

Sustainable Stormwater Funding in the Upper Charles

Town of Milford, Stormwater Cost of Service

Cost of Service Analysis; Fully-Burdened Personnel Costs, Summary by Cost Subcategory

Major Cost Category	Existing	Year 1	Year 2	Year 3	Year 4	Year 5	Year 10	Description (existing)	Description (future)
Cost Subcategory									
Administration									
General Stormwater Program Administration	\$ 6,035	\$ 8,888	\$ 8,888	\$ 8,888	\$ 8,888	\$ 8,888	\$ 8,888	Periodic review and tracking of tasks & subcontractors	Periodic review and tracking of tasks & subcontractors (50% workload increase due to enhanced program)
Legal Support Services	N/A	\$ -	\$ 5,000	\$ -	\$ -	\$ 5,000	\$ 5,000	N/A	Legal review of regulatory changes in Years 2, 5 & 10
Inter-Agency Coordination (MA hwy, CRWA, EPA)	\$ 1,260	\$ 1,890	\$ 1,890	\$ 1,890	\$ 1,890	\$ 1,890	\$ 1,890	Share information, attend workshops & seminars	50% increase in existing efforts
Inter-Municipal Coordination (adj. Towns)	N/A	\$ 1,260	\$ 1,260	\$ 1,260	\$ 1,260	\$ 1,260	\$ 1,260	N/A	Meet twice a year to review and coordinate programs
Emergency/Disaster Management Coordination	N/A	\$ 1,260	\$ 1,260	\$ 1,260	\$ 1,260	\$ 1,260	\$ 1,260	N/A	Meet twice a year to review and coordinate programs
NPDES NOI and SWMP	N/A	\$ 41,260	\$ -	\$ -	\$ 16,260	\$ -	\$ 41,260	N/A	Prepare NOI and SWMP in Year 1, Year 4 incorporate PCP plan into SWMP, prepare NOI and update SWMP in Year 10,
NPDES Annual Reporting	\$ 4,605	\$ -	\$ 9,210	\$ 9,210	\$ 9,210	\$ 9,210	\$ 9,210	Completed by consultant, input & review by Town staff	100% increase from existing, completed by consultant, input & review by Town staff
NPDES MS4 Public Education Programs	\$ 1,000	\$ 10,335	\$ 13,423	\$ 4,845	\$ 9,465	\$ 12,123	\$ 10,038	Presentations (presentation to middle school students by consultant), add stormwater edu. Materials to library, schools, & town hall, postings on Town website & posters.	Workload increase from existing; distribute at least 2 messages to each of 4 audiences (residents, commercial, industrial, construction), measure & report message effectiveness
NPDES MS4 Public Involvement Programs	\$ 3,120	\$ 10,205	\$ 10,205	\$ 9,205	\$ 9,205	\$ 9,205	\$ 9,605	Annual clean-up programs for scrap metal (615 tons scrap metal/white goods)& oil recycling (1,200 gal. waste oil), semi-annual hazardous waste pick up, and Community Clean up days.	2xPublic meetings, update website w/ annual report&events,river clean-up day, storm drain stencil, rain barrel workshop or similar consultant presentation
NPDES MS4 & SPCC Training	\$ 1,280	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	Consultant provided 2-hr training class to Hgwy Dept employees on good housekeeping measures, and practices of equipment fueling, waste ban regs, waste water, drink water, stormwater, & emerg. preparedness	SWPPP training for Transfer Station, Hgwy dept Facility & pollution prevention/good housekeeping and IDDE for all DPW; SPCC training at hgwy dept Facility; all training done by a consultant; programs developed and training in Year 1, refresher training each year thereafter
RDA Compliance	N/A	\$ -	\$ -	\$ -	\$ -	\$ 4,000	\$ 800	N/A	Tracking of regulated entities under the RDA that discharge to the MS4
Certified Municipal phosphorus Program (CMPP)	N/A	\$ -	\$ -	\$ -	\$ -	\$ 5,000	\$ 1,000	N/A	Recordkeeping, data tracking and correspondence with regulated entities for updating program progress under "Water Quality"
Grants Program (s319, 604b, CZM)	\$ 3,690	\$ -	\$ 3,690	\$ -	\$ 3,690	\$ -	\$ 3,690	chapter 90 grant (for exist. Transp. Infrastructure improvements)	Staff efforts to apply for and administer grants received for stormwater programs; assumes one permit every two years and YR10
Subtotal:	\$ 20,990	\$ 80,098	\$ 59,826	\$ 41,558	\$ 66,128	\$ 62,836	\$ 98,901		
Billing and Finance (for a Utility)									
Financial Management	N/A							N/A	Costs are included in Indirect Cost Allocations
Indirect Cost Allocations	N/A	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		Indirect cost allocations are estimated to be 8% of the total program costs
Billing, Finance and Customer Services	N/A							N/A	Costs are based on approximately @@@@ bills per year
Cost and Rate Analysis	N/A							N/A	Costs are included in Indirect Cost Allocations
General Government Support	N/A							N/A	Costs are included in Indirect Cost Allocations
Subtotal:	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
Regulation/Enforcement									
MS4 Stormwater Permit Administration	\$ 2,700	\$ 8,100	\$ 8,100	\$ 8,100	\$ 8,100	\$ 8,100	\$ 8,100	13 filings w/ Conservation Commission of which 1 was a new permit for a 1+ Acre construction site subject to the Town stormwater management and O&M bylaw for developm't regulations	Anticipated administration of 3 permits annually- review by consultant paid for by developer, coordination and oversight cost
RDA/CMPP Compliance	N/A	\$ -	\$ -	\$ -	\$ -	\$ 11,300	\$ 2,260	N/A	Inspection of facilities to verify accuracy of information submitted under the CMPP
Stormwater/Drainage System Inspections	\$ 13,500	\$ 16,875	\$ 16,875	\$ 16,875	\$ 16,875	\$ 16,875	\$ 16,875	Currently conducted by Town Engineer to review compliance of post-construction BMPs or connections with the MS4	25% increase in workload due to various programs
Illicit Discharge and Elimination Program	\$ 6,000	\$ -	\$ 11,520	\$ 11,520	\$ 11,520	\$ 11,520	\$ 11,520	Sewer Department currently tracks down discharges when receives a call, the cost is passed on to owner of illicit discharge	Includes identification of IDDE sources- assume 50% of dry-weather sampled outfalls have illicit discharge (30 hits over permit cycle-start YR2), estimate cost to identify source \$1200 per hit . Assume removal costs are borne by property owner or sewer authority, assume cost for coordination/oversight of enforcement
Erosion/sediment Control Inspections	\$ 4,050	\$ 6,075	\$ 6,075	\$ 6,075	\$ 6,075	\$ 6,075	\$ 6,075	Engineer inspects Town projects; private projects are inspected at the cost to the developer or permittee, town inspector inspects some (assume 3% engineer fully burdened at \$135,000)	50% increase in workload due to additional maintenance and construction work
Subtotal:	\$ 26,250	\$ 31,050	\$ 42,570	\$ 42,570	\$ 42,570	\$ 53,870	\$ 44,830		

