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# Maine Combined Sewer Overflow 2008 Status Report

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## MAINE COMBINED SEWER OVERFLOW 2008 STATUS REPORT

Date: March 25, 2009 Document No.: DEPLW0972-2009

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#### INTRODUCTION

The purpose of this report is to inform the Combined Sewer Overflow (CSO) Communities and the general public on the status of the CSO program in Maine.

The information is compiled from various documents and reports submitted to the Maine Department of Environmental Protection by the CSO Communities (City/Town/District) or their consultants on their behalf. A majority of the information comes from the CSO Master Plans (a.k.a. Long Term Control Plans), Sewer System Evaluation Studies, Infiltration/Inflow Reports, Annual CSO Progress Reports, and general correspondence.

At the start of any CSO Community's abatement program, initial flow data was collected to estimate the existing discharge volumes and frequencies, define the problems, and establish a corrective course of action. This often occurred over a relatively short period of time (a year or two) and may not have captured as many good wet weather events as desired. However, this data was the best available information at the time and established the overflow baselines that are used within this report. Since then, CSO flow monitoring plans have continued to improve and overall data reliability has increased, giving the program better data for specific yearly wet weather patterns.

#### WHAT ARE CSOS?

- Combined Sewer Overflows (CSOs) are discharges of untreated wastewater from municipal sewerage systems that carry mixtures of sanitary sewage, storm water, and sometimes industrial wastes.
- They occur mostly during and after rain events or snowmelt. Flows within the combined sewer system during these wet weather events can be a high as fifty (50) times the normal dry weather flows.
- Large volumes of water entering the combined sewer system (CSS) through catch basins, old and leaky pipes, roof drains, cellar drains, sump pumps, and other sources cause the capacity of the system to be exceeded.
- Hydraulic relief points within the CSS allow the excess flows to be discharged. These relief points are generally near pump stations and river crossings.
- Excess volumes of combined sewage can also cause treatment facilities upsets, street flooding, and back-ups into basements.

### WHAT ARE THE IMPACTS OF CSOS?

- Currently in Maine there are 35 communities (towns or cities) with CSO discharge points in their sewerage systems (down from an original 60). These communities collectively have 177 individual CSO discharge points (down from an original 340).
- The frequency of discharges varies greatly from community to community, ranging from seldom to occurring in response to all but the smallest rain storms.
- In large communities hundreds of millions of gallons per year of untreated combined sanitary sewage and storm water may be discharged. Statewide, approximately 1.5 to 2.5 billion gallons are discharged annually from CSOs (down from an estimated original volume of 6.2 billion gallons).
- CSOs discharge untreated combined sewage to receiving waters that vary in size from the ocean and large rivers to small streams and drainage creeks.
- Water quality is impaired by the addition of floatables, bacteria, and sometimes industrial pollutants.
- Shellfishing areas and beaches can be closed and drinking water supplies threatened.

#### WHAT IS A CSO COMMUNITY?

- CSO Communities are permitted dischargers of combined sanitary and storm waters. The Department of Environmental Protection issues CSO permittees a wastewater discharge license that requires them to implement EPA's Nine Minimum Control Best Management Practices (BMPs), develop a Long Term Control Plan (LTCP) (a.k.a. Master Plan) to eliminate or abate their overflows, and finally to implement the plan and bring them into compliance with EPA's April 8, 1994 Combined Sewer Overflow (CSO) Control Policy.
- Special Conditions in their Maine Pollutant Discharge Elimination System (MEPDES) permit requires all CSO permittees to submit an Annual CSO Progress Report to the Department for the previous year by March 1<sup>st</sup>.
- The Progress Report documents the Community's efforts to comply with the Nine Minimum Controls, and collects pertinent fiscal and logistical information about their CSO abatement program. This information is used to track their CSO abatement progress and gather state-wide information on the CSO program and fiscal needs.

#### WHERE DID WE START?

- The CSO movement started in 1989 with the clarification of the Clean Water Act through the publication of the National CSO Control Strategy by the Environmental Protection Agency (EPA).
- At that time the State had about 60 CSO Communities that discharged an estimated 6.2 billion gallons of combined wastewater and storm water during wet weather events.
- Statewide it was estimated that overflow events happened approximately 1,700 times a year through approximately 340 different CSO outfalls.
- On April 19, 1994 EPA issued a national policy statement entitled "Combined Sewer Overflow (CSO) Control Policy." This policy provides guidance to permittees with CSOs, and State permit and water quality standards authorities on coordinating the planning, selection, and implementation of CSO controls that meet the requirements of the Clean Water Act (CWA).
- In February 2000, the Maine Department of Environmental Protection Chapter 570 Rules, entitled "Combined Sewer Overflow Abatement," became effective. This chapter establishes procedures for CSO evaluation, preparation of an abatement plan, and sets forth minimum controls to reduce CSOs while longrange plans are being completed.

