### New Hampshire Small MS4 Phosphorus Source Identification Report

Appendix H - Part II 1.b

**Derry, New Hampshire** 

Prepared by:
Town of Derry
Department of Public Works
14 Manning Street
Derry, NH 03038

June 2022

Template Prepared By: Seacoast Stormwater Coalition & Manchester/Nashua Stormwater Coalition The purpose of this document is to meet the requirement in Appendix H section II.1.b.i to create a Phosphorus Source Identification Report for areas which discharge to surface waters identified as being impaired for phosphorus or its tributaries. In the Town of Derry, Big Island Pond is considered impaired for phosphorus. However, this analysis is a Town-wide evaluation and is not limited to the Big Island Pond Watershed. Though Derry does include both the raw municipally and privately owned parcel data in Attachment A of this report, the information presented in this report focuses on municipally owned parcels rather than privately owned. The reason for this focus was to complete this Year 4 requirement but to also start to prepare for the Year 5 requirement in section II.1.c.i to evaluate all permittee-owned properties for BMP retrofit opportunities.

Given that this is the raw data only, the preliminary review calculations and scoring do not consider whether properties are already retrofitted with best management practices (BMPs) or have discontinuous impervious surfaces. These features are taken into account for final consideration of the need for and feasibility of retrofits.

1. Calculation of total MS4 area draining to the water quality limited receiving water segments or their tributaries, incorporating updated mapping of the MS4 and catchment delineations produced pursuant to Part 2.3.4.6.

The Town of Derry has calculated raw data for municipal-owned and privately-owned parcels, based on impervious cover, for the entirety of the regulated NH MS4 area. A spreadsheet containing all of the Derry's raw data can be found in Attachment A.

The total MS4 area within Derry is: 14,060 acres

The Town of Derry is using raw data that was prepared by a collaborative effort between the UNH Stormwater Center, GRANITE, and NH Department of Environmental Services. Information contained in the raw data has been sorted to identify non-conservation parcels owned by the Town in descending order by acreage of impervious cover, which indicates the priority rank for BMP implementation of municipally owned properties. A focus on municipally-owned properties is a priority for the Town in order to prepare for the Year 5 requirement which states, "Within five years of the permit effective date, the permittee shall evaluated all permittee-owned properties identified as presenting retrofit opportunities or areas for structural BMPs installation..." Reports using the raw data, and of which have the highest total phosphorus loads, have been prepared to identify the ranking and optimal number of parcels to be treated by BMPs. The top ranked municipally owned parcels are represented as the "knee" and can be found in Attachment C. During Year 5 the Town will complete a similar report for all privately-owned parcels located within the NH MS4 regulated area.

2. Screening and monitoring results pursuant to Part 2.3.4.7.d., targeting the receiving water segment(s).

Dry weather screening of outfalls did not identify dry weather discharges requiring sampling within watersheds impaired for phosphorus. Wet weather screening is commencing, the results of which will be used to identify hotspots and be considered in the final determination for the need for additional stormwater treatment.

Surface water sampling periodically conducted at and around Hood Pond, which has a TMDL, is included in the Attachment B. Phosphorus levels in Hood Pond ranged from below the TMDL of 12 ug/l to 18 ug/l tributaries ranging generally ranged from nondetect to 23 ug/l. One sample from a groundwater seep from an adjacent wooded area was 49 ug/l. Further investigation attributes the phosphorus in the seep from accumulated dead vegetation, possible yard waste and goose nesting area. Evaluation is ongoing.

3. Impervious area and DCIA for the target catchment

For the purpose of this report, the Town of Derry does not distinguish between discontinuous impervious area and directly connected impervious area (DCIA). The Town initially determined priority parcels based on total impervious cover (IC) areas for consideration of disconnection and treatment using structural BMP implementation. Subsequent evaluation is being conducted to differentiate areas which already have BMPs in place.

The total impervious cover (IC) area within the Town of Derry is: 1952 acres

4. Identification, delineation and prioritization of potential catchments with high phosphorus loading

A spreadsheet identifying and prioritizing the top municipally-owned potential parcels with high phosphorus loading can be found in Attachment B of this report.

The Town is using raw data that was prepared by a collaborative effort between the UNH Stormwater Center, GRANITE, and NH Department of Environmental Services. Information contained in the raw data has been sorted to identify non-conservation parcels owned by the Town in descending order by acreage of impervious cover, which indicates the priority rank for BMP implementation of municipally-owned properties. A focus on municipally-owned properties is a priority for the Town in order to prepare for the Year 5 requirement which states, "Within five years of the permit effective date, the

permittee shall evaluated all permittee-owned properties identified as presenting retrofit opportunities or areas for structural BMPs installation..." Reports using the raw data, and of which have the highest total phosphorus loads, have been prepared to identify the ranking and optimal number of parcels to be treated by BMPs. The top ranked municipally-owned parcels are represented as the "knee" and can be found in Attachment C. During Year 5 the Town will complete a similar report for all privately-owned parcels located within the NH MS4 regulated area.

 Identification of potential retrofit opportunities or opportunities for the installation of structural BMPs during redevelopment, including the removal of impervious area of permittee-owned properties.

The Town has identified potential retrofit opportunities for the installation of structural BMPs of municipally-owned properties during redevelopment, including the potential removal of impervious cover (IC) area. Attachment C contains the prioritized list of municipally-owned parcels with consideration of multiple factors including: 1.) prioritized list of municipally-owned parcels with the highest total phosphorus pollutant loads and 2.) a number of factors from section 2.3.6.e that are used to determine the potential of each parcel to be retrofitted with a stormwater BMP.