Engineering and Master Planning									
Stormwater Master Planning	N/A	\$ 105,040	\$ 100,540	\$ 75,040	\$ 75,040	\$ 22,155	\$ 75,563	N/A	Develop a CIP based on the Phosphorous Control Plan and infrastructure needs, develop PCP by year 4, yr-5 GIS update of new BMPs , resulting TP reductions
IDDE plan		\$ 18,060	\$ 5,000	\$ -	\$ -	\$ 6,260	\$ 5,864		Update IDDE Plan in Year 1 to meet new permit requirements , Year 1 - Director time for coordination SSO, including delineation of and prioritization of catchments YR1, and coordination with Sewer/Health Dept for mapping requirements performed under data collection and mapping task. YR 2 update catchment mapping based on mapping changes, YR5 detailed report of removals
Catch basin Inventory Plan (CBIP) Plan and Street sweeping optimization	N/A	\$ 6,170	\$ 3,670	\$ 3,670	\$ 3,670	\$ 3,670	\$ 3,670	Location of some of the infrastructure is complete, Currently trying to contract with Surveyor to complete inventory.	Year 1, implement CBIP record keeping of CB cleaning and status of CB, investigate CB w/ >50% full sump at 2 consecutive cleanings, SOP year 1 to sweep areas DCIA 2x-record miles, YR 10 continue program
Waterfowl & Pet Waste Management Programs	N/A	\$ 11,260	\$ 2,520	\$ 2,520	\$ 2,520	\$ 2,520	\$ 4,268	N/A	Develop programs by end of Year, 1 assume cost for management plan, annual program planning and management
Septic, Inflow, and Infiltration Program	\$ -	\$ 1,260	\$ 1,260	\$ 1,260	\$ 1,260	\$ 1,260	\$ 1,260	Sanitary sewer (I/I) investigations and improvements, performed as part of sewer program	Continue existing program; 95% town on sewer, assume cost for coordination with Sewer Dept.
Pesticide, Herbicide, and Fertilizer Program	N/A	\$ 2,520	\$ 2,520	\$ 2,520	\$ 2,520	\$ 2,520	\$ 2,520	Applications follow the principles of an Integrated Pest Management (IPM) Program to reduce chemical applications for pest and turf management,	Continue IPM & Implement fertilizer optimization program YR-1
Spill Response and Cleanup Program	\$ -		\$ 5,760	\$ 2,520	\$ 2,520	\$ 7,020	\$ 4,455	No formal program related to stormwater	Develop a priority response program based on high accident areas, significant pollutant potential and proximity to receiving waters in YR 2; update every 3 years, YR 5 update priority response program and track results, Coordinate with Town Departments
Groundwater and Drinking Water Program		\$ 6,020	\$ 1,260	\$ 1,260	\$ 1,260	\$ 1,260	\$ 1,260	No formal evaluation of priorities & results with respect to water supply provided by town?	Review drinking water quantity and quality priority areas in Year 1 and incorporate results into planning activities for BMPs to address water quality; review status annually
Highway Department Project Design Engineering and permitting assistance	\$ 4,050	\$ 5,400	\$ 5,400	\$ 5,400	\$ 5,400	\$ 8,370	\$ 10,800	Town Engineer Review of Drainage Plans for Town (assume 2.5% engineer fully burdened at \$135,000)	YR1 25% increase in workload from existing, 2 projects per year, yr5 increase in projects for implementation of PCP 50% increase, 100% increase from YR1 in YR10
SWPPPs for Transfer Station & Highway Department Facility	N/A	\$ 15,110	\$ 2,610	\$ 2,610	\$ 2,610	\$ 2,610	\$ 2,610	N/A	Develop SWPPPs by end of Year 1; implement recommendations by end of Year 2; update every 5 years
Maintenance and Field Engineering Support	\$ 4,050	\$ 5,400	\$ 5,400	\$ 5,400	\$ 5,400	\$ 8,370	\$ 8,370	Engineers assist Hgwy Dept on an on-call basis (assume 2.5% engineer fully burdened at \$135,000)	25% increase in workload from existing, 2 projects per year, increase in projects for year 4 implementation of PCP
Drainage -Data Collection, Database Management, Mapping	N/A	\$ 252,700	\$ 234,400	\$ 33,200	\$ 33,200	\$ 33,200	\$ 33,200	N/A - System mapping to be completed by surveyor, and updated as needed	complete system mapping Year 2 cost includes mapping of entire drainage network (schematic only); and add sewer infrastructure (assume update of sewer/septic data includes GIS data update from existing plans collected from Sewer/Health dept), continue data collection, field verification and update mapping annually, YR5 tracking and update mapping for IC reduction (PCP implementation)
Sewer -Data Collection,Database Management, Mapping		\$ -	\$ 36,840	\$ 7,700	\$ 7,700	\$ 7,700	\$ 11,988	Field Data collected for existing infrastructure and new projects (GIS update) - consultant	sewer infrastructure mapping, (assume that this update includes time to collect plans, schematics, and info from Sewer/Health Dept. ,incorporate existing attribute data into GIS), continue field verification and update mapping annually, YR 10 continue map updates
Technical Services/Public Assistance (hotlines)	N/A	\$ 1,935	\$ 1,935	\$ 1,935	\$ 1,935	\$ 1,935	\$ 1,935	N/A	handle calls related to illicit discharge and flood complaints
Code Development and Zoning Support Services	N/A	\$ 7,500	\$ 17,500	\$ 12,500	\$ 6,350	\$ 6,350	\$ 10,040	N/A-bylaws for stormwater mgmt and ESC are in place	Review and update ESC, SW, IDDE as needed by YR2, Report on local regulations affecting impervious areas in Year 2, report on feasibility of green practices and other green techniques in Year 3
Hazard Mitigation Planning and Flood Insurance Updates	\$ 5,000	\$ -	\$ -	\$ -	\$ -	\$ 25,000	\$ 5,000	O'Brien Brook repair study (noted in meeting notes)	Allowance in Year 5 for specific areas of concern identified throughout the permit term
Subtotal:	\$ 13,100	\$ 438,375	\$ 426,615	\$ 157,535	\$ 151,385	\$ 140,200	\$ 182,803		
Operations and Implementation									
Operations and Maintenance Management	\$ 50,400	\$ 80,600	\$ 75,600	\$ 75,600	\$ 75,600	\$ 83,400	\$ 78,160	Highway Surveyor coordinates work schedules, equipment and product needs, oversees progress and completion of work	50% increase in effort from existing due to new projects and tracking of results (measurable goals) for each activity, Year 5 increase due to implementation & const. of BMP's for PCP
CIP/Infrastructure Implementation	\$ -				\$ -			No formal program; infrastructure needs incorporated into Highway Budget for operations, CIP funded through grants or CHP 90	Annual needs evaluation, incorporate capital projects
PCP implementation	N/A				\$ -				Year 5- implementation & construction of BMP's
voluntaryCMPP/RDA implementation	N/A				\$ -				year 5- implementation of CMPP or constr. Of BMP
IDDE	\$ -				\$ -			No Illicit discharges traced this year	year-1 address illicit discharge & year-5 report on removals,RDA- within 60 days of occurrence, no cost included in this task (see reg/enf)
Storm Sewer and Culvert Maintenance/Repair	\$ 54,683	\$ 68,354	\$ 68,354	\$ 68,354	\$ 68,354	\$ 68,354	\$ 68,354	Repair Culverts & walls, 466 ft drainpipe installed & 90 ft replaced, 57 catch basins repaired/replaced & 2 new installed, clean inlet grates	25% increase due to degraded infrastructure

