&M) of BMPs
Section I: General Information

We note the entire New Britain Township urbanized area is within the Neshaminy Creek Watershed. As such, one TMDL/PRP Plan can be submitted to DEP with the assumption that installing BMP's to one sub-basin would reduce sediment loading to the downstream areas. New modeling efforts allow MS4s to recalculate the existing sediment loads. Using Mapshed software, and as described in further detail in Sections E and F, the following tables denote the required and proposed load reductions for the Township:

Table A- 2: New Britain Township's Planning Areas Requirements Summary

New Britain Township's Planning Areas Requirement Summary	
NBT Adjusted Baseline Loading from Mapshed	2,152,808 lbs/yr
10% Reduction Required	215,281 lbs/yr

B. Public Participation

As part of the preparation of this MS4 TMDL/PRP, public participation is required. The following public participation measures are required:

- A complete copy of the TMDL/PRP shall be available for public review.
- A public notice containing a statement describing the plan, where it may be reviewed by the public and the length of time provided for the receipt of comments shall be published by the MS4 in a newspaper of general circulation in the area.
- Written comments shall be accepted by the MS4 for a minimum of 30 days from the date of public notice.
- The MS4 shall accept comments from any interested member of the public at a public meeting or hearing, which may include a regularly scheduled meeting of the governing body of the municipality or municipal authority that is the permittee.
- Consider, and make a record of the consideration of, each timely comment received from the public during the public comment period concerning the plan, identifying any changes made to the plan in response to the comment.

A copy of the newspaper public notice, copies of any written comments if received from the public, and a copy of the MS4's record of consideration of all timely comments received in the public comment period are included with this TMDL/PRP. No comments were received and no revisions were required. All required documentation of public participation, as outlined above, is included as Appendix B.

- Date TMDL/PRP public notice was published in newspaper: July 19, 2017
- Date TMDL/PRP was made available for public review/comment: July 21, 2017
- End date for receipt of written comments (30 days from the date of public notice): August 21, 2017
- Date TMDL/PRP discussed public comment solicited at a Public Meeting: July 17 & August 21, 2017
- Adopted by the Board of Supervisors by Motion at a Public Meeting: September 11, 2017

C. Map

Mapping is an integral part of developing the TMDL/PRP and requires a level of detail suitable to determine the topography, MS4 drainage areas, and loading for the listed impairments. The MS4 TMDL/PRP map shows the storm sewershed boundaries. The MS4 TMDL/PRP map also shows the proposed locations of BMPs that will be implemented in efforts to achieve the required pollutant load reductions. The storm sewershed boundaries shown on the New Britain Township MS4 TMDL/PRP Map constitute the combined storm sewershed of all MS4 outfalls within the MS4's jurisdiction that discharge to the Neshaminy Creek Watershed.

In addition, the Map shows parsed areas, which are areas within the storm sewershed that are excluded in the calculation of existing pollutant loading. Note that any BMPs located within parsed areas do not count toward achieving pollutant reduction objectives. The Township's MS4 TMDL/PRP Map is included in Appendix C.

The New Britain Township Land Use Map is also included in Appendix C. This shows the existing land uses based on Zoning data and was input into the MapShed program to calculate pollutant loads based on land uses.

D. Pollutants of Concern

For all TMDL/PRPs, New Britain Township shall calculate existing loading of the pollutant(s) of concern in lbs/year; calculate the minimum reduction required in loading in lbs/year; select BMP(s) to reduce loading; and demonstrate that the selected BMPs will achieve the minimum reductions.

For TMDL/PRPs developed for impaired water, the pollutants are based on the impairment listing, as provided in the reference TMDL Plan and Appendix A: the *MS4 Requirements Table (Municipal) Anticipated Obligations for Subsequent NPDES Permit Term (Appendix E)*. If the impairment is based on siltation only, a minimum of 10% sediment reduction is required. If the impairment is based on nutrients only or other surrogates for nutrients, (e.g., "Excessive Algal Growth" and "Organic Enrichment/Low D.O."), a minimum 5% Total Phosphorus, TP, reduction is required. If the impairment is due to both siltation and nutrients, both sediment (10% reduction) and TP (5% reduction) must be addressed. A minimum 10% reduction is required for sediments within the listed impaired waters, as well as, a 5% reduction for nutrients within the Neshaminy Creek. The MS4 TMDL/PRP presents the minimum reduction in loading for each impairment as pounds per year (lbs/yr).

E. Determine Existing Loading for Pollutants of Concern

The date the existing loading was calculated and the date of development of this Report was July 2017. However, revisions were made to the existing loading in October 2018. Any methodology that calculates existing pollutant loading in terms of pounds per year, evaluates BMP-based pollutant reductions utilizing BMP effectiveness values contained in Document 3800-PM-BCW0100m (see Appendix D) or Chesapeake Bay Program expert panel reports, uses average annual precipitation conditions and is based on sound science may be considered acceptable. If a modeling tool will be used to estimate existing loading, the same tool should be used to estimate future pollutant loading for different BMP implementation scenarios to ensure consistency with input parameters between existing and future loading.

MS4s may not claim credit for street sweeping and/or other non-structural BMPs implemented in the past. If structural BMPs were implemented prior to development of this TMDL/PRP and continue to be operated and maintained, the MS4 may claim pollutant reduction "credit" in the form of reduced existing loading. An MS4 may not reduce its obligation for achieving pollutant load reductions through previously installed BMPs; an MS4 may only use such BMPs to reduce its estimate of existing pollutant loading. In order to claim a credit, identify all such structural BMPs in Section F of the TMDL/PRP along with the following information:

- Detailed description of the BMP;
- Latitude and longitude coordinated for that BMP;
- Location of the BMP on the storm sewershed map;
- The permit number, if any, that authorized installation of the BMP;
- Calculations demonstrating the pollutant reduction achieved by the BMP;
- The date the BMP was installed and a statement that the BMP continues to serve the function(s) it was designed for; and
- The operation and maintenance (O&M) activities and O&M frequencies associated with the BMP.

The MS4 may optionally submit design drawings of the BMP for previously installed or future BMPs with the TMDL/PRP.

The date the existing loading was calculated is July 14, 2017. New Britain Township's permit obligation applies only to runoff collected by and discharged from the MS4. The storm sewershed land area that is collected by and discharges from the MS4 to various tributaries of the Neshaminy Creek has been delineated using PAMAP data known as Light Detection and Ranging (LiDAR) contours. LiDAR contours were also utilized in determining the areas for parsing. The following table summarizes the storm sewershed land areas. The sediment loads generated from these non-tributary areas are subtracted (parsed) from the total storm sewershed load to determine what is attributed to the MS4.

In modeling the existing load, the software program known as MapShed was utilized in the development of this MS4 TMDL/PRP to determine the source areas and the total load of the listed impairment based on the existing land uses. MapShed is a customized GIS interface that is used to create input data for an enhanced version of the GWLF watershed model originally developed at Cornell University. MapShed was improved by Dr. Barry Evans and his group at PSIEE using AVGWLF, a GIS-based watershed modeling tool that uses hydrology, land cover, soils, topography, weather, pollutant discharges, and other critical environmental data to model sediment and nutrient transport within a watershed. Below is the information from MapShed displaying the source area and existing loading for the New Britain Township Planning Area portion of the MS4 that drains to the Neshaminy Creek:

Table E- 1: Summary of Areas

New Britain Township's Planning Area	
Urban Area in NBT (ac)	5,120
Area Parsed (72%)(ac)	3,700
NBT Planning Area (ac.)	1,420

Table E- 2: Required 10% Siltation Reductions

Neshaminy Creek Township Planning Areas		
Parcel	**Load (lbs)**	**Area (ac)***
0	523,734	323
1	0	0
2	0	0
3	622,612	373
4	129,565	85
5	6,190	7
6	326,983	256
7	244,586	191
8	76,193	56
9	10,713	12
10	96,487	50
11	1,744	2
12	40,190	15
13	25,090	26
14	48,721	24
Total Baseline Load	**2,152,808.0**	1,420
Required Sediment Reduction (10%)	**215,280.8**	***Areas from MapShed**
Proposed Reduction	**258,599.0**	

MapShed was run for the total Neshaminy Creek Watershed to properly account for downstream channel impacts and include impaired waters identified in the MS4 Requirements. The West Branch Neshaminy, North Branch Neshaminy, Little Neshaminy, Reading Creek, Pine Run, Mill Creek, and Cook Run Watersheds are sub watersheds to the Neshaminy Creek. As such, the loadings were cumulatively included in the Neshaminy Creek existing pollutant loading. See Appendix C – New Britain Township MS4 PRP Map for the delineated watersheds and associated planning areas. The output from MapShed GWLF-E Existing Loads for the Neshaminy Creek Watershed and PRP Planning Areas are in Appendix D.

New Britain Township has a total loading of 2,152,808 lbs/year in its Neshaminy Creek storm sewersheds, as shown in Tables E-2. The impairment is Siltation which requires a minimum 10%

reduction. The existing loads subject to the requirement were multiplied by 10% to determine the required siltation reductions. Tables E-2 shows a summation of all planning areas and the existing sediment loadings within New Britain Townships MS4 with respect to the Neshaminy Watershed, and includes all sub watersheds.

We note that based on the current Neshaminy Creek TMDL, last revised December 2003, the following sediment reduction percentages are required:

Table E- 3: TMDL Reduction Requirements

Sub-Basin	UA Acres	% Reduction Required from TMDL
Part of Pine Run	360	52.5%
Part of West Branch #3	1,473	28.4%
Part of Mill Creek	130	52.0%
Total	**1,963***	**34.4%****

*Based on CAD
**Weighted Average

The Township is using a presumptive approach in which a 10% sediment reduction is assumed to also result in a 5% TP reduction. The proposed plan intends to meet the PRP requirement, however, the remaining 24.4% reduction required for the TMDL will be carried over until subsequent permit terms, until met.

F. Select BMPs to Achieve the Minimum Required Reductions in Pollutant Loading

Implementation of BMPs or land use changes must be proposed that will result in meeting the minimum required reduction in siltation and nutrient pollutant loading within the storm sewershed(s) identified by the MS4. These BMP(s) must be implemented within five (5) years of DEP's approval of coverage under the PAS-13 General Permit, and must be located within the storm sewersheds of the applicable impaired waters, on either public or private property. If the applicant is aware of BMPs that will be implemented by others (either in cooperation with the applicant or otherwise) within the storm sewershed that will result in net pollution loading reductions (not E&S BMPs to satisfy Chapter 102 requirements), the applicant may propose those BMPs within its TMDL/PRP.

DEP indicates that historic street sweeping practices should not be considered in calculating credit for future practices. All proposed street sweeping practices may be used for credit if the minimum standard is met for credit in accordance with 3800-PM-BCW0100m; Appendix D. In other words, if sweeping was conducted 12 times a year and will be increased to 25 times per year in the future, the MS4 does not need to calculate a "net reduction"; they may take full credit for the total reduction from street sweeping 25 times per year.

The names and descriptions of BMPs and land uses reported in the TMDL/PRP should be in accordance with the Chesapeake Bay Program Model; names and descriptions are available through "CAST" (www.casttool.org, see "Documentation", "Source Data" and worksheets "Land Use Definitions" and "BMP Definitions").

In calculating future pollutant loading, the applicant must be cognizant of planned changes to land uses or BMPs. For example, if a tract of land (<1 acre) currently in pasture will be converted within the next few years to residential land use, and there are no ordinances in place to control the rate, volume or quality of stormwater draining from the tract, the potential net increase in pollutant loading must be factored into the future loading estimate. This means that BMPs must be implemented on the tract or elsewhere within the storm sewershed to compensate for this change.

New Britain Township plans to achieve the sediment reduction by designing, constructing, operating, and maintaining BMPs. New Britain Township is required to implement this plan for 10% reduction over the next five (5) years and carry over the remaining TMDL reduction requirement to subsequent terms.

Table F-1 is a summary of the proposed BMPs under consideration, including the description, location, coordinates, and anticipated load reduction in pounds per year:

Table F- 1: Summary of BMPs

Concept BMPs with Potential Sediment Load Reductions				
	Description	Location	Load Reduction (lbs/yr)	Lat/Long
BMP 1	New Basin	Cotton Park	32,591	40.277745, -75.234793
BMP 2	Riparian Buffer	Brittany Farms Open Space	66,999	40.274531, -75.214102
BMP 3	Basin Retrofit	Blackburn Drive	37,860	40.272824, -75.206443
BMP 4	Basin Retrofit	Walden/Crescent O.S.	31,242	40.298808, -75.235858
BMP 5	Streambank Restoration	Sycamore Cir O.S.	34,500	40.298272, -75.200088
BMP 6	Basin Retrofit	Circle Dr O.S.	20,080	40.274447, -75.226581
BMP 7	Bioswale	Upper State Road	35,327	40.299360, -75.205606
Total			**258,599**	

As illustrated in Table E-2, the total sediment loading after proposed BMPs are implemented for the Neshaminy Creek Storm Sewershed is required to be reduced by at least 215,281 lb/yr. The proposed reductions in sediment for each BMP are calculated by taking the difference between the proposed watershed total with BMP, as shown in Appendix E- (BMP#) Urban Area Viewer, and the existing total watershed loadings, as shown in Appendix D-1 Urban Area Viewer. This will result in the net Total Suspended Solid (TSS) or sediment reduction for each BMPs. As demonstrated above in Table F-1, the proposed total load reduction can be met with a combination of BMPs, depending on awarded grants and available funding. The Township remains fully committed to meeting applicable water quality standards and has the ability to revise the plan and include detailed BMP design and additional BMPs for consideration if additional controls are required in the future. Any reductions that exceed the minimum requirements for this permit cycle will be carried into subsequent permit cycles and attributed towards meeting the minimum reduction requirements, as applicable.

All basins that are noted to be retrofitted were designed prior to implementation of Chapter 102 requirements. The existing BMPs were likely designed as stormwater peak rate attenuators versus water quality facilities. As such, the retrofits are being treated as "new" basins and all associated calculations were derived by taking the difference between the existing loadings and implementing the proposed reduction rate according to the BMP Effectiveness table for a basin retrofit. All calculations show in Appendix E support these findings and no further analysis of each retrofit is provided.

In addition to the potential implementation of the above listed BMPs, the Township is also working towards instituting an annual Stream Cleanup event that will aid in the pollution reduction of the impaired streams. Also, the Township will be installing water quality inlets along Upper State Road and at the Public Works Facility. Refer to the Planning Area Map to see the locations of the proposed water quality inlets. Further details about these initiatives will be included in subsequent Annual MS4 Reports.

2024 Update Of Concept BMPs To Meet Sediment Load Reductions

BMP 1 - New Basin at Cotton Park

- Project in design phase. Final basin capacity to exceed requirements to provide additional sediment reduction and water quality.

BMP 2 - Riparian Buffer at Brittany Farms Open Space

- Design complete and permit approval from PADEP expected soon. Construction to begin in 2024.

BMP 3 – Basin Retrofit at Blackburn Drive

- Basin retrofit design and construction expected to begin and be completed during upcoming permit period.

BMP 4 - Basin Retrofit at Crescent Drive

- Basin retrofit design and construction expected to begin and be completed during upcoming permit period.

BMP 5 – Streambank Restoration at Sycamore Circle

- Pine Run streambank restoration design expected to begin during upcoming permit period.

BMP 6 - Basin Retrofit at Circle Drive

- Large number of trees have been donated and planted in the existing basin. Tree planting provides an BMP effectiveness ratio of 20% sediment reduction and 15% TP reduction per 100 mature trees. These reductions will be calculated and provided in the annual MS4 report.
- Basin retrofit design will be reevaluated and implemented as possible during upcoming permit period.

BMP 7 – Bioswale along Upper State Road

- Township Public Works installed inlet filters along the road at this location which provides credit for Storm Sewer System Solids Removal based on the weight of material removed. These reductions will be calculated and provided in the annual MS4 report..
- Bioswale design and construction expected to begin and be completed during upcoming permit period.

G. Identify Funding Mechanism(s)

The Municipality intends to apply for related grants, such as PADEP's Growing Greener grant and Treevitalize grants, to implement these BMPs. The Municipality intends to utilize the general funds, public works, and Tree Funds to cover the construction costs for the proposed BMPs, should grant money not be awarded. Once the TMDL/PRP has been approved by PADEP, the Municipality intends to authorize the design of a portion of the proposed BMPs, upon which time a feasibility and cost analysis will be prepared and shared with PADEP.

New Britain Township will be working in the following five years (i.e., during the permit term) to determine the best funding source for each proposed BMP project as each project is undertaken.

H. Identify Responsible Parties for Operation and Maintenance (O&M) of BMPs

Once implemented, the BMPs must be properly maintained in order to continue producing the expected pollutant reductions. Actual O&M activities will be identified by the MS4 in their Annual MS4 Status Reports, submitted under the Permit.

Applicants must identify the following for each selected BMP:

- The parties responsible for ongoing O&M;
- The activities involved with O&M for each BMP; and
- The frequency at which O&M activities will occur.

Table H- 1: Operations & Maintenance of BMPs

Name of BMP, Location	Lat/Long	Owner/Responsible Party	O&M Activity & Frequency
New Basin, Cotton Park	40.277745, -75.234793	New Britain Township Public Works	Annually & After Significant Rain Events, Per PA BMP
Riparian Buffer/Streambank Stabilization, Brittany Farms Open Space	40.276479, -75.215010	New Britain Township Public Works	Annually & After Significant Rain Events, Per PA BMP Manual (latest revision)
Basin Retrofit, Blackburn Dr	40.272824, -75.206443	New Britain Township Public Works	Annually & After Significant Rain Events, Per PA BMP
Basin Retrofit, Walden Way Open Space	40.298808, -75.235858	New Britain Township Public Works	Annually & After Significant Rain Events, Per PA BMP Manual (latest revision)
Streambank Restoration, Sycamore Circle Open Space	40.298272, -75.200088	New Britain Township Public Works	Annually & After Significant Rain Events, Per PA BMP Manual (latest revision)
Basin Retrofit, Circle Drive Open Space	40.274447, -75.226581	New Britain Township Public Works	Annually & After Significant Rain Events, Per PA BMP Manual (latest revision)
Bioswale, Upper State Road	40.299360, -75.205606	New Britain Township Public Works	Annually & After Significant Rain Events, Per PA BMP

Note: The Township will ensure continued maintenance of the facilities, including but not limited to, mowing, invasive vegetation removal, sediment removal, structural inspection, etc.

I. General Information

Terms: The term “nutrients” refers to “Total Nitrogen” (TN) and “Total Phosphorus” (TP) unless specifically stated otherwise in DEP’s latest Integrated Report. The terms “sediment”, “siltation”, and “suspended solids” all refer to inorganic solids and are hereinafter referred to as “sediment.”

Pollutants of Concern and Required Reductions: For all TMDL/PRPs, MS4s shall calculate existing loading of the pollutant(s) of concern, in lbs/year; calculate the minimum reduction in loading, in lbs/year; select BMP(s) to reduce loading; and demonstrate that the selected BMP(s) will achieve the minimum reductions.

For PRPs developed for impaired waters (Appendix E), the pollutant(s) are based on the impairment listing, as provided in the MS4 Requirements Table. If the impairment is based on siltation only, a minimum 10% sediment reduction is required. If the impairment is based on nutrients only or other surrogates for nutrients (e.g., “Excessive Algal Growth” and “Organic Enrichment/Low D.O.”), a minimum 5% TP reduction is required. If the impaired is due to both siltation and nutrients, both sediment (10% reduction) and TP (5% reduction) must be addressed.

Existing Pollutant Loading: Existing loading must be calculated and reported as of the date of the development of the TMDL/PRP. MS4s may not claim credit for street sweeping and other non-structural BMPs implemented in the past. If structural BMPs were implemented prior to development of the TMDL/PRP and continue to be operated and maintained, the MS4 may claim pollutant reduction credit in the form of reduced existing loading.

> **NOTE** – An MS4 may not reduce its obligations for achieving pollutant load reductions through previously installed BMPs. An MS4 may only use such BMPs to reduce its estimate of existing pollutant loading. For example, if a rain garden was installed ten years ago and is expected to remove 100 lbs of sediment annually, and the overall annual loading of sediment in the storm sewershed is estimated to be 1,000 lbs without specifically addressing the rain garden, an MS4 may not claim that the rain garden satisfies its obligations to reduce sediment loading by 10%. The MS4 may, however, use the rain garden to demonstrate that existing loading is 900 lbs instead of 1,000 lbs, and 90 lbs rather than 100 lbs needs to be reduced during the term of permit coverage.

BMP Effectiveness: All MS4s must use the BMP effectiveness values contained within DEP’s BMP Effectiveness Values document (3800-PM-BCW0100m) or Chesapeake Bay Program expert panel reports for BMPs listed in those resources when determining pollutant load reductions in TMDL/PRPs. For BMPs not listed in 3800-PM-BCW0100m or expert panel reports, MS4s may use effectiveness values from other technical resources; such resources must be documented in the TMDL/PRP.

Combining PRPs: If the MS4 discharges into multiple local surface waters impaired for nutrients and/or sediment, one PRP may be submitted to satisfy Appendix E but calculations and BMP selections must be completed independently for the storm sewershed of each impaired water. If, for example, an MS4 permittee must complete three PRPs according to the MS4 Requirements Table for three separate surface waters, storm sewershed maps must be developed, existing loads must be calculated, and BMPs must be implemented for pollutant reductions independently within those storm sewersheds. In other words, BMPs cannot be implemented in one storm

sewershed to count toward pollutant reductions in an entirely separate storm sewershed for a different impaired water.

Where local surface waters are impaired for nutrients and/or sediment, and those waters are tributary to a larger body of water that is also impaired, MS4s can propose BMPs within the upstream impaired waters to meet the pollutant reduction requirements of both the upstream and downstream waters. For example, if Stream A flows through a municipality that is tributary to Stream B, both are impaired and the MS4 has discharges to both streams, the MS4 can implement BMPs in the storm sewershed of Stream A to satisfy pollutant reduction requirements for both Streams A and B. In general, the MS4 permittee would not be able to satisfy pollutant reduction requirements for both streams if BMPs were only implemented in the storm sewershed of Stream B; however, on a case by case basis DEP will consider such proposals where it can be demonstrated that implementing BMPs in the upstream storm sewershed is infeasible.

If, however, Stream A does not flow into Stream B, both are impaired and the MS4 has discharges to both streams, in general DEP would expect that BMPs be implemented in the storm sewershed of both streams to meet pollutant reduction requirements.

MS4s participating in collaborative efforts are encouraged to contact DEP's Bureau of Clean Water during the PRP development phase for feedback on proposed approaches.
Joint PRPs: MS4s may develop and submit a joint PRP, regardless of whether the MS4s will be submitting a "joint NOI" or are already co-permittees. In general, the MS4s participating in a joint PRP should have contiguous land areas. The "study area" to be mapped is the combined storm sewershed for all MS4 jurisdictions.

BMP Selection: MS4s may propose and take credit for only those BMPs that are not required to meet regulatory requirements or otherwise go above and beyond regulatory requirements. For example, a BMP that was installed to meet Chapter 102 NPDES permit requirements for stormwater associated with construction activities may not be used to meet minimum pollutant reductions unless the MS4 can demonstrate that the BMP exceeded regulatory requirements; if this is done, the MS4 may take credit for only those reductions that will occur as a result of exceeding regulatory requirements.

> **NOTE** – Street sweeping may be proposed as a BMP for pollutant loading reductions if 1) street sweeping is not the only method identified for reducing pollutant loading, and 2) the BMP effectiveness values contained in 3800-PM-BCW0100m or Chesapeake Bay Program expert panel reports are utilized.

Submission of PRP: Attach one copy of the PRP with the NOI or individual permit application that is submitted to the regional office of DEP responsible for reviewing the NOI or application. In addition, one copy of the PRP (not the NOI or application) must be submitted to DEP's Bureau of Clean Water (BCW). BCW prefers electronic copies of PRPs, if possible. Email the electronic version of the PRP, including map(s) (if feasible), to RA-EPPAMS4@pa.gov. If the MS4 determines that submission of an electronic copy is not possible, submit a hard copy to: PA Department of Environmental Protection, Bureau of Clean Water, 400 Market Street, PO Box 8774, Harrisburg, PA 17105-8774.

PRP Implementation and Final Report: Under the PAG-13 General Permit, the permittee must achieve the required pollutant load reductions within 5 years following DEP's approval of coverage under the General Permit, and must submit a report demonstrating compliance with the minimum pollutant load reductions as an attachment to the first Annual MS4 Status Report that is due following completion of the 5th year of General Permit coverage. For example, if DEP issues written approval of coverage to a permittee on June 1, 2018, the required pollutant load reductions must be implemented by June 1, 2023 and the final report documenting the BMPs that were implemented (with appropriate calculations) must be attached to the annual report that is due September 30, 2023. In general, the same methodology used to calculate the existing pollutant loads should be used in the final report to demonstrate the reductions. If BMP effectiveness values are updated in DEP's BMP Effectiveness Values document or Chesapeake Bay Program expert panel reports between the time the PRP is approved and the time the final report is developed, those updated effectiveness values may be used.

APPENDIX A

MS4 Requirements Table

Applicable Portion of the MS4 Requirements Table (Municipal) Anticipated Obligations for Subsequent NPDES Permit Term

MS4 Name	NPDES ID	Individual Permit Required?	Reason	Impaired Downstream Waters or Applicable TMDL Name	Requirement(s)	Other Cause(s) of Impairment
Bucks County						
NEW BRITAIN TWP	PAG130060	Yes	TMDL Plan	Neshaminy Creek TMDL	TMDL Plan-Siltation, Suspended Solids (4a)	
				Pine Run	Appendix E-Excessive Algal Growth (5)	
				Reading Creek	Appendix E-Excessive Algal Growth (5)	
				Unnamed Tributaries to West Branch Neshaminy Creek		Flow Alterations (4c)
				Warrington Lake	Appendix E-Nutrients (5)	Exotic Species (5)
				West Branch Neshaminy Creek	Appendix E-Excessive Algal Growth, Nutrients, Organic Enrichment/Low D.O. (5)	Water/Flow Variability (4c)
				North Branch Neshaminy Creek		Water/Flow Variability (4c)
				Neshaminy Creek	Appendix B-Pathogens (5), Appendix E-Nutrients, Organic Enrichment/Low D.O. (5)	
				Mill Creek	Appendix E-Nutrients (5)	
				Little Neshaminy Creek	Appendix B-Pathogens (5), Appendix C-PCB (5), Appendix E-Nutrients, Organic Enrichment/Low D.O. (5)	Water/Flow Variability (4c)
				Cooks Run	Appendix E-Nutrients (5)	
NEW HOPE BORO		Yes	SP	Delaware River		Mercury (5)
NEWTOWN BORO	PAG130057	No		Neshaminy Creek	Appendix E-Siltation (4a), Appendix B-Pathogens (5), Appendix E-Nutrients, Organic Enrichment/Low D.O. (5)	
NEWTOWN TWP	PAG130048	No		Neshaminy Creek	Appendix E-Siltation (4a), Appendix B-Pathogens (5), Appendix E-Nutrients, Organic Enrichment/Low D.O. (5)	
				Lake Luxembourg	Appendix E-Nutrients, Suspended Solids (4a)	
				Delaware River		Mercury (5)
				Core Creek	Appendix E-Siltation (4a)	
				Unnamed Tributaries to Houghs Creek		Cause Unknown (5)
NORTHAMPTON TWP	PAG130098	Yes	TMDL Plan	Little Neshaminy Creek	Appendix B-Pathogens (5), Appendix C-PCB (5), Appendix E-Nutrients, Organic Enrichment/Low D.O. (5)	Water/Flow Variability (4c)
				Neshaminy Creek	Appendix B-Pathogens (5), Appendix E-Nutrients, Organic Enrichment/Low D.O. (5)	
				Mill Creek		Other Habitat Alterations, Water/Flow Variability (4c)
				Neshaminy Creek TMDL	TMDL Plan-Siltation, Suspended Solids (4a)	

APPENDIX B

Public Participation

Appendix B-1	Public Notice & Proof of Advertisement
Appendix B-2	Public Comment (None)
Appendix B-3	Meeting Agendas and Minutes

Appendix B-1

Bucks County, SS.

NEW BRITAIN TOWNSHIP
E. M. BRADLEY, TWP. MGR.
CHALFONT, PA 18914

3-086712006
0007293602-01

Stacey Lear being duly affirmed according to law, deposes and says that he/she is the Legal Billing Co-ordinator of the INTELLIGENCER INCORPORATED, Publisher of The Intelligencer, a newspaper of general circulation, published and having its place of business at Doylestown, Bucks County, Pa. and Horsham, Montgomery County, Pa.; that said newspaper was established in 1886; that securely attached hereto is a facsimile of the printed notice which is exactly as printed and published in said newspaper on

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June 10, 2019

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and is a true copy thereof; and that this affiant is not interested in said subject matter of advertising; and all of the allegations in this statement as to the time, place and character of publication are true.

LEGAL BILLING CO-ORDINATOR

Affirmed and subscribed to me before me this 10th day of June 2019 A.D.

Commonwealth of Pennsylvania - Notary Seal
Kristen Smith, Notary Public
Bucks County
My commission expires March 5, 2022
Commission number 1324227

NOTICE

NOTICE OF PUBLIC COMMENT PERIOD AND PUBLIC MEETING for the **New Britain Township** Pollutant Reduction Plan (PRP) for Neshaminy Creek. The Plan outlines the measures the Township intends to implement to reduce certain pollutants discharged from the Township's municipal separate storm sewer system (MS4) within the watershed. The Plan includes calculations of the existing pollutant loading, the minimum reduction required, and a selection of Best Management Practices (BMPs) intended to achieve the minimum required reduction. The Township is soliciting written comments on the Plan. Interested persons may submit written comments during the 30-day period of June 7 through July 15, 2019. The Plans may be reviewed during this comment period at New Britain Township 207 Park Avenue, Chalfont, PA 18914 weekdays from 8:30 AM to 3:30 PM or on the Township website homepage http://newbritaintownship.org. Written and verbal questions and comments will be accepted at a public meeting on July 15, 2019 (7:00 PM) at New Britain Township Administrative Office. Comments must be submitted in writing to the address above (Attn: Township Manager) or by email at nbt@newbritaintownship.org and must include originators name and address. Comments submitted by fax will not be accepted.

Eileen M. Bradley
Township Manager
New Britain Township

1t Jn 10 7293602

NEW BRITAIN TOWNSHIP
6/13/19
DATE RECEIVED

Bucks County, SS.

NEW BRITAIN TOWNSHIP
E. M. BRADLEY, TWP. MGR.
CHALFONT, PA 18914

3-086712006
0007142878-01

Ann Clark being duly affirmed according to law, deposes and says that he/she is the Legal Billing Co-ordinator of the CALKINS NEWSPAPER INCORPORATED, Publisher of The Intelligencer, a newspaper of general circulation, published and having its place of business at Doylestown, Bucks County, Pa. and Horsham, Montgomery County, Pa.; that said newspaper was established in 1886; that securely attached hereto is a facsimile of the printed notice which is exactly as printed and published in said newspaper on

.....

July 19, 2017

.....

and is a true copy thereof; and that this affiant is not interested in said subject matter of advertising; and all of the allegations in this statement as to the time, place and character of publication are true.

LEGAL BILLING CO-ORDINATOR

Affirmed and subscribed to me before me this 19th day of July 2017 A.D.

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
Karen McGovern, Notary Public
Tullytown Boro, Bucks County
My Commission Expires Feb. 19, 2021
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

NOTICE

NOTICE OF PUBLIC COMMENT PERIOD AND PUBLIC MEETING for the **New Britain Township** Total Maximum Daily Load (TMDL)/ Pollutant Reduction Plan (PRP) for Neshaminy Creek. The Plan outlines the measures the Township intends to implement to reduce certain pollutants discharged from the Township's municipal separate storm sewer system (MS4) within the watershed. The Plan includes calculations of the existing pollutant loading, the minimum reduction required, and a selection of potential Best Management Practices (BMPs) intended to achieve the minimum required reduction. The Township is soliciting written comments on the Plan. Interested persons may submit written comments during the 30-day period of July 21 through August 20, 2017. The Plans may be reviewed during the comment period at New Britain Township, 207 Park Avenue, Chalfont, PA 18914 weekdays from 8:30 AM to 3:30 PM or on the Township website homepage http://newbritaintownship.org. Written and verbal comments will be accepted at a public meeting on August 21, 2017 (7:00 PM) at New Britain Township Administrative Office. Comments must be submitted in writing to the address above (Attn: Township Manager) or by email to nbt@newbritaintownship.org and must include originator's name and address. Comments submitted by fax will not be accepted.

Eileen M. Bradley,
Township Manager
NEW BRITAIN TOWNSHIP

11 Jy 19 7142878

Appendix B-2: Public Comment

No public comments have been received.

APPENDIX B-3

Board of Supervisors
Regular Meeting Agenda
July 15, 2019

6:30 p.m. Executive Session
7:00 p.m. Regular Meeting

Agenda

1. Call to Order

2. Pledge of Allegiance

3. Announcements from the Chair: The Board met in Executive Session prior to this meeting to discuss d land acquisition.

4. Public Comment on Non-Agenda Items

5. Approval of Minutes

   5.1. Minutes of Meeting of June 17, 2019

6. Departmental Reports

   6.1. Code Department Report for June 2019
   6.2. Police Department Report for June 2019
   6.3. Public Works Department Report for June 2019

7. Consideration of Old Business

   7.1. New Britain Walk Tree Replacement Plan

8. Consideration of New Business

   8.1. Gutter Guys Preliminary/Final Plan

   8.2. 2019 Consortium Fuel Contract Awards

9. Consent Agenda

   9.1. Hallmark Custom Homes, LLC has executed the following documents in reference to 149 King Road, TMP #26-0044-098: Declaration of Covenants, Easements, Conditions and Restrictions and a Stormwater Facilities Operation and Maintenance Agreement, with corresponding permanent Maintenance Guarantee Fee of $2,305.78.
   9.2. Highlands Community Association has executed a Stormwater Facilities Operations and Maintenance Agreement for properties along Schoolhouse Road and Highlands Drive, TMP #26-

007-498 and #26-007-573, with corresponding permanent Maintenance Guarantee Fee of $5,000.00.

9.3. Neil and Kristin Stoddart have executed a Stormwater Facilities Operations and Maintenance Agreement for 105 Glen Drive, TMP #26-021-144, with corresponding permanent Maintenance Guarantee Fee of $165.50.

9.4. Michael Fagan of M-N-L Masonry has executed a Professional Services Agreement for a retaining wall at 129-A Brittany Drive, TMP #26-007-215, with corresponding legal and engineering escrow of $2,000.00.

