# Maine Combined Sewer Overflow 2014 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 31 communities (towns or cities) with CSO discharge points in their sewerage systems (down from an original 60). These communities collectively have 145 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 recent years statewide, annual discharges have ranged from approximately 0.5 to 1.5 billion 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," 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 $483.4 million in CSO abatement ($22.7 million in 2014 alone) and anticipate their CSO needs for the next five years to be $178 million. Beyond five years, the expected need to bring them into compliance with the CSO Control Policy is approximated at an additional $89+ million.

## Where Are We Now?

### 2014 Status

1) In 2014, the 31 CSO Communities reduced the total number of CSO discharge locations by four (4), down from 149 to 145 (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 community of Lewiston (5), however, the City of Rockland (1) was added back into the program. The chart on page 13, **Maine Statewide Number of Combined Sewer Overflow Outfalls**, shows a 57% reduction in the number of CSO outfalls since 1989.
2) In 2014, the CSO Communities reported a total of 527 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 experience 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 2014, twenty-two (22) CSO Communities and one (1) non-community reported at least one combined sewer overflow discharge and seven (7) communities and one (1) non-community reported no overflows at all. Of the twenty-three (23) that reported discharges, only six (6) reported discharging less volume in 2014 than in 2013 and seventeen (17) reported discharging more volume, likely due to 2014 being a wetter year than the previous year.
4) The maximum number of overflow event days reported in 2014 from a single community was eighty-eight (88) events. The average (mean) number of discharge events for all communities was seventeen (17) event days and the median was nine (9) 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 45 inches. In 2014, the annual precipitation measured by CSO Communities varied significantly from 35.38 to 70.69 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 2014 was reported at 0.71 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 2014 CSO Flow Comparison** pie chart on page 16 and the **Maine 2014 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 an above average weighted precipitation year (49.73"). It also fell above the weighted average for the past five years (48.13") and above the weighted average since 1989 (47.72"). Due to this increase in annual precipitation and changes in precipitation intensities and frequencies, overflows increased by 289 million gallons or 68%, from .43 billion gallons in 2013 to 0.71 billion gallons in 2014. However, if one compares the 2014 overflow with the average overflow for the previous five years, it shows a reduction of approximately 48% even though the average rainfall for the same five year period was less than in 2014.

8) In 2014, 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 eleven (11) CSO communities accounted for approximately 2% 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 2014, up from 42% in 2013; see the **2014 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 only increased by approximately 22% from 245.6 million gallons in 2013 to 300.2 million gallons in 2014.

10) The chart on page 18 – **2014 CSO Watershed Flows**, shows a graphical representation of the CSO volumes discharged by major watershed. In 2014, Casco Bay received approximately 62.0% of the statewide CSO volume discharged, followed by the Androscoggin River at 13.0%, the Penobscot River at 12.3%, the Saco River at 5.0%, the Kennebec River at 4.0%, and the St. Croix River at 2.9%. Discharges to the St. John River, Frenchman Bay and the Machias River accounted for the remaining ~0.8% 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 2014, 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 $483.0 million to implement their CSO abatement project programs. In their 2014 Annual CSO Progress Reports submitted to the State, these CSO Communities reported expending $22.7 million on abatement work in 2014 alone. They estimate that their future needs to complete their CSO abatement programs will total an additional $267.5+ 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 2014, six (6) CSO Communities listed thirteen (13) 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, 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 2014 due to rainfall or contamination , though not specifically identified as being caused by CSO activity: (Hulls Cove, Bar Harbor – 7 Advisories) (Town Beach, Bar Harbor – 2 Advisories) (East End, Portland – 20 Advisories) and (Willard Beach, South Portland – 20 Advisories).

In 2014, 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, four (4) communities (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 - 90%. 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 - 75%, 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 40 million gallons per inch of precipitation over the past five years - 14 million gallons per inch of precipitation in 2014. 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, 2014)

| | COMMUNITY/PERMITTEE | CSOs | Number of CSOs & Receiving Water |
|---|---|---|---|
| 1. | **AUBURN SEWERAGE DISTRICT** | 2 | 2-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., 1-Whitney Bk. |
| 14. | **HAMPDEN** | 1 | 1-Souadabscook Str. |
| 15. | KENNEBEC SANITARY TREATMENT District (KSTD) | 3 | 3-Kennebec Rv. |
| 16. | **LEWISTON** | 11 | 6-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 | 2-Sebasticook Rv. |
| 34. | WINTERPORT SEWERAGE DISTRICT | 1 | 1-Penobscot Rv. |
| | TOTAL CSOs | 145 | |