A focus on municipally-owned properties is a priority for the Town in order to prepare for the Year 5 requirement which states, "Within five years of the permit effective date, the permittee shall evaluate all permittee-owned properties identified as presenting retrofit opportunities or areas for structural BMPs installation…"

The list will be further evaluated the following:

- 1. Whether structural BMPs are already in place at specific areas to which runoff from impervious cover areas discharge;
- 2. The extent to which the total impervious cover for a site is made of disconnected impervious cover allowing runoff to unpaved vegetated areas; or
- 3. Whether the impervious cover sheet flows directly to non-impervious surfaces over short or long distances.

#### **Supplemental Preliminary Screening Evaluation**

Municipal Parcels Watershed with Phosphorus-Impaired Waters

East Derry Fire Station, 190 Warner Hill Road (PID 07043-002) – This property is located within the Island Pond Watershed which is impaired for phosphorus. In 2006, approximately 1500

square feet of pavement was removed and replaced with a vegetated swale. There is no direct discharge to surface waters from this parcel.

Galliens Beach, 39 Pond Road (PID 50045) – This Town Park located on Beaver Lake will be retained for further evaluation of BMP implementation. Stormwater runoff is primarily sheet flow with roof discharge directed to a vegetated swale. The site receives some runoff from both state and town roads and includes limited closed drainage.

#### Municipal Parcels within Watershed with Phosphorus TMDL

Hood Park, 4 Rollins Street (PID 29152) – Hood Park is considered for further evaluation. Hood Park was the subject of the Landscaping for Water Quality Class hosted by the Town of Derry with UNH-T2 and NHDES. The field exercise portion of the class focused on developing BMPs within the park for improving quality of stormwater runoff.

Derry Police Department, 1 Municipal Drive (PID 35014-002) – This parcel is retained for consideration. A portion of this parcel is expected to be taken as part of the NHDOT new Exit 4A project. Stormwater controls and BMPs are being included in the design.

Derry Satellite Fire Station, 1 English Range Road (PID 58092) – Runoff from roof drains and paved surfaces is directed to an onsite detention basin before discharging to an adjacent wetland.

#### Municipal Properties not discharging to phosphorus-impaired waters

Forest Hills Cemetery, 2 Cemetery Road (PID 05071) & 65 East Derry Road, (PID 09002) — The majority of the impervious surface is made up of discontinuous impervious pavement without closed drainage allowing sheet flow to vegetated surfaces. There is no discharge to surface waters from these parcels. Paved parking area associated with the onsite maintenance building will be retained for further evaluation for the need for stormwater treatment.

Alexander Carr Park, 28 Pierce Ave (PID 05043) – This parcel is a Town Park with the impervious surface consisting of the access road, tennis courts, pickle ball court, playground, and onsite parking. This site is retained for further consideration.

Derry Dog Park and DPW Staging Area, 45 Fordway (PID 23012) – A significant portion of this parcel is wooded. The Town believes the calculated impervious area is over estimated as it misinterprets a sandy highly pervious area as impervious and there is limited discharge to surface water. However, the parcel is retained for further consideration of BMP implementation.

DPW Facilities, 38-53 Transfer Lane (PID 02020) – This large parcel includes two facilities regulated under the Multi-Sector General Permit: Transfer Station and Wastewater Treatment Facility (WWTF). The new Transfer Station has significant BMPs already addressing a significant portion of the impervious surface runoff. The WWTF received a No Exposure Exclusion however runoff from nearly all the impervious surface flows by closed drainage or sheet flow to

vegetated infiltration swale. The remaining portion of the area accounts for 4.6 acres of the total 13.45 acres impervious area and is occupied from DPW facilities including Vehicle Maintenance, Highway Garage, Salt Storage Facility, and Buildings and Grounds. These facilities are retained for further consideration.

Main Pump Station, 1 Transfer Lane (PID 23039) – This facility is the main wastewater pump station and storage building. The limited impervious area (less than 1 acre) is underlain by extensive utilities. Stormwater runoff is sheet flow to wooded and vegetated area with limited discharge to surface water. The site will be retained for further evaluation.

Derry Municipal Center, 4 Manning Street (PID 30060) & Employee Parking Lot, 16.5 Franklin St (PID 30061) – These two parcels were reconstructed during the construction of the new Derry town hall. There is a combined drainage system capturing all stormwater runoff from impervious surface and directing it to a stormwater detention basin for treatment. These parcels will be evaluated for the need for additional phosphorus treatment.

Derry Central Fire Station, 131 East Broadway (PID 37119) – Runoff is a mixed of closed drainage and sheet flow to surface water. This parcel will be retained for consideration of BMP implementation.

Derry Satellite Fire Station, 74 Hampstead Road (PID 09119) – This parcel does not discharge to surface waters or wetlands. Stormwater runoff is primarily sheet flow to surrounding pervious vegetated surface with limited closed drainage to a vegetated swale. This property will be evaluated further for the need for additional stormwater treatment.

Municipal Parking lots, 5 Abbott Court (PID 30026-001) & 54 East Broadway (PID 30104) – Both parcels are retained for further consideration.

Derry Public Library and MacGregor Park, 64 East Broadway (PID 30116) — This parcel is mostly green/open space with a small portion for the library. The impervious area associated with this parcel is the library building with a smaller portion consisting of a paved drop-off circle and limited parking. This property will be evaluated further for the need for additional stormwater treatment.

