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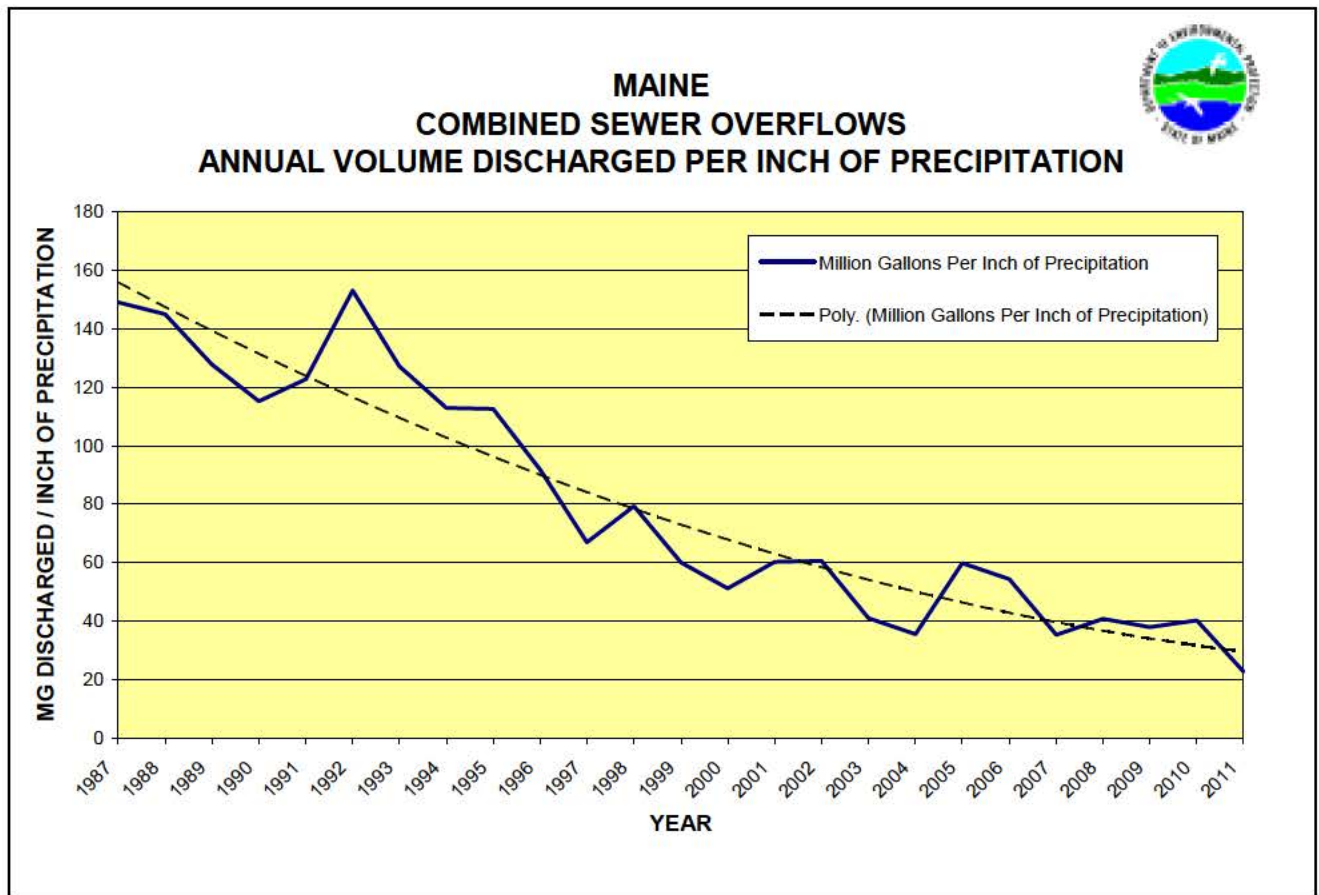


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# MAINE COMBINED SEWER OVERFLOW 2011 STATUS REPORT

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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.

This 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 as 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 can 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 facility upsets, street flooding, and back-ups into basements.

## **WHAT ARE THE IMPACTS OF CSOs?**

- Currently in Maine there are 32 communities (towns or cities) with CSO discharge points in their sewerage systems (down from an original 60). These communities collectively have 163 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 1.0 to 2.0 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 19, 1994 Combined Sewer Overflow (CSO) Control Policy.
- Special Conditions in their Maine Pollutant Discharge Elimination System (MEPDES) permit require all CSO permittees to submit an Annual CSO Progress Report to the Department for the previous year by March 1st.
- 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 long-range plans are being completed.
- In December 2000, as part of the Consolidated Appropriations Act for Fiscal Year 2001 (P.L. 106-554), Congress amended the Clean Water Act (CWA) by adding Section 402(q), commonly referred to as the Wet Weather Water Quality Act of 2000. Section 402(q) requires that each permit, order, or decree issued pursuant to the CWA for a discharge from a municipal combined sewer system shall conform to the CSO Control Policy.

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

- All of Maine’s CSO Communities have completed or are working on updates to their 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 impacts.
- Abatement projects have reduced untreated discharges in all of the CSO Communities. A number of communities have eliminated their CSO discharges entirely and are no longer licensed to discharge untreated combined sewage during wet weather.

- Statewide, CSO Communities report that they have invested a total of \$415.1 million in CSO abatement (\$33.9 million in 2011) and anticipate the CSO needs for the next five years to be \$142.7 million. Beyond five years, the expected need to bring them into compliance with the CSO Control Policy is an additional \$200+ million.

## **WHERE ARE WE NOW? – 2011 STATUS**

- 1) Maine started 2011 with 32 CSO Communities and finished the year with 32 communities. A complete listing of Maine's CSO Communities, their number of CSO outfalls and the outfall receiving waters is listed on page 8.
- 2) The volume of combined sewage discharged statewide in 2011 was reported at 1.14 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 2011 CSO Flow Comparison pie chart on page 16 and the 2011 CSO Flow Comparison by Community bar chart on page 17 are graphical comparisons of the overflow volumes between the CSO Communities.
- 3) In 2011, the CSO Communities reported a total of 576 overflow event days. This total is arrived at by summing the number of days that each CSO Community experienced an overflow event. An overflow event is any calendar 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.
- 4) Twenty-six (26) of the 32 CSO Communities reported experiencing at least one combined sewer overflow discharge in 2011, while six (6) reported no overflows.
- 5) In 2011, twenty (20) CSO communities reported discharging less in 2011 than in 2010, five (5) reported discharging more, and one (1) reported the same discharge this year as last year. The maximum number of days that overflow events were reported from a single community was 100. The average (mean) number of discharge events for all communities was 17 events and the median was 6 events. Additional information is given in the table on page 10.
- 6) 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 it is best to 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. Since 1989, the volume of combined sewage discharged has decreased by approximately 80%. This is stated as an approximation because of the correlation of overflow volumes to variations in annual weather patterns.