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 | | | | | | | | | | | | | | | | | | |
| | | Year | | | | | | | | | | | | | | | | |
| **Community** | **NPDES Permit No.** | 1987 | 1988 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| Auburn S.D. | ME0100005 | 99,720,000 | 99,720,000 | 102,297,387 | 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 |
| Bangor | ME0100781 | 635,000,000 | 635,000,000 | 230,190,000 | 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 |
| Bar Harbor | ME0101214 & ME0102466 | 32,000,000 | 32,000,000 | 4,730,155 | 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 |
| Bath | ME0100021 | 600,000,000 | 600,000,000 | 5,910,364 | 6,173,760 | 4,341,921 | 16,496,467 | 6,055,666 | 60,338,026 | 36,105,688 | 20,783,335 | 24,383,599 | 11,323,060 | 12,930,203 | 10,067,181 | 12,199,904 | 3,297,259 | 4,990,910 |
| Belfast | ME0101532 | 736,000 | 736,000 | 617,517 | 46,000 | 0 | 0 | 0 | 1,796,747 | 485,451 | 1,035,392 | 198,370 | 260,036 | 486,919 | 490,495 | 0 | 0 | 0 |
| Biddeford | ME0100048 | 400,000,000 | 400,000,000 | 234,987,578 | 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 |
| Brewer | ME0100072 | 750,000,000 | 750,000,000 | 322,168,651 | 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 |
| Bucksport | ME0100111 | 53,000,000 | 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 |
| Calais | ME0100129 | 42,000,000 | 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 |
| Cape Elizabeth | ME0102806 | 5,400,000 | 5,400,000 | 739,000 | 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 |
| Corinna S.D.*** | ME0100153 | 40,000,000 | 40,000,000 | 31,000 | 25,000 | 2,000 | 2,000 | 0 | | | | | | | | | | |
| Dover-Foxcroft*** | ME0100501 | 16,000 | 16,000 | 2,000 | 0 | 0 | 0 | 0 | 199,000 | 0 | | | | | | | | |
| East Millinocket*** | ME0100196 | 1,200,000 | 1,200,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | |
| Fairfield*** | ME0102393 | 300,000 | 300,000 | 221,954 | 221,954 | 65,296 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Fort Kent U.D.*** | ME0102369 | 3,000 | 3,000 | 2,200 | 0 | 0 | 2,400 | 41,000 | 600,000 | | | | | | | | | |
| Gardiner | ME0101702 | 44,000,000 | 44,000,000 | 8,278,600 | 6,487,000 | 11,528,900 | 13,149,700 | 5,113,000 | 46,616,000 | 10,269,400 | 2,487,000 | 5,000,000 | 1,380,000 | 10,453,761 | 4,655,000 | 4,455,400 | 1,287,000 | 1,950,000 |
| Greater Augusta U.D. | ME0100013 | 72,554,000 | 72,554,000 | 5,615,140 | 2,705,324 | 2,191,067 | 7,089,337 | 3,881,421 | 26,553,055 | 14,539,424 | 10,000,000 | 48,965,215 | 15,723,000 | 49,670,000 | 31,589,000 | 38,408,000 | 26,901,000 | 17,646,000 |
| Hallowell W.D. - 2008 GAUD | ME0101010 | 350,000 | 350,000 | 150,000 | 0 | 0 | 100,000 | 0 | 700,000 | 150,000 | 150,000 | - | - | - | - | - | - | - |
| Hampden | ME0102512 | 1,201,000 | 39,600 | 1,218,000 | 0 | 0 | 262,900 | 0 | 43,862,280 | 0 | 85,000 | 0 | 500,000 | 500,000 | 500,000 | 0 | 0 | 0 |
| Kennebec S.T.D. | ME0100854 | 2,500,000 | 2,500,000 | 3,043,421 | 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 |
| Kittery*** | ME0100285 | 350,000 | 350,000 | 50,000 | 50,000 | 0 | 0 | 33,900 | 0 | | | | | | | | | |
| Lewiston | ME0100994 | 208,900,000 | 208,900,000 | 136,898,295 | 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 |
| Lewiston-Auburn W.P.C.A. | ME0101478 | 480,000,000 | 480,000,000 | 107,968,000 | 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 |
| Lincoln S.D.*** | ME0101796 | 2,400,000 | 2,400,000 | 1,057,000 | | | | | | | | | | | | | | |
| Lisbon*** | ME0100307 | 600,000 | 600,000 | 300,000 | 83,000 | 0 | 0 | 0 | | | | | | | | | | |
| Livermore Falls*** | ME0100315 | | | 0 | 0 | | | | | | | | | | | | | |
| Machias | ME0100323 | 7,000,000 | 7,000,000 | 690,000 | 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 |
| Madawaska | ME 0101681 | 3,200,000 | 3,200,000 | 610,000 | 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 |
| 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 |
| Milford | ME0102695 | 220,000 | 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 |
| Milo W.D.*** | ME0100439 | 10,000 | 10,000 | 1,000 | 0 | 0 | 2,000 | 0 | 10,000 | 0 | 501,000 | 750 | | | | | | |
| Old Town | ME0100471 | 6,300,000 | 6,300,000 | 6,300,000 | 0 | 1,597,324 | 6,296,537 | 425,832 | 4,779,340 | 321,105 | 770,699 | 254,967 | 0 | 125,000 | 0 | 0 | 0 | 0 |
| Orono | ME0100498 | 31,000,000 | 31,000,000 | 2,603,000 | 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 |
| Paris U.D. | ME 0100951 | 1,000,000 | 1,000,000 | 300,000 | 0 | 0 | 175,000 | 0 | 288,000 | 173,500 | 206,000 | 84,000 | 0 | 110,000 | 0 | 1,020,000 | 0 | 0 |
| Portland & PWD | City-ME0101435 / PWD-ME0102075 | 1,800,000,000 | 1,800,000,000 | 993,511,000 | 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 |
| Presque Isle*** | ME0100561 | 27,500,000 | 27,500,000 | 7,234,000 | 113,000 | | | | | | | | | | | | | |
| Randolph | ME0102423 | 10,000,000 | 10,000,000 | 2,122,156 | 9,878,793 | 196,591 | 432,500 | 0 | 1,058,039 | 266,256 | 459,476 | 1,413,880 | 488,645 | 285,719 | 223,934 | 988,434 | 50,054 | 101,183 |
| Rockland*** | ME0100595 | 47,000,000 | 47,000,000 | 20,000,000 | 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 | 19,264,777 | 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 |
| Sanford S.D.*** | ME0100617 | 4,000,000 | 4,000,000 | 55,000 | 0 | 0 | 0 | 0 | 0 | 15,000 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Skowhegan | ME0100625 | 48,000,000 | 48,000,000 | 4,110,833 | 12,315,897 | 10,883,416 | 22,768,111 | 12,082,768 | 47,873,323 | 31,314,358 | 21,596,631 | 61,963,453 | 6,073,919 | 7,550,855 | 4,757,994 | 4,238,875 | 4,746,538 | 3,861,193 |
| South Portland | ME0100633 | 500,000,000 | 500,000,000 | 17,535,575 | 49,503,494 | 4,467,429 | 7,896,125 | 19,812,914 | 26,810,104 | 26,118,706 | 15,727,553 | 12,883,433 | 12,183,196 | 42,095,393 | 14,906,594 | 37,134,882 | 1,858,579 | 15,531,600 |
| Westbrook | ME0100846 | 50,000,000 | 50,000,000 | 1,229,000 | 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 |
| Winslow | ME0102628 | 1,300,000 | 1,300,000 | 0 | 0 | 0 | 0 | 0 | 23,652 | 0 | 725,000 | 235,000 | 5,001 | 200,000 | 63,354 | 1,327,119 | 7,070 | 0 |
| Winterport S.D. | ME0100749 | 680,000 | 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 |
| Yarmouth*** | ME0100765 | 1,000 | 1,000 | 200 | 200 | 0 | | | | | | | | | | | | |
| Total | | 6,203,441,000 | 6,202,279,600 | 2,337,942,803 | 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 |
| Total In Billion Gallons | | 6.20 | 6.20 | 2.34 | 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 |

