City of Biddeford
Waste Water Management Commission
July 13, 2022 4:30 PM City Hall
Second Floor Conference Room

1. **Roll Call**
2. **Approval of Minutes - NONE**
3. **New Business**
   - 3.1. Project Updates, Center Street, Horrigan's Court, Existing and Proposed Projects for 2022-23
   - 3.2. CSO Annual Report from DEP
     Maine CSO 2021 Status Report_FINAL_6-21-2022 (2).pdf
4. **Old Business**
   - 4.1. CSO Program Update
5. **Staff Update**
   - 5.1. Water Street Treatment Plant
   - 5.2. Biddeford Pool Treatment Plant
   - 5.3. Collections System and Pump Stations Update
     July 2022 WWC Staff Update.docx
6. **Other Business**
   - 6.1. Continued Discussion on CSO Abatement Strategies
   - 6.2. Other Items
7. **Unfinished Business - NONE**
8. **Adjournment**

Maine Combined Sewer Overflow 2021 Status Report

June 2022

Contact: Michael S. Riley, P.E.
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Document No.: DEPLQ0972N-2022

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JANET T. MILLS
GOVERNOR

MELANIE LOYZIM
COMMISSIONER

June 17, 2022

To: Combined Sewer Overflow (CSO) Permittees

Subject: 2021 Annual CSO Status Report for the State of Maine

Attached is a copy of the Maine Combined Sewer Overflow 2021 Status Report. This report is being distributed to CSO Permittee contacts, municipal officials, consulting engineers and other interested people.

The report documents the efforts and progress that has been made by each CSO Permittee to eliminate or abate combined sewer overflows within their system. These efforts continue to pay off, as 2021, edged out 2020 for the second lowest CSO discharge on record (346.7 MGY), behind only 2017. Several CSO communities had their lowest discharge on record in 2021. Precipitation for the State averaged 44.19 inches in 2021, less than the long-term average of 46.72 inches per year, but slightly above average for the last five years. If we account for the varying precipitation by unitizing CSO discharge per inch of rain, we find that in 2021 Maine achieved the second lowest CSO discharge per inch of precipitation (7.8 MG/inch) on record, behind only 2017.

These figures confirm that as sewer systems continue to be separated, they become less sensitive to rainfall resulting in a decrease in CSO discharge and activity. This trend continued in 2021, and we now have the three lowest annual CSO discharge volumes on record, having occurred within the last five years. Likewise the three years with the lowest number of CSO events and the lowest CSO discharge per inch of rainfall, have occurred within the last five years. With increased funding and expenditure on CSO abatement over the past five years the trends are positive for Maine.

The Department's CSO website has a downloadable version of the current report and also includes copies of each report from the last three years. The website also contains links to other State and Federal documents that may be of interest. The report and other CSO materials may be found at: http://www.maine.gov/dep/water/cso/index.html.

The report is meant to be a snapshot of the CSO program status in Maine. We welcome any comments that you might have to improve the report. Thanks to all of you who have contributed data for this report, and most importantly thank you for your continued efforts to eliminate the public health hazard created by CSOs.

Mike Riley, P.E.
CSO Abatement Coordinator
Division of Water Quality Management

Enc.: Maine Combined Sewer Overflow 2021 Status Report

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Introduction

The purpose of this annual report is to inform the Combined Sewer Overflow (CSO) Permittees and the general public on the status of CSO abatement efforts in the State of Maine. The drive to reduce CSO discharge began in the early 1990s with the development of CSO Master Plans by 47 Maine CSO Permittees, with DEP approvals of the Master Plans starting in 1993. As such, the overall CSO abatement effort has been waged for 30 years in Maine. Over those three decades, thirteen CSO Permittees have completed their CSO abatement plan, closed their CSO locations, conducted post construction monitoring and exited the CSO program. At this point, the remaining 34 CSO Permittees have completed the less difficult CSO abatement projects and are wrestling with the more complex, more expensive projects.

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

At the start of each CSO Permittee's abatement program, initial flow data was collected to estimate the discharge volumes and frequencies, define the scale of the problem, and establish a corrective course of action. Since then, CSO flow monitoring plans have continued to improve, Permittees have a better understanding of their collection system's response to wet weather, and overall data reliability has increased.

What is a CSS and What are CSOs?