Marion Gerrish Community Center & Thrift Shop, 39 West Broadway (PID 29137) – This parcel is operated by a non-profit. Impervious cover consists of the building and associated parking only. This parcel will be retained for further evaluation on the need for additional BMPs.

Athletic Fields, 8 South Ave (PID 30011) – This parcel consists of natural turf athletic fields with sheet flow runoff. This parcel will be retained for further evaluation on the need for additional BMPs.

Upper Room Resource Center, Rider Athletic Field, & Derry Water Tower, 36 Tsienneto Road (PID 08038) – This parcel is mostly green space, woods and athletic fields with a small portion impervious surface associated with the Upper Room Resource Center (non-profit operated) and

associated parking or the access road to the athletic fields. Runoff from green space and athletic fields is by sheet flow to vegetated areas. This parcel will be retained for further evaluation on the need for additional BMPs.

#### <u>Properties Removed from this Consideration</u>

Derry Rail Trail, 2.5 East Broadway (PID 30023) – This parcel is a narrow former rail corridor with a paved rail trail 9-feet wide by approximately 16500 feet long (less several road crossings). It is limited to foot and bicycle traffic. No motorized vehicles allowed which eliminates a significant source of phosphorus pollution. It is mostly surrounded by woods and wetlands and underlain by a major AT&T fiber optic line. The narrow nature of the parcel and paved surface with sheet flow, the reduced phosphorus loading, and limitations due to the fiber optic line make it infeasible and a low priority for added BMPs addressing phosphorus removal.

19 Elm Street (PID 29128) – This parcel was acquired through tax deed and will be sold for redevelopment. Upon taking, the Town demolished the onsite structures while USEPA conducted an emergency removal action. NHDES subsequently performed a Phase II Site Assessment. The Town will be selling the property for redevelopment. Permanent stormwater controls will be required during redevelopment to meet necessary phosphorus and TSS removal requirements. This property does not discharge to phosphorus impaired waters.