- 7) 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. Since 1989, the number of overflow days has decreased by approximately 65%, once again stated as an approximation.
- 8) In 2011 Maine CSO Communities reduced the total number of CSO discharge locations by one (1), down from 164 to 163. Reductions were in the communities of Auburn (1) and Lewiston (2). Although there were three (3) discharge points removed, two (2) previously closed CSO discharge locations were reopened this year in Bangor. A CSO regulator location was removed in Saco, however, credit was not taken, since it shared an outfall pipe which remains active. The chart on page 13, Maine – Statewide Number of Combined Sewer Overflow Outfalls, shows a 52% reduction in the number of CSO outfalls since 1989.
- 9) 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 partially compensate for the fluctuation in yearly precipitation patterns, the total volume of combined sewage discharged has been unitized by taking into consideration the average annual precipitation amount for the CSO communities. The average annual precipitation amount for all of the communities was calculated by applying a weighted precipitation amount, based on their percentage of the total statewide overflow volume, to each community's annual precipitation amount and then summing the total. 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. Since 1989, overflow volumes have decreased from approximately 128 million gallons per inch of precipitation to 35 - 40 million gallons per inch of precipitation - 23 million in 2011. Although this type of analysis is rough, it is a good indicator of the CSO abatement progress that is being made.
- 10) The average annual precipitation for all of Maine's CSO Communities is approximately 45 inches. In 2011, the annual precipitation for the CSO Communities varied significantly from 34.3 – 58.2 inches. 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 continuing widening of the gap (trend lines) between the yearly precipitation amount and the yearly volume of combined sewage discharged. This widening gap clearly indicates that CSO abatement is being accomplished and that overflow volumes are becoming less influenced by precipitation events.
- 11) 2011 was another above average precipitation year (50.18"), slightly above last year's weighted average of 49.8". As a result of ongoing CSO abatement work and possibly changes in precipitation intensities and frequencies, the statewide



volume of CSO discharges decreased by 863 million gallons or 43.1%, from 2.003 billion gallons in 2010 to 1.140 billion gallons in 2011.

- 12) The CSOs from the City of Portland and the Portland Water District in the Portland area comprised approximately 44% of the State's total overflow volume in 2011; 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 decreased by 47.3% from 1.223 billion gallons in 2010 to 0.644 billion gallons in 2011.
- 13) In 2011, the top twelve (12) dischargers accounted for approximately 98% of the total volume of combined sewage discharged in the State, while the remaining fourteen (14) communities that discharged accounted for approximately 2%. See the CSO Flow Comparison Pie Chart on page 16.
- 14) Abatement of CSOs is a costly endeavor. To date Maine CSO Communities have reported expending \$415.1 million implementing their CSO abatement projects. In the 2011 Annual CSO Progress Reports submitted to the State, these communities reported expending \$33.9 million on abatement work in 2011. It is estimated that the future needs of these communities to complete their CSO abatement plans totals \$340+ million in 2011 dollars.
- 15) 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 based on these variables.
- 16) 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.
- 17) 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.
- 18) 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 shell fishing area being closed. These are, but not necessarily limited to, urban storm water runoff, malfunctioning septic systems, domestic and non-domestic animal waste, agricultural runoff, and bathers, to name just a few. What is assessed in the Annual Reports is which beach and shell fishing areas may be impacted by the CSOs.

In 2011, six (6) CSO Communities listed eleven (11) beach areas that could be impacted by their CSO discharges. They were: Bar Harbor (Town Beach off Town Pier & Hulls Cove); Biddeford (Hills Beach, Biddeford Pool & Camp Ellis); Cape Elizabeth (Cliff House Beach, Casino Beach & Fort Williams Park); Portland (East End Beach); South Portland (Willard Beach); and Calais (Red Beach – though not considered a swimming beach). In 2011, the following beach closures or advisories were reported to the Maine Healthy Beaches website, though not specifically identified as being caused by CSO activity (East End, 7 advisories).

In 2011, five (5) CSO Communities listed shell fishing areas that were closed in their area (Bar Harbor, Calais, Machias, Portland and 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.

- 19) The chart on page 18 – 2011 CSO Watershed Flows, shows a graphical representation of the CSO volumes discharged by watershed. In 2011, Casco Bay received approximately 46% of the statewide CSO volume discharged, followed by the Penobscot River at 25.3%, the Androscoggin River at 18.5%, the Kennebec River at 4.5%, the Saco River at 3.8%, and the St. Croix River at 1.5%. Discharges to the St. John River, Frenchman Bay, the Machias River, and Penobscot Bay account for the remaining ~0.5% of combined sewer overflow volume. The Table on page 19 – CSO Annual Watershed Flows, shows the actual CSO volumes by discharger associated with the individual watersheds for 2011, as well as for the previous four years.

**MAINE – COMBINED SEWER OVERFLOW (CSO)  
COMMUNITY LIST  
(As of December 31, 2011)**



	<b>COMMUNITY/PERMITTEE</b>	<b>CSOs</b>	<b>Number of CSOs &amp; Receiving Water</b>
1.	<b>AUBURN SEWERAGE DISTRICT</b> .....	2	3-Androscoggin Rv.
2.	BANGOR .....	9	3-Kenduskeag Str., 4-Penobscot Rv.
3.	<b>BAR HARBOR (Hulls Cove)</b> .....	1	1-Frenchman Bay
4.	<b>BAR HARBOR (Main Plant)</b> .....	3	2-Frenchman Bay, 1-Eddie Brook
5.	BATH .....	4	4-Kennebec Rv.
6.	BELFAST .....	2	2-Passagassawakeag River/Belfast Harbor
7.	BIDDEFORD .....	10	9-Saco Rv., 1-Thatcher Bk.
8.	BREWER .....	5	4-Penobscot River, 1-Sedgeunkendunk Str.
9.	BUCKSPORT .....	1	1-Penobscot Rv.
10.	CALAIS .....	5	4-St. Croix Rv., 1-Landing Brook
11.	<b>CAPE ELIZABETH – Ottawa Road PS</b> (Co-Permittees - So. Portland, PWD, & Cape Eliz.)	1	1-Atlantic Ocean
12.	<b>FAIRFIELD</b> .....	2	2-Kennebec Rv.
13.	GARDINER .....	1	1-Kennebec Rv.
14.	<b>GREATER AUGUSTA UTILITY DISTRICT (GAUD)</b> <b>(Includes Hallowell Sanitary Sewers &amp; CSO)</b> ...	22	4-Bond Bk., 1-Kennedy Bk., 16-Kennebec Rv., 1-Whitney Bk.
15.	<b>HAMPDEN</b> .....	1	1-Souadabscook Str.
16.	KENNEBEC SANITARY TREATMENT District (KSTD)	3	3-Kennebec Rv.
17.	<b>LEWISTON</b> .....	18	8-Androscoggin Rv., 1-Gully Bk., 1 -Hart Bk., 10-Jepson Bk.
18.	<b>LEWISTON-AUBURN Water Pollution Control</b> <b>Authority (LAWPCA)</b> .....	1	1-Androscoggin Rv.
19.	MACHIAS .....	2	2-Machias Rv.
20.	MADAWASKA .....	2	2-St. John Rv.
21.	MECHANIC FALLS SANITARY DISTRICT .....	3	3-Little Androscoggin Rv.
22.	<b>MILFORD</b> .....	1	1-Penobscot Rv.
23.	OLD TOWN .....	3	2-Penobscot Rv., 1-Stillwater Rv.
24.	ORONO .....	1	1-Penobscot Rv.
25.	PARIS UD .....	1	1-Little Androscoggin Rv.
26.	<b>PORTLAND – CITY</b> .....	11	6-Back Cove, 2-Capiscic Bk., 2-Portland Harbor., 1-Nason Bk. (marsh)
27.	<b>PORTLAND – PORTLAND WATER DISTRICT (PWD)</b>	21	9-Back Cove, 3-Casco Bay, 7-Fore Rv., 2- Portland Harbor
28.	<b>RANDOLPH</b> .....	1	1-Kennebec Rv.
29.	SACO .....	4	1-Bear Bk., 3-Saco Rv.
30.	SANFORD SANITARY DISTRICT .....	1	1-Mousam Rv.
31.	SKOWHEGAN .....	7	7-Kennebec Rv.
32.	SOUTH PORTLAND .....	6	1-Barberry Ck., 1-Fore Rv., 1-Calvery Pond., 2-Portland Hbr., 1-Long Creek
33.	WESTBROOK .....	5	5-Presumpscot Rv.
34.	<b>WINSLOW</b> .....	2	2-Sebasticook Rv.
35.	WINTERPORT SEWERAGE DISTRICT .....	1	1-Penobscot Rv.
	<b>TOTAL CSOs</b>	<b>163</b>	

