

Project Name **Moosehead Redevelopment**
 Project Number **85761**
 Date **4/27/2021**
 Done by **JAO**

RB=Roadside Buffer
 Imp=Impervious area
 Land=Landscaped Area
 W=Width
 B=Buffer

REQUIRED BUFFER FLOW PATH LENGTHS
 ~BUFFER ADJACENT TO DOWN HILL SIDE OF ROAD~

# of Travel Ways to Buffer	Length of Flow Forest	Length of Flow Meadow
1	35	50
2	55	80

* Buffer slopes may not exceed 20%

** Buffers may not be located in a wetland

*** Roadside slopes may be included in a meadow buffer if the slope is less than 4:1 **and** if the soils allow infiltration

Mountain View Pond

BMP Type & #	Watershed ID	# of Travelways (Right, Left or Both)	Buffer Type (Forest or Meadow)	Treatment Factor	Standard Buffer Length (ft)	Adjusted Buffer Length (ft)
RB1	Q2	Both	Forest	0.40	55	55
RB2	Q4	Both	Forest	0.40	55	55
RB3	Q9	Both	Meadow	0.40	80	80

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BL=Buffer with a Level Lip Spreader L=Length
 Imp=Impervious area W=Width
 Land=Landscaped Area B=Buffer
 C1=Loamy Sand or Sandy Loam C2=Silt Loam, Clay Loam or Silty Clay Loam

**REQUIRED BUFFER FLOW PATH LENGTHS
 ~BUFFERS WITH LEVEL LIP SPREADERS~**

0-8% Buffer Slope

Soils	Length of Flow Thru Buffer (ft)	Berm L for Forested Buffer(ft)		Berm L for Meadow Buffer(ft)	
		Per acre Imp	Per acre Land	Per acre Imp	Per acre Land
A	75	75	25	125	35
	100	65	20	75	25
	150	50	15	60	20
B	75	100	30	150	45
	100	80	25	100	30
	150	65	20	75	25
C1	75	125	35	150	45
	100	100	30	125	35
	150	75	25	100	30
C2	100	150	45	200	60
	150	100	30	150	45
D	150	150	45	200	60

9-15% Buffer Slope

Length of Flow Thru Buffer (ft)	Berm L for Forested Buffer(ft)		Berm L for Meadow Buffer(ft)	
	Per acre Imp	Per acre Land	Per acre Imp	Per acre Land
75	90	30	150	42
100	78	24	90	30
150	60	18	72	24
75	120	36	180	54
100	96	30	120	36
150	78	24	90	30
75	150	42	180	54
100	120	36	150	42
150	90	30	120	36
100	180	54	240	72
150	120	36	180	54
150	180	54	240	72

Mountain View Pond

BMP Type & #	Watershed ID	Imp (sf)	Imp (acres)	Buffer Type (forest/meadow)	Treatment Factor	Soil Type	Buffer Slope	from table	from table	Standard Berm Length (ft)	Adjusted Buffer Length (ft)
								Standard Buffer Length (ft)	L of Berm per ac. imp		
BL1	Q6	2298	0.0528	Meadow	0.40	C	8%	75	150	8	75
BL2	Q8	4731	0.1086	Meadow	0.40	D	10%	150	240	26	150
BL3	Q13	10378	0.2382	Forest	0.40	D	10%	150	180	43	150
BL4	Q18	4826	0.1108	Meadow	0.40	B	10%	75	180	20	75

Project Name **Moosehead Redevelopment** BA=Buffer Adjacent to Small Imp RB=Roadside buffer BRS=Roadside Buffer with Rock Sandwich
 Project Number **85761** BL=Buffer w/level spreader DB=Detention basin
 Date **4/27/2021** DT=Buffer w/ditch turnout WP=Wet pond
 Done by **JAO** USF=Underdrain Soil Filter INF=Infiltration

QUALITY CALCULATIONS FOR LINEAR PORTION

Mountain View Pond

Phosphorous Requirement

Watershed per acre phosphorus budget (Appendix C): **P 0.032 # P/acre/year** Total ac of devel. parcel: **TA 58.03 acres**
 Small Watershed Threshold (Appendix C) **SWT 189 acres** NWI wetland acreage: **WA acres**
 Allowable increase in Town's share of annual phos (App C) **FC 24.42 lbs P/year** Steep slope acreage: **SA acres**
 Area avail. For development (App C) **AAD 3029 acres** Existing imp area (Pre 1980) **EIA_B acres**
 Project acreage: $A = TA - (WA + SA + EIA_B + EIA_A)$ **A 58.03 acres** Existing imp area (post 1980) **EIA_A acres**
 A/AAD **R 0.019**

Project Phos Budget: $PPB = P \times A$ **PPB 1.8568 lbs P/year**
 Project Phos Budget with small watershed adjustment: **PPB N/A lbs P/year**

Total Post Development Phos Export with STC (lbs P/yr)= **1.7404** <= **1.8568**
 Total Post Development Phos Export (lbs P/yr)= **1.9430** without STC credit
 Total source treatment mitigation credit (STC) (lbs/yr)= **0.2026**
 Total Impervious Area= **2.75** Acres