10. Board of Supervisors Comments

11. Administration Comments

11.1. Reinvestment of Bridge Loan Proceeds to Univest Bank - Resolution #2019-18

11.2. New Britain Blvd. Traffic Signal Change Order #2

11.3. Release and Indemnity Agreement with Bucks County, CNBTJSA and New Britain Township

11.4. Adoption of NPDES MS4 TMDL/PRP Plan

11.5. On Thursday, July 18 at 7:00 p.m., the ZHB will consider the application of Rotelle Development/Parini/Fidushin for a property at 2240 Swamp Road. They are seeking a variance from a prior ZHB decision. Interested parties are encouraged to attend, although this application may be withdrawn.

11.6. On Thursday, August 15 at 7:00 p.m., the ZHB will consider the application of Prestige Property Partners for Lots 1, 5 and 12 of the Vineyard at Peace Valley Subdivision. The applicant is seeking relief to allow a lane lot of 9.61 gross acres (min. 10). Interested parties are encouraged to attend.

11.7. Cancellation of August 5, 2019 Meeting

12. Solicitor and Engineer Comments

13. Public Comment

14. Other Business

15. Payment of Bills

15.1. Bills List dated June 25, 2019 in amount of $96,298.12
15.2. Bills List dated June 26, 2019 in amount of $8,309.01
15.3. Bills List dated July 2, 2019 in amount of $5,209.70 (medical reimbursements)
15.4. Bills List dated July 10, 2019 in amount of $175,408.89

16. Adjournment

The next Meeting of the Board of Supervisors of New Britain Township will take place on ***Monday, August 19, 2019 at 7:00 p.m.,*** *at the New Britain Township Building, 207 Park Avenue, Chalfont, PA. Agenda are posted to the Township website prior to the meeting date at www.newbritaintownship.org.*

Board of Supervisors
Regular Meeting
September 11, 2017

8:30 a.m. Executive Session
9:00 a.m. Regular Meeting

Agenda

1. Call to Order

2. Pledge of Allegiance

3. Announcements from the Chair: The Board met in Executive Session on Monday, August 21, 2017 at 7:40 p.m. to discuss personnel issues. The Board also met in Executive Session prior to this Meeting to discuss personnel issues and land acquisition.

4. Public Comment on Non-Agenda Items

5. Approval of Minutes

   5.1. Minutes of Meeting of August 21, 2017

6. Departmental Reports

7. Consideration of Old Business

   7.1. Chalfont-New Britain Joint Sewer Authority

   7.2. Neshaminy Creek Total Maximum Daily Load (TMDL)/Pollution Reduction Plan (PRP) Adoption

8. Consideration of New Business

   8.1. Schoolhouse Road Traffic Study – Authorization to Advertise Ordinance for New Traffic Control Ordinance

9. Consent Agenda

   9.1. 505 W. Butler Avenue, LLC (Nolen Properties) has executed a Professional Services Agreement for subdivision of TMP #26-006-096, 505 W. Butler Avenue, formerly

known as the Acme Property, with corresponding legal and engineering escrow of $15,000.00.

9.2. Colebrook Properties, LP has executed a Professional Services Agreement for subdivision of parcels in and around XXX Schoolhouse Road and Barry Road, also known as TMP #26-001-106-002, 26-001-106-003, 26-001-106-004 and 26-001-106-005, with corresponding legal and engineering escrow of $2,500.00.

9.3. Nick and Ashley Pompei have executed a Professional Services Agreement for construction of a single-family dwelling on Layle Lane, TMP #26-014-004, with corresponding legal and engineering escrow of $5,000.00.

10. Board of Supervisors Comments

11. Administration Comments

11.1. 2017-18 Consortium Salt Contract

11.2. On Thursday, September 21, 2017 at 7:00 p.m., the New Britain Township Zoning Hearing Board will consider the application of Doylestown Waste Recycling, LLC for the property at 1510 Swamp Road, TMP #26-012-059-002, in the OP-Office Park Zoning District, owned by TF Partners, LP, for variances to an F3-Recycling Collection Center Use. The Applicant seeks variances to allow modifications to the F3 Use: namely to allow the recycling of additional materials such as untreated wood, drywall, particle board, shingles, concrete, stone, brick, block and other construction-related materials; and to increase the daily allowable tonnage to up to 250 tons per day (100 tons currently allowable). Interested parties are encouraged to attend.

12. Solicitor and Engineer Comments

13. Other Business

14. Public Comment

15. Payment of Bills

15.1. Bills List dated September 1, 2017 for $57,546.13

15.2. Bills List dated September 7, 2017 for $132,699.11

16. Adjournment

The next Meeting of the Board of Supervisors of New Britain Township will take place on ***Monday, September 18, at 7:00 p.m.,*** *at the New Britain Township Building, 207 Park Avenue, Chalfont, PA. Agenda are posted to the Township website prior to the meeting date at www.newbritaintownship.org.*

Board of Supervisors
Regular Meeting
August 21, 2017

6:30 p.m. Executive Session
7:00 p.m. Regular Meeting

Agenda

1. Call to Order

2. Pledge of Allegiance

3. Announcements from the Chair: The Board met in Executive Session prior to this Meeting to discuss personnel issues and land acquisition.

4. Public Comment on Non-Agenda Items

5. Approval of Minutes

   5.1. Minutes of Meeting of July 17, 2017

6. Departmental Reports

   6.1. Code Department Report for July 2017

   6.2. Police Department Report for July 2017

   6.3. Public Works Department Report for July 2017

7. Consideration of Old Business

   7.1. Metro Storage Land Development Approval Resolution #2017-16

8. Consideration of New Business

   8.1. PUBLIC HEARING: Increase in Indebtedness Ordinance #2017-08-08

   8.2. Authorize Advertisement of Proposed Intergovernmental Agreement and Cooperative Recycling Grant Ordinance

   8.3. Resolution #2017-18 Authorizing Donation of Unclaimed Property

   8.4. Resolution #2017-21 Opposing HB1469 and SB663, related to UCC and Third-Party Inspection

8.5. Act 172 Tax Credit for Active Volunteer First Responders Discussion

9. Consent Agenda

9.1. MDG, LLC has executed a Sewer Installation Agreement for the Frost Tract at Upper State Road and Pickertown Road, TMP #26-005-077, for installation of a sanitary sewer line to service eleven new lots, with corresponding financial security escrow of $25,000.00.

9.2. Lot 20-2 Realty LP (SkyZone) has submitted Escrow Release Request #4 for $88,182.00, leaving $189,125.00 remaining.

9.3. The Estates at Julius Farm, LP has submitted Escrow Release Request #4 for the Estates at Julius Farm (Maurer Tract) for 184,895.70, leaving $729,855.88 remaining.

9.4. Brian T. and Katherine M. Freedman have executed a Stormwater Operation and Maintenance Agreement for improvements to 9 Elaines Lane, TMP #26-003-113-002, with corresponding permanent Maintenance Guarantee Fee of $343.50.

9.5. Toll PA XIII, LP has submitted Escrow Release Request #1 for the New Britain Woods Project for $1,115,219.20, leaving $922,131.67 remaining.

9.6. Holy Properties, LLC has submitted Escrow Release Request #4 for the Clauser Tree Service Property for $13,466.25, leaving $100,875.88 remaining.

9.7. New Galena Road Bridge Replacement Project Payment Application #2 for $121,296.96 to DESCCO Design and Construction, Inc., leaving $492,891.35 remaining.

10. Board of Supervisors Comments

11. Administration Comments

11.1. Adoption of 2018 Police Pension Minimum Municipal Obligation, Res. #2017-19

11.2. Adoption of 2018 Non-Uniform Pension Minimum Municipal Obligation, Res. #2017-20

12. Solicitor and Engineer Comments - TMDL/PRP Plan Public Comment

13. Other Business

14. Public Comment

15. Payment of Bills

15.1. Bills List dated August 3, 2017 for $6,698.09

15.2. Bills List dated August 9, 2017 for $405,701.75

15.3. Bills List dated August 17, 2017 for $187,370.57

16. Adjournment

The next Meeting of the Board of Supervisors of New Britain Township, ***a Work Session****, will take place on* ***Monday, September 11, at 9:00 a.m.,*** *at the New Britain Township Building, 207 Park Avenue, Chalfont, PA. Agenda are posted to the Township website prior to the meeting date at www.newbritaintownship.org.*

Board of Supervisors
Regular Meeting
July 17, 2017

6:30 p.m. Executive Session
7:00 p.m. Regular Meeting

Agenda

1. Call to Order

2. Pledge of Allegiance

3. Announcements from the Chair: The Board met in Executive Session prior to this Meeting to discuss personnel issues and land acquisition.

4. Public Comment on Non-Agenda Items

5. Approval of Minutes

    5.1. Minutes of Meeting of July 3, 2017

6. Departmental Reports

    6.1. Code Department Report for June 2017

    6.2. Police Department Report for June 2017

    6.3. Public Works Department Report for June 2017

7. Consideration of Old Business

    7.1. PFM Financial Consultants Presentation on Loan RFPs

    7.2. Authorize Advertisement of Ordinance Approving Indebtedness

    7.3. Metro Storage Land Development Approval Resolution #2017-16

    7.4. Frost Tract Land Development Approval Resolution #2017-17

8. Consideration of New Business

9. Consent Agenda

9.1. Alexander Sharpan/Apollo CM Group have executed a Professional Services Agreement for demolition of an existing building and construction of a single□family dwelling at 52 N. Chapman Road, TMP #26□012□046, with corresponding legal and engineering escrow of $2,500.00.

9.2. New Galena Road Bridge Replacement Project Payment Application #1 for $50,542.20 to DESCCO Design and Construction, Inc., leaving $614,188.31 remaining.

10. Board of Supervisors Comments

11. Administration Comments

11.1. Discussion of MS4 PRP Plan

11.2. Lepore Record Plans

11.3. Fall Festival PennDOT Overhead Banner Application

11.4. Possible Cancellation of August 7, 2017 Meeting

12. Solicitor and Engineer Comments

13. Other Business

14. Public Comment

15. Payment of Bills

15.1. Bills List dated July 7, 2017 for $177,040.27

16. Adjournment

The next Meeting of the Board of Supervisors of New Britain Township will take place on ***Monday, August 21, 2017 at 7:00 p.m.,*** *at the New Britain Township Building, 207 Park Avenue, Chalfont, PA. Agenda are posted to the Township website prior to the meeting date at www.newbritaintownship.org.*

BOARD OF SUPERVISORS
MEETING MINUTES
July 15, 2019

A Regular Meeting of the New Britain Township Board of Supervisors was held on Monday, July 15, 2019, at the Township Administration Building, 207 Park Avenue, New Britain Township, PA, beginning at 7:00 p.m. Present were Supervisors: Chair A. James Scanzillo, Vice Chair Helen B. Haun, and William B. Jones, III. Also present were Township Manager Eileen M. Bradley, Zoning Officer Kelsey Harris, Chief of Police Robert Scafidi, and Craig Kennard from the Township Engineer's Office and Township Solicitor Peter Nelson. Absent from the meeting were Supervisors Gregory T. Hood and Cynthia M. Jones.

1. Call to Order: Mr. Scanzillo called the Meeting to order.

2. Pledge of Allegiance: Mr. Scanzillo asked the Boy Scout Troop to lead the Board and audience in the Pledge of Allegiance.

3. Announcements: Mr. Scanzillo announced that the Board had met in Executive Session prior to this Meeting to discuss land acquisition.

4. Public Comment on Non-Agenda Items:

Mary Margaret Briggs of Forest Park Drive inquired to Ms. Bradley if she had heard from PennDOT consultant Nathan Parish regarding the Bristol Road Extension. Ms. Bradley confirmed that she had not heard from him.

No further comments were made.

5. Approval of Minutes:

5.1. Minutes of Meeting of June 17, 2019:

MOTION: A motion was made by Mrs. Haun, seconded by Mr. Jones and unanimously approved, to accept the June 17, 2019 Minutes as written.

6. Departmental Reports:

6.1. Code Department Report for June 2019: Ms. Bradley presented the Code Department Report for June 2019.

6.2. Police Department Report for June 2019: Chief Scafidi presented the Police Department Report for June 2019.

6.3. Public Works Department Report for June 2019: Ms. Bradley presented the Public Works Department Report for June 2019.

7. Consideration of Old Business:

7.1. New Britain Walk Tree Replacement Plan: Appearing before the Board on behalf of the Applicant was a representative from Carter van Dyke Associates, Landscape Architects and Planners. The New Britain Walk Homeowners' Association proposed to remove all 246 street trees over a three year period. Tree roots were

damaging curbs, sidewalks and roadways, as well as undermining underground utilities. The trees would be replaced mainly in open space areas, and in locations that did not conflict with sidewalks, curbs and utilities. The HOA asked for a reduction in the size of replacement trees to 1-1 ½ inch caliper, as well as a reduction in the number of replacement trees. The cost of tree removal and replacement, as well as repairs to infrastructure would be borne by the HOA.

MOTION: Upon motion by Mrs. Haun, seconded by Mr. Jones, the Board unanimously approved the New Britain Walk Three-Year Tree Replacement Plan with a 50% reduction in the number of trees replanted and a reduction of tree caliper to 1-1 ½ inches for replacement trees.

8. Consideration of New Business:

8.1. Gutter Guys Preliminary/Final Plan, Resolution #2019-19: Appearing before the Board on behalf of the Applicant, Gutter Guys (78 Industrial Drive, LLC) was Adam Crews of Crews Surveying, LLC. Mr. Crews presented the Preliminary/Final Plan of proposed Land Development for 4645 County Line Road. The Applicant proposed a 6,000 s.f. office/storage building, Use K5 Contracting on 2.88 acres in the IO Industrial-Office District. While there were a few remaining technical issues, the Applicant agreed to comply with the Gilmore review letter of May 2, 2019 and any issues required by PennDOT.

MOTION: Upon motion by Ms. Haun, seconded by Mr. Jones, the Board unanimously approved Resolution #2019-19, granting Gutter Guys Preliminary/Final Plan Approval, conditioned upon compliance with the Gilmore May 2, 2019 Review Letter and PennDOT Highway Occupancy permit requirements.

8.2. 2019 Consortium Fuel Contract Awards: Ms. Bradley announced that New Britain Township had participated in the Bucks County Consortium 2019-2020 Fuel Bid. Based on recommendation by Public Works Superintendent Ryan Cressman, Ms. Bradley recommended the Township award contracts to : PAPCO, Inc. for Unleaded Regular; Riggins for #2 Heating Oil; East River Energy for Ultra-Low Sulfur Diesel Fuel; and Mansfield Oil of Gainsville, Inc. for Off-Road Diesel Fuel.

MOTION: A motion was made by Mrs. Haun, seconded by Mr. Jones and carried unanimously, to award the 2019 Consortium Fuel Bid to PAPCO, Inc. for Unleaded Regular at $0.0109; to Riggins Inc. for #2 Heating Fuel at $0.0280; to East River Energy for Ultra Low Sulfur Diesel Fuel at $0.0164; and to Mansfield Oil of Gainsville, Inc. for Off-Road Diesel Fuel at $0.2561. Fuel prices are based on market fluctuation, with quoted rates for delivery per gallon.

9. Consent Agenda:

MOTION: Upon motion by Mr. Jones, seconded by Ms. Haun, the Board unanimously approved the following Consent Agenda items: Execution of Declaration of Covenants, Easements, Conditions, and Restrictions and a Stormwater Facilities Operations and Maintenance Agreement with Hallmark Custom Homes, LLC for construction of a single-family home at 149 King Road, TMP #26-004-098, with corresponding permanent Maintenance Guarantee Fee of $2,305.78; Execution of a Stormwater Facilities Operations and Maintenance Agreement with Highlands Community Association for a dam removal at properties along Schoolhouse Road and Highlands Drive, TMP #26-007-498 and #26-007-573, with corresponding Maintenance Guarantee Fee of $5,000.00; Execution of a Stormwater Facilities Operations and Maintenance Agreement with Neil and Kristin Stoddart for construction of an inground swimming pool at 105 Glen Drive, TMP #26-021-144, with corresponding Maintenance Guarantee Fee of $165.50; Execution of a Professional

Services Agreement with Michael Fagan of M-N-L Masonry for construction of a retaining wall at 129-A Brittany Drive, TMP #26-007-215, with corresponding legal and engineering escrow of $2,000.00.

10. Board of Supervisors' Comments: Mr. Jones made a comment on the wonderful turn-out for the Annual Tri-Municipal July Forth Parade. He thanked all those who attended and volunteered.

11. Township Administration Comments:

11.1. Reinvestment of Bridge Loan Proceeds to Univest Bank: Ms. Bradley stated that during the last Township meeting, the Board had approved a full drawdown of the remaining funds left in the $3,000,000.00 Bridge and Capital Projects Loan. She stated that she was seeking the Boards approval to place the funds in money market account with Univest Bank that would earn 2.00% interest.

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MOTION: A motion was made by Mr. Jones, seconded by Mrs. Haun and carried unanimously, to place the remaining Bridge and Capital Projects Loan funds into a Univest Bank money market account earning 2.00% interest.

11.2. New Britain Blvd. Traffic Signal Change Order #2: Ms. Bradley stated that the Township was in receipt of Chang Order #2 from Armour and Sons for the proposed Traffic Signal at New Britain Boulevard and County Line Road in the amount of $25,292.50. The additional cost was for changes to sizes of mast arms, an additional mast arm and striping for a turn lane on County Line Road. She recommended that the Board approve the Change Order.

MOTION: A motion was made by Mrs. Haun, seconded by Mr. Jones and carried unanimously, to approve New Britain Blvd. Traffic Signal Change Order #2 in the amount of $25,292.50, and to authorize Ms. Bradley to execute same.

11.3. Release and Indemnity Agreement: Ms. Bradley stated that this agreement was necessary to allow Chalfont-New Britain Township Joint Sewer Authority (CNBTJSA) to investigate installation of a new pump station on property owned by Bucks County and leased by New Britain Township.

MOTION: A motion was made by Mrs. Haun, seconded by Mr. Jones and carried unanimously, to authorize execution of a Release and Indemnity Agreement with Bucks County, CNBTJSA, and New Britain Township for property at New Galena and Walter Roads.

11.4. Adoptions of NPDES MS4 TMDL/PRP Plan: Ms. Bradley stated that the Board had discussed the NPDES MS4 Total Maximum Daily Load and Pollution Reduction Plan (TMDL/PRP) at past meetings. The Plan had been presented to the public, advertised and made available for comment for a minimum of 30 days. No public comment had been received. Ms. Bradley recommended adoption of the TMDL/PRP Plan.

MOTION: Upon motion by Mr. Jones, seconded by Mrs. Haun, the Board unanimously authorized Adoption of NPDES MS4 TMDL/PRP Plan.

11.5. Rotelle Development/Parini/Fidushin Zoning Hearing: Ms. Bradley stated that on Thursday, July 18, at 7:00 p.m., the Zoning Hearing Board would consider the Application of Rotelle Development/Parini/Fidushin for a property at 2240 Swamp Road. They were seeking a dimensional variance from a prior ZHB decision. Interested parties were encouraged to attend. She added that this application might be withdrawn, but recommended that the Board take no action.

11.6. Vineyard at Peace Valley Subdivision Zoning Hearing: Ms. Bradley stated that on Thursday, August 15, at 7:00 p.m., the Zoning Hearing Board would consider the Application of Prestige Property Partners for Lots #1, 5 and 12 of the Vineyard at Peace Valley Subdivision. The applicant was seeking relief to allow a lane lot of 9.61 gross acres (min. 10). Interested parties were encouraged to attend. Ms. Bradley recommended that the Board to take no action on the application, but request that the Zoning Hearing Board, should they choose to grant the requested relief, add a condition to be included in their official decision that the Township would not accept or review any permit applications for the project at the Vineyard at Peace Valley until an amended Final Plan had been recorded.

11.7 Authorization for Appraisal: Ms. Bradley requested authorization to order an appraisal on a property within the Township for purposes of potential conservation easement purchase.

MOTION: Upon motion by Mrs. Haun, seconded by Mr. Jones, the Board unanimously approved authorization to order an appraisal for the property discussed during Executive Session held on July 15, 2019.

11.8. Cancellation of August 5, 2019 Meeting: Ms. Bradley asked that the Board consider cancellation of the Board of Supervisors Meeting of August 5, as per longstanding policy.

MOTION: A motion was made by Mr. Jones, seconded by Mrs. Haun and carried unanimously, to cancel the Board of Supervisors Meeting scheduled for August 5.

12. Solicitor and Engineer Comments: There were no Solicitor comments at this time.

Mr. Kennard requested that the Township provide a letter to the Hilltown Township Water and Sewer Authority authorizing connection of the Lohin Subdivision to their public sewer system in Hilltown Township. Ms. Bradley also stated that Mr. Showalter and Mr. Lohin would need to coordinate the connection with the CNBTJSA.

MOTION: A motion was made by Mrs. Haun, seconded by Mr. Jones and carried unanimously, to authorize the Township Manager to draft an approval letter for the public sewer connection in Hilltown Township for the proposed Lohin Subdivision.

13. Other Business: There was no Other Business at this time.

14. Public Comment: Bruce Quedenfeld of Brittany Drive thanked Chief Scafidi for the Police assistance in their neighborhood regarding the detoured traffic from the 202 Bridge closure. He suggested that the Police Department install solar power for the electronic signs placed in the neighborhood. Chief Scafidi stated that the Department was researching the use of solar-powered batteries. Mr. Quedenfeld also inquired if the construction site was required to be fenced off. Ms. Bradley responded that she could not recall at this time.

Ms. Eileen Campanile of Butler Avenue requested that the Township close the roads in Brittany Farms to all traffic for the remainder of construction. Chief Scafidi stated that it was a public road and closing the roads would not be enforceable by the Police. Mr. Scanzillo added that if the Township was able to find additional ways to improve the traffic situation, the Township would act on them.

Ms. Mary Beth McCabe of E. Fairwoods Drive requested that the Board provide printed copies of the plans with the meeting agenda, as they are difficult to read when being presented in person. Mr. Scanzillo stated that the Township was looking into purchasing a Smart Board for the meeting room.

Mr. Phil Shire of Hampshire Drive thanked the Police for doing an excellent job patrolling their neighborhood. He expressed his concern with the number of trucks still driving through the neighborhood. Mr. Scanzillo replied that "No Thru Trucks" signs had been installed and Police were issuing tickets when possible.

Mr. Quedenfeld inquired about the Hometown Heroes Flag program and if the Township could have something similar. Mr. Nelson replied that the Hometown Heroes program was based out of the Pennsylvania State Association of Boroughs and only Boroughs were able to participate in the program.

Mrs. Haun had a brief discussion with the members of the Boy Scouts that were present in the audience.

There was no other Public Comment.

15. Payment of Bills:

15.1. Bills List dated June 25, 2019 for $96,298.12:

MOTION: Upon motion by Mr. Jones, seconded by Mrs. Haun, the Board unanimously approved the Bills List dated June 25, 2019 for $96,298.12.

15.2. Bills List dated June 26, 2019 for $8,309.01:

MOTION: Upon motion by Mrs. Haun, seconded by Mr. Jones, the Board unanimously approved the Bills List dated June 26, 2019 for $8,309.01.

15.3. Bills List dated July 2, 2019 for $5,209.70 (medical reimbursements):

MOTION: Upon motion by Mr. Jones, seconded by Mrs. Haun, the Board unanimously approved the Bills List dated July 2, 2019 for $5,209.70 (medical reimbursements).

15.4. Bills List dated July 10, 2019 for $175,408.89:

MOTION: Upon motion by Mr. Jones, seconded by Mrs. Haun, the Board unanimously approved the Bills List dated July 10, 2019 for $175,408.89.

16. Adjournment:

MOTION: There being no further business or comment, a motion was made by Mr. Jones, seconded by Mrs. Haun, and unanimously carried, to adjourn the meeting at 8:00 p.m.

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NEW BRITAIN TOWNSHIP BOARD OF SUPERVISORS

A. James Scanzillo, Chair

Helen B. Haun, Vice Chair

William B. Jones, III, Member

Gregory T. Hood, Member

Cynthia M. Jones, Member

Attest:
Eileen M. Bradley
Secretary/Manager

BOARD OF SUPERVISORS
MEETING MINUTES
September 11, 2017

A Regular Meeting of the New Britain Township Board of Supervisors was held on Monday, May 1, 2017, at the Township Administration Building, 207 Park Avenue, New Britain Township, PA, beginning at 9:00 a.m. Present were Supervisors: Chair A. James Scanzillo, Vice Chair John A. Bodden, Sr., Members Helen B. Haun, Gregory T. Hood and William B. Jones, III. Also present were Township Manager Eileen M. Bradley, Township Solicitor Peter Nelson, Esq., and Township Engineer Janene Marchand.

1. Call to Order: Mr. Scanzillo called the Meeting to order.

2. Pledge of Allegiance: Mr. Scanzillo led the Board and audience in the Pledge of Allegiance. A moment of silence was observed to mark the 16th anniversary of the September 11 tragedy.

3. Announcements: Mr. Scanzillo announced that the Board had met in Executive Session on Monday, August 21, 2017 at 7:40 p.m. to discuss personnel issues. The Board also met in Executive Session prior to this Meeting to discuss personnel issues and land acquisition

4. Public Comment on Non-Agenda Items: There was no Public Comment at this time.

5. Approval of Minutes:

5.1. Minutes of Meeting of August 21, 2017:

MOTION: A motion was made by Mr. Bodden, seconded by Mrs. Haun and unanimously approved to accept the August 21, 2017 Minutes as written.

6. Departmental Reports: There were no Departmental Reports at this time.

7. Consideration of Old Business:

7.1. Chalfont-New Britain Township Joint Sewer Authority: Chalfont-New Britain Township Joint Sewer Authority (CNBTJSA) Executive Director John Schmidt, Board Chairman Joseph Bonner and Board Member Gustave Haun were present to represent the CNBTJSA. Mr. Schmidt reviewed the progress of Phase 3 construction of plant expansion. Mr. Schmidt stated that once this final phase was finished, the total cost of the project would be roughly $6 million.

Mr. Jones asked if the recent fire at their facility had any effect on operations. Mr. Schmidt stated that on May 23, 2017, a fire broke out in the sludge dryer building. The fire also damaged the adjacent building roof. The dryer, which had been off during construction of a new metal roof, was turned back on. Interior plywood smoldered all day, and eventually caught fire in late afternoon. The fire did not have an effect on their ability to service residents, but added cost due to having to haul sludge out to another processor.

Mr. Schmidt stated that three different insurance companies were involved, and that all repairs and additional operational expenses incurred due to this fire would be covered by insurance. Ms. Bradley asked if they had been given the go ahead to begin repairs. Mr. Schmidt responded that repairs were already underway.

Mr. Bodden asked if they had checked the other flues on the property. Mr. Schmidt stated they had, but that none of the other flues burned fuels like the one that had caught fire.

Mrs. Haun asked if they would still be using a metal roof after the fire. Mr. Schmidt said that they were, however, there would be no attic and the ceiling rafters would be exposed. Mr. Schmidt added that it would take about two months before the dryer would be operational. The incident would cost the insurance companies roughly $1 million in the end.

Mrs. Cynthia Jones of Circle Drive asked if the sewer line was installed along Upper State Road for the Frost Tract before school started. Mr. Schmidt stated that the timeline was met and the sewer line had been successfully installed before Labor Day.

7.2. Neshaminy Creek TMDL/PRP Adoption: Ms. Bradley stated that the Board had discussed the Neshaminy Creek Total Maximum Daily Load/Pollution Reduction Plan (TMDL/PRP) on several occasions. The Plan had been presented to the public, advertised and made available for comment for a minimum of 30 days. No public comment had been received. Ms. Bradley recommended adoption of the TMDL/PRP, to be submitted to DEP as part of the Township's NPDES MS4 Permit Application.

MOTION: A motion was made by Mrs. Haun, seconded by Mr. Bodden and carried unanimously, to adopt the Neshaminy Creek Total Maximum Daily Load/Pollution Reduction Plan and to submit final application for New Britain Township's 2018 -2023 NPDES-MS4 Permit.

8. Consideration of New Business:

8.1. Authorization to Advertise Ordinance Amendment for New Traffic Control on E. Schoolhouse Road: Ms. Bradley stated that she was seeking authorization to advertise an amendment for new traffic control on E. Schoolhouse Road between Upper State Road and Manor Drive. Following an engineered traffic study of the area, a stop sign would be moved from Tartan Terrace to Krista Court, and a new stop sign would be erected at Prince William Way. Additional cautionary signage would also be added throughout the area.

Ms. Cynthia Jones asked if there was any ability to add a left-turn signal arrow at Schoolhouse and W. Butler Avenue. Mrs. Marchand explained that an arrow was not warranted per PennDOT specifications. Every time a new development project in the vicinity was proposed, the Township required the developer to submit a traffic study of the intersection. When the PennDOT warrants are met, that developer would be required to make the necessary improvements to the intersection system. Ms. Bradley added that she would have the timing of the light examined in the short term.

MOTION: Upon motion by Mr. Hood, seconded by Mr. Jones, and carried unanimously, the Board approved advertisement of an ordinance amendment for new traffic control on E. Schoolhouse Road between Upper State Road and Manor Drive.

9. Consent Agenda:

MOTION: Upon motion by Mr. Bodden, seconded by Mr. Jones, the Board unanimously approved the following Consent Agenda items: Professional Service Agreement for 505 W Butler Avenue, LLC for subdivision of TMP #26-006-096, 505 W Butler Avenue, with corresponding legal and engineering escrow of $15,000.00; Professional Service Agreement for Colebrook Properties, LP for subdivision of TMP #26-001-106-002, 26-001-106-003, 26-001-106-004, 26-001-106-005, parcels in and around Schoolhouse Road and Barry Road, with corresponding legal and

engineering escrow of $2,500.00; Professional Service Agreement for Nick and Ashley Pompei for construction of a single-family dwelling of TMP #26-014-004, Layle Lane, with corresponding legal and engineering escrow of $5,000.00.

Ms. Cynthia Jones asked if any plans were submitted for the subdivision plan of the Nolen property that indicated potential uses of the property. Ms. Bradley stated that the applicant submitted for subdivision only. No land development plans were submitted, and none would be approved.

Mr. Bodden asked if plans had been submitted for the self-storage facility in the old ACME building. Ms. Bradley stated that no application had been submitted as of the prior Friday.

10. Board of Supervisors' Comments: Mr. Bodden took a moment to acknowledge the victims of September 11 as well as those victims and first responders impacted by the recent hurricanes in Texas and Florida.

Mr. Jones stated that there was nominal turnout for Friday's Movie in the Park showing of the movie Beauty and the Beast. In the future, he hoped for better weather to get a larger attendance.

11. Township Administration Comments:

11.1. 2017-2018 Consortium Salt Contract: Ms. Bradley stated that results of the Bucks County Consortium's 2017-2018 Salt Bid had been received. She stated that it was the recommendation of Wayne Fultz, Superintendent of Public Works, and herself that the Board award a contract to the apparent lowest bidder, Morton Salt, Inc. at $48.82 per ton delivered. Ms. Bradley noted that last year's bid amount was $59.48.

MOTION: A motion was made by Mrs. Haun, seconded by Mr. Hood and carried unanimously, to award the 2017-2018 Salt Contract to Morton Salt, Inc. for $48.82 per ton.

11.2. Doylestown Waste Recycling Zoning Hearing Board Application: Ms. Bradley stated that on Thursday, September 21, 2017 at 7:00 p.m., the ZHB would consider the application of Doylestown Waste Recycling, LLC for the property at 1510 Swamp Road, TMP #26-012-059-002, in the OP-Office Park Zoning District, owned by TF Partners, LP, for variances to an F3-Recycling Collection Center Use. The Applicant sought variances to allow modifications to the F3 Use: namely to allow the recycling of additional materials such as untreated wood, drywall, particle board, shingles, concrete, stone, brick, block and other construction-related materials; and to increase the daily allowable tonnage to up to 250 tons per day (100 tons currently allowable). Interested parties were encouraged to attend. Ms. Bradley recommended leaving the issue up to the Zoning Hearing Board.

11.3. Land Acquisition: Ms. Bradley requested authorization to order an appraisal of a certain property discussed in Executive Session, for the purposes of potentially acquiring a conservation easement.

MOTION: A motion was made by Mrs. Haun, seconded by Mr. Bodden and carried unanimously, to authorize Township staff to obtain an appraisal of a certain property for purposes of potentially acquiring a conservation easement.

11.4. Construction Easement and Right-of-Way Acquisition for Culvert Construction: Ms. Bradley stated that she would also need authorization for appraisals for certain properties for acquisition of additional rights-of-way and temporary construction easements for culvert replacements on Sellersville and Walter Roads.

MOTION: A motion was made by Mr. Hood, seconded by Mr. Jones and carried unanimously, to authorize Township staff to obtain appraisals for certain properties for acquisition of additional rights-of-way and temporary construction easements for culvert replacements on Sellersville and Walter Roads.

12. Solicitor and Engineer Comments: There were no Solicitor or Engineer Comment at this time.

13. Other Business: There was no Other Business at this time.

14. Public Comment: There was no Public Comment at this time.

15. Payment of Bills:

15.1. Bills List dated September 1, 2017 for $57,546.13:

MOTION: Upon motion by Mr. Bodden, seconded by Mrs. Haun, the Board unanimously approved the Bills List dated September 1, 2017 for $57,546.13.

15.2. Bills List dated September 7, 2017 for $132,699.11:

MOTION: Upon motion by Mr. Jones, seconded by Mr. Hood, the Board unanimously approved the Bills List dated September 7, 2017 for $132,699.11.

16. Adjournment:

MOTION: There being no further business or comment, a motion was made by Mr. Bodden, seconded by Mr. Jones, and unanimously carried, to adjourn the meeting at 9:30 a.m.

NEW BRITAIN TOWNSHIP BOARD OF SUPERVISORS

_____
A. James Scanzillo, Chair

_____
John A. Bodden, Sr., Vice Chair

_____
Helen B. Haun, Member

Attest: _____
Eileen M. Bradley
Secretary/Manager

_____
Gregory T. Hood, Member

_____
William B. Jones, III, Member

BOARD OF SUPERVISORS
MEETING MINUTES
August 21, 2017

A Regular Meeting of the New Britain Township Board of Supervisors was held on Monday, August 21, 2017, at the Township Administration Building, 207 Park Avenue, New Britain Township, PA, beginning at 7:00 p.m. Present were Supervisors: Chair A. James Scanzillo, Vice Chair John A. Bodden, Sr., Members Helen B. Haun, Gregory T. Hood and William B. Jones, III. Also present were Township Manager Eileen M. Bradley, Township Solicitor Stephen Kramer, Esq., and Township Engineer Janene Marchand.

1. Call to Order: Mr. Scanzillo called the Meeting to order.

2. Pledge of Allegiance: Mr. Scanzillo led the Board and audience in the Pledge of Allegiance.

3. Announcements: Mr. Scanzillo announced that the Board had met in Executive Session prior to this Meeting to discuss personnel issues and land acquisition.