<i>Inlet, Catch Basin, and Manhole Cleaning</i>	\$ 63,956	\$ 69,243	\$ 69,243	\$ 69,243	\$ 69,243	\$ 69,243	\$ 69,243	3,368 catch basins cleaned by subcontractor, 1,600 CUY (sweep & catch basin material removed), Includes costs for emergency cleaning and cleaning of basins as needed in addition to subcontractor cleaning service	inspect all 3368 catch basins and manholes each year and clean as needed, clean basins when sump 50% full, document infrastructure status
<i>Stormwater BMP Facility Maintenance</i>	\$ 18,000	\$ 18,000	\$ 18,000	\$ 18,000	\$ 18,000	\$ 18,900	\$ 27,000	Brush cutting and trash clean up at various detention basins and culverts, some performed through inmate programs (approx. 70 basins for town to maintain) estimate based on seasonal employees (\$2,000* 9 weeks)	Continue existing effort cleaning and maintenance of BMP locations in first 4 years; YR 5- 5% increased maint. due to PCP implementation, YR10 25% increase in maintenance
<i>SWPPPs for Transfer Station & Highway Department Facility</i>	\$ 11,357	\$ 11,357	\$ 11,357	\$ 11,357	\$ 11,357	\$ 11,357	\$ 11,357	Facility clean up- remove 975 gal. oil/water & 5 drums of oily sand & sludge from separator at garage	Continue existing activities
<i>Street Sweeping & Sidewalk Sweeping</i>	\$ 201,890	\$ 208,930	\$ 208,930	\$ 208,930	\$ 208,930	\$ 208,930	\$ 208,930	continuous sweeping March thru November 120 miles swept (all town accepted streets), 1,600 CUY (sweep & catch basin material removed), cost includes equipment, maintenance, fully burdened labor, & disposal for street and sidewalk sweeping.	In addition to existing sweeping program, sweep municipal directly connected parking 2x per year
<i>Fall Leaf-pickup and Composting Program</i>	\$ 106,570	\$ 106,570	\$ 106,570	\$ 106,570	\$ 106,570	\$ 106,570	\$ 106,570	Leaf Collection on 120 miles of Town streets, collected 9,198 CUY lawn waste & 405 Christmas trees, includes cost of equip., fuel, fully burdened labor, and maintenance. Cost also includes composting program for collected yard waste.	Continue leaf collection program
<i>Maintenance/Repair/Installation of ESC practices</i>	\$ -	\$ 7,220	\$ 7,220	\$ 7,220	\$ 7,220	\$ 7,220	\$ 7,220	no reported repairs	allowance to address erosion repairs
<i>Stream Restoration/Stabilization</i>	\$ 80,000			\$ 28,540	\$ -		\$ 28,540	1-project Charles River @ central st.	allowance to adress 1 stream project every 3 years, YR 3 and YR10
<i>Ditch and Channel Maintenance</i>	N/A				\$ -			restoration of walls Godfrey Brook- (Env. Bond Bill)	Continue existing maintenance activities
<i>Waterfowl & Pet Waste Management Programs</i>	N/A	\$ -	\$ 4,000	\$ 8,500	\$ 6,500	\$ 6,500	\$ 6,500	N/A no current operations, Educational posters are Town buildings informing people not to feed waterfowl.	Install waterfowl education signs at congregation areas by Year 2; install pet waste stations at key areas of concern by Year 3; implement waterfowl deterrents by Year 4; maintain programs after Year 4
<i>Public Assistance Program</i>	N/A	\$ 3,690	\$ 3,690	\$ 3,690	\$ 3,690	\$ 3,690	\$ 3,690	public awareness but No incentive program in place to encourage Relocation of roof leaders into catch basins; disconnection of identified illicit discharges	continue creating public awareness & encourage disconnection of impervious areas, and illicit discharges
<i>Hazardous/Toxic Materials Collection Program</i>	\$ 9,045	\$ 9,045	\$ 9,045	\$ 9,045	\$ 9,045	\$ 9,045	\$ 9,045	Annual clean-up programs for scrap metal (615 tons scrap metal/white goods)& oil recycling (1,200 gal. waste oil), semi-annual hazardous waste pick up. Includes cost of staff coordination of program.	Continue existing activity and report annually
<i>Emergency Drainage Repairs</i>	\$ 12,000	\$ 12,000	\$ 12,000	\$ 12,000	\$ 12,000	\$ 12,000	\$ 18,000	Annual allowance for unexpected repair of failed drainage structures	Continue existing practices; 50% increase in Year 10 due to aged structures, new/additional infrastructure overall
<i>Land, Easement, and Rights Acquisition</i>	N/A				\$ 5,000	\$ 5,000	\$ 5,000	N/A	Future costs reflect estimated legal time associated with capital projects
Subtotal:	\$ 607,901	\$ 595,009	\$ 594,009	\$ 627,049	\$ 596,509	\$ 610,209	\$ 647,609		
Monitoring									
<i>Catchment Assessment & Outfall Monitoring (dry weather)</i>	N/A	\$ -	\$ 58,870	\$ 58,870	\$ 58,870	\$ 58,870	\$ -	All outfalls inspected once during dry weather conditions (303 outfalls 100% inspected during dry weather) completed by consultant 2005	Assess 50% of catchments by Year 3, monitor 50% of outfalls by Year 4 and 100% of catchments and outfalls by Year 5; catchment assessments include key junction manhole inspections (i.e., damming of inlet pipes)
<i>Stormwater Outfall Monitoring (wet weather)</i>	N/A	\$ 13,492	\$ 62,580	\$ 62,580	\$ 62,580	\$ 62,580	\$ 52,762	N/A	Develop Permittee Specific Monitoring Plan in Year 1; sample 25% of outfalls each year beginning in Year 2, assume 20% of outfalls excluded
Subtotal:	\$ -	\$ 13,492	\$ 121,450	\$ 121,450	\$ 121,450	\$ 121,450	\$ 52,762		
TOTAL:	\$ 668,241	\$ 1,158,024	\$ 1,244,470	\$ 990,162	\$ 978,042	\$ 988,565	\$ 1,026,905		Cost in 2011 Dollars
Future Total Including 2.5% Annual Inflation:	\$ 668,241	\$ 1,186,974	\$ 1,306,693	\$ 1,064,424	\$ 1,075,846	\$ 1,112,135	\$ 1,315,933		Annual inflation of 2.5% is an average of historic inflation values reported for the last 10 years based on Consumer Price Index

