

STUDY AREA STATISTICS

Estimates based on GIS data and assumptions from literature review.

STANDARD - NO BMPS

		Study Area Land Use Indicators							Riparian Indicators				
Study Area	Scenario	Acres	% Sewer	Percent High Intensity Land Use	% Impervious	% Forest	% Wetland	% Forest & wetland	RIP % HILU	RIP% Impervious	RIP % Forest	RIP % Wetland	RIP % Forest and Wetland
Barden Reservoir	Current Land Use21ET	19928	0%	3%	2%	73%	11%	84%	2%	1%	66%	25%	91%
Moswansicut Reservoir	Current Land Use21ETnoWater	1923	0%	9%	11%	41%	15%	57%	5%	5%	48%	31%	79%
Ponaganset Reservoir	Current Land Use21ETnoWater	930	0%	0%	3%	69%	8%	77%	1%	3%	64%	19%	83%
Regulating Reservoir	Current Land Use21ET	11901	0%	4%	4%	63%	12%	74%	3%	3%	59%	25%	84%
Scituate Reservoir	Current Land Use21ETnoWater	18290	0%	3%	3%	71%	12%	83%	1%	1%	65%	28%	93%
Westconnaug Reservoir	Current Land Use21ETnoWater	3267	0%	3%	2%	73%	8%	81%	1%	1%	71%	20%	91%
Entire Watershed	Current Land Use21ET	60227	0%	3%	3%	65%	11%	75%	2%	2%	64%	26%	90%
Future													
Barden Reservoir	Future Land Use	19960	0%	2%	8%	17%	11%	28%	1%	5%	28%	24%	53%
Moswansicut Reservoir	Future Land Use21ETnoWater	1965	0%	5%	16%	18%	15%	33%	4%	8%	31%	31%	62%
Ponaganset Reservoir	Future Land Use21ETnoWater	1144	0%	0%	8%	8%	7%	15%	1%	7%	17%	18%	35%
Regulating Reservoir	Future Land Use21ET	11928	0%	2%	9%	16%	12%	28%	2%	6%	23%	25%	48%
Scituate Reservoir	Future Land Use21ETnoWater	18360	0%	1%	6%	45%	12%	57%	1%	3%	49%	28%	77%
Westconnaug Reservoir	Future Land Use21ET	3437	0%	1%	6%	29%	8%	37%	1%	4%	42%	20%	61%
Entire Watershed	Future Land Use21ET	60227	0%	2%	7%	25%	11%	35%	1%	5%	34%	25%	59%

STUDY AREA STATISTICS

Note: Nutrient loading estimates are potential inputs at the source and represent amounts entering runoff or groundwater recharge.