- Combined Sewer Systems (CSS) are defined as collection systems which carry a combination of sanitary wastewater and storm water, within the same pipes. They are typically older collection systems designed and installed prior to the advent of wastewater treatment facilities.
- Combined Sewer Overflows (CSOs) are discharges of untreated wastewater from municipal CSSs. CSOs can be considered hydraulic relief points in a CSS which discharge to a receiving water during wet weather to protect property and prevent sewer backups into people's basements. CSOs typically consist of two components; a CSO Regulator where the untreated wastewater exits the sewer system, and a CSO outfall where the wastewater is discharged to the receiving water. Maine Pollution Discharge Elimination System (MePDES) permits issued by the State license the CSO outfalls, not the CSO regulators. Although uncommon, there can be more than one regulator discharging to a given CSO outfall.
- Difference between a CSO Outfall and a CSO Regulator:
    - CSO Outfall – a licensed pipe or structure that discharges untreated combined wastewater from an overwhelmed collection system to the receiving water during wet weather events in compliance with requirements of the MePDES permit and waste discharge license.
    - CSO Regulator – this is where combined wastewater exits the sewer collection system, prior to reaching the wastewater treatment facility (WWTF). Think of it as leakage on the way to the WWTF. This happens when flows are high enough

to exceed a regulator weir elevation thereby diverting that portion of the flow to a CSO outfall. CSO regulators are not permitted structures, CSO outfalls are. There can be more than one CSO regulator per CSO outfall. For example, Portland currently has 33 CSO regulators for 28 CSO outfalls.

- Large volumes of water entering the 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, resulting in discharges. Most Permittees distinguish between inflow and infiltration from public sources (catch basins and pipe located within the public right of way) and private sources (roof drains, perimeter drains, sump pumps, and service pipes located on private property)
- CSO discharges occur mostly during and after rain events or snowmelt. Depending on the amount of inflow (catch basins, sump pumps, roof drains) and infiltration (high groundwater leaking into sewer via crack, loose joints) entering a CSS flows during wet weather events can be as high as fifty (50) times the normal dry weather flows. This ratio of wet weather flow to dry weather flow is referred to as the peaking factor. For CSO Permittees in Maine, wet weather peaking factors range from about three, for Permittees that have implemented an effective sewer separation program, to over ten, for Permittees whose separation efforts have been less effective. Peaking factors are an indication of the sensitivity of a CSS to precipitation and also a good indicator of how combined the CSS still is.
- CSOs were originally added as hydraulic relief points within the CSS to allow the excess flows to be discharged in a controlled manner. These relief points are generally at topographic low points, near pump stations and river crossings.
- A CSO discharge is considered a legally allowable discharge under the MePDES permit program subject to the following two conditions:
  - The CSO Permittee must be pursuing a DEP approved CSO abatement plan.
  - The abatement plan must be on schedule.
  - If either condition is not met, the legal protection for CSO discharge goes away. Subsequent discharges are treated as illicit sanitary sewer overflows, until the two conditions are once again met.
- Sewer separation projects are designed to separate out the stormwater collection system from the wastewater collection system so that the sewers only carry wastewater and all stormwater is handled separately. If enough separation work is completed, CSO locations are no longer needed and can be permanently closed.

What are the Impacts of CSOs?

- At the end of 2021, there were 34 Maine CSO Permittees (Towns, Cities, Utility Districts, Authorities) located in 31 Maine communites with CSO discharge points in their sewer collection systems. At the end of 2021, these Permittees collectively had 123 individual CSO discharge points (reduced from the original 340). Seven CSO locations were either permanently closed or converted to emergency overflows in 2021 (Auburn SD CSO 005, City of Calais CSO 004 and CSO 007, GAUD CSO 003 and CSO 022B, Paris U.D. CSO 001, and City of Portland CSO 010).
- The frequency of discharges varies greatly amongst Permittees, ranging from seldom, all the way to occurring in response to the smallest rainstorms. Dry weather CSO

discharges are prohibited, as are CSO discharges due to mechanical failure, or inadequate operation and maintenance. In addition, no discharges shall occur at flow rates below the design capacity of the collection system.