Note:* Unless otherwise noted, Year 10 costs represent the average cost over the 5-Year permit term

Sustainable Stormwater Funding in the Upper Charles																
Town of Milford, Stormwater Cost of Service																
Program Administration: Existing & Future Cost Supporting Data																
		Subcontractors (units = fee)				Fully Burdened Personnel (rate = salary+50%, units = FTE)				Expenses				Total Cost	Total FTE	Description
	Source	Consulting Engineer	GIS Technician-Consultant	Legal Counsel	Town Engineer	Town Administrator	Hgwy Surveyor	Asst. Hgwy Surveyor	Hgwy Admin	Mileage	Postage	Disposal	Other			
	Rate	1	1	1	\$135,000	\$187,500	\$126,000	\$78,000	\$58,500	\$0.51	\$0.44		1			
Administration	# Units															
General Stormwater Program Administration	Existing						0.03	0.02						\$ 5,340	0.05	Periodic review and tracking of tasks & subcontractors
	Proposed						0.05	0.03						\$ 8,010	0.08	Periodic review and tracking of tasks & subcontractors (50% workload increase due to enhanced program)
Legal Support Services	Existing	-		-		-	-		-	-	-		-	\$ -	0.00	N/A
	Proposed-YR2			\$5,000										\$ 5,000	0.00	Legal review of regulatory changes in Year 2
	Proposed-YR5			\$5,000										\$ 5,000	0.00	Legal review of regulatory changes in Year 5
	Proposed-YR10			\$5,000										\$ 5,000	0.00	Legal review of regulatory changes in Year 10
Administrative Support Services	Existing								0.01				110.00	\$ 695	0.01	Assist in mailings, preparation of budgets, etc.
	Proposed								0.02					\$ 878	0.02	50% workload increase from existing
Inter-Agency Coordination (CRWA, EPA, Mass-Hgwy)	Existing						0.010	0.000						\$ 1,260	0.01	Share information, attend workshops & seminars
	Proposed						0.015	0.000						\$ 1,890	0.02	50% increase of existing efforts
Inter-Municipal Coordination (adj. Towns)	Existing	-		-		-	-	-	-	-	-		-	\$ -	0.00	N/A
	Proposed						0.010							\$ 1,260	0.01	Meet twice a year to review and coordinate programs
NPDES NOI and SWMP	Existing	-		-		-	-	-	-	-	-		-	\$ -	0.00	N/A
	Proposed YR-4	\$15,000					0.01							\$ 16,260	0.01	Incorporate PCP plan into SWMP
	Proposed YR-1 & 10	\$40,000					0.01							\$ 41,260	0.01	Prepare NOI and SWMP in Year 1, prepare NOI and update SWMP in Year 10
NPDES Annual Reporting	Existing	\$1,500					0.020		0.010					\$ 4,605	0.03	Completed by consultant, input & review by Town staff
	Proposed	\$3,000					0.04		0.02					\$ 9,210	0.06	100% increase from existing, completed by consultant, input & review by Town staff
NPDES MS4 Public Education Programs	Existing	\$1,000												\$ 1,000	\$ -	Presentations (presentation to middle school students by consultant), add stormwater edu. Materials to library, schools, & town hall, postings on Town website & posters.
	Proposed-YR 1	\$3,000					0.030		0.030				1,800	10,335	0.06	2 educational messages one to target residents (radio ad) and one to developers audience (brochures w/ permit application), Consultant-Survey of educational program effectiveness
	Proposed-YR 2	\$3,000					0.030		0.030		1,700		4,140	13,423	0.06	2 educational messages one to target commercial (mailed brochure) and one to industrial audience (mailed brochures), Consultant-Survey of educational program effectiveness
	Proposed-YR 3	\$3,000					0.010		0.010					4,845	0.02	Consultant-Survey of educational program effectiveness
	Proposed-YR 4	\$3,000					0.030		0.030				930	9,465	0.06	2 educational messages to target residents (newspaper ad) and developer audience (brochures w/ permit application), Consultant-Survey of educational program effectiveness
	Proposed-YR 5	\$3,000					0.030		0.030		1,700		2,840	12,123	0.06	2 educational messages one to target commercial (mailing &presentation at local business assoc. meeting) and one to industrial audience (mailed brochures), Consultant-Survey of educational program effectiveness
	Proposed-Averaged/YR-10													10,038	0.00	Workload increase from existing; distribute at least 2 messages to each of 4 audiences (residents, commercial, industrial, construction), measure & report message effectiveness
NPDES MS4 Public Involvement Programs	Existing							0.01	0.04					\$ 3,120	0.05	Annual clean-up programs for scrap metal (615 tons scrap metal/white goods)& oil recycling (1,200 gal. waste oil), semi-annual hazardous waste pick up, and Community Clean up days.
	Proposed-YR 1& YR 2	\$2,360					0.010		0.010			1000	5000	\$ 10,205	0.02	2x Public meetings, update website w/ annual report&events,river clean-up day, storm drain stencil,presentation by consultant
	Proposed-YR 3-5	\$2,360					0.010		0.010			1000	4000	\$ 9,205	0.02	2x Public meetings, update website w/ annual report&events,river clean-up day, storm drain stencil, rain barrel workshop or similar consultant presentation
	Proposed-Averaged/Year 10													\$ 9,605	0.00	2xPublic meetings, update website w/ annual report&events,rver clean-up day, storm drain stencil, rain barrel workshop or similar consultant presentation
NPDES MS4 & SPCC Training	Existing	\$800											480.00	\$ 1,280	0.00	Consultant provided 2-hr training class to DPW employees on good housekeeping measures, and practices of equipment fueling, waste ban regs, waste water, drink water, stormwater, & emerg. Preparedness
	Proposed Annual	\$5,000												\$ 5,000	0.00	SWPPP training for Transfer Station, DPW Facility & pollution prevention/good housekeeping and IDDE for all DPW
RDA Compliance	Existing	-		-		-	-	-	-	-	-		-		0.00	N/A
	Proposed YR-5+	\$4,000												\$ 4,000	0.00	Tracking of regulated entities under the RDA that discharge to the MS4
Certified Municipal Phosphorous Program (CMPP)	Existing	-		-		-	-	-	-	-	-		-		0.00	N/A
	Proposed YR-5+	\$5,000												\$ 5,000	0.00	Recordkeeping, data tracking and correspondence with regulated entities for updating program progress under "Water Quality"
Grants Program (s319, 604b, CZM)	Existing						0.02		0.02					\$ 3,690	0.04	some state grants for repairs
	Proposed YR-2&4						0.02		0.02					\$ 3,690	0.04	Staff efforts to apply for and administer grants received for stormwater programs; assumes one permit every two years
Stormwater Advisory Committee Support	Existing	-		-		-	-	-	-	-	-		-		0.00	N/A
	Proposed													\$ -	0.00	Incorporated into general stormwater program administration
Unspecified Overhead	Existing													\$ -	0.00	Copies, postage, consumables
	Proposed													\$ -	0.00	50% increase from existing
Emergency/Disaster Management	Existing	\$0	\$0	\$0	\$0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	N/A
	Proposed						0.010							\$ 1,260	0.01	Coordinate stormwater program with EPC, meet twice a year
Total:	Existing	\$3,300		0.00	0.00	0.00	0.08	0.03	0.08	0.00	0.00		\$590	\$20,990	0.19	
	Proposed YR-1	\$50,360	\$0	\$0	0.00	0.00	0.13	0.03	0.06	0.00	\$0	\$1,000	\$6,800	\$89,098	0.22	
	Proposed YR-2	\$13,360	\$0	\$5,000	0.00	0.00	0.18	0.03	0.10	0.00	\$1,700	\$1,000	\$9,140	\$59,826	0.31	
	Proposed YR-3	\$13,360	\$0	\$0	0.00	0.00	0.14	0.03	0.06	0.00	\$0	\$1,000	\$4,000	\$41,558	0.23	
	Proposed YR-4	\$28,360	\$0	\$0	0.00	0.00	0.19	0.03	0.10	0.00	\$0	\$1,000	\$4,930	\$66,128	0.32	
	Proposed YR-5	\$22,360	\$0	\$5,000	0.00	0.00	0.16	0.03	0.08	0.00	\$1,700	\$1,000	\$6,840	\$62,836	0.27	