STANDARD - NO BMPS

Estimated Nutrient Loading

Estimated Nitrate-N sources to grw recharge

Study Area	Scenario	NO3N in GW Recharge mg/l	NO3N to GW recharge lbs/ac/yr	N SW runoff lbs/ac/yr	Total N to study area lbs/ac/yr	% N in SW runoff from Atm.	P to SW lbs/ac/yr	Septic Systems	Lawn Fert.	Agri. Fert	Pet Waste	Other
Barden Reservoir	Current Land Use21ET	0.5	3.1	2.5	5.5	5.8%	0.3	29%	8%	32%	2%	30%
Moswansicut Reservoir	Current Land Use21ETnoWater	1.9	10.4	4.2	14.6	0.7%	0.8	48%	11%	32%	3%	6%
Ponaganset Reservoir	Use21ETnoWater	0.5	3.2	2.4	5.6	9.7%	0.4	53%	17%	0%	3%	26%
Regulating Reservoir	Current Land Use21ET	0.9	5.3	3.1	8.5	7.0%	0.5	42%	10%	30%	2%	15%
Scituate Reservoir	Current Land Use21ETnoWater	0.7	4.2	2.7	6.9	2.5%	0.4 b		10%	33%	2%	21%
Westconnaug Reservoir	Current Land Use21ETnoWater	0.6	4.0	2.5	6.5	1.2%	0.3	25%	8%	42%	1%	23%
Entire Watershed	Current Land Use21ET	0.7	4.0	3.1	7.0	20.7%	0.4	36%	10%	32%	2%	21%
Future												
Barden Reservoir	Future Land Use	1.0	5.7	2.7	8.5	0.9%	0.7	66%	25%	1%	4%	5%
Moswansicut Reservoir	Future Land Use21ETnoWater	2.1	10.8	4.0	14.8	0.6%	1.1	72%	18%	3%	4%	3%
Ponaganset Reservoir	Future Land Use21ETnoWater	1.2	6.7	2.8	9.6	1.5%	0.8	67%	26%	0%	4%	2%
Regulating Reservoir	Future Land Use21ET	1.3	6.9	3.1	10.0	5.6%	0.8	67%	23%	2%	4%	4%
Scituate Reservoir	Future Land Use21ETnoWater	0.8	5.0	2.6	7.6	2.2%	0.6	60%	21%	4%	4%	12%
Westconnaug Reservoir	Future Land Use21ET	0.9	5.3	2.4	7.8	1.6%	0.6	62%	25%	2%	4%	8%
Entire Watershed	Future Land Use21ET	1.1	5.6	3.1	8.7	16.9%	0.7	65%	23%	2%	4%	6%

STUDY AREA STATISTICS

STANDARD - NO BMPS

		SOILS hydrologic groups								SWAP				
Study Area	Scenario	% 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'	# ISDS	ISDS /Acre	
Barden Reservoir	Current Land Use21ET	6%	31%	61%	3%	59.7%	39%	52%	27%	0%	1%	1,157	0.06	
Moswansicut Reservoir	Current Land Use 21ETnoWater	10%	42%	40%	8%	36.5%	21%	33%	42%	2%	3%	638	0.33	
Ponaganset Reservoir	Current Land Use 21ETnoWater	4%	55%	40%	1%	52.7%	37%	34%	44%	0%	0%	106	0.11	
Regulating Reservoir	Current Land Use21ET	9%	39%	50%	2%	45.1%	27%	41%	39%	0%	1%	1,752	0.15	
Scituate Reservoir	Current Land Use 21ETnoWater	5%	52%	40%	3%	34.8%	18%	33%	47%	0%	1%	1,745	0.10	
Westconnaug Reservoir	Current Land Use 21ETnoWater	18%	49%	31%	3%	31.1%	17%	26%	60%	1%	1%	217	0.07	
Entire Watershed	Current Land Use21ET	8%	41%	47%	3%	43.0%	26%	38%	36%	0%	1%	5,612	0.09	
Future														
Barden Reservoir	Future Land Use Future Land	6%	31%	61%	3%	59.6%	39%	52%	27%	0%	1%	4,973	0.25	
Moswansicut Reservoir	Future Land Use 21ETnoWater	10%	42%	40%	8%	35.8%	21%	33%	41%	1%	1%	1,006	0.51	
Ponaganset Reservoir	Future Land Use 21ETnoWater	4%	57%	38%	1%	42.8%	30%	33%	36%	0%	0%	340	0.30	
Regulating Reservoir	Future Land Use21ET	9%	39%	50%	2%	45.0%	27%	41%	39%	0%	1%	3,680	0.31	
Scituate Reservoir	Future Land Use 21ETnoWater	5%	52%	40%	3%	34.7%	18%	33%	47%	0%	0%	3,644	0.20	
Westconnaug Reservoir	Future Land Use21ET	18%	49%	30%	3%	29.6%	16%	26%	57%	0%	0%	748	0.22	
Entire Watershed	Future Land Use21ET	8%	41%	48%	3%	42.9%	26%	39%	36%	0%	1%	14,389	0.24	

