Table 1-1
Final Goals and Objectives for the Development of a Metedeconk River Watershed Protection Restoration Plan

Goal		Objective
1	**Provide a sustainable water supply to the human population while maintaining natural water regimes**	Improve natural freshwater flows
		Promote water conservation and implement water re-use demonstration projects (i.e., fully functioning with educational components) on public properties (e.g., golf courses and other public facilities)
2	**Ensure no degradation in water quality (i.e. maintain the Category One designation) and eliminate water quality impairments**	Reduce stormwater flow via implementation of projects on public facilities and redevelopment projects
		Reduce nitrogen, phosphorus, pathogens, tds and tss
		Implement TMDLs (reference existing 303d list and develop priority implementation schedule with NJDEP and USEPA)
		Prevent habitat loss and support habitat restoration within riparian buffers to preserve and improve regional biodiversity
		Address data gaps for groundwater and tributary water quality within the Metedeconk River watershed
		Protect and restore critical wildlife habitat and natural lands identified by NJDEP, Trust for Public Land, Rutgers University, Ocean County Natural Lands Trust and others (e.g. riparian areas, forested areas, etc.)
		Minimize health risks to recreational contact water users from pathogens (i.e., make pathogen-impaired waters a priority for TMDL implementation)
		Improve soil health for biological, chemical, and physical function; implement demonstration projects on public and/or priority properties
		Identify multiple sources of funding for implementation of the plan
3	**Support the health of the Barnegat Bay**	Reduce nitrogen, phosphorus, pathogens and tss
		Reduce stormwater runoff to the bay
		Improve passive recreational access
		Protect natural shoreline buffers and open space; implement buffer setback
4	**Improve the water quality of watershed lakes**	Reduce pathogen and phosphorus inputs
		Address invasive plant species (e.g., identify priority species and develop management plans) and sediment accumulation (e.g., reduce stormwater runoff and protect shoreline buffers)
5	**Promote education and outreach regarding watershed impacts from growth**	Enlist involvement and support of all levels of government, specifically municipal and/or county planning and zoning boards and environmental commissions, stormwater coordinators, DPWs, etc., for sustained effectiveness in managing watershed resources
		Identify and encourage Low Impact Development standards appropriate for the Metedeconk basin
		Promote cooperation among the development community, such as board of realtors, shore builders assoc., etc., involved in watershed development
		Promote cooperation among various regulatory agencies involved in watershed resources and development
		Support Smart Growth standards and promote municipal participation in Sustainable NJ
		Support open space planning and preservation (work with towns and Green Acres to develop a plan for headwater protection)
		Work in concert with the Barnegat Bay Partnership and other organizations involved in education and outreach to: (1) expand the public's understanding of the watershed, (2) encourage public participation and support of improving watershed health, and (3) promote public involvement in restoration activities
		Increase public understanding of the Metedeconk watershed and the role the public plays in its health
		Involve stakeholders in defining problems, objectives and solutions

Table 2-1

Major Soil Types within the Metedeconk River Watershed

Soil Symbol	Soil Name	Runoff Class	Drainage Class	Hydrologic Group	Taxonomic Class	Order	Erosion Potential	Area within Watershed (acres)
AtsA	Atsion sand, 0 to 2 percent slopes	Very high	Poorly drained	A/D	Sandy, siliceous, mesic Aeric Alaquods	Spodosols	Low	8538.347834
LasB	Lakewood sand, 0 to 5 percent slopes	Very low	Excessively drained	A	Mesic, coated Spodic Quartzipsamments	Entisols	Low	7843.78903
LakB	Lakehurst sand, 0 to 5 percent slopes	Very high	Moderately well drained	A	Mesic, coated Aquodic Quartzipsamments	Entisols	Low	5995.469982
EveB	Evesboro sand, 0 to 5 percent slopes	Very low	Excessively drained	A	Mesic, coated Lamellic Quartzipsamments	Entisols	Low	5336.668902
DocB	Downer loamy sand, 0 to 5 percent slopes	Very low	Well drained	B	Coarse-loamy, siliceous, semiactive, mesic Typic Hapludults	Ultisols	Moderate	4688.176734
KkgB	Klej loamy sand, 0 to 5 percent slopes	Very high	Somewhat poorly drained	B	Mesic, coated Aquic Quartzipsamments	Entisols	Low	2510.212275
BerAt	Berryland sand, 0 to 2 percent slopes, frequently flooded	Very low	Very poorly drained	B/D	Sandy, siliceous, mesic Typic Alaquods	Spodosols	Low	2093.215248
MakAt	Manahawkin muck, 0 to 2 percent slopes, frequently flooded	Negligible	Very poorly drained	D	Sandy or sandy-skeletal, siliceous, dysic, mesic Terric Haplosaprists	Histosols	Low	1274.805901
LasC	Lakewood sand, 5 to 10 percent slopes	Low	Excessively drained	A	Mesic, coated Spodic Quartzipsamments	Entisols	Low	957.0471445
GamB	Galloway loamy sand, 0 to 5 percent slopes	Very low	Somewhat poorly drained	A/D	Mesic, coated Aquic Quartzipsamments	Entisols	Low	951.0009901
BerAr	Berryland sand, 0 to 2 percent slopes, rarely flooded	Negligible	Very poorly drained	B/D	Sandy, siliceous, mesic Typic Alaquods	Spodosols	Low	939.7269545
EveC	Evesboro sand, 5 to 10 percent slopes	Low	Excessively drained	A	Mesic, coated Lamellic Quartzipsamments	Entisols	Low	819.0344575
DoeA	Downer sandy loam, 0 to 2 percent slopes	Very low	Well drained	B	Coarse-loamy, siliceous, semiactive, mesic Typic Hapludults	Ultisols	Moderate	811.8644717
UR	Urban land							680.1344099
EvuB	Evesboro-Urban land complex, 0 to 5 percent slopes	Very low	Excessively drained	A	Mesic, coated Lamellic Quartzipsamments	Entisols	Low	614.3812
EveD	Evesboro sand, 10 to 15 percent slopes	Low	Excessively drained	A	Mesic, coated Lamellic Quartzipsamments	Entisols	Low	576.4911525
DoeB	Downer sandy loam, 2 to 5 percent slopes	Very low	Well drained	B	Coarse-loamy, siliceous, semiactive, mesic Typic Hapludults	Ultisols	Moderate	569.8421627
UdauB	Udorthents-Urban land complex, 0 to 8 percent slopes	Medium	Well drained	D	Udorthents	Entisols	Moderate	467.1582848
DofgB	Downer gravelly sandy loam, gravelly substratum, 2 to 5 percent slopes	Very low	Well drained	B	Coarse-loamy, siliceous, semiactive, mesic Typic Hapludults	Ultisols	Moderate	358.9580497
PssA	Psamments, 0 to 3 percent slopes	Very low	Well drained	A	Mesic Psamments	Entisols	Low	324.3162221

Table 2-2
Soil Types by HUC14 within North Branch Watershed

HUC	Symbol	Soil Name	Runoff Class	Drainage Class	Hydrologic Group	Erosion Potential	Acres	% of Soil in HUC14
NB1	AtsA	Atsion sand, 0 to 2 percent slopes	Very high	Poorly drained	A/D	Low	1991.2	36%
	LakB	Lakehurst sand, 0 to 5 percent slopes	Very high	Moderately well drained	A	Low	1120.8	20%
	LasB	Lakewood sand, 0 to 5 percent slopes	Very low	Excessively drained	A	Low	796.3	15%
	EveB	Evesboro sand, 0 to 5 percent slopes	Very low	Excessively drained	A	Low	336.9	6%
	KkgB	Klej loamy sand, 0 to 5 percent slopes	Very high	Somewhat poorly drained	B	Low	281.8	5%
	HumAt	Humaquepts, 0 to 3 percent slopes, frequently flooded	Negligible	Poorly drained	D	Moderate	186.4	3%
	LasC	Lakewood sand, 5 to 10 percent slopes	Low	Excessively drained	A	Low	110.4	2%
	EveD	Evesboro sand, 10 to 15 percent slopes	Low	Excessively drained	A	Low	92.0	2%
	ThgB	Tinton loamy sand, 0 to 5 percent slopes	Very low	Well drained	A	Moderate	90.1	2%
	CoeAs	Colemantown loam, 0 to 2 percent slopes, occasionally flooded	Negligible	Poorly drained	C/D	Moderate	77.3	1%
	EveC	Evesboro sand, 5 to 10 percent slopes	Low	Excessively drained	A	Low	68.4	1%
	DoeB	Downer sandy loam, 2 to 5 percent slopes	Very low	Well drained	B	Moderate	67.3	1%
NB2	LasB	Lakewood sand, 0 to 5 percent slopes	Very low	Excessively drained	A	Low	1043.2	15%
	EveB	Evesboro sand, 0 to 5 percent slopes	Very low	Excessively drained	A	Low	990.5	14%
	KkgB	Klej loamy sand, 0 to 5 percent slopes	Very high	Somewhat poorly drained	B	Low	952.2	14%
	AtsA	Atsion sand, 0 to 2 percent slopes	Very high	Poorly drained	A/D	Low	932.1	13%
	LakB	Lakehurst sand, 0 to 5 percent slopes	Very high	Moderately well drained	A	Low	534.9	8%
	BerAt	Berryland sand, 0 to 2 percent slopes, frequently flooded	Very low	Very poorly drained	B/D	Low	462.0	7%
	DocB	Downer loamy sand, 0 to 5 percent slopes	Very low	Well drained	B	Moderate	435.8	6%
	LasC	Lakewood sand, 5 to 10 percent slopes	Low	Excessively drained	A	Low	313.6	5%
	EvuB	Evesboro-Urban land complex, 0 to 5 percent slopes	Very low	Excessively drained	A	Low	297.5	4%
	UdauB	Udorthents-Urban land complex, 0 to 8 percent slopes	Medium	Well drained	D	Moderate	179.1	3%
	EveC	Evesboro sand, 5 to 10 percent slopes	Low	Excessively drained	A	Low	143.9	2%
	HboA	Hammonton sandy loam, 0 to 2 percent slopes	Very high	Moderately well drained	B	Moderate	84.7	1%
	GamB	Galloway loamy sand, 0 to 5 percent slopes	Very low	Somewhat poorly drained	A/D	Low	69.8	1%
	EveD	Evesboro sand, 10 to 15 percent slopes	Low	Excessively drained	A	Low	60.0	1%
	PssA	Psamments, 0 to 3 percent slopes	Very low	Well drained	A	Low	47.0	1%
	DoeB	Downer sandy loam, 2 to 5 percent slopes	Very low	Well drained	B	Moderate	46.7	1%
NB3	AtsA	Atsion sand, 0 to 2 percent slopes	Very high	Poorly drained	A/D	Low	1234.6	32%
	KkgB	Klej loamy sand, 0 to 5 percent slopes	Very high	Somewhat poorly drained	B	Low	707.6	18%
	LasB	Lakewood sand, 0 to 5 percent slopes	Very low	Excessively drained	A	Low	410.8	11%
	LakB	Lakehurst sand, 0 to 5 percent slopes	Very high	Moderately well drained	A	Low	319.6	8%
	EvuB	Evesboro-Urban land complex, 0 to 5 percent slopes	Very low	Excessively drained	A	Low	316.8	8%
	UdauB	Udorthents-Urban land complex, 0 to 8 percent slopes	Medium	Well drained	D	Moderate	288.1	7%
	EveB	Evesboro sand, 0 to 5 percent slopes	Very low	Excessively drained	A	Low	242.0	6%
	BerAt	Berryland sand, 0 to 2 percent slopes, frequently flooded	Very low	Very poorly drained	B/D	Low	163.7	4%
	EveD	Evesboro sand, 10 to 15 percent slopes	Low	Excessively drained	A	Low	66.2	2%
NB4	LasB	Lakewood sand, 0 to 5 percent slopes	Very low	Excessively drained	A	Low	715.6	23%
	AtsA	Atsion sand, 0 to 2 percent slopes	Very high	Poorly drained	A/D	Low	709.4	23%
	EveB	Evesboro sand, 0 to 5 percent slopes	Very low	Excessively drained	A	Low	472.4	15%
	LakB	Lakehurst sand, 0 to 5 percent slopes	Very high	Moderately well drained	A	Low	462.6	15%
	KkgB	Klej loamy sand, 0 to 5 percent slopes	Very high	Somewhat poorly drained	B	Low	274.3	9%
	DoeB	Downer sandy loam, 2 to 5 percent slopes	Very low	Well drained	B	Moderate	143.9	5%
	BerAt	Berryland sand, 0 to 2 percent slopes, frequently flooded	Very low	Very poorly drained	B/D	Low	83.8	3%
	WogA	Woodstown loam, 0 to 2 percent slopes	Low	Moderately well drained	C	Moderate	69.8	2%
NB5	EveB	Evesboro sand, 0 to 5 percent slopes	Very low	Excessively drained	A	Low	1218.4	24%
	DocB	Downer loamy sand, 0 to 5 percent slopes	Very low	Well drained	B	Moderate	1033.0	20%
	BerAt	Berryland sand, 0 to 2 percent slopes, frequently flooded	Very low	Very poorly drained	B/D	Low	512.5	10%
	LasB	Lakewood sand, 0 to 5 percent slopes	Very low	Excessively drained	A	Low	282.0	6%
	AtsA	Atsion sand, 0 to 2 percent slopes	Very high	Poorly drained	A/D	Low	275.9	5%
	LakB	Lakehurst sand, 0 to 5 percent slopes	Very high	Moderately well drained	A	Low	266.5	5%
	KkgB	Klej loamy sand, 0 to 5 percent slopes	Very high	Somewhat poorly drained	B	Low	245.7	5%
	DoeA	Downer sandy loam, 0 to 2 percent slopes	Very low	Well drained	B	Moderate	225.7	4%
	MakAt	Manahawkin muck, 0 to 2 percent slopes, frequently flooded	Negligible	Very poorly drained	D	Low	199.1	4%
	DouB	Downer-Urban land complex, 0 to 5 percent slopes	Very low	Well drained	B	Moderate	141.2	3%
	EveC	Evesboro sand, 5 to 10 percent slopes	Low	Excessively drained	A	Low	131.9	3%
	BerAr	Berryland sand, 0 to 2 percent slopes, rarely flooded	Negligible	Very poorly drained	B/D	Low	112.2	2%
	UR	Urban land				#N/A	110.4	2%
	DoeB	Downer sandy loam, 2 to 5 percent slopes	Very low	Well drained	B	Moderate	85.0	2%
CFL1	LasB	Lakewood sand, 0 to 5 percent slopes	Very low	Excessively drained	A	Low	2079.1	44%
	LakB	Lakehurst sand, 0 to 5 percent slopes	Very high	Moderately well drained	A	Low	696.5	15%
	DocB	Downer loamy sand, 0 to 5 percent slopes	Very low	Well drained	B	Moderate	315.3	7%
	UR	Urban land					314.2	7%
	AtsA	Atsion sand, 0 to 2 percent slopes	Very high	Poorly drained	A/D	Low	267.6	6%
	AptAv	Appoquinimink-Transquaking-Mispillion complex, 0 to 1 percent slopes, very frequently flooded	Negligible	Very poorly drained	D	High	220.4	5%
	MakAt	Manahawkin muck, 0 to 2 percent slopes, frequently flooded	Negligible	Very poorly drained	D	Low	215.3	5%
	PstAt	Psammaquents, sulfidic substratum, 0 to 3 percent slopes, frequently flooded	Negligible	Very poorly drained	A	Low	134.3	3%
	BerAt	Berryland sand, 0 to 2 percent slopes, frequently flooded	Very low	Very poorly drained	B/D	Low	128.0	3%
	EveB	Evesboro sand, 0 to 5 percent slopes	Very low	Excessively drained	A	Low	127.4	3%

