

## POLLUTANT REDUCTION PLAN (PRP) / TMDL PLAN FINAL REPORT

*Before completing this report please review the instructions, which are located within the Annual MS4 Status Report Instructions (3800-FM-BCW0491)*

### PRP / TMDL PLAN SUMMARY

Permittee Name: Lancaster City MS4 Permit No.: PAG133577

PRP    TMDL Plan    Combined PRP / TMDL Plan

Plan Approval Date: 7/26/2018 Required Completion Date: 7/31/2023

Joint Plan?    Yes    No   *If Yes, identify all participating permittees as an attachment to this report*

Surface Waters Addressed by Plan: Lower Conestoga River, Little Conestoga Creek

Permittee's Planning Area (acres): 2,271 Total Planning Area (Joint Plans): \_\_\_\_\_ acres

Pollutant Load Reduction Calculation Methodology:

Simplified Method    Mapshed    ModelMyWatershed    Other: WinSLAMM

	TSS	TN	TP
Baseline Pollutant Load – Planning Area	1,401,510 lbs/yr	n/a lbs/yr	n/a lbs/yr
Pollutant Load Reduction Requirement (%)	<b>10</b> %	n/a %	n/a %
Pollutant Load Reduction Requirement (lbs/yr)	<b>140,151</b> lbs/yr	n/a lbs/yr	n/a lbs/yr
WLA Reduction Requirement ( <i>TMDL Plan only</i> )	lbs/yr	lbs/yr	lbs/yr

### BMP IMPLEMENTATION

BMP Type	No. of BMPs	Pollutant Load Reductions Achieved (Credit)		
		TSS	TN	TP
Structural BMPs	4	<b>82,335</b> lbs/yr	n/a lbs/yr	n/a lbs/yr
Non-Structural BMPs	1	<b>59,038</b> lbs/yr	n/a lbs/yr	n/a lbs/yr
<b>Total</b>	<b>5</b>	<b>141,373</b> lbs/yr	n/a lbs/yr	n/a lbs/yr

**Pollutant Load Reductions are documented on the following attachments:**

- Attachment A – Infiltration BMPs   No.: 3
- Attachment B – BMP Retrofits   No.: \_\_\_\_\_
- Attachment C – Stream and/or Floodplain Restoration   No.: \_\_\_\_\_
- Attachment D – Street Sweeping or Storm Drain Solids Removal   No.: 1
- Attachment E – Tree Planting   No.: \_\_\_\_\_
- Attachment F – Non-structural (Annual Practice) BMPs   No.: \_\_\_\_\_
- BMP(s) have been implemented for which there are no attachments (*attach calculations*)

**COMPLIANCE DETERMINATION**

Were the pollutant load reduction requirements of the permit met?  Yes  No

If the pollutant load reduction requirements of the permit were **not met**, report the required load reductions remaining in lbs/yr and as a percentage of the total required load reduction.

	TSS	TN	TP
Load Reduction Remaining	lbs/yr	lbs/yr	lbs/yr
Percent of Required Load Reduction Remaining	%	%	%

***If the pollutant load reduction requirements of the permit were not met, attach an explanation and provide a schedule for completing implementation of the PRP or TMDL Plan, including interim milestones.***

**CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

CINDY McCORMICK

Responsible Official Name

DEPUTY DIRECTOR OF PUBLIC WORKS

Official Title

Cindy McCormick

Signature

10/13/2023

Date Signed

## ATTACHMENT A – INFILTRATION BMPs

### GENERAL INFORMATION

Permittee Name: Lancaster City MS4 Permit No.: PAG133577  
 BMP Name: Shelley Rd. Rain Garden (1 of 3) Latitude: 40.035  
 Surface Waters: Lower Conestoga River Longitude: -76.264  
 Municipality: City of Lancaster County: Lancaster  
 Construction of the BMP is Complete. Date Construction Completed: 2018  
 Photographs, Drawings, and O&M Plan are attached. Inspection/Monitoring Frequency: see attached O&M Plan

#### GP-4 (GP043617117)

Permits or Approvals Obtained: **Coverage under PASPGP-05**

Party Responsible for Long-Term O&M:  Permittee  Other: \_\_\_\_\_  
 Joint BMP?  Yes  No *If Yes, attach a list of other permittees sharing credit for the BMP*  
 Type of BMP (see instructions): Bioretention – Raingarden (C/D soils without underdrain)  
 BMP Effectiveness Values: TSS: 55 % TN: 25 % TP: 45 %  
 Effectiveness Values Source:  DEP  CB Expert Panel Report  Other: \_\_\_\_\_

### BMP CONSTRUCTION

BMP Infiltrating Surface Area (ft<sup>2</sup>): 930 Ponding Depth (ft): 1.7  Underdrain  
 Media Description: 24" soil layer, 6" clean course sand, 6" AASHTO 57 clean-washed Media Depth (ft): 2  
 Vegetated Loading Ratio (see instructions): 37 WQ Storage Volume (ft<sup>3</sup>): 1,488

### TSS LOAD DELIVERED TO BMP

Total Drainage Area Treated by BMP: 2.70 acres (Treatment Area)

