Maine Combined Sewer Overflow 2015 Status Report

May 2016

Contact: David P. Breau, P.E.
CSO Coordinator
Bureau of Land and Water Quality
Phone: (207) 287-7766

Document No.: DEPLQ0972H-2016

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 State House Station | Augusta, Maine 04330-0017
www.maine.gov/dep

TABLE OF CONTENTS

TABLES

CHARTS

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 31 communities (towns or cities) with CSO discharge points in their sewerage systems (down from an original 60). These communities collectively have 143 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. In the past three years statewide, total annual discharges have ranged from approximately 425 to 715 million gallons from CSOs (down from an estimated original volume of 6.2 billion gallons in 1989).
- 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," took effect. 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 $503.5 million in CSO abatement ($23.0 million in 2015 alone) and anticipate their CSO needs for the next five years and beyond to be approximately $286.2 million.

Where Are We Now?

2015 Status

1) In 2015, the 31 CSO Communities reduced the total number of CSO discharge locations by two (2), down from 145 to 143 (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 Auburn (1) and the Greater Augusta Utilities District (1). The chart on page 13, **Maine Statewide Number of Combined Sewer Overflow Outfalls**, shows a 58% reduction in the number of CSO outfalls since 1989.

2) In 2015, the CSO Communities reported a total of 341 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 CSO locations within a community experiences a 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 2015, twenty-four (24) CSO Communities and two (2) non-communities (i.e. regional treatment facilities) reported at least one combined sewer overflow discharge and four (4) communities reported no overflows at all. One community experienced surcharging with meter malfunctions and was not able to quantify overflow volumes. Of the twenty-six (26) that reported discharges, twelve (12) reported discharging less volume in 2015 than in 2014 and fourteen (14) reported discharging more volume.

4) The maximum number of overflow event days reported in 2015 from a single community was fifty-eight (58) events. The average (mean) number of discharge events for all communities was eleven (11) event days and the median was two (2) event days. Additional information can be found in the table on page 10, **Maine CSO Community Annual Number of CSO Discharge Events**.

5) The average annual precipitation in Maine is approximately 47 inches. In 2015, the annual precipitation measured by CSO Communities varied significantly from 23.60 to 47.56 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 projects continue to be completed, overflow volumes are becoming less influenced by precipitation events.

6) The volume of untreated combined sewage discharged statewide in 2015 was reported at 438.5 million 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 2015 CSO Flow Comparison** pie chart on page 16 and the **Maine 2015 CSO**

Flow Comparison by Community bar chart on page 17 show graphical comparisons of these overflow volumes between the CSO Communities.

7) Last year turned out to be a below average weighted precipitation year (39.51"). It also fell below the weighted average for the previous five years (48.13") and below the weighted average since 1989 (47.42"). Due to this decrease in annual precipitation and changes in precipitation intensities and frequencies, overflows decreased by 276 million gallons or 39%, from 714.5 million gallons in 2014 to 438.5 million gallons in 2015. If one compares the 2015 overflows with the average overflows for the previous five years, it shows a reduction of approximately 60% while the rainfall in 2015 was only 18% less than the average rainfall for the same five year period.

8) In 2015, the top twelve (12) CSO discharge communities accounted for approximately 97% of the total annual volume of combined sewage being discharged in the State, while the remaining fourteen (14) CSO communities accounted for approximately 3% of the annual discharge volume. See the **2014 CSO Flow Comparison** pie chart on page 16.

9) The untreated CSO discharges from the City of Portland and the Portland Water District in the greater Portland area accounted for approximately 58% of the State of Maine's total untreated overflow volume in 2015; see the **2015 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 from the remaining CSO Communities decreased by approximately 39% from 300.2 million gallons in 2014 to 183.8 million gallons in 2015.

10) The chart on page 18 – **2015 CSO Watershed Flows**, shows a graphical representation of the CSO volumes discharged by major watershed. In 2015, Casco Bay received approximately 61.7% of the statewide CSO volume discharged, followed by the Androscoggin River at 14.2%, the Penobscot River at 9.6%, the Kennebec River at 8.1%, the Saco River at 4.4%, and the St. Croix River at 1.2%. Discharges to Frenchman Bay and the Machias River accounted for the remaining ~0.7% of combined sewer overflow volumes. The Table on page 19 – **Maine CSO Annual Watershed Flows**, shows the actual CSO volumes by discharger associated with the individual watersheds for 2015, as well as for the previous four years.

11) Abatement of CSOs is a costly endeavor. To date Maine CSO Communities have reported expending a total of $503.5 million to implement their CSO abatement project programs. In their 2015 Annual CSO Progress Reports submitted to the State, these CSO Communities reported expending $23.0 million on abatement work in 2015 alone. They also estimated that their future needs to complete their CSO abatement programs will total an additional $286.2+ 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 are not necessarily 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 being assessed in this Annual Report is which beaches and shellfishing areas may have been impacted by CSO discharges.

In 2015, seven (7) CSO Communities could possibly have had impacts on thirteen (13) beach areas by their CSO discharges. They were: Bar Harbor (Town Beach off Town Pier & Hulls Cove); Biddeford/Saco (Hills Beach, Biddeford Pool, Middle Beach, Fortunes Rock Beach & 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).

The following beach advisories were reported to the Maine Healthy Beaches web-site (www.mainecoastdata.org/public/CurrentBeachStatus.aspx) in 2015 due to rainfall or contamination , though not specifically identified as being caused by CSO activity: (Bar Harbor, Hulls Cove_ 1 Advisory) (Bar Harbor, Town Beach_ 1 Advisory) (Biddeford/Saco, Biddeford Pool Beach_ 2 Advisories) (Portland, East End_ 13 Advisories) and (South Portland, Willard Beach_ 20 Advisories).

In 2015, six (6) CSO Communities listed shellfishing areas that could be impacted by their CSO discharges (Bar Harbor, Biddeford, Calais, Machias, Portland and South Portland). Of these, five (5) communities (Bar Harbor, Calais, Machias, Portland and South Portland) reported closures, which may or may not have been 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 the next 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 85 - 92%. This percentage reduction is stated as an approximate range 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 70 - 80%, 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 Overflows 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 between 10 and 26 million gallons per inch of precipitation over the past five years - 11 million gallons per inch of precipitation in 2015. 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.

7) As previously mentioned, 2015 was a dry year. That said, many CSO communities experienced a significant storm event on or about September 30th. That one storm dropped rain at frequencies ranging from a 10 year storm up to a 100 year plus storm for 21 of the 27 dischargers. That one storm also accounted for 44% of the total annual state discharge volume and was the only discharge day for 8 CSO communities.

MAINE – COMBINED SEWER OVERFLOW (CSO) COMMUNITY LIST

(As of December 31, 2015)

