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# Maine Combined Sewer Overflow 2012 Status Report

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# Maine Combined Sewer Overflow 2012 Status Report

*July 2013*

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MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION  
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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 159 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 floatable solids, bacteria, and sometimes industrial pollutants.
- Potential shellfishing areas and beaches can be closed and drinking water supplies threatened.

## **What Is A CSO Community?**

- CSO Communities are permitted dischargers of untreated 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 untreated 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 State permitting authorities and permit holders with CSO’s 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 \$438.5 million in CSO abatement (\$36.2 million in 2012) and anticipate the CSO needs for the next five years to be \$138.4 million. Beyond five years, the expected need to bring them into compliance with the CSO Control Policy is an additional \$148+ million.

## Where Are We Now?

### 2012 Status

- 1) In 2012, the 32 CSO Communities reduced the total number of CSO discharge locations by five (5), down from 163 to 159 (a complete listing of Maine's CSO Communities, their number of CSO outfalls and the outfall receiving waters is listed on page 8). Reductions were in the communities of Augusta (3), Brewer (1) and Portland (1). Although there were five (5) discharge points removed, one (1) previously closed CSO discharge location was reopened this year in Auburn. The chart on page 13, **Maine Statewide Number of Combined Sewer Overflow Outfalls**, shows a 53% reduction in the number of CSO outfalls since 1989.
- 2) In 2012, the CSO Communities reported a total of 547 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.
- 3) In 2012, twenty-three (23) CSO Communities and two (2) non-communities reported at least one combined sewer overflow discharge and eight (8) reported no overflows at all.
- 4) Of the twenty-five (25) that reported discharges, eight (8) CSO communities reported discharging less volume in 2012 than in 2011 and seventeen (17) reported discharging more volume. The maximum number of overflow event days reported from a single community was 146 events. The average (mean) number of discharge events for all communities was 17 event days and the median was 9 event days. Additional information can be found in the table on page 10.
- 5) The average annual precipitation in Maine is approximately 45 inches. In 2012, the annual precipitation measured by CSO Communities varied significantly from 29.5 – 59.25 inches. The **Maine Yearly CSO Volumes and Precipitation** chart on page 15 compares annual CSO volumes to yearly precipitation. The chart shows that CSO volumes tend to mirror the yearly ups and downs in precipitation amounts. The chart also shows a continuing widening of the gap (trend lines) between the yearly precipitation amount and the yearly volume of untreated combined sewage being discharged. This widening gap appears to indicate that as CSO abatement continues to be accomplished, overflow volumes are becoming less influenced by precipitation events.
- 6) The volume of untreated combined sewage discharged statewide in 2012 was reported at 1.23 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 **Maine 2012 CSO Flow Comparison** pie chart on page 16 and the **Maine 2012 CSO Flow Comparison by Community** bar chart on page 17 are graphical comparisons of the overflow volumes between the CSO Communities.

- 7) Last year was another above average precipitation year (47.91”), but slightly below the previous year’s weighted average of 50.18”. Although ongoing CSO abatement work continues, probably due to changes in precipitation intensities and frequencies, the statewide volume of untreated CSO discharges increased by 87 million gallons or 7.6%, from 1.14 billion gallons in 2011 to 1.23 billion gallons in 2012.
- 8) In 2012, the top twelve (12) CSO discharge communities accounted for approximately 98% of the total annual volume of combined sewage being discharged in the State, while the remaining thirteen (13) CSO communities accounted for approximately 2% of the annual discharge volume. See the **2012 CSO Flow Comparison** pie chart on page 16.
- 9) The chart on page 18 – **2012 CSO Watershed Flows**, shows a graphical representation of the CSO volumes discharged by watershed. In 2012, Casco Bay received approximately 62.1% of the statewide CSO volume discharged, followed by the Androscoggin River at 18.4%, the Saco River at 6.7%, the Penobscot River at 5.7%, the Kennebec River at 5.0%, 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 – **Maine CSO Annual Watershed Flows**, shows the actual CSO volumes by discharger associated with the individual watersheds for 2012, as well as for the previous four years.
- 10) The untreated CSO discharges from the City of Portland and the Portland Water District in the greater Portland area accounted for approximately 57% of the State of Maine’s total untreated overflow volume in 2012; see the **2012 Maine CSO Flow Comparison** pie chart on page 16. Given the large impact that Portland’s data has on the State’s total discharge volume, it may be beneficial to exclude Portland’s data when examining the State of Maine’s overall CSO abatement progress. After removing Portland’s overflow volume from the state total, the overflow volume remaining for the CSO Communities decreased by 18.75% from 0.644 billion gallons in 2011 to 0.524 billion gallons in 2012.
- 11) Abatement of CSOs is a costly endeavor. To date Maine CSO Communities have reported expending a total of \$438.5 million to implement their CSO abatement project programs. In their 2012 Annual CSO Progress Reports submitted to the State, these CSO Communities reported expending \$36.2 million on abatement work in 2012 alone. They estimate that their future needs to complete their CSO abatement programs will total an additional \$286+ million dollars.
- 12) It is well established that CSOs can and do have impacts on beach and shellfish closures. Stating with certainty that specific CSO events are solely responsible for specific closures is more difficult and is beyond the scope of this report. In some areas there may be other factors that enter into a beach or shellfishing area being closed. These may include, but not necessarily be limited to: urban storm water runoff, malfunctioning septic systems, domestic and non-domestic animal waste, agricultural runoff, and bathers, to name a few. What is assessed in this Annual Report is which beaches and shellfishing areas may have been impacted by CSO discharges.



In 2012, 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 2012, the following beach closures or advisories were reported to the Maine Healthy Beaches web-site, though not specifically identified as being caused by CSO activity: (Hulls Cove, Bar Harbor – 4 Advisories) (Town Beach, Bar Harbor – 5 Advisories) (Hills Beach, Biddeford – 5 Advisories) (East End, Portland – 8 Closures & 16 Advisories) (Willard Beach, South Portland – 2 Advisories).

In 2012, five (5) CSO Communities listed shellfishing 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.