Table 2-2 (cont'd)
Soil Types by HUC14 within the South Brach Watershed

HUC	Symbol	Soil Name	Runoff Class	Drainage Class	Hydrologic Group	Erosion Potential	Acres	% of Soil in HUC14
SB1	AtsA	Atsion sand, 0 to 2 percent slopes	Very high	Poorly drained	A/D	Low	931.5	29%
	LasB	Lakewood sand, 0 to 5 percent slopes	Very low	Excessively drained	A	Low	657.7	21%
	LakB	Lakehurst sand, 0 to 5 percent slopes	Very high	Moderately well drained	A	Low	537.2	17%
	BerAr	Berryland sand, 0 to 2 percent slopes, rarely flooded	Negligible	Very poorly drained	B/D	Low	499.9	16%
	LasC	Lakewood sand, 5 to 10 percent slopes	Low	Excessively drained	A	Low	145.2	5%
	BerAt	Berryland sand, 0 to 2 percent slopes, frequently flooded	Very low	Very poorly drained	B/D	Low	106.1	3%
	PhbB	Phalanx loamy sand, 2 to 5 percent slopes	Very low	Well drained	B	Moderate	52.7	2%
	KkgB	Klej loamy sand, 0 to 5 percent slopes	Very high	Somewhat poorly drained	B	Low	48.6	2%
	LakkB	Lakehurst sand, clayey substratum, 0 to 5 percent slopes	Very high	Moderately well drained	A	Moderate	36.5	1%
	PHG	Pits, sand and gravel		Well drained			34.7	1%
SB2	AtsA	Atsion sand, 0 to 2 percent slopes	Very high	Poorly drained	A/D	Low	891.3	25%
	BerAr	Berryland sand, 0 to 2 percent slopes, rarely flooded	Negligible	Very poorly drained	B/D	Low	88.6	2%
	BerAt	Berryland sand, 0 to 2 percent slopes, frequently flooded	Very low	Very poorly drained	B/D	Low	93.0	3%
	DocB	Downer loamy sand, 0 to 5 percent slopes	Very low	Well drained	B	Moderate	69.0	2%
	DoeB	Downer sandy loam, 2 to 5 percent slopes	Very low	Well drained	B	Moderate	18.5	1%
	EveB	Evesboro sand, 0 to 5 percent slopes	Very low	Excessively drained	A	Low	333.6	9%
	GamB	Galloway loamy sand, 0 to 5 percent slopes	Very low	Somewhat poorly drained	A/D	Low	202.0	6%
	KemA	Keyport sandy loam, 0 to 2 percent slopes	Medium	Moderately well drained	C	High	10.9	0%
	LakB	Lakehurst sand, 0 to 5 percent slopes	Very high	Moderately well drained	A	Low	1031.4	29%
	LasB	Lakewood sand, 0 to 5 percent slopes	Very low	Excessively drained	A	Low	700.5	20%
SB3	LasB	Lakewood sand, 0 to 5 percent slopes	Very low	Excessively drained	A	Low	784.0	16%
	AtsA	Atsion sand, 0 to 2 percent slopes	Very high	Poorly drained	A/D	Low	712.8	15%
	LakB	Lakehurst sand, 0 to 5 percent slopes	Very high	Moderately well drained	A	Low	606.2	13%
	DocB	Downer loamy sand, 0 to 5 percent slopes	Very low	Well drained	B	Moderate	561.7	12%
	GamB	Galloway loamy sand, 0 to 5 percent slopes	Very low	Somewhat poorly drained	A/D	Low	434.0	9%
	DoeA	Downer sandy loam, 0 to 2 percent slopes	Very low	Well drained	B	Moderate	387.3	8%
	MakAt	Manahawkin muck, 0 to 2 percent slopes, frequently flooded	Negligible	Very poorly drained	D	Low	273.2	6%
	BerAt	Berryland sand, 0 to 2 percent slopes, frequently flooded	Very low	Very poorly drained	B/D	Low	196.7	4%
	LasC	Lakewood sand, 5 to 10 percent slopes	Low	Excessively drained	A	Low	176.7	4%
	EveB	Evesboro sand, 0 to 5 percent slopes	Very low	Excessively drained	A	Low	170.3	4%
	DoeB	Downer sandy loam, 2 to 5 percent slopes	Very low	Well drained	B	Moderate	137.6	3%
	HbmB	Hammonton loamy sand, 0 to 5 percent slopes	Very high	Moderately well drained	B	Moderate	117.2	2%
SB4	DocB	Downer loamy sand, 0 to 5 percent slopes	Very low	Well drained	B	Moderate	1577.6	32%
	EveB	Evesboro sand, 0 to 5 percent slopes	Very low	Excessively drained	A	Low	952.7	19%
	AtsA	Atsion sand, 0 to 2 percent slopes	Very high	Poorly drained	A/D	Low	311.0	6%
	EveD	Evesboro sand, 10 to 15 percent slopes	Low	Excessively drained	A	Low	300.4	6%
	EveC	Evesboro sand, 5 to 10 percent slopes	Low	Excessively drained	A	Low	281.5	6%
	BerAt	Berryland sand, 0 to 2 percent slopes, frequently flooded	Very low	Very poorly drained	B/D	Low	259.7	5%
	DofgB	Downer gravelly sandy loam, gravelly substratum, 2 to 5 percent slopes	Very low	Well drained	B	Moderate	182.2	4%
	LakB	Lakehurst sand, 0 to 5 percent slopes	Very high	Moderately well drained	A	Low	171.6	3%
	PssA	Psamments, 0 to 3 percent slopes	Very low	Well drained	A	Low	126.8	3%
	PHG	Pits, sand and gravel		Well drained		#N/A	87.3	2%
	SacB	Sassafras sandy loam, 2 to 5 percent slopes	Low	Well drained	B	Moderate	86.0	2%
	LasB	Lakewood sand, 0 to 5 percent slopes	Very low	Excessively drained	A	Low	78.2	2%
	BerAr	Berryland sand, 0 to 2 percent slopes, rarely flooded	Negligible	Very poorly drained	B/D	Low	68.2	1%
	MakAt	Manahawkin muck, 0 to 2 percent slopes, frequently flooded	Negligible	Very poorly drained	D	Low	61.9	1%
	DoeB	Downer sandy loam, 2 to 5 percent slopes	Very low	Well drained	B	Moderate	54.8	1%
	LasC	Lakewood sand, 5 to 10 percent slopes	Low	Excessively drained	A	Low	50.7	1%
	KemA	Keyport sandy loam, 0 to 2 percent slopes	Medium	Moderately well drained	C	High	49.7	1%
SB5	DocB	Downer loamy sand, 0 to 5 percent slopes	Very low	Well drained	B	Moderate	693.3	23%
	EveB	Evesboro sand, 0 to 5 percent slopes	Very low	Excessively drained	A	Low	482.3	16%
	LasB	Lakewood sand, 0 to 5 percent slopes	Very low	Excessively drained	A	Low	296.3	10%
	AtsA	Atsion sand, 0 to 2 percent slopes	Very high	Poorly drained	A/D	Low	281.0	9%
	MakAt	Manahawkin muck, 0 to 2 percent slopes, frequently flooded	Negligible	Very poorly drained	D	Low	263.9	9%
	LakB	Lakehurst sand, 0 to 5 percent slopes	Very high	Moderately well drained	A	Low	248.2	8%
	UR	Urban land				#N/A	164.4	5%
	GamB	Galloway loamy sand, 0 to 5 percent slopes	Very low	Somewhat poorly drained	A/D	Low	144.1	5%
	DoeA	Downer sandy loam, 0 to 2 percent slopes	Very low	Well drained	B	Moderate	99.4	3%
	EveC	Evesboro sand, 5 to 10 percent slopes	Low	Excessively drained	A	Low	75.2	2%
	PssA	Psamments, 0 to 3 percent slopes	Very low	Well drained	A	Low	66.8	2%
	BerAt	Berryland sand, 0 to 2 percent slopes, frequently flooded	Very low	Very poorly drained	B/D	Low	54.1	2%
	LasC	Lakewood sand, 5 to 10 percent slopes	Low	Excessively drained	A	Low	50.7	2%

Table 2-3

Population by Municipality within the Metedeconk River Watershed (Study Area)

Municipality	Sum of Acres	2010 Population	2010 No. of Housing Units	Housing Density (persons per household)
Brick Township	5,125.77	18,677	8,105	2.3
Freehold Township	6,687.69	1,295	452	2.86
Howell Township	13,124.76	31,768	10,446	3.04
Jackson Township	13,744.31	30,191	11,085	2.72
Lakewood Township	11,108.10	73,226	15,967	4.59
Millstone Township	110.51	57	29	1.98
Wall Township	217.95	224	91	2.47
Grand Total	**50,119**	**155,439**	**46,175**	**3.19 (weighted avg)**

Table 2-4

Population by HUC14 within the Metedeconk River Watershed (Study Area)

HUC	Sum of Acres	2010 Population	2010 No. of Housing Units	Housing Density (persons per household)
CFL1	5,910.78	15,121	6,387	2.37
NB1	5,475.83	1,999	754	2.65
NB2	6,948.68	24,647	7,449	3.31
NB3	3,916.07	10,338	3,339	3.1
NB4	3,082.06	3,282	974	3.37
NB5	5,064.64	36,390	9,507	3.83
SB1	3,203.00	348	120	2.91
SB2	3,603.59	2,436	1,088	2.24
SB3	4,835.66	11,301	4,031	2.8
SB4	5,001.00	27,142	7,414	3.66
SB5	3,077.78	22,434	5,114	4.39
Grand Total	**50,119**	**155,439**	**46,175**	**3.12 (weighted avg)**

Table 2-5

Demographics for Major Townships within the Metedeconk River Watershed

Township	Brick Township	Freehold Township	Howell Township	Jackson Township	Lakewood Township
Total Population	75,072	36,184	51,075	54,856	92,843
Housing Status					
(in housing units unless noted)					
Total	33,677	13,140	17,979	20,342	26,337
Occupied	29,842	12,577	17,260	19,417	24,283
Owner-occupied	24,863	10,368	15,386	16,925	12,570
Population in owner-occupied (number of individuals)	63,038	29,768	46,322	48,632	41,765
Renter-occupied	4,979	2,209	1,874	2,492	11,713
Population in renter-occupied (number of individuals)	11,335	4,781	4,637	5,792	48,718
Vacant	3,835	563	719	925	2,054
Vacant: for rent	379	260	130	223	584
Vacant: for sale	431	108	235	230	431
Vacant: for seasonal/recreational/occasional use	89	33	93	81	69
Population by Sex/Age					
Male	35,770	17,903	25,061	26,656	46,115
Female	39,302	18,281	26,014	28,200	46,728
Under 18	15,547	8,797	13,451	13,531	38,842
18 & over	59,525	27,387	37,624	41,325	54,001
20 - 24	4,020	1,843	2,983	2,737	7,372
25 - 34	7,966	3,613	4,812	5,073	15,272
35 - 49	16,161	8,835	12,578	13,130	10,244
50 - 64	16,194	7,545	10,815	10,924	7,634
65 & over	13,468	4,698	5,105	8,123	11,286
Population by Ethnicity					
Hispanic or Latino	5,301	2,808	4,153	4,295	16,062
Non Hispanic or Latino	69,771	33,376	46,922	50,561	76,781
Population by Race					
White	69,856	30,509	45,100	48,765	78,290
African American	1,502	1,931	1,865	2,664	5,898
Asian	1,173	2,544	2,309	1,616	777
American Indian and Alaska Native	104	47	79	57	276
Native Hawaiian and Pacific Islander	27	7	23	18	14
Other	1,350	531	822	696	6,199
Identified by two or more	1,060	615	877	1,040	1,389

Table 2-6
USGS Stream Gages along the Metedeconk River

USGS Site ID	Name	Drainage Area (sq. mi)	Period of Record
1408120	North Branch Metedeconk River near Lakewood NJ	34.9	October 1972 to Present
1408140	South Branch Metedeconk River at Lakewood NJ	26	October 1972 through September 1976
1408150	South Branch Metedeconk River near Lakewood NJ	27.5	June 1992 through March 1999
1408151	South Branch Metedeconk River at New Hampshire Avenue near Lakewood NJ	29.5	June 2011 to Present