#### WHAT IS BEING DONE TO ABATE CSO DISCHARGES?

- All of Maine's CSO Communities have completed or are working on comprehensive CSO studies or facilities plans. These plans are often referred to as Master Plans (MPs) or Long Term Control Plans (LTCPs). These documents define the magnitude of the CSO discharges, their impacts on the environment, and evaluate a range of abatement control alternatives and their financial impact.
- Abatement projects have reduced untreated discharges in all of the CSO Communities. A number of communities have eliminated their CSO discharges and are no longer licensed to discharge untreated combined sewage during wet weather.
- <u>Statewide, CSO Communities report that they have invested a total of \$311</u> million (\$16 million in 2008) in CSO abatement and anticipate the CSO needs for the next five years to be \$149 million. After that, the expected needs to bring them into compliance with the CSO Control Policy is an additional \$100 to \$150 million.

#### WHERE ARE WE NOW? – 2008 STATUS

- Maine started and ended 2008 with 35 CSO Communities. Effective January 1, 2008, two of the CSO Communities, Augusta and Hallowell, were incorporated into the same district known as the Greater Augusta Utility District. Whereas this did decrease the number of CSO MEPDES permits from 37 to 36, it did not change the number of CSO Communities as they are distinct civil jurisdictions. A complete listing of Maine's CSO Communities, their number of CSO outfalls and the outfall receiving waters is on page 8.
- The volume of combined sewage discharged statewide in 2008 was reported at 2.41 billion gallons. The table on page 9, Maine CSO Community Flow Data, contains a historic listing of the yearly overflows from each CSO Community. The 2008 CSO Flow Comparison pie chart on page 16 and the 2008 CSO Flow Comparison By Community bar chart on page 17 are graphical comparisons of the overflow volumes between the CSO Communities.
- In 2008, the CSO Communities reported 792 overflow events. This total is arrived at by summing the number of days that each CSO Community experienced an overflow event. An overflow event is any day in which one or more CSOs within a community discharge. The table on page 10, Maine CSO Community Annual Number of CSO Discharge Events, contains a historic listing of the annual number of CSO discharge events for each CSO Community.
- Thirty (30) of the 35 CSO Communities reported experiencing at least one combined sewer overflow discharge in 2008, while five (5) reported no overflows.
- In 2008, fifteen (15) of the communities reported discharging less in 2008 than in 2007, seventeen (17) reported discharging more, while three (3) reported no change. The maximum number of days that overflow events were reported from a single community was 87. The average (mean) number of discharge events for all of the communities was 23 and the median was 10. Additional information is given in the table on page 10.
- The volume and frequency of CSO discharges varies from one wet weather event to another based on existing groundwater conditions, frozen or thawed ground, snowmelt, and rainfall volume, duration, and intensity. To evaluate abatement progress we look for an overall trend in reduction, versus trends from year to year. The chart on page 11, Combined Sewer Overflow Volume Discharged, illustrates an overall downward trend in the CSO volumes being discharged annually. <u>Since 1989, the volume of combined sewage discharged has decreased by approximately 60 - 70%</u>. This is stated as a range because of the correlation of overflow volumes to variations in annual weather patterns.

- Similarly, the chart on page 12, Combined Sewer Overflow Annual Number of Discharge Events, shows a downward trend in the number of overflow days per year. <u>Since 1989, the number of overflow days has decreased by approximately</u> <u>55 - 65%</u>, once again stated as a range.
- In 2008 Maine CSO Communities reduced the total number of CSO discharge locations by 6, down from 183 to 177. While 10 CSO structures were eliminated in the following communities: Auburn (1), Bangor (4), Biddeford (1), Bucksport (1), Lewiston (1), Sanford (1), and Skowhegan (1), this was partially offset by a relicensing of 3 previously closed CSOs in Mechanic Falls (2) and South Portland (1) and the correction of a clerical error in Saco (1). The reopening and relicensing of the previously closed three CSOs was necessary to protect upstream properties from damage and to quantify overflow volumes. The additional CSO location in Saco was listed as a discharge location on their current wastewater discharge license, but had inadvertently been removed from the list of current CSOs. The chart on page 13, Maine Statewide Number of Combined Sewer Overflow Outfalls, shows a <u>48% reduction in the number of CSO outfalls since 1989</u>.
- Trying to compare CSO abatement progress from year to year is difficult because of the number of conditions that influence the volume and frequency of overflows, not the least of which is yearly precipitation patterns. To somewhat compensate for the fluctuation in yearly precipitation patterns, the total volume of combined sewage discharged has been unitized by taking into consideration the annual precipitation amount for the CSO communities. The chart on page 14, CSO Annual Volume Discharged Per Inch of Precipitation, illustrates this and shows a continual downward trend in the volume of combined sewage discharged per inch of annual precipitation. <u>Since 1989, overflow volumes have decreased from approximately 149 million gallons per inch of precipitation to 30 - 50 million gallons per inch of precipitation, 42 million in 2008. Although this type of analysis is rough, it is a good indicator of the CSO abatement progress that is being made.
  </u>
- The average annual precipitation for all of Maine's CSO Communities is approximately 45 inches. In 2008, the annual precipitation for the CSO Communities ranged from 50 - 66 inches, exceeding the average precipitation by 5 - 17 inches (10 - 46%). The Yearly CSO Volumes and Precipitation chart on page 15 shows a comparison between annual CSO volumes and yearly precipitation. The graph shows that CSO volumes tend to follow the yearly ups and downs in precipitation levels. The chart shows a widening gap between the yearly precipitation amount and the yearly volume of combined sewage discharged. This widening gap clearly indicates that the CSO abatement is being accomplished and that overflow volumes are becoming less influenced by precipitation events.