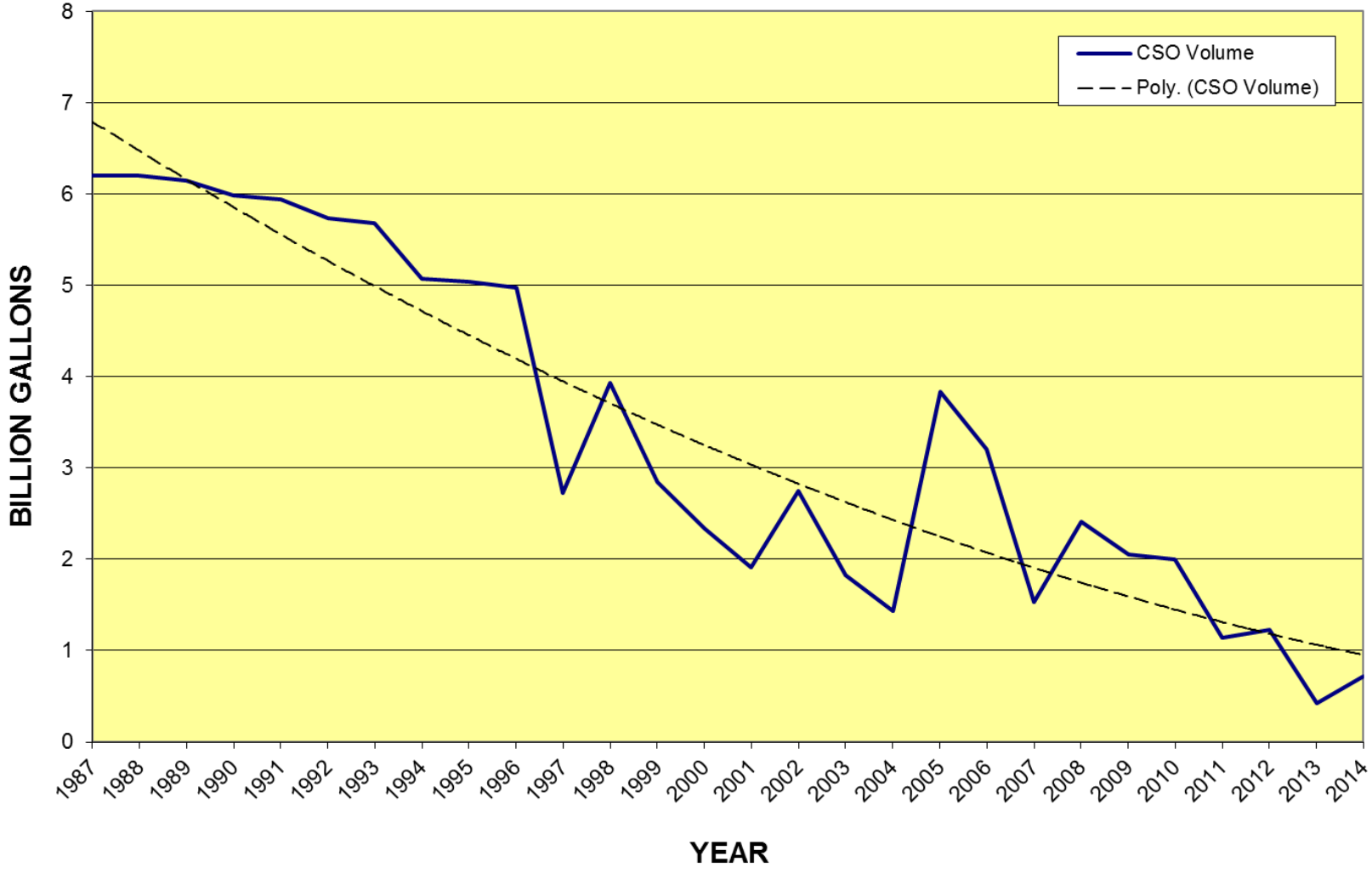
# MAINE CSO COMMUNITY ANNUAL NUMBER OF CSO DISCHARGE EVENTS

**Annual Number of CSO Discharge Events**

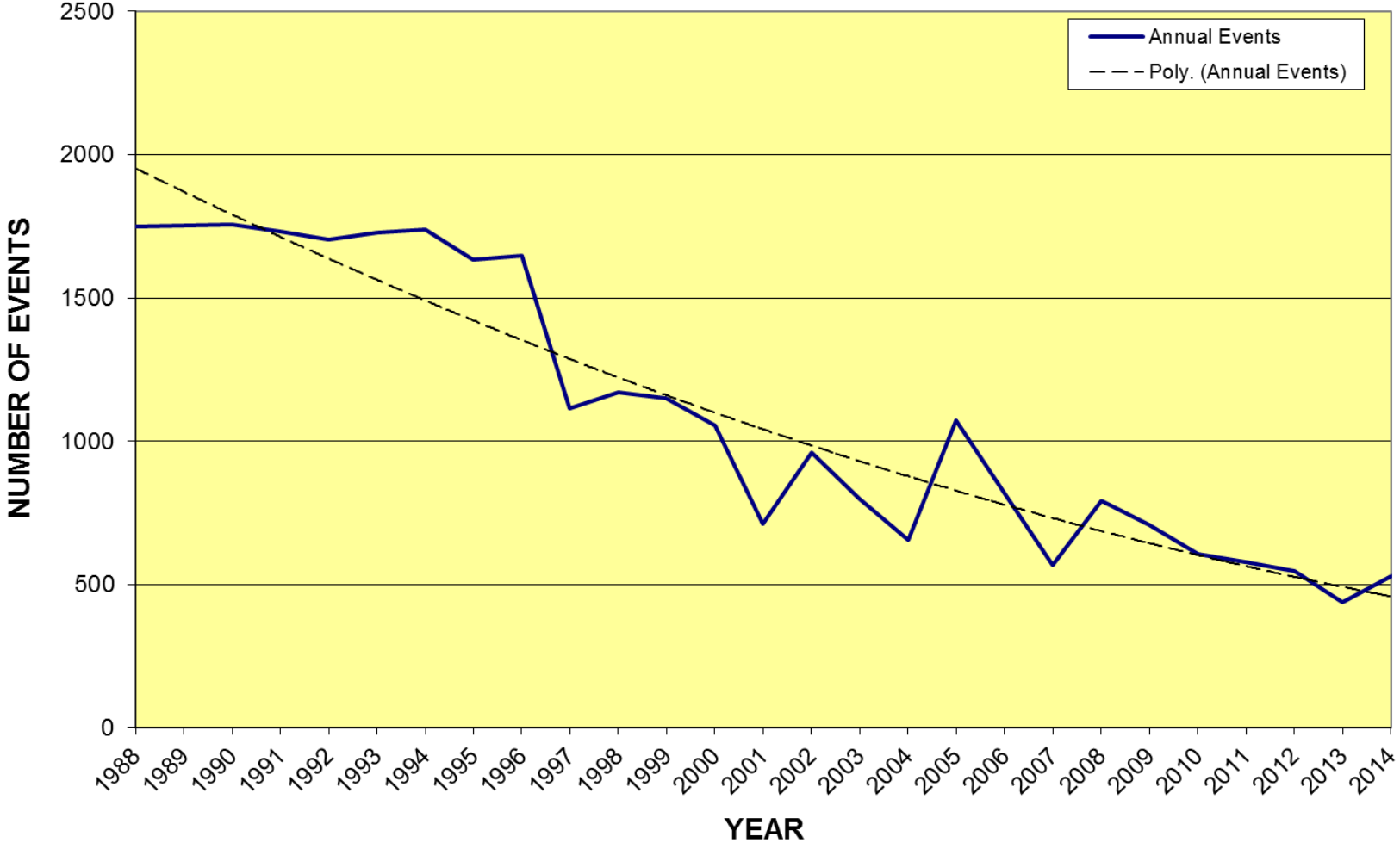