Table 2-7

Change in Land Use/Land Cover from 1995 to 2007

Municipality	Percent Impervious	Acres											
		Agriculture	Forest	Commercial	Industrial	Mixed Urban	High Residential	Medium Residential	Low Residential	Trans/Comm/Utility	Urban Open	Water	Wetlands
Brick Township	2%	(8.49)	(145.03)	46.83	(3.77)	2.26	(26.39)	59.07	3.32	64.99	1.07	47.70	(41.55)
Freehold Township	0%	20.58	(146.04)	(0.59)	1.98	4.57	0.00	(0.04)	140.54	(2.59)	18.01	3.99	(40.34)
Howell Township	2%	(119.66)	(535.26)	179.42	8.37	(42.88)	1.27	363.67	194.86	79.51	111.01	21.43	(261.67)
Jackson Township	4%	(266.88)	(1426.99)	115.44	43.13	63.42	99.13	501.70	701.30	19.84	324.81	29.35	(204.25)
Lakewood Township	4%	(44.76)	(952.04)	150.93	104.47	122.30	226.65	247.27	(12.43)	127.54	93.47	36.97	(100.34)
Millstone Township	2%	(0.55)	(7.01)	1.68	0.76	(4.31)	0.00	0.11	5.98	3.67	0.00	0.45	(0.77)
Wall Township	3%	7.23	(34.27)	0.00	0.00	(2.57)	0.00	11.23	8.44	(0.11)	10.06	0.00	0.00
Grand Total	**5%**	**(412.53)**	**(3246.66)**	**493.70**	**154.94**	**142.79**	**300.67**	**1183.00**	**1042.01**	**292.86**	**558.42**	**139.89**	**(648.92)**

Table 2-8

Summary of 2007 Land Use / Land Cover by HUC14 within the Metedeconk River Watershed

HUC14	Alternate ID	Branch	Percent Impervious	Acres											
				Agriculture	Forest	Commercial	Industrial	Mixed Urban	High Residential	Medium Residential	Low Residential	Trans/Comm/Utility	Urban Open	Water	Wetlands	Grand Total
02040301020010	**NB1**	Metedeconk River NB	4%	374.54	1,261.96	58.19	12.87	54.61	15.69	47.02	624.02	58.26	85.42	18.75	2,864.52	5,475.84
02040301020020	**NB2**	Metedeconk River NB	19%	265.96	1,169.15	319.03	16.01	140.80	62.57	1,985.57	1,210.04	218.88	148.35	18.95	1,393.37	6,948.69
02040301020030	**NB3**	Metedeconk River NB	14%	169.52	614.01	144.36	27.92	54.90	59.06	955.03	506.00	51.20	62.03	27.37	1,244.70	3,916.08
02040301020040	**NB4**	Metedeconk River NB	7%	310.28	994.28	27.14	36.42	56.08	11.82	257.65	282.86	63.63	216.29	11.11	814.51	3,082.08
02040301020050	**NB5**	Metedeconk River NB	22%	123.78	1,007.46	239.82	51.99	172.21	492.52	1,319.83	314.78	203.65	403.15	44.93	690.52	5,064.63
Sub Total Metedeconk River NB			**14%**	**1,244.08**	**5,046.86**	**788.54**	**145.22**	**478.59**	**641.67**	**4,565.09**	**2,937.70**	**595.63**	**915.24**	**121.11**	**7,007.62**	**24,487.33**
02040301030010	**SB1**	Metedeconk River SB	3%	182.79	1,092.24	13.63	32.86	25.22			134.96	42.66	21.26	15.42	1,641.94	3,202.99
02040301030020	**SB2**	Metedeconk River SB	7%	94.57	1,303.70	5.66	26.29	66.07	20.76	171.09	419.77	80.01	316.97	42.78	1,055.93	3,603.60
02040301030030	**SB3**	Metedeconk River SB	13%	130.70	1,113.65	123.62	25.47	89.54	103.74	579.04	1,142.21	41.99	210.39	44.54	1,230.77	4,835.66
02040301030040	**SB4**	Metedeconk River SB	19%	41.34	1,220.50	175.23	151.98	117.68	343.32	1,114.14	773.04	69.81	281.01	101.69	611.26	5,001.01
02040301030050	**SB5**	Metedeconk River SB	26%	2.10	750.80	336.02	204.84	165.72	217.78	467.95	69.00	93.90	198.21	74.38	497.09	3,077.78
Sub Total Metedeconk River SB			**14%**	**451.50**	**5,480.89**	**654.16**	**441.45**	**464.23**	**685.60**	**2,332.22**	**2,538.97**	**328.38**	**1,027.84**	**278.81**	**5,036.98**	**19,721.04**
02040301040020	**CNFL1**	Metedeconk River	23%		925.44	515.85	223.91	265.35	290.73	1,068.11	134.12	253.76	266.99	1,226.55	739.98	5,910.79
Grand Total	**Grand Total**		**15%**	**1,695.58**	**11,453.19**	**1,958.55**	**810.58**	**1,208.17**	**1,618.00**	**7,965.42**	**5,610.80**	**1,177.76**	**2,210.07**	**1,626.47**	**12,784.58**	**50,119.16**

Table 2-9

Change in Land Use/Land Cover from 1995 to 2007

HUC14	Alternate ID	Branch	Percent Impervious	Acres											
				Agriculture	Forest	Commercial	Industrial	Mixed Urban	High Residential	Medium Residential	Low Residential	Trans/Comm/Utility	Urban Open	Water	Wetlands
02040301020010	**NB1**	Metedeconk River NB	1%	24.58	(164.21)	13.22	1.32	10.27	2.68	17.54	130.87	6.52	18.03	6.51	(67.30)
02040301020020	**NB2**	Metedeconk River NB	2%	2.73	(338.23)	71.22	(0.70)	(41.35)	3.65	79.03	302.67	42.92	33.79	6.55	(162.27)
02040301020030	**NB3**	Metedeconk River NB	2%	3.12	(134.91)	97.92	(2.21)	(16.75)	(4.11)	37.91	85.58	17.50	(22.36)	1.90	(63.57)
02040301020040	**NB4**	Metedeconk River NB	3%	(86.87)	(282.25)	15.60	5.61	22.38	(0.28)	243.02	39.58	5.42	98.42	4.25	(64.84)
02040301020050	**NB5**	Metedeconk River NB	2%	(76.44)	(278.24)	23.81	(3.26)	12.36	47.55	192.40	23.00	32.73	64.34	25.81	(64.09)
Sub Total Metedeconk River NB				**(132.88)**	**(1,197.84)**	**221.77**	**0.77**	**(13.09)**	**49.49**	**569.90**	**581.70**	**105.10**	**192.22**	**45.03**	**(422.08)**
02040301030010	**SB1**	Metedeconk River SB	1%	2.36	(45.11)	7.48	16.02	(0.08)	-	(1.14)	37.66	7.17	(5.75)	2.62	(21.21)
02040301030020	**SB2**	Metedeconk River SB	3%	(51.81)	(331.67)	(0.88)	10.62	12.87	13.62	158.30	27.05	25.70	166.47	13.48	(43.77)
02040301030030	**SB3**	Metedeconk River SB	5%	(222.69)	(641.91)	71.06	18.29	37.64	32.85	309.72	292.49	5.16	146.51	10.84	(59.95)
02040301030040	**SB4**	Metedeconk River SB	3%	2.47	(406.55)	48.12	71.03	24.20	88.84	70.14	112.29	9.32	1.91	1.51	(23.29)
02040301030050	**SB5**	Metedeconk River SB	6%	(1.49)	(350.45)	73.34	9.64	20.59	131.06	34.30	(31.94)	56.40	77.67	17.68	(36.78)
Sub Total Metedeconk River SB				**(271.16)**	**(1,775.69)**	**199.11**	**125.61**	**95.22**	**266.37**	**571.33**	**437.54**	**103.74**	**386.82**	**46.13**	**(185.01)**
02040301040020		Metedeconk River	3%	(8.49)	(273.14)	75.79	28.57	60.65	(15.19)	41.76	19.76	84.01	(20.61)	48.73	(41.84)
Grand Total			**3%**	**(412.53)**	**(3,246.66)**	**496.68**	**154.94**	**142.79**	**300.66**	**1,183.00**	**1,039.01**	**292.85**	**558.42**	**139.88**	**(648.93)**

- - - - - - - - - - - - -

Table 3-1
Identified Water Quality Impairments

Subbasin	HUC14	Area (mi^2)	Subwatershed Name	TMDL	2010 Integrated List (Priority Ranking)
NB-1	02040301020010	8.6	Metedeconk R NB (above I-195)	Phosphorus, Stream Fecal Coliform	Dissolved Oxygen (M)**, Arsenic (L), DDD(L), DDT(L), DDE(L), Chlordane in Fish Tissue(L), Mercury in Fish Tissue(L), PCB in Fish Tissue(L), Turbidity*, Lead*
NB-2	02040301020020	10.9	Metedeconk R NB (Rt 9 to I-195)	Stream Fecal Coliform	Dissolved Oxygen(M)**, Temperature(M), Arsenic(L), Turbidity*
NB-3	02040301020030	6.1	Haystack Brook	Stream Fecal Coliform	Cause Unknown(M)
NB-4	02040301020040	4.8	Muddy Ford Brook	Stream Fecal Coliform	TP(M), TSS(M), Arsenic(L)**, Mercury in Water Column(L)
NB-5	02040301020050	7.9	Metedeconk R NB (confluence to Rt 9)	Stream Fecal Coliform	Temperature(M), Arsenic(L)**, Lead*
SB-1	02040301030010	5	Metedeconk R SB (above I-195 exit 21 rd)	Stream Fecal Coliform	Dissolved Oxygen (M)**, Arsenic (L), Lead*
SB-2	02040301030020	5.6	Metedeconk R SB (74d19m15s to I-195 X21)	Stream Fecal Coliform	Turbidity*
SB-3	02040301030030	7.6	Metedeconk R SB (Bennetts Pd to 74d19m15s)	Stream Fecal Coliform	Cause Unknown (M), Polychlorinated biphenyls(L), Mercury in Fish Tissue(L), Chlordane in Fish Tissue(L)
SB-4	02040301030040	7.8	Metedeconk R SB (Rt 9 to Bennetts Pond)	Stream Fecal Coliform, Lake Fecal Coliform	Arsenic(L)**
SB-5	02040301030050	4.8	Metedeconk R SB (confluence to Rt 9)	Stream Fecal Coliform	Arsenic(L)**, Lead*
CNFL-1	02040301040020	9.2	Metedeconk R (Beaverdam Ck to confl)	Stream Fecal Coliform, Lake Fecal, Total Coliform	Arsenic(L)**, Cause Unknown(M)

* = listed on draft 2012 303(d) list

** = listed on 2010 303(d) List, but NOT included on draft 2012 303(d) list

Table 3-2

Surface Water Quality Standards Pertinent to the Metedeconk River for Non-Toxic Parameters

Parameter	SWQS	Relevant Classification	Notes
Enterococci (counts/100 mL)	35/100	SE1	geometric mean
	104/100		maximum single sample
E-Coli (counts/100 mL)	126/100	All FW2	geometric mean
	235/100		maximum single sample
Dissolved Oxygen (mg/L)	6	FW2-TM	24 hour average
	5		Any time
	5	FW2-NT, SE1	24 hour average
	4		Any time
Floating, colloidal, color and settleable solids; petroleum hydrocarbons and other oils and grease	None noticible in the water or deposited in quantites detrimental to natural biota. None which would render the water unsuitable for designated uses.	All	
Nutrients	Concentrations cannot render waters unsuitable for existing or designated uses (objectionable algal densities, nuisance aquatic vegetation,, diurnal fluctuations in DO, or other indicators of impairments caused by nutrients.	All	
Phosphorus (mg/L)	0.1	FW2	Non tidal streams
	0.05		Lakes
pH	4.5 - 7.5	FW2	
Total Suspended Solids (mg/L)	25	FW2-TP	
	40	FW2-NT	
Total Dissolved Solids (mg/L)	No increase in background which would interfere with designated or existing uses or 500 mg/L, whichever is more stringent.	FW2	
Sulfate (mg/L)	250	FW2	
Taste and Odor	None offensive to humans.	All	
Temperature (Celsius)	25	FW2-TM	daily maximum
	23		7 day average
	31	FW2-NT	daily maximum
	28		7 day average
	29.4	SE1	Summer seasonal average
Toxic Substances (general)	None in such concentratons to affect humans or be detrimental to natural aquatic biota or which would render the waters unsuitable for designated uses.	All	See Appendix 3
	None which would cause drinking water standards to be exceeded after appropriate treatment	FW2	See Appendix 3
Turbidity (NTU)	15	FW2	30 day average
	50		Any sample
Ammonia (mg NH3-N/L)	based on analytical equations	FW2	see SWQS

Table 3-3
Summary of SVA Ranking

Subbasin	No. SVA Sites	Score Average	Ranking
NB-1	8	7.1	4
NB-2	9	6.8	7
NB-3	6	5.5	11
NB-4	6	6.4	9
NB-5	16	7	6
SB-1	2	7.8	1
SB-2	5	7.8	2
SB-3	10	7.1	5
SB-4	12	6.6	8
SB-5	11	7.3	3
CNFL-1	3	5.6	10

Table 3-4
Sites Identified in Stream Visual Assessment as Possible Candidates for Restoration

