

STUDY AREA STATISTICS Aquideck Island

STANDARD - NO BMPS

		Study Area Land Use Indicators						Riparian Indicators						Estimated Nutrient Loading			
Study Area	Scenario	Acres	% Sewer	% High Intensity Land Use	% Im-pervious	% Forest	% Wetland	% Forest & wetland	RIP % HILU	RIP%Im-pervious	RIP % Forest	RIP % Wetland	RIP % Forest and Wetland	NO3N in GW Recharge e mg/l	NO3N to GW recharge lbs/ac/yr	N SW runoff lbs/ac/yr	Total N to study area lbs/ac/y
Aquidneck Whole	Current Land Use	6708	49%	52%	21%	4%	13%	18%	32%	15%	8%	34%	41%	18.6	20.6	11.8	32.4
Bailey Brook	Current Land Use	2811	79%	68%	35%	0%	16%	16%	50%	28%	1%	30%	30%	24.0	13.6	10.4	24.0
Gardiner Pond	Current Land Use	292	15%	24%	2%	9%	12%	21%	5%	1%	10%	46%	56%	85.5	16.0	11.7	27.8
Lawton Valley Reservoir	Current Land Use	827	0%	33%	13%	7%	6%	13%	34%	11%	21%	24%	45%	16.0	25.1	11.0	36.1
Maidford River	Current Land Use	1336	49%	51%	15%	1%	11%	12%	10%	9%	0%	32%	32%	14.9	29.2	14.0	43.1
Nelson Pond	Current Land Use	604	11%	27%	7%	21%	14%	36%	16%	6%	21%	38%	59%	8.2	18.0	9.3	27.4
St. Mary's Pond	Current Land Use	508	0%	45%	8%	7%	13%	20%	32%	1%	17%	49%	66%	54.7	30.7	14.9	45.6
Sisson Pond	Current Land Use	330	3%	48%	5%	5%	22%	27%	34%	0%	7%	59%	66%	35.1	30.9	16.0	47.0

Note: Runoff and nutrient loading estimates based on local RIGS land use and soils data, local research on nitrogen leaching, and assumptions from literature review.
 Nutrient loading estimates represent potential sources entering runoff or groundwater recharge.
 Nutrient removal in surface or groundwater is not quantified but depends on multiple factors such as extent and location of developed land, extent of wetlands and forest, soil types, and undeveloped shoreline buffers .

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Estimated Nitrate-N sources to groundwater SOILS hydrologic groups

SWAP

Study Area	Scenario	Septic Systems	Lawn Fert.	Agri. Fert.	Pet Waste	Other	% A	% B	% C	% D	%SHWT <1.5-3.5'	%SHWT 1.5'-3.5'	%Restr. C., 2"/hr	% Erode	HILU on A soil	HILU on HWT <3.5'
Aquidneck Whole	Current Land Use	21%	6%	67%	5%	1%	0%	1%	93%	6%	55.8%	40%	69%	22%	0%	28%
Bailey Brook	Current Land Use	23%	10%	56%	11%	1%	0%	0%	98%	2%	52.0%	40%	60%	14%	0%	34%
Gardiner Pond	Current Land Use	4%	2%	92%	0%	2%	0%	0%	58%	42%	59.4%	38%	58%	6%	0%	20%
Lawton Valley Reservoir	Current Land Use	36%	7%	54%	2%	1%	0%	1%	99%	0%	26.1%	15%	83%	54%	0%	2%
Maidford River	Current Land Use	16%	4%	76%	3%	1%	0%	0%	98%	2%	90.9%	69%	83%	8%	0%	44%
Nelson Pond	Current Land Use	26%	3%	66%	2%	3%	0%	8%	81%	11%	67.2%	44%	60%	19%	0%	25%
St. Mary's Pond	Current Land Use	25%	3%	70%	2%	0%	0%	0%	99%	1%	28.3%	18%	65%	51%	0%	9%
Sisson Pond	Current Land Use	13%	1%	85%	1%	0%	0%	0%	88%	12%	39.9%	18%	57%	39%	0%	16%

Note: Runoff and nutrient loading
 Nutrient loading estimates represent
 Nutrient removal in surface or groundwater

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Estimated Water Budget / Runoff / Recharge

Study Area	Scenario	# ISDS	ISDS /Acre	Precip Inches	ET Inches	Avail. Precip Inches	SW runoff Inches	Net	ISDS	SW	GW	Precip Mgal/yr	ET Mgal/yr	Avail. Precip Mgal/yr	surface runoff Mgal/yr	Avg.net recharge precip. Mgal/yr	ISDS recharge Mgal/yr	If 100% forested surface runoff Mgal/yr	Lost
								recharge Precip. Inches	recharge e Inches	runoff % avail.	recharge e % avail								recharge from 100% forested Mgal/yr
Aquidneck Whole	Current Land Use	1,950	0.29	42	21	21	16.6	4.4	0.5	79%	21%	7650	3825	3825	3,018	807	85	991	2,027
Bailey Brook	Current Land Use	570	0.20	42	21	21	18.8	2.2	0.3	90%	10%	3205	1603	1603	1,437	166	25	252	1,185
Gardiner Pond	Current Land Use	14	0.05	42	21	21	20.2	0.8	0.1	96%	4%	333	167	167	161	6	1	126	35
Lawton Valley Reservoir	Current Land Use	500	0.60	42	21	21	15.0	6.0	1.0	72%	28%	943	472	472	337	134	22	153	184
Maidford River	Current Land Use	400	0.30	42	21	21	12.8	8.2	0.5	61%	39%	1523	762	762	465	296	18	104	361
Nelson Pond	Current Land Use	190	0.31	42	21	21	11.8	9.2	0.5	56%	44%	688	344	344	193	151	8	98	96
St. Mary's Pond	Current Land Use	262	0.52	42	21	21	19.4	1.6	0.8	92%	8%	580	290	290	267	23	11	160	107
Sisson Pond	Current Land Use	85	0.26	42	21	21	17.5	3.5	0.4	83%	17%	376	188	188	157	31	4	97	59