### **Overall Trends and Considerations**

- 1) The volume and frequency of CSO discharges vary 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 reductions, versus trends from year to year. The chart on page 11, **Maine Statewide Combined Sewer Overflow Volume Discharged**, illustrates the continuing downward trend in the CSO volumes being discharged annually. Since 1989, the volume of untreated combined sewage discharged has decreased by approximately 80%. This percentage reduction is stated as an approximation because of the correlation between reported overflow volumes and variations in annual weather patterns.
- 2) Similarly, the chart on page 12, **Maine Statewide Combined Sewer Overflow Annual Number of Discharge Events**, shows a downward trend in the number of overflow event days per year. Since 1989, the number of overflow days has decreased by approximately 69%, once again stated as an approximation for the reason previously mentioned.
- 3) CSO abatement progress cannot 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 amounts, intensity and timing, the rate of snow melt, frozen or thawed ground, and existing groundwater levels. Even given the same annual precipitation, it is highly unlikely that any two years would result in the same volume of CSO discharges based on these variables.
- 4) Trying to compare CSO abatement progress from year to year is difficult due to the varying 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 annual precipitation patterns, the total volume of untreated combined sewage discharged has been unitized by taking into consideration the average annual

precipitation received by each CSO Community. The unitized average annual precipitation for each CSO Community was calculated by applying a weighted precipitation multiplier based on their percentage of the total statewide overflow volume to each community's annual precipitation amount and then summing these values to get a total. The chart on page 14, **Maine Combined Sewer Overflow Annual Volume Discharged per Inch of Precipitation**, illustrates this and shows a continuing 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 23 - 41 million gallons per inch of precipitation over the past five years - 26 million gallons in 2012. This analysis is useful as a general indicator of the CSO abatement progress that is being accomplished.

- 5) The relationship between the annual precipitation and the annual volume of combined sewage discharged is not strictly linear. As a general rule, as precipitation levels increase, the volume of combined sewage being discharged per inch of precipitation would increase. However, once the capacity of the combined sewer system is reached, any additional rainfall or snowmelt would overflow the already inundated system.
- 6) Wet weather conditions and precipitation patterns affect individual CSO Communities differently. Some characteristics that contribute to these varying conditions include: the make-up of the sewer system, the number of catch basins connected, the area of impermeable surfaces, and the specific hydraulic restriction(s) causing the overflows, to name just a few. The overflows in some communities are influenced to a greater degree by intense summer storms, while in other communities it might be high ground water. Therefore direct comparisons between various communities should not be made.

**MAINE – COMBINED SEWER OVERFLOW (CSO)  
COMMUNITY LIST**  
(As of December 31, 2012)



<b>COMMUNITY/PERMITTEE</b>	<b>CSOs</b>	<b>Number of CSOs &amp; Receiving Water</b>
1. AUBURN SEWERAGE DISTRICT .....	3	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. FAIRFIELD .....	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>	18	0-Bond Bk., 1-Kennedy Bk., 16-Kennebec Rv., 1-Whitney Bk.
15. HAMPDEN .....	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. MILFORD .....	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-Capisc Bk., 2-Portland Harbor., 1-Nason Bk. (marsh)
27. <b>PORTLAND – PORTLAND WATER DISTRICT (PWD)</b>	20	9-Back Cove, 3-Casco Bay, 6-Fore Rv., 2- Portland Harbor
28. RANDOLPH .....	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. WINSLOW .....	2	2-Sebastcook Rv.
35. WINTERPORT SEWERAGE DISTRICT .....	1	1-Penobscot Rv.
<b>TOTAL CSOs</b>	<b>159</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.