No longer a CSO Community

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

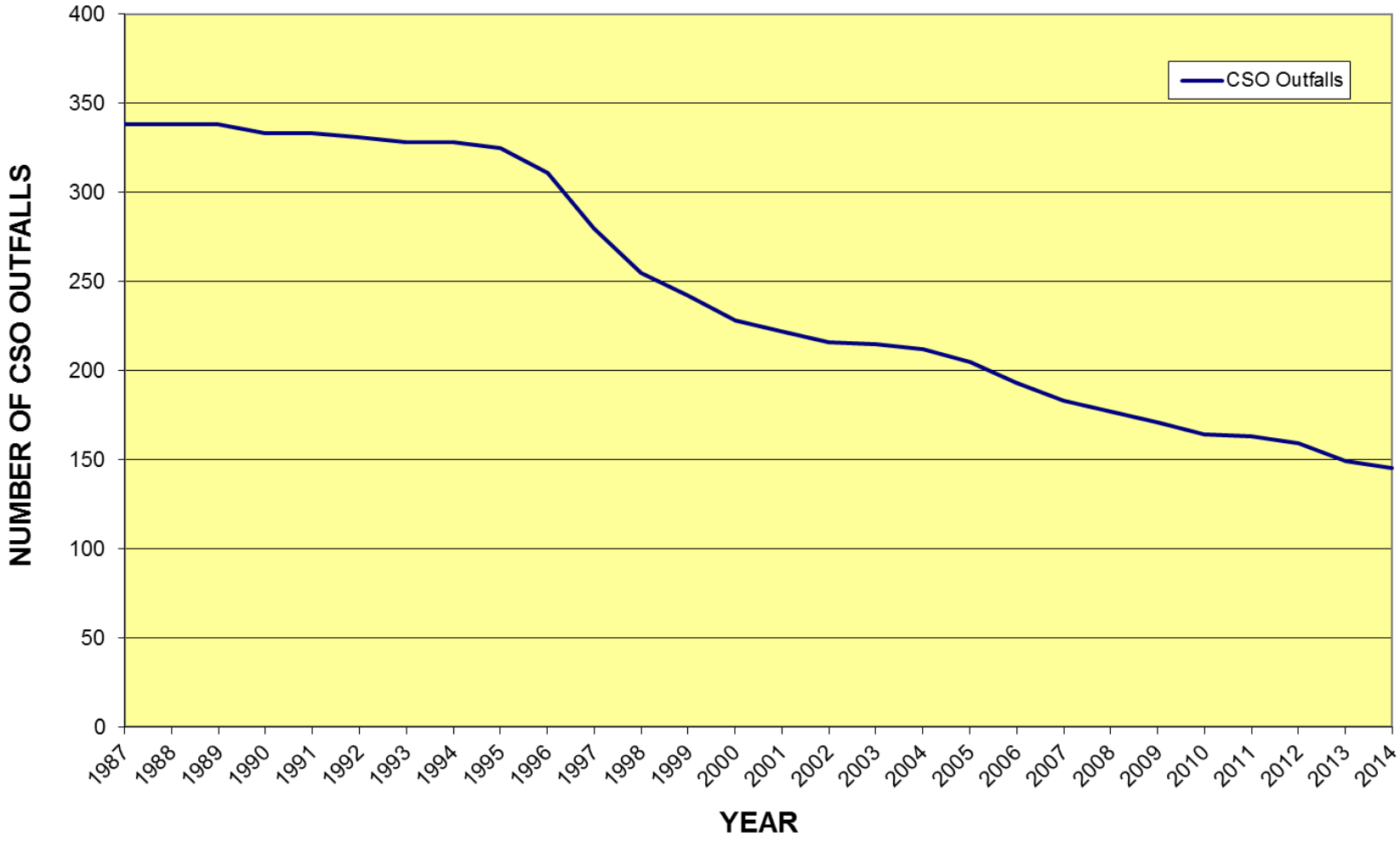
# MAINE - STATEWIDE
# COMBINED SEWER