Sustainable Stormwater Funding in the Upper Charles
Town of Milford, Stormwater Cost of Service
Regulation/Enforcement: Existing & Future Cost Supporting Data

		Subcontractors (units = fee)		Burdened Personnel (rate = salary+50%, units = FTE)						Expenses			Total Cost	Total FTE	Description
	Source	Consulting Engineer	Legal Counsel	Town Administrator	Town Engineer	Hgwy Surveyor	Asst. Hgwy Surveyor	Hgwy Admin	DPW Clerk	Mileage	Postage	Other			
	Rate	1	1	\$187,500	\$135,000	\$126,000	\$78,000	\$58,500	\$58,500	\$0.51	\$0.44	1			
Regulation/Enforcement	# Units														
MS4 Stormwater Permit Administration	Existing				0.02								\$ 2,700	0.02	13 filings w/ Conservation Commission of which 1 was a new permit for a 1+ Acre construction site subject to the Town stormwater management and O&M bylaw for developm't regulations
	Proposed				0.06								\$ 8,100	0.06	Anticipated administration of 3 permits annually
RDA/CMPP Compliance	Existing												\$ -	0.00	N/A
	Proposed	\$5,000			0.05	0.05							\$ 11,300	0.10	Inspection of facilities to verify accuracy of information submitted under the CMPP
Stormwater/Drainage System Inspections	Existing				0.10								\$ 13,500	0.10	Currently conducted by Town Engineer to review compliance of post-construction BMPs or connections with the MS4
	Proposed				0.13								\$ 16,875	0.13	25% increase in workload due to various programs
Illicit Discharge and Dumping Program	Existing	\$6,000											\$ 6,000	0.00	Sewer Department currently tracks down discharges when receives a call, the cost is passed on to owner of illicit discharge
	Proposed YR 2-5	\$9,000				0.02							\$ 11,520	0.02	Includes identification of IDDE sources- assume 50% of dry-weather sampled outfalls have illicit discharge (30 hits over permit cycle-start YR2), estimate cost to identify source \$1200 per hit (CWP IDDE 2004 manual =\$900 per site, dye test) assume removal costs are borne by owner or sewer authority, include \$2500 for coordination/oversight of enforcement (2% effort director)
Erosion/sediment Control Inspections	Existing				0.03								\$ 4,050	0.03	Engineer inspects Town projects; private projects are inspected at the cost to the developer or permittee, town inspector inspects some
	Proposed				0.05								\$ 6,075	0.05	50% increase in workload due to additional maintenance and construction work
Total:	Existing	\$6,000	\$0	0.00	0.15	0.00	0.00	0.00	0.00	\$0	\$0	\$0	\$26,250	0.15	
	Proposed YR1	\$5,000	\$0	0.00	0.28	0.00	0.00	0.00	0.00	\$0	\$0	\$0	\$31,050	0.28	
	Proposed YR 2-4	\$14,000	\$0	0.00	0.28	0.02	0.00	0.00	0.00	\$0	\$0	\$0	\$42,570	0.30	
	Proposed YR 5	\$19,000	\$0	0.00	0.28	0.07	0.00	0.00	0.00	\$0	\$0	\$0	\$53,870	0.35	

Sustainable Stormwater Funding in the Upper Charles
Town of Milford, Stormwater Cost of Service
Engineering & Master Planning: Existing & Future Cost Supporting Data