#### **ATTACHMENT A**

#### Raw Municipal and Private Parcel Data in MS4 Regulated Area

#### PSIR Attachment A - Derry Raw Municipal Parcels only in the MS4 Area

T-1-110 A / ' '	40-0																
Total IC Area (acres)	1952.4								,			T			1		
Street Address	NH GIS ID	PID	Town Owned Flag (0/1)	Conservation Lands Flag (0/1)	MS4 Flag (0/1)	Area (ac)	IC (ac)	TSS Load (lb/yr)	TP Load (lb/yr)	TN Load (lb/yr)	Treatment Priority	Estimated TSS Reduction: 0.1-in sizing, 67% RE (lb/yr)	Estimated TSS Reduction: 0.4-in sizing, 96% RE (lb/yr)	Estimated TP Reduction: 0.1-in sizing, 41% RE (lb/yr)	Estimated TP Reduction: 0.4-in sizing, 81% RE (lb/yr)	Estimated Costs: 0.1-in sizing (\$)	Estimated Costs: 0.4-ir sizing (\$)
38-53 Transfer Ln, Derry, NH	08055-02020	02020	1	0	1	130.2	13.45	10175.5	26.49	208.73	1	6817.59	9768.48	10.86	21.46	155000	62000
5 Hood Rd, Derry, NH	08055-32038	32038	1	0	1	19.27	7.24	4976.91	12.75	106.18	2	3334.53	4777.83	5.23	10.33	83000	33400
28 Pierce Ave, Derry, NH	08055-05043	05043	1	0	1	32.38	3.38	4152.84	9.54	82.29	3	2782.4	3986.72	3.91	7.73	39000	15600
2 Cemetery Rd, Derry, NH	08055-05071	05071	1	0	1	35.15	3.21	3859.81	12.84	123.35	4	2586.07	3705.42	5.26	10.4	37000	14800
1 Municipal Dr, Derry, NH	08055-35014-002	35014-002	1	0	1	6.36	2.92	1333.42	5.29	44.3	5	893.39	1280.09	2.17	4.29	34000	13500
2.5 East Broadway, Derry, NH	08055-30023	30023	1	0	1	35.66	2.38	2576.76	7.46	65.45	6	1726.43	2473.69	3.06	6.04	27000	11000
45 Fordway, Derry, NH	08055-23012	23012	1	0	1	9.83	2.05	1593.87	3.61	27.4	7	1067.9	1530.12	1.48	2.92	24000	9400
36 Tsienneto Rd, Derry, NH	08055-08038	08038	1	0	1	20.96	2.01	1489.59	5.9	51.1	8	998.03	1430.01	2.42	4.78	23000	9300
8 South Ave, Derry, NH	08055-30011	30011	1	0	1	8.27	1.92	1646.12	3.44	27.85	9	1102.9	1580.28	1.41	2.79	22000	8800
14 Manning St, Derry, NH	08055-30060	30060	1	0	1	1.31	1.31	1193.91	2.12	16.5	10	799.92	1146.15	0.87	1.71	15000	6100
	08055-29152	29152	1	0	1	8.91	1.31	993.76	3.04	26.34	11	665.82	954.01	1.25	2.46	15000	
• • • • • • • • • • • • • • • • • • • •	08055-37119	37119	1	0	1	1.07	1.05	542.61		14.47	12					12000	
**	08055-29128	29128	1	0	1	1.57	1.01	602.96		15.6	13						
, ,,	08055-50045	50045	1	0	1	1.89		484	1.93	14.98	14					11000	
• • • • • • • • • • • • • • • • • • • •	08055-29137	29137	1	0	1	1.41	0.94	582.02		14.5	15					11000	
•• ••	08055-30026-001	30026-001	1	0	1	0.89		1025.16		10.02	16					10000	
• • •	08055-30104	30104	1	0	1	0.84	0.84	378.02		12.37	17		362.9				
•• ••	08055-30116	30116	1	0	1	2.85	0.81	585.95		10.89	18					9000	
•• ••	08055-23039	23039	1	0	1	32.47	0.8	1009.63	2.54	17.24	19						
· ·	08055-09119	09119	1	0	1	0.98	0.67	397.26		10.62	20					8000	
• • • • • • • • • • • • • • • • • • • •	08055-09119	09119	1	0	1	3.69	0.67	615.94	1.72	15.37	20					7000	
• • •			1	0	_			594.46								7000	
	08055-58092	58092	1	·	1	1.02	0.6			8.58	22						
• • • • • • • • • • • • • • • • • • • •	08055-30061	30061	1	0	1	0.73	0.53	563.97	0.81	6.46	23					6000	
• • •	08055-30126	30126	1	0	1	0.53	0.53	519.88	0.81	6.55	25					6000	
•• ••	08055-29189	29189	1	0	1	0.41	0.41	332.32	0.66	5.42	26					5000	
• • •	08055-02069	02069	1	0	1	5	0.38	608.32	0.83	7.05	27		583.99			4000	
	08055-11039	11039	1	0	1	0.65		256.71	0.52	3.99	28					3000	
•• ••	08055-29141	29141	1	0	1	0.28		319.07	0.42	3.3	29					3000	
• • • • • • • • • • • • • • • • • • • •	08055-30174	30174	1	0	1	0.28		361.98	0.4	3.09	30					3000	
· , , , , , , , , , , , , , , , , , , ,	08055-29167	29167	1	0	1	0.55	0.21	257.2	0.31	2.3	31					2000	
• • • • • • • • • • • • • • • • • • • •	08055-39052	39052	1	0	1	1.56	0.2	195.15	0.63	5.86	32		187.35	0.26		2000	
, , ,,	08055-09002-001	09002-001	1	0	1	4.84	0.16	433.43		14.85	33		416.1			2000	
18 Barkland Dr, Derry, NH	08055-54003	54003	1	0	1	0.56		176.71		2.38	34					2000	
63 East Derry Rd, Derry, NH	08055-09002-002	09002-002	1	0	1	0.81	0.15	143.31	0.42	3.7	35			0.17	0.34	2000	
35.5 Fordway, Derry, NH	08055-23040-001	23040-001	1	0	1	0.38	0.14	62.91	0.29	2.35	36	42.15	60.4	0.12	0.23	2000	700
1 Collettes Grove Rd, Derry, NH	08055-20026	20026	1	0	1	5.22	0.13	389.84	0.97	9.08	37	261.19	374.25	0.4	0.79	2000	600
6 Walker St, Derry, NH	08055-24028	24028	1	0	1	2.01	0.13	188.82	0.24	1.93	38	126.51	181.26	0.1	0.19	2000	600
36 Birch St, Derry, NH	08055-27002-001	27002-001	1	0	1	0.22	0.13	162.05	0.18	1.39	39	108.57	155.56	0.07	0.14	1000	600
3 Rebecca Ln, Derry, NH	08055-02028-085	02028-085	1	0	1	0.68	0.12	149.9	0.41	3.54	40	100.43	143.9	0.17	0.33	1000	600
2 East Broadway, Derry, NH	08055-30049-002	30049-002	1	0	1	0.12	0.12	87.07	0.19	1.61	41	58.34	83.59	0.08	0.16	1000	500
4 Brian Ave, Derry, NH	08055-25013-010	25013-010	1	0	1	0.68	0.11	123.62	0.17	1.3	42	82.83	118.68	0.07	0.14	1000	500
•	08055-39053-001	39053-001	1	0	1	0.18		169.28		1.3	43					1000	
• • • • • • • • • • • • • • • • • • • •	08055-25013-020	25013-020	1	0	1	0.97	0.1	124.1		2.28	44	83.15				1000	
	08055-37117	37117	1	0	1	1.71		99.73		0.94	45					1000	
•	08055-37050	37050	1	0	1	0.15		137.69		1	47					1000	
	08055-59032	59032	1	0	1	0.56		57.89		1.78	49					1000	
	08055-39032	30038	1	0	1	0.62		95.46		0.77	50					1000	
	08055-58080	58080	1	0	1	0.82		95.46 86.52		1.13	51					1000	
∠+ Lugion nauge nu, Deny, N⊓	00000-20000	20000	1	U	1	0.52	0.07	00.32	0.14	1.13	31	57.97	63.00	0.00	0.11	1000	300
	08055-24058	24058	1	^	1	0.12	0.07	102.57	0.09	0.71	52	68.72	98.46	0.04	0.08	1000	300