- 2008 was another above average precipitation year (57"), especially when compared to near average year of 2007 (48"). As a result the statewide volume of CSO discharges increased by 57%, from 1.53 to 2.41 billion gallons in 2008.
- The CSOs from the City of Portland and Portland Water District in Portland comprised approximately 36% of the State's total overflow volume in 2008; see the CSO Flow Comparison Pie Chart on page 16. Given the large impact that Portland's data has on the State's total, it might be prudent to look at the rest of the state without utilizing Portland's data. After removing Portland's overflow data from the state total, the overflow volume for the remaining CSO communities increased by 63% from 2007 to 2008, 0.94 to 1.53 billion gallons respectively.
- In 2008, the top twelve (12) dischargers accounted for approximately 97% of the total volume of combined sewage discharged in the State, see the CSO Flow Comparison Pie Chart on page 16.
- Abatement of CSOs is a costly endeavor. To date Maine CSO Communities have reported expending <u>\$311 million</u> implementing their CSO abatement projects. In the 2008 Annual CSO Progress Reports submitted to the State, these communities reported expending \$16 million on abatement work in 2008. It is estimated that the future needs of these communities to complete their CSO abatement plans totals \$250 \$300 million, in 2008 dollars.
- CSO abatement progress can not be measured solely by comparing the volumes discharged from one year to the next. The reason is that the volume discharged is influenced by variations in precipitation amount, intensity and timing, the rate of snow melt, frozen or thawed ground, and existing groundwater levels. Even given the same annual precipitation, no two years would result in the same volume of CSO discharges.
- The relationship between the annual precipitation and the annual volume of combined sewage discharged is not linear. As a general rule, as precipitation levels increase, the volume of combined sewage discharged also increases per inch of precipitation. Simply put, once the capacity of the combined sewer system is reached, any additional rainfall or snowmelt overflows the already inundated system.
- Different wet weather conditions and precipitation patterns also affect individual CSO Communities differently. This is due mostly to the make up of the sewer system, the number of catch basins connected, the area of impermeable surface, and the specific hydraulic restriction(s) causing the overflows, to name just a few. The overflows in some communities are more susceptible or responsive to intense summer storms, while in other communities it might be high ground water. Direct comparisons between various communities should not be made.

 It is well established that CSOs can and do have impacts on beach and shellfish closures. Stating that a specific CSO event or series of events is responsible for a specific closure is more difficult and will not be attempted in this report. In some areas there are a number of other factors that might enter into a beach or shellfishing area being closed. These are, but not necessarily limited to, urban storm water runoff, malfunctioning septic systems, domestic and no domestic animal waste, agricultural runoff, and bathers, to name just a few. What is assessed in the Annual Reports is which beach and shellfishing areas may be impacted by the CSOs.

In 2008, seven (7) CSO Communities listed eleven (11) beach areas that may be impacted by their CSO discharges. They were: Bar Harbor (Town Beach & Hulls Cove); Biddeford (Hills Beach, Biddeford Pool & Camp Ellis); Cape Elizabeth (Casino Beach & Fort Williams Park); Portland (East End Beach); Rockland (Sandy Beach); Skowhegan (Two Rivers Campground); and South Portland (Willard Beach). Of these, two (2) beaches were listed as having an advisory or closure in 2008 (East End & Willard Beach), one (1) of which (East End Beach) was listed as being caused in whole or in part by CSO activity.