STUDY AREA STATISTICS

STANDARD - NO BMPS

Estimated Water Budget / Runoff / Recharge

Study Area	Scenario	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
Barden Reservoir	Current Land Use21ET	53	21	32	5.0	27.0	0.1	16%	84%	28677	11363	17315	2,708	14,607	51	2,035	673
	Current Land Use 21ETnoWater																
Moswansicut Reservoir	Current Land Use21ETnoWater	53	21	32	8.3	23.7	0.5	26%	74%	2767	1096	1671	435	1,236	28	145	290
Ponaganset Reservoir	Use21ETnoWater	53	21	32	5.6	26.4	0.2	18%	82%	1338	530	808	142	666	5	98	43
Regulating Reservoir	Current Land Use21ET	53	21	32	6.6	25.4	0.2	21%	79%	17127	6786	10341	2,120	8,221	77	1,287	833
	Current Land Use 21ETnoWater																
Scituate Reservoir	Current Land Use21ETnoWater	53	21	32	4.7	27.3	0.2	15%	85%	26320	10429	15892	2,353	13,539	76	1,452	901
	Current Land Use21ETnoWater																
Westconnaug Reservoir	Use21ETnoWater	53	21	32	3.8	28.2	0.1	12%	88%	4701	1863	2838	338	2,501	9	203	135
Entire Watershed	Current Land Use21ET	53	21	32	8.4	23.6	0.2	26%	74%	86537	34288	52249	13,704	38,545	246	10,829	2,875
Future																	
Barden Reservoir	Future Land Use	53	21	32	6.9	25.1	0.4	22%	78%	28724	11381	17343	3,730	13,612	218	1,626	2,104
	Future Land Use21ETnoWater																
Moswansicut Reservoir	Future Land Use21ETnoWater	53	21	32	10.4	21.6	0.8	32%	68%	2828	1120	1707	553	1,154	44	147	407
	Future Land Use21ETnoWater																
Ponaganset Reservoir	Future Land Use21ETnoWater	53	21	32	7.1	24.9	0.5	22%	78%	1646	652	994	220	774	15	83	137
Regulating Reservoir	Future Land Use21ET	53	21	32	8.3	23.7	0.5	26%	74%	17166	6801	10364	2,687	7,677	161	1,193	1,495
	Future Land Use21ETnoWater																
Scituate Reservoir	Future Land Use21ETnoWater	53	21	32	5.9	26.1	0.3	18%	82%	26422	10469	15953	2,932	13,021	160	1,426	1,506
Westconnaug Reservoir	Future Land Use21ET	53	21	32	5.7	26.3	0.4	18%	82%	4946	1960	2986	529	2,457	33	217	312
Entire Watershed	Future Land Use21ET	53	21	32	9.5	22.5	0.4	30%	70%	86649	34332	52316	15,575	36,741	630	9,616	5,959

Study Area Land Use Indicators								Riparian Indicators					
Study Area	Scenario	Acres	% Sewer	Percent High Intensity Land Use	% Impervious	% Forest	% Wetland	% Forest & wetland	RIP % HILU	RIP% Impervious	RIP % Forest	RIP % Wetland	RIP % Forest and Wetland

BMP

Study Area	Scenario
Barden Reservoir	Buildout 20% Fert.leaching
Moswansicut Reservoir	Buildout 20% Fert.leaching
Ponaganset Reservoir	Buildout 20% Fert.leaching
Regulating Reservoir	Buildout 20% Fert.leaching
Scituate Reservoir	Buildout 20% Fert.leaching
Westconnaug Reservoir	Buildout 20% Fert.leaching
Entire Watershed	Buildout 20% Fert.leaching

Barden Reservoir	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr
Moswansicut Reservoir	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr
Ponaganset Reservoir	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr
Regulating Reservoir	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr
Scituate Reservoir	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr
Westconnaug Reservoir	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr
Entire Watershed	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr

Impervious BMP

Barden Reservoir	20% Impervious Reduction	19960	0%	2%	6%	17%	11%	28%	1%	28%	24%	53%
Moswansicut Reservoir	20% Impervious Reduction	1965	0%	5%	15%	18%	15%	33%	4%	31%	31%	62%
Ponaganset Reservoir	20% Impervious Reduction	1143	0%	0%	7%	8%	7%	15%	1%	17%	18%	35%
Regulating Reservoir	20% Impervious Reduction	11928	0%	2%	8%	16%	12%	28%	2%	23%	25%	48%
Scituate Reservoir	20% Impervious Reduction	18360	0%	1%	5%	45%	12%	57%	1%	49%	28%	77%
Westconnaug Reservoir	20% Impervious Reduction	3437	0%	1%	5%	29%	8%	37%	1%	42%	20%	61%
Entire Watershed	20% Impervious Reduction	60227	0%	2%	6%	25%	11%	35%	1%	34%	25%	59%

Estimated Nutrient Loading

Estimated Nitrate-N sources to grw recharge

Study Area	Scenario	NO3N in GW	NO3N to GW	N SW runoff	Total N to study area	% N in SW runoff from Atm.	P to SW	Septic Systems	Lawn Fert.	Agri. Fert	Pet Waste	Other
		Recharge mg/l	recharge lbs/ac/yr									
BMP												
Study Area	Scenario	NO3N in GW Recharge mg/l	NO3N to GW recharge lbs/ac/yr	N SW runoff lbs/ac/yr	Total N to study area lbs/ac/yr	% N in SW runoff from Atm.						
Barden Reservoir	Buildout 20% Fert.leaching	1.6	9.1	2.7	11.8	0.9%						
Moswansicut Reservoir	Buildout 20% Fert.leaching	3.0	15.4	4.0	19.4	0.6%						
Ponaganset Reservoir	Buildout 20% Fert.leaching	1.9	10.9	2.8	13.7	1.5%						
Regulating Reservoir	Buildout 20% Fert.leaching	1.9	10.6	3.1	13.7	5.6%						
Scituate Reservoir	Buildout 20% Fert.leaching	1.2	7.4	2.6	10.0	2.2%						
Westconnaug Reservoir	Buildout 20% Fert.leaching	1.4	8.4	2.4	10.8	1.6%						
Entire Watershed	Buildout 20% Fert.leaching	1.7	8.6	3.1	11.6	16.9%						
Barden Reservoir	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr	0.8	4.7	2.7	7.4	0.9%						
Moswansicut Reservoir	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr	1.8	9.3	4.0	13.3	0.6%						
Ponaganset Reservoir	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr	0.9	5.4	2.8	8.2	1.5%						
Regulating Reservoir	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr	1.0	5.7	3.1	8.8	5.6%						
Scituate Reservoir	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr	0.7	4.2	2.6	6.8	2.2%						
Westconnaug Reservoir	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr	0.7	4.3	2.4	6.8	1.6%						
Entire Watershed	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr	0.9	4.6	3.1	7.7	16.9%						
Impervious BMP												
Barden Reservoir	20% Impervious Reduction	1.0	5.8	2.5	2.5	1.0%	0.6	65%	25%	1%	4%	5%
Moswansicut Reservoir	20% Impervious Reduction	2.1	10.8	3.8	14.6	0.7%	1.0	72%	18%	3%	4%	3%
Ponaganset Reservoir	20% Impervious Reduction	1.2	6.8	2.6	2.6	1.7%	0.7	66%	26%	0%	4%	3%
Regulating Reservoir	20% Impervious Reduction	1.2	7.0	2.9	2.9	6.0%	0.7	67%	23%	2%	4%	4%
Scituate Reservoir	20% Impervious Reduction	0.8	5.0	2.5	7.5	2.3%	0.5	60%	20%	4%	4%	12%
Westconnaug Reservoir	20% Impervious Reduction	0.9	5.4	2.3	7.6	1.7%	0.5	61%	24%	2%	4%	8%
Entire Watershed	20% Impervious Reduction	1.1	5.6	2.9	2.9	17.9%	0.6	64%	23%	2%	4%	7%