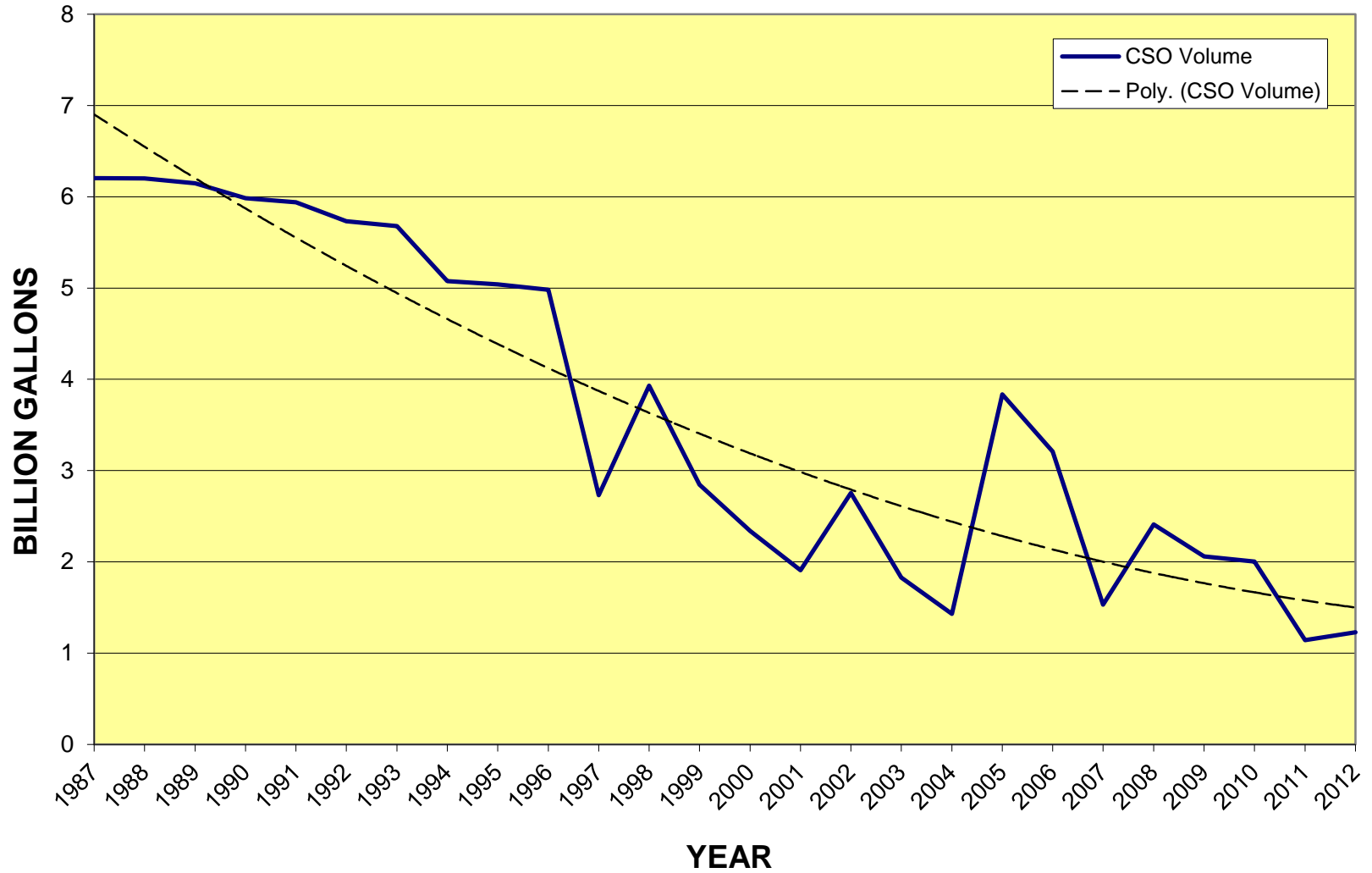


## MAINE CSO COMMUNITY ANNUAL NUMBER OF CSO DISCHARGE EVENTS

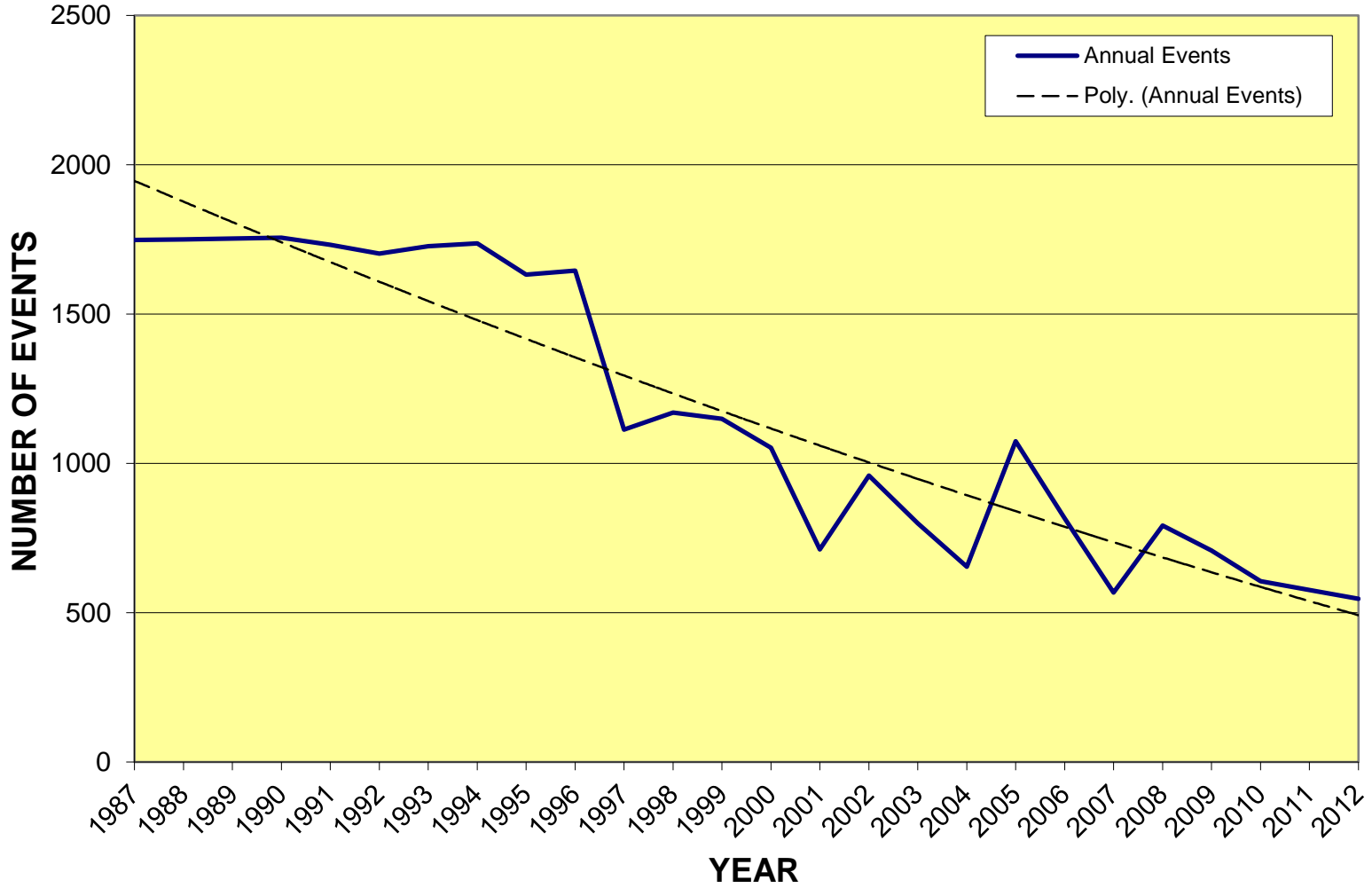
		Annual Number of CSO Discharge Events																		
No longer a CSO Community																				
Community	NPDES Permit No.	Year																		
		1987	1988	1989	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Auburn S.D.	ME0100005	80	80	80	7	7	7	44	67	62	24	58	37	42	59	61	37	11	8	
Bangor	ME0100781	53	53	53	44	33	37	20	40	49	42	46	58	25	65	78	73	54	29	
Bar Harbor	ME0101214 & ME0102466	155	155	155	47	98	44	7	21	16	5	22	18	10	27	28	19	6	13	
Bath	ME0100021	64	64	64	30	37	21	10	25	23	20	33	32	25	29	21	20	12	23	
Belfast	ME0101532	7	7	7	5	7		1	0	0	0	5	3	5	4	3	6	3	0	
Biddeford	ME0100048	180	180	180	147	162	184	140	150	93	61	104	82	70	53	46	28	100	146	
Brewer	ME0100072	95	95	95	92	95	80	53	72	66	72	78	45	38	59	56	50	45	5	
Bucksport	ME0100111	53	53	53	10	17	10	32	24	25	8	24	18	2	0	0	0	0	0	
Calais	ME0100129	15	15	15	15	15	15	15	15	15	9	15	5	8	10	14	8	6	14	
Cape Elizabeth	ME0102806	5	5	5	3	5	5	3	0	2	5	20	20	5	11	17	12	6	11	
Corinna S.D.	ME0100153	30	30	30	16	26	23	19	1	1	0									
Dover-Foxcroft	ME0100501	8	8	8	3	0	1	0	0	0	0	2	0							
East Millinocket	ME0100196	11	11	11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fairfield	ME0102393	15	15	15	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	
Fort Kent U.D.	ME0102369	10	10	10		0	2	0	0	2	1	4								
Gardiner	ME0101702	40	40	40	19	11	13	9	13	24	11	41	14	2	8	2	12	6	6	
Greater Augusta U.D.	ME0100013	80	80	80	79	59	73	25	58	70	58	73	50	29	34	35	32	37	29	
Hallowell W.D. - 2008 GAU	ME0101010	14	14	14	4	6	3	0	0	2	0	14	3	3	-	-	-	-	-	
Hampden	ME0102512	1	3	8	1	11	9	0	0	2	0	13	0	1	0	1	1	1	0	
Kennebec S.T.D.	ME0100854	15	15	15	8	6	6	4	0	5	7	9	3	1	4	0	0	0	1	
Kittery	ME0100285	7	7	7	2	0	1	1	0	0	1	0								
Lewiston	ME0100994	80	80	80	71	62	70	43	57	55	65	69	70	38	71	58	68	45	38	