4. Public Comment on Non-Agenda Items: Mrs. Cynthia Jones of Circle Drive asked when the Nolen Subdivision (former Acme Property) would be on the agenda. Ms. Bradley stated that the Township had only received plans two weeks ago, and they were still under engineering review. The project was tentatively scheduled to go before the Planning Commission in late September.

5. Approval of Minutes:

5.1. Minutes of Meeting of July 17, 2017:

MOTION: A motion was made by Mrs. Haun, seconded by Mr. Jones and unanimously approved to accept the July 17, 2017 Minutes as written.

6. Departmental Reports:

6.1. Code Department Report for July 2017: Ms. Bradley presented the Code Department Report for July 2017.

6.2. Police Department Report for July 2017: Chief Scafidi presented the Police Department Report for July 2017. Chief Scafidi reported that the Department was up and running on its new E-Ticketing system. Ms. Bradley stated that the delay in getting the system operational was due to the State.

6.3. Public Works Department Report for July 2017: Ms. Bradley presented the Public Works Department Report for July 2017.

7. Consideration of Old Business:

7.1. Metro Storage Land Development Approval Resolution #2017-16: Ms. Bradley stated that the Board had reviewed the Metro Storage application on several occasions. Remaining issues were the amounts of fees-in-lieu, to which the Applicant had agreed. Ms. Bradley reviewed the required contribution amounts for various categories: $75,814.11 for road improvements, $33,440.00 for park and recreation improvements, $2,257.50 for stormwater fee, and $9,500.00 for Stormwater BMP Maintenance fee.

Ms. Bradley recommended approval of Resolution #2017-16 as drafted.

MOTION: A motion was made by Mr. Hood, seconded by Mr. Bodden and carried unanimously, to adopt Resolution #2017-16, granting Final Land Development Approval and setting the terms and conditions for the Metro Storage Land Development Plan.

8. Consideration of New Business:

8.1. PUBLIC HEARING: Increase in Indebtedness Ordinance #2017-08-08: Mr. Scanzillo called the Public Hearing to order at 7:10 p.m. Mr. Kramer informed the Board that the proposed ordinance would increase the debt of the Township by $3,000,000. Ms. Bradley stated that the new debt would pay for the New Galena Road Bridge replacement, numerous culvert repairs throughout the Township, and other possible capital improvements.

Mr. Shon Weldon of Willowwood Drive asked what was the Township's current debt situation. Ms. Bradley stated that the Township currently held debt of $1.6 million for construction of the Public Works building.

MOTION: There being no further discussion, a motion was made by Mr. Bodden, seconded by Mr. Jones and carried unanimously, to close the Public Hearing at 7:20 p.m.

MOTION: Upon motion by Mr. Hood, seconded by Mr. Bodden, the Board unanimously approved Ordinance #2017-08-08, authorizing the Increase in Indebtedness of $3,000,000.

8.2. Authorize Advertisement of the Proposed Intergovernmental Agreement and Cooperative Recycling Grant Ordinance: Ms. Bradley stated that the proposed ordinance was required by recent legislation to allow municipalities to jointly apply for DEP 901 Recycling Grant funding. She stated that six other Central Bucks municipalities would pass identical ordinances. Ms. Bradley asked the Board to authorize advertisement of the Intergovernmental Agreement and Cooperative Recycling Grant Ordinance.

MOTION: Upon motion by Mrs. Haun, seconded by Mr. Bodden, the Board unanimously authorized advertisement of the Intergovernmental Agreement and Cooperative Recycling Grant Ordinance.

8.3. Resolution #2017-18 Authorizing Donation of Unclaimed Property: Ms. Bradley stated that the Township was in possession of a surplus of unclaimed bicycles, of which would be difficult for the Township to sell or dispose. Per the Second Class Township Code, the Township could donate unclaimed and damaged bicycles to a 501(c)3 service organization, such as the Chalfont VFW Post No. 3258. The VFW would refurbish the bicycles, and donate them to needy families, or sell them and use the funding for their charitable works.

MOTION: Upon motion by Mr. Jones, seconded by Mr. Hood, the Board unanimously approved Resolution #2017-18, authorizing donation of unclaimed property.

8.4. Resolution #2017-21: Opposing HB1469 and SB663, Related to UCC and Third-Party Inspections: Ms. Bradley stated that House Bill 1469 and Senate Bill 663 before the Pennsylvania General Assembly would cause damaging alterations to the Uniformed Construction Code; specifically, remove control of inspections and permit pricing out of the hands of municipalities and under control of third-party inspection companies. These bills could open up the construction market to collusion and other illegal acts. Ms. Bradley asked that the Board pass this resolution in opposition to the two bills, so that it could be forwarded to our State Legislators.

MOTION: Upon motion by Mr. Hood, seconded by Mr. Bodden, the Board unanimously approved Resolution #2017-21, opposing HB1469 and SB663, related to UCC and Third-Party Inspection, and directing the Manager to forward the Resolution to elected State Legislators.

8.5. Discussion: Act 172 Tax Credit for Active Volunteer First Responders: Ms. Bradley stated that Act 172 of 2016 was designed to assist in the recruitment and retention of volunteer first responders, such as firefighters and EMS providers by providing them with real estate or earned income tax credits for their service. She stated that she had been reviewing multiple methods of implementing the tax credit with a number of different agencies.

Ms. Bradley stated that the real estate tax credit was difficult to implement, was not equitable to all volunteers, and produced minimal return for the volunteers. An earned income tax credit posed similar equity issues with unemployed, underemployed and retired volunteers. A third strategy was a flat Township-paid stipend for meeting established benchmarks, paid to the fire company for distribution under the stated policy. Ms. Bradley stated that this scenario could be the most effective method administratively for the Township and the most equitable to the volunteers, but was outside the guidelines of Act 172. Ms. Bradley stated that if the Board wished to implement such an incentive program, action would need to be taken in the near future. She sought direction from the Board on how to proceed.

Mr. Hood stated that he was in favor of an equitable system, and asked if fire police and auxiliary members were addressed in Act 172. Ms. Bradley stated that all fire companies she had talked with had written criteria to meet in order to be considered an "Active Member" which was the status indicated in Act 172. The fire company would be required to annually submit the written criteria and a certified list of Active Members. If the individual company considered that fire police fulfilled the written criteria to be Active Members, then so would the Township. Ms. Bradley added that any stipend or tax credit would be paid by the resident municipality.

Mr. Hood asked that since it involved multiple municipalities, would each contribute a flat fee to a pool of money for the stipends. Ms. Bradley stated that each municipality would chose to enact a policy under Act 172, an alternate policy, or to not act at all. While uniformity across the County would be beneficial, it would be nearly impossible with 54 separate municipalities just in Bucks County. In the case of a stipend, however, contributions could be based on a per capita served basis, similar to how insurance is currently shared with Chalfont and New Britain.

Mr. Hood said he would be in favor of an incentive program and the other Board members agreed. Ms. Bradley stated that she could present them with a draft policy and preliminary cost figures for the next meeting.

9. Consent Agenda:

MOTION: Upon motion by Mr. Bodden, seconded by Mr. Hood, the Board unanimously approved the following Consent Agenda items: Execution of a Sewer Installation Agreement for MDG, LLC for installation of a sanitary sewer line for TMP #26-005-077, the Frost Tract at Upper State Road and Pickertown Road, with corresponding financial security escrow of $25,000.00; Escrow Release #4 for $88,182.00, Lot 20-2 Realty LP (SkyZone), leaving $189,125.00 remaining; Escrow Release #4 for $184,895.70, Estates at Julius Farm (Maurer Tract) leaving $729,855.88 remaining; Execution of a Stormwater Operation and Maintenance Agreement with Brian T. and Katherine M. Freedman for TMP #26-003-113-002, 9 Elaines Lane, with corresponding permanent Maintenance Guarantee Fee of $343.50; Escrow Release #1 for $1,115,219.20, New Britain Woods Project/Toll PA XIII, LP, leaving $922,131.67 remaining; Escrow Release #4 for $13,466.2, Holy Properties, LLC, for Clauser Tree Service Property,

leaving $100,875.88 remaining; Payment Application #2 for $121,296.96, DESCCO Design and Construction, Inc. for New Galena Road Bridge Replacement Project, leaving $492,891.35 remaining.

10. Board of Supervisors' Comments: Mr. Bodden stated that he had visited the New Galena Bridge Project site and that work was moving along. He stated that the undertaking was quite impressive. Ms. Bradley asked the engineer to be kept apprised of when the beams were being installed, so that photographs could be taken of the work.

11. Township Administration Comments:

11.1. Adoption of 2018 Police Pension MMO Resolution #2017-19: Ms. Bradley stated that in order to keep the Township's two pension funds healthy and sound, the Township was required to annually pay into the Police Pension Fund and the Non-Uniform Pension Fund a Minimum Municipal Obligation (MMO), as outlined in the proposed Resolutions before the Board. Based on the 2015 Valuation Reports of the actuary, The 2018 MMO would be $133,914 for Police Pension Fund, $38,925 for the Non-Uniform Pension Fund, for a total 2018 MMO of $172,839.

11.2. Adoption of 2018 Non-Uniformed Pension MMO Resolution #2017-20:

MOTION: A motion was made by Mrs. Haun, seconded by Mr. Hood and carried unanimously, to adopt Resolution #2017-19, the 2018 Minimum Municipal Obligation requiring a payment of $133,914 to the Police Pension Fund; and to adopt Resolution #2017-20, the 2018 Minimum Municipal Obligation requiring a payment of $38,925 to the Non-Uniform Pension.

12. Solicitor and Engineer Comments: Mrs. Marchand stated that Gilmore was working on completing the New Britain Township TMDL/PRP MS4 permit application. The public comment period was ending, and that residents should provide input before the comment period ended.

Mr. Weldon asked if the Permit was a State requirement. Ms. Bradley stated that these permits were government regulations set forth by the U.S. Environmental Protection Agency (EPA) and the PA Department of Environmental Protection (DEP) that require municipalities to reduce sediment and phosphorous within the Neshaminy Creek watershed. She stated that the TMDL/PRP Plan outlined the Township's plan to meet these mandates over the five-year life of the permit.

13. Other Business: There was no Other Business at this time.

14. Public Comment: There was no Public Comment at this time.

15. Payment of Bills:

15.1. Bills List dated August 3, 2017 for $6,698.09:

MOTION: Upon motion by Mrs. Haun, seconded by Mr. Hood, the Board unanimously approved the Bills List dated August 3, 2017 for $6,698.09.

15.2. Bills List dated August 9, 2017 for $405,701.75:

MOTION: Upon motion by Mrs. Haun, seconded by Mr. Hood, the Board unanimously approved the Bills List dated August 9, 2017 for $405,701.09.

15.3. Bills List dated August 21, 2017 for $235,220.57:

MOTION: Upon motion by Mrs. Haun, seconded by Mr. Hood, the Board unanimously approved the Bills List dated August 21, 2017 for $235,220.57.

16. Adjournment:

MOTION: There being no further business or comment, a motion was made by Mr. Jones, seconded by Mr. Hood, and unanimously carried, to adjourn the meeting at 7:40 p.m.

NEW BRITAIN TOWNSHIP BOARD OF SUPERVISORS

_____
A. James Scanzillo, Chair

_____
John A. Bodden, Sr., Vice Chair

_____
Helen B. Haun, Member

Attest: _____
Eileen M. Bradley
Secretary/Manager

_____
Gregory T. Hood, Member

_____
William B. Jones, III, Member

BOARD OF SUPERVISORS
MEETING MINUTES
July 17, 2017

A Regular Meeting of the New Britain Township Board of Supervisors was held on Monday, May 1, 2017, at the Township Administration Building, 207 Park Avenue, New Britain Township, PA, beginning at 7:00 p.m. Present were Supervisors: Chair A. James Scanzillo, Vice Chair John A. Bodden, Sr., Members Helen B. Haun, Gregory T. Hood and William B. Jones, III. Also present were Township Manager Eileen M. Bradley, Township Solicitor Peter Nelson, Esq., and Township Engineer Janene Marchand.

1. Call to Order: Mr. Scanzillo called the Meeting to order.

2. Pledge of Allegiance: Mr. Scanzillo led the Board and audience in the Pledge of Allegiance.

3. Announcements: Mr. Scanzillo announced that the Board had met in Executive Session prior to this Meeting to discuss personnel issues and land acquisition.

4. Public Comment on Non-Agenda Items: There was no Public Comment at this time.

5. Approval of Minutes:

5.1. Minutes of Meeting of July 3, 2017:

MOTION: A motion was made by Mr. Jones, seconded by Mr. Bodden and unanimously approved, to accept the July 3, 2017 Minutes as written.

6. Departmental Reports:

6.1. Code Department Report for June 2017: Ms. Bradley presented the Code Department Report for June 2017.

6.2. Police Department Report for June 2017: Chief Scafidi presented the Police Department Report for June 2017. Mr. Hood asked if there were many opioid related incidents. Chief Scafidi stated that only a few might be opioid-related.

6.3. Public Works Department Report for June 2017: Ms. Bradley presented the Public Works Department Report for June 2017. Mrs. Haun asked if there were any issues with flooding from the recent storms. Ms. Bradley stated there was no flooding of any significance throughout the Township.

7. Consideration of Old Business:

7.1. PFM Financial Consultants Presentation on Loan Proposals: Ms. Bradley introduced Mr. Jamie Schlesinger of PFM Financial Advisors, LLC to present the results of the Township's recent Request for Proposals (RFP) for a $3,000,000.00 bank loan. The loan would pay for reconstruction of the New Galena Road Bridge, repair/replacement of five culverts throughout the Township, and various other capital projects. Six proposals had been received by the July 11, 2017 deadline, with one received after that deadline.

Mr. Schlesinger stated that the RFP called for a loan term length of between five and ten years with a two-year drawdown period and no pre-payment penalty, with variable and/or fixed rates. He stated that banks were

asked to submit proposals for five, seven, ten and fifteen years with fixed interest rates. Variable interest rates were required to be capped at a stated rate.

After analysis of the total cost of the loan and fees, the proposal from First National Bank and Trust Company of Newtown (FNB) offered a ten-year fixed rate of 2.50%, with a variable rate based on 75% of the Wall Street Journal's Prime rate not to exceed 4.5% for the remainder of the term. This proposal resulted in the most cost effective choice of all proposals.

Mr. Schlesinger stated that FNB was easy to work with and would not require the Township to transfer other accounts to their bank. Ms. Bradley echoed this sentiment, stating that she had worked with FNB in the past and was confident that the relationship would be successful. Mr. Schlesinger and Ms. Bradley both recommended the Township contract with FNB for the borrowing. If the Board acted tonight, the loan could be settled by the end of August.

MOTION: Upon motion by Mr. Bodden, seconded by Mr. Jones, the Board unanimously elected to accept the proposal of First National Bank and Trust Company of Newtown, for a fifteen year $3,000,000.00 loan, with a two-year drawdown period, with a fixed rate of 2.50% for ten years, with no penalty for early repayment, and a maximum variable interest rate of 4.50% thereafter.

7.2. Authorize Advertisement of Ordinances Approving Indebtedness: Ms. Bradley stated that the Local Government Unit Debt Act required passage of an ordinance to allow the Township to incur additional indebtedness of $3,000,00.00, and asked the Board to authorize advertisement of an ordinance approving indebtedness. She stated that this was a necessary step to ensure the loan process continued moving forward and could be voted on at the August 21 meeting.

MOTION: Upon motion by Mr. Hood, seconded by Mrs. Haun, the Board unanimously authorized advertisement of an ordinance approving indebtedness.

7.3. Metro Storage Land Development Approval Resolution #2017-16: Mr. Bodden stated that since the Applicant was not present, he moved to table this issue.

MOTION: A motion was made by Mr. Bodden, seconded by Mrs. Haun and carried unanimously, to table Resolution #2017-16, which would have granted Final Approval to Metro Storage, to a future meeting.

7.4. Frost Tract Land Development Approval Resolution #2017-17: Appearing for the Applicant, Metropolitan Development Group (MDG, LLC) was Ms. Giovanna M. Raffaelli, Esq. Ms. Raffaelli stated that she was present to finalize and hopefully attain Final Approval from the Township for Phase II of the Frost Tract on Upper State Road.

The Applicant had met with the Chalfont-New Britain Township Joint Sewer Authority (CNBTJSA) and most neighbors to discuss the proposed sewer line along Upper State Road to Bristol Road. Ms. Raffaelli stated that the developer would assume responsibility to be careful and restore residents' property to pre-construction condition. The CNBTJSA had no issues with the proposed sewer line or construction plans.

Mr. Bodden asked if any engineering or legal issues present. Mrs. Marchand stated that they had received from the developer a video of the current conditions of Upper State Road and resident driveways. There were no other engineering concerns. Mr. Nelson stated he had no legal issues and the Board had a draft Resolution in front of them for consideration.

MOTION: A motion was made by Mr. Hood, seconded by Mrs. Haun and carried unanimously, to adopt Resolution #2017-17, granting Final Approval to the Frost Tract Phase II Land Development Plan.

8. Consideration of New Business:

9. Consent Agenda:

MOTION: Upon motion by Mr. Jones, seconded by Mrs. Haun, the Board unanimously approved the following Consent Agenda items: Execution of a Professional Services Agreement for Alexander Sharpan/Apollo CM Group for development of TMP #26-012-046, 52 N. Chapman Road, for demolition of an existing building and construction of a single family dwelling, with corresponding legal and engineering escrow of $2,500.00; Payment Application #1 in the amount of $50,542.20 for DESCCO Design and Construction, Inc. for construction of the New Galena Road Bridge Replacement Project, leaving $614,188.31 remaining.

10. Board of Supervisors' Comments: There were no Board of Supervisor's Comments at this time.

11. Township Administration Comments:

11.1. Discussion of MS4 PRP Plan: Mrs. Marchand stated that the Township was required to apply for a new Department of Environmental Protection (DEP) Municipal Separate Storm Sewer System (MS4) Permit every five years. Along with current MS4 reporting requirements, this round of permitting also required the Township to create Pollution Reduction Plans (PRP) and install best management practices (BMPs) to remove sediment and pollutants from the Neshaminy Creek and its tributaries. Mrs. Marchand stated the permit required a 10% reduction in sediment and a 5% reduction in nutrients from entering our waterways.

Mrs. Marchand stated that the Township would be undergoing five major retrofitting projects over the next five years to attain these goals. They included: adding a new basin to Cotton Park; adding additional riparian buffer to the Highlands Open Space; Circle Drive basin retrofit; improvements to the Cornwall Drive swale; and retrofitting of the Walden Way basin.

Ms. Bradley stated that Staff would advertise the proposed PRPs and obtain feedback from residents and stakeholders over the next month. Those comments would become part of the MS4 Application to DEP.

Mr. Hood asked if the Township was being proactive with stormwater management when it comes to land development. Ms. Bradley stated that stormwater management features are a requirement of both the Zoning Ordinance, Subdivision and Land Development Ordinance, Stormwater Management Act 167 Ordinance in all land development projects. Additionally, any resident making an improvement to their property that requires a variance from the Zoning Hearing Board is typically required to install stormwater management BMPs to their property.

11.2. Lepore Record Plans: Ms. Bradley stated that the Lepore Final Record Plans required Board signatures before recordation could take place.

MOTION: A motion was made by Mr. Hood, seconded by Mrs. Haun and carried unanimously, to execute the Lepore Final Record Plans.

11.3. Fall Festival PennDOT Overhead Banner Application: Ms. Bradley stated that the Chairman's signature was required to obtain permission from PennDOT to hang an Overhead Banner for the 2017 Fall Festival scheduled for September 23.

11.4. Possible Cancellation of August 7, 2017 Meeting: Ms. Bradley suggested to the Board that the August 7, 2017 Meeting be cancelled.

MOTION: A motion was made by Mr. Bodden, seconded by Mrs. Haun and carried unanimously, to cancel the August 7, 2017 Board of Supervisors Meeting.

12. Solicitor and Engineer Comments: There were no Solicitor or Engineer Comments at this time.

13. Other Business: There was no Other Business at this time.

14. Public Comment: There was no Public Comment at this time.

15. Payment of Bills:

15.1. Bills List dated July 7, 2017 for $177,040.27:

MOTION: Upon motion by Mrs. Haun, seconded by Mr. Jones, the Board unanimously approved the Bills List dated July 7, 2017 for $177,040.27.

16. Adjournment:

MOTION: There being no further business or comment, a motion was made by Mr. Hood, seconded by Mr. Jones, and unanimously carried, to adjourn the meeting at 7:30 p.m.

NEW BRITAIN TOWNSHIP BOARD OF SUPERVISORS

_____
A. James Scanzillo, Chair

_____
John A. Bodden, Sr., Vice Chair

_____
Helen B. Haun, Member

Attest: _____
Eileen M. Bradley
Secretary/Manager

_____
Gregory T. Hood, Member

_____
William B. Jones, III, Member

TOWNSHIP OF NEW BRITAIN

Bucks County, Pennsylvania
Founded: 1723

Eileen M. Bradley
Township Manager

BOARD OF SUPERVISORS

Helen B. Haun
John A. Bodden, Sr.
William B. Jones, III
A. James Scanzillo
Gregory T. Hood

PLANNING COMMISSION

Planning Commission Meeting
July 11, 2017
7:00 p.m.

Agenda

1. Pledge of Allegiance

2. Approval of Minutes of Meeting of June 27, 2017

3. Lohin, 4-Lot Subdivision and Land Development Plan Review, Township Line Road and Walter Road, TMP #26-001-043

4. New Britain Township's Total Maximum Daily Load (TMDL) & MS4 Pollutant Reduction Plan for the Neshaminy Creek

5. Public Comment

6. Adjournment

The next meeting of the New Britain Township Planning Commission is scheduled to take place on Tuesday, July 25, 2017, at 7:00 p.m. at the New Britain Township Building, 207 Park Avenue, Chalfont, PA

MEETING MINUTES
July 11, 2017
7:00 p.m.

A Meeting of the New Britain Township Planning Commission was held on July 11, 2017, at the Township Administration Building, 207 Park Avenue, New Britain Township, PA, beginning at 7:00 p.m. In attendance were: Chair Marco Tustanowsky, Vice Chair Deborah Rendon, William B. Jones III, Alfred Tocci, Gregory Hood, and Stephanie Shortall. Member Theresa Rizzo Grimes was absent. Township Zoning Officer, Devan Ambron and Township Engineer, Janene Marchand were also in attendance.

Public Meeting

1. Approval of Minutes:

1.1 Minutes of June 27, 2017 Planning Commission Meeting:

> **MOTION: Upon motion of Mr. Shortall, seconded by Mr. Tocci, the June 27, 2017 Minutes were approved as written.**

2. Lohin, 4-Lot Subdivision and Land Development Plan Review, Township Line Road and Walter Road, TMP #26-001-043

Mr. Robert Showalter, RL Showalter and Associates, Mr. Michael Lohin, and Mr. Chris Lohin were in attendance to present the proposed plan of subdivision to the New Britain Township Planning Commission. Mr. Showalter gave a brief history of the property. The property consists of 20 acres and is located in the SR-2, Suburban Residential, zoning district on the corner of Township Line Road and Walters Road. Mr. Showalter stated the proposed lots will range in size from approximately 3.5 acres to almost 6 acres and will be serviced by on-lot water and septic systems. Lots 1, 2 and 3 will be accessed by a shared driveway taking access off Township Line Road to avoid disturbance of the natural resources along Walters Road.

At this time Mr. Tocci asked Mr. Showalter who will be responsible for the maintenance of the shared driveway. Mr. Showalter stated the three property owners will be responsible for maintenance of the driveway. Mr. Showalter stated this plan was created before the issuance of the Fire Marshal review letter. Mr. Showalter presented a sketch plan overlay showing reconfiguration of the proposed driveway. The revised plan shows a horseshoe turn around area for the shared driveways. The Commission members discussed with Mr. Showalter and the applicants the potential benefits of the installation of a turnaround/island area for the 3 lots. Mr. Tustanowsky stated the revision gives a better sense of a community. With the revision fewer curb-cuts will be required along Township Line Road. The plans will be formally revised to show the revised driveway layout and B1 use.

At this time Mr. Showalter addressed the Gilmore & Associates Review letter dated June 13, 2017. Mr. Showalter stated a waiver is being requested from widening and improving the existing roads. The

Commission recommended a waiver be granted from road widening along Township Line Road and a partial waiver to allow the widening of Walters Road be reduced to a minimum of 18 feet. It was recommended that the sight lines be improved at the intersection of Township Line Road and Walters Road.

Mr. Showalter stated a waiver is being requested from the requirement of curb and sidewalk being installed along Township Line Road and Walters Road property frontages. Mr. Showalter stated currently no curbs or sidewalks exist along either of these frontages. The Commission is in support of this waiver.

A waiver is being requested in the calculation method of sizing the proposed stormwater management facilities. It is recommended a waiver be granted and the existing streams be stabilized and/or the applicant install riparian buffer plantings.

Mr. Showalter stated a waiver is being requested from the requirement to provide trees every 30 feet along the existing streets. Gilmore & Associates recommends that street trees be substituted with riparian buffer trees. The Commission recommends granting this waiver.

Mr. Showalter described the reasoning behind choosing the location for the proposed septic systems on each lot. He stated multiple tests were performed on each lot and the best location appears to be in the middle of the tract. Mr. Showalter stated he will supply documentation supporting this.

A brief discussion was had in regards to the need for stormwater management along Township Line Road. Mr. Showalter stated he will discuss this with Hilltown Township. With there being no further discussion the Commission recommends the proposed Subdivision/Land Development Plan be revised.

MOTION: Upon motion by Mr. Jones, seconded by Mrs. Rendon, and carried unanimously, the Commission tabled the proposed Subdivision/Land Development Plan.

3. New Britain Township's Total Maximum Daily Load (TMDL) & MS4 Pollutant Reduction Plan for the Neshaminy Creek

Mrs. Marchand presented the Planning Commission members a copy of the Total Maximum Daily Load & MS4 Pollutant Reduction Plan report. Mrs. Marchand stated as part of the Clean Water Act regulations a TMDL must be developed for those waterbodies identified as imparted by the state. Based on biological assessments for the Neshaminy Creek, the creek and its sub-watersheds were listed as showing aquatic life use impairment due to sediment and nutrients ostensibly as a result of growth and land development within the watershed. Mrs. Marchand stated there is a total of 7 BMP's proposed within the Township to aid in load reduction. The proposed BMP's include installing new stormwater basins, retrofitting existing basins, stabilizing streams and the installation of several bio-swales. No comments were received from the public.

MOTION: Upon motion by Mr. Jones, seconded by Mr. Hood, and carried unanimously, the Commission made a recommendation to approve advertisement of the Total Maximum Daily Load & MS4 Pollutant Reduction Plan Report.

4. **Public Comment.** There was no public comment at this time.

5. **Adjournment.**

MOTION: A motion was made by Mrs. Shortall, seconded by Mrs. Rendon, and unanimously carried to adjourn the July 11, 2017 meeting at 7:53 p.m.

Respectfully Submitted,

_____ _____

Marco Tustanowsky, Chair Devan Ambron, Zoning Officer

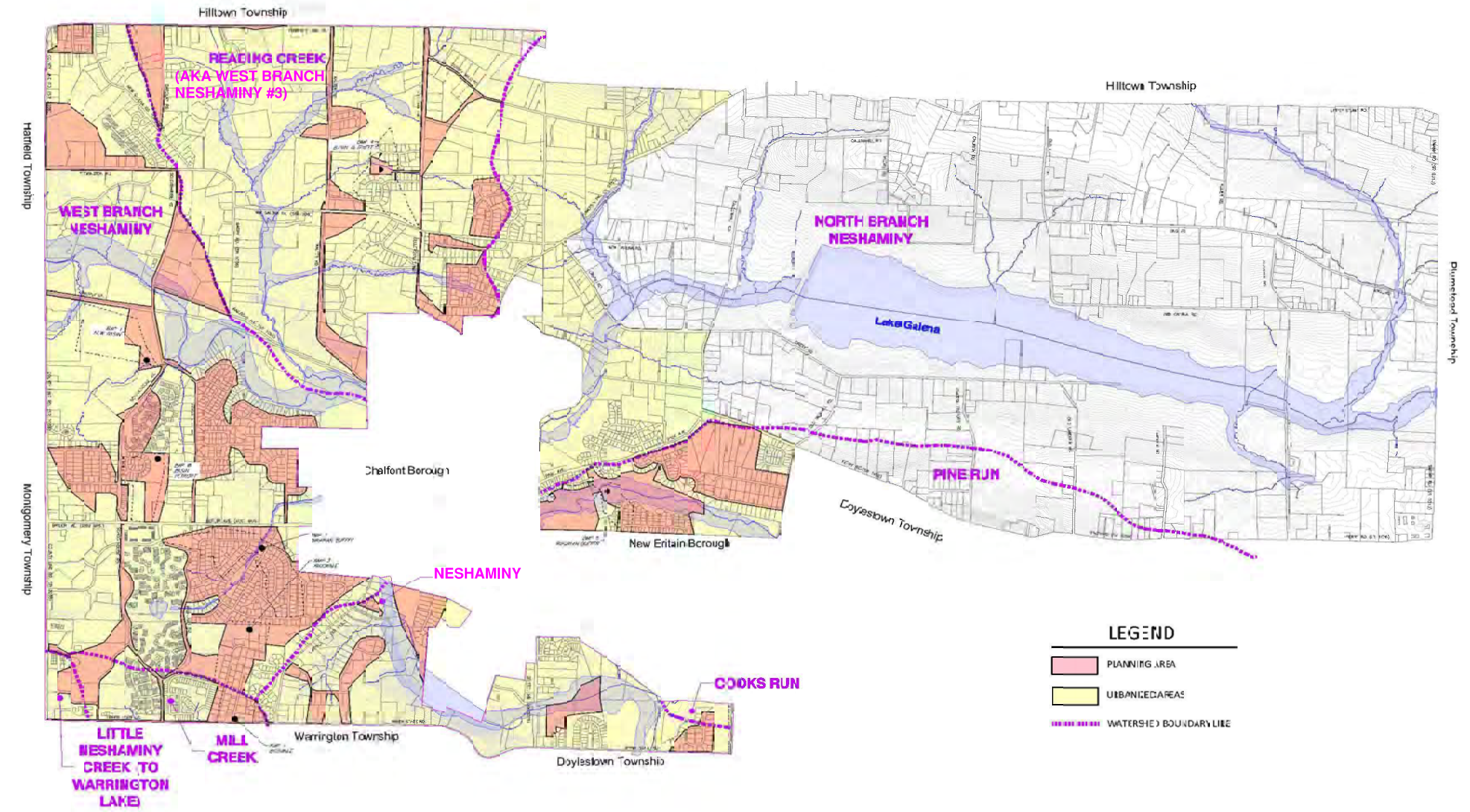
APPENDIX C

Maps

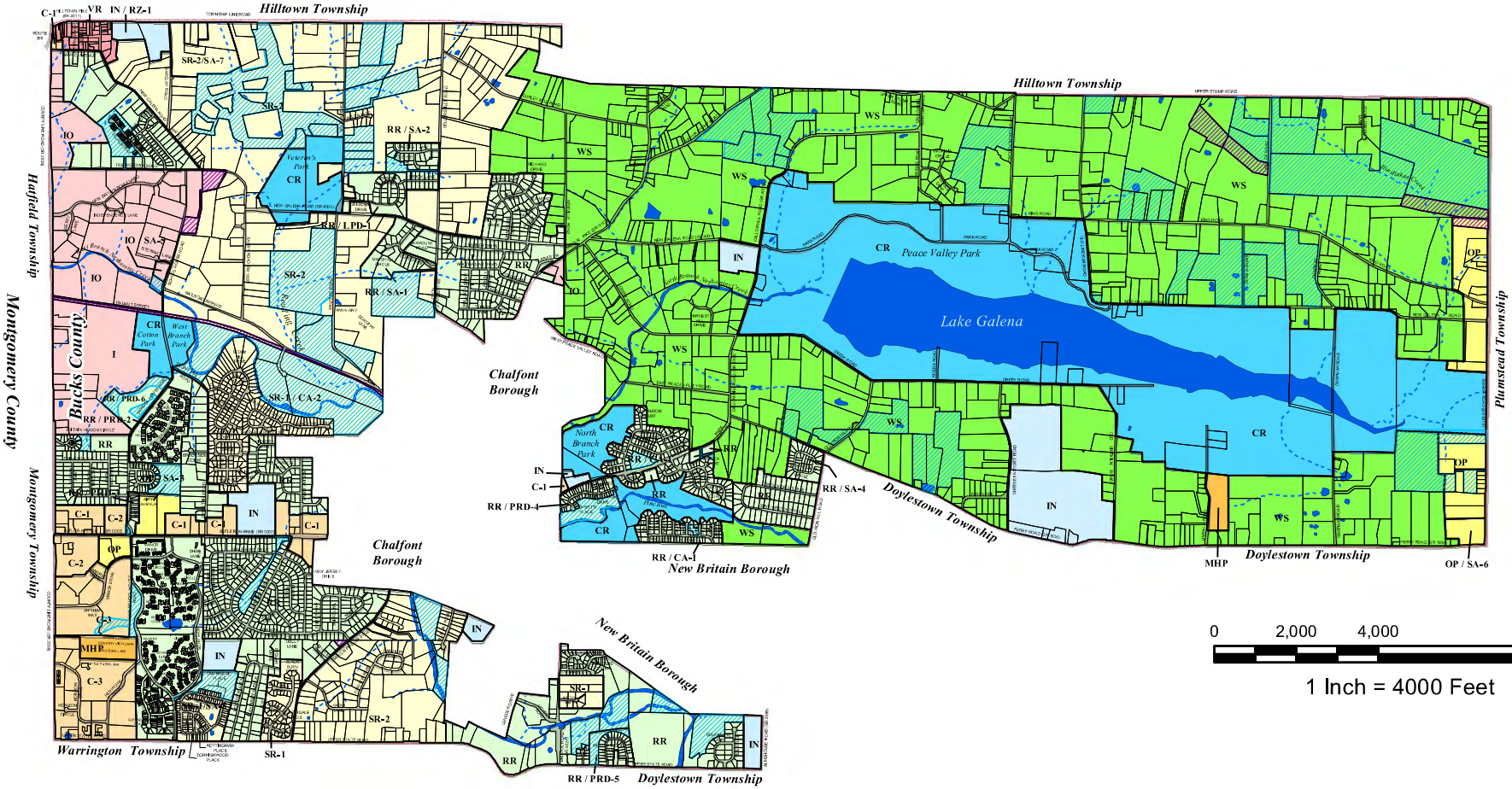
Appendix C-1: New Britain Township MS4 PRP Map
Appendix C-2: New Britain Township Land Use Map