Subbasin	Site	Score / Rank	Description	Restoration
NB5	CB1	6.9/ Fair	Receives runoff from bowling alley parking lot, banks are eroding and attempts have been made at stabilization, high flows may be coming from upstream sources	BMP to address parking lot runoff and/or streambank restoration project, upstream detention basin near Joe Parker Rd may also be a possible retrofit to reduce flows.
				BMP for upstream nursery and expansion of riparian buffer upstream.
NB5	CB5	6.2/ Fair	The tributary is a headwater stream fed by stormwater from a very urbanized area of Lakewood, no BMPs observed, litter present	The drainage area of this reach is a possible source of nonsource point pollution, reduction of stormwater volumes onsite or a BMP at the beginning of reach.
				Possible riparian buffer restoration.
CFL1	CBB-1	7.0/Fair	Reach located in a large commercial area, downstream of CCB-3, unstable banks, this site is downstream of the BTMUA intake	The drainage area of this reach is a source of nonsource point pollution and high flows of stormwater runoff, restoration of this site would be in partner with upstream stormwater controls and streambank restoration at site CBB-1.
				Possible opportunity for basin retrofit and improvements in housekeeping and stormwater infrastructure maintenance at adjacent shopping center(s).
CFL1	CBB-3	3.3/ Poor	Reach runs through a large commercial area near the Brick Plaza, banks are unstable and there is a lot of sediment, this site is downstream of the BTMUA intake	While this tributary meets the Metedeconk River downstream of the BTMUA, there are most likely water quality impacts on the Barnegat Bay, it appears there is very little treatment of stormwater from the shopping centers which are a large source of NPS. Possible opportunity for channel improvements and retrofit of parking lot islands, pervious pavers and catch basins. Signage to inform public of stormwater mitigation measures.
SB4	CP-3	3.9/Poor	Reach runs through a residential area near Forest Dr in Lakewood, erosion along stream banks, riparian buffer is narrow, and outfalls discharge directly to stream, there is an upstream lake and wooden dams and bulkheads have been constructed along the reach to prevent erosion	Reach is a possible site for streambank restoration to address erosion and restore riparian area, high stormwater flows or flow from the lake seems to be an issue, also could also be a candidate for on-site stormwater management such as rain gardens
NB5	CVS-1	8.5/Good	While this site scored good in the VAPP, there was a lot of litter in the reach and outfalls are silted in, runoff from the apartment complex is discharged directly to the stream	Possible BMP demonstration site to address runoff from apartment complex .
				Possibility of reestablishing some riparian buffer area; dumping occurring along reach – fencing would be beneficial.
NB3	DB-1			Agricultural BMPs may be beneficial at the herb farm adjacent to the reach. May also be an opportunity to improve riparian buffers.
NB3	GH1	5.5/Poor	Unstable banks and signs of high stormwater flows observed in VAPP, tributary begins in a residential area, waterfowl present in upstream ponds and algae in stream may indicate nutrients from fertilizer	Possible retrofits of the detention basin(s) in the area, particularly one found in disrepair adjacent reach. SVA indicates reach is along fire dept property, this may be a candidate for stream/riparian buffer restoration and/or installation of a BMP.
NB5	GR2	5.7/Poor	Stream is fed by stormwater from residential development at Newton's Corner Rd, Howell, habitat scores are low and algae was observed	Potential bio-retention area and installation of decentralized BMPs throughout the catchment neighborhood.
NB5	GR4	8.2/Good	Reach is downstream of GR2, there are signs of high stormwater flows and sediment in reach near outfalls from detention basins	Restoration of this site may be achieved through restoration of BMPs at the upstream reach GR2, retrofits to the detention basins along the reach are also a possibility.
NB3	HS6	4.7/Poor	Stream may have been re-routed during bridge construction, low channel scores, reach receives runoff from residential area, sediment in stream	Possible retrofits to upstream detention basins or on-site stormwater management on residential lots, e.g. rain gardens.
NB4	MF3	6.2/Poor	Headwater stream crossing Co Rd 547, Howell, culvert under	Reach is adjacent to a horse farm, possible site for agricultural BMP.
			road is above elevation of stream reach, stream appears to have been straightened	Potential to improve riparian buffer area.
NB5	NA		Immediately upstream of BTMUA intake. Direct stormwater discharge from roadway. Stormwater runoff from the development to the north also discharges upstream of the reach.	BMP at the Garden State Parkway median just upstream of the reach.
NB2	NF	6.6/Fair	Reach receives runoff from commercial area along Rt 9 in Lakewood, low channel and habitat scores	Restoration would need to address runoff from Rt 9 and businesses along Rt 9 such as parking lot BMPs.
				Potential for restoration of riparian area (lawn and unused parking lot area).
NB5	NF14	6.4/Fair	Reach receives runoff from commercial area via a major outfall – possibly from Kennedy Blvd and an apartment complex, sediment in stream, there is a parking lot very close to the stream	Possible BMP to address runoff from apt complex and parking lot adjacent to stream.
				Major storm outfall warrants additional study for potential BMPs to reduce runoff volumes from catchment area, improve water quality, identify illicit connections, etc.; also potential for some restoration of riparian area (lawn and unused parking lot area). Potential for offline treatment.
NB2	NK	5.6/Poor	Reach crosses Hulses Corner Rd, Jackson, very turbid water observed, agriculture upstream along Farmingdale Rd, low habitat scores, unstable banks and possible nutrient enrichment	Turbid water appearance may suggest NPS from agriculture, possible site for agriculture BMPs
NB1	NQ	5.8/Poor	Headwater to the North Branch crosses Co Rd 537, Millstone, reach begins downstream of pond in which there is a buffer only on 25% of shoreline	Restoration of shoreline buffer around pond may deter waterfowl and filter nutrients from stormwater runoff.
NB3	PB2	6.7/Fair	Reach connects Echo Lake and downstream lake, habitat scores are low and there is a spillway from the lake at the start of the reach	Possible BMP for the parking lot runoff at Echo Lake.
				Echo Lake shoreline restoration/management and waterfowl control would likely be beneficial.

Table 3-4
Sites Identified in Stream Visual Assessment as Possible Candidates for Restoration

Subbasin	Site	Score / Rank	Description	Restoration
continued				
SB5	SA	8.7/Good	Reach on the South Branch, of good condition, however reach receives runoff from high traffic area – Chambersbridge Rd on ramp to the GSP, and industrial area to the south	May be a good place for BMPs or other stormwater treatment facilities since site is upstream from the BTMUA intake
SB5	SC			May be opportunity for smaller BMPs at the western entrance to Lake Shenandoah County Park. Would provide a good opportunity for public education.
SB5	SD	8.2/Good	Reach generally of good condition, receives runoff from commercial areas on Hurley Ave and Clifton Ave via outfall, Cedar Bridge Baseball Field also nearby	Baseball complex may be a site for BMPs, commercial area could be a source of NPS and possible sites for stormwater retrofits
SB4	SE & SG		Located at the eastern and western boundaries of Lake Carasaljo.	Potential for lake and shoreline management/restoration and BMPs around the lake.
SB5	SE-P	4.0/ Poor	Headwater reach of SD, poor channel condition, unstable banks and erosion, fed by stormwater from residential area, runs behind Bais Rivka Rochel on River Ave, Lakewood	This may be a possible site for stream bank restoration if the upstream stormwater runoff is also addressed. Possibility for retrofits of detention basins and wet ponds in the area. Stabilize surrounding areas to limit solids loading. Retrofit catch basin.
SB4	SG	7.6/ Good	Reach is downstream of Lakewood Country Club on main stem of South Branch, receives discharge from detention basins	Potential for BMP to address direct stormwater discharges. Also potential for streambank and/or riparian buffer restoration.
NB5	SH-1	4.9/Poor	Receives parking lot runoff, outfalls discharge directly to stream, channel in fair condition	BMP to address parking lot runoff, could be part of a restoration project for CB1. Stormwater inlet should be flushed and maintained as well as upgraded to strain floatables.
NB5	SH-3	4.7/Poor	Reach flows through a picnic area at Ocean County Park and connects two lakes, riparian buffer is compromised, upstream of site CB1	Possible restoration and demonstration site to restore riparian buffer along the reach, opportunity for education and outreach . BMP for parking lot stormwater runoff. Lake management measures and waterfowl control would likely be beneficial.
NB4	SHB2	5.2/Poor	Headwater stream to the same tributary as MF3 and TKL1, fed by stormwater from residential development multiple detention bains discharge to stream, sediment and algae observed	Possible retrofit of detention basins in residential area, also opportunity for BMPs at the sports complex and parking lots along Lakewood-Allenwood Rd
SB4	SI			Lake Eno (immediately upstream) would benefit from lake management measures to address nuisance vegetation problems, etc.
SB2	SK			Jackson Mills Lake (immediately upstream) would benefit from lake management measures to address nuisance vegetation problems, etc.
NB3	SPC1	3.2/Poor	This tributary meets up with the tributary of HS6, reach is fed by stormwater from residential area, a lot of algae and a narrow riparian buffer	The Newbury Elementary School is at the beginning of the reach and may be a possible site for a BMP demonstration site such as a bioretention basin, treatment wetland or a vegetated swale. Potential to retrofit roof drains with above ground BMPs.
NB4	TKL1	5.0/Poor	Headwater stream to the same tributary as MF3, runs through rural residential/ agricultural area, low habitat scores, narrow riparian buffer	Reach may be a candidate for buffer restoration or agricultural BMPs in the adjacent areas
NB2	TM-8	6.3/Fair	Reach is fed by detention basin outfall, receives runoff from KMART and PathMark shopping center on Rt 9, sediment in reach, turbid water – also observed downstream at NH	Possible retrofit of detention basin and BMPs to treat and control runoff from the shopping center
NB5	TR1-2	4.1/Poor	Reach along Lanes Mill Rd, Brick, erosion along banks with attempts to stabilize them, stream receives runoff from a concrete drainage channel and an adjacent park and ride parking lot and Lanes Mill Rd, very turbid water observed	Stream bank restoration site with BMP to address runoff from parking lot. Potential for bio-retention areas within parking lot; vegetated filter strip.
SB3 & SB4	TR12-1 TR13-1 TR13-2 TR13-3 TR13-5 TR14-1 TR15-1			Each of these sites has detention basins in the vicinity that may be good candidates for retrofit.
SB3 & SB4	TR12-2	7.3/Fair	Headwater tributary to South Branch crosses Hyson Rd, Jackson, low habitat scores, detention basins discharge upstream and downstream of reach, receives runoff upstream from I-195, algae present in downstream reach TR12-1	Since this is a headwater stream, detention basin retrofits could be considered, large residential lots to east of reach suggest this area was more recently developed. Sampling data at TR12-1 indicates high conductivity. This may be a priority reach for restoration since historical data is available.
SB4	TR21-2	3.6/Poor	Tributary upstream of Lake Carasaljo in Lakewood, and downstream of CP-3, erosion along banks and nutrients and algae observed in adjacent pond, lawns mowed up to banks	Reach runs through residential area with no stormwater BMPs, site could be a part of a restoration plan for CP-3 and Lake Carasaljo
NB2	TR23-1	7.1/Fair	Reach receives runoff from large residential development on Aldrich Rd and Forest Dr, low habitat scores	No stormwater BMPs observed along reach, Woodland park many be a good location for a BMP to treat runoff that is discharged at the outfall off Arkansas Dr
SB5	TR4-1			Implementation of stormwater BMPs for stormwater runoff (from Lakewood Industrial Park).
NB1	TUR2	4.6/Poor	Stream originates from stormwater runoff at Fox Hill Dr, Howell, crosses Rt 9 and receives runoff from commercial area, appears stream has been straightened and low habitat scores	Headwater stream, BMPs may be appropriate to address runoff from residential areas and commercial parking lots. May be opportunity for restoration of riparian buffer area and/or streambank.

Table 3-5
Loading Rate by Land Use Type

2007 Land Use Category	Load (lbs/ac/yr)		
	TN	TSS	TP
AGRICULTURAL WETLANDS (MODIFIED)	3	40	0.1
AIRPORT FACILITIES	10	120	1
ALTERED LANDS	5	60	0.5
ARTIFICIAL LAKES	3	40	0.1
ATHLETIC FIELDS (SCHOOLS)	10	120	1
ATLANTIC WHITE CEDAR WETLANDS	3	40	0.1
BEACHES	5	60	0.5
BRIDGE OVER WATER	3	40	0.1
CEMETERY	10	120	1
COMMERCIAL/SERVICES	22	200	2.1
CONFINED FEEDING OPERATIONS	10	300	1.3
CONIFEROUS BRUSH/SHRUBLAND	3	40	0.1
CONIFEROUS FOREST (>50% CROWN CLOSURE)	3	40	0.1
CONIFEROUS FOREST (10-50% CROWN CLOSURE)	3	40	0.1
CONIFEROUS SCRUB/SHRUB WETLANDS	3	40	0.1
CONIFEROUS WOODED WETLANDS	3	40	0.1
CROPLAND AND PASTURELAND	10	300	1.3
DECIDUOUS BRUSH/SHRUBLAND	3	40	0.1
DECIDUOUS FOREST (>50% CROWN CLOSURE)	3	40	0.1
DECIDUOUS FOREST (10-50% CROWN CLOSURE)	3	40	0.1
DECIDUOUS SCRUB/SHRUB WETLANDS	3	40	0.1
DECIDUOUS WOODED WETLANDS	3	40	0.1
DISTURBED WETLANDS (MODIFIED)	3	40	0.1
DREDGED LAGOON	3	40	0.1
EXTRACTIVE MINING	5	60	0.5
FORMER AGRICULTURAL WETLAND (BECOMING SHRUBBY, NOT BUILT-UP)	3	40	0.1
HERBACEOUS WETLANDS	3	40	0.1
INDUSTRIAL	16	200	1.5
MAJOR ROADWAY	10	120	1
MANAGED WETLAND IN BUILT-UP MAINTAINED REC AREA	3	40	0.1
MANAGED WETLAND IN MAINTAINED LAWN GREENSPACE	3	40	0.1
MIXED DECIDUOUS/CONIFEROUS BRUSH/SHRUBLAND	3	40	0.1
MIXED FOREST (>50% CONIFEROUS WITH >50% CROWN CLOSURE)	3	40	0.1
MIXED FOREST (>50% CONIFEROUS WITH 10-50% CROWN CLOSURE)	3	40	0.1
MIXED FOREST (>50% DECIDUOUS WITH >50% CROWN CLOSURE)	3	40	0.1
MIXED FOREST (>50% DECIDUOUS WITH 10-50% CROWN CLOSURE)	3	40	0.1
MIXED SCRUB/SHRUB WETLANDS (CONIFEROUS DOM.)	3	40	0.1
MIXED SCRUB/SHRUB WETLANDS (DECIDUOUS DOM.)	3	40	0.1
MIXED TRANSPORTATION CORRIDOR OVERLAP AREA	10	120	1
MIXED URBAN OR BUILT-UP LAND	10	120	1
MIXED WOODED WETLANDS (CONIFEROUS DOM.)	3	40	0.1
MIXED WOODED WETLANDS (DECIDUOUS DOM.)	3	40	0.1
NATURAL LAKES	3	40	0.1
OLD FIELD (< 25% BRUSH COVERED)	3	40	0.1
ORCHARDS/VINEYARDS/NURSERIES/HORTICULTURAL AREAS	10	300	1.3
OTHER AGRICULTURE	10	300	1.3
OTHER URBAN OR BUILT-UP LAND	10	120	1
PHRAGMITES DOMINATE COASTAL WETLANDS	3	40	0.1
PHRAGMITES DOMINATE INTERIOR WETLANDS	3	40	0.1
PLANTATION	3	40	0.1
RAILROADS	10	120	1
RECREATIONAL LAND	10	120	1
RESIDENTIAL, HIGH DENSITY OR MULTIPLE DWELLING	15	140	1.4
RESIDENTIAL, RURAL, SINGLE UNIT	5	100	0.6
RESIDENTIAL, SINGLE UNIT, LOW DENSITY	5	100	0.6
RESIDENTIAL, SINGLE UNIT, MEDIUM DENSITY	15	140	1.4
SALINE MARSH (HIGH MARSH)	3	40	0.1
SALINE MARSH (LOW MARSH)	3	40	0.1
STADIUM, THEATERS, CULTURAL CENTERS AND ZOOS	10	120	1
STORMWATER BASIN	10	120	1
STREAMS AND CANALS	3	40	0.1
TIDAL RIVERS, INLAND BAYS, AND OTHER TIDAL WATERS	3	40	0.1
TRANSITIONAL AREAS	5	60	0.5
TRANSPORTATION/COMMUNICATION/UTILITIES	10	120	1
UNDIFFERENTIATED BARREN LANDS	5	60	0.5
UPLAND RIGHTS-OF-WAY DEVELOPED	10	120	1
UPLAND RIGHTS-OF-WAY UNDEVELOPED	10	120	1
WETLAND RIGHTS-OF-WAY	3	40	0.1