35 CSO Permits, permitting 32 CSO Towns/Cities

**Two or more permits in one CSO Town/City**

**Two CSO Towns/Cities covered in one permit**

**Bold** = 10 communities with sewer system only. Sewers discharge to a POTW controlled by another entity.

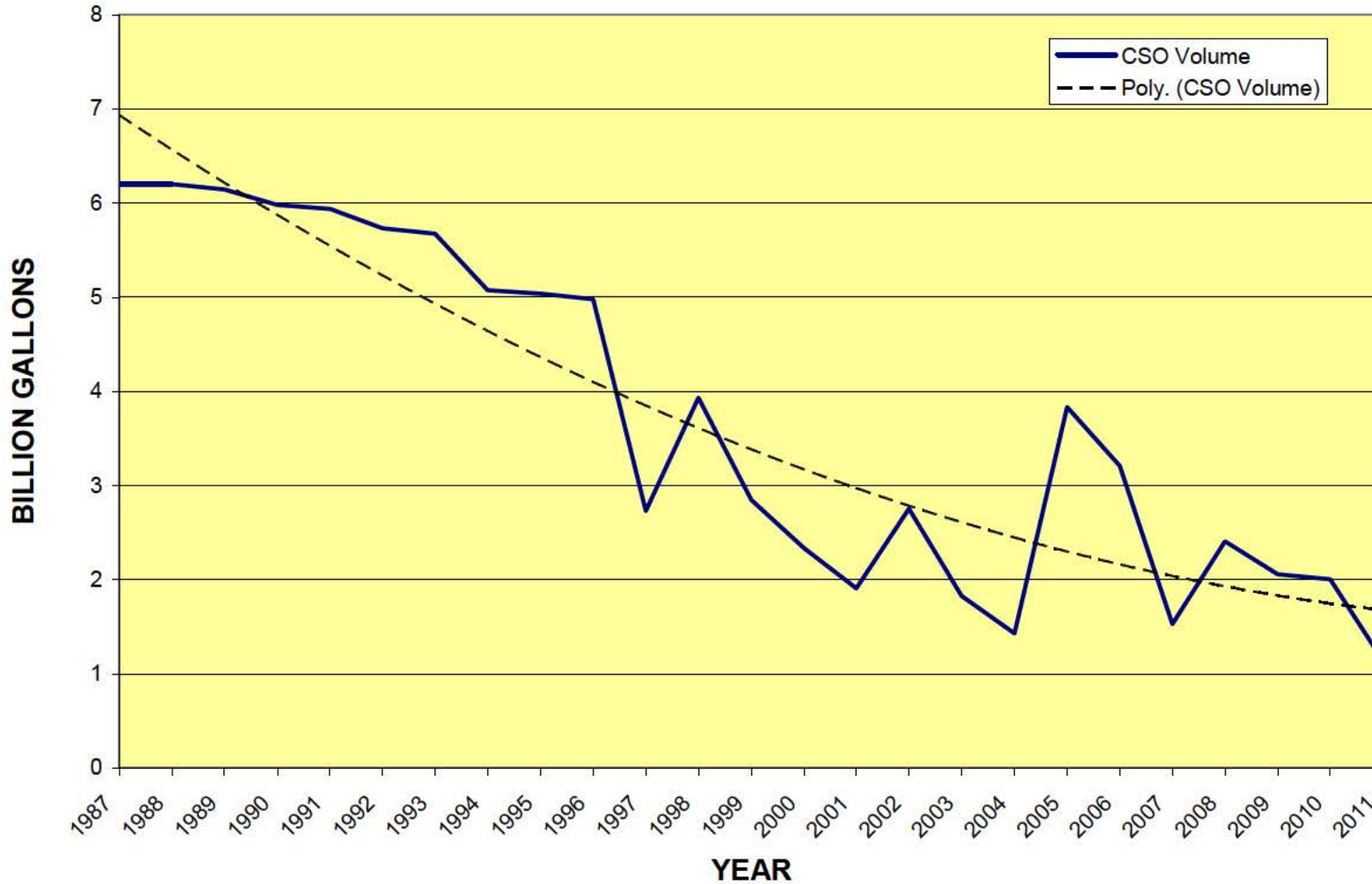


## MAINE CSO COMMUNITY ANNUAL NUMBER OF CSO DISCHARGE EVENTS

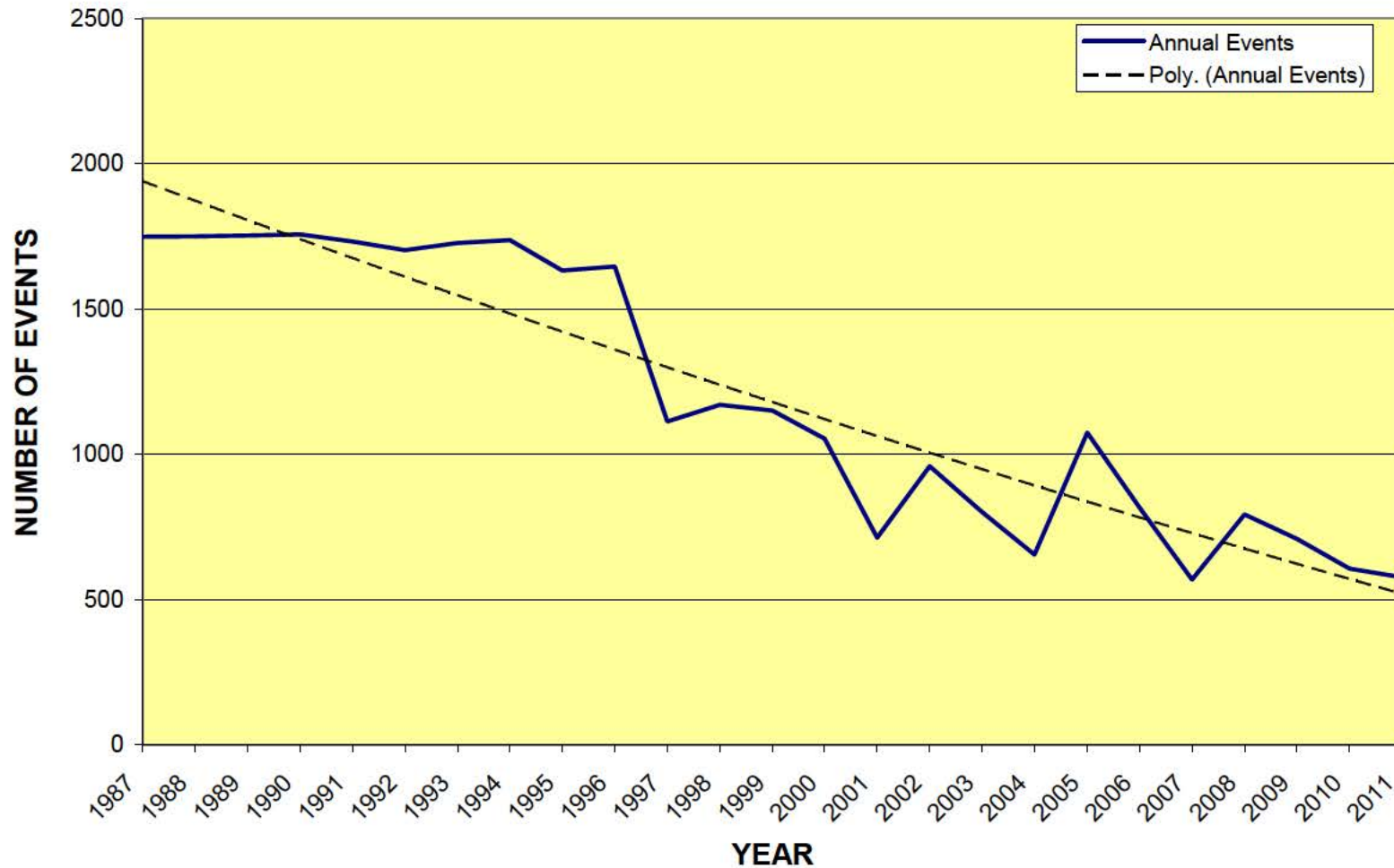
		Annual Number of CSO Discharge Events																			
No longer a CSO Community																					
Community	NPDES Permit No.	1987	1988	1989	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Auburn S.D.	99720000	80	80	80	10	10	7	7	7	7	44	67	62	24	58	37	42	59	61	37	11
Bangor	635000000	53	53	53	49	41	38	44	33	37	20	40	49	42	46	58	25	65	78	73	54
Bar Harbor	32000000	155	155	155	155	155	154	47	98	44	7	21	16	5	22	18	10	27	28	19	6
Bath	600000000	64	64	64	64	64	64	30	37	21	10	25	23	20	33	32	25	29	21	20	12
Belfast	736000	7	7	7	7	7	7	5	7	1	0	0	0	0	5	3	5	4	3	6	3
Biddeford	400000000	180	180	180	180	180	94	147	162	184	140	150	93	61	104	82	70	53	46	28	100
Brewer	750000000	95	95	95	66	66	22	92	95	80	53	72	66	72	78	45	38	59	56	50	45
Bucksport	53000000	53	53	53	53	53	53	10	17	10	32	24	25	8	24	18	2	0	0	0	0
Calais	42000000	15	15	15	15	15	15	15	15	15	15	15	15	9	15	5	8	10	14	8	6
Cape Elizabeth	ME0102806	5	5	5	5	5	2	3	5	5	3	0	2	5	20	20	5	11	17	12	6
Corinna S.D.	40000000	30	30	30	30	30	15	16	26	23	19	1	1	0							
Dover-Foxcroft	16000	8	8	8	1	4	0	3	0	1	0	0	0	0	2	0					
East Millinocket	1200000	11	11	11	11	11	11	11	0	0	0	0	0	0	0	0					
Fairfield	300000	15	15	15	15	15	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0
Fort Kent U.D.	3000	10	10	10	10	10	10	10	0	2	0	0	2	1	4						
Gardiner	44000000	40	40	40	40	40	5	19	11	13	9	13	24	11	41	14	2	8	2	12	6
Greater Augusta U.D.	72554000	80	80	80	80	80	39	79	59	73	25	58	70	58	73	50	29	34	35	32	37
Hallowell W.D. - 2008 GAUD	350000	14	14	14	14	14	3	4	6	3	0	0	2	0	14	3	3				
Hampden	1201000	1	3	8	8	14	8	1	11	9	0	0	2	0	13	0	1	0	1	1	1
Kennebec S.T.D.	2500000	15	15	15	15	15	15	8	6	6	4	0	5	7	9	3	1	4	0	0	0
Kittery	350000	7	7	7	7	7	3	2	0	1	1	0	0	1	0						
Lewiston	208900000	80	80	80	80	80	46	71	62	70	43	57	55	65	69	70	38	71	58	68	45
Lewiston-Auburn W.P.C.A.	480000000	80	80	80	80	80	80	80	80	41	28	25	23	35	49	44	29	38	36	44	37
