Town of Sherborn – MS4 Work and PCP Update

September 2023

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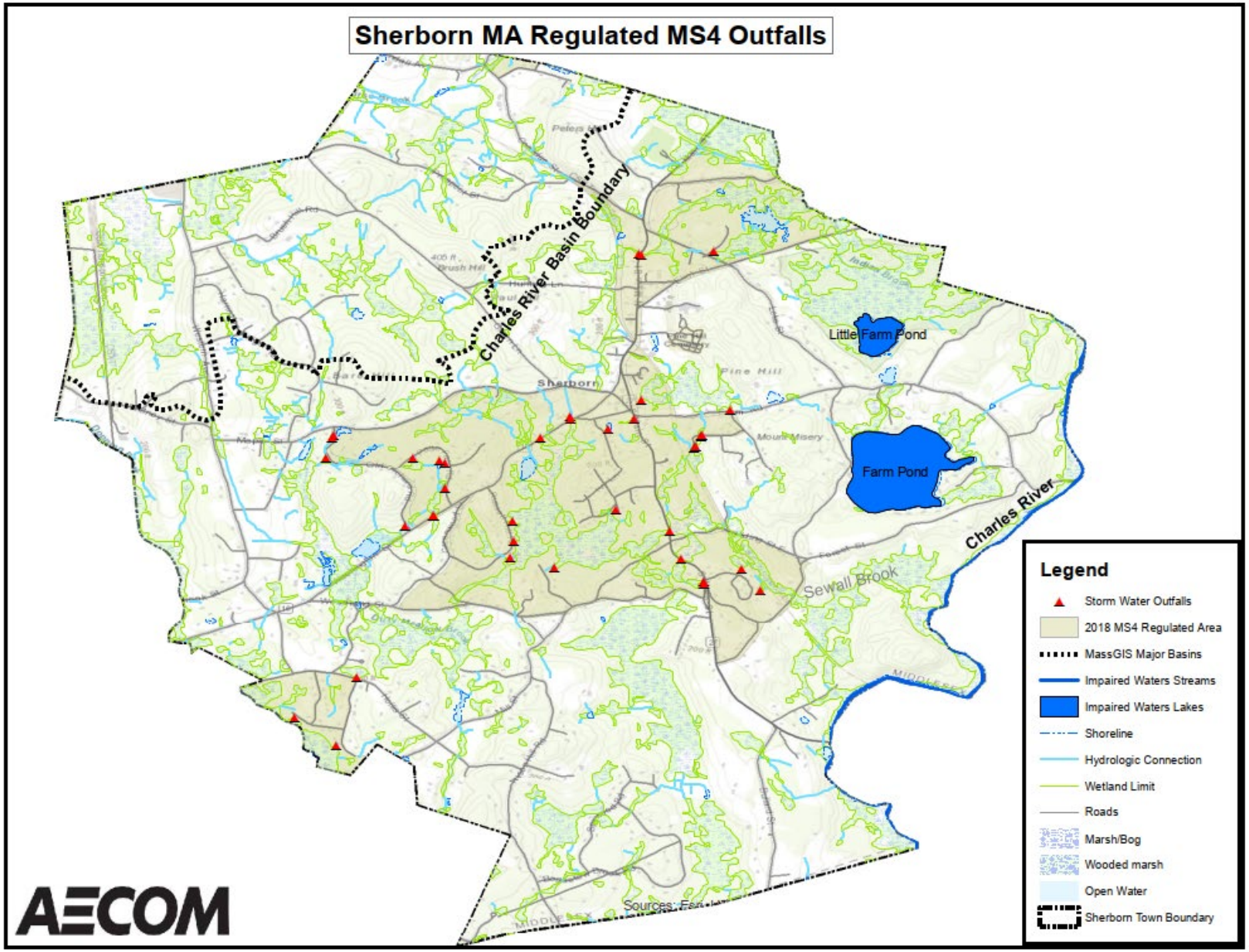
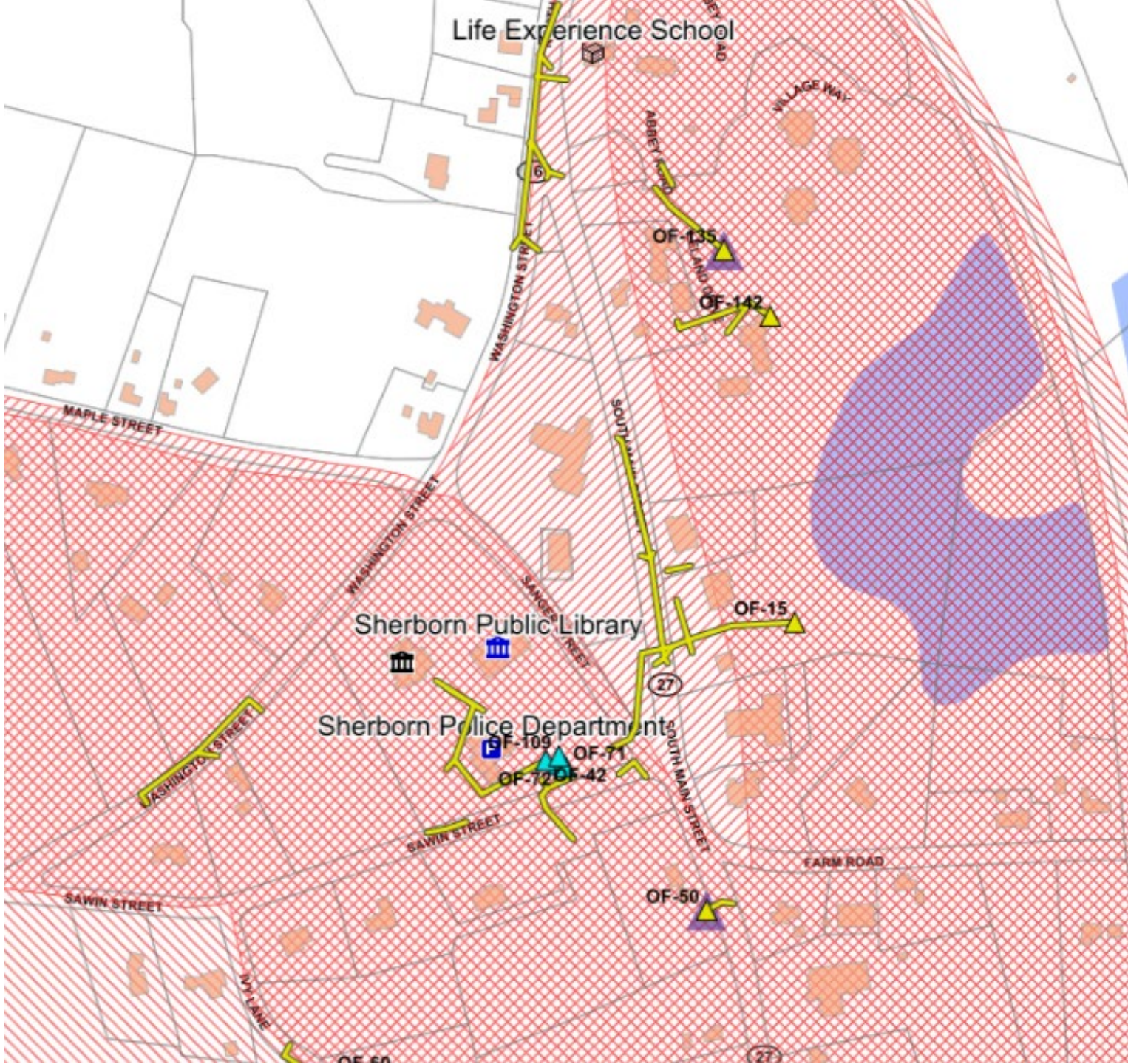
Overview of the MS4 Program and Permit Requirements