Street Address	NH GIS ID	PID	Town	Conservation	MS4	Area	IC (ac)	TSS Load	TP Load	TN Load	Treatment	Estimated TSS	Estimated TSS	Estimated TP Reduction:	Estimated TP Reduction:	Estimated	Estimated
			Owned Flag	Lands Flag	Flag	(ac)		(lb/yr)	(lb/yr)	(lb/yr)	Priority	Reduction: 0.1-in	Reduction: 0.4-in sizing,	0.1-in sizing, 41% RE	0.4-in sizing, 81% RE	Costs: 0.1-in	Costs: 0.4-in
			(0/1)	(0/1)	(0/1)							sizing, 67% RE (lb/yr)	96% RE (lb/yr)	(lb/yr)	(lb/yr)	sizing (\$)	sizing (\$)
23 Stark Rd, Derry, NH	08055-03123	03123	1	. 0	1	1.31	0.07	101.27	0.18	1.6	54	67.85	97.22	0.07	0.15	1000	3000
41 Collettes Grove Rd, Derry, NH	08055-19022	19022	1	0	1	0.08	0.06	89.85	0.08	0.62	55	60.2	86.26	0.03	0.07	1000	3000
4 East Broadway, Derry, NH	08055-30048	30048	1	0	1	0.05	0.05	79.86	0.07	0.55	58	53.5				1000	
8 Central St, Derry, NH	08055-30034	30034	1	. 0	1	0.05	0.05	79.34	0.07	0.55	59	53.16				1000	
17 Montgomery Farm Rd, Derry, NH	08055-02003-073	02003-073	1	0	1	1.31	0.05	67.67	0.22	2.04	60	45.34		0.09	0.18	1000	
Cemetery Rd, Derry, NH	08055-39100	39100	1	0	1	0.11	0.04	70.47	0.07	0.63	61	47.21		0.03	0.06	1000	2000
3 Central Ct, Derry, NH	08055-30037	30037	1	0	1	0.34	0.04	29.04	0.08	0.61	62	19.46	27.88	0.03	0.06	1000	2000
6 Westerly Dr, Derry, NH	08055-05073-010	05073-010	1	0	1	0.46	0.04	89.85	0.21	1.89	63	60.2	86.26	0.08	0.17	0	2000
21 Stark Rd, Derry, NH	08055-03124	03124	1	. 0	1	0.67	0.04	56.34	0.09	0.71	64	37.75	54.08	0.04	0.07	0	2000
83 Rockingham Rd, Derry, NH	08055-28033-002	28033-002	1	0	1	3.67	0.04	172.85	0.56	5.38	66	115.81	165.93	0.23	0.45	0	2000
38.5 Pond Rd, Derry, NH	08055-50049	50049	1	. 0	1	0.09	0.04	42.68	0.05	0.4	67	28.6	40.98	0.02	0.04	0	2000
52 North Shore Rd, Derry, NH	08055-09044	09044	1	0	1	2.13	0.03	48.43	0.14	1.35	69	32.45	46.49	0.06	0.12	0	1000
5 Pelican Cir, Derry, NH	08055-22012-006	22012-006	1	0	1	0.32	0.03	57.24	0.1	0.91	70	38.35	54.95	0.04	0.08	0	1000
16 St Charles St, Derry, NH	08055-23028	23028	1	. 0	1	0.07	0.03	12.23	0.05	0.39	71	8.19	11.74	0.02	0.04	0	1000
22 Cove Dr, Derry, NH	08055-58010	58010	1	. 0	1	0.62	0.03	44.78	0.06	0.53	73	30	42.99	0.02	0.05	0	1000
1 Chase St, Derry, NH	08055-50037	50037	1	0	1	0.03	0.02	13.58	0.04	0.34	74	9.1	13.03	0.02	0.03	0	1000
Taryn Rd, Derry, NH	08055-07047-036	07047-036	1	0	1	0.1	0.02	34.96	0.04	0.32	75	23.42	33.56	0.02	0.03	0	1000
Desmarais Ave, Derry, NH	08055-26152	26152	1	0	1	0.68	0.02	50.77	0.21	1.93	76	34.01	48.74	0.08	0.17	0	1000
27 South Main St, Derry, NH	08055-33001	33001	1	. 0	1	21.74	0.01	177.97	0.67	6.47	77	119.24	170.85	0.27	0.54	0	1000
9.5 Wildwood Dr, Derry, NH	08055-11057	11057	1	0	1	8.28	0.01	247.56	1	9.92	78	165.86	237.65	0.41	0.81	0	0
6 Eileen Ave, Derry, NH	08055-58028	58028	1	. 0	1	0.25	0	10.97	0.04	0.4	80	7.35	10.53	0.02	0.03	0	0
24 Overledge Dr, Derry, NH	08055-14016-029	14016-029	1	0	1	0.82	0	18.9	0.07	0.65	81	12.66	18.14	0.03	0.05	0	0
109.5 By-Pass 28, Derry, NH	08055-11067	11067	1	0	1	21.9	0	201.68	0.8	8.03	82	135.13	193.61	0.33	0.65	0	O
78-82 Scobie Pond Rd, Derry, NH	08055-11001	11001	1	. 0	1	31.4	0	1965.51	7.8	78.36	83	1316.89	1886.89	3.2	6.32	0	0
7 Frost Rd, Derry, NH	08055-03108-004	03108-004	1	0	1	0.67	0	37.13	0.13	1.4	84	24.88	35.64	0.05	0.1	0	0
26 Gordon Rd, Derry, NH	08055-01002-015004	01002-015004	1	0	1	0.43	0	27.61	0.11	1.05	86	18.5	26.51	0.04	0.09	0	0
93.5 Hampstead Rd, Derry, NH	08055-09092	09092	1	0	1	0.06	0	6.73	0.02	0.22	87	4.51	6.46	0.01	0.02	0	0
30 English Range Rd, Derry, NH	08055-59002	59002	1	0	1	0.15	0	4.74	0.02	0.19	88	3.18		0.01	0.02	0	0
4 Eileen Ave, Derry, NH	08055-58027	58027	1	. 0	1	0.28	0	8.52	0.03	0.34	89	5.71	8.18	0.01	0.03	0	C
7 Montgomery Farm Rd, Derry, NH	08055-02003-007	02003-007	1	0	1	0.56	0	17.24	0.07	0.68	90	11.55	16.55	0.03	0.06	0	O
15 Collettes Grove Rd, Derry, NH	08055-20022	20022	1	0	1	1.05	0	39.15	0.16	1.53	92	26.23		0.06	0.13	0	0
5.5 Tracy Dr, Derry, NH	08055-01015-015	01015-015	1	0	1	2.86	0	45.39	0.19	1.85	94	30.41		0.08	0.15	0	0
7.5 Willow St, Derry, NH	08055-02070	02070	1	. 0	1	63.55	0	1637.91	6.77	67.64	95	1097.4		2.78		0	0
7 Lester Ln, Derry, NH	08055-03131	03131	1	. 0	1	8.53	0	22.54	0.09	0.9	96	15.1		0.04	0.07	0	0
120 Rockingham Rd, Derry, NH	08055-05008A	05008A	1	0	1	0.02	0	0	0	0	98	0	0	0	0	0	0
51.5 South Main St, Derry, NH	08055-05092	05092	1	0	1	3.11	0	152.42	0.62	6.07	99	102.12	146.33	0.25	0.5	0	0
38-46 Featherbed Ln, Derry, NH	08055-06013	06013	1	0	1	7.18		271.2	1.05	11.07	100	181.7		0.43		0	C
46 Scenic Dr, Derry, NH	08055-08053-001	08053-001	1	0	1	1.88		88.05	0.32	3.56	102	58.99		0.13		0	C
50.5 Tsienneto Rd, Derry, NH	08055-08060-002	08060-002	1	0	1	0.22		6.36	0.03	0.26	103	4.26		0.01			C
12 Forest St, Derry, NH	08055-11057-017	11057-017	1	0	1	2.79		80.77	0.33	3.34	104	54.12		0.14		0	(
Chancellor Dr, Derry, NH	08055-14013	14013	1	0		12.3		322.03	1.33	13.28	105	215.76		0.55		0	C
22.5 Overledge Dr, Derry, NH	08055-14015	14015	1	. 0	1	37.48		1099.5	4.53	45.12	106	736.67		1.86		0	C
Drew Brook - Row, Derry, NH	08055-19099	19099	1	. 0	1	0.03		0.18	0	0.01	107	0.12		0	0	0	C
37.5 Fordway, Derry, NH	08055-23040	23040	1	. 0	1	0.04		0	0	0	108	0		0	0	0	C
1.5 Jenney Dickey Hill, Derry, NH	08055-52046	52046	1	0	1	0.11		0.38	0	0.02	109	0.25	0.36	0	0	0	0
5.5 Orchard Dr, Derry, NH	08055-56018	56018	1	0	1	6.3		82.54	0.31	3.31	110	55.3		0.13	0.25	0	0
14 Humphrey Rd, Derry, NH	08055-05066-001	05066-001	1	1	1	42.65		3469.53	11.85	107.9	111	2324.58		4.86		40000	
24 Humphrey Rd, Derry, NH	08055-05072	05072	1	1	1	14.03		1437.78	5.15	47.41	112	963.31		2.11	4.17	16000	
7 Young Rd, Derry, NH	08055-09010	09010	1	. 1	1	77		5087.23	18.4	179.62	113	3408.44		7.54	14.9		
24 Kendall Pond Rd, Derry, NH	08055-22012	22012	1	1	1	18.32		537.29	2.25	20.99	115	359.99		0.92			
62 East Derry Rd, Derry, NH	08055-39037	39037	1	1	1	36.06		2187.22	7.78	80.82	118	1465.44		3.19			
9 Jade Ct, Derry, NH	08055-14016-018	14016-018	1	1	1	9.47		378.58	0.76	6.82	119	253.65		0.31	0.61	3000	
7 Londonderry Ln, Derry, NH	08055-12028-019	12028-019	1	1	1	5.19		281.3	0.76	7.73	120	188.47		0.35		2000	
5 Lester Ln, Derry, NH	08055-03169-060	03169-060	1	1	1	2.7		216.12	0.80	7.73	121	144.8		0.29		1000	
* **			1	1	1			1327.6		52.17							
62 Damren Rd, Derry, NH	08055-13012	13012	1	1	1	41.71	0.04	1327.6	5.26	52.17	122	889.49	1274.49	2.16	4.26	0	20