SOILS hydrologic groups **SWAP**

Study Area	Scenario	% 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'	# ISDS	ISDS /Acre
------------	----------	-----	-----	-----	-----	--------------------	--------------------	---------------------	--------	-------------------	-------------------------	--------	------------

BMP

Study Area	Scenario
Barden Reservoir	Buildout 20% Fert.leaching
Moswansicut Reservoir	Buildout 20% Fert.leaching
Ponaganset Reservoir	Buildout 20% Fert.leaching
Regulating Reservoir	Buildout 20% Fert.leaching
Scituate Reservoir	Buildout 20% Fert.leaching
Westconnaug Reservoir	Buildout 20% Fert.leaching
Entire Watershed	Buildout 20% Fert.leaching

Barden Reservoir	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr
Moswansicut Reservoir	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr
Ponaganset Reservoir	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr
Regulating Reservoir	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr
Scituate Reservoir	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr
Westconnaug Reservoir	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr
Entire Watershed	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr

Impervious BMP

Barden Reservoir	20% Impervious Reduction	6%	31%	61%	3%	59.6%	39%	52%	27%	0%	1%	4,973	0.25
Moswansicut Reservoir	20% Impervious Reduction	10%	42%	40%	8%	35.8%	21%	33%	41%	1%	1%	1,006	0.51
Ponaganset Reservoir	20% Impervious Reduction	4%	57%	38%	1%	42.9%	30%	33%	36%	0%	0%	339	0.30
Regulating Reservoir	20% Impervious Reduction	9%	39%	50%	2%	45.0%	27%	41%	39%	0%	1%	3,680	0.31
Scituate Reservoir	20% Impervious Reduction	5%	52%	40%	3%	34.7%	18%	33%	47%	0%	0%	3,644	0.20
Westconnaug Reservoir	20% Impervious Reduction	18%	49%	30%	3%	29.6%	16%	26%	57%	0%	0%	748	0.22
Entire Watershed	20% Impervious Reduction	8%	41%	48%	3%	42.9%	26%	39%	36%	0%	1%	14,389	0.24

Estimated Water Budget / Runoff / Recharge

Study Area	Scenario	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
BMP																	
Study Area	Scenario																
Barden Reservoir	Buildout 20% Fert.leaching																
Moswansicut Reservoir	Buildout 20% Fert.leaching																
Ponaganset Reservoir	Buildout 20% Fert.leaching																
Regulating Reservoir	Buildout 20% Fert.leaching																
Scituate Reservoir	Buildout 20% Fert.leaching																
Westconnaug Reservoir	Buildout 20% Fert.leaching																
Entire Watershed	Buildout 20% Fert.leaching																
Barden Reservoir	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr																
Moswansicut Reservoir	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr																
Ponaganset Reservoir	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr																
Regulating Reservoir	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr																
Scituate Reservoir	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr																
Westconnaug Reservoir	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr																
Entire Watershed	Buildout 3% Fert.leaching at 87.5 lbs/ac/yr																
Impervious BMP																	
Barden Reservoir	20% Impervious Reduction	53	21	32	6.3	25.7	0.4	20%	80%	28724	11381	17343	3,418	13,925	218	1,626	1,791
Moswansicut Reservoir	20% Impervious Reduction	53	21	32	9.9	22.1	0.8	31%	69%	2828	1120	1707	526	1,181	44	147	379
Ponaganset Reservoir	20% Impervious Reduction	53	21	32	6.5	25.5	0.5	20%	80%	1645	652	993	203	790	15	83	120
Regulating Reservoir	20% Impervious Reduction	53	21	32	7.8	24.2	0.5	24%	76%	17166	6801	10364	2,537	7,827	161	1,193	1,344
Scituate Reservoir	20% Impervious Reduction	53	21	32	5.6	26.4	0.3	17%	83%	26422	10469	15953	2,786	13,167	160	1,426	1,360
Westconnaug Reservoir	20% Impervious Reduction	53	21	32	5.3	26.7	0.4	16%	84%	4946	1960	2986	492	2,493	33	217	276
Entire Watershed	20% Impervious Reduction	53	21	32	9.1	22.9	0.4	28%	72%	86649	34332	52316	14,885	37,432	630	9,616	5,269