- MS4 Permit began July 1, 2018
- Currently in Year 6 which began July 1, 2023
- Updated permit coming (planned for this fall)



Annual Report

- On-going MS4 work (Summarized in Annual Report)
  - Phosphorous Control Plan (PCP)
  - Outfall Ranking/Receiving Waters Update
  - Catchment Investigations/Structure Mapping
  - IDDE Training
  - Support of Stormwater Projects



Phosphorous Control Plan

PCP – Individual Tasks

1. Overview of all PCP Phase 1 milestones
2. Watershed and Community Characterization
3. PCP Load Reduction Targets
4. Legal Analysis
5. Funding Source Assessment

PCP – Individual Tasks

6. Non-Structural Controls

- Previously submitted with assumptions of the impervious cover within the watershed.
- Was updated with actual GIS measured IC, and IC collected by CB
- Includes enhanced sweeping schedule to start in Permit Year 6.

Non-Structural BMP	Regulated MS4 Area Phosphorous Load Reduction (lb/yr)	Community Wide Area Phosphorous Load Reduction (lb/yr)
Street sweeping	2.74	5.40
Catch Basin Cleaning	1.58	3.11
Leaf Litter Control and Collection	6.08	12.01
Total P-Reduction	**10.40**	**20.52**

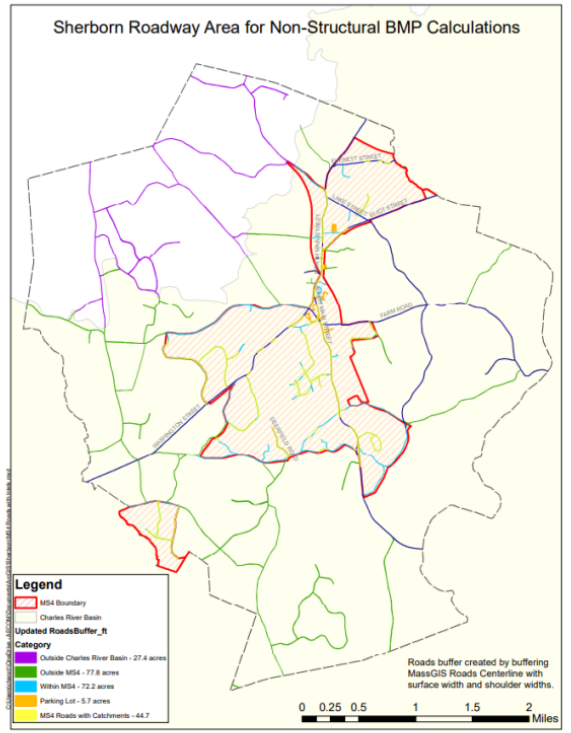


Figure 2 – Roadways and Parking lot areas owned by the Town of Sherborn that were used to calculate the Non-Structural BMP credits