	COMMUNITY/PERMITTEE	CSOs	Number of CSOs & Receiving Water
1.	**AUBURN SEWERAGE DISTRICT**	1	1-Androscoggin Rv.
2.	BANGOR	9	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.	BATH	4	4-Kennebec Rv.
6.	BELFAST	2	2-Passagassawakeag River/Belfast Harbor
7.	BIDDEFORD	8	8-Saco Rv.
8.	BREWER	4	3-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** (Co-Permittees - So. Portland, PWD, & Cape Eliz.)	1	1-Atlantic Ocean
12.	GARDINER	1	1-Kennebec Rv.
13.	GREATER AUGUSTA UTILITY DISTRICT (GAUD) (Includes **Hallowell Sanitary Sewers & CSO**	18	1-Kennedy Bk., 16-Kennebec Rv.
14.	**HAMPDEN**	1	1-Souadabscook Str.
15.	KENNEBEC SANITARY TREATMENT District (KSTD)	3	3-Kennebec Rv.
16.	**LEWISTON**	10	5-Androscoggin Rv., 1-Goff Bk./Hart Bk., 4-Jepson Bk.
17.	LEWISTON-AUBURN Water Pollution Control Authority (LAWPCA)	1	1-Androscoggin Rv.
18.	MACHIAS	2	2-Machias Rv.
19.	MADAWASKA	2	2-St. John Rv.
20.	MECHANIC FALLS SANITARY DISTRICT	2	2-Little Androscoggin Rv.
21.	**MILFORD**	1	1-Penobscot Rv.
22.	OLD TOWN	3	2-Penobscot Rv., 1-Stillwater Rv.
23.	ORONO	1	1-Penobscot Rv.
24.	PARIS UD	1	1-Little Androscoggin Rv.
25.	**PORTLAND – CITY**	11	6-Back Cove, 2-Capisic Bk., 2-Portland Harbor., 1-Nason Bk. (marsh)
26.	PORTLAND – PORTLAND WATER DISTRICT (PWD)	20	9-Back Cove, 3-Casco Bay, 6-Fore Rv., 2- Portland Harbor
27.	**RANDOLPH**	1	1-Kennebec Rv.
28.	ROCKLAND	1	1-Rockland Harbor
29.	SACO	4	1-Bear Bk., 3-Saco Rv.
30.	SKOWHEGAN	7	7-Kennebec Rv.
31.	SOUTH PORTLAND	6	1-Barberry Ck., 1-Fore Rv., 1-Calvery Pond., 2-Portland Hbr., 1-Long Creek
32.	WESTBROOK	5	5-Presumpscot Rv.
33.	**WINSLOW**	2	3-Sebasticook Rv.
34.	WINTERPORT SEWERAGE DISTRICT	1	1-Penobscot Rv.
	TOTAL CSOs	143	

34 CSO Permits, permitting 31 CSO Towns/Cities
Two or more permits in one CSO Town/City
Two CSO Towns/Cities covered in one permit
Bold = 9 communities with sewer system only. Sewers discharge to a POTW controlled by another entity.

MAINE CSO COMMUNITY FLOW DATA

Annual Volumes (Gallons)

*** No longer a CSO Community

*meter error

Community	NPDES Permit No.	Year 1987	1988	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Auburn S.D.	ME0100005	99,720,000	99,720,000	199,674,605	66,307,631	19,197,928	4,687,316	37,155,818	28,936,137	23,622,547	23,984,272	19,440,841	12,952,500	19,234,856	12,404,500	3,717,000	1,286,000	2,928,519
Bangor	ME0100781	635,000,000	635,000,000	88,430,000	161,000,000	204,000,000	193,870,000	303,160,000	272,750,000	150,580,000	378,640,000	347,360,000	389,300,000	146,000,000	69,940,000	32,140,000	87,748,000	40,109,000
Bar Harbor	ME0101214 & ME0102466	32,000,000	32,000,000	384,531	2,729,389	2,845,621	290,133	13,661,958	5,102,820	8,719,436	12,601,889	11,935,337	6,930,405	2,563,669	3,776,092	407,010	1,561,139	2,335,692
Bath	ME0100021	600,000,000	600,000,000	6,173,760	4,341,921	16,496,467	6,055,666	60,338,026	36,105,688	20,783,335	24,383,599	11,323,060	12,930,203	10,067,181	12,199,904	3,297,259	4,990,910	2,727,901
Belfast	ME0101532	736,000	736,000	46,000	0	0	0	1,796,747	485,451	1,035,392	198,370	260,036	486,919	490,495	0	0	0	0
Biddeford	ME0100048	400,000,000	400,000,000	145,356,657	415,694,234	136,417,937	101,087,776	301,372,131	163,423,532	150,304,402	147,313,000	146,452,750	127,029,700	41,609,559	79,848,639	43,252,373	34,049,095	18,358,229
Brewer	ME0100072	750,000,000	750,000,000	243,176,051	417,536,641	509,412,078	279,830,419	592,984,187	247,538,580	231,283,607	289,560,294	229,270,683	227,139,515	140,065,515	435,548	58,310	139,280	465,000
Bucksport	ME0100111	53,000,000	53,000,000	53,000,000	53,000,000	53,000,000	371,970	16,623,000	5,546,501	20,000	0	0	0	0	0	0	0	0
Calais	ME0100129	42,000,000	42,000,000	42,000,000	42,000,000	26,280,000	5,290,000	42,140,000	20,409,850	22,060,520	18,989,779	21,263,750	31,134,915	16,860,000	18,210,000	18,311,206	20,775,288	5,292,778
Cape Elizabeth	ME0102806	5,400,000	5,400,000	100,000	0	630,000	1,325,000	4,807,000	5,365,000	3,254,000	2,567,000	3,527,000	3,955,292	1,072,000	2,735,000	41,000	1,440,000	277,000
Corinna S.D.***	ME0100153	40,000,000	40,000,000	25,000	2,000	2,000	0											
Dover-Foxcroft***	ME0100501	16,000	16,000	0	0	0	0	199,000	0									
East Millinocket***	ME0100196	1,200,000	1,200,000	0	0	0	0	0	0									
Fairfield***	ME0102393	300,000	300,000	221,954	65,296	0	0	0	0	0	0	0	0	0	0	0		
Fort Kent U.D.***	ME0102369	3,000	3,000	0	0	2,400	41,000	600,000										
Gardiner	ME0101702	44,000,000	44,000,000	6,487,000	11,528,900	13,149,700	5,113,000	46,616,000	10,269,400	2,487,000	5,000,000	1,380,000	10,453,761	4,655,000	4,455,400	1,287,000	1,950,000	2,299,300