In 2008, five (5) CSO Communities listed shellfishing areas that were closed in their area (Bar Harbor, Calais, Machias, Portland & South Portland). Three (3) of these communities (Bar Harbor, Machias and Portland) reported that the closures were caused in whole or in part by CSO activity.

The chart on page 18 – 2008 CSO Watershed Flows, shows a graphical representation of the CSO volume discharged by watershed. In 2008, Casco Bay received approximately 38% of the statewide CSO volume discharged, followed by Penobscot River at 28%, the Androscoggin River at 20%, the Saco River at 6%, the Kennebec River at 6%, and the St. John River at 1%. Discharges to the St. Croix River, Frenchman Bay, the Machias River, and Penobscot Bay account for the remaining 1% of combined sewer overflow volume.

#### MAINE - COMBINED SEWER OVERFLOW (CSO) COMMUNITY LIST (As of December 31, 2008)



	COMMUNITY	CSOs	Number of CSOs & Receiving Water
1.	Auburn SD	3	3-Androscoggin Rv.
2.	BANGOR	7	3-Kenduskeag Str., 4-Penobscot Rv.
3.	Bar Harbor (Hulls Cove)	1	1-Frenchman Bay
4.	Bar Harbor (Main Plant)	3	2-Frenchman Bay, 1-Eddie Brook
5.	Ватн	4	4-Kennebec Rv.
6.	Belfast	2	2-Passagassawakeag River/Belfast Harbor
7.	Biddeford	10	9-Saco Rv., 1-Thatcher Bk.
8.	Brewer	6	5-Penobscot River, 1-Sedgeunkendunk Str.
9.	BUCKSPORT	1	1-Penobscot Rv.
10.	CALAIS	5	4-St. Croix Rv., 1-Landing Brook
11.	CAPE ELIZABETH – Ottawa Road PS	1	1-Atlantic Ocean
12.	Fairfield	2	2-Kennebec Rv.
13.	Gardiner	1	1-Kennebec Rv.
14.	GREATER AUGUSTA UTILITY DISTRICT (GAUD) (Includes Hallowell CSO)	24	4-Bond Bk., 1-Kennedy Bk., 18-Kennebec Rv., 1-Whitney Bk.
15.	Hamden	1	1-Souadabscook Str.
16.	Kennebec STD	3	3-Kennebec Rv.
17.	LEWISTON	22	10-Androscoggin Rv., 1-Gully Bk., 1 -Hart Bk., 10-Jepson Bk.
18.	Lewiston-Auburn WPCA	1	1-Androscoggin Rv.
19.	MACHIAS	2	2-Machias Rv.
20.	Madawaska	2	2-St. John Rv.
21.	MECHANIC FALLS SD	3	3-Little Androscoggin Rv.
22.	Milford	1	1-Penobscot Rv.
23.	Milo WD	3	1-Pleasant Rv., 2-Sebec Rv.
24.	OLD TOWN	3	2-Penobscot Rv., 1-Stillwater Rv.
25.	Orono	1	1-Penobscot Rv.
26.	Paris UD	1	1-Little Androscoggin Rv.
27.	Portland – CITY	12	6-Back Cove, 3-Capisic Bk., 2-Portland Harbor., 1-Nason Bk. (marsh)
28.	Portland – PWD	21	9-Back Cove, 3-Casco Bay, 7-Fore Rv., 2- Portland Harbor
29.	Randolph	1	1-Kennebec Rv.
30.	ROCKLAND	2	2-Rockland Harbor
31.	SACO	6	1-Bear Bk., 5-Saco Rv.
32.	Sanford SD	1	<del>2</del> 1-Mousam Rv.
33.	Skowhegan	8	9 8-Kennebec Rv.
34.	South Portland	6	1-Barberry Ck., 1-Fore Rv., 1-Calvery Pond., 2-Portland Hbr.
35.	Westbrook	5	5-Presumpscot Rv.
36.	WINSLOW	1	1-Sebasticook Rv.
37.	WINTERPORT SD	1	1-Penobscot Rv.
	TOTAL CSOs	177	