Lewiston-Auburn W.P.C.A.	ME0101478	80	80	80	80	80	41	28	25	23	35	49	44	29	38	36	44	37	22	
Lincoln S.D.	ME0101796	10	10	10	3	11	2													
Lisbon	ME0100307	5	5	5	5	1	1	1	0	0	0									
Livermore Falls	ME0100315				0															
Machias	ME0100323	15	15	15	2	9	5	0	4	16	8	15	10	5	12	13	9	7	9	
Madawaska	ME 0101681	16	16	16	12	0	3	1	1	7	4	65	14	17	18	32	17	10	8	
Mechanic Falls S.D.	ME0100391	42	42	42	25	18		10	15	20	12	29	23	9	42	42	18	39	28	
Milford	ME0102695	8	8	8	8	8	8	8	8	8	8	0	8	0	4	1	3	2	1	
Milo W.D.	ME0100439	3	3	3	3	3	1	0	0	1	0	1	0	2	1					
Old Town	ME0100471	25	25	25	3	5	4	0	5	7	1	13	1	4	4	0	1	0	0	
Orono	ME0100498	30	30	28	7	12	4	0	1	2	0	12	3	6	7	3	3	2	0	
Paris U.D.	ME 0100951	5	5	5	1	0	1	0	0	1	0	2	2	2	2	0	4	0	4	
Portland & PWD	City-ME0101435 / PWD-ME0102075	100	100	100	102	81	83	58	141	71	86	88	93	58	87	104	79	88	70	
Presque Isle	ME0100561	26	26	26	26	12	14	4												
Randolph	ME0102423	23	23	23	23	23	23	19	3	2	0	8	3	1	9	7	3	2	2	
Rockland	ME0100595	23	23	23	23	18	8	5	11	6	2	0	0	0	0	0				
Saco	ME 0101117	44	44	44	33	39	44	22	36	22	32	41	24	12	12	9	10	4	21	
Sanford S.D.	ME0100617	10	10	10	10	3	1	0	0	0	0	0	1	0	0	0	0	0	0	
Skowhegan	ME0100625	160	160	160	111	111	161	95	115	77	53	81	81	55	58	17	23	21	25	
South Portland	ME0100633	23	23	23	23	23	15	12	11	10	10	20	20	5	10	10	12	13	12	
Westbrook (PWD)	ME0100846	50	50	50	30	19	16	15	33	7	13	17	31	55	50	11	12	16	13	
Winslow	ME0102628	20	20	20	10	1	0	0	0	0	0	1	0	3	3	3	2	3	9	
Winterport S.D.	ME0100749	8	8	8	8	8	8	3	3	8	1	2	0	1	1	1	0	0	0	
Yarmouth	ME0100765	4	4	4	4	4	2	1	0											
<b>Total</b>		<b>1748</b>	<b>1750</b>	<b>1753</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>547</b>	
<b>Median</b>		<b>23</b>	<b>23</b>	<b>23</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>9</b>	
<b>Mean</b>		<b>39</b>	<b>39</b>	<b>39</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>	<b>17</b>	