Greater Augusta U.D.	ME0100013	72,554,000	72,554,000	2,705,324	2,191,067	7,089,337	3,881,421	26,553,055	14,539,424	10,000,000	48,965,215	15,723,000	49,670,000	31,589,000	38,408,000	26,901,000	17,646,000	21,680,000
Hallowell W.D. - 2008 GAUD	ME0101010	350,000	350,000	0	0	100,000	0	700,000	150,000	150,000	-	-	-	-	-	-	-	-
Hampden	ME0102512	1,201,000	39,600	0	0	262,900	0	43,862,280	0	85,000	0	500,000	500,000	500,000	0	0	0	24,105
Kennebec S.T.D.	ME0100854	2,500,000	2,500,000	421,162	0	858,175	341,948	2,438,706	385,734	1,136,649	2,209,107	0	0	0	135,444	0	0	1,797,554
Kittery***	ME0100285	350,000	350,000	50,000	0	0	33,900	0										
Lewiston	ME0100994	208,900,000	208,900,000	61,370,660	176,395,415	199,236,985	82,766,343	249,891,633	159,807,018	90,983,189	152,039,341	116,557,656	113,285,042	78,521,909	90,103,658	32,772,894	21,355,331	30,574,217
Lewiston-Auburn W.P.C.A.	ME0101478	480,000,000	480,000,000	135,764,000	111,036,000	113,088,000	83,045,000	480,025,000	265,521,000	142,286,000	292,244,000	207,794,000	156,986,000	108,278,048	113,380,000	63,567,000	68,569,000	27,838,000
Lincoln S.D.***	ME0101796	2,400,000	2,400,000															
Lisbon***	ME0100307	600,000	600,000	83,000	0	0	0											
Livermore Falls***	ME0100315			0														
Machias	ME0100323	7,000,000	7,000,000	0	722,293	2,533,245	2,124,118	6,646,222	3,008,025	2,263,720	2,328,905	4,073,938	2,791,962	1,180,678	938,330	1,857,988	2,202,444	1,067,647
Madawaska	ME 0101681	3,200,000	3,200,000	11,398	3,892	100,000	1,749,764	8,215,460	3,700,002	2,667,765	24,194,225	15,800,000	1,107,610	1,490,000	377,488	349,400	1,830,563	0
Mechanic Falls S.D.	ME0100391	18,000,000	18,000,000	3,923,998	1,001,489	2,389,769	963,114	11,765,409	9,419,000	11,853,000	11,223,600	6,231,000	9,250,000	5,033,002	9,638,035	3,663,997	1,385,675	1,013,807
Milford	ME0102695	220,000	220,000	220,000	220,000	220,000	220,000	0	211,070	0	88,365	66,285	52,006	407,151	26,970	0	10,000	25,000
Milo W.D.***	ME0100439	10,000	10,000	0	0	2,000	0	10,000	0	501,000	750							
Old Town	ME0100471	6,300,000	6,300,000	0	1,597,324	6,296,537	425,832	4,779,340	321,105	770,699	254,967	0	125,000	0	0	0	0	30,000
Orono	ME0100498	31,000,000	31,000,000	0	494,000	1,179,000	0	18,467,330	1,314,000	7,360,000	4,820,000	371,471	2,416,910	1,260,837	0	0	0	1,320,000
Paris U.D.	ME 0100951	1,000,000	1,000,000	0	0	175,000	0	288,000	173,500	206,000	84,000	0	110,000	0	1,020,000	0	0	0
Portland & PWD	City-ME0101435 / PWD-ME0102075	1,800,000,000	1,800,000,000	807,157,162	1,245,153,000	454,680,000	607,351,945	1,296,000,000	1,816,525,856	589,203,712	883,105,087	872,751,281	780,188,153	496,288,000	704,319,257	179,403,901	414,421,500	254,663,330
Presque Isle***	ME0100561	27,500,000	27,500,000	113,000														
Randolph	ME0102423	10,000,000	10,000,000	9,878,793	196,591	432,500	0	1,058,039	266,256	459,476	1,413,880	488,645	285,719	223,934	988,434	50,054	101,183	0
Rockland***	ME0100595	47,000,000	47,000,000	20,000,000	20,000,000	20,000,000	7,000,000	0	0	0	0	0						
Saco	ME 0101117	176,000,000	176,000,000	17,720,027	4,316,465	5,758,842	10,313,025	176,214,902	38,451,182	1,950,000	100,000	27,015	924,014	1,372,128	2,964,929	1,100,985	1,739,425	1,057,000
Sanford S.D.***	ME0100617	4,000,000	4,000,000	0	0	0	0	0	15,000	0	0	0	0	0	0			
Skowhegan	ME0100625	48,000,000	48,000,000	12,315,897	10,883,416	22,768,111	12,082,768	47,873,323	31,314,358	21,596,631	61,963,453	6,073,919	7,550,855	4,757,994	4,238,875	4,746,538	3,861,193	6,786,698
South Portland	ME0100633	500,000,000	500,000,000	49,503,494	4,467,429	7,896,125	19,812,914	26,810,104	26,118,706	15,727,553	12,883,433	12,183,196	42,095,393	14,906,594	37,134,882	1,858,579	15,531,600	11,161,602
Westbrook	ME0100846	50,000,000	50,000,000	2,187,000	271,000	7,000	944,000	11,119,000	40,636,729	15,879,000	7,379,066	7,069,280	14,105,989	12,202,000	18,903,485	6,222,000	11,932,000	4,423,000
Winslow	ME0102628	1,300,000	1,300,000	0	0	0	0	23,652	0	725,000	235,000	5,001	200,000	63,354	1,327,119	7,070	0	164,549
Winterport S.D.	ME0100749	680,000	680,000	70,500	144,000	570,000	91,000	677,800	0	102,000	252,000	18,000	0	0	0	0	60,000	90,000
Yarmouth***	ME0100765	1,000	1,000	200	0													
Total		6,203,441,000	6,202,279,600	1,908,571,173	2,753,299,393	1,827,077,657	1,431,109,372	3,834,873,122	3,207,810,924	1,530,056,633	2,409,022,597	2,057,947,144	2,003,957,863	1,140,692,904	1,227,909,989	425,012,564	714,585,626	438,509,928
Total In Billion Gallons		6.20	6.20	1.91	2.75	1.83	1.43	3.83	3.21	1.53	2.41	2.06	2.00	1.14	1.23	0.43	0.71	0.44