Lincoln S.D.	2400000	10	10	10	10	5	1	3	11	2											
Lisbon	600000	5	5	5	5	5	5	5	1	1	1	0	0	0							
Livermore Falls	0						0	0													
Machias	7000000	15	15	15	3	3	3	2	9	5	0	4	16	8	15	10	5	12	13	9	7
Madawaska	3200000	16	16	16	27	26	16	12	0	3	1	1	7	4	65	14	17	18	32	17	10
Mechanic Falls S.D.	18000000	42	42	42	42	42	24	25	18		10	15	20	12	29	23	9	42	42	18	39
Milford	220000	8	8	8	8	8	8	8	8	8	8	8	8	8	0	8	0	4	1	3	2
Milo W.D.	10000	3	3	3	3	3	3	3	3	1	0	0	1	0	1	0	2	1			
Old Town	6300000	25	25	25	25	25	25	3	5	4	0	5	7	1	13	1	4	4	0	1	0
Orono	31000000	30	30	28	18	37	3	7	12	4	0	1	2	0	12	3	6	7	3	3	2
Paris U.D.	1000000	5	5	5	5	5	0	1	0	1	0	0	1	0	2	2	2	2	0	4	0
Portland & PWD	1800000000	100	100	100	100	100	61	102	81	83	58	141	71	86	88	93	58	87	104	79	88
Presque Isle	27500000	26	26	26	26	26	17	26	12	14	4										
Randolph	10000000	23	23	23	23	23	23	23	23	23	19	3	2	0	8	3	1	9	7	3	2
Rockland	47000000	23	23	23	23	23	12	23	18	8	5	11	6	2	0	0	0	0	0		
Saco	176000000	44	44	44	44	44	36	33	39	44	22	36	22	32	41	24	12	12	9	10	4
Sanford S.D.	4000000	10	10	10	10	10	10	10	3	1	0	0	0	0	0	1	0	0	0	0	0
Skowhegan	48000000	160	160	160	160	160	108	111	111	161	95	115	77	53	81	81	55	58	17	23	21
South Portland	500000000	23	23	23	23	23	21	23	23	15	12	11	10	10	20	20	5	10	10	12	13
Westbrook (PWD)	50000000	50	50	50	50	50	34	30	19	16	15	33	7	13	17	31	55	50	11	12	16
Winslow	1300000	20	20	20	20	20	10	10	1	0	0	0	0	0	1	0	3	3	3	2	3
Winterport S.D.	680000	8	8	8	8	8	8	8	8	8	3	3	8	1	2	0	1	1	1	0	0
Yarmouth	1000	4	4	4	4	4	0	4	4	2	1	0									
<b>Total</b>		<b>1748</b>	<b>1750</b>	<b>1753</b>	<b>1632</b>	<b>1646</b>	<b>1113</b>	<b>1170</b>	<b>1150</b>	<b>1053</b>	<b>712</b>	<b>959</b>	<b>800</b>	<b>654</b>	<b>1074</b>	<b>816</b>	<b>568</b>	<b>792</b>	<b>709</b>	<b>606</b>	<b>576</b>
<b>Median</b>		<b>23</b>	<b>23</b>	<b>23</b>	<b>20</b>	<b>23</b>	<b>12</b>	<b>10</b>	<b>11</b>	<b>8</b>	<b>4.5</b>	<b>4</b>	<b>7</b>	<b>5</b>	<b>15</b>	<b>12</b>	<b>5</b>	<b>10</b>	<b>10.5</b>	<b>12</b>	<b>6</b>
<b>Mean</b>		<b>39</b>	<b>39</b>	<b>39</b>	<b>36</b>	<b>37</b>	<b>25</b>	<b>26</b>	<b>26</b>	<b>24</b>	<b>16</b>	<b>22</b>	<b>19</b>	<b>16</b>	<b>27</b>	<b>21</b>	<b>16</b>	<b>23</b>	<b>21</b>	<b>18</b>	<b>17</b>

Numbers in blue are estimated from LTCP/MP or other source.