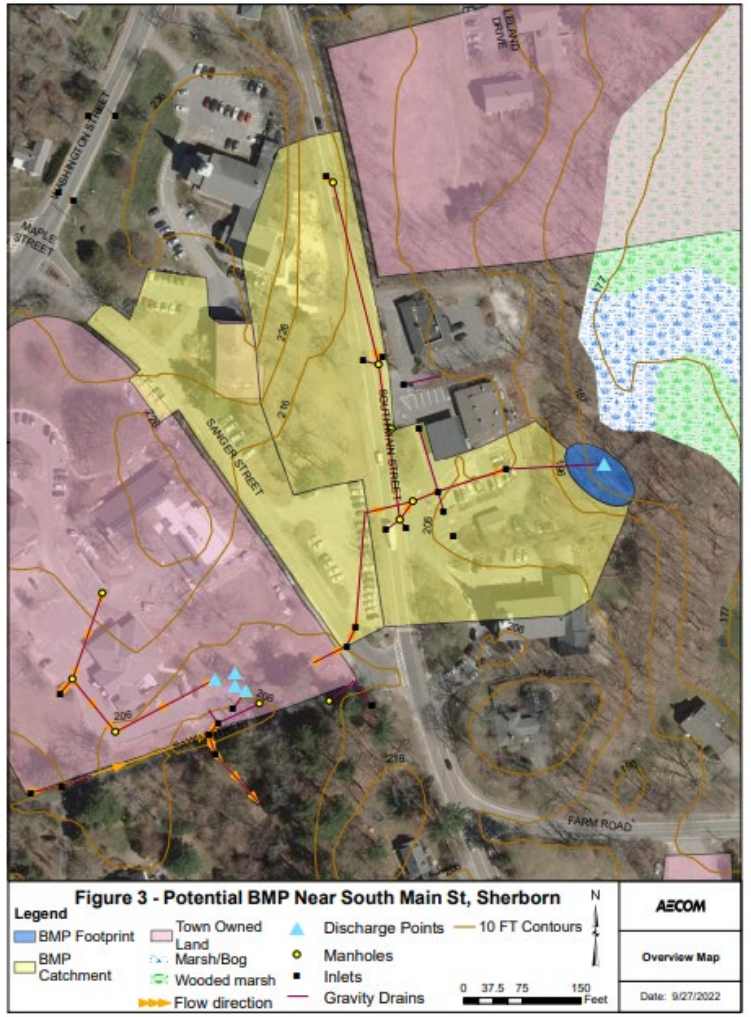
PCP – Individual Tasks

7. Structural Controls (2 existing and 5 proposed)
    - Desktop review identified potential retrofitting locations.
    - Narrowed down to 5 proposed locations with field reconnaissance.
    - Used Opti- Tool to compute P-loads, P-reductions and cost information.

BMP Location	BMP Type	Storage Capacity (gal)	Initial P Load from catchment (lbs/yr)	P Load reduction (%)	P Load removed (lbs/year)
Leland Road	Infiltration Basin	55,123	3.69	92.4%	3.41
Parks Drive	Infiltration Basin	13,306	0.75	95.0%	0.71
Pilgrim Church	Wet Pond	76,304	5.16	49.7%	2.56
Deerfield Road	Wet Pond	39,645	2.69	45.2%	1.21
Ivy Lane	Wet Pond	36,658	2.32	47.0%	1.09
Total		**221,036**	**14.95**	**-**	**9.31**


ABBEY ROAD
VILLAGE WAY
LELAND DRIVE
SCHUMANN STREET
215
206
197
177
Figure 1 - Potential BMP Near Leland Drive, Sherborn
Legend
BMP Footprint
BMP Catchment
Town Owned Land
Marsh/Bog
Wooded marsh
Flow direction
Manholes
Inlets
10 FT Contours
Gravity Drains
0 30 60 120 Feet
N
AECOM
Overview Map
Date: 9/27/2022


PARKS DRIVE
147
Figure 2 -Potential BMP Near Parks Drive, Sherborn
Legend
BMP Footprint
BMP Catchment
Town Owned Land
Marsh/Bog
Flow direction
Discharge Points
Manholes
Inlets
Gravity Drains
10 FT Contours
0 25 50 100 Feet
N
AECOM
Overview Map
Date: 9/27/2022


WASHINGTON STREET
MAPLE STREET
LELAND DRIVE
SANGER STREET
SCHUMANN STREET
FARM ROAD
206
216
Figure 3 - Potential BMP Near South Main St, Sherborn
Legend
BMP Footprint
BMP Catchment
Town Owned Land
Marsh/Bog
Wooded marsh
Flow direction
Discharge Points
Manholes
Inlets
Gravity Drains
10 FT Contours
0 37.5 75 150 Feet
N
AECOM
Overview Map
Date: 9/27/2022