#### TSS Load Delivered to BMP – Simplified Method

Calculations attached

Pollutant	Land Cover	Area (acres)	Loading Rate (lbs/ac/yr)	Delivered Load (lbs/yr)
TSS	Impervious			
	Pervious			
Total TSS Load Delivered to BMP (lbs/yr) =				

#### TSS Load Delivered to BMP – Land Cover-Based Calculation Method

Calculations attached

Pollutant	Land Cover	Area (acres)	Loading Rate (lbs/ac/yr)	Delivered Load (lbs/yr)
TSS	<b>1/4 Acre Residential, 29% Imp.</b>	<b>2.70</b>	<b>11,699</b>	<b>31,625</b>
Total TSS Load Delivered to BMP (lbs/yr) =				

### TSS LOAD REDUCTION CREDIT

TSS Load Delivered to BMP (**31,625** lbs/yr) x TSS Effectiveness Value (**55%**) = **17,394** lbs/yr TSS Credit

Permittee Credit for Joint BMPs (if applicable): \_\_\_\_\_ % or \_\_\_\_\_ lbs/yr TSS Credit

## ATTACHMENT A – INFILTRATION BMPs

GENERAL INFORMATION			
Permittee Name:	Lancaster City MS4	Permit No.:	PAG133577
BMP Name:	Shelley Road Porous Pavers (2 of 3)	Latitude:	40.035
Surface Waters:	Lower Conestoga River	Longitude:	-76.264
Municipality:	City of Lancaster	County:	Lancaster
<input checked="" type="checkbox"/> Construction of the BMP is Complete.	Date Construction Completed:	2018	
<input checked="" type="checkbox"/> Photographs, Drawings, and O&M Plan are attached.	Inspection/Monitoring Frequency:	see attached O&M Plan	
Permits or Approvals Obtained: <b>GP-4 (GP043617117) Coverage under PASPGP-05</b>			
Party Responsible for Long-Term O&M: <input checked="" type="checkbox"/> Permittee <input type="checkbox"/> Other: _____			
Joint BMP? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If Yes, attach a list of other permittees sharing credit for the BMP</i>			
Type of BMP (see instructions): Permeable Pavement (C/D soils with underdrain)(capped underdrain)			
BMP Effectiveness Values: TSS: <u>55</u> % TN: <u>20</u> % TP: <u>20</u> %			
Effectiveness Values Source: <input checked="" type="checkbox"/> DEP <input type="checkbox"/> CB Expert Panel Report <input type="checkbox"/> Other: _____			

BMP CONSTRUCTION			
BMP Infiltrating Surface Area (ft <sup>2</sup> ):	1,530	Ponding Depth (ft):	5 <input checked="" type="checkbox"/> Underdrain
Media Description:	AASHTO 57 clean-washed	Media Depth (ft):	5
<input type="checkbox"/> Vegetated	Loading Ratio ( <i>see instructions</i> ):	46	WQ Storage Volume (ft <sup>3</sup> ): 3,060

### TSS LOAD DELIVERED TO BMP

Total Drainage Area Treated by BMP: 5.6 acres (Treatment Area)

**TSS Load Delivered to BMP – Simplified Method**  Calculations attached

Pollutant	Land Cover	Area (acres)	Loading Rate (lbs/ac/yr)	Delivered Load (lbs/yr)
TSS	Impervious			
	Pervious			
Total TSS Load Delivered to BMP (lbs/yr) =				

**TSS Load Delivered to BMP – Land Cover-Based Calculation Method**  Calculations attached

Pollutant	Land Cover	Area (acres)	Loading Rate (lbs/ac/yr)	Delivered Load (lbs/yr)
TSS	<b>1/4 Acre Residential, 29% Imp.</b>	<b>5.6</b>	<b>11,699</b>	<b>65,504</b>
Total TSS Load Delivered to BMP (lbs/yr) =				

### TSS LOAD REDUCTION CREDIT

TSS Load Delivered to BMP (**65,504** lbs/yr) x TSS Effectiveness Value (**55%**) = 36,027 lbs/yr TSS Credit  
 Permittee Credit for Joint BMPs (if applicable): \_\_\_\_\_ % or \_\_\_\_\_ lbs/yr TSS Credit

## ATTACHMENT A – INFILTRATION BMPs

### GENERAL INFORMATION

Permittee Name: Lancaster City MS4 Permit No.: PAG133577  
 BMP Name: Shelley Road Regenerative Stormwater (Step-Pool) Conveyance System (3 of 3) Latitude: 40.035  
 Surface Waters: Lower Conestoga River Longitude: -76.264  
 Municipality: City of Lancaster County: Lancaster  
 Construction of the BMP is Complete. Date Construction Completed: 2018  
 Photographs, Drawings, and O&M Plan are attached. Inspection/Monitoring Frequency: see attached O&M Plan  
 Permits or Approvals Obtained: GP-4 (GP043617117) Coverage under PASPGP-05  
 Party Responsible for Long-Term O&M:  Permittee  Other: \_\_\_\_\_  
 Joint BMP?  Yes  No *If Yes, attach a list of other permittees sharing credit for the BMP*  
 Type of BMP (see instructions): Regenerative Stormwater Conveyance (RSC)/Vegetated Open Channel  
 BMP Effectiveness Values: TSS: 50 % TN: 10 % TP: 45 %  
 Effectiveness Values Source:  DEP  CB Expert Panel Report  Other: \_\_\_\_\_