- In large communities, tens 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 CSO discharges have ranged from approximately 347 to 455 million gallons. For comparison, the estimated volume from 1989, when most CSO abatement programs were just starting, was 6.2 billion gallons.
- CSOs discharge untreated combined sewage into ten major watersheds in Maine. The watersheds include seven (7) rivers and their tributaries (Androscoggin, Kennebec, Machias, Penobscot, St. Croix, St. John, and Saco) and three (3) bays (Casco Bay, Frenchman Bay, and Penobscot Bay). The receiving waters vary in size from the Atlantic Ocean all the way down to a handful of small streams. The latter are the focus of DEP's effort to eliminate CSO discharge to sensitive receiving waters.
- Water quality is impaired by the addition of floatable solids, bacteria, and sometimes industrial pollutants that may be present in CSO discharges.
- Potential public health impacts from CSO discharges include the closure of beaches and shell fishing areas due to bacterial contamination, and the potential for drinking water supplies to be threatened/contaminated.
- Why is CSO abatement important? During wet weather, flows in a CSS can hydraulically overload the capacity of the collection system leading to CSOs, sanitary sewer overflows (SSOs), street flooding, back-ups into basements, and treatment facility upsets.

What is a CSO Permittee?

- CSO Permittee – a Town, City, Sewer District, or regional Wastewater Treatment Authority that has active CSO locations in their collection system which must be licensed.
- CSO Permittees are authorized to discharge untreated combined sanitary and storm waters subject to the conditions and requirements included in the Maine Pollutant Discharge Elimination System (MePDES) permit. In simple terms, a CSO Permittee receives legal protection for CSO discharges while they work to implement an approved CSO Master Plan to abate and eliminate said discharges.
- The Department of Environmental Protection issues CSO Permittees a wastewater discharge license that requires them to implement the Environmental Protection Agency's (EPA) Nine Minimum Control Best Management Practices (BMPs) for CSOs and develop, maintain and implement a CSO Master Plan (aka the Long Term Control Plan (LTCP)) to eliminate or abate their overflows, bringing them into compliance with EPA's April 19, 1994 Combined Sewer Overflow (CSO) Control Policy, the Clean Water Act, and State law.
- Special Conditions in a Maine Pollutant Discharge Elimination System (MePDES) permit/Waste Discharge License require all CSO Permittees to submit an Annual CSO Progress Report to the Department, by March 1st of the following year for the previous calendar year.

- The Annual CSO Progress Report documents the Permittee's efforts to implement CSO abatement in a given year 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 abatement movement began in 1989 with the publication of the National CSO Control Strategy by the EPA.
- At that time, the State of Maine had about 50 CSO Permittees that discharged an estimated 6.2 billion gallons of untreated wastewater and storm water into the surface waters of the State, primarily during wet weather events.
- At the start of the program in the late 1980s, CSO Permittees reported that over 1,700 individual CSO discharge events were occurring each year, through approximately 340 CSO outfall locations (an average of 5 discharge events per CSO location per year).
- On April 19, 1994 EPA issued a national policy statement entitled "Combined Sewer Overflow (CSO) Control Policy." This policy provided guidance to State permitting authorities and CSO Permittees on coordinating the planning, selection, and implementation of CSO controls, that once implemented, would allow CSO Permittees to achieve compliance with 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 established procedures for CSO evaluation, preparation of an abatement plan, and set forth minimum controls to reduce CSOs while long-term plans are completed. Chapter 570 also discussed the conditions under which new sources of wastewater could be added to a CSS with active CSOs.
- 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 1994 EPA CSO Control Policy.

What is Being Done to Eliminate/Abate CSO Discharges?

- All of Maine's CSO Permittees have completed or are currently working on implementing their CSO Master Plan, often referred to as a Long-Term Control Plan. These documents define the magnitude of the CSO discharges, their impacts on the environment, evaluate a range of abatement control alternatives and their financial impacts, and recommend a set of CSO controls that will eliminate/abate the CSO discharges.
- CSO abatement projects have reduced the discharge of untreated, combined sewage to receiving waters for all the CSO Permittees. Thirteen Permittees have eliminated their CSO discharges entirely, have left the CSO program, and are no longer licensed to discharge untreated combined sewage during wet weather.
- Statewide, **currently licensed** CSO Permittees have reported investing approximately

$746 million in CSO abatement since the program started (Note: this number has been adjusted to reflect recent audit). Of the total invested to date, the Maine Clean Water State Revolving Fund (CWSRF) has contributed $329 million (44% of total expenditure on CSO abatement by current CSO Permittees).

- Statewide, **previously licensed** CSO Permittees, that have since left the program, reported investing a total of approximately $462 million on CSO abatement, with the CWSRF providing $114.7 million of that total (25% of total expenditure on CSO abatement by prior CSO Permittees).
- Anticipated infrastructure needs of current CSO Permittees over the next five years are estimated to be approximately $210 million.