Street Address	NH GIS ID	PID	Town	Conservation	MS4	Area	IC (ac)	TSS Load	TP Load	TN Load	Treatment	Estimated TSS	Estimated TSS	Estimated TP Reduction:	Estimated TP Reduction:	Estimated	Estimated
			Owned Flag	Lands Flag	Flag	(ac)		(lb/yr)	(lb/yr)	(lb/yr)	Priority	Reduction: 0.1-in	Reduction: 0.4-in sizing,	0.1-in sizing, 41% RE	0.4-in sizing, 81% RE	Costs: 0.1-in	Costs: 0.4-in
			(0/1)	(0/1)	(0/1)							sizing, 67% RE (lb/yr)	96% RE (lb/yr)	(lb/yr)	(lb/yr)	sizing (\$)	sizing (\$)
42.5 Faith Dr, Derry, NH	08055-09043-002	09043-002	1	1	1	118.44	0.02	3484.38	13.01	140.77	123	2334.53	3345	5.33	10.54	0	1000
Ballard Rd, Derry, NH	08055-06102	06102	1	1	1	26.39	0.02	751.36	3.01	29.92	124	503.41	721.3	1.24	2.44	0	1000
10 Young Rd, Derry, NH	08055-09117	09117	1	1	1	3.57	0.01	329.97	1.33	12.95	125	221.08	316.77	0.55	1.08	0	0
7 Applewood Dr, Derry, NH	08055-11084	11084	1	1	1	11.67	0	358.51	1.48	14.7	126	240.2	344.17	0.61	1.2	0	0
28 Overledge Dr, Derry, NH	08055-14016-031	14016-031	1	1	1	12.53	0	110.14	0.45	4.45	127	73.79	105.73	0.18	0.36	0	0
21.25 Bowers Rd, Derry, NH	08055-02036	02036	1	1	1	6.66	0	188.6	0.78	7.8	130	126.36	181.06	0.32	0.63	0	0
23 Adams Pond Rd, Derry, NH	08055-09068-025	09068-025	1	1	1	3.28	0	276.98	1.12	10.93	133	185.57	265.9	0.46	0.91	0	0
88 English Range Rd, Derry, NH	08055-11088-003	11088-003	1	1	1	38.09	0	1564.65	5.92	63.63	136	1048.32	1502.07	2.43	4.79	0	0
26 Magnolia Ln, Derry, NH	08055-24037-025	24037-025	1	1	1	5.48	0	273.71	1.11	10.83	137	183.39	262.77	0.46	0.9	0	0