		Subcontractors (units = fee)			Fully Burdened Personnel (rate = salary+50%, units = FTE)						Expenses			Total Cost	Total FTE	Description
	Source	Consulting Engineer	GIS consultant	Legal Counsel	Town Administrator	Town Engineer	Hgwy Surveyor	Asst. Hgwy Surveyor	Hgwy Admin	DPW Clerk	Mileage	Postage	Other			
	Rate	1	1	1	\$187,500	\$135,000	\$126,000	\$78,000	\$58,500	\$58,500	\$0.51	\$0.44	1			
Engineering & Master Planning	# Units															
Stormwater Master Planning, includes PCP/CIP planning, link with Comp. Plan; planning for infrastructure needs, includes facility inventory for SW retrofit, tracking BMPs and resulting TP reduction, and updating GIS and annual report	Existing													\$ -	0.00	
	Proposed YR-1	\$95,000	\$5,000				0.04							\$ 105,040	0.04	PCP Development and Adjust IC loads and % removal from 2000-2009, facility retrofit inventory (1/2 yr 1)
	Proposed YR-2	\$70,500	\$25,000				0.04							\$ 100,540	0.04	PCP development, PCP GIS supportive mapping and YR 2 Progress Report, facility retrofit inventory (1/2 yr2)
	Proposed YR-3	\$70,000					0.04							\$ 75,040	0.04	PCP development
	Proposed YR-4	\$60,000		10,000			0.04							\$ 75,040	0.04	PCP development
	Proposed YR-5	\$15,000	\$1,500		0.01	0.01	0.01			0.02				\$ 22,155	0.05	Annual tracking and update GIS with BMPs installed &TP reductions, annual reporting of new BMPs and resulting TP reduction- CIP planning based on PCP by consultant with staff review
Illicit Discharge Detection and Elimination Plan	Existing													\$ -	0.00	IDDE Plan developed during 2003 permit
	Proposed YR-1	\$10,000	\$6,800				0.010							\$ 18,060	0.01	Update IDDE Plan in Year 1 to meet new permit requirements , director coord., delineation of and prioritization of catchments (20% of 303 outfalls/20 per day *8hr/dy*\$70/hr) YR2, director Coord.
	Proposed YR-2		\$5,000											\$ 5,000	0.00	Update catchment delineation based on mapping changes/updates
	Proposed YR-5	\$5,000					0.010							\$ 6,260	0.01	detailed report of Illicit conneciton/discharge removals, YR5, director coord.
Catch Basin Inventory Plan (CBIP) Plan and Street Sweeping Optimization	Existing													\$ -	0.00	N/A
	Proposed YR-1		\$5,000						0.02					\$ 6,170	0.02	Upfront cost to set up tracking system and route planning, YR1
	Proposed-annual		\$2,500						0.02					\$ 3,670	0.02	Update & Review previous year CBIP recordkeeping of CB cleaning and status of CB, investigate CB w/ >50% full sump at 2 consecutive cleanings, SOP year 1. to sweep areas DCIA 2x-record miles, optimize programs
Waterfowl & Pet Waste Management Programs	Existing													\$ -	0.00	N/A
	Annual						0.02							\$ 2,520	0.02	Annual coordination and management
	Proposed YR 1	\$10,000					0.01							\$ 11,260	0.01	Develop programs by end of Year 1, pet waste & waterfowl locations identified in mapping, no additional cost for plan
Septic, Inflow, and Infiltration Program	Existing													\$ -	0.00	Sanitary sewer (II) investigations and improvements tracked to document condition and status of system
	Proposed						0.010							\$ 1,260	0.01	coordination w/ sewer dept.
Pesticide, Herbicide, and Fertilizer Program	Existing													\$ -	0.00	Applications follow the principles of an Integrated Pest Management (IPM) Program to reduce chemical applications for pest and turf management
	Proposed						0.02							\$ 2,520	0.02	Continue IPM & implement fertilizer optimization program Year 1, assume requires coordination w/ parks dept. etc.
Spill Response and Cleanup Program	Existing													\$ -	0.00	No formal program related to stormwater
	Proposed YR2	\$4,500					0.01							\$ 5,760	0.01	Develop a priority response program based on high accident areas, significant pollutant potential and proximity to
	Proposed YR 3-4						0.02							\$ 2,520	0.02	Track program results and coordinate with Town departments
	Proposed YR 5	\$4,500					0.02							\$ 7,020	0.02	Update priority response program and track program results and coordinate with Town departments
Groundwater and Drinking Water Program	Existing													\$ -	0.00	No formal evaluation of priorities & results with respect to water supply
	Proposed YR-1	\$3,500					0.02							\$ 6,020	0.02	Technical review memo of drinking water quantity and quality priority areas , includes consultant GIS map exercise
	Proposed YR 2-5						0.01							\$ 1,260	0.01	Incorporate program results into planning activities for BMPs to address water quality; review status annually
DPW Project Design Engineering and Permitting Assistance	Existing					0.030								\$ 4,050	0.03	Town Engineer Review of Drainage Plans for Town (assume 2.5% engineer fully burdened at \$135,000)
	Proposed YR 1-4					0.040								\$ 5,400	0.04	25% increase in workload from existing, 2 projects per year
	Proposed YR 5+					0.06								\$ 8,370	0.06	50% increase in projects as part of PCP implementation
	Proposed YR 10					0.08								\$ 10,800	0.08	100% increase from YR1 in projects as part of PCP implementation
SWPPPs for Transfer Station & DPW Facility	Existing													\$ -	0.00	Municipal facility inventory completed to evaluate pollution prevention and good housekeeping at municipal facilities
	Proposed YR 1	\$12,500				0.01	0.01							\$ 15,110	0.02	Develop SWPPPs by end of Year 1; assume \$2500 per site 1/4 town bldgs need swppp (5 of 22 sites). SWPPP for Highway Garage complete include annual inspection at the garage
	Proposed YR 2-5					0.01	0.01							\$ 2,610	0.02	implement recommendations by end of Year 2; update every 5 years, assume annual evaluation performed by town engineer or facility manager, coordinate w/ SWMP director
Maintenance and Field Engineering Support	Existing					0.030								\$ 4,050	0.03	Engineers assist DPW on an on-call basis
	Proposed YR 1-4					0.040								\$ 5,400	0.04	25% increase in workload from existing, 2 projects per year,
	Proposed YR 5+					0.06								\$ 8,370	0.06	100% increase in projects as maintenance needs increase
Data Collection, Database Management, Mapping	Existing													\$ -	0.00	Field data collected for existing infrastructure and new projects (GIS update)
	Proposed-YR 1		\$250,000			0.02								\$ 252,700	0.02	1/2 of stormwater infrastructure system mapping
	Proposed-YR 2-Drainage		\$231,700			0.02								\$ 234,400	0.02	complete system mapping Year 2 cost includes mapping of entire drainage network (schematic only);
	Proposed-YR 2-Sewer		\$34,140			0.02								\$ 36,840	0.02	sewer mapping-60 miles of Sewer serves 95% of town, assume takes a GIS consultant (\$70/hr) 1 hr to update
	Proposed-YR 3-5 Sewer		\$5,000			0.02						\$ -	0.00	\$ 7,700	0.02	GIS with 1 mile of sewer data provided by Sewer Dept.,
	Proposed-YR 3		\$30,500			0.02								\$ 33,200	0.02	Years 3-5 update septic/ sewer attributes
	Proposed-YR 4		\$30,500			0.02								\$ 33,200	0.02	Years 3 include field mapping and verification of drainage attributes (\$25000), IC reduction tracking & GIS update
Technical Services/Public Assistance (hotlines)	Existing													\$ -	0.00	Years 4 include field mapping and verification of drainage attributes (\$25000), update with new BMPs and retrofits, IC reduction tracking (\$5500) update gis with layers from developer.
	Proposed					0.01			0.01					\$ 1,935	0.02	Years 5 include cont. field mapping and verification of drainage attributes (\$25000), update of new BMPs & retrofits, IC reduction tracking (\$5500)update gis with layers from developer.
	Proposed YR 1-4					0.06								\$ 8,370	0.06	
Code Development and Zoning Support Services	Existing													\$ -	0.00	Handle calls related to flooding and illicit discharges
	Proposed-YR 1	\$7,500												\$ 7,500	0.00	Updates completed to comply with 2003 NPDES MS4 Permit
	Proposed-YR 2	\$17,500												\$ 17,500	0.00	Consultant Review ESC, SW, and IDDE codes, develop or update written procedures for plan review, inspection, and ESC enforcement
	Proposed-YR 3	\$12,500												\$ 12,500	0.00	Consultant complete Review of ESC, SW, and IDDE codes, review Impervious Cover requirements in codes
	Proposed-YR 4&5	\$5,000				0.01								\$ 6,350	0.01	Report on feasibility of green practices and other green techniques in Year 3
Hazard Mitigation Planning and Flood Insurance Updates	Existing	\$5,000												\$ 5,000	0.00	Year 4 & 5 code compliance support
	Proposed YR-5	\$25,000												\$ 25,000	0.00	N/A
Total:	Existing	\$5,000	\$0	\$0	0.00	0.06	0.00	0.00	0.00	0.00	0.00	\$0	\$0	\$13,100	0.06	Allowance for H&H analysis (consultant) in Year 5 for specific areas of concern identified throughout the permit term; review results of FEMA mapping updates for Worcester County, anticipated within 5 years
	Proposed YR1	\$138,500	\$266,800	\$0	0.00	0.12	0.12	0.00	0.03	0.00	0.00	\$0	\$0	\$438,375	0.27	
	Proposed YR2	\$92,500	\$298,340	\$0	0.00	0.13	0.12	0.00	0.02	0.00	0.00	\$0	\$0	\$426,615	0.27	
	Proposed YR3	\$82,500	\$38,000	\$0	0.00	0.13	0.13	0.00	0.02	0.00	0.00	\$0	\$0	\$157,535	0.28	
	Proposed YR4	\$65,000	\$33,000	\$10,000	0.00	0.12	0.13	0.00	0.02	0.00	0.00	\$0	\$0	\$151,385	0.27	
	Proposed YR5	\$54,500	\$39,500	\$0	0.01	0.19	0.11	0.00	0.02	0.02	0.00	\$0	\$0	\$140,200	0.35	