NEW BRITAIN TOWNSHIP POLLUTANT REDUCTION PLAN (PRP)

NESHAMINY CREEK WATERSHED



Land Use Map
New Britain Township



ZONING DISTRICT

CR	Conservation and Recreation District	Preserved Land
WS	Watershed District	Utility Property
SR-1	Single Family Residential 1 District	
SR-2	Single Family Residential 2 District	
RR	Residential District	
VR	Village Residential District	
MHP	Manufacturing Home Park District	
C-1	Commercial District	
C-2	Commercial District	
C-3	Commercial District	
OP	Office Park District	
IN	Institutional District	
I	Industrial District	
IO	Industrial Office District	

This Zoning District Map of New Britain Township, Bucks County, Pennsylvania, has been adopted, or amended, on the dates indicated:

Date
August 4, 1995
February 3, 2003
April 28, 2003
October 21, 2013

COMPREHENSIVE PLAN
MAP #5
LAND USE MAP

NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES
65 EAST BUTLER AVENUE NEW BRITAIN, PA 18901-5106 - (215) 345-4330 - www.gilmore-assoc.com

JOB NO: 16-01002	DATE: JUNE 2016	SCALE: 1" : 4000'

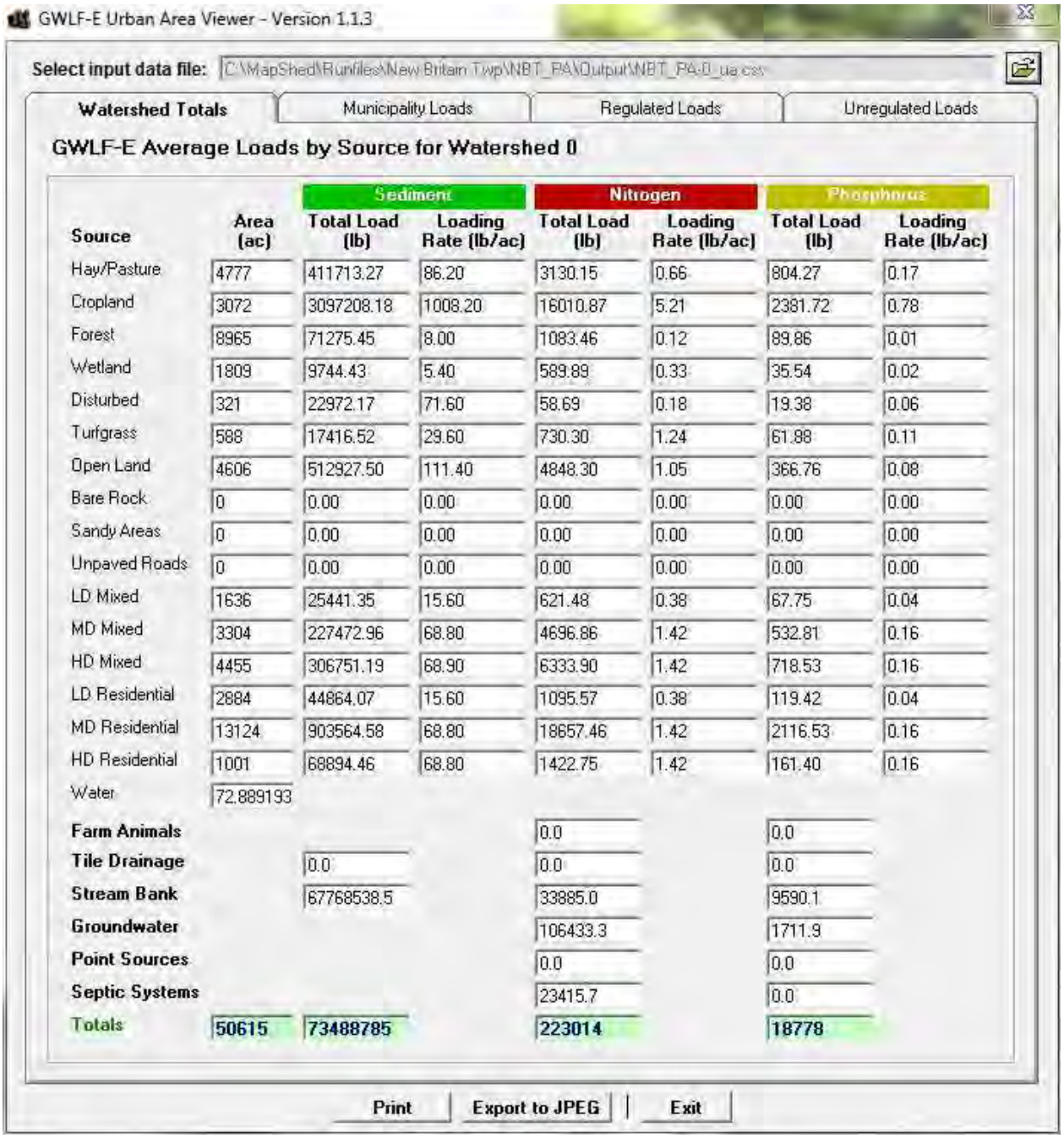
APPENDIX D

Determine Existing Loads for Pollutants of Concern:

Appendix D- 1: Total Watershed Loading for Neshaminy Creek
Appendix D- 2: Total Loading for Planning Areas to Neshaminy Creek

Appendix D - Determine Existing Loads for Pollutants of Concern:

Appendix D- 1: Total Watershed Loading for Neshaminy Creek



GWLF-E Urban Area Viewer - Version 1.1.3

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Watershed Totals | Municipality Loads | Regulated Loads | Unregulated Loads

GWLF-E Average Loads by Source for Watershed 0

		Sediment		Nitrogen		Phosphorus	
Source	Area (ac)	Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)
Hay/Pasture	4777	411713.27	86.20	3130.15	0.66	804.27	0.17
Cropland	3072	3097208.18	1008.20	16010.87	5.21	2381.72	0.78
Forest	8965	71275.45	8.00	1083.46	0.12	89.86	0.01
Wetland	1809	9744.43	5.40	589.89	0.33	35.54	0.02
Disturbed	321	22972.17	71.60	58.69	0.18	19.38	0.06
Turfgrass	588	17416.52	29.60	730.30	1.24	61.88	0.11
Open Land	4606	512927.50	111.40	4848.30	1.05	366.76	0.08
Bare Rock	0	0.00	0.00	0.00	0.00	0.00	0.00
Sandy Areas	0	0.00	0.00	0.00	0.00	0.00	0.00
Unpaved Roads	0	0.00	0.00	0.00	0.00	0.00	0.00
LD Mixed	1636	25441.35	15.60	621.48	0.38	67.75	0.04
MD Mixed	3304	227472.96	68.80	4696.86	1.42	532.81	0.16
HD Mixed	4455	306751.19	68.90	6333.90	1.42	718.53	0.16
LD Residential	2884	44864.07	15.60	1095.57	0.38	119.42	0.04
MD Residential	13124	903564.58	68.80	18657.46	1.42	2116.53	0.16
HD Residential	1001	68894.46	68.80	1422.75	1.42	161.40	0.16
Water	72.889193						
Farm Animals				0.0		0.0	
Tile Drainage		0.0		0.0		0.0	
Stream Bank		67768538.5		33885.0		9590.1	
Groundwater				106433.3		1711.9	
Point Sources				0.0		0.0	
Septic Systems				23415.7		0.0	
Totals	**50615**	**73488785**		**223014**		**18778**	

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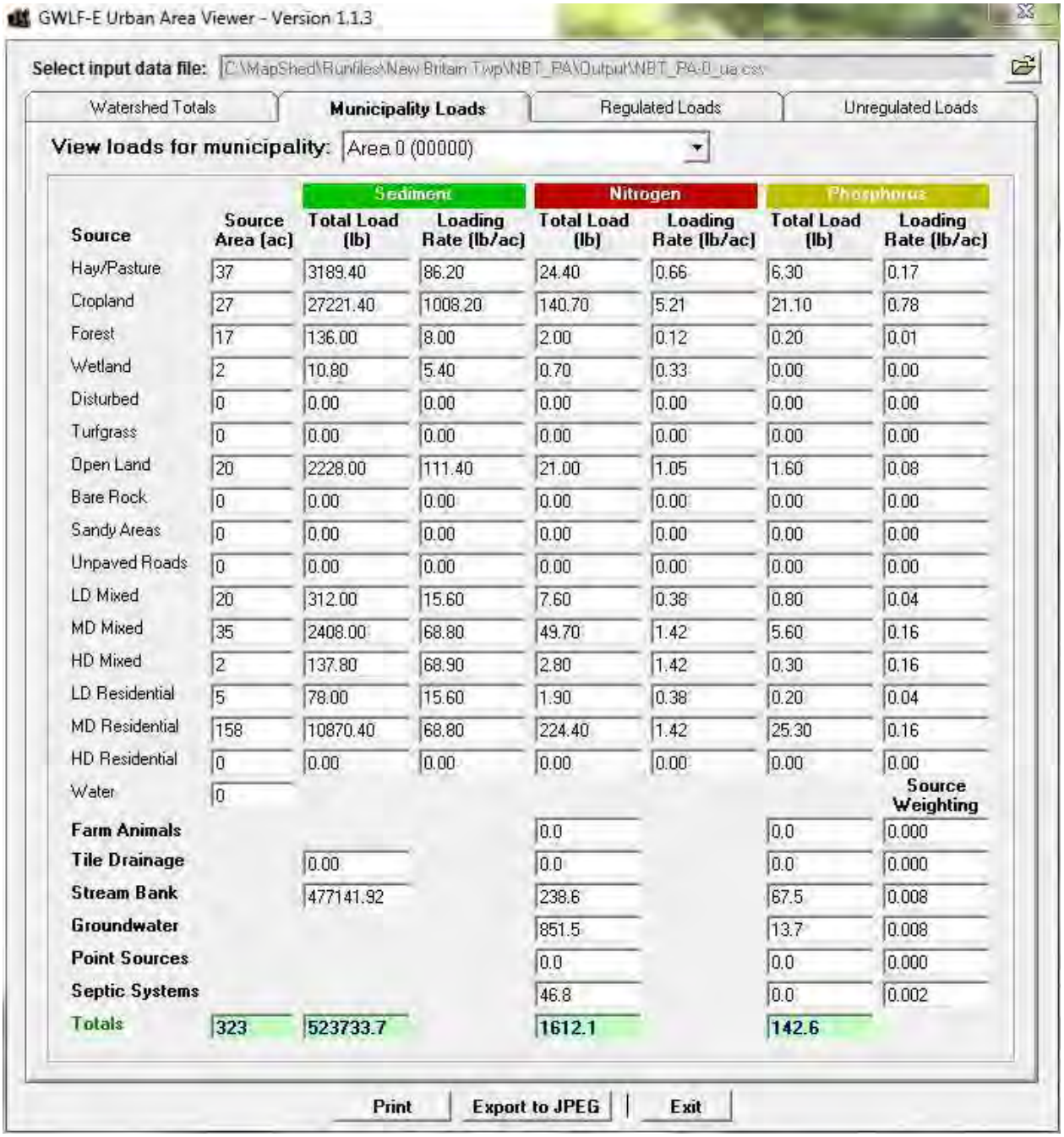
Appendix D- 2: Total Loading for Planning Areas to Neshaminy Creek



GWLF-E Urban Area Viewer - Version 1.1.3

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Watershed Totals | **Municipality Loads** | Regulated Loads | Unregulated Loads

View loads for municipality: Area 0 (00000)

Source	Source Area (ac)	Sediment Total Load (lb)	Sediment Loading Rate (lb/ac)	Nitrogen Total Load (lb)	Nitrogen Loading Rate (lb/ac)	Phosphorus Total Load (lb)	Phosphorus Loading Rate (lb/ac)
Hay/Pasture	37	3189.40	86.20	24.40	0.66	6.30	0.17
Cropland	27	27221.40	1008.20	140.70	5.21	21.10	0.78
Forest	17	136.00	8.00	2.00	0.12	0.20	0.01
Wetland	2	10.80	5.40	0.70	0.33	0.00	0.00
Disturbed	0	0.00	0.00	0.00	0.00	0.00	0.00
Turfgrass	0	0.00	0.00	0.00	0.00	0.00	0.00
Open Land	20	2228.00	111.40	21.00	1.05	1.60	0.08
Bare Rock	0	0.00	0.00	0.00	0.00	0.00	0.00
Sandy Areas	0	0.00	0.00	0.00	0.00	0.00	0.00
Unpaved Roads	0	0.00	0.00	0.00	0.00	0.00	0.00
LD Mixed	20	312.00	15.60	7.60	0.38	0.80	0.04
MD Mixed	35	2408.00	68.80	49.70	1.42	5.60	0.16
HD Mixed	2	137.80	68.90	2.80	1.42	0.30	0.16
LD Residential	5	78.00	15.60	1.90	0.38	0.20	0.04
MD Residential	158	10870.40	68.80	224.40	1.42	25.30	0.16
HD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
Water	0						Source Weighting
Farm Animals				0.0		0.0	0.000
Tile Drainage		0.00		0.0		0.0	0.000
Stream Bank		477141.92		238.6		67.5	0.008
Groundwater				851.5		13.7	0.008
Point Sources				0.0		0.0	0.000
Septic Systems				46.8		0.0	0.002
Totals	323	523733.7		1612.1		142.6	

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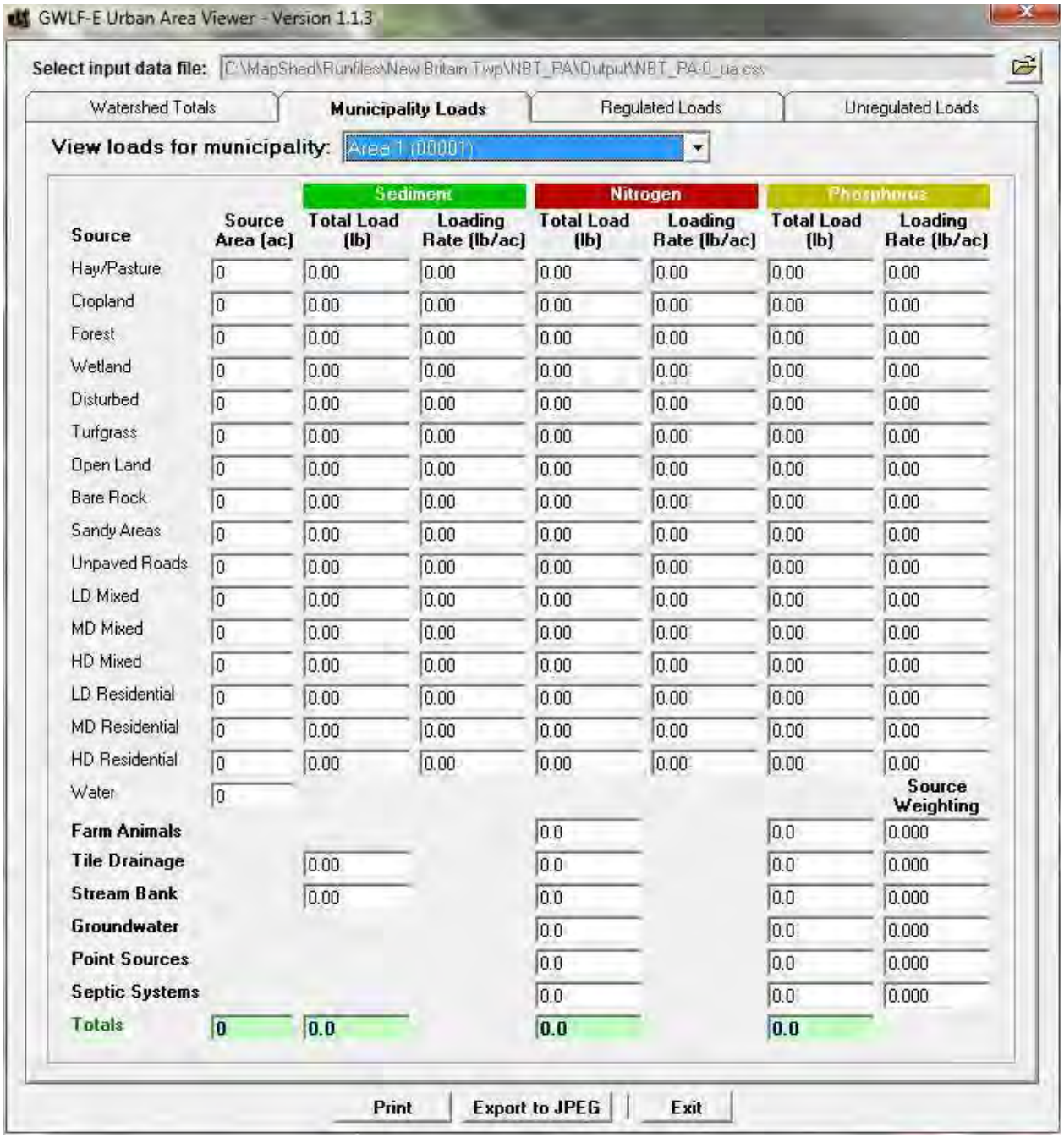
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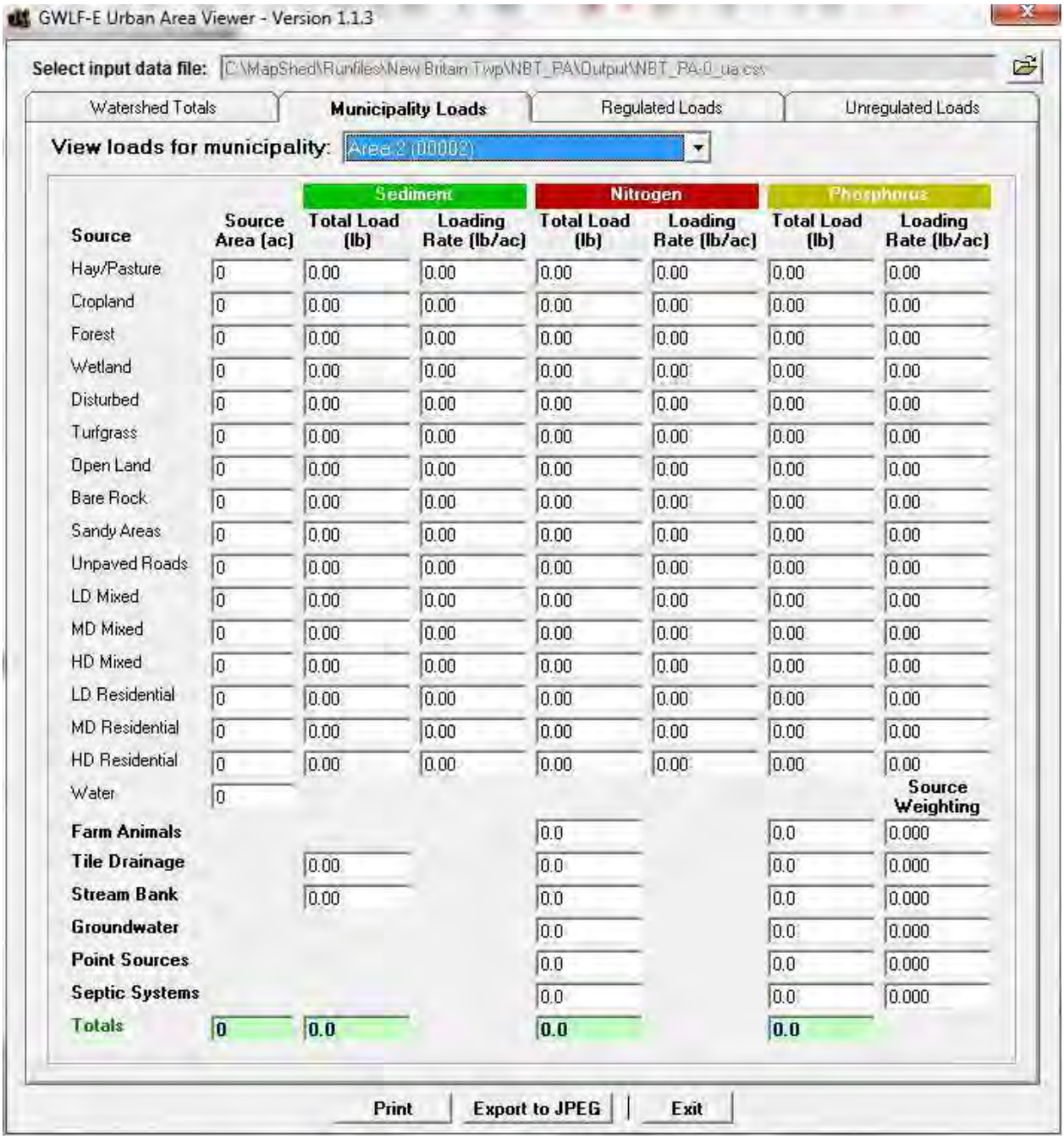
Watershed Totals
Municipality Loads
Regulated Loads
Unregulated Loads
View loads for municipality:
Area 1 (00001)
Sediment
Nitrogen
Phosphorus
Source
Source Area (ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Hay/Pasture 0 0.00 0.00 0.00 0.00 0.00 0.00
Cropland 0 0.00 0.00 0.00 0.00 0.00 0.00
Forest 0 0.00 0.00 0.00 0.00 0.00 0.00
Wetland 0 0.00 0.00 0.00 0.00 0.00 0.00
Disturbed 0 0.00 0.00 0.00 0.00 0.00 0.00
Turfgrass 0 0.00 0.00 0.00 0.00 0.00 0.00
Open Land 0 0.00 0.00 0.00 0.00 0.00 0.00
Bare Rock 0 0.00 0.00 0.00 0.00 0.00 0.00
Sandy Areas 0 0.00 0.00 0.00 0.00 0.00 0.00
Unpaved Roads 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
MD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
HD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Residential 0 0.00 0.00 0.00 0.00 0.00 0.00
MD Residential 0 0.00 0.00 0.00 0.00 0.00 0.00
HD Residential 0 0.00 0.00 0.00 0.00 0.00 0.00
Water 0
Source Weighting
Farm Animals 0.0 0.0 0.000
Tile Drainage 0.00 0.0 0.0 0.000
Stream Bank 0.00 0.0 0.0 0.000
Groundwater 0.0 0.0 0.000
Point Sources 0.0 0.0 0.000
Septic Systems 0.0 0.0 0.000
Totals 0 0.0 0.0 0.0
Print
Export to JPEG
Exit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Watershed Totals
Municipality Loads
Regulated Loads
Unregulated Loads
View loads for municipality: Area 2 (00002)
Sediment
Nitrogen
Phosphorus
Source
Source Area (ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Hay/Pasture 0 0.00 0.00 0.00 0.00 0.00 0.00
Cropland 0 0.00 0.00 0.00 0.00 0.00 0.00
Forest 0 0.00 0.00 0.00 0.00 0.00 0.00
Wetland 0 0.00 0.00 0.00 0.00 0.00 0.00
Disturbed 0 0.00 0.00 0.00 0.00 0.00 0.00
Turfgrass 0 0.00 0.00 0.00 0.00 0.00 0.00
Open Land 0 0.00 0.00 0.00 0.00 0.00 0.00
Bare Rock 0 0.00 0.00 0.00 0.00 0.00 0.00
Sandy Areas 0 0.00 0.00 0.00 0.00 0.00 0.00
Unpaved Roads 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
MD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
HD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Residential 0 0.00 0.00 0.00 0.00 0.00 0.00
MD Residential 0 0.00 0.00 0.00 0.00 0.00 0.00
HD Residential 0 0.00 0.00 0.00 0.00 0.00 0.00
Water 0
Source Weighting
Farm Animals 0.0 0.0 0.000
Tile Drainage 0.00 0.0 0.0 0.000
Stream Bank 0.00 0.0 0.0 0.000
Groundwater 0.0 0.0 0.000
Point Sources 0.0 0.0 0.000
Septic Systems 0.0 0.0 0.000
Totals 0 0.0 0.0 0.0
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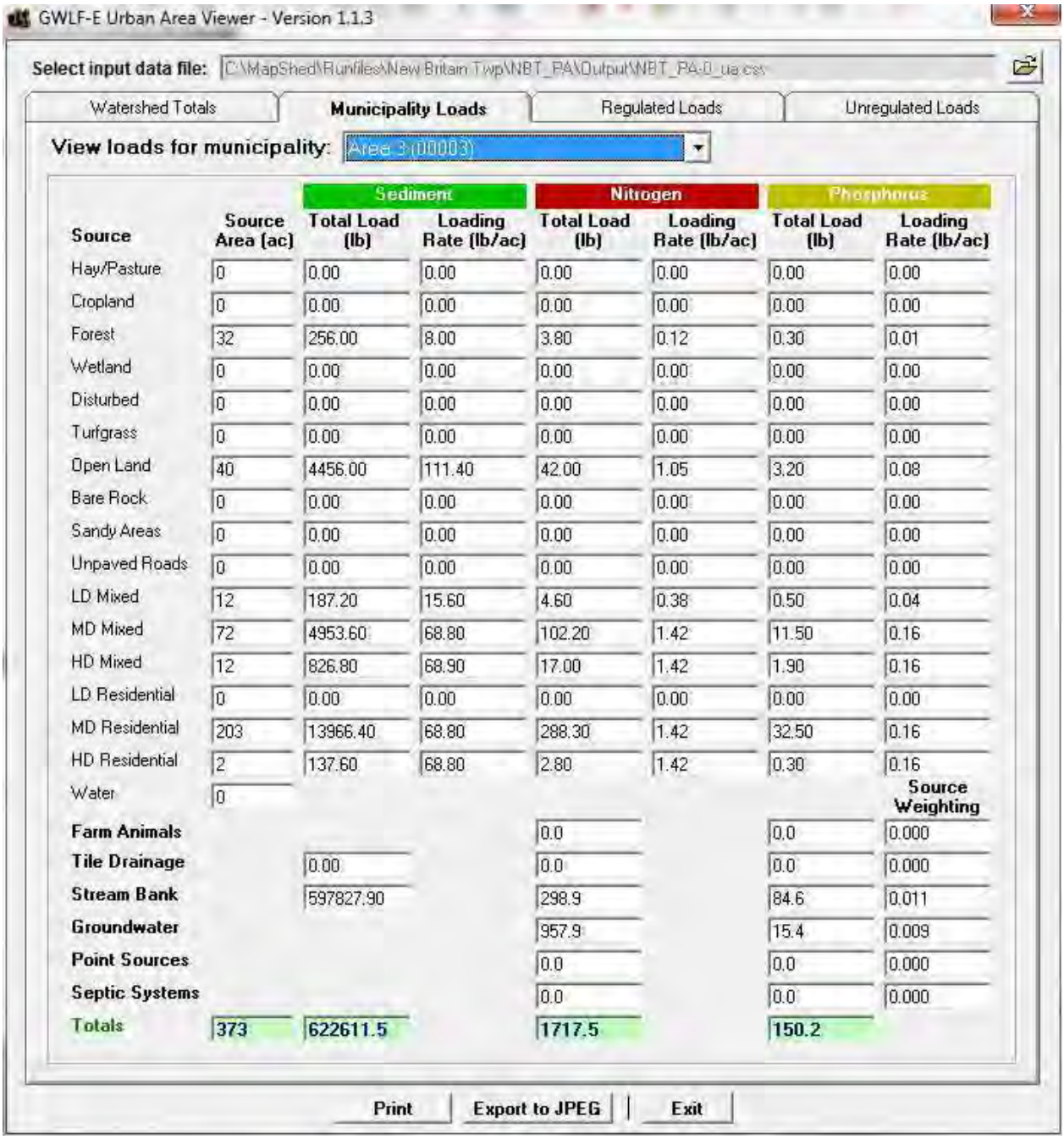
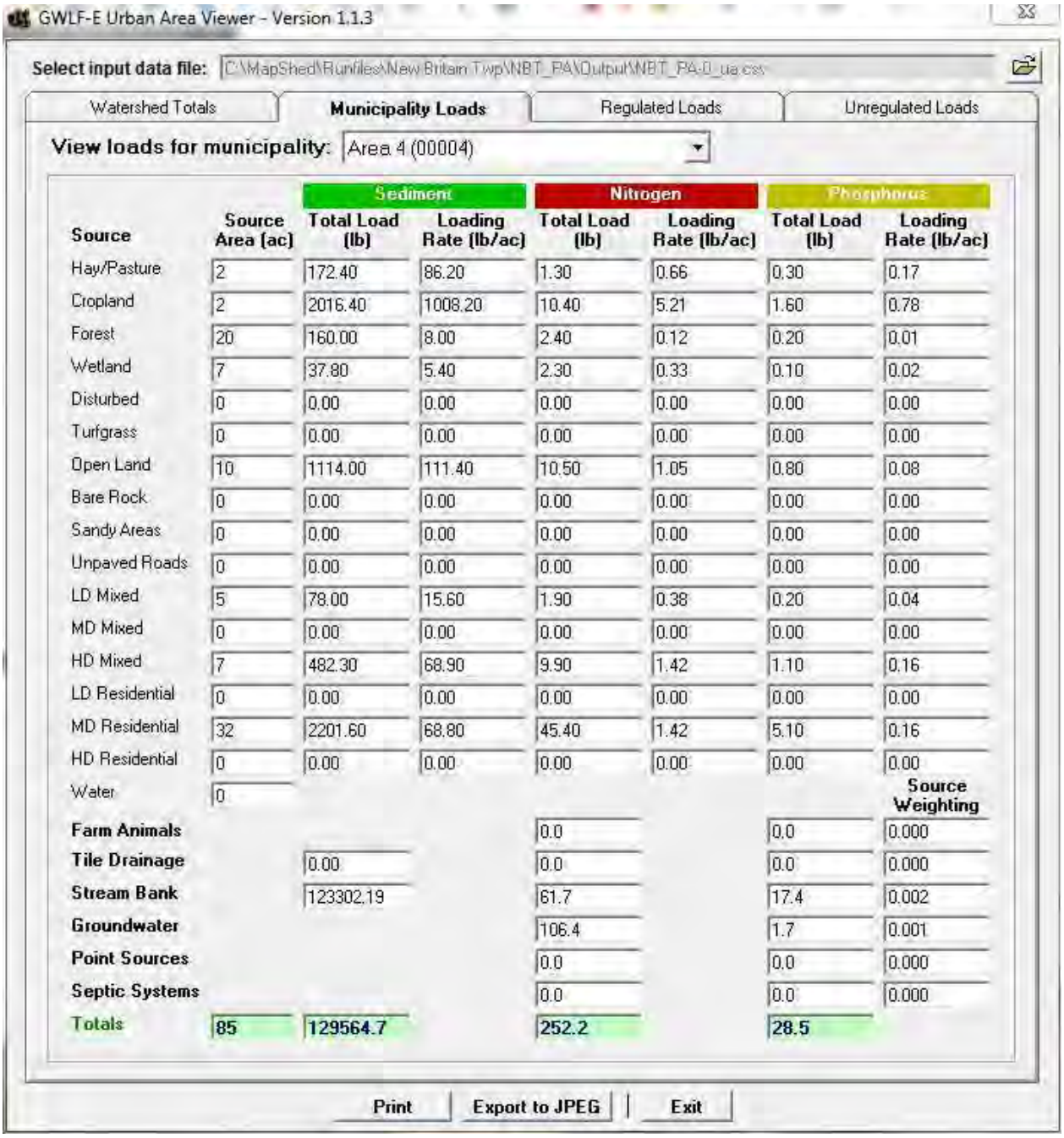
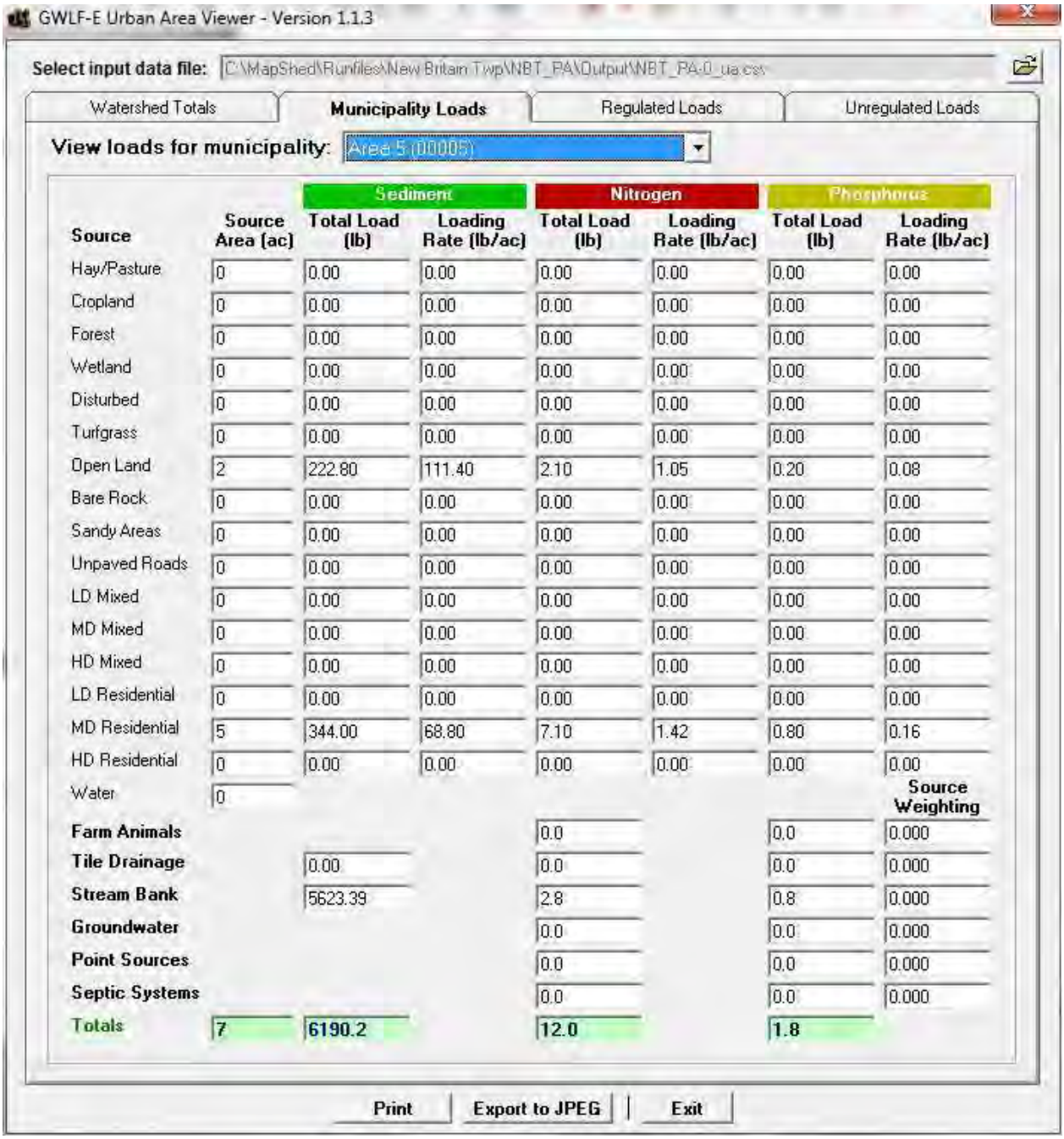
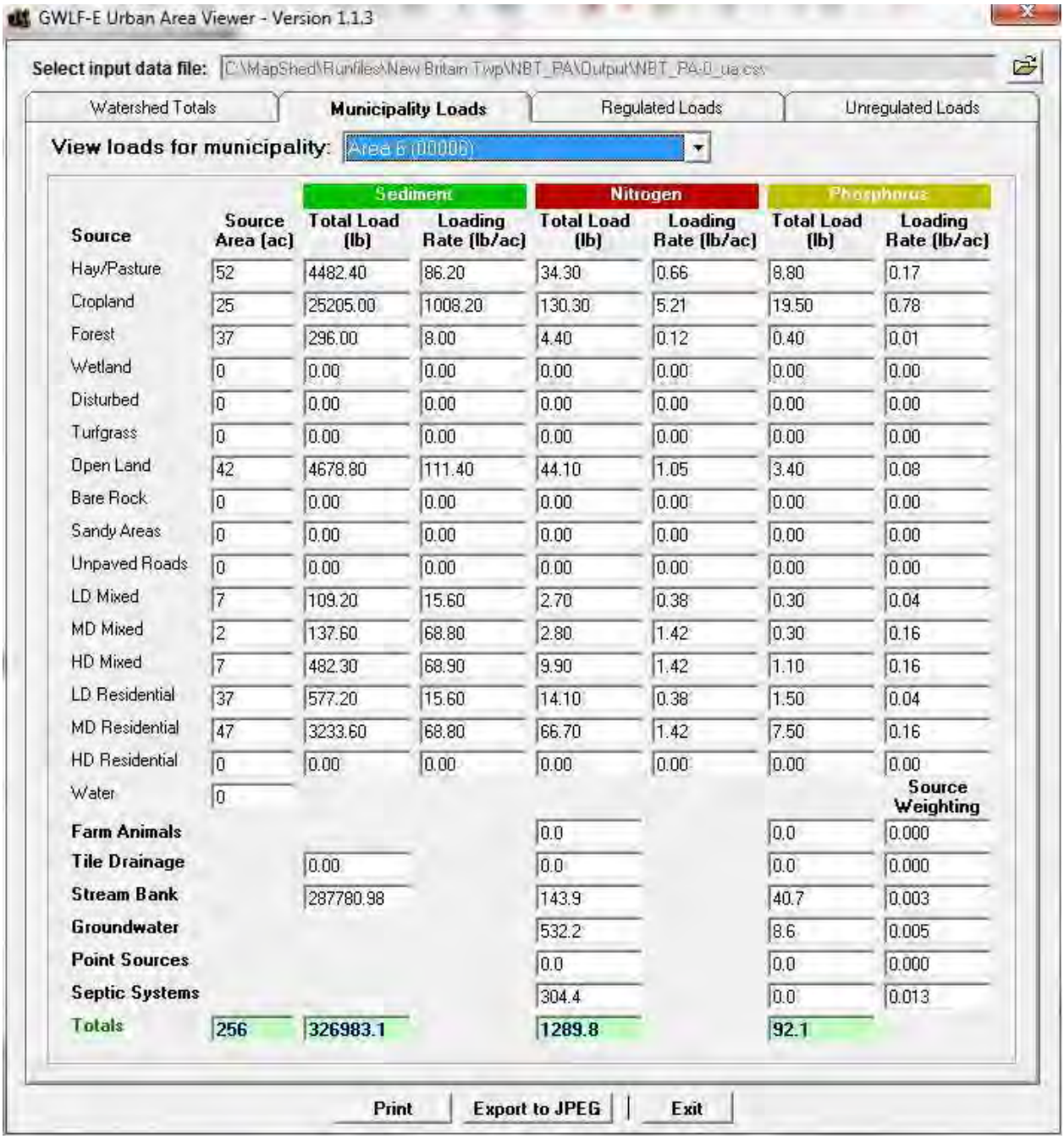
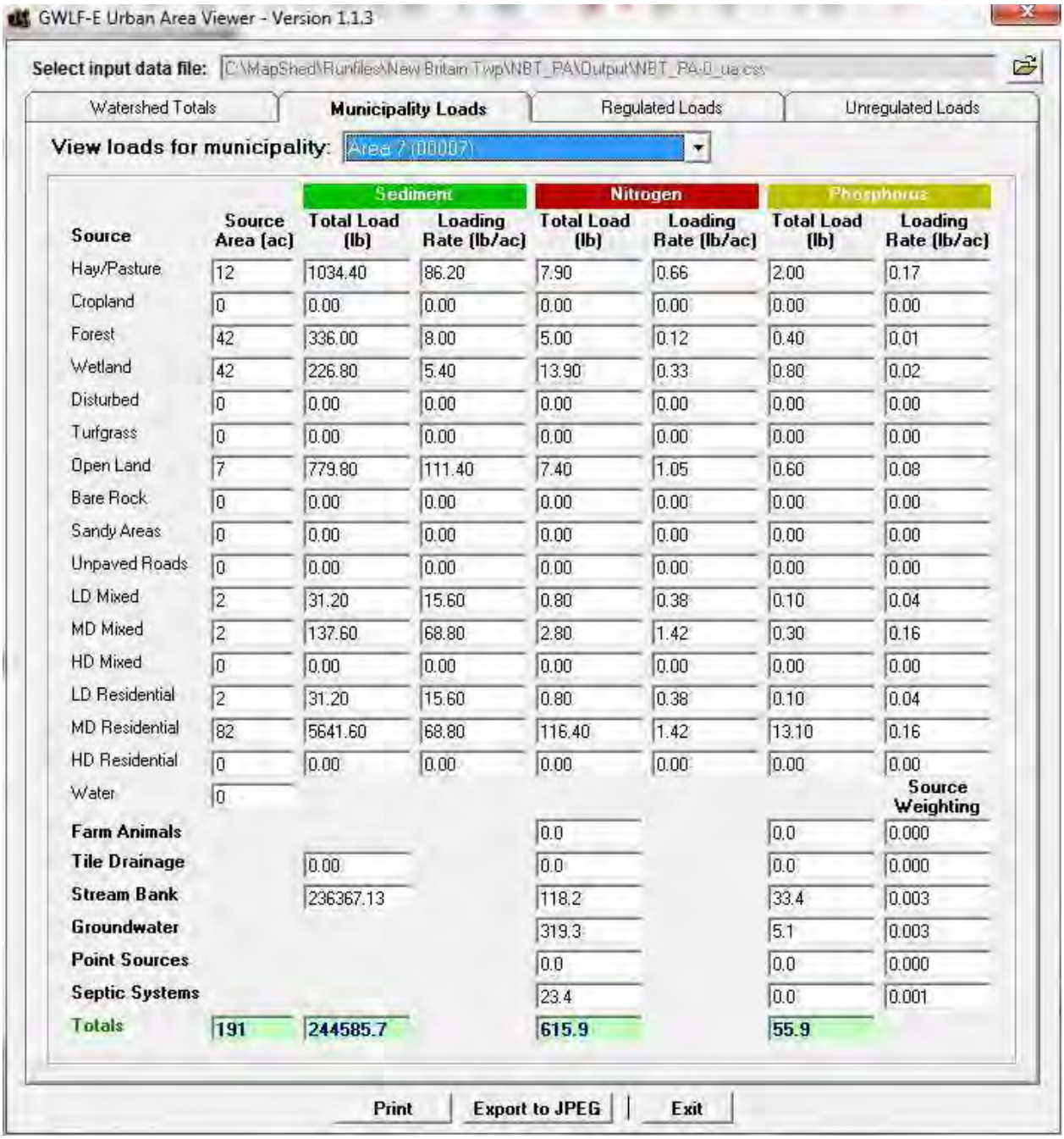
Export to JPEG
Exit