Where are We Now?

2021 Status

1) In 2021, the 34 currently licensed CSO Permittees reduced the total number of CSO discharge locations by seven, from 130 to 123, (a complete listing of Maine's CSO Permittees, the number of CSO locations, and the corresponding receiving waters are listed on page 10). CSOs were closed in the communities of Auburn, Augusta (GAUD), Calais, Paris, and Portland. With the addition of 2021 data, the chart on page 16, **Maine – Statewide Number of Combined Sewer Overflow Outfalls**, shows a 63.6% reduction in the overall number of CSO locations in Maine since 1988.

2) In 2021, the CSO Permittees reported a total of 262 overflow event days which is the lowest annual total on record for the State. An overflow event is any calendar day that one or more CSO locations within a community experiences a discharge. The table on page 12, **Maine CSO Permittee Annual Number of CSO Discharge Events**, contains a historic listing of the annual number of CSO discharge events for each CSO Permittee.

3) The maximum number of overflow event days reported in 2021 from a single CSO Permittee was sixty-one (61). The average (mean) number of discharge event days per year for all Permittees was eight (8) event days and the median was three (3) event days. Additional information can be found in the table on page 12, **Maine CSO Permittee Annual Number of CSO Discharge Events**.

4) Since 1989, the statewide flow weighted average annual precipitation for CSO Permittees in Maine has been 46.72 inches. In 2021, the annual precipitation measured by CSO Permittees varied significantly from 28.06 to 55.77 inches with flow weighted average of 44.19 inches. Comparatively speaking, this is an average year for precipitation in Maine.

5) The **Maine – Yearly CSO Volumes and Precipitation** chart on page 18 compares annual CSO discharge volumes to annual precipitation. The chart illustrates that CSO discharge volumes tend to mirror the annual upward and downward trends in precipitation totals, but also shows that the peaks have become less pronounced as the CSO abatement effort has progressed. The chart also shows a progressive widening of the gap between the annual precipitation trend line and the annual CSO discharge volume trend line. This widening gap illustrates that as CSO abatement projects

continue to be implemented, collection systems are becoming less sensitive to precipitation events.

6) The CSO volume discharged statewide in 2021 was reported to be approximately 346.7 million gallons. This is the second lowest annual discharge on record, trailing only the 294 MG low point set in 2017.

7) The table on page 12, **Maine CSO Permittee Flow Data**, contains a historic listing of the annual overflows from each CSO Permittee. The **Maine 2021 CSO Flow Comparison** pie chart on page 19 and the **Maine 2021 CSO Flow Comparison by Permittee** bar chart on page 20 show graphical comparisons of these overflow volumes between the CSO Permittees.

8) In 2021 the top five (5) CSO Permittees, ranked by discharge volume, accounted for approximately 92.8% of the total CSO volume discharged in the State. The top ten (10) CSO Permittees accounted for approximately 97.5% of the total CSO discharge volume. The remaining twenty-one (21) CSO Permittees accounted for 2.5% of the total CSO discharge volume. See the **Maine 2021 CSO Flow Comparison** pie chart on page 19 for a graphical comparison of CSO dischargers.

9) CSO discharges by the City of Portland and the Portland Water District accounted for approximately 56.1% of Maine's total CSO discharge volume in 2021; see the **Maine 2021 CSO Flow Comparison** pie chart on page 19. The City of Portland is in the midst of two large CSO abatement projects with the Back Cove South Storage Facility and the Back Cove West Storage Conduit. If both tanks had of been in service in 2021, we estimate CSO discharge to Back Cove would have been reduced by more than 70 million gallons.

10) CSO discharges by the City of Bangor accounted for 22.4% of Maine's total CSO discharge volume in 2021. The City of Bangor is currently constructing the 3.8 MG Davis Brook Storage Facility which should have a significant impact on CSO discharge and activity in Bangor.

11) In 2021, the State of Maine saw a continuation of the trend towards more high intensity rain events which can overwhelm any combined sewer collection system. This trend of high intensity storms has worked against the progress made by Maine CSO communities.

12) The chart on page 21 – **Maine 2021 CSO Volume Discharged by Watershed**, is a graphical representation of the CSO volumes discharged by major watershed. In 2021, Casco Bay received approximately 57.2% of the statewide CSO volume discharged, followed by the Penobscot River at 24.0%, the Saco River at 8.4%, the Androscoggin River at 6.8%, the Kennebec River at 2.1%, and Frenchman Bay at 1.1%. Discharges to the St. Croix River, Penobscot Bay, the St. John River, and the Machias River account for the remaining ~0.4% of combined sewer overflow volumes.