DEERFIELD ROAD
WOODLAND STREET
Figure 4 - Potential BMP Near Deerfield Rd, Sherborn
Legend
BMP Footprint
BMP Catchment
Flow direction
Town Owned Land
Wooded marsh
10 FT Contours
Discharge Points
Manholes
Inlets
Gravity Drains
0 50 100 200 Feet
N
AECOM
Overview Map
Date: 9/27/2022


IVY LANE
Figure 5 - Potential BMP Near Ivy Lane, Sherborn
Legend
BMP Footprint
BMP Catchment
Town Owned Land
10 FT Contours
Wooded marsh
Open Water
Flow direction
Discharge Points
Manholes
Inlets
Gravity Drains
0 30 60 120 Feet
N
AECOM
Overview Map
Date: 9/27/2022

PCP – Individual Tasks

7. Structural Controls (2 existing and 5 proposed)
    - Computed P-loads, P-reductions for the 2 existing BMPs

BMP Location	BMP Type	Storage Capacity (gal)	Initial P Load (lbs/yr)	Total P Load reduction (%)	P Load removed (lbs/year)
DPW	Infiltration Basin	63,269	4.30	50.6%	2.18
Police Station	Infiltration Basin	31,771	2.38	53.3%	1.27
Total		**95,040**	**6.68**	-	**3.45**


MAPLE STREET
WASHINGTON STREET
SOUTH MAIN STREET
SANDER STREET
Figure 2 - Existing BMP at Sherborn Police Department
Legend
BMP Catchment
Town Owned Land
Existing BMP
Manholes
Inlets
Flow Direction
Discharge Points
10 FT Contours
Gravity Drains
0 30 60 120 Feet
N
AECOM
Overview Map
Date: 9/27/2022


BUTLER STREET
Figure 1 - Existing BMP at Sherborn DPW
Legend
Existing BMP
BMP Catchment
Flow direction
Town Owned Land
Wooded marsh
10 FT Contours
Discharge Points
Manholes
Inlets
Gravity Drains
0 30 60 120 Feet
N
AECOM
Overview Map
Date: 9/27/2022

PCP – Individual Tasks

8. Description of Operation and Maintenance:

Sherborn's O&M are adequate to cover the new proposed BMPs

9. Phase 1 Implementation Schedule

Condition	From Permit[1]
Baseline P-Load, lbs/yr	*447*
Allowable P-Load, lbs/yr	*333*
Stormwater P-Load Reduction Requirement, lbs/yr[3]	*115*
Year 8 Milestone: 20% of Reduction, in lbs/yr	*23*
Year 10 Milestone: 25% of Reduction, in lbs/yr	*28.75*

PCP – Individual Tasks

10. Estimated Cost for implementing Phase 1 of the PCP and funding source:
    - Year 6 – 10 cost for implementation of non-structural BMPs
        - Sweeping: $15,000
        - Catch-basin Cleaning: $20,000
        - Leaf Litter: $15,000
    - Year 6 – 10 cost for implementation of structural BMPs

BMP Location	BMP Type	OptiTool Opinion of BMP Cost ($) 2016	Estimated Cost Range
Leland Road	Infiltration Basin	91,964	180,000 - 230,000
Deerfield Road	Wet Pond	72,077	145,000 - 185,000
Parks Drive	Infiltration Basin	22,198	40.000 - 60,000
Ivy Lane	Wet Pond	66,647	125,000 - 175,000
Pilgrim Church	Wet Pond	138,724	295,000 - 335,000
Total		**391,610**	**490,000 - 985,000**

Next Steps and Final Thoughts:

- Submitting the PCP report with the five (5) proposed BMPs.
- Within the PCP discuss that P-loads accounting tools are limiting and note the challenges in meeting the P-load removals as required by the permit.
- Possibility that EPA might amend OptiTool to give credit for treating pervious areas and/or give higher credits to non-structural BMPs.
- Option of developing our own worksheets to recalculate with reductions for pervious areas.

Questions