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

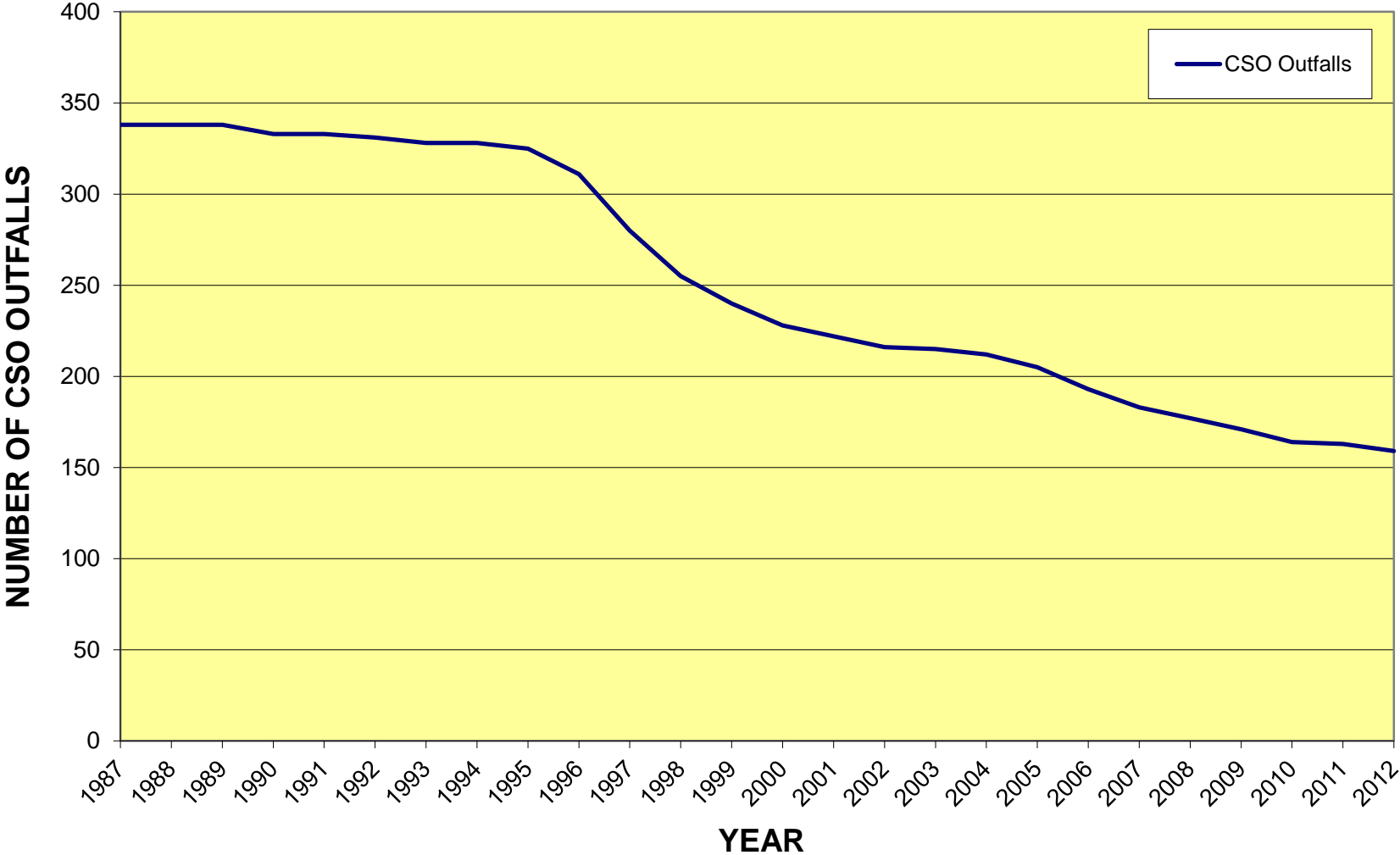
# MAINE - STATEWIDE COMBINED SEWER OVERFLOW (CSO) VOLUME DISCHARGED



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