Table 3-6
Calculated Nitrogen Load

Sub-basin	Acres	Total Nitrogen Load (lbs/yr)	Areal Weighted Nitrogen Loading (lbs/acre/yr)	% of Total Nitrogen Load
SB1	3,203	12,378	3.86	3%
SB2	3,604	17,583	4.88	5%
NB4	3,082	17,987	5.84	5%
NB1	5,476	23,530	4.3	6%
SB3	4,836	30,368	6.28	8%
NB3	3,916	30,368	7.75	8%
SB5	3,078	29,190	9.48	8%
SB4	5,001	42,656	8.53	12%
NB5	5,065	48,868	9.65	13%
CFL1	5,911	52,146	8.82	14%
NB2	6,949	59,351	8.54	16%
Total	**50,119**	**364,424**	**7.27**	**100%**

Table 3-7
Calculated Phosphorus Load

Sub-basin	Acres	Total Phosphorus Load (lbs/yr)	Areal Weighted Phosphorus Loading (lbs/acre/yr)	% of Total Phosphorus Load
SB1	3203	752	0.23	2%
SB2	3604	1326	0.37	4%
NB4	3082	1523	0.49	5%
NB1	5476	1686	0.31	5%
SB5	3078	2543	0.83	8%
SB3	4836	2629	0.54	8%
NB3	3916	2642	0.67	8%
SB4	5001	3790	0.76	12%
NB5	5065	4396	0.87	14%
CFL1	5911	4440	0.75	14%
NB2	6949	5381	0.77	17%
Total	**50,119**	**31,108**	**0.6**	**100%**

Table 3-8
Calculated Total Suspended Solids Load

Sub-basin	Acres	Total TSS load (lbs/yr)	Areal weighted TSS load (lbs/acre/yr)	% of Total TSS load
SB1	3,203	197,227	62	4%
SB2	3,604	246,588	68	5%
NB4	3,082	278,066	90	6%
SB5	3,078	313,500	102	7%
NB3	3,916	373,133	95	8%
NB1	5,476	385,306	70	9%
SB3	4,836	408,165	84	9%
SB4	5,001	489,883	98	11%
NB5	5,065	540,836	107	12%
CFL1	5,911	557,104	94	12%
NB2	6,949	716,598	103	16%
Total	**50,119**	**4,506,406**	**90**	**100%**

Table 3-9
Summary of Calculated Loads by Sub-Basin

HUC-14 Subbasin	Drainage Area	Phosphorus			Nitrogen			TSS			Overall
		Annual Load	Annual Load Rate	Rank	Annual Load	Annual Load Rate	Rank	Annual Load	Annual Load Rate	Rank	Rank (avg)
	(acres)	(lbs/yr)	(lbs/ac/yr)		(lbs/yr)	(lbs/ac/yr)		(lbs/yr)	(lbs/ac/yr)		
NB1	5,476	1,686	0.31	10	23,530	4	10	385,306	70	9	10
NB2	6,949	5,381	0.77	3	59,351	9	4	716,598	103	3	3
NB3	3,916	2,642	0.67	6	30,368	8	6	373,133	95	5	6
NB4	3,082	1,523	0.49	8	17,987	6	8	278,066	90	7	8
NB5	5,065	4,396	0.87	1	48,868	10	1	540,836	107	1	1
SB1	3,203	752	0.23	11	12,378	4	11	197,227	62	11	11
SB2	3,604	1,326	0.37	9	17,583	5	9	246,588	68	10	9
SB3	4,836	2,629	0.54	7	30,368	6	7	408,165	84	8	7
SB4	5,001	3,790	0.76	4	42,656	9	5	489,883	98	4	4
SB5	3,078	2,543	0.83	2	29,190	9	2	313,500	102	2	2
CFL1	5,911	4,440	0.75	5	52,146	9	3	557,104	94	6	5
Total	**50,119**	**31,108**			**364,424**			**4,506,406**			
		Average	***0.6***			***7.09***			***88.57***		

Table 3-10a
Calculated Load as a Function of Land Use for the North Branch Sub-Basins

				Calculated Loading			Percent Source Contribution			
Subbasin	Land Use	Area (Acres)	Area (%)	N (lbs/yr)	P (lbs/yr)	TSS (lbs/yr)	N (%)	P (%)	TSS (%)	Avg (%)
NB1		5,476		23,530	1,685	385,306				
11% of Watershed Area	URBAN	924	17%	7,190	768	105,232	31%	46%	27%	34%
4% Impervious	WETLANDS	2,865	52%	8,594	286	114,580	37%	17%	30%	28%
1% Impervious Increase	AGRICULTURE	375	7%	3,745	487	112,363	16%	29%	29%	25%
	FOREST	1,262	23%	3,786	126	50,478	16%	7%	13%	12%
	BARREN LAND	32	1%	159	16	1,903	1%	1%	0%	1%
	WATER	19	0%	56	2	750	0%	0%	0%	0%
NB2		6,949		59,351	5,381	716,597				
14% of Watershed Area	URBAN	4,065	59%	48,767	4,759	531,387	82%	88%	74%	82%
19% Impervious	WETLANDS	1,393	20%	4,180	139	55,735	7%	3%	8%	6%
2% Impervious Increase	FOREST	1,169	17%	3,507	117	46,766	6%	2%	7%	5%
	AGRICULTURE	266	4%	2,660	346	79,787	4%	6%	11%	7%
	BARREN LAND	36	1%	180	18	2,164	0%	0%	0%	0%
	WATER	19	0%	57	2	758	0%	0%	0%	0%
NB3		3,916		30,368	2,641	373,133				
8% of Watershed Area	URBAN	1,854	47%	22,984	2,230	246,466	76%	84%	66%	75%
14% Impervious	WETLANDS	1,245	32%	3,734	124	49,788	12%	5%	13%	10%
2% Impervious Increase	FOREST	614	16%	1,842	61	24,560	6%	2%	7%	5%
	AGRICULTURE	170	4%	1,695	220	50,856	6%	8%	14%	9%
	WATER	27	1%	82	3	1,095	0%	0%	0%	0%
	BARREN LAND	6	0%	31	3	368	0%	0%	0%	0%
NB4		3,082		17,987	1,521	278,065				
	URBAN	838	27%	8,853	880	105,330	49%	58%	38%	48%
6% of Watershed	AGRICULTURE	310	10%	3,103	403	93,083	17%	26%	33%	26%
7% Impervious	FOREST	994	32%	2,983	99	39,771	17%	7%	14%	12%
3% Impervious Increase	WETLANDS	815	26%	2,444	81	32,580	14%	5%	12%	10%
Increase	BARREN LAND	114	4%	571	57	6,857	3%	4%	2%	3%
	WATER	11	0%	33	1	444	0%	0%	0%	0%
NB5		5,065		48,868	4,397	540,836				
10% of Watershed	URBAN	3,147	Mor	42,146	4,036	430,921	86%	92%	80%	86%
22% Impervious	FOREST	1,007	20%	3,022	101	40,298	6%	2%	7%	5%
2% Impervious Increase	WETLANDS	691	14%	2,072	69	27,621	4%	2%	5%	4%
	AGRICULTURE	124	2%	1,238	161	37,134	3%	4%	7%	4%
	BARREN LAND	51	1%	255	26	3,065	1%	1%	1%	1%
	WATER	45	1%	135	4	1,797	0%	0%	0%	0%

Table 3-10b
Calculated Load as a Function of Land Use for the South Branch Sub-Basins

				Calculated Pollutant Loading			Percent Contribution			
Subbasin	Land Use	Area (Acres)	Area (%)	N (lbs/yr)	P (lbs/yr)	TSS (lbs/yr)	N (%)	P (%)	TSS (%)	Average (%)
SB1		3,203		12,379	752	197,227				
6% of Watershed Area	WETLANDS	1,642	51%	4,926	164	65,677	40%	22%	33%	32%
3% Impervious	FOREST	1,092	34%	3,277	109	43,690	26%	15%	22%	21%
1% Impervious Increase	URBAN	252	8%	2,211	230	31,317	18%	31%	16%	21%
	AGRICULTURE	183	6%	1,828	238	54,839	15%	32%	28%	25%
	BARREN LAND	18	1%	91	9	1,087	1%	1%	1%	1%
	WATER	15	0%	46	2	617	0%	0%	0%	0%
SB2		3,604		17,455	1,321	244,877				
	URBAN	962	27%	8,707	890	113,450	50%	67%	46%	54%
7% of Watershed Area	FOREST	1,304	36%	3,911	130	52,148	22%	10%	21%	18%
7% Impervious	WETLANDS	1,056	29%	3,168	106	42,237	18%	8%	17%	14%
3% Impervious Increase	AGRICULTURE	95	3%	946	123	28,371	5%	9%	12%	9%
	BARREN LAND	145	4%	723	72	8,671	4%	5%	4%	4%
	WATER	43	1%	128	4	1,711	1%	0%	1%	1%
SB3		4,836		30,234	2,625	406,384				
10% of Watershed Area	URBAN	2,195	45%	21,289	2,160	266,134	70%	82%	65%	72%
13% Impervious	WETLANDS	1,231	25%	3,692	123	49,231	12%	5%	12%	10%
5% Impervious Increase	FOREST	1,114	23%	3,341	111	44,546	11%	4%	11%	9%
	AGRICULTURE	131	3%	1,307	170	39,211	4%	6%	10%	7%
	BARREN LAND	121	3%	605	61	7,262	2%	2%	2%	2%
	WATER	45	1%	134	4	1,782	0%	0%	0%	0%
SB4		5,001		42,656	3,791	489,883				
10% of Watershed Area	URBAN	2,983	60%	36,226	3,522	397,546	85%	93%	81%	86%
19% Impervious	FOREST	1,220	24%	3,661	122	48,820	9%	3%	10%	7%
3% Impervious Increase	WETLANDS	611	12%	1,834	61	24,450	4%	2%	5%	4%
	AGRICULTURE	41	1%	413	54	12,401	1%	1%	3%	2%
	WATER	102	2%	305	10	4,068	1%	0%	1%	1%
	BARREN LAND	43	1%	217	22	2,598	1%	1%	1%	1%
SB5		3,078		29,188	2,542	313,501				
6% of Watershed Area	URBAN	1,697	55%	24,917	2,379	256,568	85%	94%	82%	87%
26% Impervious	FOREST	751	24%	2,252	75	30,032	8%	3%	10%	7%
6% Impervious Increase	WETLANDS	497	16%	1,491	50	19,884	5%	2%	6%	4%
	BARREN LAND	57	2%	284	28	3,413	1%	1%	1%	1%
	WATER	74	2%	223	7	2,975	1%	0%	1%	1%
	AGRICULTURE	2	0%	21	3	629	0%	0%	0%	0%

Table 3-10c

Calculated Load as a Function of Land Use for the Confluence Sub-Basin

				Calculated Pollutant Loading			Percent Contribution			
Subbasin	Land Use	Area (Acres)	Area (%)	N (lbs/yr)	P (lbs/yr)	TSS (lbs/yr)	N (%)	P (%)	TSS (%)	Average (%)
CFL1		5,911		52,146	4,441	557,104				
12% of Watershed Area	URBAN	2,944	50%	43,094	4,113	436,919	83%	93%	78%	85%
23% Impervious	WATER	1,227	21%	3,680	123	49,062	7%	3%	9%	6%
3% Impervious Increase	FOREST	925	16%	2,776	93	37,018	5%	2%	7%	5%
	WETLANDS	740	13%	2,220	74	29,599	4%	2%	5%	4%
	BARREN LAND	75	1%	376	38	4,506	1%	1%	1%	1%

Table 3-11
Summary of Water Quality and Stream Visual Assessment Data for the North Branch