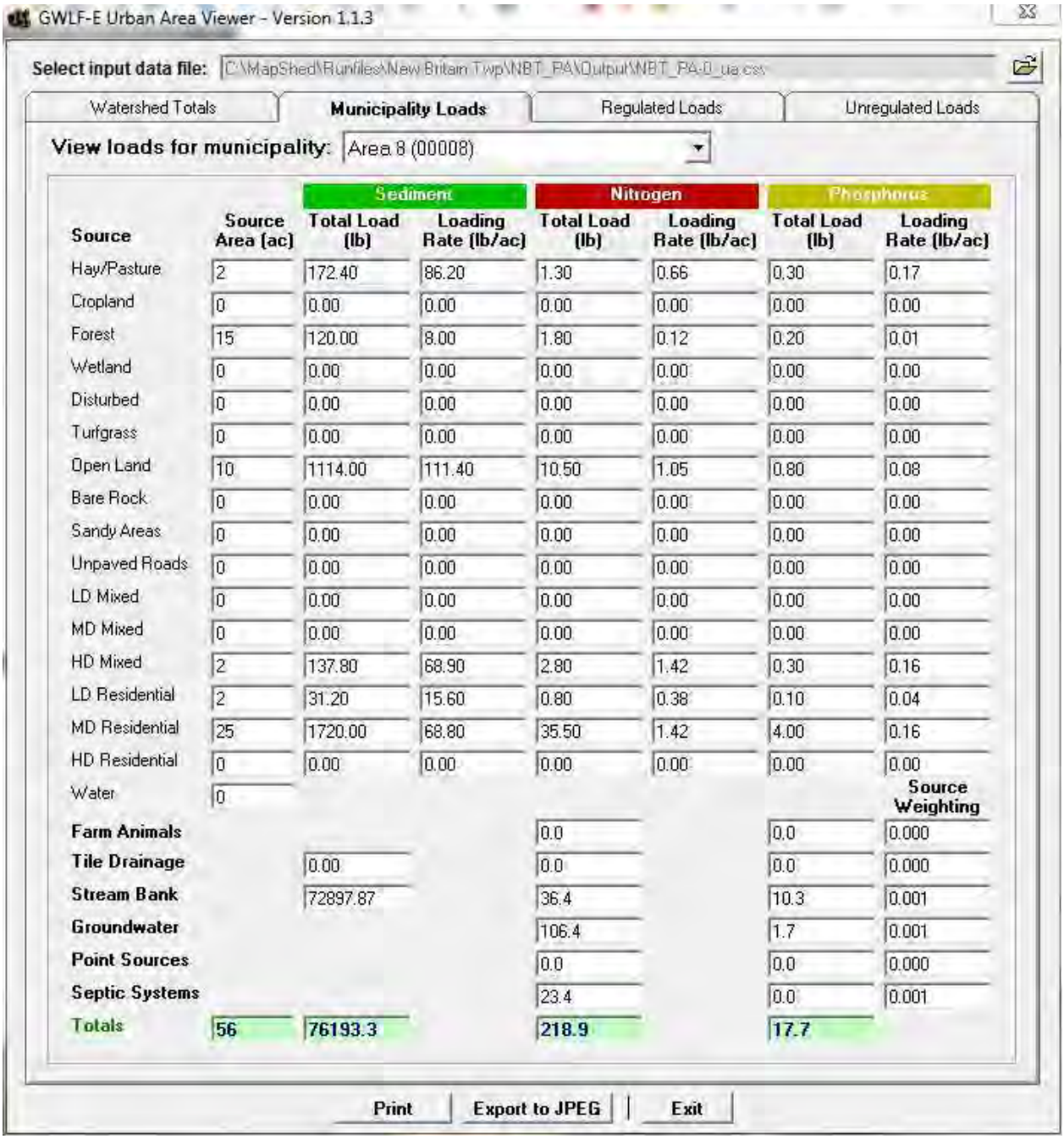

GWLF-E Urban Area Viewer - Version 1.1.3
Select input data file:
C:\MapShed\Runfiles\New Britain Twp\NBT_PA\Output\NBT_PA-0_ua.csv
Watershed Totals
Municipality Loads
Regulated Loads
Unregulated Loads
View loads for municipality:
Area 3 (00003)
Sediment
Nitrogen
Phosphorus
Source
Source Area (ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Hay/Pasture 0 0.00 0.00 0.00 0.00 0.00 0.00
Cropland 0 0.00 0.00 0.00 0.00 0.00 0.00
Forest 32 256.00 8.00 3.80 0.12 0.30 0.01
Wetland 0 0.00 0.00 0.00 0.00 0.00 0.00
Disturbed 0 0.00 0.00 0.00 0.00 0.00 0.00
Turfgrass 0 0.00 0.00 0.00 0.00 0.00 0.00
Open Land 40 4456.00 111.40 42.00 1.05 3.20 0.08
Bare Rock 0 0.00 0.00 0.00 0.00 0.00 0.00
Sandy Areas 0 0.00 0.00 0.00 0.00 0.00 0.00
Unpaved Roads 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Mixed 12 187.20 15.60 4.60 0.38 0.50 0.04
MD Mixed 72 4953.60 68.80 102.20 1.42 11.50 0.16
HD Mixed 12 826.80 68.90 17.00 1.42 1.90 0.16
LD Residential 0 0.00 0.00 0.00 0.00 0.00 0.00
MD Residential 203 13966.40 68.80 288.30 1.42 32.50 0.16
HD Residential 2 137.60 68.80 2.80 1.42 0.30 0.16
Water 0
Source Weighting
Farm Animals 0.0 0.0 0.000
Tile Drainage 0.00 0.0 0.0 0.000
Stream Bank 597827.90 298.9 84.6 0.011
Groundwater 957.9 15.4 0.009
Point Sources 0.0 0.0 0.000
Septic Systems 0.0 0.0 0.000
Totals 373 622611.5 1717.5 150.2
Print
Export to JPEG
Exit

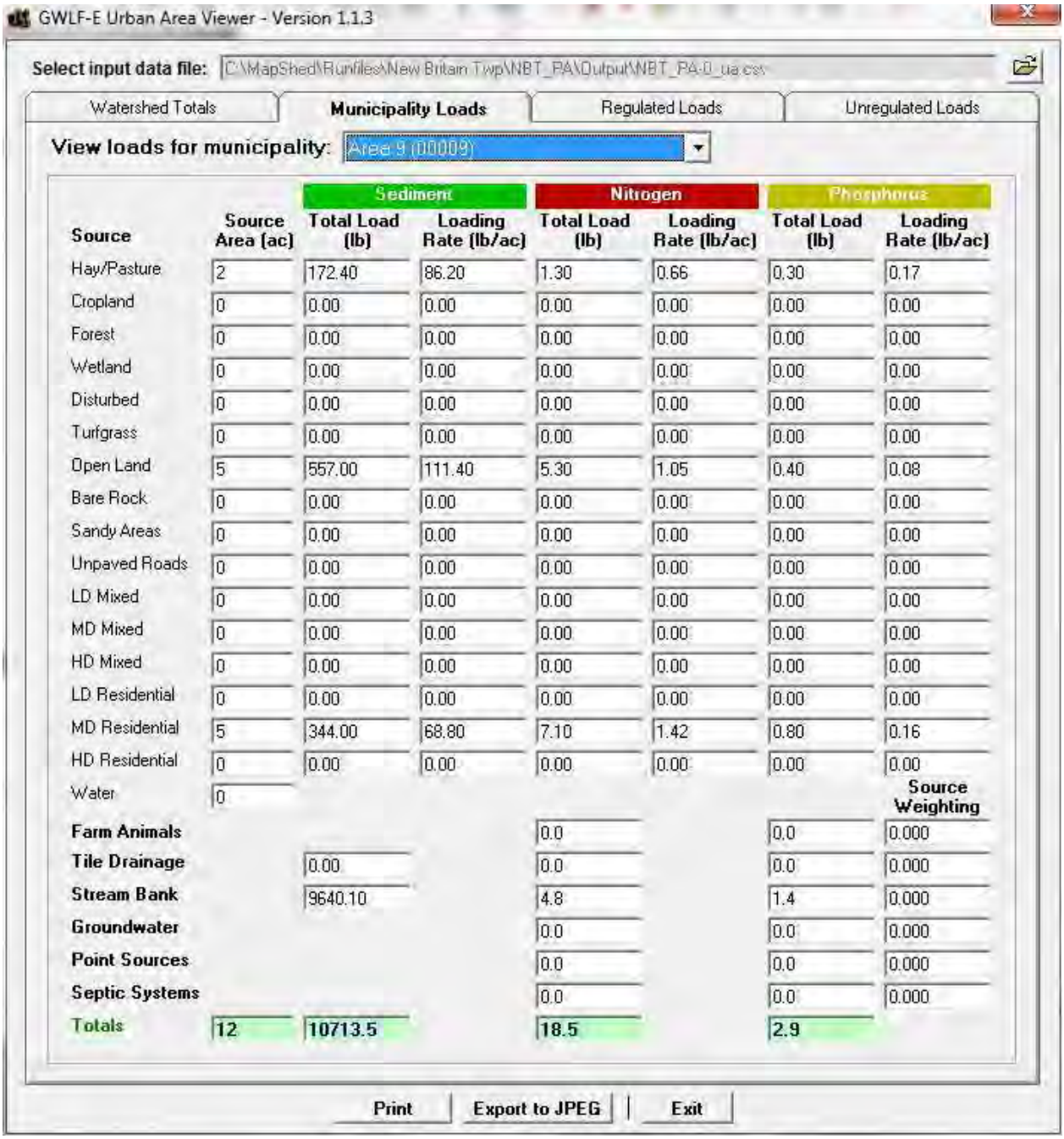

GWLF-E Urban Area Viewer - Version 1.1.3
Select input data file: C:\MapShed\Runfiles\New Britain Twp\NBT_PA\Output\NBT_PA-0_ua.csv
Watershed Totals
Municipality Loads
Regulated Loads
Unregulated Loads
View loads for municipality: Area 4 (00004)
Sediment
Nitrogen
Phosphorus
Source
Source Area (ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Hay/Pasture 2 172.40 86.20 1.30 0.66 0.30 0.17
Cropland 2 2016.40 1008.20 10.40 5.21 1.60 0.78
Forest 20 160.00 8.00 2.40 0.12 0.20 0.01
Wetland 7 37.80 5.40 2.30 0.33 0.10 0.02
Disturbed 0 0.00 0.00 0.00 0.00 0.00 0.00
Turfgrass 0 0.00 0.00 0.00 0.00 0.00 0.00
Open Land 10 1114.00 111.40 10.50 1.05 0.80 0.08
Bare Rock 0 0.00 0.00 0.00 0.00 0.00 0.00
Sandy Areas 0 0.00 0.00 0.00 0.00 0.00 0.00
Unpaved Roads 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Mixed 5 78.00 15.60 1.90 0.38 0.20 0.04
MD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
HD Mixed 7 482.30 68.90 9.90 1.42 1.10 0.16
LD Residential 0 0.00 0.00 0.00 0.00 0.00 0.00
MD Residential 32 2201.60 68.80 45.40 1.42 5.10 0.16
HD Residential 0 0.00 0.00 0.00 0.00 0.00 0.00
Water 0
Source Weighting
Farm Animals 0.0 0.0 0.000
Tile Drainage 0.00 0.0 0.0 0.000
Stream Bank 123302.19 61.7 17.4 0.002
Groundwater 106.4 1.7 0.001
Point Sources 0.0 0.0 0.000
Septic Systems 0.0 0.0 0.000
Totals 85 129564.7 252.2 28.5
Print
Export to JPEG
Exit

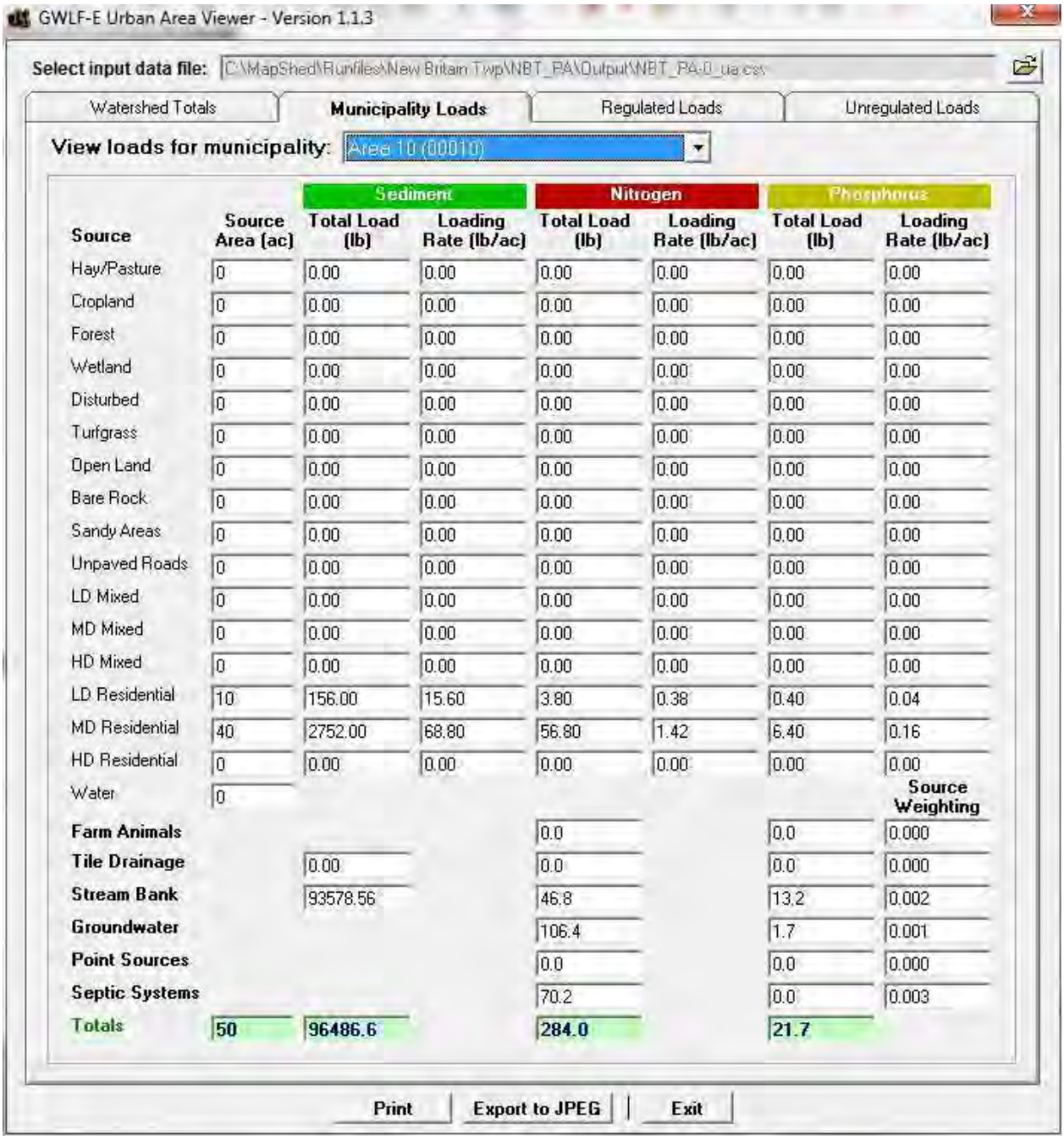

GWLF-E Urban Area Viewer - Version 1.1.3
Select input data file: C:\MapShed\Runfiles\New Britain Twp\NBT_PA\Output\NBT_PA-0_ua.csv
Watershed Totals
Municipality Loads
Regulated Loads
Unregulated Loads
View loads for municipality: Area 5 (00005)
Sediment
Nitrogen
Phosphorus
Source
Source Area (ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Hay/Pasture 0 0.00 0.00 0.00 0.00 0.00 0.00
Cropland 0 0.00 0.00 0.00 0.00 0.00 0.00
Forest 0 0.00 0.00 0.00 0.00 0.00 0.00
Wetland 0 0.00 0.00 0.00 0.00 0.00 0.00
Disturbed 0 0.00 0.00 0.00 0.00 0.00 0.00
Turfgrass 0 0.00 0.00 0.00 0.00 0.00 0.00
Open Land 2 222.80 111.40 2.10 1.05 0.20 0.08
Bare Rock 0 0.00 0.00 0.00 0.00 0.00 0.00
Sandy Areas 0 0.00 0.00 0.00 0.00 0.00 0.00
Unpaved Roads 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
MD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
HD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Residential 0 0.00 0.00 0.00 0.00 0.00 0.00
MD Residential 5 344.00 68.80 7.10 1.42 0.80 0.16
HD Residential 0 0.00 0.00 0.00 0.00 0.00 0.00
Water 0
Source Weighting
Farm Animals 0.0 0.0 0.000
Tile Drainage 0.00 0.0 0.0 0.000
Stream Bank 5623.39 2.8 0.8 0.000
Groundwater 0.0 0.0 0.000
Point Sources 0.0 0.0 0.000
Septic Systems 0.0 0.0 0.000
Totals 7 6190.2 12.0 1.8
Print
Export to JPEG
Exit

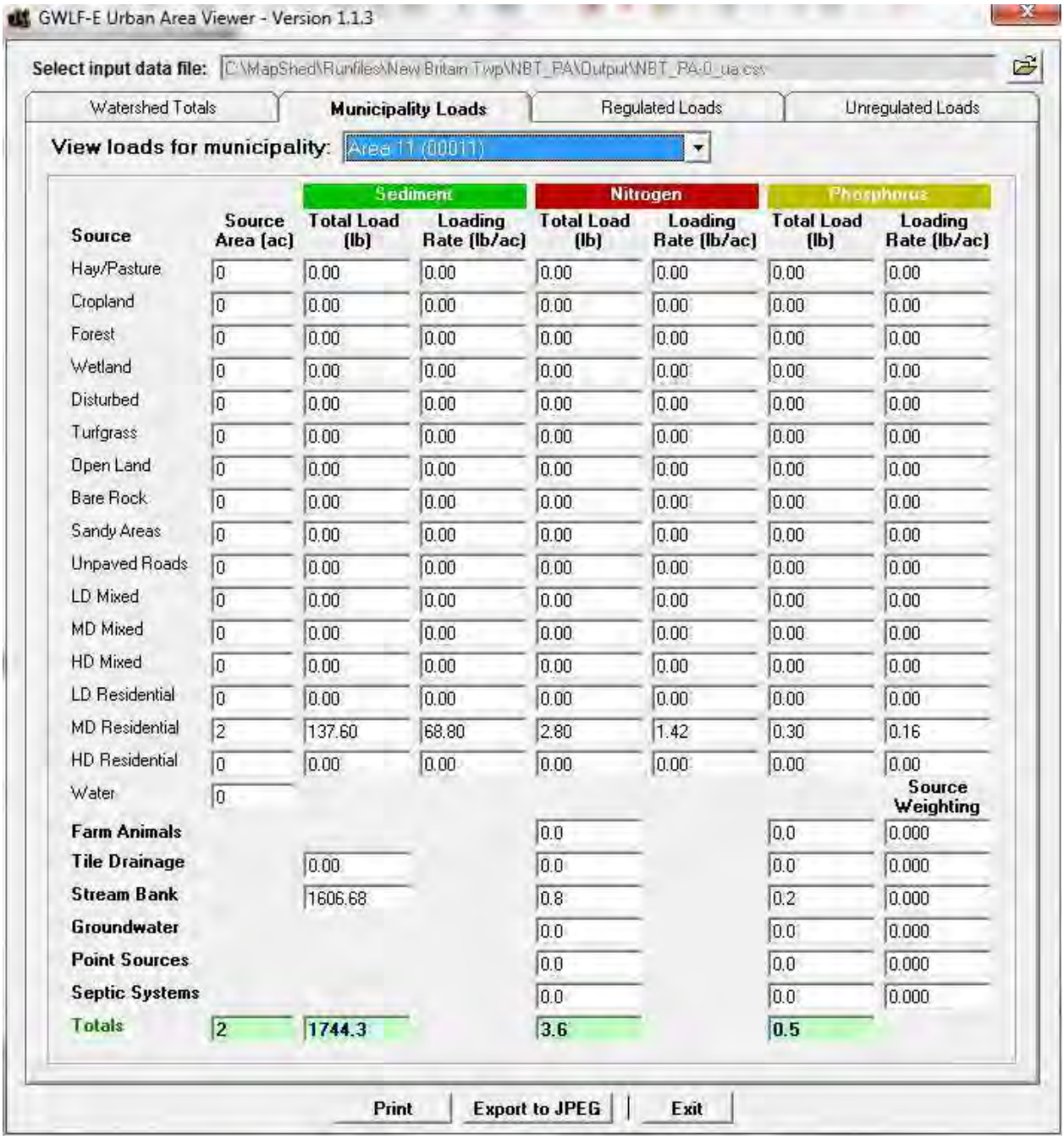

GWLF-E Urban Area Viewer - Version 1.1.3
Select input data file: C:\MapShed\Runfiles\New Britain Twp\NBT_PA\Output\NBT_PA-0_ua.csv
Watershed Totals
Municipality Loads
Regulated Loads
Unregulated Loads
View loads for municipality: Area 6 (00006)
Sediment
Nitrogen
Phosphorus
Source
Source Area (ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Hay/Pasture 52 4482.40 86.20 34.30 0.66 8.80 0.17
Cropland 25 25205.00 1008.20 130.30 5.21 19.50 0.78
Forest 37 296.00 8.00 4.40 0.12 0.40 0.01
Wetland 0 0.00 0.00 0.00 0.00 0.00 0.00
Disturbed 0 0.00 0.00 0.00 0.00 0.00 0.00
Turfgrass 0 0.00 0.00 0.00 0.00 0.00 0.00
Open Land 42 4678.80 111.40 44.10 1.05 3.40 0.08
Bare Rock 0 0.00 0.00 0.00 0.00 0.00 0.00
Sandy Areas 0 0.00 0.00 0.00 0.00 0.00 0.00
Unpaved Roads 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Mixed 7 109.20 15.60 2.70 0.38 0.30 0.04
MD Mixed 2 137.60 68.80 2.80 1.42 0.30 0.16
HD Mixed 7 482.30 68.90 9.90 1.42 1.10 0.16
LD Residential 37 577.20 15.60 14.10 0.38 1.50 0.04
MD Residential 47 3233.60 68.80 66.70 1.42 7.50 0.16
HD Residential 0 0.00 0.00 0.00 0.00 0.00 0.00
Water 0
Source Weighting
Farm Animals 0.0 0.0 0.000
Tile Drainage 0.00 0.0 0.0 0.000
Stream Bank 287780.98 143.9 40.7 0.003
Groundwater 532.2 8.6 0.005
Point Sources 0.0 0.0 0.000
Septic Systems 304.4 0.0 0.013
Totals 256 326983.1 1289.8 92.1
Print
Export to JPEG
Exit

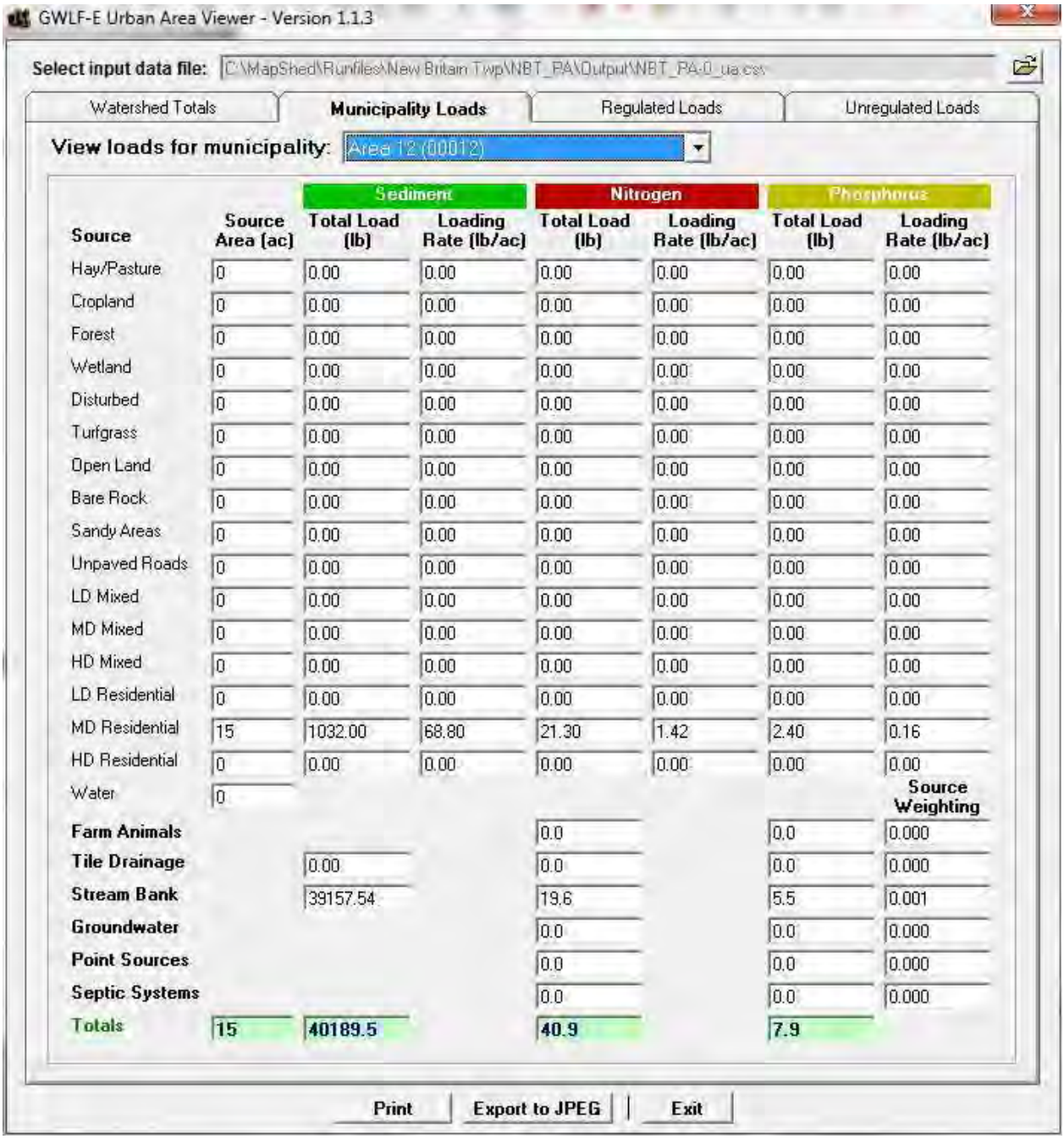

GWLF-E Urban Area Viewer - Version 1.1.3
Select input data file: C:\MapShed\Runfiles\New Britain Twp\NBT_PA\Output\NBT_PA-0_ua.csv
Watershed Totals
Municipality Loads
Regulated Loads
Unregulated Loads
View loads for municipality: Area 7 (00007)
Sediment
Nitrogen
Phosphorus
Source
Source Area (ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Hay/Pasture 12 1034.40 86.20 7.90 0.66 2.00 0.17
Cropland 0 0.00 0.00 0.00 0.00 0.00 0.00
Forest 42 336.00 8.00 5.00 0.12 0.40 0.01
Wetland 42 226.80 5.40 13.90 0.33 0.80 0.02
Disturbed 0 0.00 0.00 0.00 0.00 0.00 0.00
Turfgrass 0 0.00 0.00 0.00 0.00 0.00 0.00
Open Land 7 779.80 111.40 7.40 1.05 0.60 0.08
Bare Rock 0 0.00 0.00 0.00 0.00 0.00 0.00
Sandy Areas 0 0.00 0.00 0.00 0.00 0.00 0.00
Unpaved Roads 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Mixed 2 31.20 15.60 0.80 0.38 0.10 0.04
MD Mixed 2 137.60 68.80 2.80 1.42 0.30 0.16
HD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Residential 2 31.20 15.60 0.80 0.38 0.10 0.04
MD Residential 82 5641.60 68.80 116.40 1.42 13.10 0.16
HD Residential 0 0.00 0.00 0.00 0.00 0.00 0.00
Water 0
Source Weighting
Farm Animals 0.0 0.0 0.000
Tile Drainage 0.00 0.0 0.0 0.000
Stream Bank 236367.13 118.2 33.4 0.003
Groundwater 319.3 5.1 0.003
Point Sources 0.0 0.0 0.000
Septic Systems 23.4 0.0 0.001
Totals 191 244585.7 615.9 55.9
Print
Export to JPEG
Exit