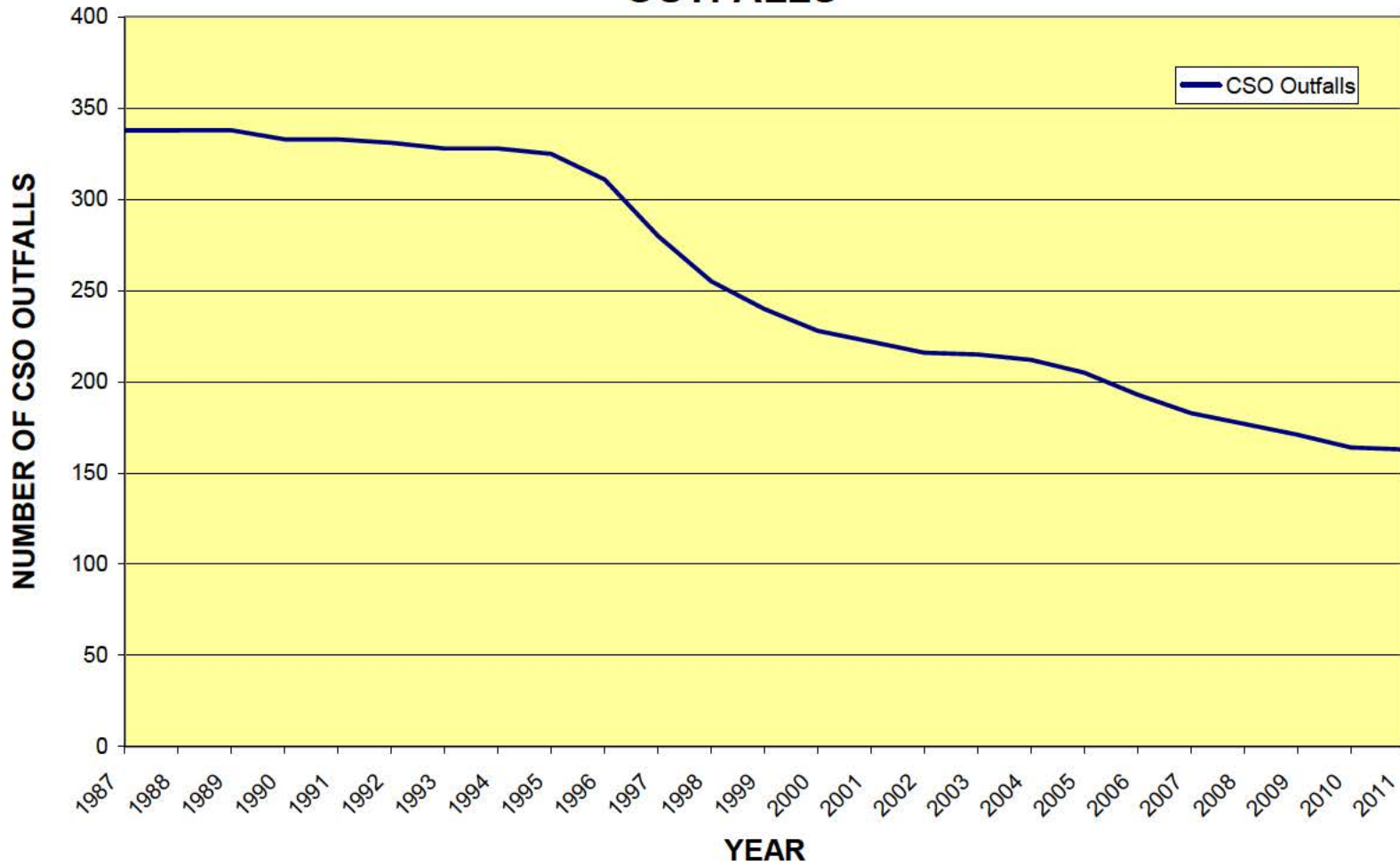
# MAINE - STATEWIDE COMBINED SEWER OVERFLOW (CSO) VOLUME DISCHARGED



# MAINE - STATEWIDE COMBINED SEWER OVERFLOW (CSO) ANNUAL NUMBER OF DISCHARGE EVENTS



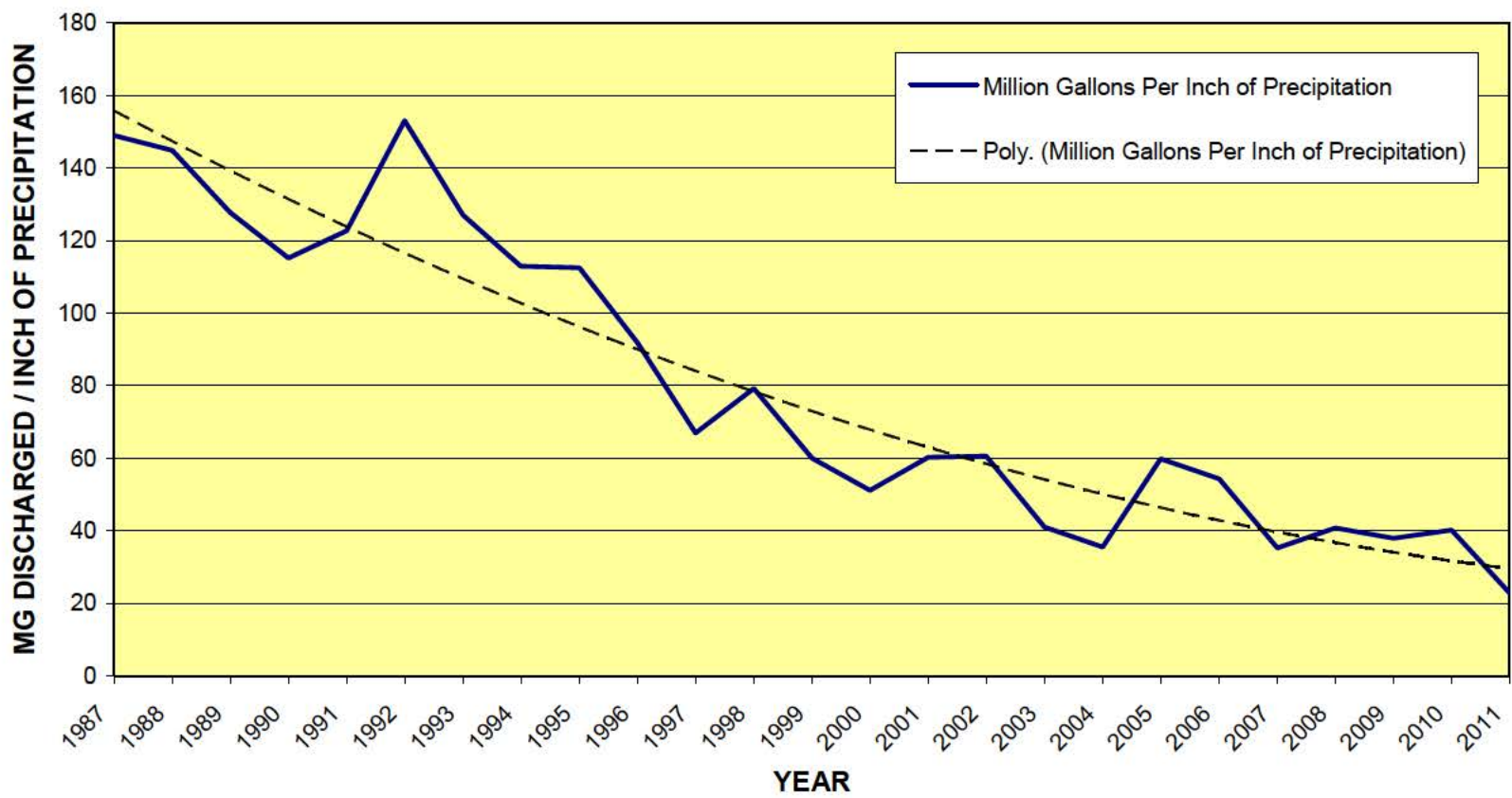