		Study Area Land Use Indicators							Riparian Indicators				
Study Area	Scenario	Acres	% Sewer	Percent High Intensity Land Use	% Impervious	% Forest	% Wetland	% Forest & wetland	RIP % HILU	RIP% Impervious	RIP % Forest	RIP % Wetland	RIP % Forest and Wetland
Stormwater BMPs													
Barden Reservoir	New Commercial/Industrial												
Barden Reservoir	All New Development												
Barden Reservoir	Retrofit to Existing High Intensity Development												
Barden Reservoir	All High Intensity Development												
Conservation Design													
Barden Reservoir	25% Conservation Design	19968	0%	2%	6%	32%	11%	43%	1%	28%	24%	53%	
Moswansicut Reservoir	25% Conservation Design	1965	0%	5%	16%	23%	15%	38%	4%	31%	31%	62%	
Ponaganset Reservoir	25% Conservation Design	1143	0%	0%	6%	25%	7%	32%	1%	17%	18%	35%	
Regulating Reservoir	25% Conservation Design	11928	0%	2%	7%	29%	12%	41%	2%	23%	25%	48%	
Scituate Reservoir	25% Conservation Design	18360	0%	1%	5%	52%	12%	64%	1%	49%	28%	77%	
Westconnaug Reservoir	25% Conservation Design	3437	0%	1%	4%	42%	8%	50%	1%	42%	20%	61%	
Entire Watershed	25% Conservation Design	60227	0%	2%	6%	36%	11%	46%	1%	34%	25%	59%	
Barden Reservoir	50% Conservation Design	19968	0%	2%	4%	47%	11%	58%	1%	28%	24%	53%	
Moswansicut Reservoir	50% Conservation Design	1965	0%	5%	15%	28%	15%	43%	4%	31%	31%	62%	
Ponaganset Reservoir	50% Conservation Design	1143	0%	0%	5%	43%	7%	49%	1%	17%	18%	35%	
Regulating Reservoir	50% Conservation Design	11928	0%	2%	6%	42%	12%	54%	2%	23%	25%	48%	
Scituate Reservoir	50% Conservation Design	18360	0%	1%	5%	59%	12%	71%	1%	49%	28%	77%	
Westconnaug Reservoir	50% Conservation Design	3437	0%	1%	4%	55%	8%	63%	1%	42%	20%	61%	
Entire Watershed	50% Conservation Design	60227	0%	2%	5%	47%	11%	57%	1%	34%	25%	59%	