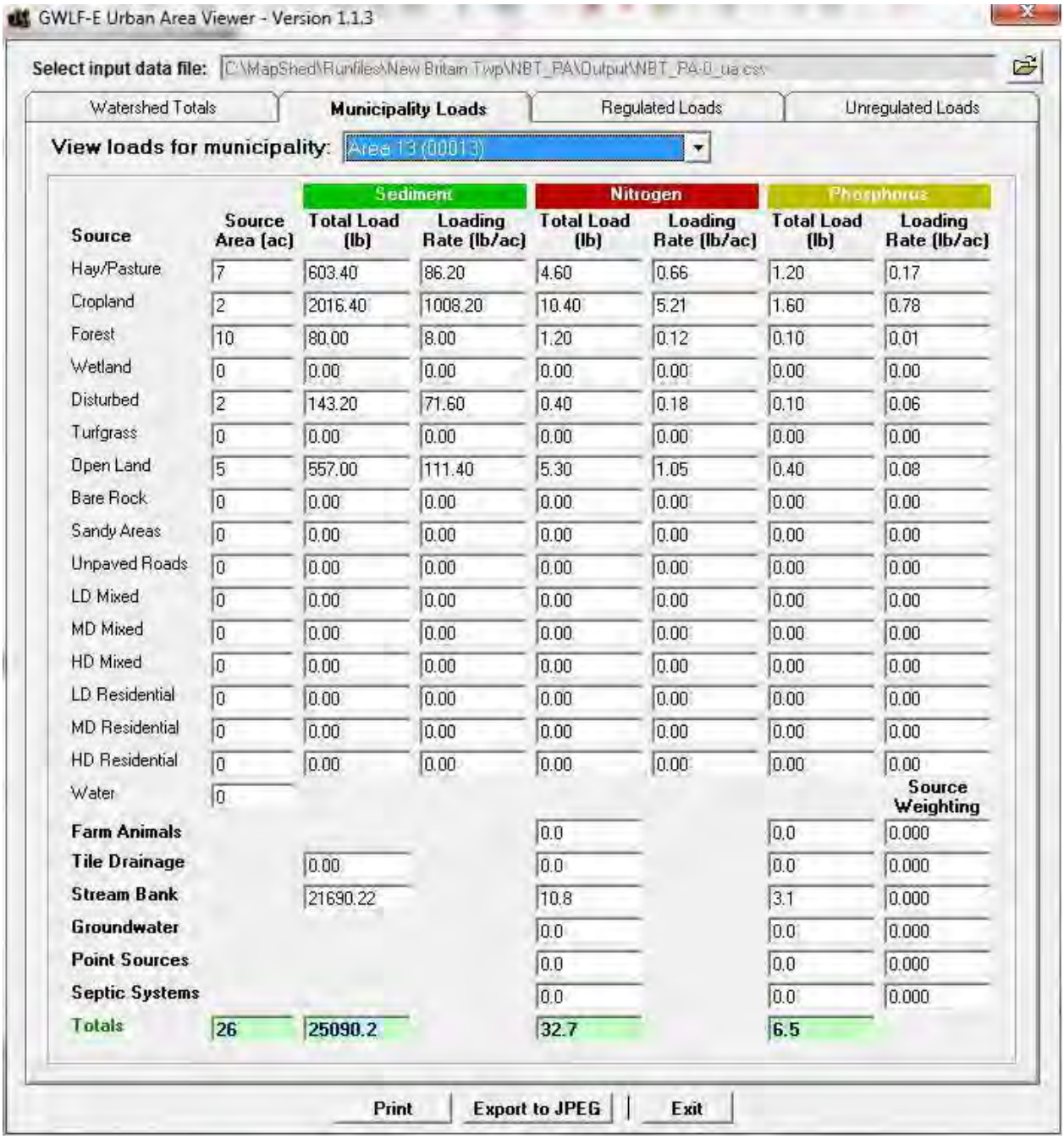

GWLF-E Urban Area Viewer - Version 1.1.3
Select input data file: C:\MapShed\Runfiles\New Britain Twp\NBT_PA\Output\NBT_PA-0_ua.csv
Watershed Totals
Municipality Loads
Regulated Loads
Unregulated Loads
View loads for municipality: Area 8 (00008)
Sediment
Nitrogen
Phosphorus
Source
Source Area (ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Hay/Pasture 2 172.40 86.20 1.30 0.66 0.30 0.17
Cropland 0 0.00 0.00 0.00 0.00 0.00 0.00
Forest 15 120.00 8.00 1.80 0.12 0.20 0.01
Wetland 0 0.00 0.00 0.00 0.00 0.00 0.00
Disturbed 0 0.00 0.00 0.00 0.00 0.00 0.00
Turfgrass 0 0.00 0.00 0.00 0.00 0.00 0.00
Open Land 10 1114.00 111.40 10.50 1.05 0.80 0.08
Bare Rock 0 0.00 0.00 0.00 0.00 0.00 0.00
Sandy Areas 0 0.00 0.00 0.00 0.00 0.00 0.00
Unpaved Roads 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
MD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
HD Mixed 2 137.80 68.90 2.80 1.42 0.30 0.16
LD Residential 2 31.20 15.60 0.80 0.38 0.10 0.04
MD Residential 25 1720.00 68.80 35.50 1.42 4.00 0.16
HD Residential 0 0.00 0.00 0.00 0.00 0.00 0.00
Water 0
Source Weighting
Farm Animals 0.0 0.0 0.000
Tile Drainage 0.00 0.0 0.0 0.000
Stream Bank 72897.87 36.4 10.3 0.001
Groundwater 106.4 1.7 0.001
Point Sources 0.0 0.0 0.000
Septic Systems 23.4 0.0 0.001
Totals 56 76193.3 218.9 17.7
Print
Export to JPEG
Exit

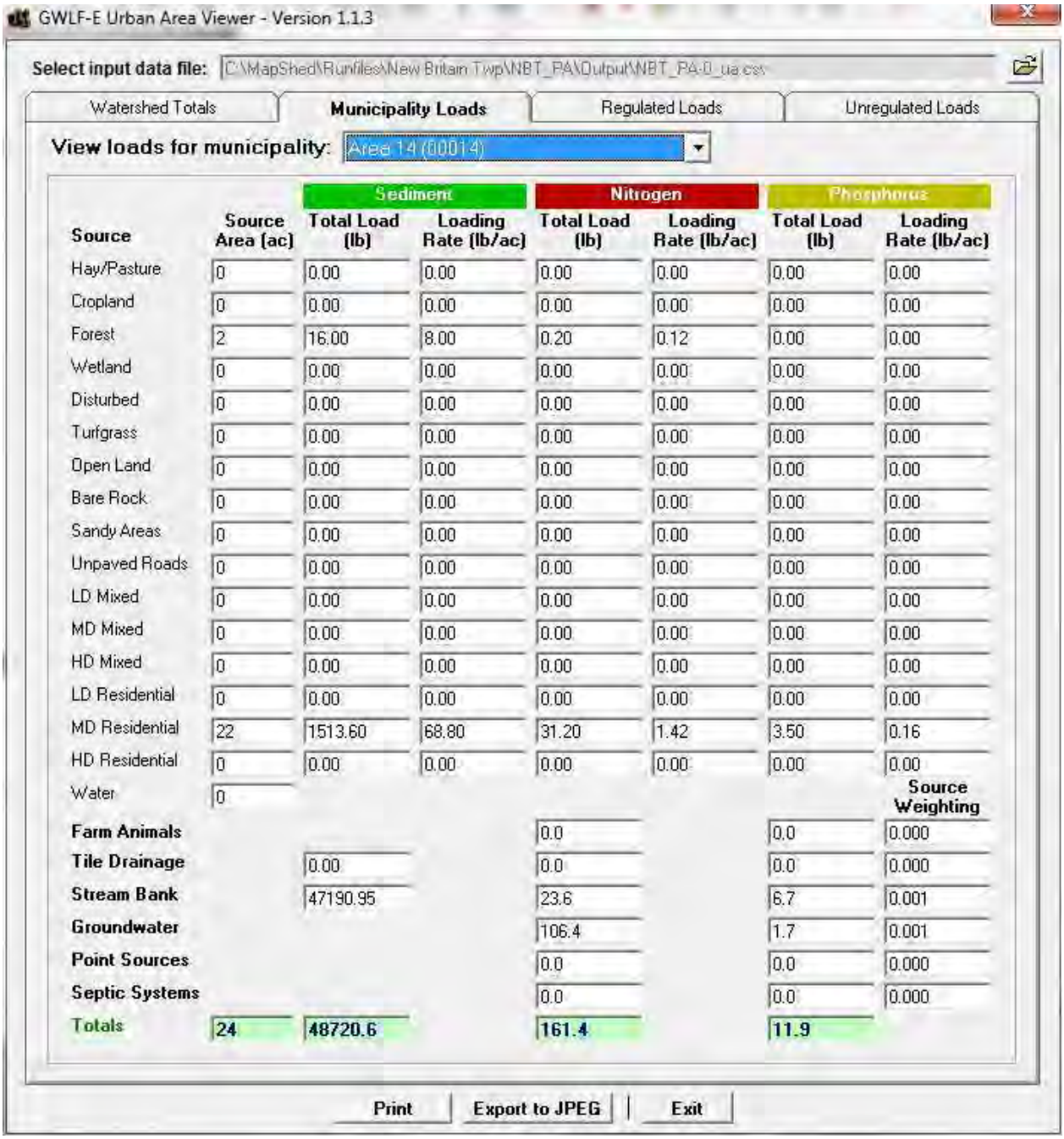

GWLF-E Urban Area Viewer - Version 1.1.3
Select input data file: C:\MapShed\Runfiles\New Britain Twp\NBT_PA\Output\NBT_PA-0_ua.csv
Watershed Totals
Municipality Loads
Regulated Loads
Unregulated Loads
View loads for municipality: Area 9 (00009)
Sediment
Nitrogen
Phosphorus
Source
Source Area (ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Hay/Pasture 2 172.40 86.20 1.30 0.66 0.30 0.17
Cropland 0 0.00 0.00 0.00 0.00 0.00 0.00
Forest 0 0.00 0.00 0.00 0.00 0.00 0.00
Wetland 0 0.00 0.00 0.00 0.00 0.00 0.00
Disturbed 0 0.00 0.00 0.00 0.00 0.00 0.00
Turfgrass 0 0.00 0.00 0.00 0.00 0.00 0.00
Open Land 5 557.00 111.40 5.30 1.05 0.40 0.08
Bare Rock 0 0.00 0.00 0.00 0.00 0.00 0.00
Sandy Areas 0 0.00 0.00 0.00 0.00 0.00 0.00
Unpaved Roads 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
MD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
HD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Residential 0 0.00 0.00 0.00 0.00 0.00 0.00
MD Residential 5 344.00 68.80 7.10 1.42 0.80 0.16
HD Residential 0 0.00 0.00 0.00 0.00 0.00 0.00
Water 0
Source Weighting
Farm Animals 0.0 0.0 0.000
Tile Drainage 0.00 0.0 0.0 0.000
Stream Bank 9640.10 4.8 1.4 0.000
Groundwater 0.0 0.0 0.000
Point Sources 0.0 0.0 0.000
Septic Systems 0.0 0.0 0.000
Totals 12 10713.5 18.5 2.9
Print
Export to JPEG
Exit


GWLF-E Urban Area Viewer - Version 1.1.3
Select input data file:
C:\MapShed\Runfiles\New Britain Twp\NBT_PA\Output\NBT_PA-0_ua.csv
Watershed Totals
Municipality Loads
Regulated Loads
Unregulated Loads
View loads for municipality:
Area 10 (00010)
Sediment
Nitrogen
Phosphorus
Source
Source Area (ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Hay/Pasture 0 0.00 0.00 0.00 0.00 0.00 0.00
Cropland 0 0.00 0.00 0.00 0.00 0.00 0.00
Forest 0 0.00 0.00 0.00 0.00 0.00 0.00
Wetland 0 0.00 0.00 0.00 0.00 0.00 0.00
Disturbed 0 0.00 0.00 0.00 0.00 0.00 0.00
Turfgrass 0 0.00 0.00 0.00 0.00 0.00 0.00
Open Land 0 0.00 0.00 0.00 0.00 0.00 0.00
Bare Rock 0 0.00 0.00 0.00 0.00 0.00 0.00
Sandy Areas 0 0.00 0.00 0.00 0.00 0.00 0.00
Unpaved Roads 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
MD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
HD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Residential 10 156.00 15.60 3.80 0.38 0.40 0.04
MD Residential 40 2752.00 68.80 56.80 1.42 6.40 0.16
HD Residential 0 0.00 0.00 0.00 0.00 0.00 0.00
Water 0
Source Weighting
Farm Animals 0.0 0.0 0.000
Tile Drainage 0.00 0.0 0.0 0.000
Stream Bank 93578.56 46.8 13.2 0.002
Groundwater 106.4 1.7 0.001
Point Sources 0.0 0.0 0.000
Septic Systems 70.2 0.0 0.003
Totals 50 96486.6 284.0 21.7
Print
Export to JPEG
Exit


GWLF-E Urban Area Viewer - Version 1.1.3
Select input data file: C:\MapShed\Runfiles\New Britain Twp\NBT_PA\Output\NBT_PA-0_ua.csv
Watershed Totals
Municipality Loads
Regulated Loads
Unregulated Loads
View loads for municipality: Area 11 (00011)
Sediment
Nitrogen
Phosphorus
Source
Source Area (ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Hay/Pasture 0 0.00 0.00 0.00 0.00 0.00 0.00
Cropland 0 0.00 0.00 0.00 0.00 0.00 0.00
Forest 0 0.00 0.00 0.00 0.00 0.00 0.00
Wetland 0 0.00 0.00 0.00 0.00 0.00 0.00
Disturbed 0 0.00 0.00 0.00 0.00 0.00 0.00
Turfgrass 0 0.00 0.00 0.00 0.00 0.00 0.00
Open Land 0 0.00 0.00 0.00 0.00 0.00 0.00
Bare Rock 0 0.00 0.00 0.00 0.00 0.00 0.00
Sandy Areas 0 0.00 0.00 0.00 0.00 0.00 0.00
Unpaved Roads 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
MD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
HD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Residential 0 0.00 0.00 0.00 0.00 0.00 0.00
MD Residential 2 137.60 68.80 2.80 1.42 0.30 0.16
HD Residential 0 0.00 0.00 0.00 0.00 0.00 0.00
Water 0
Source Weighting
Farm Animals 0.0 0.0 0.000
Tile Drainage 0.00 0.0 0.0 0.000
Stream Bank 1606.68 0.8 0.2 0.000
Groundwater 0.0 0.0 0.000
Point Sources 0.0 0.0 0.000
Septic Systems 0.0 0.0 0.000
Totals 2 1744.3 3.6 0.5
Print
Export to JPEG
Exit


GWLF-E Urban Area Viewer - Version 1.1.3
Select input data file: C:\MapShed\Runfiles\New Britain Twp\NBT_PA\Output\NBT_PA-0_ua.csv
Watershed Totals
Municipality Loads
Regulated Loads
Unregulated Loads
View loads for municipality: Area 12 (00012)
Sediment
Nitrogen
Phosphorus
Source
Source Area (ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Hay/Pasture 0 0.00 0.00 0.00 0.00 0.00 0.00
Cropland 0 0.00 0.00 0.00 0.00 0.00 0.00
Forest 0 0.00 0.00 0.00 0.00 0.00 0.00
Wetland 0 0.00 0.00 0.00 0.00 0.00 0.00
Disturbed 0 0.00 0.00 0.00 0.00 0.00 0.00
Turfgrass 0 0.00 0.00 0.00 0.00 0.00 0.00
Open Land 0 0.00 0.00 0.00 0.00 0.00 0.00
Bare Rock 0 0.00 0.00 0.00 0.00 0.00 0.00
Sandy Areas 0 0.00 0.00 0.00 0.00 0.00 0.00
Unpaved Roads 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
MD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
HD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Residential 0 0.00 0.00 0.00 0.00 0.00 0.00
MD Residential 15 1032.00 68.80 21.30 1.42 2.40 0.16
HD Residential 0 0.00 0.00 0.00 0.00 0.00 0.00
Water 0
Source Weighting
Farm Animals 0.0 0.0 0.000
Tile Drainage 0.00 0.0 0.0 0.000
Stream Bank 39157.54 19.6 5.5 0.001
Groundwater 0.0 0.0 0.000
Point Sources 0.0 0.0 0.000
Septic Systems 0.0 0.0 0.000
Totals 15 40189.5 40.9 7.9
Print
Export to JPEG
Exit


GWLF-E Urban Area Viewer - Version 1.1.3
Select input data file: C:\MapShed\Runfiles\New Britain Twp\NBT_PA\Output\NBT_PA-0_ua.csv
Watershed Totals
Municipality Loads
Regulated Loads
Unregulated Loads
View loads for municipality: Area 13 (00013)
Sediment
Nitrogen
Phosphorus
Source
Source Area (ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Hay/Pasture 7 603.40 86.20 4.60 0.66 1.20 0.17
Cropland 2 2016.40 1008.20 10.40 5.21 1.60 0.78
Forest 10 80.00 8.00 1.20 0.12 0.10 0.01
Wetland 0 0.00 0.00 0.00 0.00 0.00 0.00
Disturbed 2 143.20 71.60 0.40 0.18 0.10 0.06
Turfgrass 0 0.00 0.00 0.00 0.00 0.00 0.00
Open Land 5 557.00 111.40 5.30 1.05 0.40 0.08
Bare Rock 0 0.00 0.00 0.00 0.00 0.00 0.00
Sandy Areas 0 0.00 0.00 0.00 0.00 0.00 0.00
Unpaved Roads 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
MD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
HD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Residential 0 0.00 0.00 0.00 0.00 0.00 0.00
MD Residential 0 0.00 0.00 0.00 0.00 0.00 0.00
HD Residential 0 0.00 0.00 0.00 0.00 0.00 0.00
Water 0
Source Weighting
Farm Animals 0.0 0.0 0.000
Tile Drainage 0.00 0.0 0.0 0.000
Stream Bank 21690.22 10.8 3.1 0.000
Groundwater 0.0 0.0 0.000
Point Sources 0.0 0.0 0.000
Septic Systems 0.0 0.0 0.000
Totals 26 25090.2 32.7 6.5
Print
Export to JPEG
Exit


GWLF-E Urban Area Viewer - Version 1.1.3
Select input data file: C:\MapShed\Runfiles\New Britain Twp\NBT_PA\Output\NBT_PA-0_ua.csv
Watershed Totals
Municipality Loads
Regulated Loads
Unregulated Loads
View loads for municipality: Area 14 (00014)
Sediment
Nitrogen
Phosphorus
Source
Source Area (ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Hay/Pasture 0 0.00 0.00 0.00 0.00 0.00 0.00
Cropland 0 0.00 0.00 0.00 0.00 0.00 0.00
Forest 2 16.00 8.00 0.20 0.12 0.00 0.00
Wetland 0 0.00 0.00 0.00 0.00 0.00 0.00
Disturbed 0 0.00 0.00 0.00 0.00 0.00 0.00
Turfgrass 0 0.00 0.00 0.00 0.00 0.00 0.00
Open Land 0 0.00 0.00 0.00 0.00 0.00 0.00
Bare Rock 0 0.00 0.00 0.00 0.00 0.00 0.00
Sandy Areas 0 0.00 0.00 0.00 0.00 0.00 0.00
Unpaved Roads 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
MD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
HD Mixed 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Residential 0 0.00 0.00 0.00 0.00 0.00 0.00
MD Residential 22 1513.60 68.80 31.20 1.42 3.50 0.16
HD Residential 0 0.00 0.00 0.00 0.00 0.00 0.00
Water 0
Source Weighting
Farm Animals 0.0 0.0 0.000
Tile Drainage 0.00 0.0 0.0 0.000
Stream Bank 47190.95 23.6 6.7 0.001
Groundwater 106.4 1.7 0.001
Point Sources 0.0 0.0 0.000
Septic Systems 0.0 0.0 0.000
Totals 24 48720.6 161.4 11.9
Print
Export to JPEG
Exit

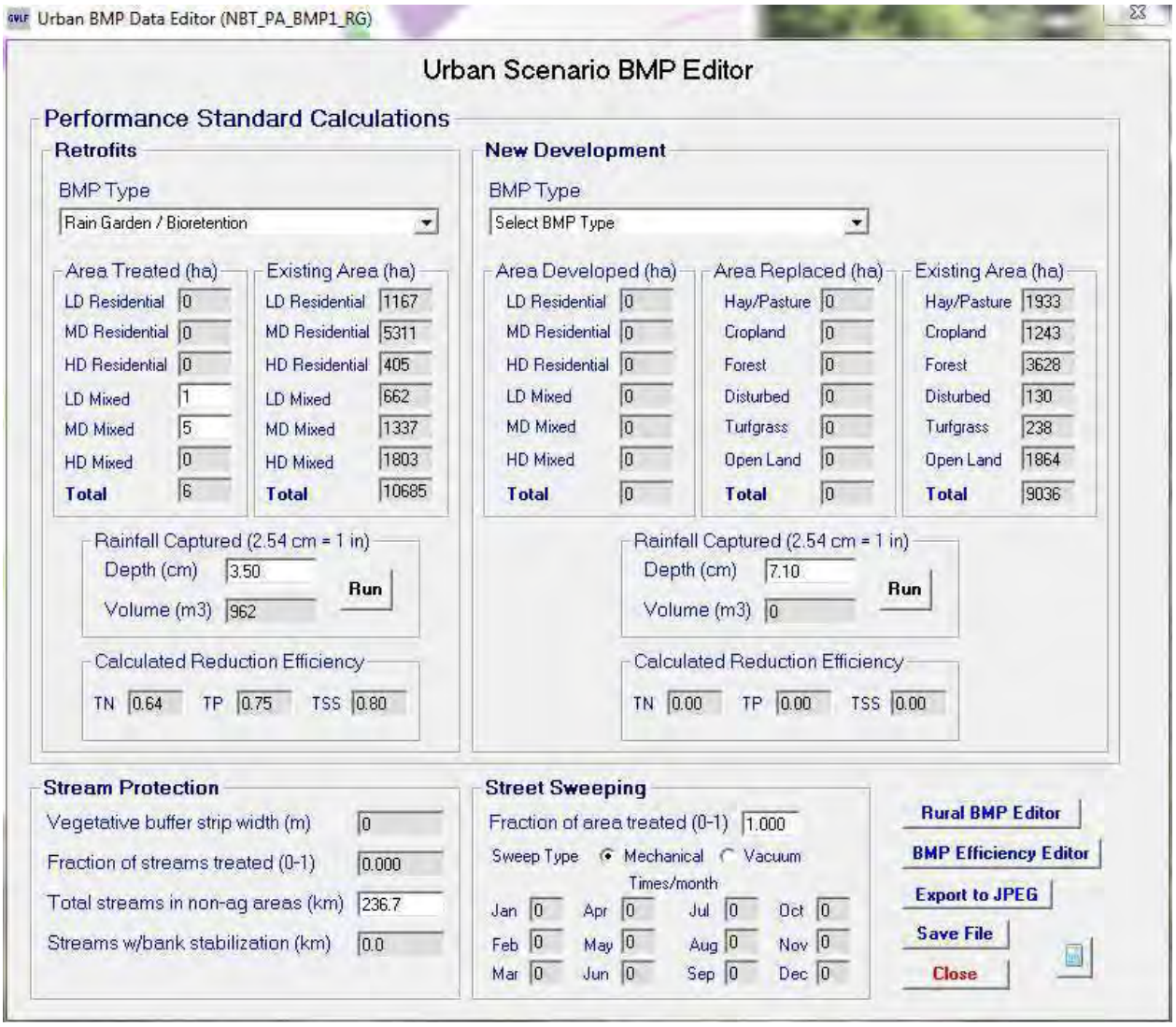
Appendix E

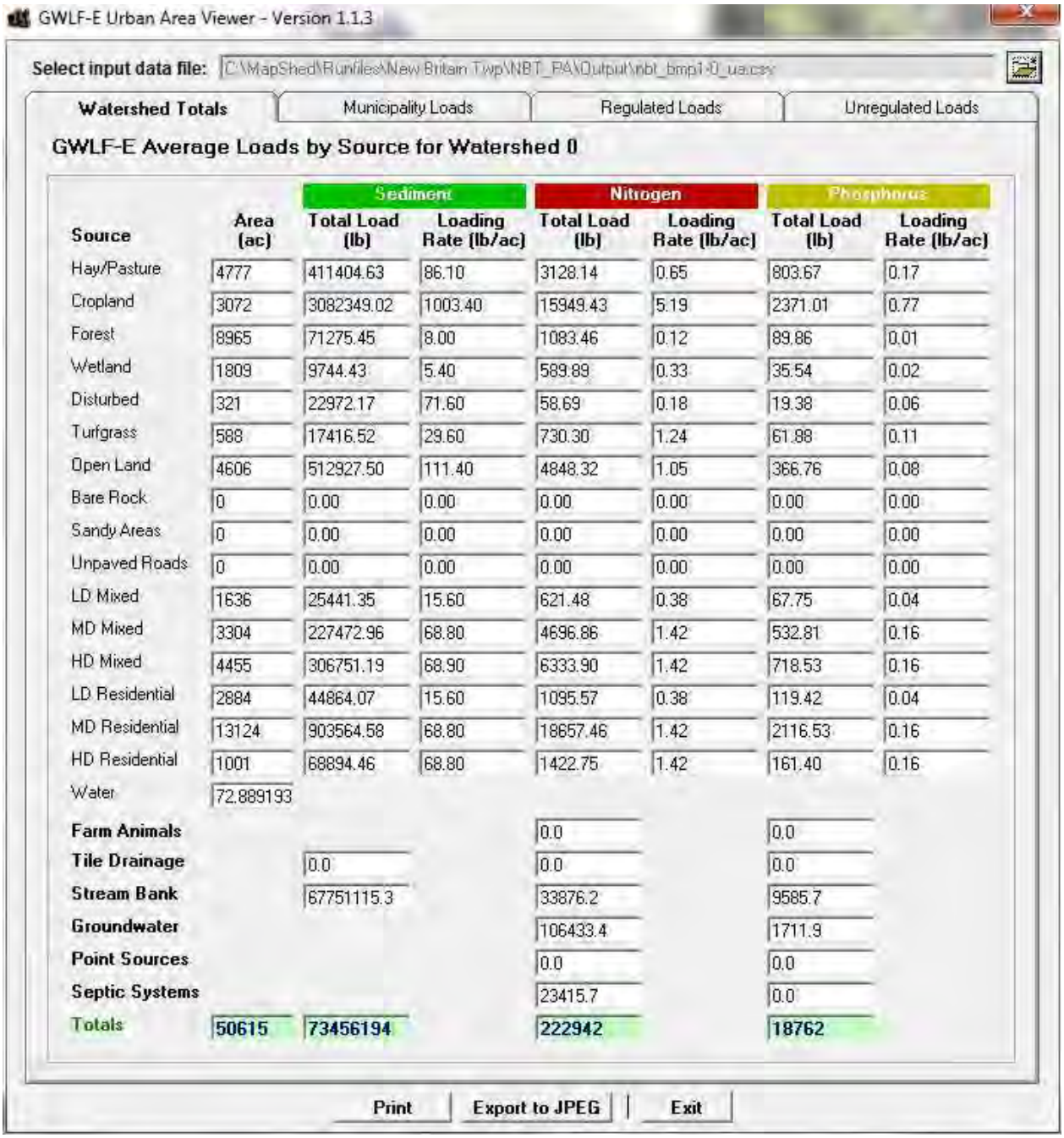
Proposed BMP Inputs/Outputs:

Appendix E- 1: BMP 1 – Rain Garden
Appendix E- 2: BMP 2 – Riparian Buffer
Appendix E- 3: BMP 3 – Basin Retrofit
Appendix E- 4: BMP 4 – Basin Retrofit
Appendix E- 5: BMP 5 – Streambank Restoration
Appendix E- 6: BMP 6 – Basin Retrofit
Appendix E- 7: BMP 7 - Bioswale
Appendix E- 8: BMP Effectiveness Table

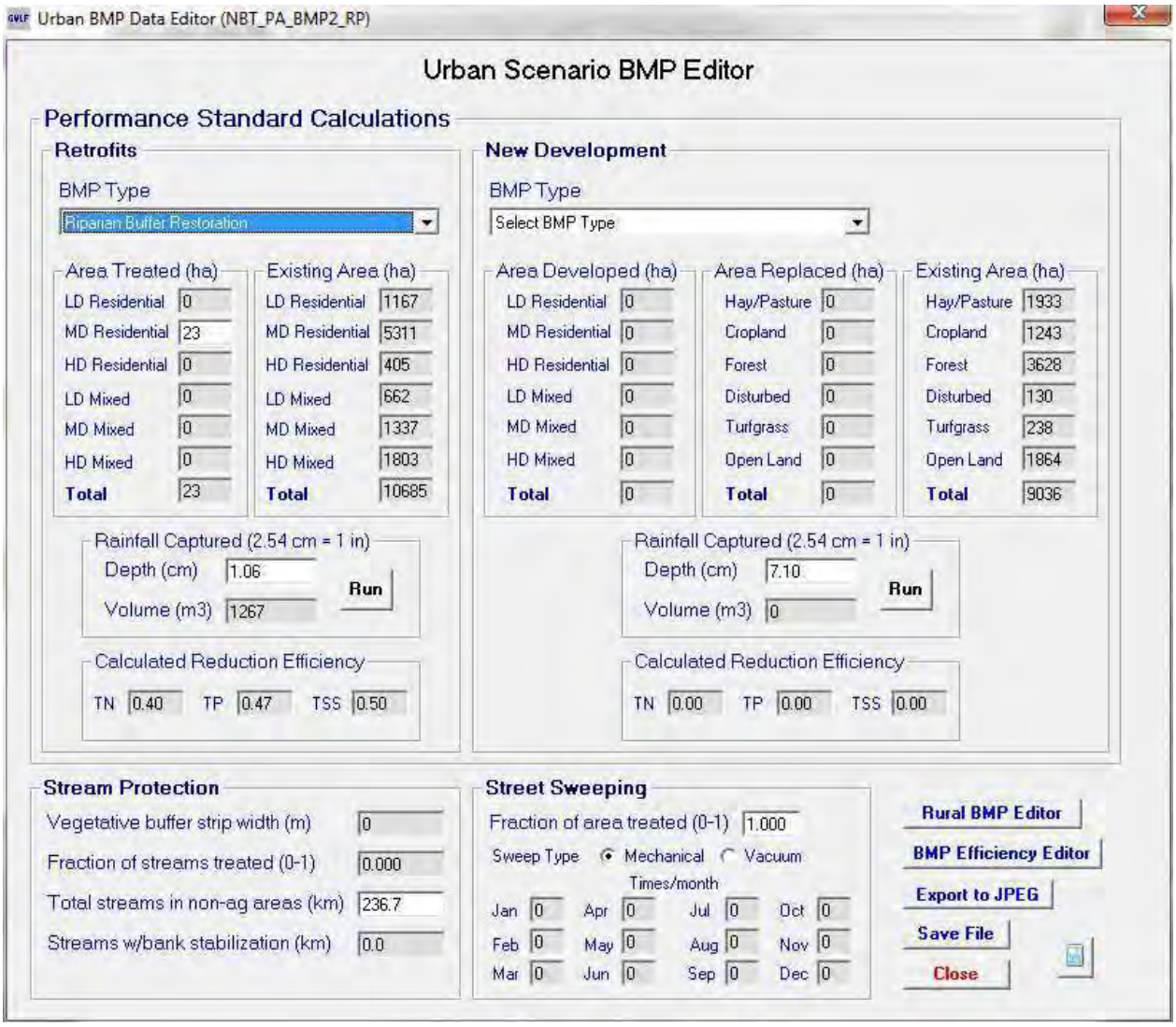
Appendix E - Proposed BMP Inputs/Outputs:

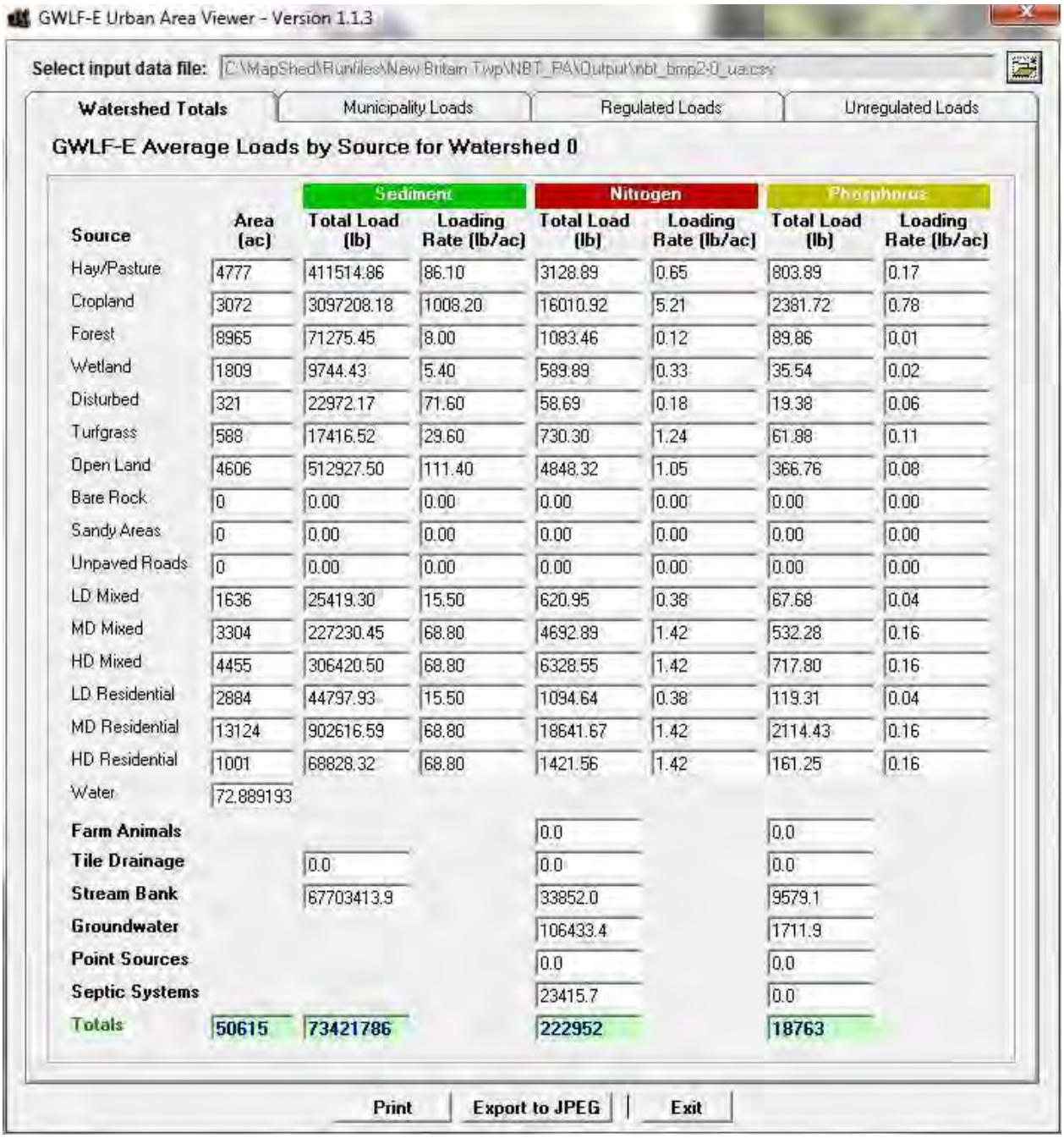
Appendix E- 1: BMP 1 – Rain Garden


Urban BMP Data Editor (N8T_PA_BMP1_RG)
Urban Scenario BMP Editor
Performance Standard Calculations
Retrofits
BMP Type
Rain Garden / Bioretention
Area Treated (ha)
LD Residential 0
MD Residential 0
HD Residential 0
LD Mixed 1
MD Mixed 5
HD Mixed 0
Total 6
Existing Area (ha)
LD Residential 1167
MD Residential 5311
HD Residential 405
LD Mixed 662
MD Mixed 1337
HD Mixed 1803
Total 10685
Rainfall Captured (2.54 cm = 1 in)
Depth (cm) 3.50
Volume (m3) 962
Run
Calculated Reduction Efficiency
TN 0.64 TP 0.75 TSS 0.80
New Development
BMP Type
Select BMP Type
Area Developed (ha)
LD Residential 0
MD Residential 0
HD Residential 0
LD Mixed 0
MD Mixed 0
HD Mixed 0
Total 0
Area Replaced (ha)
Hay/Pasture 0
Cropland 0
Forest 0
Disturbed 0
Turfgrass 0
Open Land 0
Total 0
Existing Area (ha)
Hay/Pasture 1933
Cropland 1243
Forest 3628
Disturbed 130
Turfgrass 238
Open Land 1864
Total 9036
Rainfall Captured (2.54 cm = 1 in)
Depth (cm) 7.10
Volume (m3) 0
Run
Calculated Reduction Efficiency
TN 0.00 TP 0.00 TSS 0.00
Stream Protection
Vegetative buffer strip width (m) 0
Fraction of streams treated (0-1) 0.000
Total streams in non-ag areas (km) 236.7
Streams w/bank stabilization (km) 0.0
Street Sweeping
Fraction of area treated (0-1) 1.000
Sweep Type Mechanical Vacuum
Times/month
Jan 0 Apr 0 Jul 0 Oct 0
Feb 0 May 0 Aug 0 Nov 0
Mar 0 Jun 0 Sep 0 Dec 0
Rural BMP Editor
BMP Efficiency Editor
Export to JPEG
Save File
Close

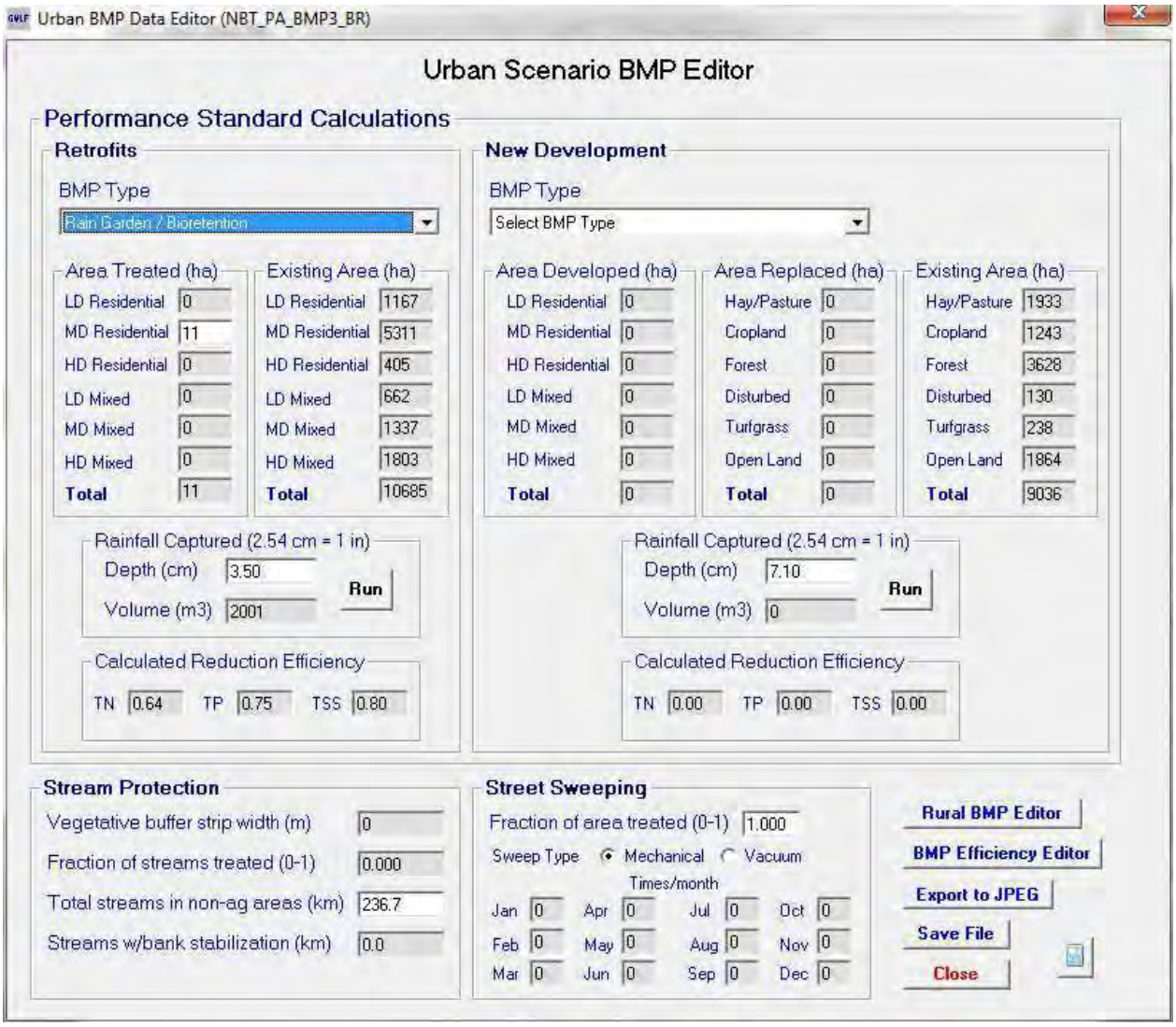

GWLF-E Urban Area Viewer - Version 1.1.3
Select input data file: C:\MapShed\Runfiles\New Britain Twp\NBT_PA\Output\nbt_bmp1-0_ua.csv
Watershed Totals
Municipality Loads
Regulated Loads
Unregulated Loads
GWLF-E Average Loads by Source for Watershed 0
Sediment
Nitrogen
Phosphorus
Source
Area (ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Hay/Pasture 4777 411404.63 86.10 3128.14 0.65 803.67 0.17
Cropland 3072 3082349.02 1003.40 15949.43 5.19 2371.01 0.77
Forest 8965 71275.45 8.00 1083.46 0.12 89.86 0.01
Wetland 1809 9744.43 5.40 589.89 0.33 35.54 0.02
Disturbed 321 22972.17 71.60 58.69 0.18 19.38 0.06
Turfgrass 588 17416.52 29.60 730.30 1.24 61.88 0.11
Open Land 4606 512927.50 111.40 4848.32 1.05 366.76 0.08
Bare Rock 0 0.00 0.00 0.00 0.00 0.00 0.00
Sandy Areas 0 0.00 0.00 0.00 0.00 0.00 0.00
Unpaved Roads 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Mixed 1636 25441.35 15.60 621.48 0.38 67.75 0.04
MD Mixed 3304 227472.96 68.80 4696.86 1.42 532.81 0.16
HD Mixed 4455 306751.19 68.90 6333.90 1.42 718.53 0.16
LD Residential 2884 44864.07 15.60 1095.57 0.38 119.42 0.04
MD Residential 13124 903564.58 68.80 18657.46 1.42 2116.53 0.16
HD Residential 1001 68894.46 68.80 1422.75 1.42 161.40 0.16
Water 72.889193
Farm Animals 0.0 0.0
Tile Drainage 0.0 0.0 0.0
Stream Bank 67751115.3 33876.2 9585.7
Groundwater 106433.4 1711.9
Point Sources 0.0 0.0
Septic Systems 23415.7 0.0
Totals 50615 73456194 222942 18762
Print
Export to JPEG
Exit

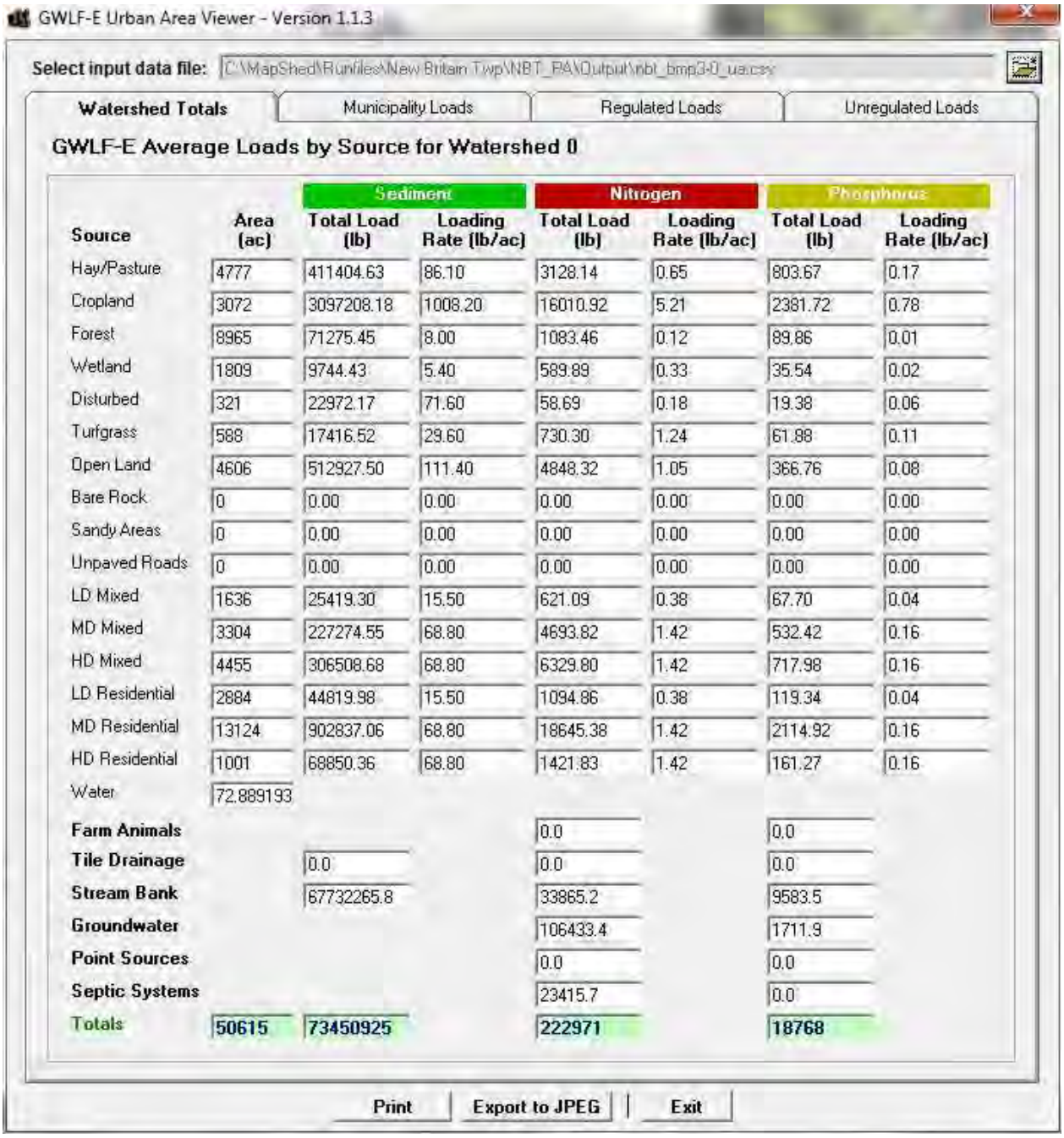
Appendix E- 2: BMP 2 – Riparian Buffer


Urban BMP Data Editor (NBT_PA_BMP2_RP)
Urban Scenario BMP Editor
Performance Standard Calculations
Retrofits
BMP Type
Riparian Buffer Restoration
Area Treated (ha)
LD Residential 0
MD Residential 23
HD Residential 0
LD Mixed 0
MD Mixed 0
HD Mixed 0
Total 23
Existing Area (ha)
LD Residential 1167
MD Residential 5311
HD Residential 405
LD Mixed 662
MD Mixed 1337
HD Mixed 1803
Total 10685
Rainfall Captured (2.54 cm = 1 in)
Depth (cm) 1.06
Volume (m3) 1267
Run
Calculated Reduction Efficiency
TN 0.40 TP 0.47 TSS 0.50
New Development
BMP Type
Select BMP Type
Area Developed (ha)
LD Residential 0
MD Residential 0
HD Residential 0
LD Mixed 0
MD Mixed 0
HD Mixed 0
Total 0
Area Replaced (ha)
Hay/Pasture 0
Cropland 0
Forest 0
Disturbed 0
Turfgrass 0
Open Land 0
Total 0
Existing Area (ha)
Hay/Pasture 1933
Cropland 1243
Forest 3628
Disturbed 130
Turfgrass 238
Open Land 1864
Total 9036
Rainfall Captured (2.54 cm = 1 in)
Depth (cm) 7.10
Volume (m3) 0
Run
Calculated Reduction Efficiency
TN 0.00 TP 0.00 TSS 0.00
Stream Protection
Vegetative buffer strip width (m) 0
Fraction of streams treated (0-1) 0.000
Total streams in non-ag areas (km) 236.7
Streams w/bank stabilization (km) 0.0
Street Sweeping
Fraction of area treated (0-1) 1.000
Sweep Type Mechanical Vacuum
Times/month
Jan 0 Apr 0 Jul 0 Oct 0
Feb 0 May 0 Aug 0 Nov 0
Mar 0 Jun 0 Sep 0 Dec 0
Rural BMP Editor
BMP Efficiency Editor
Export to JPEG
Save File
Close

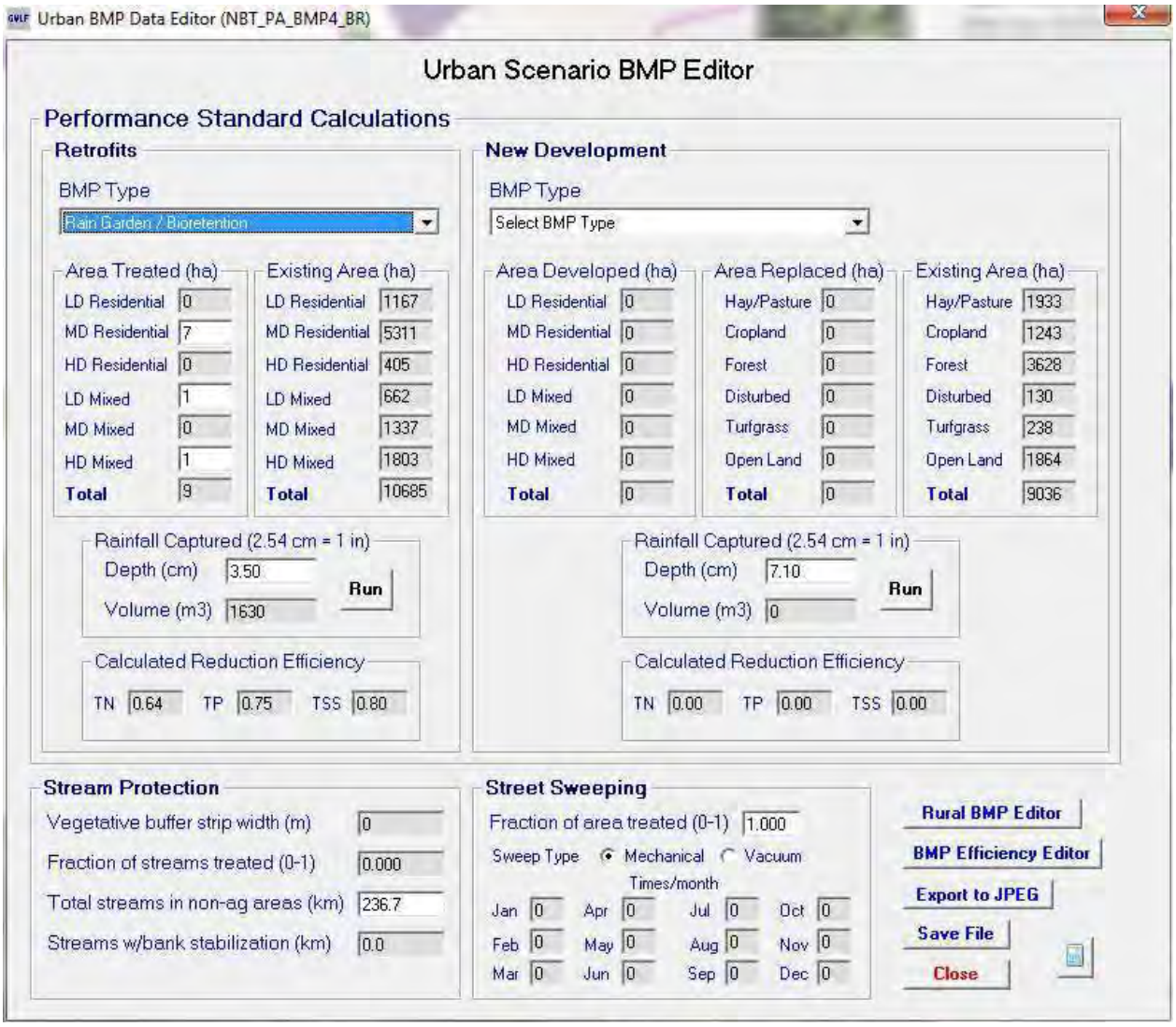

GWLF-E Urban Area Viewer - Version 1.1.3
Select input data file: C:\MapShed\Runfiles\New Britain Twp\NBT_PA\Output\nbt_bmp2-0_ua.csv
Watershed Totals
Municipality Loads
Regulated Loads
Unregulated Loads
GWLF-E Average Loads by Source for Watershed 0
Sediment
Nitrogen
Phosphorus
Source
Area (ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Hay/Pasture 4777 411514.86 86.10 3128.89 0.65 803.89 0.17
Cropland 3072 3097208.18 1008.20 16010.92 5.21 2381.72 0.78
Forest 8965 71275.45 8.00 1083.46 0.12 89.86 0.01
Wetland 1809 9744.43 5.40 589.89 0.33 35.54 0.02
Disturbed 321 22972.17 71.60 58.69 0.18 19.38 0.06
Turfgrass 588 17416.52 29.60 730.30 1.24 61.88 0.11
Open Land 4606 512927.50 111.40 4848.32 1.05 366.76 0.08
Bare Rock 0 0.00 0.00 0.00 0.00 0.00 0.00
Sandy Areas 0 0.00 0.00 0.00 0.00 0.00 0.00
Unpaved Roads 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Mixed 1636 25419.30 15.50 620.95 0.38 67.68 0.04
MD Mixed 3304 227230.45 68.80 4692.89 1.42 532.28 0.16
HD Mixed 4455 306420.50 68.80 6328.55 1.42 717.80 0.16
LD Residential 2884 44797.93 15.50 1094.64 0.38 119.31 0.04
MD Residential 13124 902616.59 68.80 18641.67 1.42 2114.43 0.16
HD Residential 1001 68828.32 68.80 1421.56 1.42 161.25 0.16
Water 72.889193
Farm Animals 0.0 0.0
Tile Drainage 0.0 0.0 0.0
Stream Bank 67703413.9 33852.0 9579.1
Groundwater 106433.4 1711.9
Point Sources 0.0 0.0
Septic Systems 23415.7 0.0
Totals 50615 73421786 222952 18763
Print
Export to JPEG
Exit

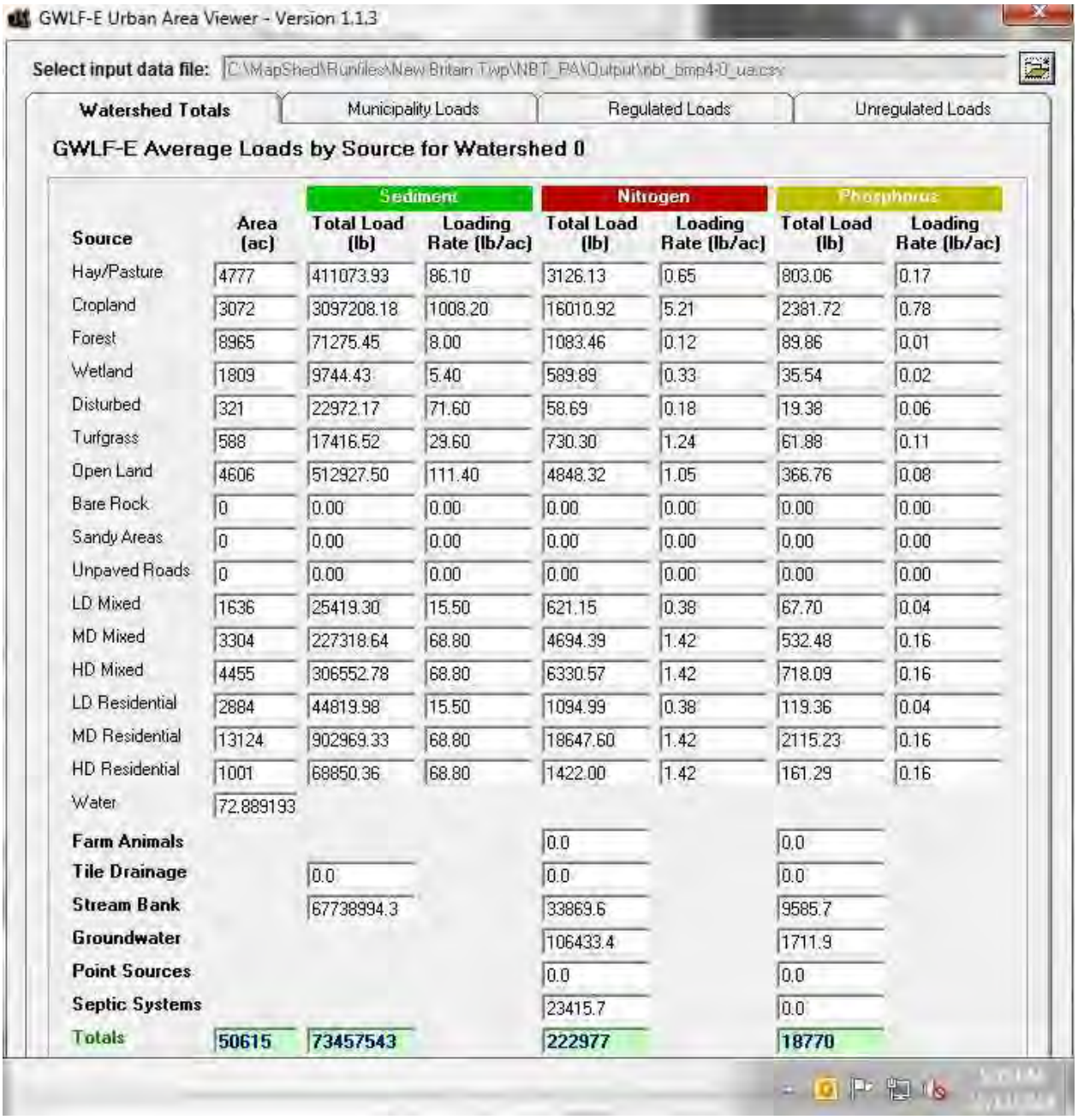
Appendix E- 3: BMP 3 – Basin Retrofit


Urban BMP Data Editor (NBT_PA_BMP3_BR)
Urban Scenario BMP Editor
Performance Standard Calculations
Retrofits
BMP Type
Rain Garden / Bioretention
Area Treated (ha)
LD Residential 0
MD Residential 11
HD Residential 0
LD Mixed 0
MD Mixed 0
HD Mixed 0
Total 11
Existing Area (ha)
LD Residential 1167
MD Residential 5311
HD Residential 405
LD Mixed 662
MD Mixed 1337
HD Mixed 1803
Total 10685
Rainfall Captured (2.54 cm = 1 in)
Depth (cm) 3.50
Volume (m3) 2001
Run
Calculated Reduction Efficiency
TN 0.64 TP 0.75 TSS 0.80
New Development
BMP Type
Select BMP Type
Area Developed (ha)
LD Residential 0
MD Residential 0
HD Residential 0
LD Mixed 0
MD Mixed 0
HD Mixed 0
Total 0
Area Replaced (ha)
Hay/Pasture 0
Cropland 0
Forest 0
Disturbed 0
Turfgrass 0
Open Land 0
Total 0
Existing Area (ha)
Hay/Pasture 1933
Cropland 1243
Forest 3628
Disturbed 130
Turfgrass 238
Open Land 1864
Total 9036
Rainfall Captured (2.54 cm = 1 in)
Depth (cm) 7.10
Volume (m3) 0
Run
Calculated Reduction Efficiency
TN 0.00 TP 0.00 TSS 0.00
Stream Protection
Vegetative buffer strip width (m) 0
Fraction of streams treated (0-1) 0.000
Total streams in non-ag areas (km) 236.7
Streams w/bank stabilization (km) 0.0
Street Sweeping
Fraction of area treated (0-1) 1.000
Sweep Type Mechanical Vacuum
Times/month
Jan 0 Apr 0 Jul 0 Oct 0
Feb 0 May 0 Aug 0 Nov 0
Mar 0 Jun 0 Sep 0 Dec 0
Rural BMP Editor
BMP Efficiency Editor
Export to JPEG
Save File
Close


GWLF-E Urban Area Viewer - Version 1.1.3
Select input data file: C:\MapShed\Runfiles\New Britain Twp\NBT_PA\Output\nbt_bmp3-0_ua.csv
Watershed Totals
Municipality Loads
Regulated Loads
Unregulated Loads
GWLF-E Average Loads by Source for Watershed 0
Sediment
Nitrogen
Phosphorus
Source
Area (ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Hay/Pasture 4777 411404.63 86.10 3128.14 0.65 803.67 0.17
Cropland 3072 3097208.18 1008.20 16010.92 5.21 2381.72 0.78
Forest 8965 71275.45 8.00 1083.46 0.12 89.86 0.01
Wetland 1809 9744.43 5.40 589.89 0.33 35.54 0.02
Disturbed 321 22972.17 71.60 58.69 0.18 19.38 0.06
Turfgrass 588 17416.52 29.60 730.30 1.24 61.88 0.11
Open Land 4606 512927.50 111.40 4848.32 1.05 366.76 0.08
Bare Rock 0 0.00 0.00 0.00 0.00 0.00 0.00
Sandy Areas 0 0.00 0.00 0.00 0.00 0.00 0.00
Unpaved Roads 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Mixed 1636 25419.30 15.50 621.09 0.38 67.70 0.04
MD Mixed 3304 227274.55 68.80 4693.82 1.42 532.42 0.16
HD Mixed 4455 306508.68 68.80 6329.80 1.42 717.98 0.16
LD Residential 2884 44819.98 15.50 1094.86 0.38 119.34 0.04
MD Residential 13124 902837.06 68.80 18645.38 1.42 2114.92 0.16
HD Residential 1001 68850.36 68.80 1421.83 1.42 161.27 0.16
Water 72.889193
Farm Animals 0.0 0.0
Tile Drainage 0.0 0.0 0.0
Stream Bank 67732265.8 33865.2 9583.5
Groundwater 106433.4 1711.9
Point Sources 0.0 0.0
Septic Systems 23415.7 0.0
Totals 50615 73450925 222971 18768
Print
Export to JPEG
Exit

Appendix E- 4: BMP 4 – Basin Retrofit


Urban BMP Data Editor (NBT_PA_BMP4_BR)
Urban Scenario BMP Editor
Performance Standard Calculations
Retrofits
BMP Type
Rain Garden / Bioretention
Area Treated (ha)
LD Residential 0
MD Residential 7
HD Residential 0
LD Mixed 1
MD Mixed 0
HD Mixed 1
Total 9
Existing Area (ha)
LD Residential 1167
MD Residential 5311
HD Residential 405
LD Mixed 662
MD Mixed 1337
HD Mixed 1803
Total 10685
Rainfall Captured (2.54 cm = 1 in)
Depth (cm) 3.50
Volume (m3) 1630
Run
Calculated Reduction Efficiency
TN 0.64 TP 0.75 TSS 0.80
New Development
BMP Type
Select BMP Type
Area Developed (ha)
LD Residential 0
MD Residential 0
HD Residential 0
LD Mixed 0
MD Mixed 0
HD Mixed 0
Total 0
Area Replaced (ha)
Hay/Pasture 0
Cropland 0
Forest 0
Disturbed 0
Turfgrass 0
Open Land 0
Total 0
Existing Area (ha)
Hay/Pasture 1933
Cropland 1243
Forest 3628
Disturbed 130
Turfgrass 238
Open Land 1864
Total 9036
Rainfall Captured (2.54 cm = 1 in)
Depth (cm) 7.10
Volume (m3) 0
Run
Calculated Reduction Efficiency
TN 0.00 TP 0.00 TSS 0.00
Stream Protection
Vegetative buffer strip width (m) 0
Fraction of streams treated (0-1) 0.000
Total streams in non-ag areas (km) 236.7
Streams w/bank stabilization (km) 0.0
Street Sweeping
Fraction of area treated (0-1) 1.000
Sweep Type Mechanical Vacuum
Times/month
Jan 0 Apr 0 Jul 0 Oct 0
Feb 0 May 0 Aug 0 Nov 0
Mar 0 Jun 0 Sep 0 Dec 0
Rural BMP Editor
BMP Efficiency Editor
Export to JPEG
Save File
Close