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Future		Acres	% Sewer	% High Intensity Land Use	% Impervious	% Forest	% Wetland	% Forest & wetland	RIP % HILU	RIP%Impervious	RIP % Forest	RIP % Wetland	RIP % Forest and Wetland	NO3N in Recharge e mg/l	NO3N to GW recharge lbs/ac/yr	N SW runoff lbs/ac/yr	Total N to study area lbs/ac/yr
Aquidneck Whole	Future Land Use	6682	49%	40%	26%	4%	13%	17%	31%	16%	8%	35%	42%	13.9	14.2	8.7	22.8
Bailey Brook	Future Land Use	2785	79%	62%	40%	0%	16%	16%	51%	29%	1%	31%	32%	26.2	8.8	8.8	17.8
Gardiner Pond	Future Land Use	292	15%	14%	4%	9%	12%	21%	5%	1%	10%	46%	56%	29.2	10.7	8.5	19.4
Lawton Valley Reservoir	Future Land Use	827	0%	25%	17%	7%	6%	13%	31%	13%	20%	24%	45%	14.4	22.1	8.8	31.0
Maidford River	Future Land Use	1336	49%	26%	22%	1%	11%	12%	6%	10%	0%	32%	32%	8.7	17.3	7.9	25.9
Nelson Pond	Future Land Use	604	11%	14%	12%	19%	14%	33%	15%	6%	21%	38%	59%	5.4	12.4	5.4	17.2
St. Mary's Pond	Future Land Use	508	0%	35%	12%	6%	13%	19%	32%	1%	17%	49%	66%	46.5	26.3	12.3	38.6
Sisson Pond	Future Land Use	330	3%	29%	11%	4%	22%	25%	34%	0%	7%	59%	66%	27.3	22.7	11.5	34.5

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Future		Septic Systems	Lawn Fert.	Agri. Fert	Pet Waste	Other	% A	% B	% C	% D	%SHWT <1.5-3.5'	%SHWT 1.5'-3.5'	%Restr. C.,2"/hr	% Erode	HILU on A soil	HILU on HWT <3.5'
Aquidneck Whole	Future Land Use	40%	13%	39%	7%	1%	0%	1%	93%	6%	56.0%	41%	69%	22%	0%	20%
Bailey Brook	Future Land Use	40%	20%	21%	18%	1%	0%	0%	98%	2%	52.3%	40%	60%	14%	0%	30%
Gardiner Pond	Future Land Use	16%	6%	75%	1%	3%	0%	0%	58%	42%	59.4%	38%	58%	6%	0%	12%
Lawton Valley Reservoir	Future Land Use	50%	10%	36%	3%	1%	0%	1%	99%	0%	26.1%	15%	83%	54%	0%	2%
Maidford River	Future Land Use	40%	14%	39%	6%	1%	0%	0%	98%	2%	90.9%	69%	83%	8%	0%	23%
Nelson Pond	Future Land Use	56%	11%	25%	4%	3%	0%	8%	81%	11%	67.2%	44%	60%	19%	0%	13%
St. Mary's Pond	Future Land Use	36%	5%	56%	2%	0%	0%	0%	99%	1%	28.3%	18%	65%	51%	0%	8%
Sisson Pond	Future Land Use	30%	5%	62%	2%	0%	0%	0%	88%	12%	39.9%	18%	57%	39%	0%	11%

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Estimated Water Budget / Runoff / Recharge
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		# ISDS	ISDS /Acre	Precip Inches	ET Inches	Avail. Precip Inches	SW runoff Inches	Net recharge Precip. Inches	ISDS recharge Inches	SW runoff % avail.	GW recharge % avail	Precip Mgal/yr	ET Mgal/yr	Avail. Precip Mgal/yr	surface runoff Mgal/yr	Avg.net recharge precip. Mgal/yr	ISDS recharge Mgal/yr	If 100% forested surface runoff Mgal/yr	Lost recharge from 100% forested Mgal/yr
Future																			
Aquidneck Whole	Future Land Use	2,484	0.37	42	21	21	17.1	3.9	0.6	81%	19%	7620	3810	3810	3,097	713	109	988	2,109
Bailey Brook	Future Land Use	645	0.23	42	21	21	19.9	1.1	0.4	95%	5%	3175	1588	1588	1,504	83	28	249	1,255
Gardiner Pond	Future Land Use	33	0.11	42	21	21	19.6	1.4	0.2	93%	7%	333	167	167	155	11	1	126	29
Lawton Valley Reservoir	Future Land Use	603	0.73	42	21	21	15.4	5.6	1.2	73%	27%	943	472	472	346	126	26	153	192
Maidford River	Future Land Use	610	0.46	42	21	21	12.9	8.1	0.7	62%	38%	1523	762	762	469	292	27	104	365
Nelson Pond	Future Land Use	277	0.46	42	21	21	11.7	9.3	0.7	56%	44%	688	344	344	191	153	12	98	94
St. Mary's Pond	Future Land Use	319	0.63	42	21	21	19.5	1.5	1.0	93%	7%	580	290	290	269	21	14	160	109
Sisson Pond	Future Land Use	151	0.46	42	21	21	18.1	2.9	0.7	86%	14%	376	188	188	162	26	7	97	64