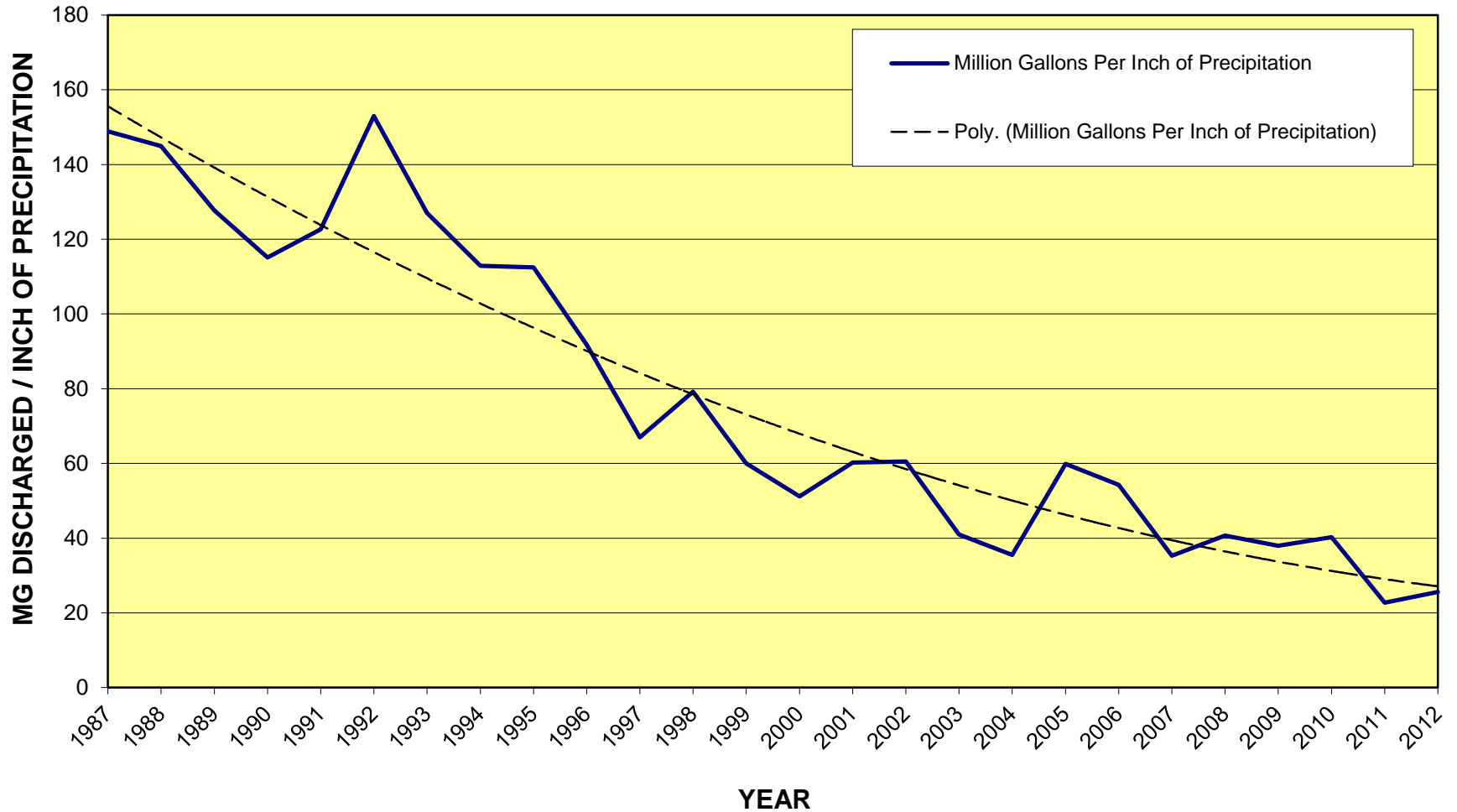


# MAINE - STATEWIDE NUMBER OF COMBINED SEWER OVERFLOW (CSO) OUTFALLS

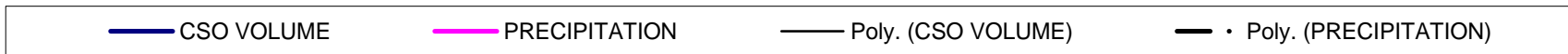
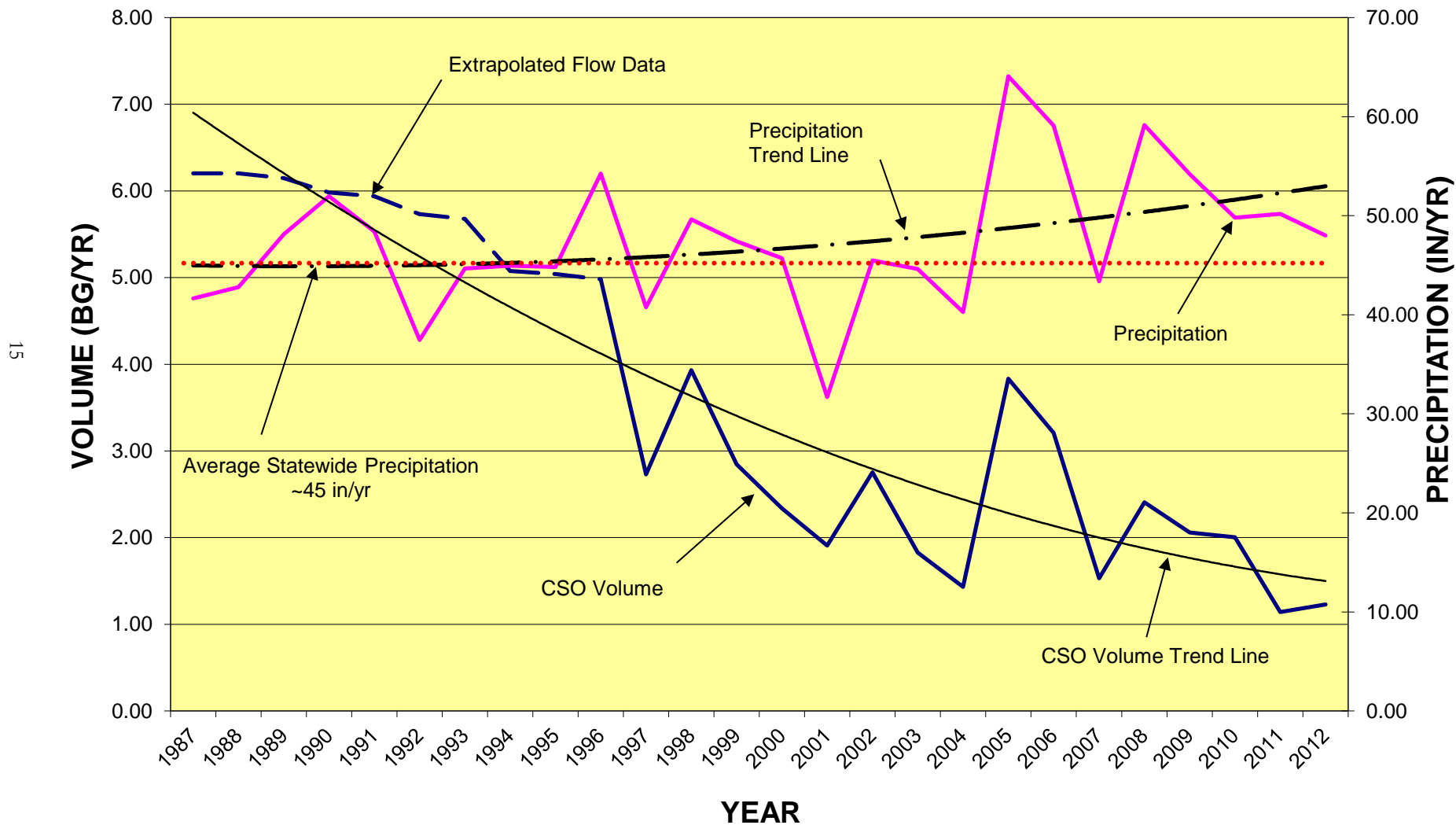