OVERFLOW (CSO)
# VOLUME DISCHARGED



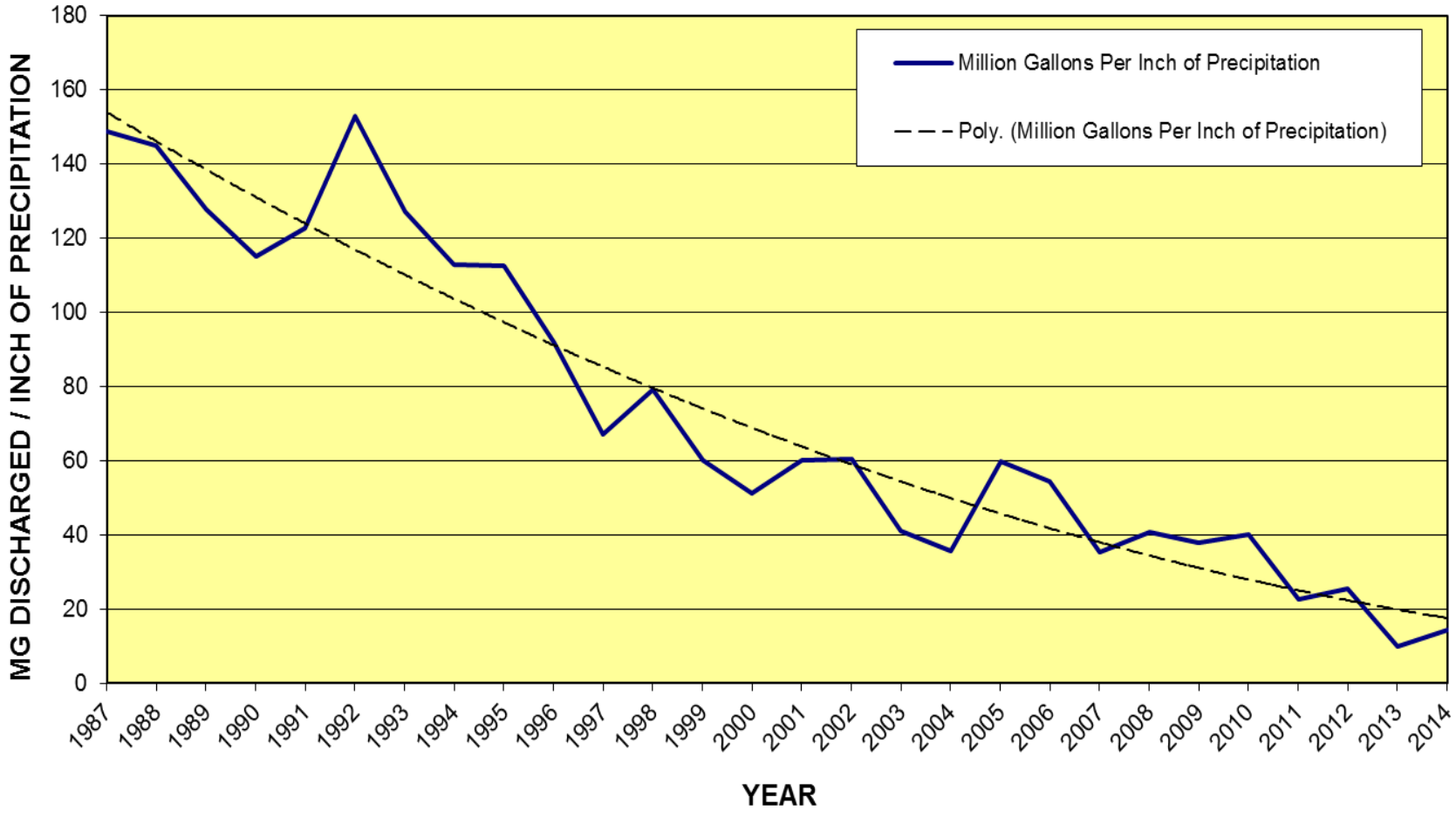
# MAINE - STATEWIDE
# COMBINED SEWER OVERFLOW (CSO)
# ANNUAL NUMBER OF DISCHARGE EVENTS