#### **ATTACHMENT B**

# Surface Water Testing Only No Dry Weather Screening Data is available for phosphorus impaired watersheds

#### **Hood Pond Surface Water Testing Results**

Date	Sample Identifier	Phosphorus Results	Location
9/23/2019	HOODERD	10 ug./l	Hood Pond - Center of Pond
9/23/2019	06-SHB	<10 ug/l	Shields Brook (upstream of Hood Pond at North High St)
11/2/2021	HP-Beach	18 ug/l	Hood Pond Beach
11/2/2021	06-SHB	13 ug/l	Shields Brook (upstream of Hood Pond at North High St)
			Tributary to Hood Pond - enters prime wetland between Shields
11/2/2021	HP-Trib	23 ug/l	Brook and Hood Pond
11/2/2021	HP-Inlet	21 ug/l	Hood Pond inlet between Prime Wetland and Pond
11/2/2021	HP-Seep	49 ug/l	Groundwater Seep from heavily vegetated/wooded area

#### **ATTACHMENT C**

# Identification, Delineation and Prioritization of Potential Catchments with Potentially High Phosphorus Loading

P:	SIR Attachment C- Derry identificat	ion, delineation and prioritiza	tion of potential catchments wit	th high phosphorus loading
Treatment Priority	Street Address	Parcel Acreage (acres)	Impervious Cover Area (acres)	Total Phosphorus Load (lb/year)
1	38-53 Transfer Ln	130.2	13.45	26.49
2	5 Hood Rd	19.27	7.24	12.75
3	28 Pierce Ave	32.38	3.38	9.54
4	2 Cemetery Rd	35.15	3.21	12.84
5	1 Municipal Dr	6.36	2.92	5.29
6	2.5 East Broadway	35.66	2.38	7.46
7	45 Fordway	9.83	2.05	3.61
8	36 Tsienneto Rd	20.96	2.01	5.90
9	8 South Ave	8.27	1.92	3.44
10	14 Manning St	1.31	1.31	2.12
11	4 Rollins St	8.91	1.31	3.04
12	131 East Broadway	1.07	1.05	1.73
13	19 Elm St	1.57	1.01	1.93
14	39 Pond Rd	1.89	0.99	1.93
15	39 West Broadway	1.41	0.94	1.74
16	5 Abbott Ct	0.89	0.87	1.29
17	54 East Broadway	0.84	0.84	1.47
18	64 East Broadway	2.85	0.81	1.34
19	1 Transfer Ln	32.47	0.80	2.00
20	74 Hampstead Rd	0.98	0.67	1.28
21	65 East Derry Rd	3.69	0.63	1.72
22	1 English Range Rd	1.02	0.60	1.08
23	16.5 Franklin St	0.73	0.53	0.81
24	190 Warner Hill Rd	1.21	0.53	1.13