36 CSO Permits, permitting 34 of 35 CSO Towns/Cities Two or more permits in one CSO Town/City

**Bold** = 9 communities with sewer systems only. Sewers discharge to a POTW controlled by another entity.

MAINE CSO COMMUNITY FLOW DATA

								Ann	ual Volumes (G	allons)											
œ	1989	1990	1991	1992	1993	1994	1995	1996	<b>Year</b> 1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
» و د	99,720,000 35,000,000	99,720,000 525,000,000	99,720,000 533 000 000	99,720,000 386,000,000	99,720,000 384.000.000	99,720,000 403 000 000	99,720,000 416,000,000	99,720,000 344 000 000	99,720,000 317 730 000	99,720,000 329,000,000	78,340,742 285 010 000	102,297,387 1 230 190 000	99,674,605 88.430.000 - 1	66,307,631 61 000 000 - 2	19,197,928	4,687,316 03 870 000 3	37,155,818 03 160 000	28,936,137 272 750 000	23,622,547 150 580 000	23,984,272 378 640 000	
20	32.000.000	32.000.000	32.000.000	32.000.000	32.000.000	31.900.000	14.700.000	14.700.000	13.160.915	1.919.628	17.627.806	4.730.155	384.531	2.729.389	2.845.621	290.133	03,100,000 13.661.958	5.102.820	8.719.436	12.601.889	
9	000,000,000	600,000,000	600,000,000	600,000,000	600,000,000	52,600,000	37,000,000	37,000,000	37,000,000	37,000,000	37,000,000	5,910,364	6,173,760	4,341,921	16,496,467	6,055,666	60,338,026	36, 105,688	20,783,335	24,383,599	
Q	736,000	736,000	736,000	736,000	736,000	736,000	736,000	736,000	736,000	736,620	617,517	617,517	46,000	0	0	0	1,796,747	485,451	1,035,392	198,370	
0 0 7 1	00,000,000	400,000,000	400,000,000	400,000,000	400,000,000	400,000,000	400,000,000	400,000,000	160,000,000	286,924,366	191,155,589	234,987,578 1	45,356,657 4	15,694,234 1	36,417,937 1	01,087,776 3	01,372,131	163,423,532	150,304,402	147,313,000	
~ 2 0				/ 50,000,000	1/25,000,000	1/25,000,000	/25,000,000	000,000,627	000,000,627	210,670,800	423,644,459	322, 168,651 2	43,176,051 4	1 /, 536,641 5	09,412,078 2	79,830,419 5	92,984,187 46 623 000	247,538,580	231,283,607	289,500,294	
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2 0	42,000,000 F 400 000	42,000,000 F 400 000		4 2,000,000 F 400,000	42,000,000 F 400 000	42,000,000 5,400,000	42,000,000 F ADD 000	42,000,000 F 400,000	42,000,000 F 400,000	42,000,000 5 400,000	42,000,000 5 400,000	4 <b>2,000,000</b>	44,000,000	42,000,000	20,200,000	5,290,000	42,140,000 4 807 000	ZU,4U9,05U	3 254 000	10,909,779 2 667 000	
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2 0	16.000	16.000	16.000	4.000	16.000	12.000	2.000	8.000	0	6.000	0	2.000	0	0	0	0 0	199.000	0			
Ģ	1.200.000	1.200.000	1.200.000	1.200.000	1.200.000	1.200.000	1.200,000	1.200,000	1.200.000	1.200.000	0	0	0	0	0	0	0	0			
ọ	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	301,461	221,954	221,954	221,954	221,954	65,296	0	0	0	0	0	0	
0	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	0	2,200	0	0	2,400	41,000	600,000				
0	44,000,000	44,000,000	44,000,000	44,000,000	44,000,000	44,000,000	44,000,000	44,000,000	44,000,000	43,948,000	7,843,400	8,278,600	6,487,000	11,528,900	13,149,700	5,113,000	46,616,000	10,269,400	2,487,000	5,000,000	
0	72,554,000	72,554,000	72,554,000	72,554,000	72,554,000	72,554,000	72,554,000	72,554,000	1,053,717	3,411,410	72,554,222	5,615,140	2,705,324	2,191,067	7,089,337	3,881,421	26,553,055	14,539,424	10,000,000	48,965,215	
Q	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	150,000	200,000	300,000	150,000	0	0	100,000	0	700,000	150,000	150,000		
õ	389,000	797,500	282,875	265,834	1,703,766	493,399	528,980	1,716,002	106,355	113,282	1,474,767	1,218,000	0	0	262,900	0	43,862,280	0	85,000	0	
9	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	436,994	399,843	3,088,240	3,043,421	421,162	0	858,175	341,948	2,438,706	385,734	1,136,649	2,209,107	
9	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	150,000	100,000	0	50,000	50,000	0	0	33,900	0				
0	000,000,800	208,900,000	208,900,000	208,900,000	208,900,000	208,900,000	208,900,000	208,900,000	94,105,000	142,000,000	215,300,000	136,898,295	61,370,660 1	76,395,415 1	99,236,985	82,766,343 2	49,891,633	159,807,018	90,983,189	152,039,341	