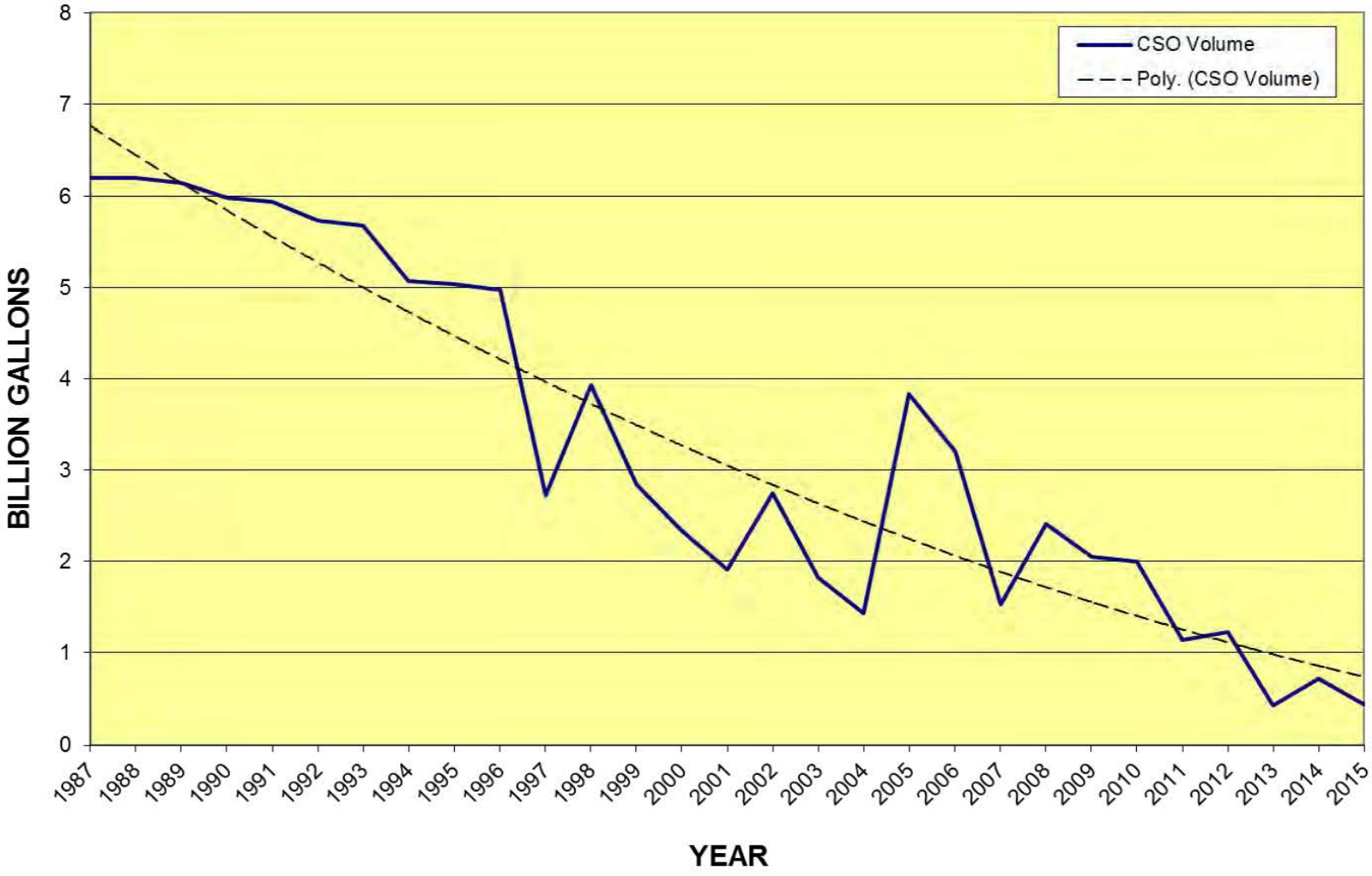
MAINE CSO COMMUNITY ANNUAL NUMBER OF CSO DISCHARGE EVENTS

Annual Number of CSO Discharge Events

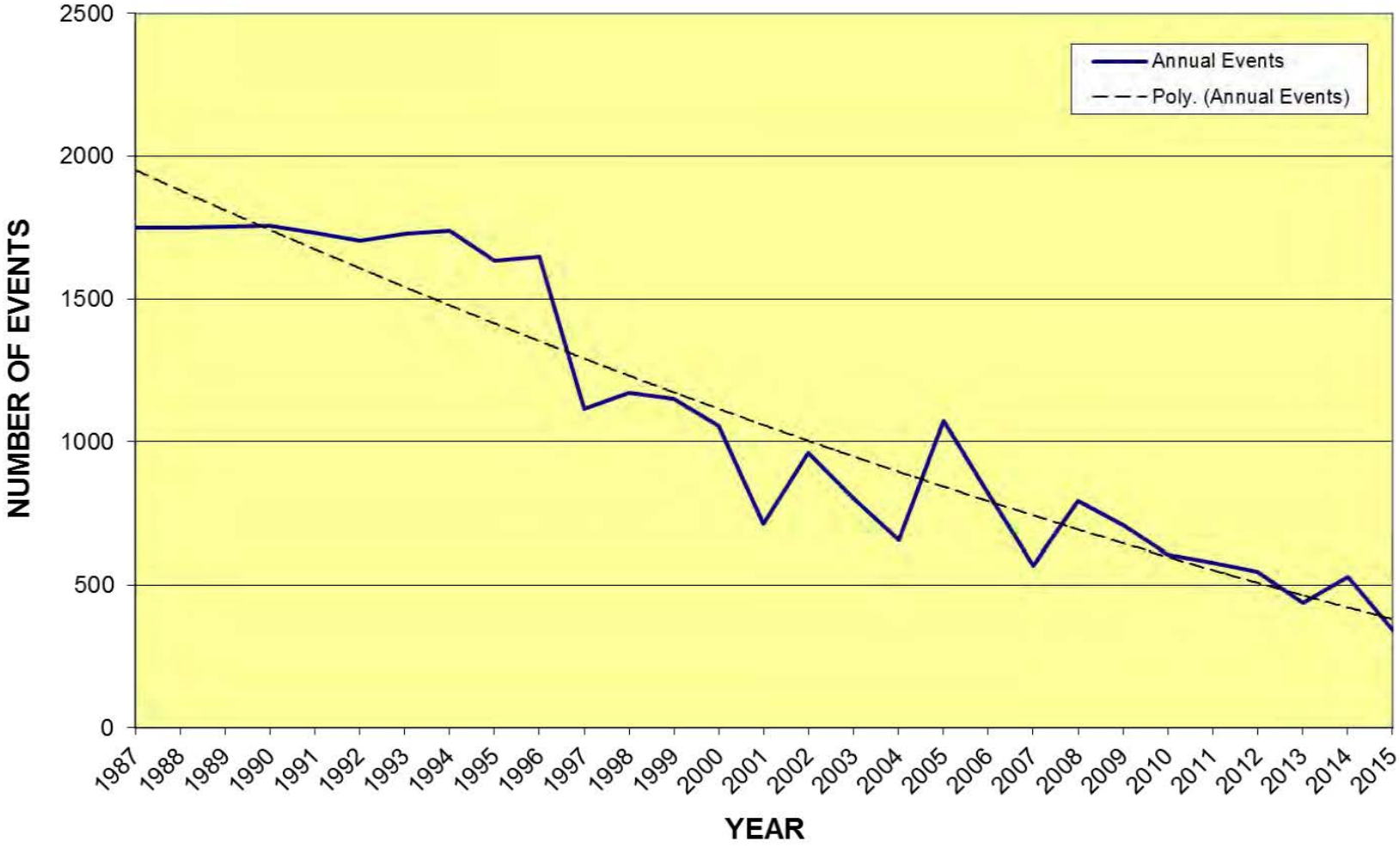
No longer a CSO Community

Community	NPDES Permit No.	Year																													
		1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Auburn S.D.	ME0100005	80	80	80	80	80	80	21	21	10	10	7	7	7	7	44	67	62	24	58	37	42	59	61	37	11	8	5	5	2
Bangor	ME0100781	53	53	53	53	52	37	46	49	49	41	38	44	33	37	20	40	49	42	46	58	25	65	78	73	54	29	27	34	20
Bar Harbor	ME0101214 & ME0102466	155	155	155	155	155	155	155	155	155	155	154	47	98	44	7	21	16	5	22	18	10	27	28	19	6	13	6	17	5
Bath	ME0100021	64	64	64	64	64	64	64	64	64	64	64	30	37	21	10	25	23	20	33	32	25	29	21	20	12	23	18	18	8
Belfast	ME0101532	7	7	7	7	7	7	7	7	7	7	7	5	7		1	0	0	0	5	3	5	4	3	6	3	0	0	0	1
Biddeford	ME0100048	180	180	180	180	180	180	180	180	180	180	94	147	162	184	140	150	93	61	104	82	70	53	46	28	100	146	77	88	48
Brewer	ME0100072	95	95	95	95	95	95	66	66	66	66	22	92	95	80	53	72	66	72	78	45	38	59	56	50	45	5	3	3	1
Bucksport	ME0100111	53	53	53	53	53	53	53	53	53	53	53	10	17	10	32	24	25	8	24	18	2	0	0	0	0	0	0	0	0
Calais	ME0100129	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	9	15	5	8	10	14	8	6	14	8	14	6
Cape Elizabeth	ME0102806	5	5	5	5	5	5	5	5	5	5	2	3	5	5	3	0	2	5	20	20	5	11	17	12	6	11	2	12	2
Corinna S.D.	ME0100153	30	30	30	30	30	30	30	30	30	30	15	16	26	23	19	1	1	0											
Dover-Foxcroft	ME0100501	8	8	8	8	8	2	8	6	1	4	0	3	0	1	0	0	0	0	2	0									
East Millinocket	ME0100196	11	11	11	11	11	11	11	11	11	11	11	11	0	0	0	0	0	0	0	0									
Fairfield	ME0102393	15	15	15	15	15	15	15	15	15	15	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0		
Fort Kent U.D.	ME0102369	10	10	10	10	10	10	10	10	10	10			0	2	0	0	2	1	4										
Gardiner	ME0101702	40	40	40	40	40	40	40	40	40	40	5	19	11	13	9	13	24	11	41	14	2	8	2	12	6	6	3	3	2
Greater Augusta U.D.	ME0100013	80	80	80	80	80	80	80	80	80	80	39	79	59	73	25	58	70	58	73	50	29	34	35	32	37	29	22	29	17
Hallowell W.D. - 2008 GAU	ME0101010	14	14	14	14	14	14	14	14	14	14	3	4	6	3	0	0	2	0	14	3	3	-	-	-	-	-	-	-	-
Hampden	ME0102512	1	3	8	10	7	4	17	18	8	14	8	1	11	9	0	0	2	0	13	0	1	0	1	1	1	0	0	0	1
Kennebec S.T.D.	ME0100854	15	15	15	15	15	15	15	15	15	15	15	8	6	6	4	0	5	7	9	3	1	4	0	0	0	1	0	0	1
Kittery	ME0100285	7	7	7	7	7	7	7	7	7	7	3	2	0	1	1	0	0	1	0										
Lewiston	ME0100994	80	80	80	80	80	80	80	80	80	80	46	71	62	70	43	57	55	65	69	70	38	71	58	68	45	38	27	23	37