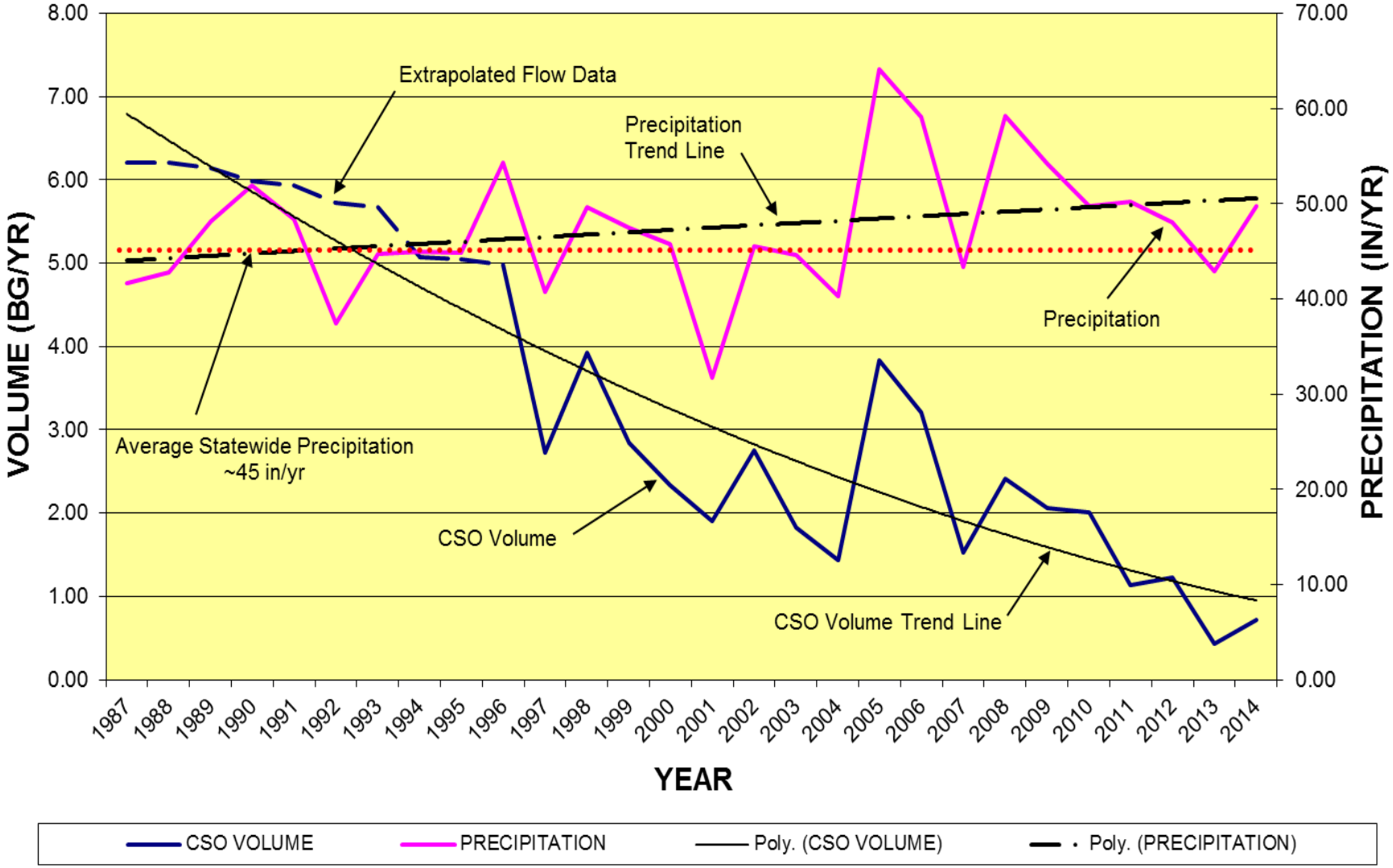
# MAINE - STATEWIDE NUMBER OF COMBINED SEWER OVERFLOW (CSO) OUTFALLS



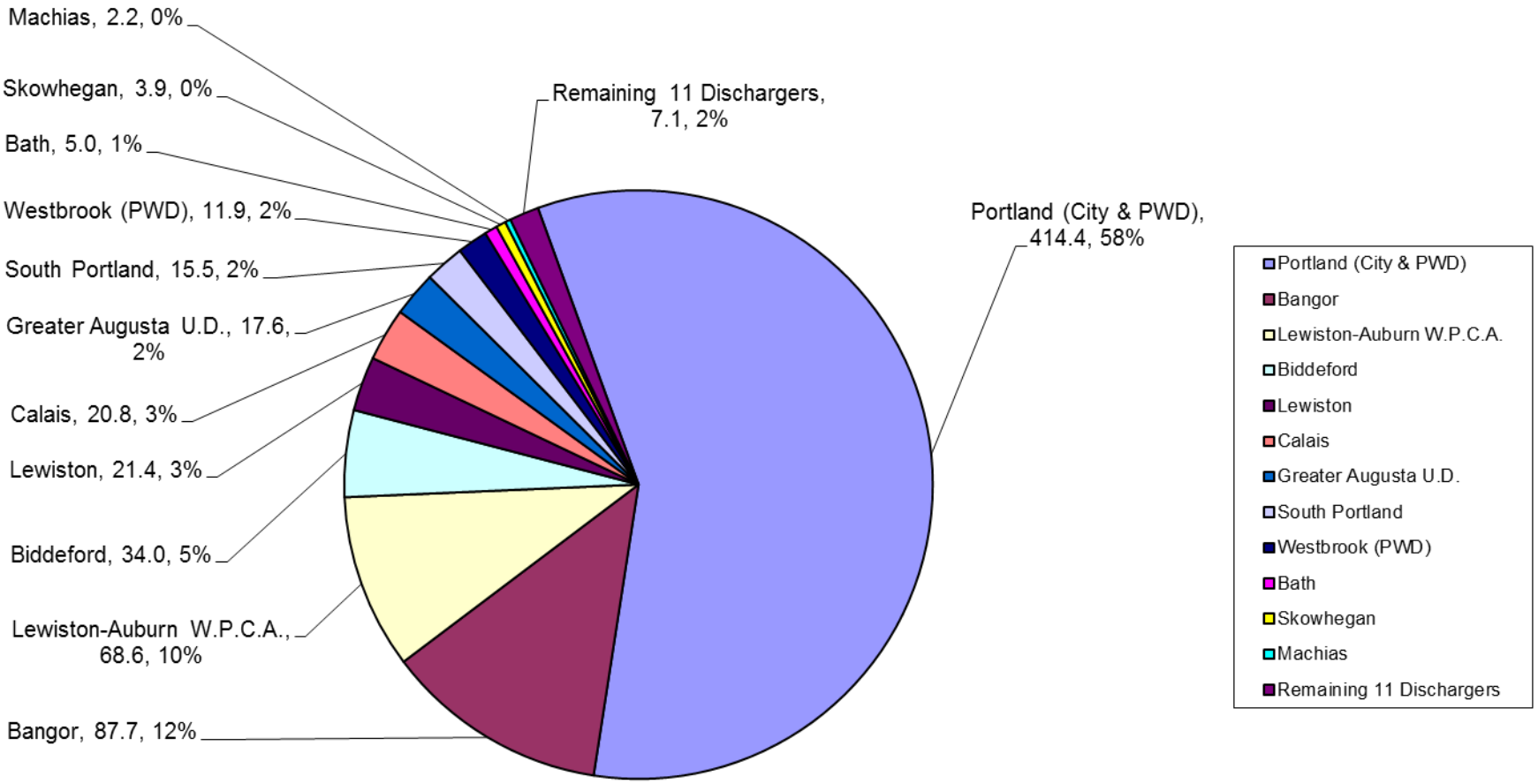
# MAINE
# COMBINED SEWER OVERFLOWS
# ANNUAL VOLUME DISCHARGED PER INCH OF PRECIPITATION