2 0	80,000,000	480,000,000	480,000,000	480,000,000	480,000,000	480,000,000	480,000,000	480,000,000	480,000,000	480,000,000	480,000,000	107,968,000 1	35,764,000 1	11,036,000 1	13,088,000	83,045,000 4	80,025,000	265,521,000	142,286,000	292,244,000	
2 0	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000	1,216,350	86,982	2,411,050	349,276	1,000,760,1	00000	c	c	¢					
2	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	900,000	000,068	300,000	83,000	Ð	Ð	0					
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	3 200 000	3 200 000	3,200,000	3 200,000	2 014 000	3 094 500	3 242 000	2 400 000	2 404 640	457 409	0000101	610,000	11.398	3,892	100,000	1 749 764	8,215,460	3 700 002	2,667,765	24 194 225	
	18,000,000	18,000,000	18,000,000	18,000,000	18,000,000	18,000,000	18 000 000	18 000 000	3 544 743	11 098 872	17 997 322	0000010	3 923 998	1 001 489	2 389 769	963 114	0,210,400 11 765 409	9,419,000	11 853 000	11 223 600	
	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220.000	220,000	220,000	220,000	220,000	0	211 070	000,000,11	88.365	
2 0	10.000	10.000	10.000	10,000	10.000	10.000	10.000	10.000	10,000	10.000	10.000	1.000	0	0	2.000	0	10.000	0.0	501.000	750	
0	6.300.000	6.300,000	6.300,000	6.300.000	6.300.000	6.300,000	6.300.000	6.300,000	6.300,000	6.300.000	6.300.000	6.300.000	0	1.597.324	6.296.537	425.832	4.779.340	321.105	770,699	254.967	
Ģ	25,500,000	20,800,000	19,100,000	8,600,000	31,600,000	8,900,000	11,100,000	22,200,000	19,600	6,956,500	5,234,000	2,603,000	0	494,000	1,179,000	0	18,467,330	1,314,000	7,360,000	4,820,000	
0	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	0	17,900	0	300,000	0	0	175,000	0	288,000	173,500	206,000	84,000	
0 1,8	:00,000,000 1,	800,000,000	1,800,000,000 1	1,800,000,000 1	,800,000,000 1	1,800,000,000	1,800,000,000 1	1,800,000,000	457,505,000 1	788,201,000	740,737,000	993,511,000 8	07,157,162 1,2	245,153,000 4	54,680,000 6	07,351,945 1,2	96,000,000 1	,816,525,856	589,203,712	883, 105, 087	
9	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000	4,390,000	27,487,000	10, 194,000	7,234,000	113,000								
0	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	2,122,156	9,878,793	196,591	432,500	0	1,058,039	266,256	459,476	1,413,880	
õ	47,000,000	47,000,000	47,000,000	47,000,000	47,000,000	47,000,000	47,000,000	47,000,000	47,000,000	47,370,142	20,000,000	20,000,000	20,000,000	20,000,000	20,000,000	7,000,000	0	0	0	0	
0	76,000,000	176,000,000	176,000,000	176,000,000	176,000,000	176,000,000	176,000,000	176,000,000	30,255,737	31,558,200	19,608,006	19,264,777	17,720,027	4,316,465	5,758,842	10,313,025 1	76,214,902	38,451,182	1,950,000	100,000	
0	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000	2,458,950	2,470,950	55,000	0	0	0	0	0	15,000	0	0	
Q	48,000,000	48,000,000	48,000,000	48,000,000	48,000,000	48,000,000	48,000,000	48,000,000	10,917,612	23,930,371	23,930,371	4,110,833	12,315,897	10,883,416	22,768,111	12,082,768	47,873,323	31,314,358	21,596,631	61,963,453	
9 I	50,000,000	400,000,000	350,000,000	300,000,000	250,000,000	200,000,000	183,000,000	183,000,000	31,046,134	182,646,264	50,000,000	17,535,575	49,503,494	4,467,429	7,896,125	19,812,914	26,810,104	26,118,706	15,727,553	12,883,433	
0	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	38,407,000	49,090,000	21,391,000	1,229,000	2,187,000	271,000	7,000	944,000	11,119,000	40,636,729	15,879,000 775,000	7,379,066	
2 0	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000	000,000	000'009	200,000	000000	0	000	0000	0 000 10	23,052	5 0	100,627	235,000	
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0 0 0	47,129,000 5, 6.15	,982,837,500 { 5.98	5,938,622,875 { 5.94	5,731,093,834 5 5.73	5,677,357,766 { 5.68	5,076,023,899 5.08	5,041,596,980 4 5.04	4,979,864,352 2 4.98	,730,560,890 3 2.73	930,954,113 2 3.93	,846,862,121 2, 2.85	,337,942,803 1,9 2.34	08,571,173 2,7 1.91	53,299,393 1,8 2.75	:27,077,657 1,4 1.83	31,109,372 3,8 1.43	34,873,122 3 3.83	,,207,810,924 3.21	1,530,056,633 1.53	2,409,022,597 2.41	
												Min	us Portland 1,5	08,146,393 1,3	72,397,657 8	23,757,427 2,5	38,873,122 1	,391,285,068	940,852,921	1,525,917,510	