Lewiston-Auburn W.P.C.A.	ME0101478	80	80	80	80	80	80	80	80	80	80	80	80	80	41	28	25	23	35	49	44	29	38	36	44	37	22	32	26	17
Lincoln S.D.	ME0101796	10	10	10	10	10	10	10	10	10	5	1	3	11	2															
Lisbon	ME0100307	5	5	5	5	5	5	5	5	5	5	5	5	1	1	1	0	0	0											
Livermore Falls	ME0100315											0	0																	
Machias	ME0100323	15	15	15	15	5	7	3	9	3	3	3	2	9	5	0	4	16	8	15	10	5	12	13	9	7	9	6	13	7
Madawaska	ME 0101681	16	16	16	16	16	16	91	91	27	26	16	12	0	3	1	1	7	4	65	14	17	18	32	17	10	8	3	7	0
Mechanic Falls S.D.	ME0100391	42	42	42	42	42	42	42	42	42	42	24	25	18		10	15	20	12	29	23	9	42	42	18	39	28	17	30	17
Milford	ME0102695	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	0	8	0	4	1	3	2	1	0	1	1
Milo W.D.	ME0100439	3	3	3	3	3	3	3	3	3	3	3	3	3	1	0	0	1	0	1	0	2	1							
Old Town	ME0100471	25	25	25	25	25	25	25	25	25	25	25	3	5	4	0	5	7	1	13	1	4	4	0	1	0	0	0	0	1
Orono	ME0100498	30	30	28	29	19	12	25	27	18	37	3	7	12	4	0	1	2	0	12	3	6	7	3	3	2	0	0	0	2
Paris U.D.	ME 0100951	5	5	5	5	5	5	5	5	5	5	0	1	0	1	0	0	1	0	2	2	2	2	0	4	0	4	0	0	0
Portland & PWD	City-ME0101435 / PWD-ME0102075	100	100	100	100	100	100	100	100	100	100	61	102	81	83	58	141	71	86	88	93	58	87	104	79	88	70	63	75	58
Presque Isle	ME0100561	26	26	26	26	26	26	26	26	26	26	17	26	12	14	4														
Randolph	ME0102423	23	23	23	23	23	23	23	23	23	23	23	23	23	23	19	3	2	0	8	3	1	9	7	3	2	2	1	2	0
Rockland	ME0100595	23	23	23	23	23	23	23	23	23	23	12	23	18	8	5	11	6	2	0	0	0	0	0						0
Saco	ME 0101117	44	44	44	44	44	44	44	44	44	44	36	33	39	44	22	36	22	32	41	24	12	12	9	10	4	21	15	19	13
Sanford S.D.	ME0100617	10	10	10	10	10	10	10	10	10	10	10	10	3	1	0	0	0	0	0	1	0	0	0	0	0	0	0		
Skowhegan	ME0100625	160	160	160	160	160	160	160	160	160	160	108	111	111	161	95	115	77	53	81	81	55	58	17	23	21	25	36	28	20
South Portland	ME0100633	23	23	23	23	23	23	23	23	23	23	21	23	23	15	12	11	10	10	20	20	5	10	10	12	13	12	7	9	2
Westbrook (PWD)	ME0100846	50	50	50	50	50	50	50	50	50	50	34	30	19	16	15	33	7	13	17	31	55	50	11	12	16	13	60	70	49
Winslow	ME0102628	20	20	20	20	20	20	20	20	20	20	10	10	1	0	0	0	0	0	1	0	3	3	3	2	3	9	1	0	1
Winterport S.D.	ME0100749	8	8	8	8	8	8	8	8	8	8	8	8	8	8	3	3	8	1	2	0	1	1	1	0	0	0	0	1	2
Yarmouth	ME0100765	4	4	4	4	4	4	4	4	4	4	0	4	4	2	1	0													
Total		1748	1750	1753	1756	1732	1703	1727	1737	1632	1646	1113	1170	1150	1053	712	959	800	654	1074	816	568	792	709	606	576	547	439	527	341