# MAINE
# YEARLY CSO VOLUMES AND PRECIPITATION

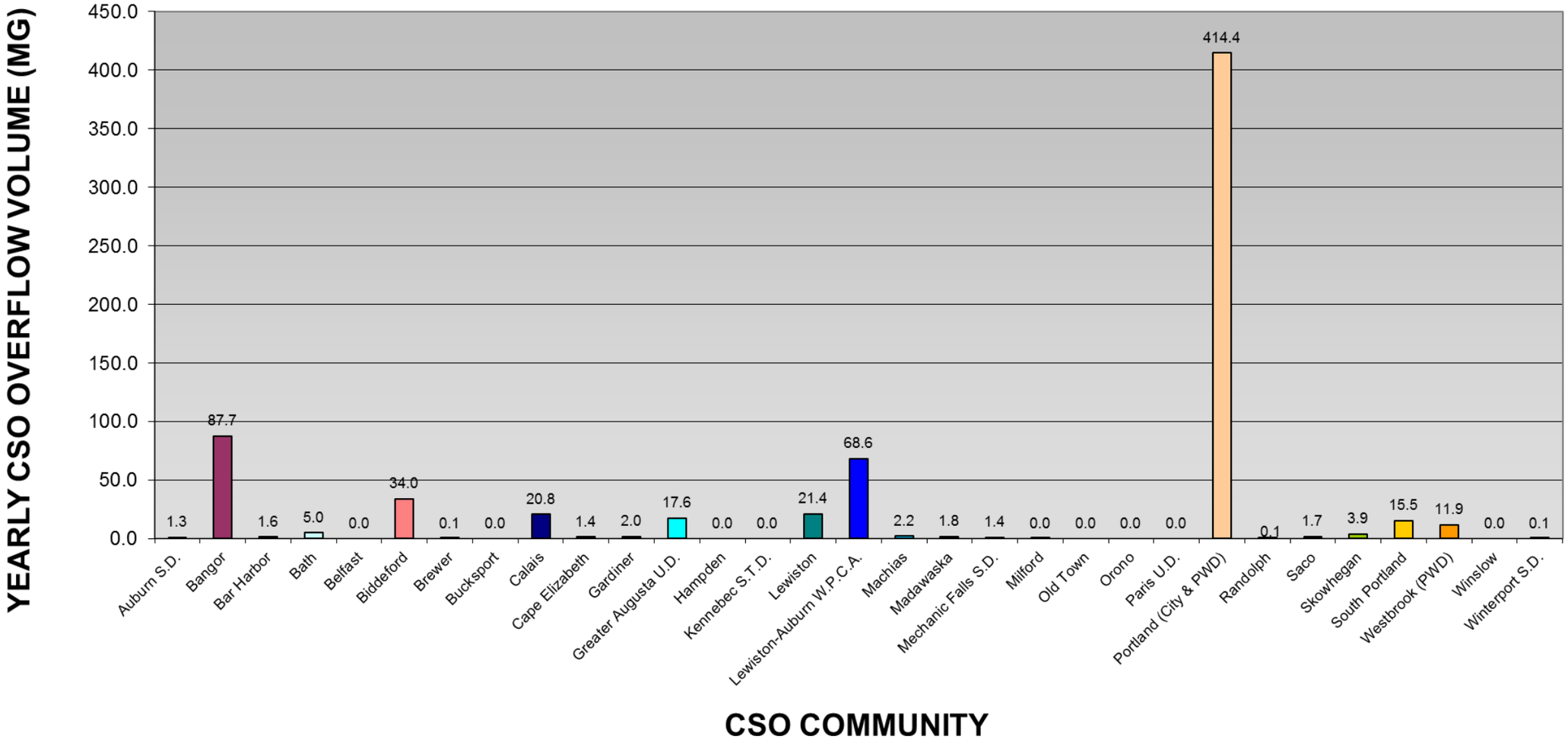


# Maine 2014 CSO FLOW COMPARISON
# 31 CSO COMMUNITIES
# 23 DISCHARGERS - 0.71 BILLION GALLONS

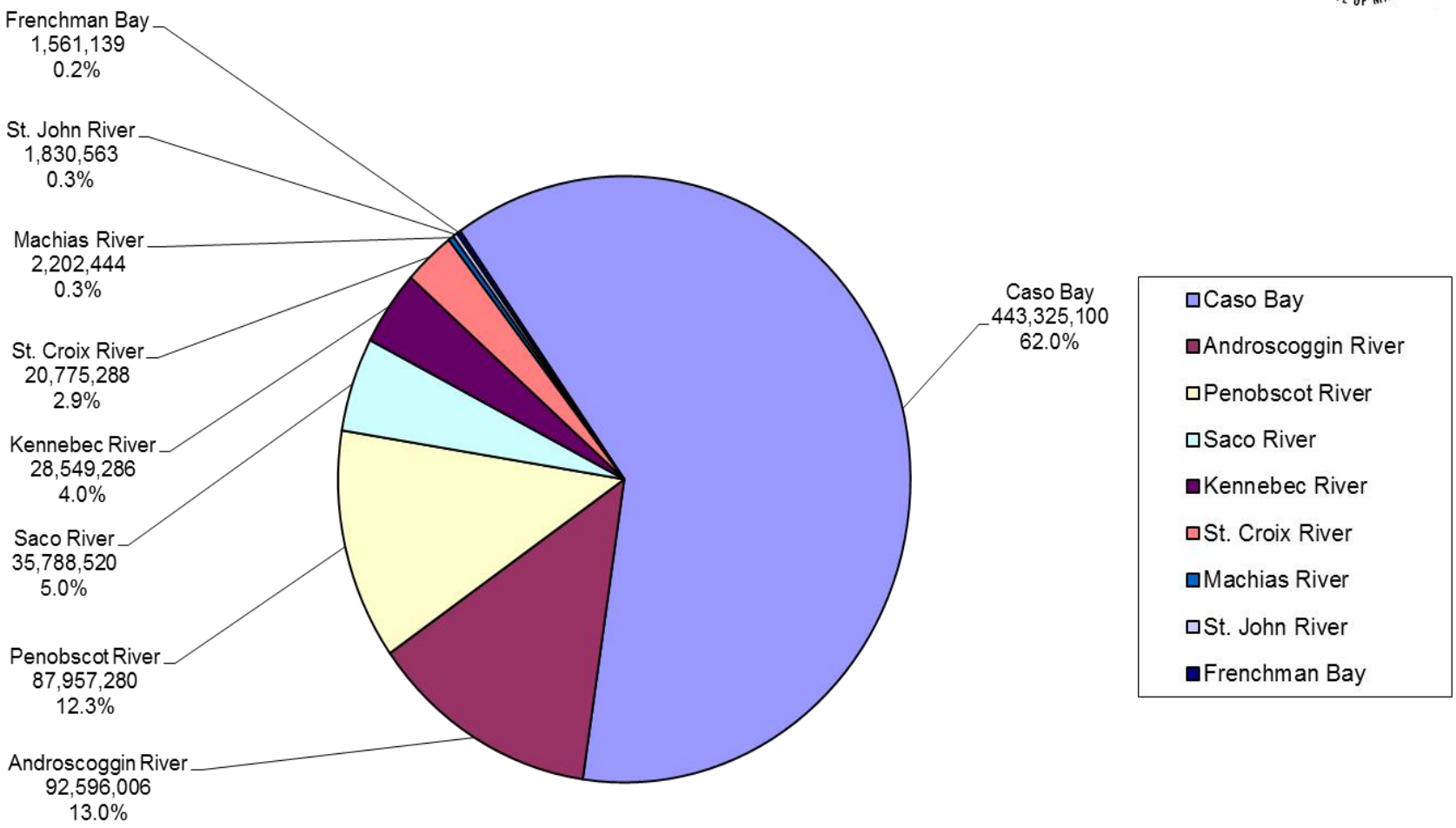



**Discharger, Overflow in Million Gallons (MG), Percent of Total**

# Maine 2014 CSO FLOW COMPARISON BY COMMUNITY
## 0.71 Billion Gallons



# Maine 2014 CSO Watershed Flows
## 0.71 Billion Gallons




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

# MAINE CSO ANNUAL WATERSHED FLOWS

| | Community | Annual CSO Flows (Gallons) | | | | |
|---|---|---|---|---|---|---|
| | | 2010 | 2011 | 2012 | 2013 | 2014 |
| Androscoggin River | Auburn SD | 12,952,500 | 19,234,856 | 12,404,500 | 3,717,000 | 1,286,000 |
| | Lewiston-Auburn WPCA | 156,986,000 | 108,278,048 | 113,380,000 | 63,567,000 | 68,569,000 |
| | Lewiston | 113,285,042 | 78,521,909 | 90,103,658 | 32,772,894 | 21,355,331 |
| | Mechanic Falls SD | 9,250,000 | 5,033,002 | 9,638,035 | 3,663,997 | 1,385,675 |
| | Paris UD | 110,000 | 0 | 1,020,000 | 0 | 0 |
| | ***Sub Total*** | ***292,583,542*** | ***211,067,815*** | ***226,546,193*** | ***103,720,891*** | ***92,596,006*** |
| Casco Bay | Cape Elizabeth | 3,955,292 | 1,072,000 | 2,735,000 | 41,000 | 1,440,000 |
| | Portland-City & PWD | 780,188,153 | 496,288,000 | 704,319,257 | 179,403,901 | 414,421,500 |
| | South Portland | 42,095,393 | 14,906,594 | 37,134,882 | 1,858,579 | 15,531,600 |
| | Westbrook | 14,105,989 | 12,202,000 | 18,903,485 | 6,222,000 | 11,932,000 |
| | ***Sub Total*** | ***840,344,827*** | ***524,468,594*** | ***763,092,624*** | ***187,525,480*** | ***443,325,100*** |
| Frenchman Bay | Bar Harbor | 6,930,405 | 2,563,669 | 3,776,092 | 407,010 | 1,561,139 |
| | | | | | | |
| | | | | | | |
| | ***Sub Total*** | ***6,930,405*** | ***2,563,669*** | ***3,776,092*** | ***407,010*** | ***1,561,139*** |
| Kennebec River | Augusta SD | 49,670,000 | 31,589,000 | 38,408,000 | 26,901,000 | 17,646,000 |
| | Bath | 12,930,203 | 10,067,181 | 12,199,904 | 3,297,259 | 4,990,910 |
| | Fairfield | 0 | 0 | 0 | 0 | 0 |
| | Gardiner | 10,453,761 | 4,655,000 | 4,455,400 | 1,287,000 | 1,950,000 |
| | Hallowell WD | - | - | - | - | - |
| | Kennebec STD | 0 | 0 | 135,444 | 0 | 0 |