No longer a CSO Community			
Community	NPDES Permit No.	1987	198
Auburn S.D. Bannor	ME0100005 ME0100781	99,720,000 635 000 000	99,720,00 635,000,00
Bar Harbor	ME0101214 & ME0102466	32,000,000	32,000,00
Bath Belfast	ME0100021 ME0101532	600,000,000 736,000	600,000,009 736,00
Biddeford	ME0100048	400 000 000	400 000 000
Brewer	ME0100072	750,000,000	750,000,00
Bucksport	ME0100111	53,000,000	53,000,00
Calais	ME0100129	42,000,000	42,000,00
Cape Elizabelli (PWU) Corinna S D	ME0100153	3,400,000 40,000,000	40,000 00
Dover-Foxcroft	ME0100501	16,000	16.00
East Millinocket	ME0100196	1,200,000	1,200,00
Fairfield	ME0102393	300,000	300,00
Fort Kent U.D.	ME0102369	3,000	3,00
Greater Aunista II D	ME0101702 ME0100013	72 554 000	72 554 00
Hallowell W.D 2008 GAUD	ME0101010	350,000	350,00
Hampden	ME0102512	1,201,000	39,60
Kennebec S.T.D.	ME0100854	2,500,000	2,500,00
Kittery	ME0100285	350,000	350,00
	ME0100994	208,900,000	208,900,00
Lewistori-Auburn W.P.C.A.	ME01014796	2 400 000	2 400 00
Lisbon	ME0100307	600,000	600.009
Livermore Falls	ME0100315		
Machias	ME0100323	7,000,000	7,000,00
Madawaska	ME 0101681	3,200,000	3,200,00
Mechanic Falls S.D.	ME0100391	18,000,000	18,000,00
Milford	ME0102695	220,000	220,00
	MEU 100471 MED100408	31,000,000	0,000,00 31,000,00
Paris U.D.	ME 0100951	1.000,000	1.000.00
Portland & PWD	City-ME0101435 / PW D-ME0102075	1,800,000,000	1,800,000,00
Presque Isle	ME0100561	27,500,000	27,500,00
Randolph	ME0102423	10,000,000	10,000,00
Rockland	ME0100595	47,000,000	47,000,00
	ME 0101117	1/00/000	
Skowhedan	ME010001/ ME0100625	4,000,000	4,000,00
South Portland	ME0100633	500,000,000	500,000,00
Westbrook	ME0100846	50,000,000	50,000,00
Winslow	ME0102628	1,300,000	1,300,00
Winterport S.D.	ME0100749	680,000	680,00
Yarmouth	ME0100765	1,000	1,00
Total		6,203,441,000	6,202,279,60
Total In Billion Gallons		6.20	6.2