HUC 14		WQ sampling station (Main Stem)	WQ sampling station	SVA site	Ranking	SVA score	Nitrate-N (mg/L)	Nitrite (mg/L)	NH3 (mg/L)	Total Phosphorus (mg/L)	TDS (mg/L)	Conductance (uS/cm)	Fecal Coliform (counts/1	Temp (deg F)	pH
NB1				NQ	Poor	5.8									
		NP	NP	NP	Fair	6.6	0.03		0.28	0.08	122.32	188	560	51.5	5.27
		NO	NO	NO	Good	8.5			0.45		121.14	187	266	51.8	5.2
		NN	NN	NN	Good	8.3			0.29		86.23	133	943	52.1	5.03
		NM	NM	NM	Good	8.9			0.25		75.72	117	219	51.9	5.68
		NL	NL	NL	Good	8.2			0.2		81.16	125	262	51.9	5.99
		NK		*TUR2*	*Poor*	*4.6*									
			NK	NK	Poor	5.6	0.08		0.25	0.05	86.5	133	1070	51	6.28
NB2		NJ	NJ	NJ	Good	7.9			0.24		99.08	152	498	51.4	6.46
		NI	*STM1*	*STM1*	*Fair*	*6.3*			*0.38*		*150*	*229*		*54.5*	*5.27*
			NI	NI	Good	7.7			0.3		117.68	181	944	53.4	6.44
		NH		*TR23-1*	*Fair*	*7.1*									
				TM-8	*Fair*	*6.3*									
			NH	NH	Fair	7.4			0.28		114.21	176	989	51.5	6.38
		NG	NG	NG	Fair	6.3	0.41		0.29	0.04	110.71	171	2050	52.1	6.39
		NF	NF	NF	Fair	6.6			0.31		131.61	203	586	51.3	6.47
NB5		NE	NF14	NF14	Fair	6.4			0.39		220	203	401	58.4	5.81
				CVS-1	*Good*	*8.5*									
			NE	NE	Good	8			0.33		127.85	194	876	52	6.4
		ND	ND	ND	Good	8.1	0.58	0.002	0.31	0.03	115.53	178	685	52.7	6.3
		NC	NC	NC	Good	7.9			0.31		125.63	193	1193	52.1	6.37
	NB3	*MF-1* (* NB)	*HS-5*	*HS6*	*Poor*	*4.7*			*0.33*		*144*	*221*	*951*	*52.9*	*6.27*
			HS-5	*SPC1*	*Poor*	*3.2*			*0.33*		*144*	*221*	*951*	*52.9*	*6.27*
				GH1	*Poor*	*5.5*									
				PB2	*Fair*	*6.7*									
				DB5	*Poor*	*5.3*									
				DB1	*Good*	*7.5*									
	NB4	*MF-1* (NB)*	*MF-3*	*MF3*	*Fair*	*6.2*			*0.12*		*58*	*90*	*4761*	*52*	*5.3*
				TKL1	*Poor*	*5*									
			MF-2	*MF2*	*Fair*	*7*			*0.6*		*69*	*106*	*3502*	*53.8*	*5.92*
			SHB-2	*SHB2*	*Poor*	*5.2*			*0.46*		*435*	*269*	*5218*	*53.5*	*6.02*
			SHB-1	*SHB1*	*Fair*	*6.6*			*0.52*		*105*	*165*	*1479*	*54*	*6.24*
			MF-1	*MF1*	*Good*	*8.5*	*0.66*	*0.004*	*0.36*	*0.03*	*104*	*160*	*1093*	*51.7*	
		NB		*GR2*	*Poor*	*5.7*									
				GR4	*Good*	*8.2*									
				NBC	*Good*	*8.5*									
				TR1-2	*Poor*	*4.1*									
			NB	*NB*	*Good*	*8.8*			*0.31*		*107.62*	*165*	*339*	*53.5*	*6.18*
		NA	*CB-5*	*CB5*	*Fair*	*6.2*			*1.2*		*363*	*557*		*58.5*	*6.45*
				SH-3	*Poor*	*4.7*									
				SH-1	*Poor*	*4.9*									
				CB1	*Fair*	*6.9*									
			NA	NA	Good	8.3	0.97	0.003	0.36	0.04	115.45	178	610	53.8	6.25

Note: Orange shading indicates notable change in one or more water quality parameters from upstream station(s).

Table 3-12
Summary of Water Quality and Stream Visual Assessment Data for the South Branch

HUC 14	WQ sampling station (Main Stem)	WQ sampling station	VAPP site	Ranking	VAPP score	Nitrate-N (mg/L)	Nitrite (mg/L)	NH3 (mg/L)	Total Phosphorus (mg/L)	TDS (mg/L)	Conductance (uS/cm)	Fecal Coliform (counts/1	Temp (deg F)	pH
SB1	SP													
	SO							0.21		166.1	256	120	51.9	3.77
	SN					0.03		0.17	0.03	62.57	96	174	51.9	5.52
	SM	SM	SM	Good	7.7			0.18		41.63	64	306	52.6	5.42
	SL	SL	SL	Good	7.8			0.19		54.68	84	114	51.6	5.74
SB2	SK		*TR26-1*	*Good*	*7.8*									
			TR27-2	*Good*	*8.6*									
		SK	SK	Fair	6.7	0.06	0.003	0.24	0.03	69.73	107	294	53.9	5.98
SB3	SJ		*TR10-1*	*Good*	*7.9*									
			TR7-1	*Good*	*7.7*									
		SJ	SJ	Good	7.5			0.2		73.67	113	146	52.8	6.39
	SI	*TR12-2*	*TR12-2*	*Fair*	*7.3*			*0.42*		*231*	*336*		*51.9*	*5.83*
		TR12-1	*TR12-1*	*Fair*	*6.8*			*0.37*		*205*	*315*		*52.5*	*6.42*
			TR13-5	*Good*	*8.3*									
		TR13-1	*TR13-1*	*Fair*	*6.5*			*0.4*		*118*	*181*		*54.8*	*6.32*
		TR13-3	*TR13-3*	*Fair*	*6.3*			*0.55*		*158*	*243*		*55.9*	*6.16*
		TR13-2	*TR13-2*	*Fair*	*6.9*			*0.32*		*96*	*148*		*54.7*	*6.5*
			TR14-1	*Fair*	*6.3*									
		SI	SI	Good	7.8			0.25		89.28	137	184	55.8	6.41
SB4	SH		*TR15-1*	*Poor*	*6*									
		SH	SH	Good	8.4			0.25		92.67	142	702	53.8	6.33
	SG		*TR16-1*	*Fair*	*6.5*									
			TR17-1	*Fair*	*6.4*									
		SG	SG	Fair	7.6	0.49		0.25	0.04	90.36	140	752	53	6.32
	SF		*WP3*	*Good*	*7.3*									
			WP1	*Good*	*7.9*									
		SF	SF	Fair	7.1			0.31		84.29	130	8098	52.9	5.93
	SE		*CP-3*	*Poor*	*3.9*									
			TR21-2	*Poor*	*3.6*									
			SE-P	*Poor*	*4*									
		SE	SE	Fair	6.9			0.27		98.69	152	115	56	6.51
SB5	SD	SD	SD	Good	8.2	0.44	0.004	0.26	0.03	97.55	147	198	56.5	6.35
	SC	SC	SC	Fair	6.9			0.29		104.46	161	189	56.1	6.4
	SB1	SB1	SB1	Good	7.8			0.26		100.45	154	77	57.8	6.49
	SA	*CTB-2*	*CTB-2*	*Fair*	*6.4*			*0.17*		*71*	*110*	*64*	*52*	*5.41*
		CTB-1	*CTB-1*	*Good*	*7.5*			*0.3*		*95*	*146*	*178*	*52.8*	*6.27*
			TR4-1	*Poor*	*5.3*									
			SA-DEN	Excellent	9.5									
		SA	SA	Good	8.7	0.52	0.002	0.27	0.03	98.02	151	215	57	6.39
CFL1	BTMUA INTAKE		POND6	Good	8.7									
		BTMUA INTAKE				0.59	0.004	0.45	0.03	241.71	372	533	55.8	6.31
	Downstream of intake		CBB-1	Fair	7	0.61	0.027	0.36	0.03	88	135	213	53.8	5.93
			CBB-3	Poor	3.3		1.2			363	557		58.5	6.45
			CBB-5	Fair	6.5									

Note: Orange shading indicates notable change in one or more water quality parameters from upstream station(s).

Table 3-13
Summary of Pollutants of Concern by Sub-Basin

Subbasin	Subwatershed Name	Pollutant of Concern	Documentation	Sources	Land Uses with Highest Loadings
NB1	Metedeconk R NB (above I-195)	Phosphorus	TMDL	Fertilizer, Manure	Agriculture, Low Density Residential,
		Pathogens	TMDL (Fecal Coliform)	Manure, Wildlife	Agriculture, Low Density Residential,
		Dissolved Oxygen	303d	Wetlands	Wetlands
		Arsenic	303d	Natural, orchards (potentially)	
		DDT, DDD, DDE	303d	Pesticides; Agricultural	
		Turbidity	303d (draft 2012)	Urban Runoff	
		Lead	303d (draft 2012)	Urban runoff, industrial	
NB2	Metedeconk R NB (Rt 9 to I-195)	Pathogens	TMDL (Fecal Coliform)	Urban runoff, pet waste, waterfowl, wildlife, sewer leaks and overflows	Medium Density Residential
		Dissolved Oxygen	303d	Upstream wetlands	Wetlands, Medium Density Residential
		Temperature	303d	Impoundments, cleared buffer	Medium Density Residential
		Arsenic	303d	Natural, orchards (potentially)	Medium Density Residential
		Nitrogen, Conductivity, TDS	Other*	Urban runoff	Medium Density Residential
		Turbidity	303d (draft 2012)	Urban runoff	
NB3	Haystack Brook	Pathogens	TMDL (Fecal Coliform)	Urban runoff, pet waste, waterfowl, wildlife, sewer leaks and overflows	Medium Density Residential Runoff
		Biological	303d	Unknown	
		Conductivity	Other*	Impervious Areas, Road Deicing Salt	Major Roadways I-195, Rte 9
		Runoff Volume	Other*	Urban runoff	Urban Runoff
NB4	Muddy Ford Brook	Pathogens	TMDL (Fecal Coliform)	Agriculture, Septics	Agriculture, Low Density Residential,
		Phosphorus	303d	Fertilizer, Manure, Septics	Agriculture, Low Density Residential,
		TSS	303d	Row crops and animal farms	Agriculture
		Arsenic	303d	Naturally occurring	Medium Density Residential
		Mercury	303d	Unknown	Atmospheric?
NB5	Metedeconk R NB (confluence to Rt 9)	Temperature	303d	Impoundments, cleared buffer	
		Arsenic	303d	Naturally occurring	
		Lead	303d (draft 2012)	Urban runoff	
SB1	Metedeconk R SB (above I-195 exit 21 rd)	Pathogens	TMDL	Manure, Septics, Wildlife	Medium Density Residential
		Arsenic	303d	Naturally occurring	
		Dissolved Oxygen	303d	Upstream wetlands	Wetlands, Medium Density Residential
		Lead	303d (draft 2012)	Urban runoff	
SB2	Metedeconk R SB (74d19m15s to I-195 X21)	Pathogens	TMDL	Urban runoff, pet waste, waterfowl, wildlife, sewer leaks and overflows	Medium Density Residential
		Turbidity	303d (draft 2012)	Urban runoff	
SB3	Metedeconk R SB (Bennetts Pd to 74d19m15s)	Pathogens	TMDL	Urban runoff, pet waste, waterfowl, wildlife, sewer leaks and overflows	Medium Density Residential
		Conductivity, TDS	Other*		
		Runoff Volume	Other*	Urban runoff	
SB4	Metedeconk R SB (Rt 9 to Bennetts Pond)	Stream and Lake Coliform Pathogens	TMDL	Urban runoff, pet waste, waterfowl, wildlife, sewer leaks and overflows	Medium Density Residential
		Arsenic	303d	Naturally occurring	Urban
		Runoff Volume	Other*	Urban runoff	
SB5	Metedeconk R SB (confluence to Rt 9)	Pathogens	TMDL	Urban runoff, pet waste, waterfowl, wildlife, sewer leaks and overflows	
		Arsenic	303d	Naturally occurring	Urban
		Mercury	303d		
		Runoff Volume	Other*	Urban runoff	Urban
		Lead	303d (draft 2012)	Urban runoff	
		Floatables			
CNFL1	Metedeconk R (Beaverdam Ck to confl)	Biological	303d		
		Enterococcus	303d		
		Arsenic	303d	Naturally occurring	
		Runoff Volume	Other*	Urban runoff	Urban

* Other pollutants of concern include Nitrogen, Phosphorus, and TSS to the Barnegat Bay; Conductivity, Nitrate, and TDS from monitoring results; and runoff volume impacting stream conditions from the visual assessment

Table 4-1
Summary of TMDLs within the Metedeconk River Watershed

TMDL	Stream Fecal		Lake Fecal Coliform		Total Coliform	Phosphorus
Segment	**N. Branch**	**S. Branch**	**Lake Carasaljo**	**Ocean County Park Lake**		**N. Branch (NB1)**
Standard	SWQS: 10% of samples during 30 day period not to exceed 400 cfu/100 ml; nor average 200 cfu/100 ml		HD: single sample 235 cfu/100ml		NSSP: single sample 330 cfu/100ml and mean 70 cfu/100ml	SWQS: 0.1 mg/l
Percent Reduction	90% (overall)	90% (overall)	99% (overall)	96% (overall)	87% (overall) 89% (urban, ag, & marinas)	49.8% (overall) 84.9% (urban and ag)

Table 4-2
Estimated Load Reductions by HUC

HUC	Load Reduction (lb/yr)		
	Nitrogen	Phosphorus	TSS
NB1	5,358	1,067	158,844
NB2	25,199	4,339	446,157
NB3	12,093	2,083	217,045
NB4	5,858	1,091	144,841
NB5	21,258	3,567	341,680
SB1	1,979	398	62,894
SB2	4,730	861	103,529
SB3	11,072	1,981	222,902
SB4	17,953	3,040	299,261
SB5	12,220	2,025	187,754
CNFL1	21,116	3,496	318,951

Table 4-3
Watershed Management Strategies Pertinent to the Metedeconk River Watershed