Sustainable Stormwater Funding in the Upper Charles
Town of Milford, Stormwater Cost of Service
Operations & Maintenance: Existing & Future Cost Supporting Data

	Source Rate	Subcontractors (units = fee)			Fully Burdened Personnel (rate = salary+50%, units = FTE)						Expenses						Total Cost	Total FTE	Description	
		Consulting Engineer	GIS Consultant	Legal Counsel	Town Engineer	Hgwy Surveyor	Asst. Hgwy Surveyor	Hgwy Admin	Working Foreman	Seasonal Labor	Equipment Budget	Disposal	Vehicle Parts	Materials & Supplies	Fuel	Other				
		1		1	\$135,000	\$126,000	\$78,000	\$58,500	\$53,000	\$18,000	1	1	1	1	1	1				
Operations & Implementation	# Units																			
Operations and Maintenance Management	Existing					0.40											\$ 50,400	0.40	Highway Surveyor coordinates work schedules, equipment and product needs, oversees progress and completion of work	
	Proposed YR1	\$5,000				0.60											\$ 80,600	0.60	Develop detailed O&M program for municipal facilities, parks, buildings, streets, vehicle storage, infrastructure, and SWPPP	
	Proposed YR-5					0.60	0.10										\$ 83,400	0.70	Increase in BMP mgmt & oversight due to PCP implementation	
	Proposed YR2 -4					0.60											\$ 75,600	0.60	50% increase in effort from existing due to new projects and tracking of results (measurable goals) for each activity.	
CIP/Infrastructure Implementation	Existing																\$ -	0.00	No formal program; infrastructure needs incorporated into Highway Budget for operations, CIP funded through grants or CHP 90 or s319; stormwater improvements completed as part of Highway and Water Department Projects, including decreases to roadway width and removal of cul-de-sacs	
	Proposed																\$ -	0.00	Annual needs evaluation, incorporate capital projects, evaluate stormwater improvement opportunities	
PCP Implementation	Existing																\$ -	0.00	N/A	
	Proposed																\$ -	0.00	Year 4 - implementation & construction of BMPs	
Voluntary CMPP/RDA Implementation	Existing																\$ -	0.00	N/A	
	Proposed																\$ -	0.00	Year 5 - implementation of CMPP or construction of BMP	
Illicit Discharge Removal	Existing																\$ -	0.00	No formal program; no cross connections to MS4 identified thus far; illegal dumping removed by Highway Department and disposal coordinated with Board of Health	
	Proposed																\$ -	0.00	Year 1 - address illicit discharge & Year 5 report on removals, RDA - within 60 days of occurrence.	
Storm Sewer and Culvert Maintenance/Repair	Existing															\$ 54,683	\$ 54,683	0.00	Repair/re-setting of catch basin grates, damaged headwalls, collapsed culverts and structures, rebuilding of manholes and catch basins	
	Proposed															\$68,354	\$ 68,354	0.00	25% increase due to degraded infrastructure	
Inlet, Catch Basin, and Manhole Cleaning	Existing								0.079		6,475	11,212					\$42,066	\$ 63,956	0.08	Clean approximately 3,368 catch basins and manholes per year
	Proposed					0.02	0.02	0.02	0.080		6,475	11,212					\$42,066	\$ 69,243	0.14	Clean all catch basins and manholes each year (~3,368 structures)
Stormwater BMP Facility Maintenance	Existing																\$ 18,000	\$ 18,000	0.00	Brush cutting and trash clean up at various detention basins and culverts, some performed through inmate programs (approx. 70 basins for town to maintain) estimate based on seasonal employees (\$2,000* 9 weeks)
	Proposed Yr 1-4																\$ 18,000	\$ 18,000	0.00	continue existing existing effort;
	Proposed Yr 5																\$ 18,900	\$ 18,900	0.00	5% increase in cleaning and maintenance Year 5 due to implementation of PCP plan/retrofits
	Proposed Yr 10																\$27,000	\$ 27,000	0.00	25% increase in maintenance YR 10, due to increased number of BMPs resulting from PCP plan
SWPPP- Facility Maintenance	Existing											\$ 11,357						\$ 11,357	0.00	Facility clean up- remove 975 gal. oil/water & 5 drums of oily sand & sludge from separator at garage
	Proposed											\$ 11,357						\$ 11,357	0.00	continue existing activities
Street Sweeping	Existing								2.16		25,511	21,200	28,000		12,699		\$ 201,890	2.16	All streets are swept twice a year and sidewalks once a year	
	Proposed								2.16		25,511	21,200	28,000		12,699	\$7,040	\$ 208,930	2.16	In addition to existing activities, sweep directly connected municipal parking areas 2x, assume each parking lot cost \$400/year & 80% muni bldg lots need to be swept (80% of 22 bldgs)	
Fall Leaf-pickup	Existing								0.87		46,102	5,327	3,500		5,330		\$ 106,570	0.87	Leaf pickup program in place	
	Proposed								0.87		46,102	5,327	3,500		5,330		\$ 106,570	0.87	Continue existing leaf collection program	
Maintenance/Repair/Installation of ESC practices	Existing																\$ -	0.00	Repair of areas in spring damaged by snow plowing; repair of other eroded areas due to major rain events (road repairs - budgeted amount)	
	Proposed					0.01	0.01		0.02	0.01				5,000			\$ 7,220	0.05	Allowance for repair of areas in spring damaged by snow plowing; repair of other eroded areas due to major rain events (road repairs - budgeted amount)	
Stream Restoration/Stabilization	Existing															\$80,000	\$ 80,000	0.00	stream restoration project	
	Proposed YR-3 & YR-10					0.01	0.02		0.02	0.04				25,000			\$ 28,540	0.09	allowance to adress 1 stream project every 3 years, YR 3 and YR10	
Ditch and Channel Maintenance	Existing																\$ -	0.00		
	Proposed																\$ -	0.00	Continue existing maintenance activities	
Waterfowl & Pet Waste Management Programs	Existing																\$ -	0.00	N/A	
	Proposed YR-2																\$4,000	\$ 4,000	0.00	install pet waste collection bag stations, stock bags annually
	Proposed YR-3	\$6,000															\$2,500	\$ 8,500	0.00	implement waterfowl controls (Goose egg addling) & public education signage, continue waterfowl controls and pet bags stock annually
	Proposed YR 4-5	\$6,000															\$500	\$ 6,500	0.00	Develop programs by end of Year 1, implement pet management year 2, water fowl year 2 public aware year 3 implement
Public Assistance Program	Existing																\$ -	0.00	No program for the storm sewer system; Town requires inflows to the sanitary sewer system to be disconnected	
	Proposed					0.02		0.02									\$ 3,690	0.04	Create public awareness & incentive program to encourage disconnection of impervious areas to the storm sewer system	
Hazardous/Toxic Materials Collection Program	Existing					0.01		0.01								\$7,200	\$ 9,045	0.02	Existing hazardous collection program	
	Proposed					0.01		0.01								\$7,200	\$ 9,045	0.02	continue existing program	
Emergency Drainage Repairs	Existing															\$12,000	\$ 12,000	0.00	Annual allowance for unexpected repair of failed drainage structures	
	Proposed YR1-5															\$12,000	\$ 12,000		Continue existing practices;	
	Proposed YR10															\$18,000	\$ 18,000	0.00	Continue existing practices; 50% increase in Year 10 due to aged structures, new/additional infrastructure overall	
Land, Easement, and Rights Acquisition	Existing																\$ -	0.00	N/A	
	Proposed YR-5			\$5,000													\$ 5,000	0.00	Future costs reflect estimated legal time associated with capital projects	
Total:	Existing	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3	\$0	\$78,088	\$49,096	\$31,500	\$0	\$18,029	\$213,949	\$607,901	3.53		
	Proposed YR1	\$5,000	\$0	\$0	\$0	\$1	\$0	\$0	\$3	\$0	\$78,088	\$49,096	\$31,500	\$5,000	\$18,029	\$160,660	\$595,009	3.88		
	Proposed YR2	\$0	\$0	\$0	\$0	\$1	\$0	\$0	\$3	\$0	\$78,088	\$49,096	\$31,500	\$5,000	\$18,029	\$164,660	\$594,009	3.88		
	Proposed YR3	\$6,000	\$0	\$0	\$0	\$1	\$0	\$0	\$3	\$0	\$78,088	\$49,096	\$31,500	\$30,000	\$18,029	\$163,160	\$627,049	3.97		
	Proposed YR4	\$6,000	\$0	\$0	\$0	\$1	\$0	\$0	\$3	\$0	\$71,613	\$37,884	\$31,500	\$5,000	\$18,029	\$119,094	\$596,509	3.74		
	Proposed YR5	\$6,000	\$0	\$5,000	\$0	\$1	\$0	\$0	\$3	\$0	\$78,088	\$49,096	\$31,500	\$5,000	\$18,029	\$162,060	\$610,209	3.88		