13) In 2021, four of Maine's major rivers received the **lowest annual CSO discharge on record**. These include the Androscoggin River which benefited from reduced discharge by Lewiston and LAWPCA, the Kennebec River where all seven CSO communities reduced their discharge, the Saco River, driven by significantly lower discharge from

Biddeford, and the St. Croix River, where Calais had a significant reduction in discharge. The table on page 22 – **Maine Annual CSO Volume Discharged by Watershed**, shows the reported CSO discharge volumes for each CSO Permittee grouped by the receiving watersheds, both for 2021 and the previous five years.

14) CSO discharges are well documented contributors to 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 of the State, there may be other factors that contribute to a beach or shell fishing area closure. 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. This Annual Report attempts to identify which beaches and shell fishing areas **may have** been impacted by CSO discharges in 2021.

15) In 2021, there was one beach closure due to CSO discharge and that was in Portland at East End Beach. There were potential impacts on thirteen (13) beach areas from 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).

16) In 2021 three (3) CSO Permittees reported that shell fishing areas could have been impacted by their CSO discharges (Bar Harbor, Machias and Portland). All three (3) reported shell fishing area closures, which may or may not have been attributed to 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 levels, frozen or thawed ground, snowmelt, and rainfall volume, duration, and intensity. To evaluate CSO abatement progress it is best to look for a historical trend in reductions, rather than totals from year to year. The chart on page 14, **Maine – Statewide Combined Sewer Overflow Volume Discharged**, illustrates the continuing overall downward trend in the CSO volume discharged annually. Since 1989, the overall CSO volume discharged annually has decreased by approximately 94% statewide. Recent progress has slowed as Permittees tackle the more difficult abatement projects.

2) Similarly, the chart on page 15, **Maine – Statewide Combined Sewer Overflow Annual Number of Discharge Events**, shows an overall downward trend in the number of overflow event days per year. Since 1989, the number of overflow event days experienced per year has decreased by approximately 85.1% statewide.

3) CSO abatement progress should not be measured solely by comparing the volumes discharged from one year to the next, because the volume discharged is influenced by variations in precipitation amounts, intensity and timing, the total area drained by the collection system, 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 because of the complex relationship between 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 annual precipitation patterns. To partially compensate for the fluctuation in annual precipitation patterns, the total volume of untreated combined sewage discharged can be unitized by taking into consideration the average annual precipitation received by each CSO Permittee. Just divide CSO volume by annual precipitation reported in inches to obtain a volume discharged per inch of precipitation. The chart on page 17, **Maine Combined Sewer Overflows Annual Volume Discharged per Inch of Precipitation**, illustrates the unitized CSO discharge volume per year. This chart 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 **7.8** million gallons per inch of precipitation, a reduction of 93.9%. This is the second lowest total on record, trailing only the 7.3 MG per inch that was discharged in 2017. The reduction in CSO discharge per inch of rain mirrors the overall reduction in annual CSO discharge volume achieved statewide through 2021 (94%). This analysis is useful as a general indicator of the CSO abatement progress that is being accomplished.

5) Precipitation and the CSO volume discharged does not have a simple linear relationship. Still, generally, as precipitation levels increase, the volume of combined sewage being discharged per inch of precipitation would increase, because of the sewers finite capacity to capture more storm water. Once the capacity of the combined sewer system is reached, any additional rainfall or snowmelt would overflow the already inundated system.

6) The susceptibility of a CSO Permittee's sewer collection system to excessive inflow and infiltration (I&I) is dependent on many factors including age and condition of pipe, degree of separation, quality of the original installation, how well the system has been maintained, etc. Therefore, wet weather conditions and precipitation patterns affect individual CSO Permittees differently. Systems with a large number of catch basins or roof drains still connected, or with a high percentage of impermeable surfaces, may be influenced to a greater degree by the inflow generated by intense summer storms. In communities where the sanitary and storm systems are largely separated and inflow is not the main challenge, the cause of wet weather discharges might be more infiltration based. In these systems a high ground water table, often occurring in the spring, can promote infiltration into the collection system via leaky pipes and manholes. Therefore, direct comparisons between Permittees regarding their CSO abatement progress could be misleading.