# MAINE - STATEWIDE NUMBER OF COMBINED SEWER OVERFLOW (CSO) OUTFALLS







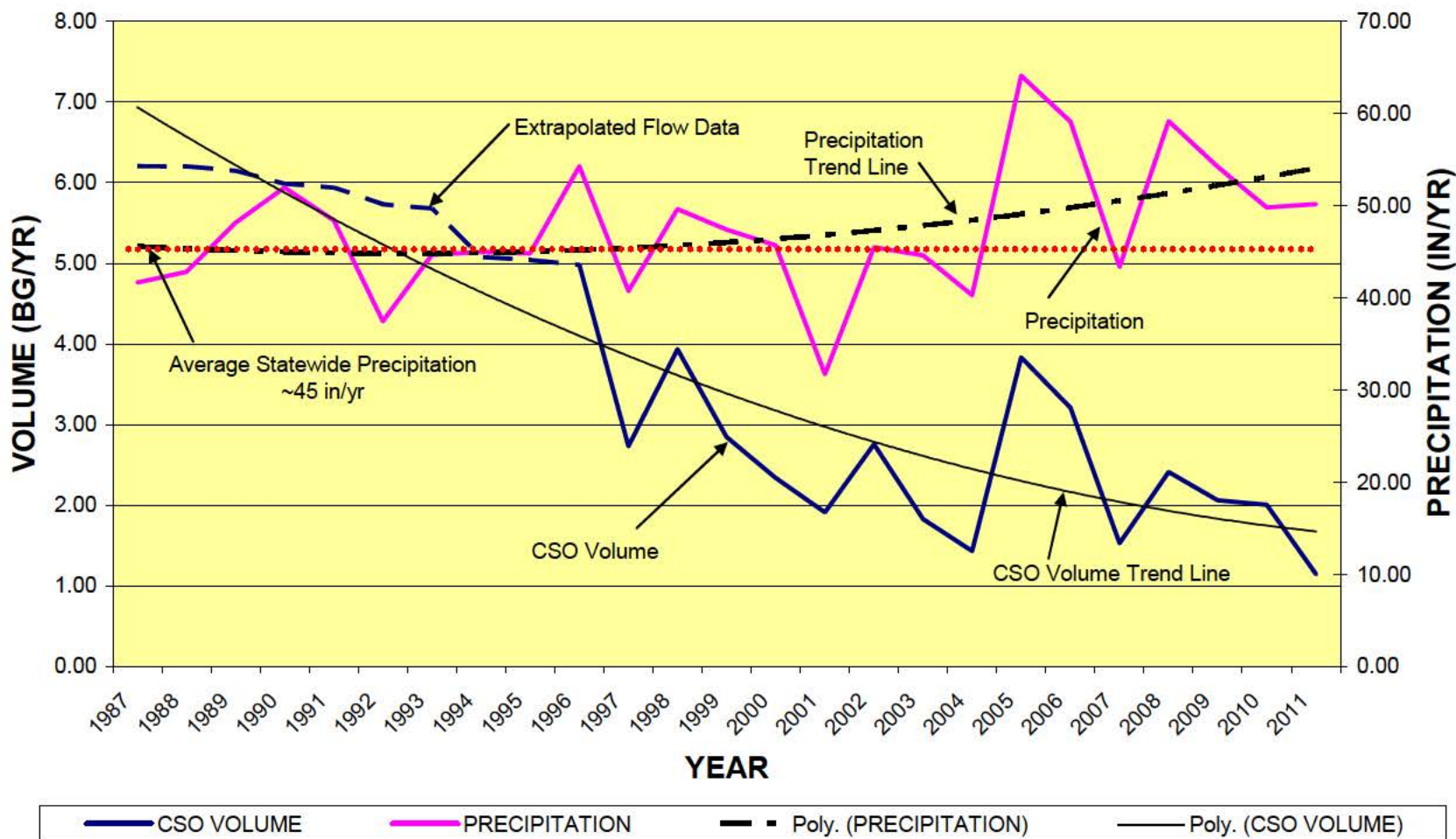
# MAINE COMBINED SEWER OVERFLOWS ANNUAL VOLUME DISCHARGED PER INCH OF PRECIPITATION