### BMP CONSTRUCTION

BMP Infiltrating Surface Area (ft<sup>2</sup>): 1,035 Ponding Depth (ft): 2  Underdrain  
 Media Description: 2' depth sand in pools & riffle stone/sand & woodchips at transitions Media Depth (ft): 2  
 Vegetated Loading Ratio (*see instructions*): 35 WQ Storage Volume (ft<sup>3</sup>): 744

### TSS LOAD DELIVERED TO BMP

Total Drainage Area Treated by BMP: 2.9 acres (Treatment Area)  
**TSS Load Delivered to BMP – Simplified Method**  Calculations attached

Pollutant	Land Cover	Area (acres)	Loading Rate (lbs/ac/yr)	Delivered Load (lbs/yr)
TSS	Impervious			
	Pervious			
Total TSS Load Delivered to BMP (lbs/yr) =				

**TSS Load Delivered to BMP – Land Cover-Based Calculation Method**  Calculations attached

Pollutant	Land Cover	Area (acres)	Loading Rate (lbs/ac/yr)	Delivered Load (lbs/yr)
TSS	<b>1/4 Acre Residential, 29% Imp.</b>	<b>2.87</b>	<b>11,699</b>	<b>33,554</b>
Total TSS Load Delivered to BMP (lbs/yr) =				

### TSS LOAD REDUCTION CREDIT

TSS Load Delivered to BMP (**33,554** lbs/yr) x TSS Effectiveness Value (**50%**) = 16,777 lbs/yr TSS Credit  
 Permittee Credit for Joint BMPs (if applicable): \_\_\_\_\_ % or \_\_\_\_\_ lbs/yr TSS Credit

**ATTACHMENT X – OTHER STRUCTURAL BMPs**

**GENERAL INFORMATION**

Permittee Name: Lancaster City MS4 Permit No.: PAG133577  
 BMP Name: Long's Park Pond Treatment Wetland Latitude: 40.065  
 Surface Waters: Little Conestoga Creek Longitude: -76.333  
 Municipality: City of Lancaster County: Lancaster

Construction of the BMP is Complete. Date Construction Completed: July 23  
 Photographs, Drawings, and O&M Plan are attached. Inspection/Monitoring Frequency: see attached O&M Plan

Permits or Approvals Obtained: NPDES Permit #PAC360774

Party Responsible for Long-Term O&M:  Permittee  Other: \_\_\_\_\_

Joint BMP?  Yes  No *If Yes, attach a list of other permittees sharing credit for the BMP*

Type of BMP (see instructions): Wetland

BMP Effectiveness Values: TSS: 60 % TN: 20 % TP: 45 %

Effectiveness Values Source:  DEP  CB Expert Panel Report  Other: \_\_\_\_\_

**BMP CONSTRUCTION**

BMP Surface Area (ft<sup>2</sup>): 26,136 Ponding Depth (ft): 2.6  Underdrain

Media Description: 3 ft. iron enhanced sand media in IESF Media Depth (ft): 3

Vegetated Loading Ratio (see instructions): 37 WQ Storage Volume (ft<sup>3</sup>): 38,930

**TSS LOAD DELIVERED TO BMP**

Total Drainage Area Treated by BMP: 38.8 acres (Treatment Area)

**TSS Load Delivered to BMP – Simplified Method**  Calculations attached

Pollutant	Land Cover	Area (acres)	Loading Rate (lbs/ac/yr)	Delivered Load (lbs/yr)
TSS	Impervious			
	Pervious			
Total TSS Load Delivered to BMP (lbs/yr) =				

**TSS Load Delivered to BMP – Land Cover-Based Calculation Method**  Calculations attached

Pollutant	Land Cover	Area (acres)	Loading Rate (lbs/ac/yr)	Delivered Load (lbs/yr)
TSS	<b>Other Urban; 24% Imp. (Park Land, Streets, Sidewalks, Parking, Roofs, Water Bodies)</b>	<b>38.8</b>	<b>522</b>	<b>20,228</b>
Total TSS Load Delivered to BMP (lbs/yr) =				

**TSS LOAD REDUCTION CREDIT**

TSS Load Delivered to BMP (**20,228** lbs/yr) x TSS Effectiveness Value (**60%**) = 12,137 lbs/yr TSS Credit

Permittee Credit for Joint BMPs (if applicable): \_\_\_\_\_ % or \_\_\_\_\_ lbs/yr TSS Credit



1: BMP effectiveness value for TSS is based on the estimated particulate solids reductions modeled using the street cleaning control practices for street land uses in WinSLAMM.

\* See Annual MS4 Status Report Instructions (3800-FM-BCW0491) for required attachments.