Estimated Nutrient Loading

Estimated Nitrate-N sources to grw recharge

Study Area	Scenario	NO3N in GW	NO3N to GW	N SW runoff	Total N to study area	% N in SW runoff from Atm.	P to SW	Estimated Nitrate-N sources to grw recharge				
		Recharge mg/l	recharge lbs/ac/yr					lbs/ac/yr	lbs/ac/yr	Septic Systems	Lawn Fert.	Agri. Fert
Stormwater BMPs												
Barden Reservoir	New Commercial/Industrial	1.0	5.7	2.7	8.4	0.9%	0.7					
Barden Reservoir	All New Development	1.0	5.7	1.9	7.6	1.3%	0.5					
Barden Reservoir	Retrofit to Existing High Inter	0.5	3.1	2.4	5.4	6.1%	0.2					
Barden Reservoir	All High Intensity Developme	1.0	5.7	2.6	2.6	1.0%	0.7					
Conservation Design												
Barden Reservoir	25% Conservation Design	0.9	5.6	2.5	8.1	1.0%	0.6	67%	20%	1%	3%	8%
Moswansicut Reservoir	25% Conservation Design	2.0	10.3	3.9	14.3	0.7%	1.0	75%	18%	3%	1%	4%
Ponaganset Reservoir	25% Conservation Design	1.1	6.6	2.5	2.5	1.7%	0.6	68%	22%	0%	3%	6%
Regulating Reservoir	25% Conservation Design	1.2	6.7	2.8	2.8	6.1%	0.7	69%	20%	2%	2%	7%
Scituate Reservoir	25% Conservation Design	0.8	4.9	2.4	2.4	2.4%	0.5	62%	18%	4%	2%	14%
Westconnaug Reservoir	25% Conservation Design	0.8	5.2	2.2	7.4	1.7%	0.5	63%	20%	2%	3%	11%
Entire Watershed	25% Conservation Design	1.0	5.4	2.9	2.9	18.2%	0.5	66%	19%	2%	3%	9%
Barden Reservoir	50% Conservation Design	0.9	5.5	2.3	7.8	1.1%	0.5	69%	15%	1%	4%	11%
Moswansicut Reservoir	50% Conservation Design	2.0	10.3	3.9	14.2	0.7%	1.0	75%	17%	3%	1%	4%
Ponaganset Reservoir	50% Conservation Design	1.0	6.4	2.4	2.4	1.8%	0.5	70%	17%	0%	4%	9%
Regulating Reservoir	50% Conservation Design	1.1	6.6	2.7	2.7	6.3%	0.6	71%	16%	2%	2%	9%
Scituate Reservoir	50% Conservation Design	0.8	4.8	2.4	2.4	2.4%	0.4	62%	16%	5%	2%	16%
Westconnaug Reservoir	50% Conservation Design	0.8	5.1	2.1	7.2	1.8%	0.4	65%	16%	2%	3%	14%
Entire Watershed	50% Conservation Design	1.0	5.3	2.8	8.1	18.6%	0.5	68%	16%	2%	3%	12%

		SOILS hydrologic groups				SWAP								
Study Area	Scenario	% 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'	# ISDS	ISDS /Acre	
Stormwater BMPs														
Barden Reservoir	New Commercial/Industrial													
Barden Reservoir	All New Development													
Barden Reservoir	Retrofit to Existing High Inter													
Barden Reservoir	All High Intensity Developme													
Conservation Design														
Barden Reservoir	25% Conservation Design	6%	31%	61%	3%	59.6%	39%	52%	27%	0%	1%	4,973	0.25	
Moswansicut Reservoir	25% Conservation Design	10%	42%	40%	8%	35.8%	21%	33%	41%	1%	1%	1,006	0.51	
Ponaganset Reservoir	25% Conservation Design	4%	56%	39%	1%	42.9%	30%	34%	36%	0%	0%	340	0.30	
Regulating Reservoir	25% Conservation Design	9%	39%	50%	2%	45.0%	27%	41%	39%	0%	1%	3,680	0.31	
Scituate Reservoir	25% Conservation Design	5%	52%	40%	3%	34.7%	18%	33%	47%	0%	0%	3,644	0.20	
Westconnaug Reservoir	25% Conservation Design	18%	49%	30%	3%	29.6%	16%	26%	57%	0%	0%	748	0.22	
Entire Watershed	25% Conservation Design	8%	41%	48%	3%	42.9%	26%	39%	36%	0%	1%	14,405	0.24	
Barden Reservoir	50% Conservation Design	6%	31%	61%	3%	59.6%	39%	52%	27%	0%	1%	4,973	0.25	
Moswansicut Reservoir	50% Conservation Design	10%	42%	40%	8%	35.8%	21%	33%	41%	1%	1%	1,006	0.51	
Ponaganset Reservoir	50% Conservation Design	4%	55%	40%	1%	42.9%	30%	35%	36%	0%	0%	340	0.30	
Regulating Reservoir	50% Conservation Design	9%	39%	50%	2%	45.0%	27%	41%	39%	0%	1%	3,680	0.31	
Scituate Reservoir	50% Conservation Design	5%	52%	40%	3%	34.7%	18%	33%	47%	0%	0%	3,644	0.20	
Westconnaug Reservoir	50% Conservation Design	18%	49%	30%	3%	29.6%	16%	26%	57%	0%	0%	748	0.22	
Entire Watershed	50% Conservation Design	8%	41%	48%	3%	42.9%	26%	39%	36%	0%	1%	14,389	0.24	