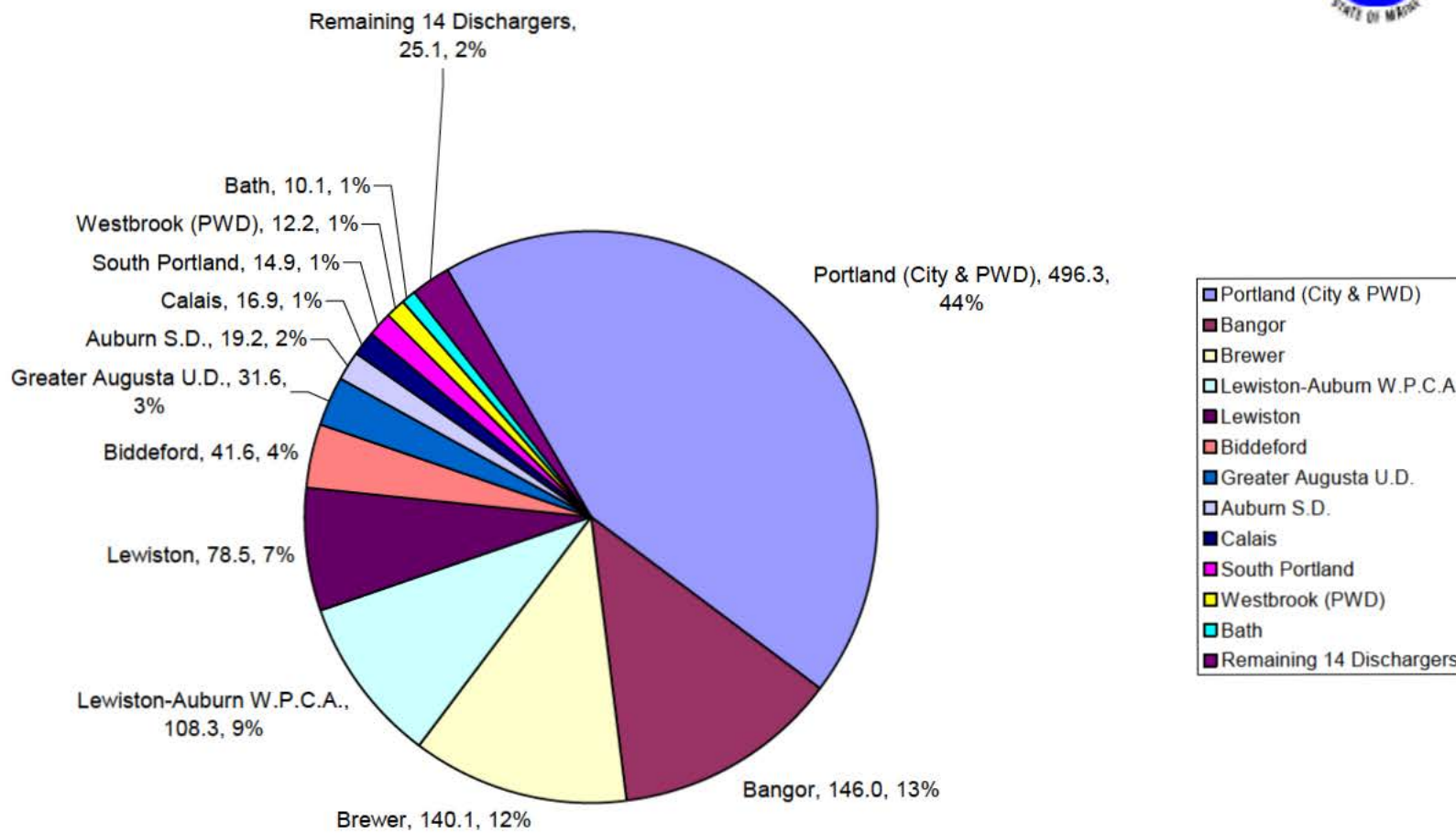
# MAINE YEARLY CSO VOLUMES AND PRECIPITATION



15

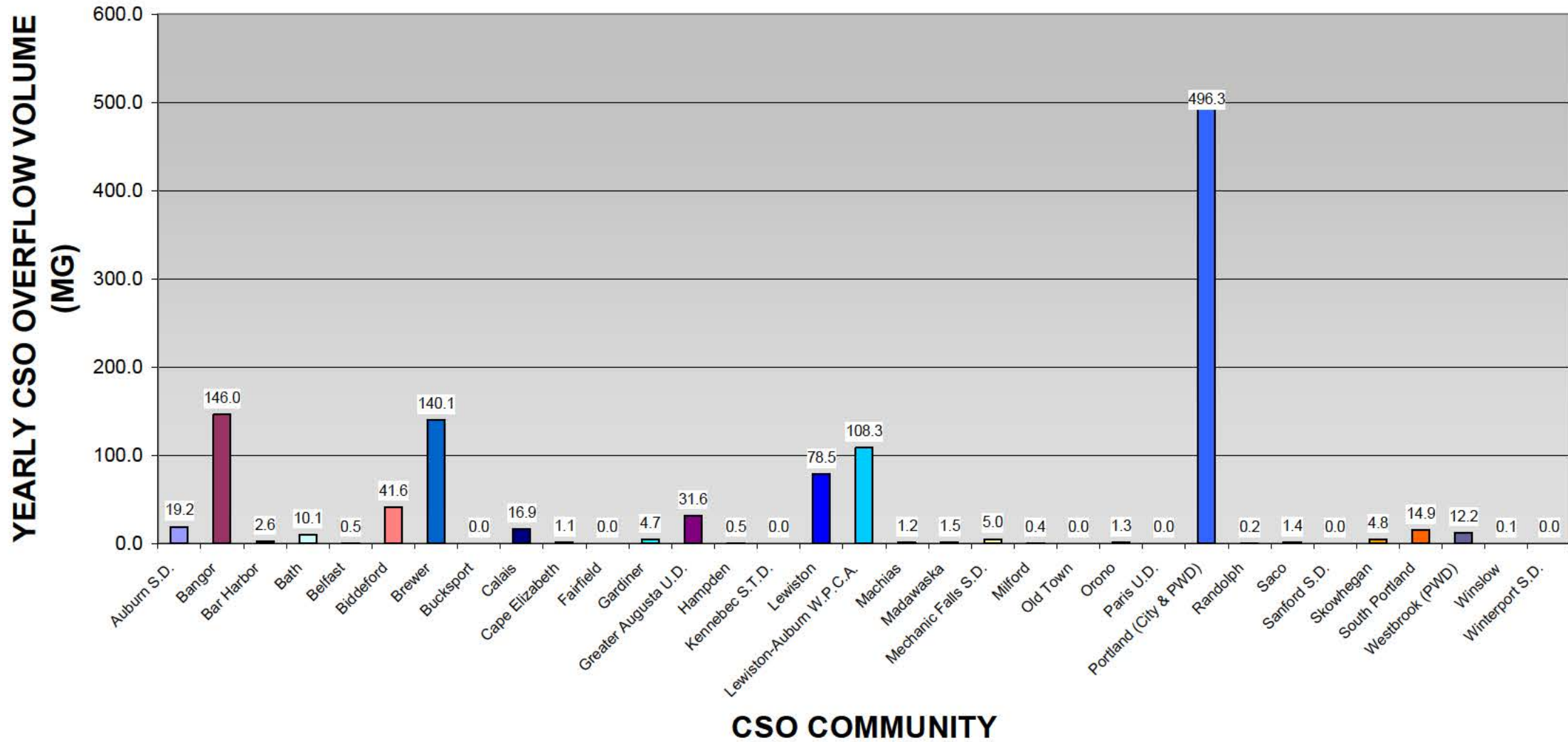


**2011 CSO FLOW COMPARISON  
32 CSO COMMUNITIES  
26 DISCHARGERS - 1.14 BILLION GALLONS**

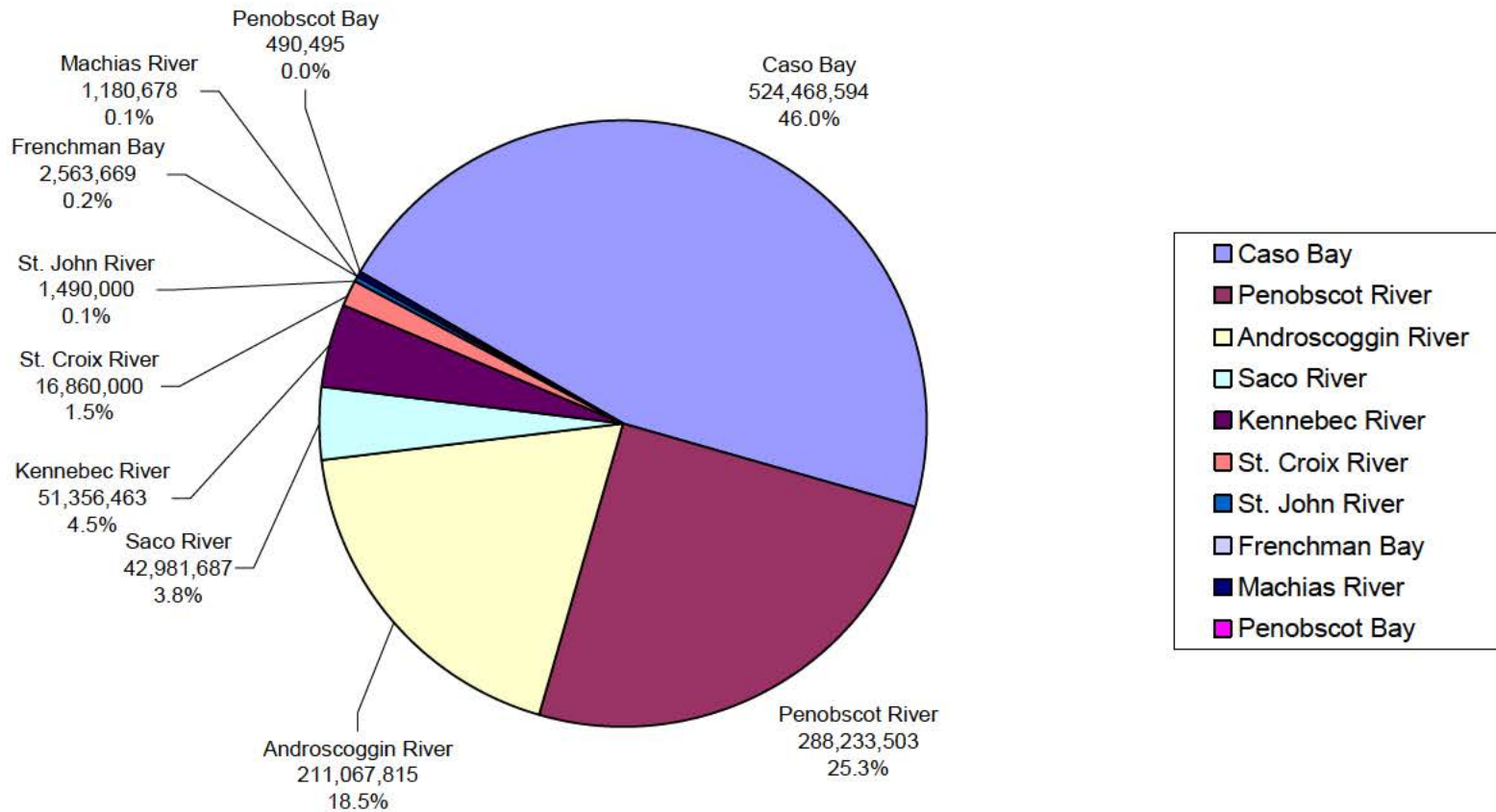


**Discharger, Overflow in Million Gallons (MG), Percent of Total**

## 2011 CSO FLOW COMPARISON BY COMMUNITY 1.14 Billion Gallons



# 2011 CSO Watershed Flows 1.14 Billion Gallons



**Discharger, Overflow in Million Gallons (MG), Percent of Total**

# MAINE CSO ANNUAL WATERSHED FLOWS

	Community	Annual CSO Flows (Gallons)				
		2007	2008	2009	2010	2011
Androscoggin River	Auburn SD	23,622,547	23,984,272	19,440,841	12,952,500	19,234,856
	Lewiston-Auburn WPCA	142,286,000	292,244,000	207,794,000	156,986,000	108,278,048
	Lewiston	90,983,189	152,039,341	116,557,656	113,285,042	78,521,909
	Mechanic Falls SD	11,853,000	11,223,600	6,231,000	9,250,000	5,033,002
	Paris UD	206,000	84,000	0	110,000	0
	<b>Sub Total</b>	<b>268,950,736</b>	<b>479,575,213</b>	<b>350,023,497</b>	<b>292,583,542</b>	<b>211,067,815</b>
Casco Bay	Cape Elizabeth	3,254,000	2,567,000	3,527,000	3,955,292	1,072,000
	Portland-City & PWD	589,203,712	883,105,087	872,751,281	780,188,153	496,288,000
	South Portland	15,727,553	12,883,433	12,183,196	42,095,393	14,906,594
	Westbrook	15,879,000	7,379,066	7,069,280	14,105,989	12,202,000
	<b>Sub Total</b>	<b>624,064,265</b>	<b>905,934,586</b>	<b>895,530,757</b>	<b>840,344,827</b>	<b>524,468,594</b>
Frenchman Bay	Bar Harbor	8,719,436	12,601,889	11,935,337	6,930,405	2,563,669
	<b>Sub Total</b>	<b>8,719,436</b>	<b>12,601,889</b>	<b>11,935,337</b>	<b>6,930,405</b>	<b>2,563,669</b>
Kennebec River	Augusta SD	10,000,000	48,965,215	15,723,000	49,670,000	31,589,000
	Ba h	20,783,335	24,383,599	11,323,060	12,930,203	10,067,181
	Fairfield	0	0	0	0	0
	Gardiner	2,487,000	5,000,000	1,380,000	10,453,761	4,655,000
	Hallowell WD	150,000	-	-	-	-
	Kennebec STD	1,136,649	2,209,107	0	0	0
	Randolph	459,476	1,413,880	488,645	285,719	223,934