## ATTACHMENT D Identification of Potential Retrofit

IR Attachr	nent D - Der	ry identific	cation of po	tential retrof	it opportuni	ities or opport	unities for tl	ne installati	on of struct	tural BMPs	during red	levelopmen	t														
						Impervious Cover (IC) Area Score	Is the site easy to access for maintenance purposes?	Is the subsurface geology appropriate for a stormwater BMP?	Is the depth to the water table appropriate for a stormwater BMP?	appropriate for a	Is the site elevation appropriate for a stormwater BMP?	aquifers	Is the proximity to subsurface infrastructure including sanitary sewers and septic systems appropriate for a stormwater BMP?	What is the risk to public safety?		What is the current storm sewer level of service?	Does the area discharge to impaired waters?	Does the area discharge to first or second order streams?	Does the area discharge to critical receiving waters?	What is the complexity and cost of implementation?	Is the site appropriate for public use?	Is there an opportunity for public education at the site?	opportunity for	reduction BMP be	Would a stormwater infiltration BMP be appropriate in this area?	Are drainage easements or other permissions needed to install and maintain the BMP?	Current use or intended future development for the municipality?
		Scorin	g Criteria			0-2 Acres IC = 5 2.1-5 Acres IC = 10 5.1-10 Acres IC = 15 10.1-20 Acres IC = 20 20.1+ Acres IC = 25	Yes = 10 Possibly = 5 No = 0	Yes = 10 Possibly = 5 No = 0	Yes = 10 Possibly = 5 No = 0	<5% slope = 10 5-10% slope Possibly = 5 > 15% slope = 0	Yes = 10 Possibly = 5 No = 0	>1000 feet = 10 500-100 feet = 5 <500 feet = 0		Low Risk = 10 Medium Risk = 5 High Risk = 0		Stormwater collection system present = 10 Stormwater collection system nearby = 5 No stormwater collection system present = 0	Yes = 10 Possibly = 5 No = 0	Yes = 10 Possibly = 5 No = 0	Yes = 10 Possibly = 5 No = 0	Low = 10 Medium = 5 High = 0	Yes = 10 Possibly = 5 No = 0	Yes = 10 Possibly = 5 No = 0	Yes = 10 Possibly = 5 No = 0	Yes = 10 Possibly = 5 No = 0	Yes = 10 Possibly = 5 No = 0	Yes = 0 Possibly = 5 No = 10	Developed = 25 Possible Plan for development = 10 Undeveloped = 5 No future plan for development = 0
Street Address	NH GIS ID	Impervious Cover Area (Acres)	Total Phosphorus Load (lb/year)	Estimated Total Phosphorus Load Reduction with 0.4- inc in sizing (lb/yr)	Estimated Costs of h 0.4-inch sizing (\$)																						
Transfer Ln	08055-02020	13.45	26.49	21.46	\$ 620,000.00	20	10	1	0 10	10	10	o 0	10	J 10	0	5	5	0	0	5	0	0	0	0	10	10	2
Rd	08055-32038	7.24	12.75	10.33	\$ 334,000.00	15	10		5 5	5	5	5 0	10	J 10	0 /	10	0	0	10	5	10	5	5	0	5	10	2'
ce Ave	08055-05043	3.38	9.54	7.73	\$ 156,000.00	10	10		0 10		5	0 د	10	0 10	0 10	10	10	0	0	5	10	5	5	0	5	10	2"
nneto Rd	08055-08038	2.01	5.90	4.78	\$ 93,000.00	5	10		5 5	10		5 10		10	- 0	5	0	0	0	0	10	5	5	0	0)	10	2'
cipal Dr	08055-35014-002	2.92	5.29	4.29	\$ 135,000.00	10	10		5 0	5	0	1 0	10	0 10	0	10	0	0	0	5	0	0	0	0	10	10	25
way Ave	08055-23012 08055-30011	2.05 1.92	3.61 3.44	2.92	\$ 94,000.00 \$ 88,000.00	5	10		10			0	10	10	0	5	10	-	0	5	10	10	10	0	10		25
s St	08055-29152	1.31	3.04	2.46	\$ 60,000.00	5	10					0	0 10	0 10	0 10	10			0	5	10			0	5	10	10
sfer Ln	08055-23039	0.80	2.00	1.62	\$ 37,000.00		10		0 0	10	10	5 0	J 7	5 10		0	10		0	5	0	0	0	0	5	10	
id Rd	08055-50045	0.99	1.93	1.57	\$ 46,000.00	5	10		5 0	10	0	0 0	0 10	0 10	0	10	10	0	10	5	10	10	10	0	0	10	2
st Broadway	08055-29137	0.94	1.74	1.41	\$ 43,000.00	5	9		5 5	5	5	0 د	0 10	0 10	0	0	0	0	0	10	10	0	0	0	5	10	
ast Broadway	08055-37119	1.05	1.73	1.40	\$ 49,000.00		(	!	5 0	10	5	0 دُ	10	J 10	0	10	10	0	0	0	0	0	0	0	0	10	2
t Broadway	08055-30104	0.84	1.47	1.19	\$ 39,000.00		10		5 5	5	5	0 د	0 10	-	0	10		0	0	5	10	0	0	0	5	10	25
t Broadway	08055-30116	0.81	1.34	1.09	\$ 37,000.00		10		5 5	5	5	2 0	0 10	- 10	0	10	10	0	0	5	10	10	10	0	5)	10	2'
tt Ct	08055-30026-001	0.87	1.29	1.04	\$ 40,000.00		10		5 5	5	5	9	0 10		0	10	5	0	0	5	10	0	0	0	5	10	2"
npstead Rd	08055-09119	0.67	1.28	1.04	\$ 31,000.00	5	10		5 5	10		0	5	5 10	0	5	0	0	0	5	0	0	0	0	0	10	25
rner Hill Rd	08055-07043-002	0.53	1.13	0.92	\$ 24,000.00	5	10		5 0	10		0	5	10	0	5	0	0	0	5	0	0	0	0	0	10	2"
h Range Rd	08055-58092	0.60	1.08	0.88	\$ 28,000.00	5	10		5	10		9		0 10	0	5	10	0	0	5	0	0	0	0	5)	10	25
st Broadway	08055-30023	2.38	7.46	6.04	\$ 110,000.00	10	5		0	5			.+	0 10	0	0	5	0	0	0	10	0	0	0	0)	5	
anklin St	08055-30061	0.53	0.81 2.12	0.65	\$ 25,000.00 \$ 61,000.00	5	10		10	10		5	5 10			10	10		0	0	0	0	0	0	10	10)	25
nning St	08055-30060	1.31		1.71 10.40	\$ 61,000.00		10		5	10		1 0	10	0 10	0	10	10	0	0	10	10	0	0	0	0	10)	25
etery Rd	08055-05071 08055-09002	3.21 0.63	12.84	1.39	\$ 148,000.00	10	10		5 5	10			1	10	ot 0	5	0	0	0	5	0	0	0	0	0	10)	25
st Derry Rd																											