Watershed ID	Total Area for Watershed (SF)	NEW Impervious Area (SF)	EXISTING Impervious Area (SF)	TOTAL Impervious Area to be Tx (SF)	Roof and Walkway Impervious Area (SF)	NEW Landscaped Area (SF)	BMP No. (or none)	Side of road being Tx right, left, both	BMP cover Forest Meadow	Treatment Factor	Export Coefficient Imp	Export Coefficient Land	Pre-Treatment lbs P/Year	Post Treatment lbs P/Year
Q1	15191	10066	0	10066		5125	USF1	Both		0.25	1.75	0.6	0.4750	0.1187
Q1	28357	28357	0	28357	28357	0	USF1			0.25	0.5	0.6	0.3255	0.0814
Q2	831	831	0	831		0	RB1	Both	Forest	0.4	1.75	0.6	0.0334	0.0134
Q3	1314	1314	0	1314		0	None			1	1.75	0.6	0.0528	0.0528
Q4	4803	4803	0	4803		0	RB2	Both	Forest	0.4	1.75	0.6	0.1930	0.0772
Q5	3283	3064	219	3283		0	None			1	1.75	0.6	0.1231	0.1231
Q6	2298	2079	219	2298		0	BL1	Right	Meadow	0.4	1.75	0.6	0.0835	0.0334
Q7	3217	2828	389	3217		0	None			1	1.75	0.6	0.1136	0.1136
Q8	4731	2254	2477	4731		0	BL2	Both	Meadow	0.4	1.75	0.6	0.0906	0.0362
Q9	5695	3332	2363	5695		0	RB3	Both	Meadow	0.4	1.75	0.6	0.1339	0.0535
Q10	4716	4716	0	4716		0	None			1	1.75	0.6	0.1895	0.1895
Q11	6671	755	5916	6671		0	None	Both		1	1.75	0.6	0.0303	0.0303
Q12	3285	-972	4257	3285		0	None	Both		1	1.75	0.6	-0.0390	-0.0390
Q13	6553	4752	1801	6553		0	BL3	Both	Forest	0.4	1.75	0.6	0.1909	0.0764
Q14	3386	3386	0	3386		0	None			1	1.75	0.6	0.1360	0.1360
Q15	13283	-3275	16558	13283		0	None	Both		1	1.75	0.6	-0.1316	-0.1316
Q16	3774	-334	4108	3774		0	None	Right	Forest	1	1.75	0.6	-0.0134	-0.0134
Q17	3825	-954	4779	3825		0	BL3	Left	Forest	0.4	1.75	0.6	-0.0383	-0.0153
Q18	4826	-347	5173	4826		0	BL4	Left	Meadow	0.4	1.75	0.6	-0.0139	-0.0056
Q19	66871	6820	30158	37078		29793	None			1	1.75	0.6	0.6884	0.6884
Q20	16933	8418	1025	9443		7490	USF2			0.25	1.75	0.6	0.4414	0.1103
Q20	21075	21075	0	21075	21075		USF2			0.25	0.5	0.6	0.2419	0.0605
Q21	5530	5530	0	5530		0	BA1	Both	Meadow	0.4	0.5	0.6	0.0635	0.0254
Q22	11137	11137	0	11137		0	None			1	0.5	0.6	0.1278	0.1278

Total New Impervious **2.75** acres Total Pre Tx Phos **3.4976** lbs P/year Total Post Tx Phos **1.9430** lbs P/year

Mitigation credit when a pre-existing source is treated by a new BMP

Watershed	Existing Road Area to be Tx (SF)	Existing Road Area to be Tx (acres)	Export Coefficient (lbs P/acre/year)	Modifier	Pre-treatment Historical P Export (lbs P/year)	Treatment Factor for Historical BMP(s) (1.0 if no BMPs)	Historical P Export (lbs P/year)		Treatment Factor for New BMP(s) Chapter 6	Mitigation Credit (lbs P/year)		Comments
Q6	219	0.0050	1.75	0.5	0.0044	1	0.0044	1 -	0.4	0.0026		
Q8	2477	0.0569	1.75	0.5	0.0498	1	0.0498	1 -	0.4	0.0299		
Q9	2363	0.0542	1.75	0.5	0.0475	1	0.0475	1 -	0.4	0.0285		
Q11	5916	0.1358	1.75	0.5	0.1188	1	0.1188	1 -	1	0.0000		
Q13	1801	0.0413	1.75	0.5	0.0362	1	0.0362	1 -	0.4	0.0217		
Q16	4108	0.0943	1.75	0.5	0.0825	1	0.0825	1 -	1	0.0000		
Q17	4779	0.1097	1.75	0.5	0.0960	1	0.0960	1 -	0.4	0.0576		
Q18	5173	0.1188	1.75	0.5	0.1039	1	0.1039	1 -	0.4	0.0623		
Total source treatment mitigation credit (STC)										0.2026	lbs P/year	

Test Pit	Texture	Restrictive Layer (Inches)	High Water Table (Inches)	Hydrologic Soil Group
1A	Very Fine Sandy Loam	>40	∅	C
2A	Very Fine Sandy Loam	>40	∅	C
3A	Very Fine Sandy Loam	22	16	D
4A	Fine Sandy Loam	18	∅	D
5A	Very Fine Sandy Loam	>40	∅	C
6A	Sandy Loam/Silt Loam	24	24	C
7A	Silt Loam	17	17	D
8A	Fine Sandy Loam/Sandy Loam	>40	∅	C
9A	Sandy Loam/Fine Sand	>40	∅	B
10A	Sandy Loam	>40	∅	B