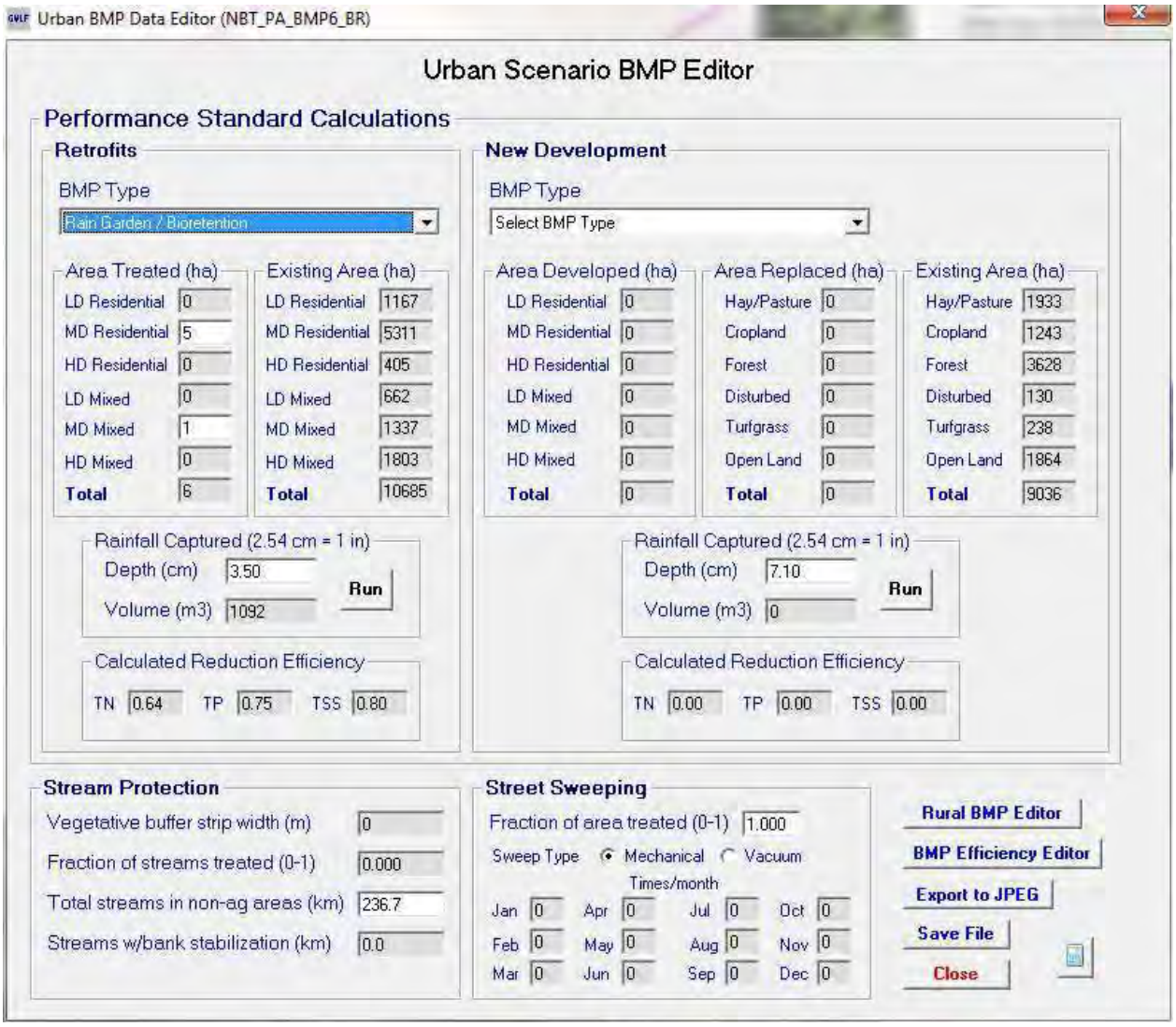


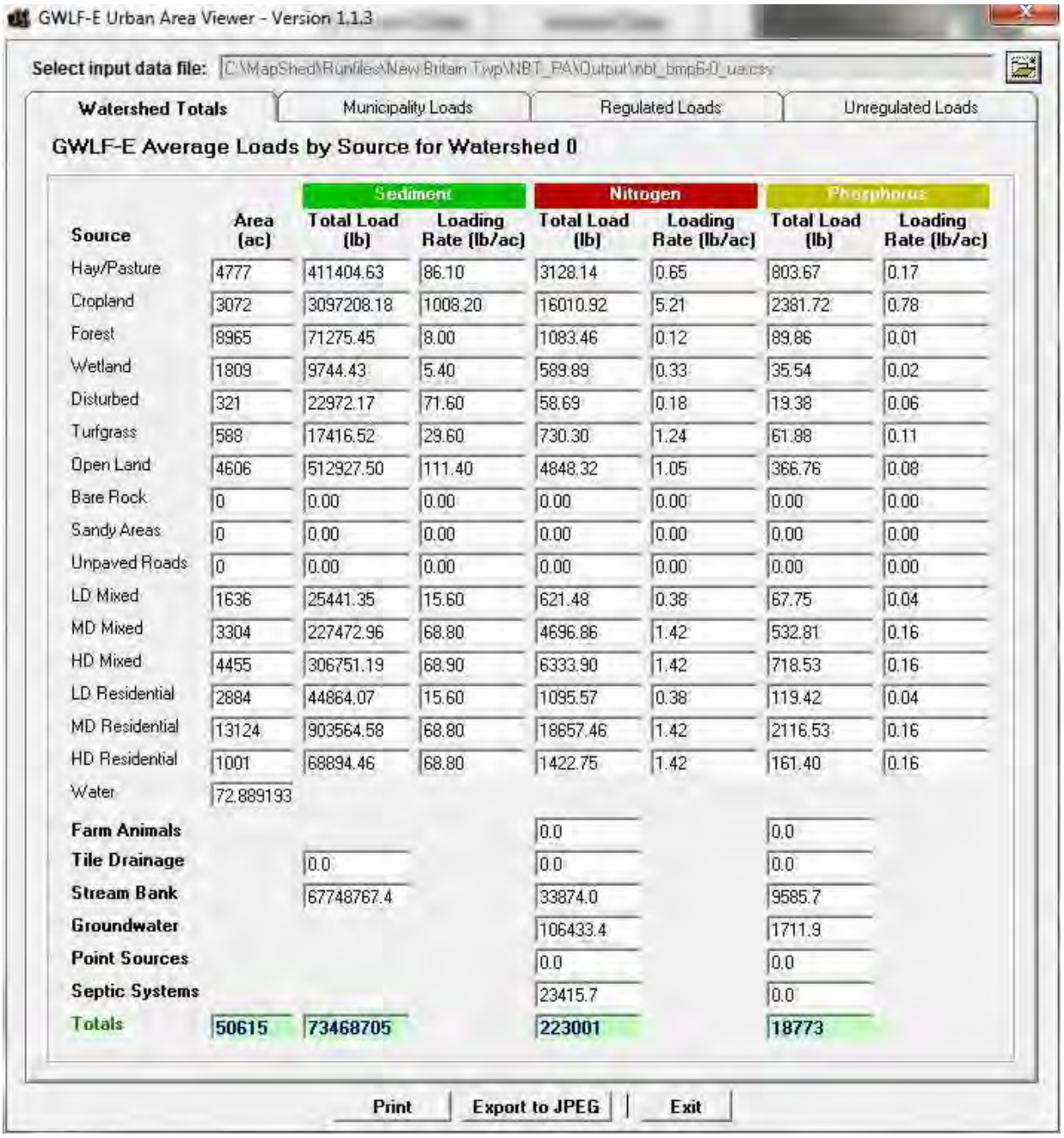
		Sediment		Nitrogen		Phosphorus	
Source	**Area (ac)**	**Total Load (lb)**	**Loading Rate (lb/ac)**	**Total Load (lb)**	**Loading Rate (lb/ac)**	**Total Load (lb)**	**Loading Rate (lb/ac)**
Hay/Pasture	4777	411073.93	86.10	3126.13	0.65	803.06	0.17
Cropland	3072	3097208.18	1008.20	16010.92	5.21	2381.72	0.78
Forest	8965	71275.45	8.00	1083.46	0.12	89.86	0.01
Wetland	1809	9744.43	5.40	589.89	0.33	35.54	0.02
Disturbed	321	22972.17	71.60	58.69	0.18	19.38	0.06
Turfgrass	588	17416.52	29.60	730.30	1.24	61.88	0.11
Open Land	4606	512927.50	111.40	4848.32	1.05	366.76	0.08
Bare Rock	0	0.00	0.00	0.00	0.00	0.00	0.00
Sandy Areas	0	0.00	0.00	0.00	0.00	0.00	0.00
Unpaved Roads	0	0.00	0.00	0.00	0.00	0.00	0.00
LD Mixed	1636	25419.30	15.50	621.15	0.38	67.70	0.04
MD Mixed	3304	227318.64	68.80	4694.39	1.42	532.48	0.16
HD Mixed	4455	306552.78	68.80	6330.57	1.42	718.09	0.16
LD Residential	2884	44819.98	15.50	1094.99	0.38	119.36	0.04
MD Residential	13124	902969.33	68.80	18647.60	1.42	2115.23	0.16
HD Residential	1001	68850.36	68.80	1422.00	1.42	161.29	0.16
Water	72.889193						
Farm Animals				0.0		0.0	
Tile Drainage		0.0		0.0		0.0	
Stream Bank		67738994.3		33869.6		9585.7	
Groundwater				106433.4		1711.9	
Point Sources				0.0		0.0	
Septic Systems				23415.7		0.0	
Totals	**50615**	**73457543**		**222977**		**18770**	

Appendix E- 5: BMP 5 – Streambank Restoration

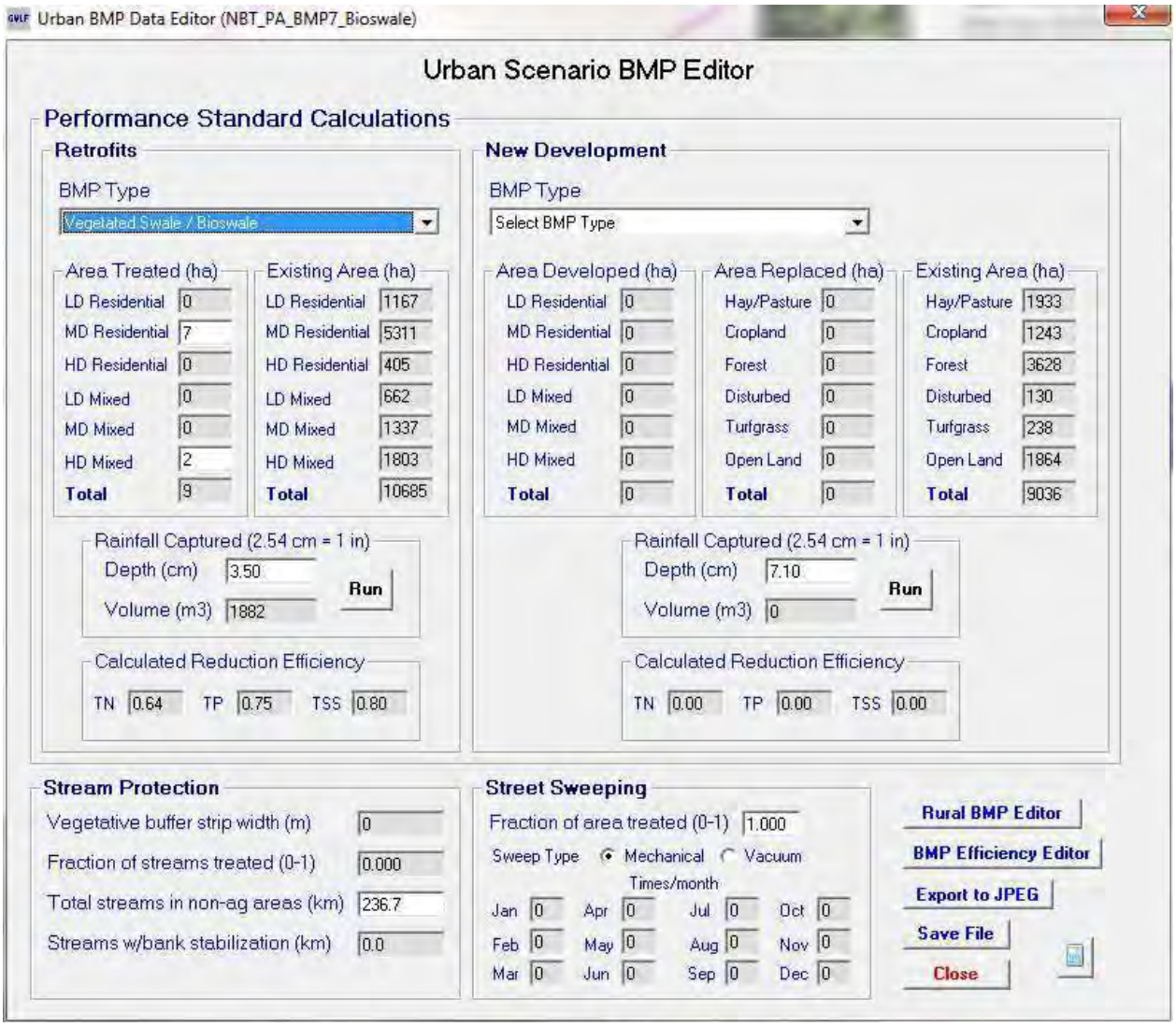
Streambank Restoration	
Streambank Length (ft)	300
TSS lbs/ft/yr	115
Reduction (lbs)	34,500

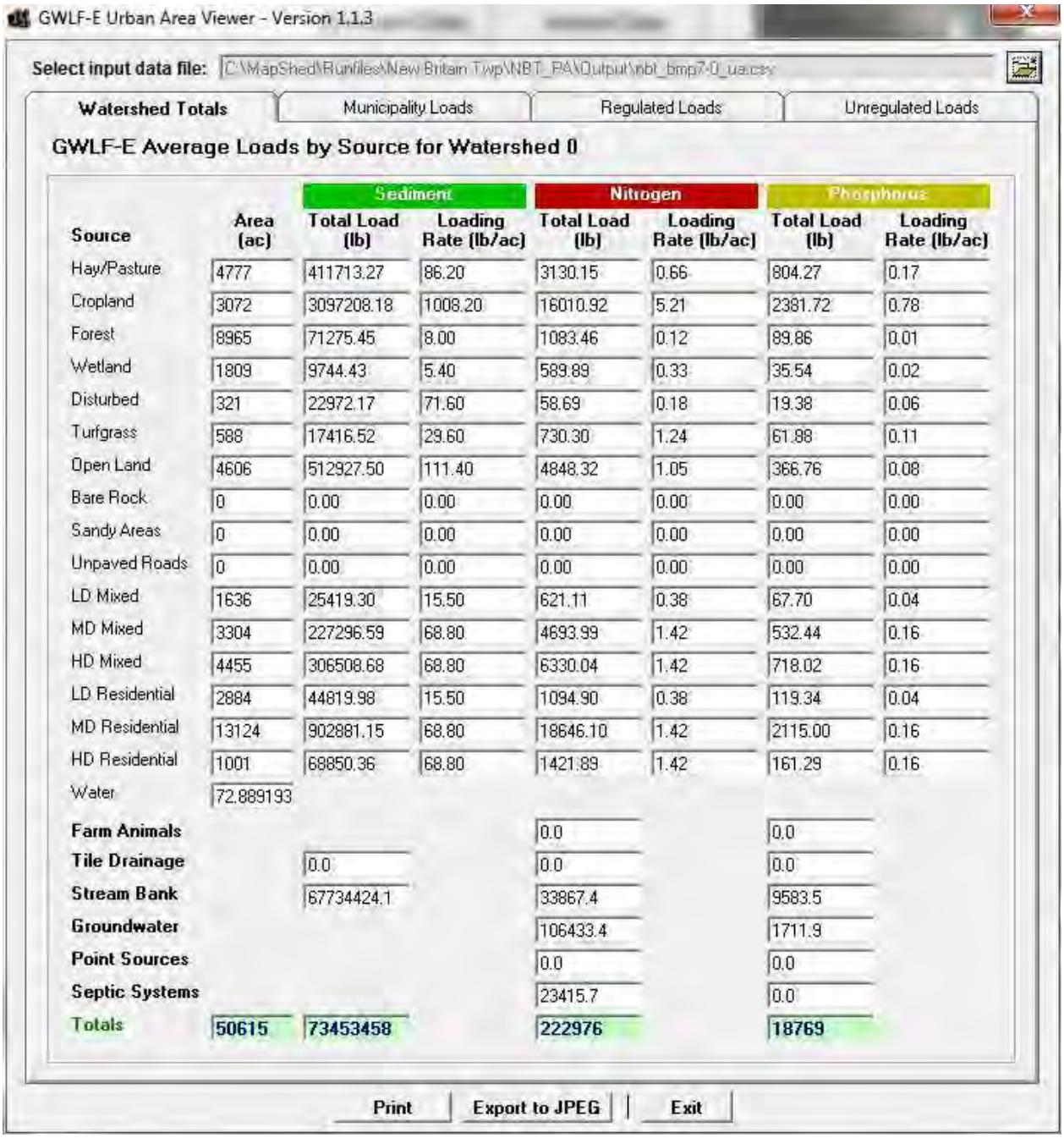
Appendix E- 6: BMP 6 – Basin Retrofit


Urban BMP Data Editor (NBT_PA_BMP6_BR)
Urban Scenario BMP Editor
Performance Standard Calculations
Retrofits
BMP Type
Rain Garden / Bioretention
Area Treated (ha)
LD Residential 0
MD Residential 5
HD Residential 0
LD Mixed 0
MD Mixed 1
HD Mixed 0
Total 6
Existing Area (ha)
LD Residential 1167
MD Residential 5311
HD Residential 405
LD Mixed 662
MD Mixed 1337
HD Mixed 1803
Total 10685
Rainfall Captured (2.54 cm = 1 in)
Depth (cm) 3.50
Volume (m3) 1092
Run
Calculated Reduction Efficiency
TN 0.64 TP 0.75 TSS 0.80
New Development
BMP Type
Select BMP Type
Area Developed (ha)
LD Residential 0
MD Residential 0
HD Residential 0
LD Mixed 0
MD Mixed 0
HD Mixed 0
Total 0
Area Replaced (ha)
Hay/Pasture 0
Cropland 0
Forest 0
Disturbed 0
Turfgrass 0
Open Land 0
Total 0
Existing Area (ha)
Hay/Pasture 1933
Cropland 1243
Forest 3628
Disturbed 130
Turfgrass 238
Open Land 1864
Total 9036
Rainfall Captured (2.54 cm = 1 in)
Depth (cm) 7.10
Volume (m3) 0
Run
Calculated Reduction Efficiency
TN 0.00 TP 0.00 TSS 0.00
Stream Protection
Vegetative buffer strip width (m) 0
Fraction of streams treated (0-1) 0.000
Total streams in non-ag areas (km) 236.7
Streams w/bank stabilization (km) 0.0
Street Sweeping
Fraction of area treated (0-1) 1.000
Sweep Type Mechanical Vacuum
Times/month
Jan 0 Apr 0 Jul 0 Oct 0
Feb 0 May 0 Aug 0 Nov 0
Mar 0 Jun 0 Sep 0 Dec 0
Rural BMP Editor
BMP Efficiency Editor
Export to JPEG
Save File
Close


GWLF-E Urban Area Viewer - Version 1.1.3
Select input data file: C:\MapShed\Runfiles\New Britain Twp\NBT_PA\Output\nbt_bmp6-0_ua.csv
Watershed Totals
Municipality Loads
Regulated Loads
Unregulated Loads
GWLF-E Average Loads by Source for Watershed 0
Sediment
Nitrogen
Phosphorus
Source
Area (ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Hay/Pasture 4777 411404.63 86.10 3128.14 0.65 803.67 0.17
Cropland 3072 3097208.18 1008.20 16010.92 5.21 2381.72 0.78
Forest 8965 71275.45 8.00 1083.46 0.12 89.86 0.01
Wetland 1809 9744.43 5.40 589.89 0.33 35.54 0.02
Disturbed 321 22972.17 71.60 58.69 0.18 19.38 0.06
Turfgrass 588 17416.52 29.60 730.30 1.24 61.88 0.11
Open Land 4606 512927.50 111.40 4848.32 1.05 366.76 0.08
Bare Rock 0 0.00 0.00 0.00 0.00 0.00 0.00
Sandy Areas 0 0.00 0.00 0.00 0.00 0.00 0.00
Unpaved Roads 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Mixed 1636 25441.35 15.60 621.48 0.38 67.75 0.04
MD Mixed 3304 227472.96 68.80 4696.86 1.42 532.81 0.16
HD Mixed 4455 306751.19 68.90 6333.90 1.42 718.53 0.16
LD Residential 2884 44864.07 15.60 1095.57 0.38 119.42 0.04
MD Residential 13124 903564.58 68.80 18657.46 1.42 2116.53 0.16
HD Residential 1001 68894.46 68.80 1422.75 1.42 161.40 0.16
Water 72.889193
Farm Animals 0.0 0.0
Tile Drainage 0.0 0.0 0.0
Stream Bank 67748767.4 33874.0 9585.7
Groundwater 106433.4 1711.9
Point Sources 0.0 0.0
Septic Systems 23415.7 0.0
Totals 50615 73468705 223001 18773
Print
Export to JPEG
Exit

Appendix E- 7: Bioswale


Urban BMP Data Editor (NBT_PA_BMP7_Bioswale)
Urban Scenario BMP Editor
Performance Standard Calculations
Retrofits
BMP Type
Vegetated Swale / Bioswale
Area Treated (ha)
LD Residential 0
MD Residential 7
HD Residential 0
LD Mixed 0
MD Mixed 0
HD Mixed 2
Total 9
Existing Area (ha)
LD Residential 1167
MD Residential 5311
HD Residential 405
LD Mixed 662
MD Mixed 1337
HD Mixed 1803
Total 10685
Rainfall Captured (2.54 cm = 1 in)
Depth (cm) 3.50
Volume (m3) 1882
Run
Calculated Reduction Efficiency
TN 0.64 TP 0.75 TSS 0.80
New Development
BMP Type
Select BMP Type
Area Developed (ha)
LD Residential 0
MD Residential 0
HD Residential 0
LD Mixed 0
MD Mixed 0
HD Mixed 0
Total 0
Area Replaced (ha)
Hay/Pasture 0
Cropland 0
Forest 0
Disturbed 0
Turfgrass 0
Open Land 0
Total 0
Existing Area (ha)
Hay/Pasture 1933
Cropland 1243
Forest 3628
Disturbed 130
Turfgrass 238
Open Land 1864
Total 9036
Rainfall Captured (2.54 cm = 1 in)
Depth (cm) 7.10
Volume (m3) 0
Run
Calculated Reduction Efficiency
TN 0.00 TP 0.00 TSS 0.00
Stream Protection
Vegetative buffer strip width (m) 0
Fraction of streams treated (0-1) 0.000
Total streams in non-ag areas (km) 236.7
Streams w/bank stabilization (km) 0.0
Street Sweeping
Fraction of area treated (0-1) 1.000
Sweep Type Mechanical Vacuum
Times/month
Jan 0 Apr 0 Jul 0 Oct 0
Feb 0 May 0 Aug 0 Nov 0
Mar 0 Jun 0 Sep 0 Dec 0
Rural BMP Editor
BMP Efficiency Editor
Export to JPEG
Save File
Close


GWLF-E Urban Area Viewer - Version 1.1.3
Select input data file: C:\MapShed\Runfiles\New Britain Twp\NBT_PA\Output\nbt_bmp7-0_ua.csv
Watershed Totals
Municipality Loads
Regulated Loads
Unregulated Loads
GWLF-E Average Loads by Source for Watershed 0
Sediment
Nitrogen
Phosphorus
Source
Area (ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Total Load (lb)
Loading Rate (lb/ac)
Hay/Pasture 4777 411713.27 86.20 3130.15 0.66 804.27 0.17
Cropland 3072 3097208.18 1008.20 16010.92 5.21 2381.72 0.78
Forest 8965 71275.45 8.00 1083.46 0.12 89.86 0.01
Wetland 1809 9744.43 5.40 589.89 0.33 35.54 0.02
Disturbed 321 22972.17 71.60 58.69 0.18 19.38 0.06
Turfgrass 588 17416.52 29.60 730.30 1.24 61.88 0.11
Open Land 4606 512927.50 111.40 4848.32 1.05 366.76 0.08
Bare Rock 0 0.00 0.00 0.00 0.00 0.00 0.00
Sandy Areas 0 0.00 0.00 0.00 0.00 0.00 0.00
Unpaved Roads 0 0.00 0.00 0.00 0.00 0.00 0.00
LD Mixed 1636 25419.30 15.50 621.11 0.38 67.70 0.04
MD Mixed 3304 227296.59 68.80 4693.99 1.42 532.44 0.16
HD Mixed 4455 306508.68 68.80 6330.04 1.42 718.02 0.16
LD Residential 2884 44819.98 15.50 1094.90 0.38 119.34 0.04
MD Residential 13124 902881.15 68.80 18646.10 1.42 2115.00 0.16
HD Residential 1001 68850.36 68.80 1421.89 1.42 161.29 0.16
Water 72.889193
Farm Animals 0.0 0.0
Tile Drainage 0.0 0.0 0.0
Stream Bank 67734424.1 33867.4 9583.5
Groundwater 106433.4 1711.9
Point Sources 0.0 0.0
Septic Systems 23415.7 0.0
Totals 50615 73453458 222976 18769
Print
Export to JPEG
Exit

Appendix E- 8: BMP Effectiveness Table

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
STORMWATER DISCHARGES FROM
SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS
BMP EFFECTIVENESS VALUES

This table of BMP effectiveness values (i.e., pollutant removal efficiencies) is intended for use by MS4s that are developing and implementing Pollutant Reduction Plans and TMDL Plans to comply with NPDES permit requirements. The values used in this table generally consider pollutant reductions from both overland flow and reduced downstream erosion, and are based primarily on average values within the Chesapeake Assessment Scenario Tool (CAST) (www.casttool.org). Design considerations, operation and maintenance, and construction sequences should be as outlined in the Pennsylvania Stormwater BMP Manual, Chesapeake Bay Program guidance, or other technical sources. The Department of Environmental Protection (DEP) will update the information contained in this table as new information becomes available. Interested parties may submit information to DEP for consideration in updating this table to DEP's MS4 resource account, RA-EPPAMS4@pa.gov. Where an MS4 proposes a BMP not identified in this document or in Chesapeake Bay Program expert panel reports, other technical resources may be consulted for BMP effectiveness values. Note – TN = Total Nitrogen and TP = Total Phosphorus.

BMP Name	BMP Effectiveness Values			BMP Description
	TN	TP	Sediment	
Wet Ponds and Wetlands	20%	45%	60%	A water impoundment structure that intercepts stormwater runoff then releases it to an open water system at a specified flow rate. These structures retain a permanent pool and usually have retention times sufficient to allow settlement of some portion of the intercepted sediments and attached nutrients/toxics. Until recently, these practices were designed specifically to meet water quantity, not water quality objectives. There is little or no vegetation living within the pooled area nor are outfalls directed through vegetated areas prior to open water release. Nitrogen reduction is minimal.
Dry Detention Basins and Hydrodynamic Structures	5%	10%	10%	Dry Detention Ponds are depressions or basins created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Hydrodynamic Structures are devices designed to improve quality of stormwater using features such as swirl concentrators, grit chambers, oil barriers, baffles, micropools, and absorbent pads that are designed to remove sediments, nutrients, metals, organic chemicals, or oil and grease from urban runoff.
Dry Extended Detention Basins	20%	20%	60%	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness.

BMP Name	BMP Effectiveness Values			BMP Description
	TN	TP	Sediment	
Infiltration Practices w/ Sand, Veg.	85%	85%	95%	A depression to form an infiltration basin where sediment is trapped and water infiltrates the soil. No underdrains are associated with infiltration basins and trenches, because by definition these systems provide complete infiltration. Design specifications require infiltration basins and trenches to be built in good soil, they are not constructed on poor soils, such as C and D soil types. Engineers are required to test the soil before approval to build is issued. To receive credit over the longer term, jurisdictions must conduct yearly inspections to determine if the basin or trench is still infiltrating runoff.
Filtering Practices	40%	60%	80%	Practices that capture and temporarily store runoff and pass it through a filter bed of either sand or an organic media. There are various sand filter designs, such as above ground, below ground, perimeter, etc. An organic media filter uses another medium besides sand to enhance pollutant removal for many compounds due to the increased cation exchange capacity achieved by increasing the organic matter. These systems require yearly inspection and maintenance to receive pollutant reduction credit.
Filter Strip Runoff Reduction	20%	54%	56%	Urban filter strips are stable areas with vegetated cover on flat or gently sloping land. Runoff entering the filter strip must be in the form of sheet-flow and must enter at a non-erosive rate for the site-specific soil conditions. A 0.4 design ratio of filter strip length to impervious flow length is recommended for runoff reduction urban filter strips.
Filter Strip Stormwater Treatment	0%	0%	22%	Urban filter strips are stable areas with vegetated cover on flat or gently sloping land. Runoff entering the filter strip must be in the form of sheet-flow and must enter at a non-erosive rate for the site-specific soil conditions. A 0.2 design ratio of filter strip length to impervious flow length is recommended for stormwater treatment urban filter strips.
Bioretention – Raingarden (C/D soils w/ underdrain)	25%	45%	55%	An excavated pit backfilled with engineered media, topsoil, mulch, and vegetation. These are planting areas installed in shallow basins in which the storm water runoff is temporarily ponded and then treated by filtering through the bed components, and through biological and biochemical reactions within the soil matrix and around the root zones of the plants. This BMP has an underdrain and is in C or D soil.
Bioretention / Raingarden (A/B soils w/ underdrain)	70%	75%	80%	An excavated pit backfilled with engineered media, topsoil, mulch, and vegetation. These are planting areas installed in shallow basins in which the storm water runoff is temporarily ponded and then treated by filtering through the bed components, and through biological and biochemical reactions within the soil matrix and around the root zones of the plants. This BMP has an underdrain and is in A or B soil.

BMP Name	BMP Effectiveness Values			BMP Description
	TN	TP	Sediment	
Bioretention / Raingarden (A/B soils w/o underdrain)	80%	85%	90%	An excavated pit backfilled with engineered media, topsoil, mulch, and vegetation. These are planting areas installed in shallow basins in which the storm water runoff is temporarily ponded and then treated by filtering through the bed components, and through biological and biochemical reactions within the soil matrix and around the root zones of the plants. This BMP has no underdrain and is in A or B soil.
Vegetated Open Channels (C/D Soils)	10%	10%	50%	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix, and/or is infiltrated into the underlying soils. This BMP has no underdrain and is in C or D soil.
Vegetated Open Channels (A/B Soils)	45%	45%	70%	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix, and/or is infiltrated into the underlying soils. This BMP has no underdrain and is in A or B soil.
Bioswale	70%	75%	80%	With a bioswale, the load is reduced because, unlike other open channel designs, there is now treatment through the soil. A bioswale is designed to function as a bioretention area.
Permeable Pavement w/o Sand or Veg. (C/D Soils w/ underdrain)	10%	20%	55%	Pavement or pavers that reduce runoff volume and treat water quality through both infiltration and filtration mechanisms. Water filters through open voids in the pavement surface to a washed gravel subsurface storage reservoir, where it is then slowly infiltrated into the underlying soils or exits via an underdrain. This BMP has an underdrain, no sand or vegetation and is in C or D soil.
Permeable Pavement w/o Sand or Veg. (A/B Soils w/ underdrain)	45%	50%	70%	Pavement or pavers that reduce runoff volume and treat water quality through both infiltration and filtration mechanisms. Water filters through open voids in the pavement surface to a washed gravel subsurface storage reservoir, where it is then slowly infiltrated into the underlying soils or exits via an underdrain. This BMP has an underdrain, no sand or vegetation and is in A or B soil.
Permeable Pavement w/o Sand or Veg. (A/B Soils w/o underdrain)	75%	80%	85%	Pavement or pavers that reduce runoff volume and treat water quality through both infiltration and filtration mechanisms. Water filters through open voids in the pavement surface to a washed gravel subsurface storage reservoir, where it is then slowly infiltrated into the underlying soils or exits via an underdrain. This BMP has no underdrain, no sand or vegetation and is in A or B soil.
Permeable Pavement w/ Sand or Veg. (A/B Soils w/ underdrain)	50%	50%	70%	Pavement or pavers that reduce runoff volume and treat water quality through both infiltration and filtration mechanisms. Water filters through open voids in the pavement surface to a washed gravel subsurface storage reservoir, where it is then slowly infiltrated into the underlying soils or exits via an underdrain. This BMP has an underdrain, has sand and/or vegetation and is in A or B soil.

BMP Name	BMP Effectiveness Values			BMP Description
	TN	TP	Sediment	
Permeable Pavement w/ Sand or Veg. (A/B Soils w/o underdrain)	80%	80%	85%	Pavement or pavers that reduce runoff volume and treat water quality through both infiltration and filtration mechanisms. Water filters through open voids in the pavement surface to a washed gravel subsurface storage reservoir, where it is then slowly infiltrated into the underlying soils or exits via an underdrain. This BMP has no underdrain, has sand and/or vegetation and is in A or B soil.
Permeable Pavement w/ Sand or Veg. (C/D Soils w/ underdrain)	20%	20%	55%	Pavement or pavers that reduce runoff volume and treat water quality through both infiltration and filtration mechanisms. Water filters through open voids in the pavement surface to a washed gravel subsurface storage reservoir, where it is then slowly infiltrated into the underlying soils or exits via an underdrain. This BMP has an underdrain, has sand and/or vegetation and is in C or D soil.
Stream Restoration	0.075 lbs/ft/yr	0.068 lbs/ft/yr	44.88 lbs/ft/yr	An annual mass nutrient and sediment reduction credit for qualifying stream restoration practices that prevent channel or bank erosion that otherwise would be delivered downstream from an actively enlarging or incising urban stream. Applies to 0 to 3rd order streams that are not tidally influenced. If one of the protocols is cited and pounds are reported, then the mass reduction is received for the protocol.
Forest Buffers	25%	50%	50%	An area of trees at least 35 feet wide on one side of a stream, usually accompanied by trees, shrubs and other vegetation that is adjacent to a body of water. The riparian area is managed to maintain the integrity of stream channels and shorelines, to reduce the impacts of upland sources of pollution by trapping, filtering, and converting sediments, nutrients, and other chemicals. (Note – the values represent pollutant load reductions from stormwater draining through buffers).
Tree Planting	10%	15%	20%	The BMP effectiveness values for tree planting are estimated by DEP. DEP estimates that 100 fully mature trees of mixed species (both deciduous and non-deciduous) provide pollutant load reductions for the equivalent of one acre (i.e., one mature tree = 0.01 acre). The BMP effectiveness values given are based on immature trees (seedlings or saplings); the effectiveness values are expected to increase as the trees mature. To determine the amount of pollutant load reduction that can credited for tree planting efforts: 1) multiply the number of trees planted by 0.01; 2) multiply the acreage determined in step 1 by the pollutant loading rate for the land prior to planting the trees (in lbs/acre/year); and 3) multiply the result of step 2 by the BMP effectiveness values given.
Street Sweeping	3%	3%	9%	Street sweeping must be conducted 25 times annually. Only count those streets that have been swept at least 25 times in a year. The acres associated with all streets that have been swept at least 25 times in a year would be eligible for pollutant reductions consistent with the given BMP effectiveness values.

BMP Name	BMP Effectiveness Values			BMP Description
	TN	TP	Sediment	
Storm Sewer System Solids Removal	0.0027 for sediment, 0.0111 for organic matter	0.0006 for sediment, 0.0012 for organic matter	1 – TN and TP concentrations	This BMP (also referred to as "Storm Drain Cleaning") involves the collection or capture and proper disposal of solid material within the storm system to prevent discharge to surface waters. Examples include catch basins, stormwater inlet filter bags, end of pipe or outlet solids removal systems and related practices. Credit is authorized for this BMP only when proper maintenance practices are observed (i.e., inspection and removal of solids as recommended by the system manufacturer or other available guidelines). The entity using this BMP for pollutant removal credits must demonstrate that they have developed and are implementing a standard operating procedure for tracking the material removed from the sewer system. Locating such BMPs should consider the potential for backups onto roadways or other areas that can produce safety hazards. To determine pollutant reductions for this BMP, these steps must be taken: 1) Measure the weight of solid/organic material collected (lbs). Sum the total weight of material collected for an annual period. Note – do not include refuse, debris and floatables in the determination of total mass collected. 2) Convert the annual wet weight captured into annual dry weight (lbs) by using site-specific measurements (i.e., dry a sample of the wet material to find its weight) or by using default factors of 0.7 (material that is predominantly wet sediment) or 0.2 (material that is predominantly wet organic matter, e.g., leaf litter). 3) Multiply the annual dry weight of material collected by default or site-specific pollutant concentration factors. The default concentrations are shown in the BMP Effectiveness Values columns. Alternatively, the material may be sampled (at least annually) to determine site-specific pollutant concentrations. DEP will allow up to 50% of total pollutant reduction requirements to be met through this BMP. The drainage area treated by this BMP may be no greater than 0.5 acre unless it can be demonstrated that the specific system proposed is capable of treating stormwater from larger drainage areas. For planning purposes, the sediment removal efficiency specified by the manufacturer may be assumed, but no higher than 80%.