# MAINE COMBINED SEWER OVERFLOWS ANNUAL VOLUME DISCHARGED PER INCH OF PRECIPITATION



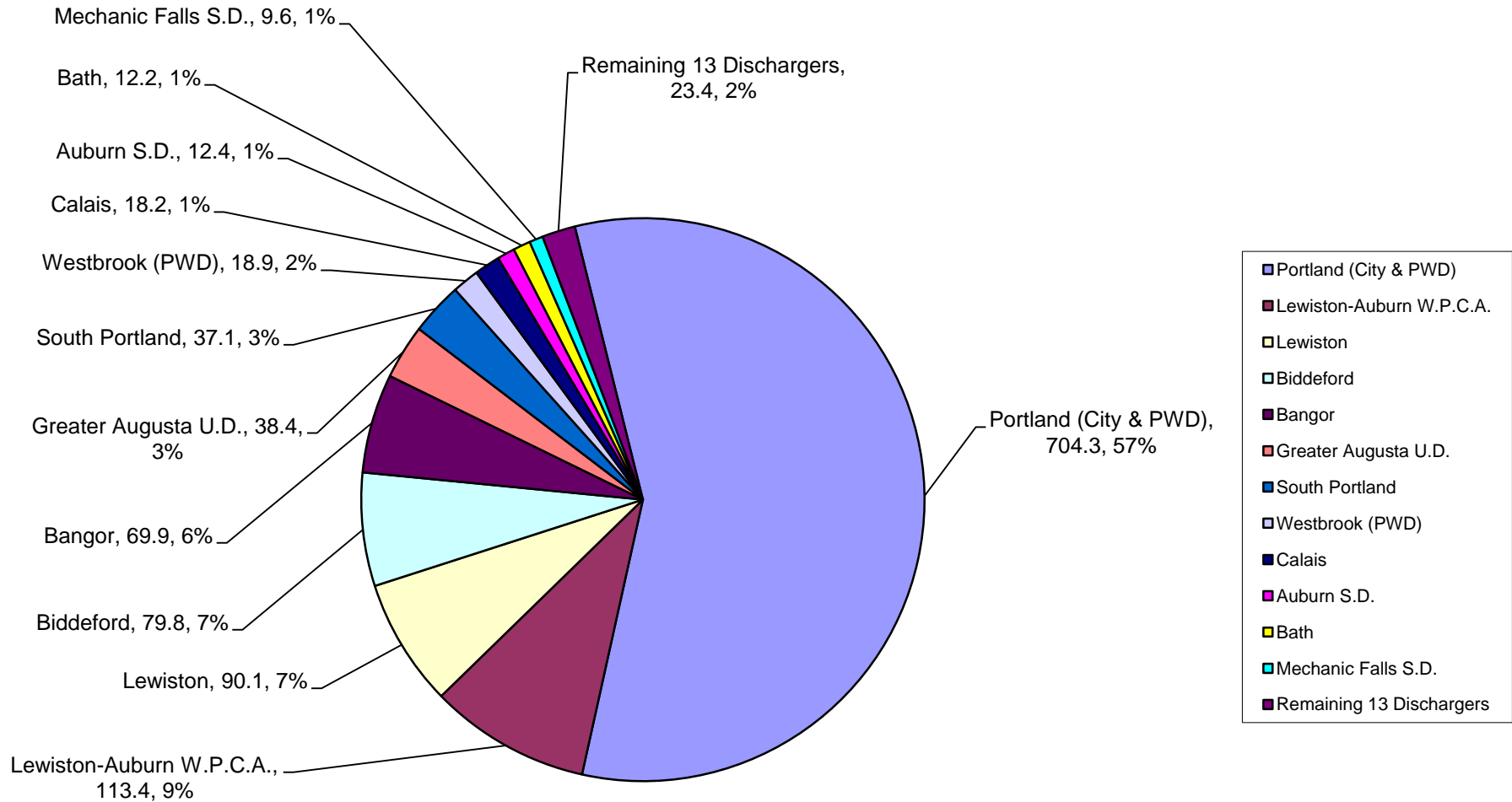
# MAINE YEARLY CSO VOLUMES AND PRECIPITATION



**Maine 2012 CSO FLOW COMPARISON  
32 CSO COMMUNITIES  
25 DISCHARGERS - 1.23 BILLION GALLONS**



16



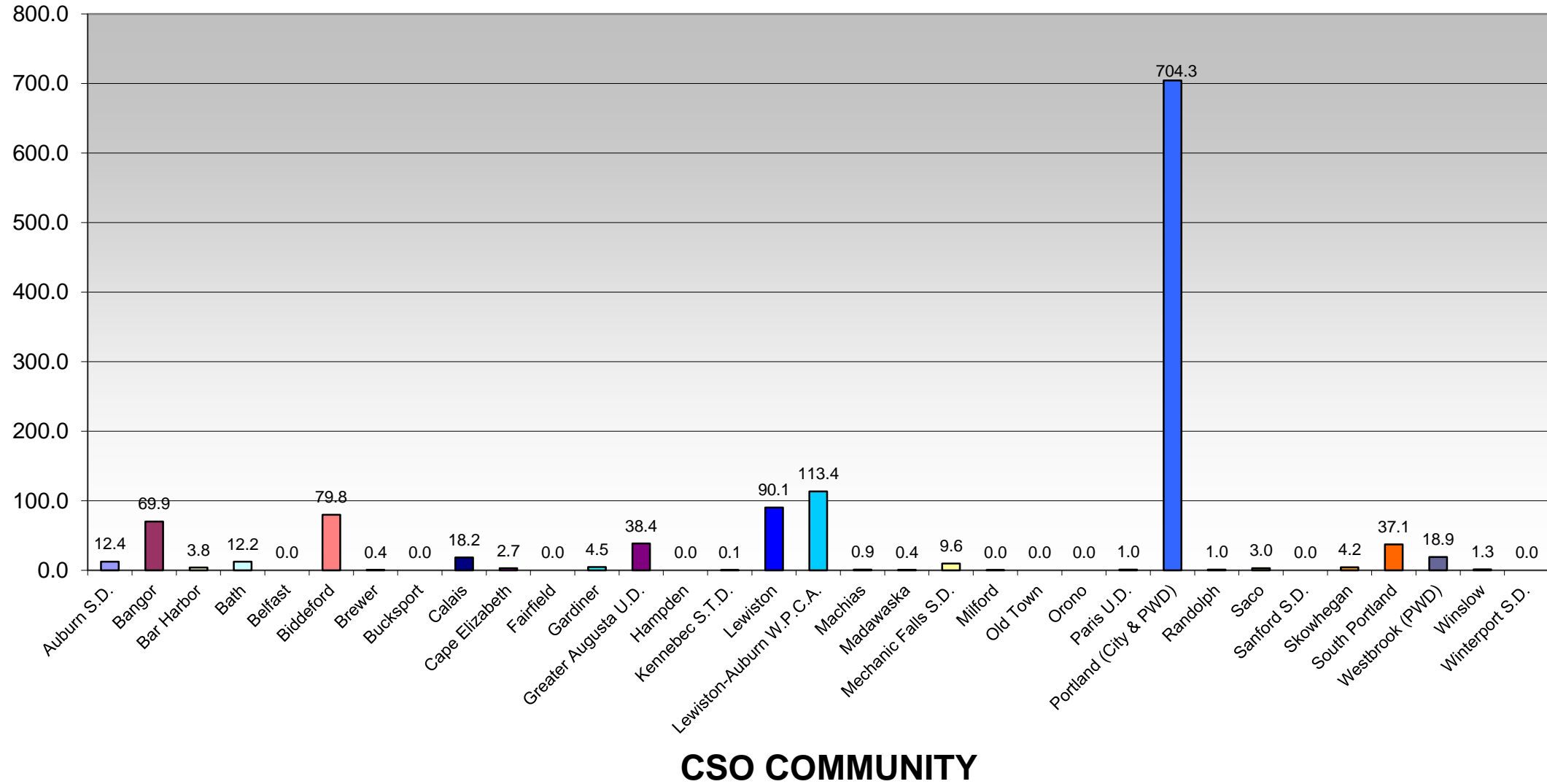
**Discharger, Overflow in Million Gallons (MG), Percent of Total**