7) Starting in 2018 the Annual Maine Combined Sewer Overflow Status Report has included a new section which summarizes the level of treatment provided by each of the fourteen (14) Maine Permittees which have a CSO Related Bypass of secondary treatment. The **Maine CSO Permittee Level of Treatment** summary included on page 23 provides the total annual volume of wastewater collected by each of the fourteen "bypass" systems, the percentage which receives secondary treatment, the

percentage which receives only primary treatment (the bypass volume), and the percentage which receives no treatment (CSO volume). The summary is a good indication of which CSO Permittees are maximizing the percentage of flows which receive secondary treatment, and whether certain systems are overly reliant on their CSO bypass.

8) Portland, Bangor, LAWPCA, and Lewiston/Auburn, are currently in the planning/design stage (Lewiston/Auburn and LAWPCA) or the construction stage (Portland and Bangor) to add off-line storage to their collection systems, or at their treatment plant. The three largest storage projects in the State, including the 3.5 MG Back Cove South Storage Tank, the 2.25 MG Back Cove West Storage Conduit, both in Portland, and the 3.8 MG Davis Brook Storage Tank in Bangor, are all scheduled to come on line within the next year and a half. All three will have a significant impact on CSO discharges once completed. The storage tank at LAWPCA will be on line by the end of 2026.

Recognitions

1) In 2021, the following CSO Permittees had their **lowest annual CSO discharge on record**: City of Biddeford, City of Calais, Greater Augusta Utility District, City of Lewiston, Town of Mechanic Falls, Town of Skowhegan, and City of Westbrook. Congratulations on this achievement!

2) In 2021, the following CSO Permittees had their **lowest, or matched their lowest, number of annual CSO events on record**: City of Bangor, Greater Augusta Utility District, Town of Mechanic Falls, and Town of Skowhegan. Congratulations on this achievement!

3) In 2021, the following CSO Permittees had **zero CSO events and zero CSO discharge**: Town of Bucksport, Kennebec Sanitary Treatment District, Town of Milford, Paris Utility District, City of Rockland. Highest honors!

4) Paris Utility District (PUD) is poised to be the next CSO permittee to complete their post construction monitoring phase (PCMP) and exit the CSO program. PUD has had no CSO discharge for over ten years and is in the third year of post construction monitoring. Their final CSO has been converted to an Emergency Overflow to protect the WWTF from flooding and will be monitored continuously. Reaching the end of one's CSO abatement effort and being able to exit the CSO program is a major achievement which should be celebrated. Congatulations to Penny Lowe and her staff at PUD. Well done!

5) Other CSO permittees that have entered the PCMP include: Town of Bucksport, City of Gardiner, City of Old Town, Town of Cape Elizabeth – Ottawa Road

6) CSO Permittees nearing the completion of their construction phase of CSO abatement, and the start of post construction monitoring, include: City of Belfast, City of Calais.

7) We'd also like to recognize those CSO Permittees that treated more than 99% of their total flow volume to secondary treatment standards. They include: Town of Bar Harbor, City of Belfast, City of Brewer, Greater Augusta Utility District, Kennebec

Sanitary Treatment District, Town of Machias, Town of Madawaska, Town of Mechanic Falls, City of Old Town, Town of Orono, Paris Utility District, City of Saco, Town of Skowhegan, City of South Portland, and City of Westbrook/PWD.

Maine Combined Sewer Overflow (CSO) Permittee List

(As of December 31, 2021)