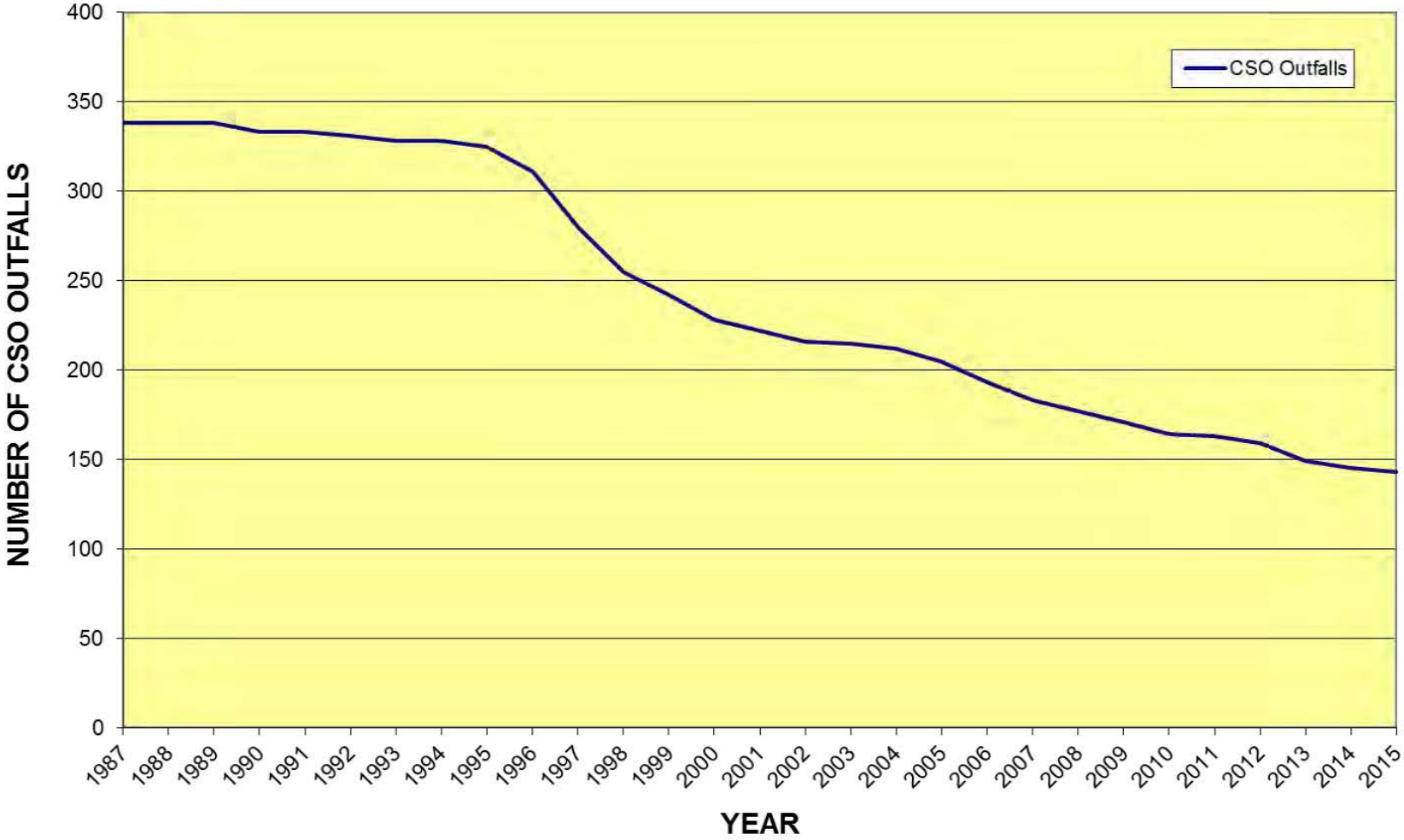
MAINE - STATEWIDE
COMBINED SEWER OVERFLOW (CSO)
VOLUME DISCHARGED



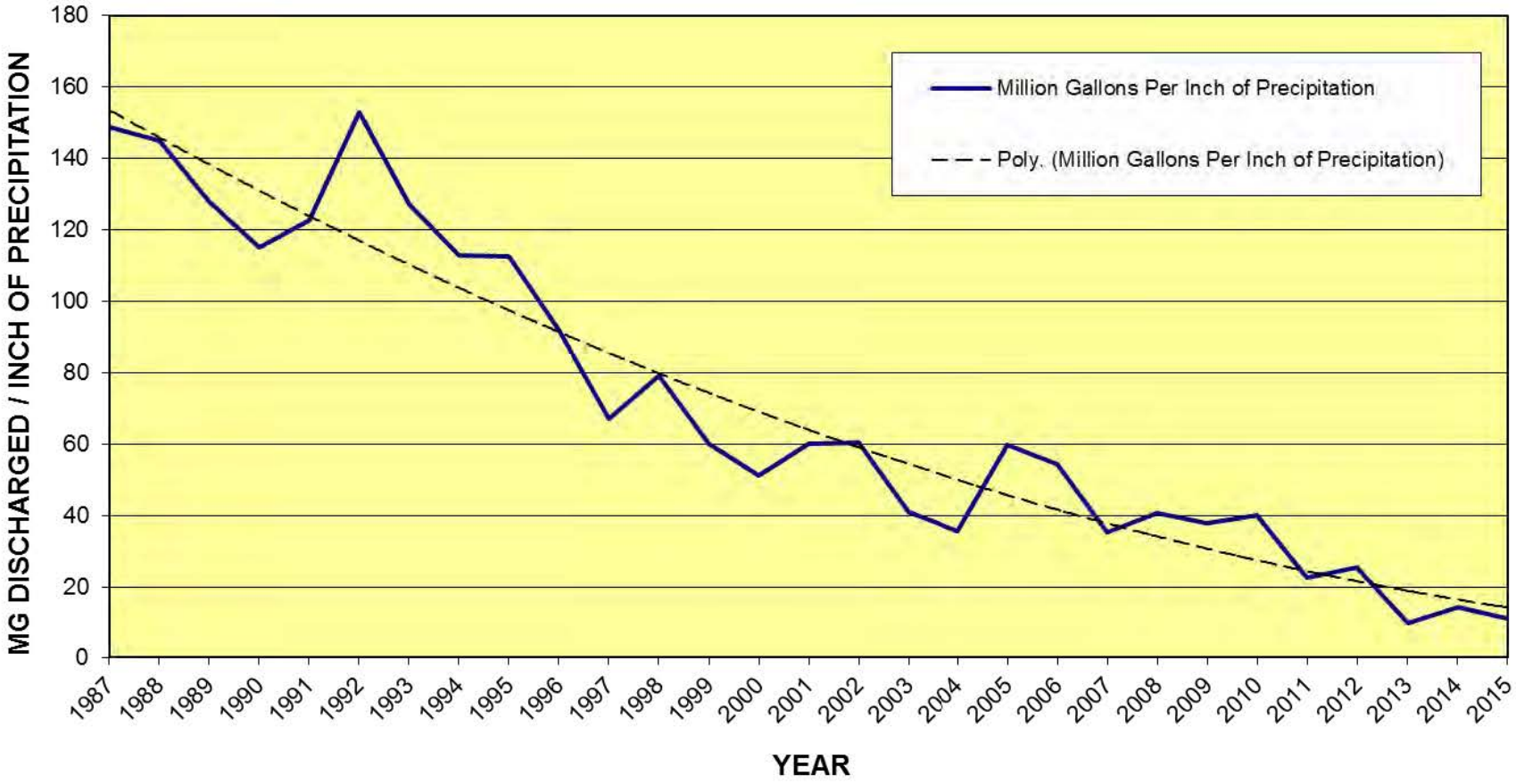
MAINE - STATEWIDE
COMBINED SEWER OVERFLOW (CSO)
ANNUAL NUMBER OF DISCHARGE EVENTS