Sustainable Stormwater Funding in the Upper Charles
Town of Milford, Stormwater Cost of Service
Monitoring: Existing & Future Cost Supporting Data

		Subcontractors (units = fee)			Fully Burdened Personnel (rate = salary+50%, units = FTE)						Expenses		Total Cost	Total FTE	Description
	Source	Consulting Engineer	Consulting GIS Technician	Legal Counsel	Town Engineer	Hgwy Surveyor	Asst. Hgwy Surveyor	Working Foreman	Seasonal Labor	Hgwy Admin	Other				
	Rate	1		1	\$135,000	\$126,000	\$78,000	\$53,000	\$18,000	\$58,500	1				
Monitoring	# Units														
Catchment Assessment & Outfall Monitoring (dry weather)	Existing											\$ -	0.00	All outfalls inspected once during dry weather conditions during the 2003 permit term	
	Proposed YR 1												0.00		
	Proposed YR 2-5	\$29,070			0.01	0.05	0.10	0.15			\$6,400	\$ 58,870	0.31	Assess 50% of catchments by Year 3, monitor 50% of outfalls by Year 4 and 100% of catchments and outfalls by Year 5; 303 outfalls and sampling of 20%; catchment assessments include key junction manhole inspections (i.e., damming of inlet pipes)by staff; 76 catchment & outfall assessments per year; 10 catchments per day = 8 days; 15 samples @ \$250/sample; 2 person field crew,damming of inlet pipes by DPW, inspection by Asst. HGWY surveyor, key junction manholes @ 8 per day x2 (inspection 48 hrs later) = 16 days (assume 84 KJMH inspected each year 2-5; allowance of 16 samples for key junction manhole flows; expenses at \$250/day; police detail at \$400/day for 16 days, \$5000 consultant review of sample results	
Stormwater Outfall Monitoring (wet weather)	Existing											\$ -	0.00	N/A	
	Proposed YR 1	\$10,000			0.01	0.02						\$ 13,492	0.03	Develop Permittee Specific Monitoring Plan in Year 1	
	Proposed YR 2-5	\$48,750			0.05	0.05	0.01					\$ 62,580	0.11	sample 25% of outfalls each year beginning in Year 2, assume 80% outfalls are sampled, sampling requires 12 days by consultant, 5 outfalls sampled per day, 25% labor contingency for false starts, \$250 per sample, \$250 per day expenses, \$5000 consultant review sample results, additional staff expenses for oversight and coordination	
Surface Water Quality Monitoring	Existing											\$ -	0.00	N/A	
	Proposed YR 3&4	\$0			0.00	0.00						\$ -	0.00	Monitoring of key streams and water bodies based on Permittee Specific Monitoring Plan, consultant to monitor 15 key locations, 4 times per year, coordination with town staff	
Total:	Existing	\$0		\$0	0.00	0.00	0.00			0.00	\$0	\$ -	0.00		
	Proposed YR1	\$10,000	\$0	\$0	0.01	0.02	0.00	0.00	0.00	0.00	\$0	\$ 13,492	0.03		
	Proposed YR2	\$77,820	\$0	\$0	0.06	0.10	0.11	0.15	0.00	0.00	\$6,400	\$ 121,450	0.42		
	Proposed YR3	\$77,820	\$0	\$0	0.06	0.10	0.11	0.15	0.00	0.00	\$6,400	\$ 121,450	0.42		
	Proposed YR4	\$77,820	\$0	\$0	0.06	0.10	0.11	0.15	0.00	0.00	\$6,400	\$ 121,450	0.42		
	Proposed YR5	\$77,820	\$0	\$0	0.06	0.10	0.11	0.15	0.00	0.00	\$6,400	\$ 121,450	0.42		