	COMMUNITY/PERMITTEE	Outfalls	Regulators	No. of CSO Outfalls & Receiving Water
1.	**AUBURN SEWERAGE DISTRICT**	1	1	1-Androscoggin R.
2.	BANGOR	8	8	5-Kenduskeag Str., 3-Penobscot R.
3.	BAR HARBOR (Hulls Cove)	1	1	1-Frenchman Bay
4.	BAR HARBOR (Main Plant)	3	3	2-Frenchman Bay, 1-Eddie Brook
5.	BATH	4	4	4-Kennebec R.
6.	BELFAST	2	2	2-Passagassawakeag R./Belfast Hbr.
7.	BIDDEFORD	7	7	7-Saco R.
8.	BREWER	4	4	3-Penobscot R., 1-Sedgeunkendunk Str.
9.	BUCKSPORT	0	0	SWIRL to Penobscot R.
10.	CALAIS	3	3	2-St. Croix R., 1-Landing Bk.
11.	**CAPE ELIZABETH – Ottawa Road PS** (Co-Permittees: So. Portland, PWD, & Cape Elizabeth)	1	1	1-Atlantic O.
12.	GARDINER	1	1	1-Kennebec R.
13.	GREATER AUGUSTA UTILITY DISTRICT (GAUD) & **Hallowell Sanitary Sewers & CSO**	16	22	16-Kennebec R.
14.	**HAMPDEN**	1	1	1-Souadabscook Str.
15.	KENNEBEC SANITARY TREATMENT District (KSTD)	2	2	2-Kennebec R.
16.	**LEWISTON**	8	9	3-Androscoggin R., 1-Goff Bk./Hart Bk., 4-Jepson Bk.
17.	LEWISTON-AUBURN Water Pollution Control Authority (LAWPCA)	1	1	1-Androscoggin R.
18.	MACHIAS	2	2	2-Machias R.
19.	MADAWASKA	2	2	2-St. John R.
20.	MECHANIC FALLS SANITARY DISTRICT	2	2	2-Little Androscoggin R.
21.	**MILFORD**	1	1	1-Penobscot R.
22.	OLD TOWN	3	3	2-Penobscot R., 1-Stillwater R.
23.	ORONO	1	1	1-Penobscot R.
24.	PARIS UD	0	0	0-Little Androscoggin R.
25.	**PORTLAND – CITY**	9	14	5-Back C., 1-Capisic Bk., 2-Portland Hbr., 1-Nason Bk. to Fore R. (marsh)
26.	PORTLAND – PORTLAND WATER DISTRICT (PWD)	19	19	8-Back C., 3-Casco B., 4-Fore R., 4-Portland Hbr.
27.	**RANDOLPH**	1	1	1-Kennebec R.
28.	ROCKLAND	1	1	1-Rockland Hbr.
29.	SACO	2	2	2-Saco R.
30.	SKOWHEGAN	5	5	5-Kennebec R.
31.	SOUTH PORTLAND	4	4	1-Barberry Ck., 1-Fore R., 1-Calvery P., 1-Portland Hbr.
32.	WESTBROOK	5	5	5-Presumpscot R.
33.	**WINSLOW**	2	2	1-Sebasticook R., 1-Kennebec R.
34.	WINTERPORT SEWERAGE DISTRICT	1	1	1-Penobscot R.
	TOTAL CSOs	123	149	

34 CSO Permits, permitting 31 CSO Towns/Cities/Districts/Authorities
Two or more permits in one CSO Town/City
Two CSO Towns/Cities covered in one permit
Permittee has entered post-construction monitoring period prior to exiting the CSO program
CSO Outfall – where wastewater is discharged to the receiving water
CSO Regulator – where wastewater exits the sanitary sewer system
Bold = 9 Permittees with sewer system only. Sewers discharge to a POTW controlled by another entity.