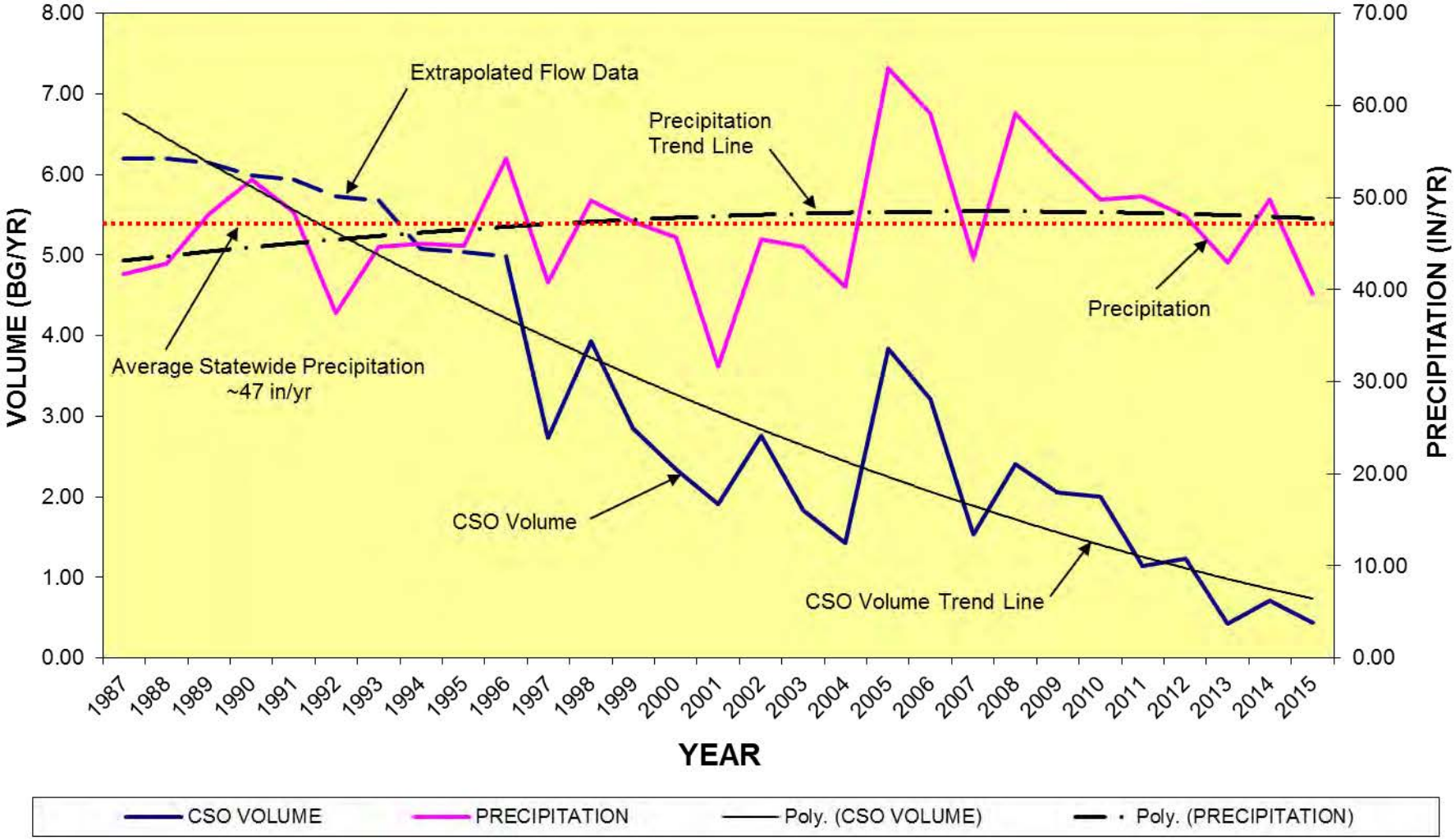
MAINE - STATEWIDE NUMBER OF COMBINED SEWER OVERFLOW (CSO) OUTFALLS



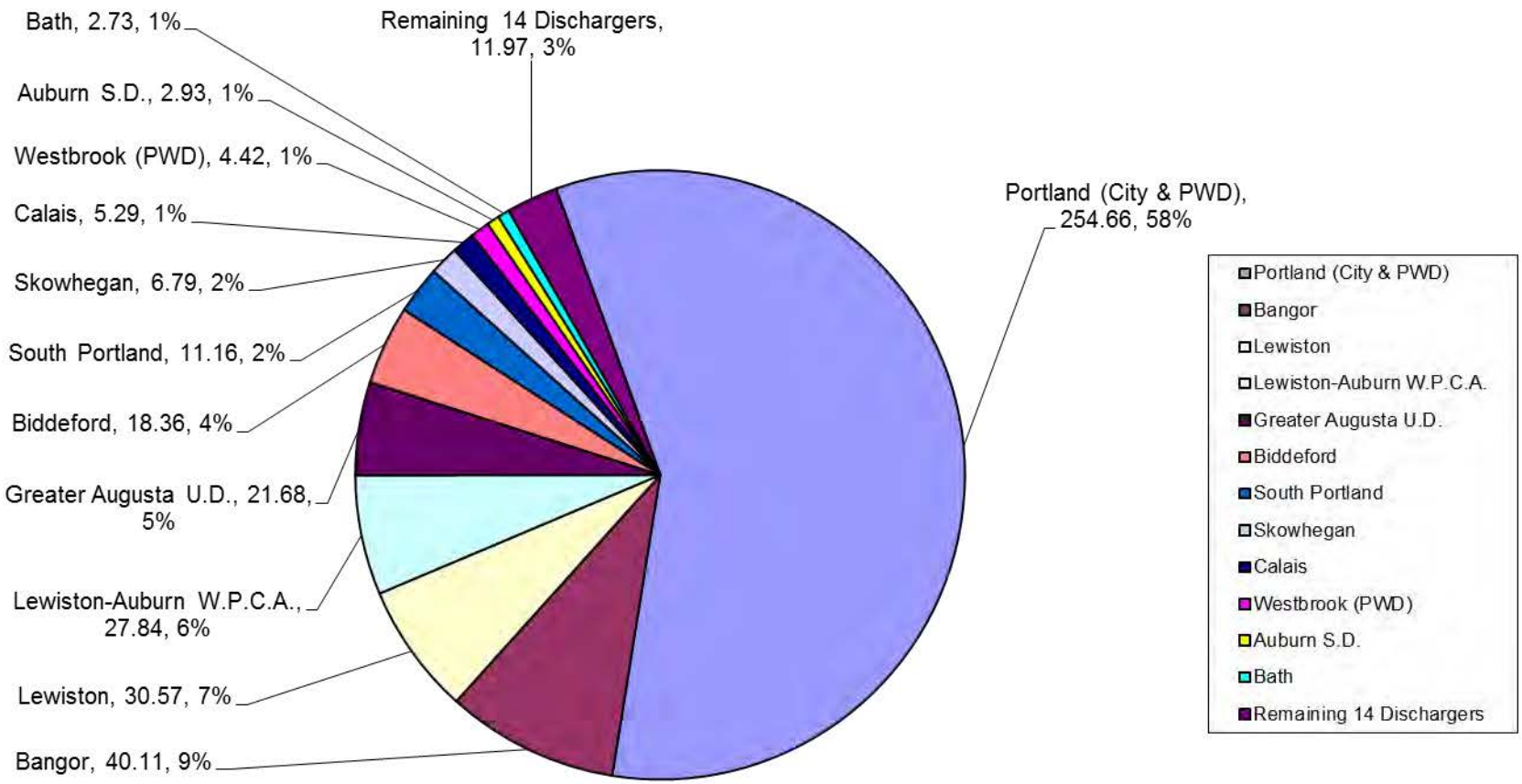
MAINE
COMBINED SEWER OVERFLOWS
ANNUAL VOLUME DISCHARGED PER INCH OF PRECIPITATION