Relative SAC Ranking	Best Management Practice	Reduce Stormwater Peak Flow	Improve Infiltration (Volume Control)	Promote Water Conservation & Reuse	Reduce Nutrient Loads	Reduce Sediment Loads	Reduce Pathogen Loads	Improve Habitat	Potential for Public Involvement	General WQ Cost Effectiveness
1	Resource Conservation/Protection	3	3	2	3	3	3	3	2	2.3
2*	Urban Green Stormwater Infrastructure (UGSI)	3	3	1	3	3	3	2	3	1.7
3	Infiltration Basin	3	3	1	3	3	3	2	2	2.0
t4	Constructed Stormwater Wetland	3	2	1	3	3	2	3	2	3.0
t4	Constructed Stormwater Gravel Wetland	3	2	1	3	3	2	3	2	3.0
6	Upland Reforestation	3	3	0	3	3	3	3	2	1.3
7	Private Property BMPs	3	3	3	2	2	1	2	3	1.7
8	Bioretention Basin	3	2	0	3	3	3	2	2	2.7
9	Retrofit Existing Stormwater Basin	3	3	1	2	2	2	2	2	2.3
10	Vegetated Filter Strip	2	2	1	3	3	2	2	2	3.0
11	Agricultural BMPs	2	1	2	3	3	3	1	2	2.0
12	Removal of Impervious Surface	3	3	1	2	2	2	3	1	1.0
13	Buffer Restoration	2	2	0	2	3	2	3	3	1.0
14	Wet Pond	3	0	1	2	3	1	2	1	3.0
15	Improve/Repair Septic Systems	1	1	2	3	1	3	2	2	1.7
16	Grassed Swale	2	3	1	1	2	1	2	2	1.7
17	Sand Filter	2	2	1	3	3	2	1	1	1.7
18	Rainwater Harvesting (non-residential)	3	2	3	1	1	1	1	3	1.0
19	Stream Restoration	2	1	0	2	3	1	3	3	1.3
20	Extended Detention Basin	3	2	1	2	2	1	1	1	2.0
21	Source Control (pet waste, fertilizer, geese management))	0	0	1	3	1	3	2	2	2.0
22	Dry Well	2	3	1	1	1	1	1	2	2.0
23	Off-line Regional Treatment	3	1	0	2	3	1	2	2	1.0
24	Pervious Paving (porous asphalt, concrete)	2	3	1	1	1	1	1	3	1.0
25	Runoff Redirection	2	3	1	1	1	1	1	1	2.0
26	Green Roof (non-residential)	3	1	2	1	1	1	1	2	1.0
27	Improved Street Sweeping	1	1	0	2	2	2	1	1	2.0
28	Manufactured Devices	2	1	1	1	3	1	1	1	1.3

Notes:

1. Scoring: 3 (high), 2 (average), 1 (low), 0 (not applicable)

2. Stormwater bumpouts overall rank 2, but infiltration trenches and stormwater planters rank 6.

Table 5-1
Subbasin Priority

Sub-Basin	Priority Ranking Based on 303(d)	Rank Based on Impervious Cover	Rank Based on Urban Acres	Priority Ranking Based on Runoff Reduction	Average	Overall Priority Ranking
NB2	1	5	3	4	2.50	**1**
NB5	3	3	1	2	2.50	**2**
SB5	3	1	4	2.5	2.75	**3**
CFL1	6	2	5	3.5	4.75	**4**
NB4	3	8	8	8	5.50	**5**
NB1	2	10	10	10	6.00	**6**
NB3	7	6	6	6	6.50	**7**
SB4	10	4	2	3	6.50	**8**
SB2	7	9	9	9	8.00	**9**
SB3	10	7	7	7	8.50	**10**
SB1	7	11	11	11	9.00	**11**

Table 5-2
Prioritized Management Strategies by Subbasin

Watershed Priority	Subbasin Priority	Subbasin	Location	Priority Reason	Source Conditions	Land Use Type	BMPs	Potential Opportunity
1		All		Stream Fecal TMDL Total Fecal Coliform TMDL	Urban Runoff, OSDSs, Sewer leaks and overflows, wildlife (waterfowl)	All	Urban Runoff Management, Goose control programs, OSDS Management, Sanitary Sewer Inspection	
1		All		Implement Education and Outreach Program		All		
2	1	NB1	Multiple Row Crop Farms Along Ridge Creek	Phosphorus TMDL, turbidity impairment	Agriculture - Row Crops and Livestock	Agriculture, Low Density Residential	Agricultural; Fertilizer management	
3	2	NB1	Fertilizer from Low Density Residential; Manure	Phosphorus TMDL, Stream Fecal TMDL, Total Fecal Coliform TMDL	Runoff from fertilizer and animal waste	Low Density Residential, Agriculture	Enforcement of Statewide Fertilizer Law; Geese management, Agricultural BMPs	
4	1	SB4	Lake Carasajlo	Lake Pathogens TMDL	Unbuffered Pond Shorelines - Geese populations	Residential	Buffer Restoration, Naturalized Shorelines; identify areas for installation of structural runoff controls	
5	1	NB5	Ocean County Park Lake	Lake Pathogens TMDL	Unbuffered Pond Shorelines - Geese populations	Recreational	Buffer Restoration, Naturalized Shorelines	
6	1	NB2	Residential Subdivisions & Schools	Urban Runoff	Existing stormwater basins, where existing, may not be providing highest level of treatment	Medium Density Residential	Stormwater Basins Retrofit, Structural Outfall BMPs, Source Control	High Visibility Demonstration Project
7	2	NB5	Route 9 (Lakewood)	Urban Runoff	Very large outfall (84") discharging directly to the North Branch	Residential, Commercial	Source control, Structural Outfall BMPs	Reduce water quality impact from significant source
8	1	CFL1 / SB5	Lakewood Industrial Park	Urban Runoff Loadings and Stream Degradation	Large Untreated Impervious Areas Directly Draining to River	Industrial	Stormwater Basins Retrofit, Structural Outfall BMPs	
9	1	NB4	Horse Farms	Phosphorus Impairment, Stream Fecal TMDL, Total Fecal Coliform TMDL	Runoff contacting manure	Agriculture	Agricultural BMPs	
10	1	NB3	Open Space	Total Fecal Coliform TMDL	Unbuffered Pond Shorelines - Geese populations	Open Space	Vegetative buffer for geese management	
11	1	SB4, SB5	Lakewood Industrial Park	Urban Runoff Loadings and Stream Degradation	Large Untreated Impervious Areas Directly Draining to River	Industrial	Stormwater Basins Retrofit, Structural Outfall BMPs, Source Control	Upgrade Existing SW Basins to Extended Detention
12	1	SB2	Few Agricultural Parcels	High Nutrient and TSS Loadings	Row crops	Agricultural	Agricultural BMPs	
13	1	SB2	Jackson Mills Lake	Nuisance Vegetation	Prevalence of nuisance vegetation	Wetlands, Forest, Residential	Lake management strategies (continue winter lake level drawdown); Evaluate options for more comprehensive lake management.	
14	1	SB3	Residential Subdivisions & Schools	Urban Runoff	Mostly untreated runoff directly connected to stream	Low, Medium, and High Density Residential	Stormwater Basins Retrofit, Structural Outfall BMPs, Source Control	Upgrade Existing SW Basins to Extended Detention
15	1	SB3	Lake Enno	Nuisance Vegetation, Stream Fecal TMDL, Total Fecal Coliform TMDL	Prevalence of nuisance vegetation	Wetlands, Forest, Residential	Lake management strategies (continue winter lake level drawdown); Evaluate options for more comprehensive lake management.	
16	1	SB1	Agricultural Tract - Ely Harmony Road	High Nutrient and TSS Loadings	Row crops	Agricultural	Agricultural BMPs and Buffer Restoration	

Table 5-2
Prioritized Management Strategies by Subbasin

Watershed Priority	Subbasin Priority	Subbasin	Location	Priority Reason	Source Conditions	Land Use Type	BMPs	Potential Opportunity
17	2	NB2	Agricultural Parcels	Nutrient and TSS Loadings	Various	Agricultural	Agricultural BMPs	
18	2	SB5	Downtown Lakewood	Loading Hot Spot		Commercial	Structural BMPs Built in to Infrastructure	
19	2	CFL1	Brick Plaza	Loading Hot Spot	Extensive Continuous Untreated Impervious Area Directly Draining to River	Commercial	Structural BMPs Built into Infrastructure; Install educational signage at Cedar Bridge Branch crossings	High Visibility Demonstration Project
20	2	NB4	Agricultural Parcels	Phosphorus and TSS Impairment, Stream Fecal TMDL, Total Fecal Coliform TMDL	Agriculture - Row Crops and Livestock, Moderate Soil Erosion Potential	Agricultural, Residential	Agricultural BMPs, Streambank and Soil Stabilization	
21	2	NB3	Residential Subdivisions & Schools	Urban Runoff	Existing stormwater basins, where existing, may not be providing highest level of treatment	Medium Density Residential	Upgrade Existing Stormwater Basins, Structural Outfall BMPs, Source Control	
22	2	SB4	Lakewood Country Club	Coliform, Temperature	Open Pond Shorelines	Recreational	Buffer Restoration, Naturalized Shorelines	Upgrade Existing SW Basins to Extended Detention
23	2	SB2	Metedeconk National Golf Course	Coliform, Temperature	Unbuffered Pond Shorelines - Geese populations	Recreational	Buffer Restoration, Naturalized Shorelines	
24	2	SB3	Few Agricultural Parcels	High Nutrient and TSS Loadings	Row crops	Agricultural	Agricultural BMPs	Upgrade Existing SW Basins to Extended Detention
25	2	SB1	Interstate I-195	Conductivity, Metals	Untreated runoff	Transportation	Urban Runoff BMPs	
26	3	NB2	Commercial Corridor Route 9	Urban Runoff	Existing stormwater basins, where existing, may not be providing highest level of treatment	Commercial	Stormwater Basins Retrofit, Structural Outfall BMPs, Source Control	High Visibility Demonstration Project
27	3	NB5	Woodlake Country Club	Temperature Impairment, Coliform	Unbuffered Pond Shorelines - Geese populations	Recreational	Buffer Restoration, Naturalized Shorelines	Upgrade Existing SW Basins to Extended Detention
28	3	SB5	Residential Subdivisions & Schools	Urban Runoff	Existing stormwater basins, where existing, may not be providing highest level of treatment	Medium Density Residential	Stormwater Basins Retrofit, Structural Outfall BMPs, Source Control	Upgrade Existing SW Basins to Extended Detention
29	3	CFL1	Residential Subdivisions & Schools	Stream Degradation	Relatively few existing stormwater basins	Medium and High Density Residential Development	Stormwater Basins Retrofit, Structural Outfall BMPs, Source Control	High Visibility Demonstration Project
30	3	NB4	Residential Subdivisions & Schools	Urban Runoff	Existing stormwater basins may not be providing highest level of treatment	Medium Density Residential	Upgrade Existing Stormwater Basins, Source Control	
31	3	NB1	Utility Easements, Agricultural Parcels	Water quality	Various areas identified as restoration priorities by UMASS	Wetlands, Agriculture, Residential	Buffer Restoration	
32	3	NB3	Commercial Area	Urban Runoff	Existing stormwater basins, where existing, may not be providing highest level of treatment	Medium Density Residential	Stormwater Basins Retrofit, Structural Outfall BMPs, Source Control	
33	3	SB4	Lakewood Country Club	Nutrient Loadings	Fertilizer Application for Turf	Recreational	Fertilizer Management	Upgrade Existing SW Basins to Extended Detention

Table 5-2
Prioritized Management Strategies by Subbasin

Watershed Priority	Subbasin Priority	Subbasin	Location	Priority Reason	Source Conditions	Land Use Type	BMPs	Potential Opportunity
34	3	SB2	Metedeconk National Golf Course	Nutrient Loadings	Fertilizer Application for Turf	Recreational	Fertilizer Management	Upgrade Existing SW Basins to Extended Detention
35	4	NB2	Aldrich Lake	TSS Loadings, Stream Fecal TMDL, Total Fecal Coliform TMDL, Nuisance Vegetation	Excessive TSS Loading, Geese populations, nuisance vegetation	Residential	Dredging, Geese management, lake management strategies	
36	4	NB5	Agricultural Tract	High Nutrient and TSS Loadings	Row crops	Agricultural	Agricultural BMPs	
37	4	SB5	Lake Shenandoah	Nuisance Vegetation, Total Fecal Coliform TMDL	Excessive nuisance vegetation, geese population	Recreational	Lake management strategies, Buffer Restoration	
38	4	NB4	Tributaries	Water quality	Various areas identified as restoration priorities by UMASS	Wetlands, Residential	Buffer Restoration	
39	4	NB3	0	TSS Loadings, Stream Fecal TMDL, Total Fecal Coliform TMDL	TSS build-up; Geese	Residential	Dredging, Geese management, lake management strategies	
40	4	SB4	Residential Subdivisions & Schools	Urban Runoff	Existing stormwater basins, where existing, may not be providing highest level of treatment	Residential	Stormwater Basins Retrofit, Structural Outfall BMPs, Source Control	Upgrade Existing SW Basins to Extended Detention
41	4	SB2	Residential Subdivision	Urban Runoff	Existing stormwater basins, where existing, may not be providing highest level of treatment	Medium Density Residential	Stormwater Basins Retrofit, Structural Outfall BMPs, Source Control	Upgrade Existing SW Basins to Extended Detention
42	4	SB3	South Branch & Tributaries	Conservation	Large parcels identified by TPL	Wetlands	Land Acquisition	
43	4	SB3	South Branch & Tributaries	Water quality	Various areas identified as restoration priorities by UMASS	Wetlands, Residential	Buffer Restoration	
44	5	NB2	Interstate I-195	Transportation Runoff	Decicing salt and vehicle related pollutants	Transporation	Urban Runoff BMPs	High Visibility Demonstration Project
45	5	NB5	Woodlake Country Club	Nutrient Loadings	Fertilizer Application for Turf	Recreational	Fertilizer Management	
46	5	SB5	South Branch & Tributaries	Water quality	Various areas identified as restoration priorities by UMASS	Wetlands, Residential	Buffer Restoration	
47	5	NB3	Tributaries	Water quality	Various areas identified as restoration priorities by UMASS	Wetlands, Residential	Buffer Restoration	
48	5	SB4	South Branch & Tributaries	Water quality	Various areas identified as restoration priorities by UMASS	Wetlands, Residential	Buffer Restoration	
49	5	SB2	South Branch & Tributaries	Water quality	Various areas identified as restoration priorities by UMASS	Wetlands, Residential	Buffer Restoration	
50	6	NB2	North Branch and Tributaries	Water quality	Various areas identified as restoration priorities by UMASS	Wetlands, Residential	Buffer Restoration	
51	6	NB5	0	Urban Runoff	Existing stormwater basins may not be providing highest level of treatment	Medium Density Residential	Upgrade Existing Stormwater Basins, Source Control	Upgrade Existing SW Basins to Extended Detention
52	7	NB5	Garden State Parkway	Transportation Runoff	Decicing Salt and vehicle related pollutants	Transportation	Urban Runoff BMPs	
53	8	NB5	North Branch and Tributaries	Water quality	Various areas identified as restoration priorities by UMASS	Wetlands, Residential	Buffer Restoration	