| | Randolph | 285,719 | 223,934 | 988,434 | 50,054 | 101,183 |
| | Skowhegan | 7,550,855 | 4,757,994 | 4,238,875 | 4,746,538 | 3,861,193 |
| | Winslow | 200,000 | 63,354 | 1,327,119 | 7,070 | 0 |
| | ***Sub Total*** | ***81,090,538*** | ***51,356,463*** | ***61,753,176*** | ***36,288,921*** | ***28,549,286*** |
| Machias River | Machias | 2,791,962 | 1,180,678 | 938,330 | 1,857,988 | 2,202,444 |
| | | | | | | |
| | ***Sub Total*** | ***2,791,962*** | ***1,180,678*** | ***938,330*** | ***1,857,988*** | ***2,202,444*** |
| Penobscot Bay | Belfast | 486,919 | 490,495 | 0 | 0 | 0 |
| | Rockland | 0 | 0 | 0 | 0 | 0 |
| | | | | | | |
| | ***Sub Total*** | ***486,919*** | ***490,495*** | ***0*** | ***0*** | ***0*** |
| Penobscot River | Bangor | 389,300,000 | 146,000,000 | 69,940,000 | 32,140,000 | 87,748,000 |
| | Brewer | 227,139,515 | 140,065,515 | 435,548 | 58,310 | 139,280 |
| | Bucksport | 0 | 0 | 0 | 0 | 0 |
| | Dover-Foxcroft | 0 | 0 | 0 | 0 | 0 |
| | East Millinocket | 0 | 0 | 0 | 0 | 0 |
| | Hampden | 500,000 | 500,000 | 0 | 0 | 0 |
| | Milford | 52,006 | 407,151 | 26,970 | 0 | 10,000 |
| | Milo WD | 0 | 0 | 0 | 0 | 0 |
| | Old Town | 125,000 | 0 | 0 | 0 | 0 |
| | Orono | 2,416,910 | 1,260,837 | 0 | 0 | 0 |
| | Winterport SD | 0 | 0 | 0 | 0 | 60,000 |
| | ***Sub Total*** | ***619,533,431*** | ***288,233,503*** | ***70,402,518*** | ***32,198,310*** | ***87,957,280*** |
| Saco River | Biddeford | 127,029,700 | 41,609,559 | 79,848,639 | 43,252,373 | 34,049,095 |
| | Saco | 924,014 | 1,372,128 | 2,964,929 | 1,100,985 | 1,739,425 |
| | ***Sub Total*** | ***127,953,714*** | ***42,981,687*** | ***82,813,568*** | ***44,353,358*** | ***35,788,520*** |
| St. Croix River | Calais | 31,134,915 | 16,860,000 | 18,210,000 | 18,311,206 | 20,775,288 |
| | | | | | | |
| | ***Sub Total*** | ***31,134,915*** | ***16,860,000*** | ***18,210,000*** | ***18,311,206*** | ***20,775,288*** |
| St. John River | Madawaska | 1,107,610 | 1,490,000 | 377,488 | 349,400 | 1,830,563 |
| | | | | | | |
| | ***Sub Total*** | ***1,107,610*** | ***1,490,000*** | ***377,488*** | ***349,400*** | ***1,830,563*** |
| | **Total Annual Flow** | **2,003,957,863** | **1,140,692,904** | **1,227,909,989** | **425,012,564** | **714,585,626** |