MAINE
YEARLY CSO VOLUMES AND PRECIPITATION

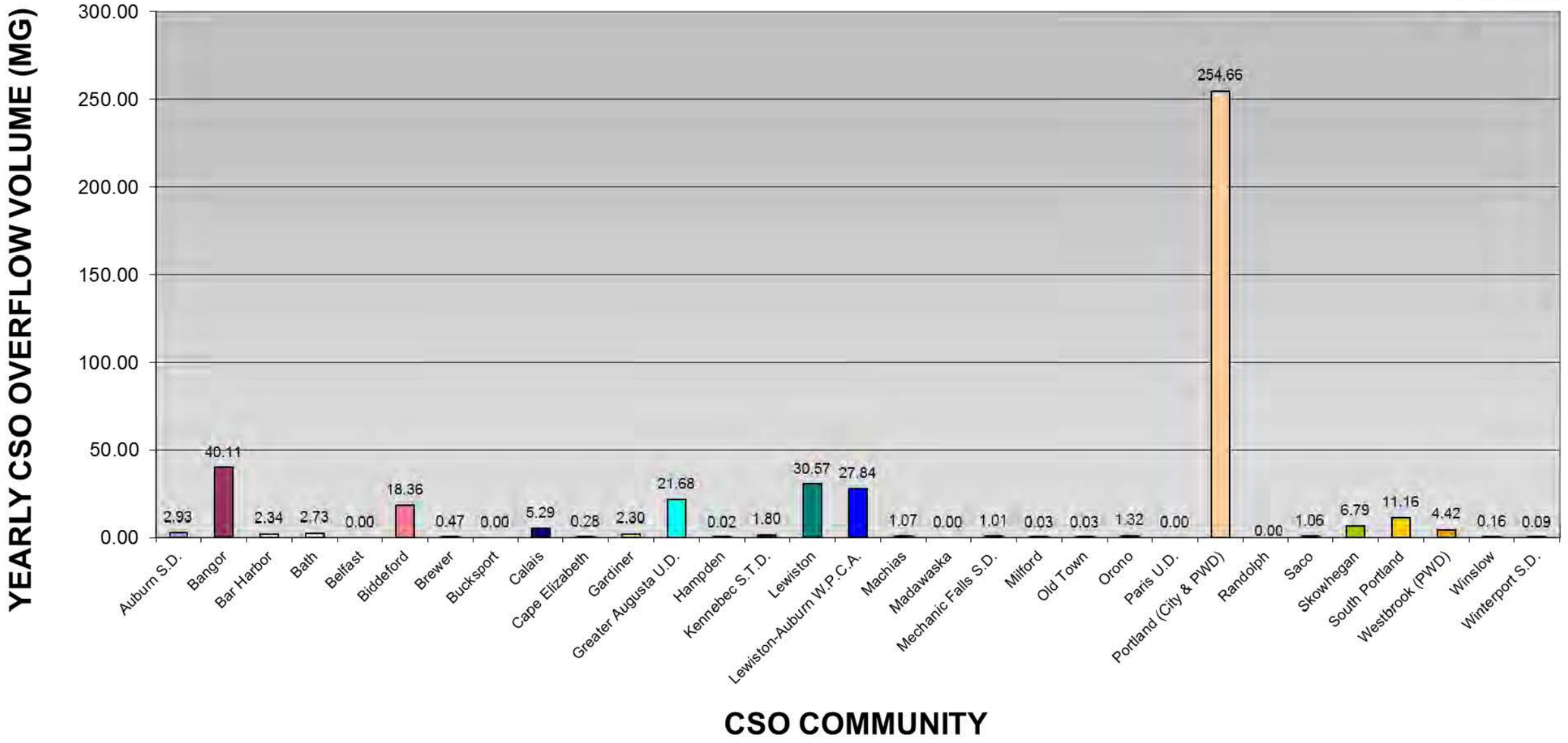


Maine 2015 CSO FLOW COMPARISON
31 CSO COMMUNITIES
27 DISCHARGERS - 0.44 BILLION GALLONS

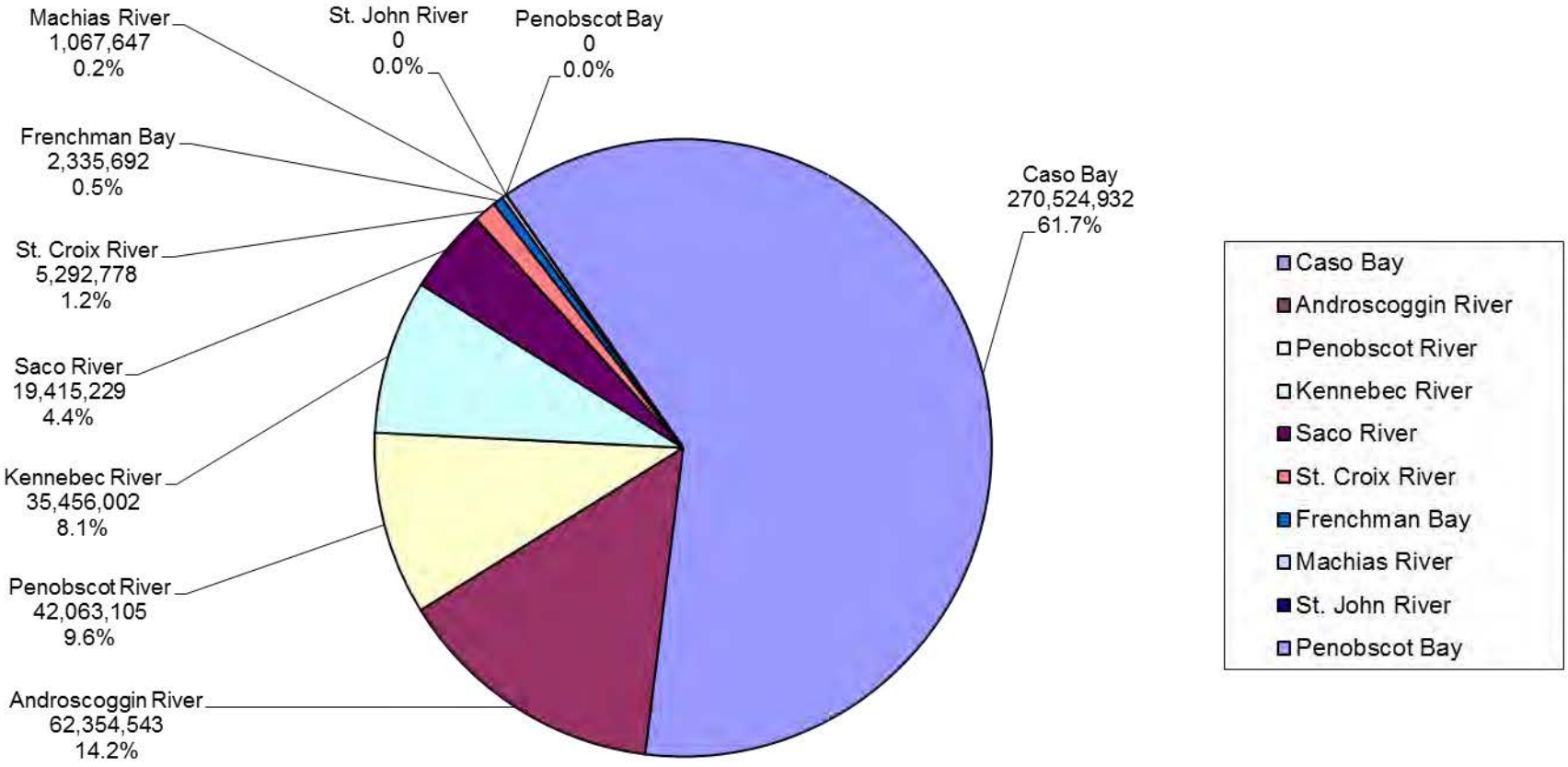


Discharger, Overflow in Million Gallons (MG), Percent of Total

Maine 2015 CSO FLOW COMPARISON BY COMMUNITY
0.44 Billion Gallons



Maine 2015 CSO Watershed Flows
0.44 Billion Gallons



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

MAINE CSO ANNUAL WATERSHED FLOWS

	Community	Annual CSO Flows (Gallons) 2011	2012	2013	2014	2015
Androscoggin River	Auburn SD	19,234,856	12,404,500	3,717,000	1,286,000	2,928,519
	Lewiston-Auburn WPCA	108,278,048	113,380,000	63,567,000	68,569,000	27,838,000
	Lewiston	78,521,909	90,103,658	32,772,894	21,355,331	30,574,217
	Mechanic Falls SD	5,033,002	9,638,035	3,663,997	1,385,675	1,013,807
	Paris UD	0	1,020,000	0	0	0
	Sub Total	***211,067,815***	***226,546,193***	***103,720,891***	***92,596,006***	***62,354,543***
Casco Bay	Cape Elizabeth	1,072,000	2,735,000	41,000	1,440,000	277,000
	Portland-City & PWD	496,288,000	704,319,257	179,403,901	414,421,500	254,663,330
	South Portland	14,906,594	37,134,882	1,858,579	15,531,600	11,161,602
	Westbrook	12,202,000	18,903,485	6,222,000	11,932,000	4,423,000
	Sub Total	***524,468,594***	***763,092,624***	***187,525,480***	***443,325,100***	***270,524,932***
Frenchman Bay	Bar Harbor	2,563,669	3,776,092	407,010	1,561,139	2,335,692
	Sub Total	***2,563,669***	***3,776,092***	***407,010***	***1,561,139***	***2,335,692***
Kennebec River	Augusta SD	31,589,000	38,408,000	26,901,000	17,646,000	21,680,000
	Bath	10,067,181	12,199,904	3,297,259	4,990,910	2,727,901
	Gardiner	4,655,000	4,455,400	1,287,000	1,950,000	2,299,300
	Kennebec STD	0	135,444	0	0	1,797,554
	Randolph	223,934	988,434	50,054	101,183	0
	Skowhegan	4,757,994	4,238,875	4,746,538	3,861,193	6,786,698
	Winslow	63,354	1,327,119	7,070	0	164,549
	Sub Total	***51,356,463***	***61,753,176***	***36,288,921***	***28,549,286***	***35,456,002***
Machias River	Machias	1,180,678	938,330	1,857,988	2,202,444	1,067,647
	Sub Total	***1,180,678***	***938,330***	***1,857,988***	***2,202,444***	***1,067,647***
Penobscot Bay	Belfast	490,495	0	0	0	0
	Rockland	0	0	0	0	0
	Sub Total	***490,495***	***0***	***0***	***0***	***0***
Penobscot River	Bangor	146,000,000	69,940,000	32,140,000	87,748,000	40,109,000
	Brewer	140,065,515	435,548	58,310	139,280	465,000
	Bucksport	0	0	0	0	0
	Hampden	500,000	0	0	0	24,105
	Milford	407,151	26,970	0	10,000	25,000
	Old Town	0	0	0	0	30,000
	Orono	1,260,837	0	0	0	1,320,000
	Winterport SD	0	0	0	60,000	90,000
	Sub Total	***288,233,503***	***70,402,518***	***32,198,310***	***87,957,280***	***42,063,105***
Saco River	Biddeford	41,609,559	79,848,639	43,252,373	34,049,095	18,358,229
	Saco	1,372,128	2,964,929	1,100,985	1,739,425	1,057,000
	Sub Total	***42,981,687***	***82,813,568***	***44,353,358***	***35,788,520***	***19,415,229***
St. Croix River	Calais	16,860,000	18,210,000	18,311,206	20,775,288	5,292,778
	Sub Total	***16,860,000***	***18,210,000***	***18,311,206***	***20,775,288***	***5,292,778***
St. John River	Madawaska	1,490,000	377,488	349,400	1,830,563	0
	Sub Total	***1,490,000***	***377,488***	***349,400***	***1,830,563***	***0***
	Total Annual Flow	**1,140,692,904**	**1,227,909,989**	**425,012,564**	**714,585,626**	**438,509,928**