# Maine 2012 CSO FLOW COMPARISON BY COMMUNITY

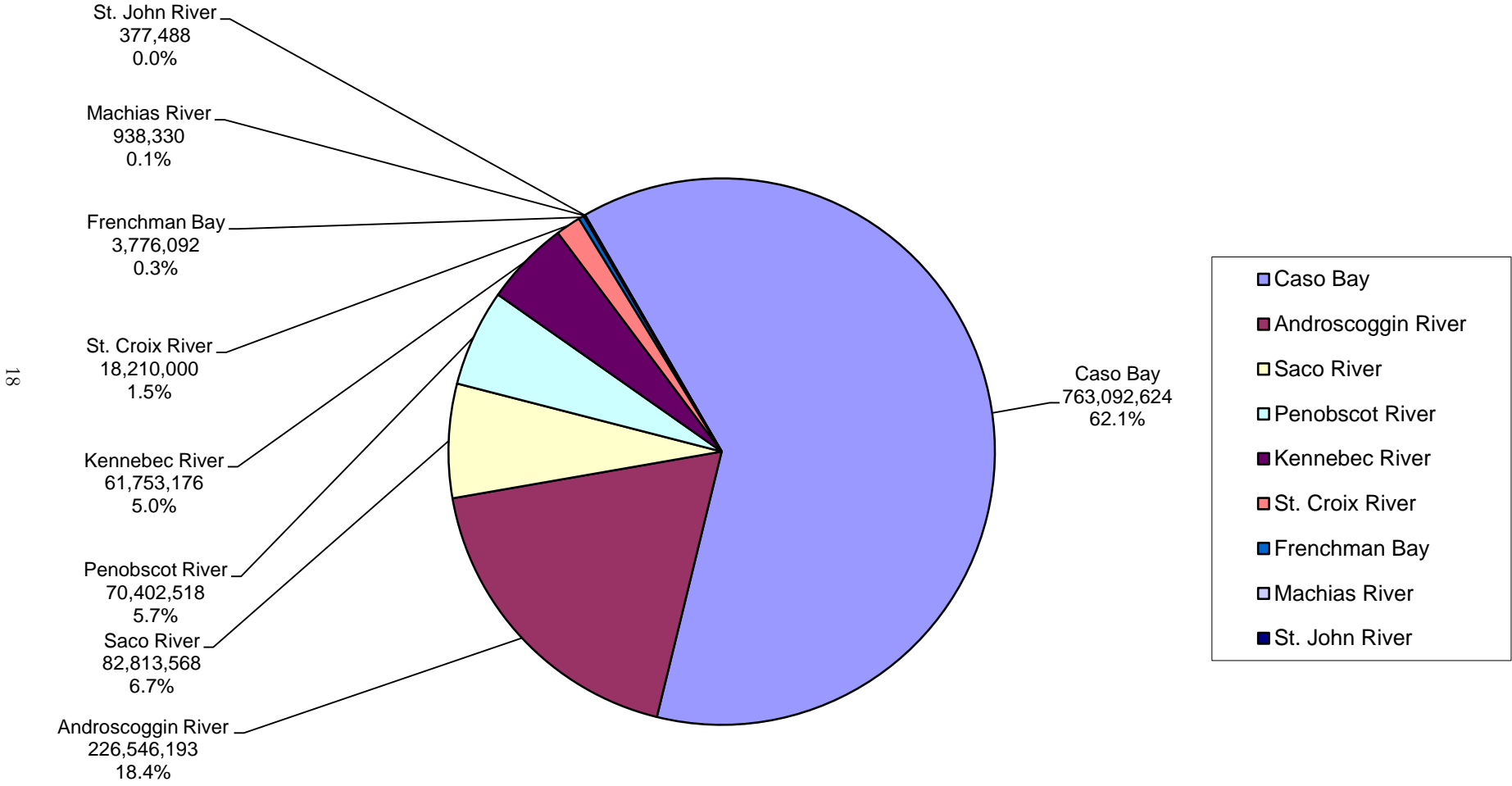
## 1.23 Billion Gallons



YEARLY CSO OVERFLOW VOLUME (MG)



# Maine 2012 CSO Watershed Flows 1.23 Billion Gallons



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

# MAINE CSO ANNUAL WATERSHED FLOWS

		Annual CSO Flows (Gallons)					
Community		2008	2009	2010	2011	2012	
Androscoggin River	Auburn SD	23,984,272	19,440,841	12,952,500	19,234,856	12,404,500	
	Lewiston-Auburn WPCA	292,244,000	207,794,000	156,986,000	108,278,048	113,380,000	
	Lewiston	152,039,341	116,557,656	113,285,042	78,521,909	90,103,658	
	Mechanic Falls SD	11,223,600	6,231,000	9,250,000	5,033,002	9,638,035	
	Paris UD	84,000	0	110,000	0	1,020,000	
<b>Sub Total</b>		<b>479,575,213</b>	<b>350,023,497</b>	<b>292,583,542</b>	<b>211,067,815</b>	<b>226,546,193</b>	
Casco Bay	Cape Elizabeth	2,567,000	3,527,000	3,955,292	1,072,000	2,735,000	
	Portland-City & PWD	883,105,087	872,751,281	780,188,153	496,288,000	704,319,257	
	South Portland	12,883,433	12,183,196	42,095,393	14,906,594	37,134,882	
	Westbrook	7,379,066	7,069,280	14,105,989	12,202,000	18,903,485	
	<b>Sub Total</b>		<b>905,934,586</b>	<b>895,530,757</b>	<b>840,344,827</b>	<b>524,468,594</b>	<b>763,092,624</b>
Frenchman Bay	Bar Harbor	12,601,889	11,935,337	6,930,405	2,563,669	3,776,092	
	<b>Sub Total</b>		<b>12,601,889</b>	<b>11,935,337</b>	<b>6,930,405</b>	<b>2,563,669</b>	<b>3,776,092</b>
Kennebec River	Augusta SD	48,965,215	15,723,000	49,670,000	31,589,000	38,408,000	
	Bath	24,383,599	11,323,060	12,930,203	10,067,181	12,199,904	
	Fairfield	0	0	0	0	0	
	Gardiner	5,000,000	1,380,000	10,453,761	4,655,000	4,455,400	
	Hallowell WD	-	-	-	-	-	
	Kennebec STD	2,209,107	0	0	0	135,444	
	Randolph	1,413,880	488,645	285,719	223,934	988,434	
	Skowhegan	61,963,453	6,073,919	7,550,855	4,757,994	4,238,875	
	Winslow	235,000	5,001	200,000	63,354	1,327,119	
<b>Sub Total</b>		<b>144,170,254</b>	<b>34,993,625</b>	<b>81,090,538</b>	<b>51,356,463</b>	<b>61,753,176</b>	
Machias River	Machias	2,328,905	4,073,938	2,791,962	1,180,678	938,330	
	<b>Sub Total</b>		<b>2,328,905</b>	<b>4,073,938</b>	<b>2,791,962</b>	<b>1,180,678</b>	<b>938,330</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	198,370	260,036	486,919	490,495	0	
	Rockland	0	0	0	0	0	
	<b>Sub Total</b>		<b>198,370</b>	<b>260,036</b>	<b>486,919</b>	<b>490,495</b>	<b>0</b>
Penobscot River	Bangor	378,640,000	347,360,000	389,300,000	146,000,000	69,940,000	
	Brewer	289,560,294	229,270,683	227,139,515	140,065,515	435,548	
	Bucksport	0	0	0	0	0	
	Dover-Foxcroft	0	0	0	0	0	
	East Millinocket	0	0	0	0	0	
	Hampden	0	500,000	500,000	500,000	0	
	Milford	88,365	66,285	52,006	407,151	26,970	
	Milo WD	750	0	0	0	0	
	Old Town	254,967	0	125,000	0	0	
	Orono	4,820,000	371,471	2,416,910	1,260,837	0	
	Winterport SD	252,000	18,000	0	0	0	
<b>Sub Total</b>		<b>673,616,376</b>	<b>577,586,439</b>	<b>619,533,431</b>	<b>288,233,503</b>	<b>70,402,518</b>	
Saco River	Biddeford	147,313,000	146,452,750	127,029,700	41,609,559	79,848,639	
	Saco	100,000	27,015	924,014	1,372,128	2,964,929	
	<b>Sub Total</b>		<b>147,413,000</b>	<b>146,479,765</b>	<b>127,953,714</b>	<b>42,981,687</b>	<b>82,813,568</b>
St. Croix River	Calais	18,989,779	21,263,750	31,134,915	16,860,000	18,210,000	
	<b>Sub Total</b>		<b>18,989,779</b>	<b>21,263,750</b>	<b>31,134,915</b>	<b>16,860,000</b>	<b>18,210,000</b>
St. John River	Madawaska	24,194,225	15,800,000	1,107,610	1,490,000	377,488	
	<b>Sub Total</b>		<b>24,194,225</b>	<b>15,800,000</b>	<b>1,107,610</b>	<b>1,490,000</b>	<b>377,488</b>
	<b>Total Annual Flow</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>	<b>1,227,909,989</b>