Table 5-3
Potential Projects at Prioritized Stream Visual Assessments and Other Sites Identified by Stakeholders

Project Site	Potential Strategies	Rank	HUC
TR23-1	• Potential BMPs to manage parking lot itself, prevent erosion at parking lot edge leading to buffer area. • BMP at end of Woodlane Road • Source control within neighborhood	1	NB2
GR2	• Potential vegetated bumpout in front of fire hydrant where parking is restricted anyway. May require moving hydrant into bumpout depending on Fire Department's preferences. • Space available directly at outfall behind chain link fence for bioretention and nicely visible. • Decentralized stormwater management practices (SMPs) throughout catchment neighborhood for source control.	1	NB5
GR4	Possible basin retrofit.	1	NB5
NF14	• Some space directly upstream of large outfall could provide potential offline storage opportunity but likely would require extensive excavation/removal which can be costly.	1	NB5
SE-P	• Upstream side of bridge/culvert has space for potential offline storage/improvements. • Downstream side of bridge/culvert has some space for roadside bioretention upgrade of inlet that drops directly into culvert, leaving that inlet to handle bypass flow. Also, space directly next to inlet that drops into culvert could be used for bioretention as well. • Extensive sand eroding from surrounding properties. Stabilizing these areas is imperative to reduce sediment loads. • Extensive traffic and nearby school (Bais Rivka) provide high visibility site. Also, students of Bais Rivka could be potential partners/stewards of site. May be worth knowing if any transportation improvements (desperately needed) would impact this area and SMPs could piggy back on those improvements at future date.	1	SB5
CBB-3	• Good opportunity to break up large area of impervious cover and provide education and outreach. • Possible opportunity for some channel improvements within the somewhat natural channel that runs through parking lot.	1	CFL1
SHB2	Possible basin retrofit.	1	NB4
GH1	• Possible retrofit on fire department property. • Identified as a restoration priority parcel byt the Trust for Public Land. • Meadow establishment on fire department property to curb geese/fecal • Enhancements to what already appears to be linear bioretention system along roadway.	1	NB3
SPC1	• Seemingly shallow groundwater conditions (reported by school administrator and apparent baseflow in channel when not raining). • High groundwater conditions could limit infiltration potential of site bioretention, but site topography could accommodate underdrains directed to channel. • Many exposed roof downspouts provide opportunity for above ground SMPs (i.e. downspout flow-through planters, rain barrels, cisterns) which could also be posed as rainwater harvesting opportunity. • In channel restoration (grading, planting, stabilization) directly in the channel on school property is an option. • Significant algae growth in short section of channel on school property could be mitigated. • Staff parking on grass is problematic and causes erosion. School administrator says it's a problem. Grass pavers or pervious pavers may be an option for stabilizing, increasing parking, but not increasing impervious cover.	1	NB3
SG	• Possible basin retrofit of existing wet pond on northeast side of bridge. • Two direct discharge pipes into open area on southeast side of bridge are very accessible and could be rerouted through treatment SMPs in park area. Consider developing site as "stormwater park" with high visibility from roadway looking down to site. Site topography also could allow an attractive cascading pool affect.	1	SB4
TR12-1	Possible basin retrofit.	1	SB3
TR4-1 and surrounding area	Lakewood industrial park; basin retrofits and runoff control	1	SB5
Jackson Mills Lake (Jackson Twp)	Lake restoration/dredging	2	SB2
Lake Enno (Jackson Twp)	Lake restoration/dredging	2	SB3
Woodland Park (Jackson Twp)	New BMP	2	NB2
Claridge Dr and Ashford Rd (Jackson Twp)	New BMP/basin where Jackson Twp added stabilization	2	NB2
Cook & Hyson Rds (Jackson Twp)	basin retrofits	2	SB3
Weston Ct outfall (Jackson Twp)	New BMP/basin	2	NB2
Brookwood Pkwy outfall (Jackson Twp)	New BMP/basin (various outfalls in cul-de-sac; stream restoration at Alaska Ave)	2	NB2
Sherrybrooke Dr basin (Howell Twp)	basin retrofits	2	NB2
Concord Circle outfall (Howell Twp)	New BMP	2	NB2
Oak Street Core (Lakewood Twp)	New regional stormwater BMP to handle growth area	2	CFL1
James & Prospect Streets Industrial Park (Lakewood Twp)	Stormwater BMPs for redevelopment	2	SB4
MLK Blvd & Pine St. (Lakewood Twp)	Stormwater management system improvements/BMPs	2	SB5
County Line Rd, Aboretum Pkwy & Tanglewood Dr (Lakewood Twp)	Stormwater management system improvements/BMPs	2	NB2
Albert Avenue (Lakewood Twp)	Stormwater management system improvements/BMPs	2	CFL1
S. Lake Drive (along Lake Carasaljo) (Lakewood Twp)	Stormwater management system improvements/BMPs	2	SB4
Coventry Square Condominium Assoc. (Lakewood Twp)	Stormwater BMPs and river corridor protection/restoration	2	NB5
Lakewood Gardens Section 2 Outfall System (Brick Twp)	Stormwater management system improvements/BMPs	2	CFL1
Hampshire Hills (Jackson Twp)	basin retrofits	3	SB3
Darien Rd outfall (Howell Twp)	New BMP/basin	3	NB3
Forge Pond Development (Brick Twp)	Stormwater management system improvements/BMPs	3	CFL1
Winding Ways (Jackson Twp)	basin retrofits	4	SB4
60 Acres development (Jackson Twp)	basin retrofits	4	SB4
Meadowood Rd basin (Jackson Twp)	basin retrofits	4	SB3
Sun Hollow Rd detention basin (Howell Twp)	basin retrofits	4	NB3
Candlewood development (Howell Twp)	New BMPs (numerous outfalls, currently unmapped)	4	NB3
Lakewood Airport/Church & Dwight storm basin (Lakewood Twp)	Basin relocation/improvement	4	CFL1
14th Street (Lakewood Twp)	Stormwater management system improvements/BMPs	4	NB2
Cedar Bridge Manor (Brick Twp)	Stormwater management system improvements/BMPs	4	CFL1
Four Seasons at Metedeconk Lakes (Jackson Twp)	retention basin/landscape maintenance	5	SB2
Hedgewood Rd detention basin (Howell Twp)	basin retrofits	5	NB3
Brent Drive detention basin (Howell Twp)	basin retrofits	5	NB3
Mount Rainier Dr. Basin (Ramtown; Block 42.06 Lot 17)	Basin retrofit. Identified by Howell Township as candidate for constructed gravel wetland.	5	NB4

Table 5-3
Potential Projects at Prioritized Stream Visual Assessments and Other Sites Identified by Stakeholders

Project Site	Potential Strategies	Rank	HUC
W Shenendoah Dr. Basin (Ramtown; Block 42.06 Lot 79.68)	Basin retrofit. Identified by Howell Township as candidate for constructed gravel wetland.	5	NB4
Iroquois Trail Pond (Jackson Twp)		5	SB4
Brewers Bridge Road @ South Branch (Jackson Twp)	County and municipal outfalls	5	SB4
Stormwater BMPs at Georgian Court University	Stormwater BMPs, turf maintenance, runoff reduction, others	5	SB4
Estuarine areas	Source control BMPs (GSI, decentralized SMPs); land acquisition and conservation	7	CFL1
Jackson Twp/Block: 52 Lot 1	SWMPT Site - Retrofit Basin (Crawford Rodriguez Elementary School)	8	NB2
Lakewood Twp/Block: 172 Lot 6&13	SWMPT Site - Retrofit Basin; Improve soil health to promote infiltration (W P Homeowners Association)	8	NB5
Brick Twp/Block: 1210 Lot 18	SWMPT Site - Retrofit Basin (Sovereign Bank)	8	NB5
Lakewood Twp/Block: 189.17 Lot 133	SWMPT Site - Retrofit Basin (Woodlake Greens)	8	NB5
Lakewood Twp/Block: 1051 Lot: 29	SWMPT Site - Retrofit Basin; Improve soil health to promote infiltration	8	SB5
Lakewood Twp/Block: 1603 Lot 2.01	SWMPT Site - Retrofit Basin	8	SB5
Lakewood Twp/Block: 1160 Lot: 246	SWMPT Site - Retrofit Basin; Lakewood Airport runway improvements and taxiway relocation	8	CFL1
Lakewood Twp/Block: 1600 Lot: 5	SWMPT Site - Retrofit Basin	8	CFL1
Lakewood Twp/Block: 345 Lot 9	SWMPT Site - Retrofit Basin on James Street; Improve soil health to promote infiltration (W P Homeowners Association)	8	SB4
Jackson Twp/Block: 75.01 Lot 1.04	SWMPT Site - Retrofit Basin in Bennetts Mills Plaza.	8	SB4
Jackson Twp/Block: 128.01 Lot 29	SWMPT Site - Retrofit Basin (Laurel Woods)	8	SB3
Jackson Twp/Block: 109.01 Lot: 53.08	SWMPT Site - Retrofit Basin (Albert Lee Subdivision)	8	SB3
Jackson Twp/Block: 135.11 Lot 32	SWMPT Site - Retrofit Basin (Hampshire Hills)	8	SB3
TR21-2	Reach runs through residential area with no stormwater BMPs, site could be a part of a restoration plan for CP-3 and Lake Carasaljo	9	SB4
CP-3	Reach is a possible site for streambank restoration to address erosion and restore riparian area, high stormwater flows or flow from the lake seems to be an issue, also could also be a candidate for on-site stormwater management such as rain gardens	10	SB4
TUR2	Headwater stream, BMPs may be appropriate to address runoff from residential areas and commercial parking lots. May be opportunity for restoration of riparian buffer area and/or streambank.	11	NB1
SH-3	Possible restoration and demonstration site to restore riparian buffer along the reach, opportunity for education and outreach. BMP for parking lot stormwater runoff. Lake management measures and waterfowl control would likely be beneficial.	12	NB5
HS6	Possible retrofits to upstream detention basins or on-site stormwater management on residential lots, e.g. rain gardens.	13	NB3
SH-1	BMP to address parking lot runoff, could be part of a restoration project for CB1. Stormwater inlet should be flushed and maintained as well as upgraded to strain floatables.	14	NB5
TKL1	Reach may be a candidate for buffer restoration or agricultural BMPs in the adjacent areas	15	NB4
NK	Turbid water appearance may suggest NPS from agriculture, possible site for agriculture BMPs	16	NB2
NQ	Restoration of shoreline buffer around pond may deter waterfowl and filter nutrients from stormwater runoff.	17	NB1
TR13-1	Each of these sites has detention basins in the vicinity that may be good candidates for retrofit. Basin TR15-1 has lowest SVA score and is classified as "Poor"	18	SB3
TR13-2		18	SB3
TR13-3		18	SB3
TR13-5		18	SB3
TR14-1		18	SB3
TR15-1		18	SB4
MF3	Reach is adjacent to a horse farm, possible site for agricultural BMP. Potential to improve the riparian area.	19	NB4
CB5	The drainage area of this reach is a possible source of nonsource point pollution, reduction of stormwater volumes onsite or a BMP at the beginning of reach. Possible riparian buffer restoration.	20	NB5
TM-8	Possible retrofit of detention basin and BMPs to treat and control runoff from the shopping center	21	NB2
NF	Restoration would need to address runoff from Rt 9 and businesses along Rt 9 such as parking lot BMPs. Potential for restoration of riparian area (lawn and unused parking lot area).	22	NB2
PB2	Possible BMP for the parking lot runoff at Echo Lake. Echo Lake shoreline restoration/management and waterfowl control would likely be beneficial.	23	NB3
SK	Jackson Mills Lake (immediately upstream) would benefit from lake management measures to address nuisance vegetation problems, etc.	24	SB2
CB1	BMP to address parking lot runoff and/or streambank restoration project, upstream detention basin near Joe Parker Rd may also be a possible retrofit to reduce flows. BMP for upstream nursery and expansion of riparian buffer upstream.	25	NB5
SC	May be opportunity for smaller BMPs at the western entrance to Lake Shenandoah County Park. Would provide a good opportunity for public education.	26	SB5
CBB-1	The drainage area of this reach is a source of nonsource point pollution and high flows of stormwater runoff, restoration of this site would be in partner with upstream stormwater controls and streambank restoration at site CBB-1. Possible opportunity for basin retrofit and improvements in housekeeping and stormwater infrastructure maintenance at adjacent shopping center(s).	27	CFL1
TR12-2	Since this is a headwater stream, detention basin retrofits could be considered, large residential lots to east of reach suggest this area was more recently developed. Sampling data at TR12-1 indicates high conductivity. This may be a priority reach for restoration since historical data is available.	28	SB3
DB-1	Agricultural BMPs may be beneficial at the herb farm adjacent to the reach. May also be an opportunity to improve riparian buffers.	29	NB3
SI	Lake Eno (immediately upstream) would benefit from lake management measures to address nuisance vegetation problems, etc.	30	SB4
SD	Baseball complex may be a site for BMPs, commercial area could be a source of NPS and possible sites for stormwater retrofits	31	SB5
CVS-1	Possible BMP demonstration site to address runoff from apartment complex. Possibility of reestablishing some riparian buffer area; dumping occurring along reach – fencing would be beneficial.	32	NB5
SA	May be a good place for BMPs or other stormwater treatment facilities since site is upstream from the BTMUA intake	33	SB5
NA	BMP at the Garden State Parkway median just upstream of the reach.	34	NB5
All Sites	Retrofit catch basins - adding inlet plates (e.g. Campbell-ERS "Grate Plate") to open throat portions of inlets to help reduce trash deposition either within the catchment of the site or directly at the site (minimum) depending on further review of each site's catchment.		