Estimated Water Budget / Runoff / Recharge

Study Area	Scenario	Precip	ET	Avail.	SW runoff	Net recharge	ISDS	SW runoff %	GW		Precip	ET	Avail. Precip	surface	Avg.net	ISDS	If 100%	Lost	
		Inches	Inches	Precip Inches	Inches	Precip. Inches	recharge Inches	avail.	recharge %	Mgal/yr	Mgal/yr	Mgal/yr	Mgal/yr	recharge precip. Mgal/yr	recharge Mgal/yr	forested surface runoff Mgal/yr	recharge from 100% forested Mgal/yr		
Stormwater BMPs																			
Barden Reservoir	New Commercial/Industrial																		
Barden Reservoir	All New Development																		
Barden Reservoir	Retrofit to Existing High Inter																		
Barden Reservoir	All High Intensity Developme																		
Conservation Design																			
Barden Reservoir	25% Conservation Design	53	21	32	6.0	26.0	0.4	19%	81%	28736	11386	17350	3,230	14,120	218	1,628	1,602		
Moswansicut Reservoir	25% Conservation Design	53	21	32	10.0	22.0	0.8	31%	69%	2828	1120	1707	534	1,173	44	147	388		
Ponaganset Reservoir	25% Conservation Design	53	21	32	5.9	26.1	0.5	19%	81%	1645	652	993	184	809	15	84	100		
Regulating Reservoir	25% Conservation Design	53	21	32	7.4	24.6	0.5	23%	77%	17166	6801	10364	2,402	7,963	161	1,193	1,209		
Scituate Reservoir	25% Conservation Design	53	21	32	5.4	26.6	0.3	17%	83%	26422	10469	15953	2,694	13,258	160	1,426	1,269		
Westconnaug Reservoir	25% Conservation Design	53	21	32	4.8	27.2	0.4	15%	85%	4946	1960	2986	447	2,539	33	217	230		
Entire Watershed	25% Conservation Design	53	21	32	8.8	23.2	0.4	27%	73%	86649	34332	52316	14,358	37,958	631	9,616	4,742		
Barden Reservoir	50% Conservation Design	53	21	32	5.3	26.7	0.4	17%	83%	28724	11381	17343	2,895	14,447	218	1,627	1,268		
Moswansicut Reservoir	50% Conservation Design	53	21	32	9.8	22.2	0.8	31%	69%	2828	1120	1707	525	1,182	44	147	378		
Ponaganset Reservoir	50% Conservation Design	53	21	32	5.3	26.7	0.5	17%	83%	1645	652	993	165	828	15	84	81		
Regulating Reservoir	50% Conservation Design	53	21	32	7.0	25.0	0.5	22%	78%	17166	6801	10364	2,254	8,110	161	1,193	1,061		
Scituate Reservoir	50% Conservation Design	53	21	32	5.2	26.8	0.3	16%	84%	26422	10469	15953	2,572	13,381	160	1,426	1,146		
Westconnaug Reservoir	50% Conservation Design	53	21	32	4.3	27.7	0.4	13%	87%	4946	1960	2986	402	2,584	33	217	185		
Entire Watershed	50% Conservation Design	53	21	32	8.4	23.6	0.4	26%	74%	86649	34332	52316	13,734	38,582	630	9,616	4,119		