	Skowhegan	21,596,631	61,963,453	6,073,919	7,550,855	4,757,994
	Winslow	725,000	235,000	5,001	200,000	63,354
<b>Sub Total</b>	<b>57,338,091</b>	<b>144,170,254</b>	<b>34,993,625</b>	<b>81,090,538</b>	<b>51,356,463</b>	
Machias River	Machias	2,263,720	2,328,905	4,073,938	2,791,962	1,180,678
	<b>Sub Total</b>	<b>2,263,720</b>	<b>2,328,905</b>	<b>4,073,938</b>	<b>2,791,962</b>	<b>1,180,678</b>
Mousam River	Sanford SD	0	0	0	0	0
	<b>Sub Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Penobscot Bay	Belfast	1,035,392	198,370	260,036	486,919	490,495
	Rockland	0	0	0	0	0
	<b>Sub Total</b>	<b>1,035,392</b>	<b>198,370</b>	<b>260,036</b>	<b>486,919</b>	<b>490,495</b>
Penobscot River	Bangor	150,580,000	378,640,000	347,360,000	389,300,000	146,000,000
	Brewer	231,283,607	289,560,294	229,270,683	227,139,515	140,065,515
	Bucksport	20,000	0	0	0	0
	Dover-Foxcroft	0	0	0	0	0
	East Millinocket	0	0	0	0	0
	Hampden	85,000	0	500,000	500,000	500,000
	Milford	0	88,365	66,285	52,006	407,151
	Milo WD	501,000	750	0	0	0
	Old Town	770,699	254,967	0	125,000	0
	Orono	7,360,000	4,820,000	371,471	2,416,910	1,260,837
	Winterport SD	102,000	252,000	18,000	0	0
<b>Sub Total</b>	<b>390,702,306</b>	<b>673,616,376</b>	<b>577,586,439</b>	<b>619,533,431</b>	<b>288,233,503</b>	
Saco River	Biddeford	150,304,402	147,313,000	146,452,750	127,029,700	41,609,559
	Saco	1,950,000	100,000	27,015	924,014	1,372,128
	<b>Sub Total</b>	<b>152,254,402</b>	<b>147,413,000</b>	<b>146,479,765</b>	<b>127,953,714</b>	<b>42,981,687</b>
St. Croix River	Calais	22,060,520	18,989,779	21,263,750	31,134,915	16,860,000
	<b>Sub Total</b>	<b>22,060,520</b>	<b>18,989,779</b>	<b>21,263,750</b>	<b>31,134,915</b>	<b>16,860,000</b>
St. John River	Madawaska	2,667,765	24,194,225	15,800,000	1,107,610	1,490,000
	<b>Sub Total</b>	<b>2,667,765</b>	<b>24,194,225</b>	<b>15,800,000</b>	<b>1,107,610</b>	<b>1,490,000</b>
	<b>Total Annual Flow</b>	<b>1,530,056,633</b>	<b>2,409,022,597</b>	<b>2,057,947,144</b>	<b>2,003,957,863</b>	<b>1,140,692,904</b>