Numbers in blue are estimated from LTCP/MP or subsequent high flow.

<b>ARGE EVENTS</b>
OF CSO DISCH
UAL NUMBER
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	2008	, 8 8 7 8 8 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0	792 10	23
	2007	4 ៷៰៰៷៰៰៰៰៰៰៰៰៰៰៰៰៰៰៰៰៰៰៰៰៰៰៰៰៰៰៰៰៰៰៰៰៰	568 5	16
	2006	88888888888900 49800 24 64880788897888	816 12	21
	2005	58 58 59 59 50 50 50 50 50 50 50 50 50 50	1074 15	27
	2004	4,4 m 8 o 5 2 m o o o o o	654 5	16
	2003	98452088885040000450000888 0 5669846045 0080666008	800 7	19
	2002	692280852480000408800006880000426808000058	959 4	22
	2001	40r6-588% ÷ « 5004004 - 488 - 0-5000008 4 5 m 80 8 5 5 0 m -	712 4.5	16
	2000	-  た 4 2 着 8 5 5 0 4 0 5 5 0 0 -  5 4 0 -  0 0 8 -  4 4 -  8 4 8 4 -  5 5 5 5 5 0 0 -  5 4 0 -  0 8 -  4 4 -  8 4 8 4 -  5 5 5 5 5 6 0 0 -  9 -  9 -  9 -  9 -  9 -  9 -  9	1053 8	24
	1999	۲ x x x z z z z z z z z z z z z z z z z	1150 11	26
vents	1998	۲448 ۵ 4 6 6 9 6 6 6 6 7 7 8 6 7 7 8 8 8 8 8 7 7 9 8 8 8 8 7 7 8 8 8 8	1170 10	26
SO Discharge E	<b>ar</b> 1997	ト ※ 葉 8 ~ 8 名 8 応 々 応 o た 4   ゅ ⊗ ゃ ∞ 応 ∞ 後 8 ~ ゅ o ∞ 6 8 ∞ ∞ % ∞ o ∞ た 8 5 6 5 8 5 8 5 ∞ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1113	25
I Number of CS	<b>Ye</b> 1996	៰៹៳៓៷៸៙៓៝៝៝៝៝៝៝៝៵៷៷៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹	1646 23	37
Annua	1995	<b>6 6</b> 6 6 7 7 8 8 8 9 7 7 9 8 7 8 8 7 7 8 8 6 9 7 8 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9	1632 20	36
	1994	<b>6</b> <b>6</b> <b>6</b> <b>6</b> <b>6</b> <b>7</b> <b>7</b> <b>8</b> <b>8</b> <b>8</b> <b>8</b> <b>8</b> <b>9</b> <b>1</b> <b>1</b> <b>8</b> <b>8</b> <b>8</b> <b>8</b> <b>8</b> <b>8</b> <b>8</b> <b>8</b>	1737 23	39
	1993	<b>៹៹</b> ៷៓៹៹៹៓៓៓៓ឨ៵៷៓៱៷ៜ៷៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹	1727 23	38
	1992	ៜ៷៲៲៲៓៹៸ៜ៓៝៝៝៝៝៷៝៷៷៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹៹	1703 20	38
	1991	ៜ <mark>ៜ៷</mark> ៓៹៸ៜ៓៝៝៝៝៵៵៱៓៰ៜ៳±៱៰៰ៜៜ៹៸៱៸ៜៜៜ៰៷៓៷៰៹៷៰៰៰៰៝ៜ៵៵៵៹៰៰៰៓	1732 20	38
	1990	888687288888888888888888888888888888888	1756 23	39
	1989	ៜ៵៵ឣ៓៹៴៹៙៓៵៵៵៰៷ៜ៵ <i>ᡄ</i> ៵៰៰ៜៜ៹៵៵៸៶ៜៜ៰៰៱៓៵៵៹៹៵៷ៜ៵៵៰ៜ៵៵៹៰ៜ៵៵៵	1753 23	39
	1988	ៜ៵៰៲ឣ៓៹៹៹៙៓៵៵៵ឣ៷ៜ៳៹៹ឣ៰៹៹ៜ៹៹៷ឣ៹ៜៜ៰៹៷៓៸ឣ៰៹៹៳៵៷ឣៜ៷៰៰៝៝៵៵៵៹៹៰៰៰៓៵៰៹៵	1750 23	39

No longer a CSO Community		
Community	NPDES Permit No.	1987
Auburn S.D.	ME010005	80
Bangor	ME0100781	23
Bar Harbor Rath	MEUTUTZ14 & MEUTUZ466 MEAAAAA34	CCI
Belfast	ME0101632	5 ~
Biddeford	ME0100048	180
Brewer	ME0100072	95
Bucksport	ME0100111	53
Calais	ME0100129	15
Cape Elizabeth (PWD)		ۍ ک
Corinna S.D.	ME0100153 ME0100501	0 <u>0</u>
East Millinocket	ME0100301 ME0100196	° <del>C</del>
Fairfield	ME0102393	15
Fort Kent U.D.	ME0102369	10
Gardiner	ME0101702	40
Greater Augusta U.D. Hallowell W. D 2008 GALID	ME0100013 ME0101010	80
Hampden	ME0102512	-
Kennebec S.T.D.	ME0100854	15
Kittery	ME0100285	7
Lewiston	ME0100994 ME0101178	80
Lincoln S.D.	ME0101478	90
Lisbon	ME0100307	Q
Livermore Falls	ME0100315	
Machias	ME0100323	15
Madawaska Machanic Falls S D	ME 0101681 ME0100301	16
Milford	ME0100391 ME0102695	¥ ∞
Milo W.D.	ME0100439	ი ი
Old Town	ME0100471	25
Orono	ME0100498	30
Paris U.D.	ME 0100951 CB: MICO101425 / DW/D MICO102075	10 Q
Presque Isle	City-ME01014337 FW D-ME0102073	26
Randolph	ME0102423	53
Rockland	ME0100595	23
Saco	ME 0101117	44
Sanford S.D.	ME0100617	10
South Portland	ME0100023 ME0100633	<u>8</u> 8
Westbrook (PWD)	ME0100846	20
Winslow	ME0102628	20
Winterport S.D.	ME0100749	ø
Yarmouth	ME0100765	4
Total		1748
Median Mean		23 39
Numbers in blue are estimate	ed from LTCP/MP or other source.	







YEAR













PROTECTION



YEAR









2008 CSO FLOW COMPARISION BY COMMUNITY



17