Maine CSO Permittee Flow Data

		Annual Volume (Gallons)																
Permittee	**NPDES Permit No.**	**1987**	**1988**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Auburn S.D.	ME0100005	99,720,000	99,720,000	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	814,738	1,117,809	1,656,736	997,100	219,600	439,796
Bangor	ME0100781	635,000,000	635,000,000	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	48,586,000	13,310,000	50,547,000	96,009,000	58,745,000	77,720,893
Bar Harbor	ME0101214 & ME0102466	32,000,000	32,000,000	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	277,000	225,200	562,221	2,757,979	971,376	3,816,271
Bath	ME0100021	600,000,000	600,000,000	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	1,608,037	1,697,081	3,753,899	2,800,232	2,874,579	1,806,487
Belfast	ME0101532	736,000	736,000	1,035,392	198,370	260,036	486,919	490,495	0	0	0	0	0	0	305,071	330,905	96,444	264,774
Biddeford	ME0100048	400,000,000	400,000,000	440,173,468	416,581,800	435,972,508	381,853,242	113,907,851	141,198,828	90,581,675	194,302,147	95,830,208	99,492,656	49,504,091	70,814,300	69,451,000	34,644,000	26,649,500
Brewer	ME0100072	750,000,000	750,000,000	231,283,607	289,560,294	229,270,683	227,139,515	140,065,515	435,548	58,310	139,280	465,000	87,374	0	366,687	868,060	76,188	4,235,000
Bucksport	ME0100111	53,000,000	53,000,000	20,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Calais	ME0100129	42,000,000	42,000,000	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	4,624,354	4,512,300	10,000,030	2,403,000	1,839,927	587,400
Cape Elizabeth	ME0102806	5,400,000	5,400,000	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	251,000	277,000	375,000	432,000	2,000	230,000
Corinna S.D.	ME0100153	40,000,000	40,000,000															
Dover-Foxcroft	ME0100501	16,000	16,000															
East Millinocket	ME0100196	1,200,000	1,200,000															
Fairfield	ME0102393	300,000	300,000	0	0	0	0	0	0	0								
Fort Kent U.D.	ME0102369	3,000	3,000															
Gardiner	ME0101702	44,000,000	44,000,000	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	665,000	2,877,000	4,893,100	2,877,000	9,932,000	1,993,000
Greater Augusta U.D.	ME0100013	72,554,000	72,554,000	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	7,120,000	3,680,000	3,771,000	3,482,000	6,074,000	3,082,000
Hallowell W.D. - 2008 GAUD	ME0101010	350,000	350,000	150,000														
Hampden	ME0102512	1,201,000	39,600	85,000	0	500,000	500,000	500,000	0	0	0	24,105	151,055	0	1,250,000	1,933,080	244,200	319,902
Kennebec S.T.D.	ME0100854	2,500,000	2,500,000	1,136,649	2,209,107	0	0	0	135,444	0	0	1,797,554	0	0	324,228	0	0	0
Kittery	ME0100285	350,000	350,000															
Lewiston	ME0100994	208,900,000	208,900,000	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	25,477,213	12,808,039	18,552,725	21,743,196	22,923,950	8,480,003
Lewiston-Auburn W.P.C.A.	ME0101478	480,000,000	480,000,000	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	18,694,000	21,856,000	25,735,000	28,518,000	33,659,000	14,531,000
Lincoln S.D.	ME0101796	2,400,000	2,400,000															
Lisbon	ME0100307	600,000	600,000															
Livermore Falls	ME0100315																	
Machias	ME0100323	7,000,000	7,000,000	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	910,259	203,815	603,687	145,425	100,035	122,833
Madawaska	ME 0101681	3,200,000	3,200,000	2,667,765	24,194,225	15,800,000	1,107,610	1,490,000	377,488	349,400	1,830,563	0	0	1,562,430	3,988,640	8,205,821	10,242	422,838
Mechanic Falls S.D.	ME0100391	18,000,000	18,000,000	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	927,473	603,528	194,728	616,537	379,608	63,330
Milford	ME0102695	220,000	220,000	0	88,365	66,285	52,006	407,151	26,970	0	10,000	25,000	20,000	0	0	29,781	8,638	0
Milo W.D.	ME0100439	10,000	10,000	501,000	750													
Old Town	ME0100471	6,300,000	6,300,000	770,699	254,967	0	125,000	0	0	0	0	30,000	10,000	0	270,801	61,508	20,698	12,128
Orono	ME0100498	31,000,000	31,000,000	7,360,000	4,820,000	371,471	2,416,910	1,260,837	0	0	0	1,320,000	1,461,000	0	1,460,000	698,817	1,192,467	905,504
Paris U.D.	ME 0100951	1,000,000	1,000,000	206,000	84,000	0	110,000	0	1,020,000	0	0	0	0	0	0	0	0	0
Portland & PWD	City-ME0101435 / PWD-ME0102075	1,800,000,000	1,800,000,000	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	318,359,691	175,675,000	283,612,831	184,453,600	178,744,981	194,468,501
Presque Isle	ME0100561	27,500,000	27,500,000															
Randolph	ME0102423	10,000,000	10,000,000	459,476	1,413,880	488,645	285,719	223,934	988,434	50,054	101,183	0	515,240	0	105,695	3,500	67,300	1,400
Rockland	ME0100595	47,000,000	47,000,000	0	0	0							0	0	0	0	0	0
Saco	ME 0101117	176,000,000	176,000,000	1,950,000	100,000	27,015	924,014	1,372,128	2,964,929	1,100,985	1,739,425	1,057,000	599,000	304,000	2,139,000	2,675,000	978,000	2,487,000
Sanford S.D.	ME0100617	4,000,000	4,000,000	0	0	0	0	0	0									
Skowhegan	ME0100625	48,000,000	48,000,000	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	4,168,672	738,844	4,379,019	1,711,809	1,073,711	252,870
South Portland	ME0100633	500,000,000	500,000,000	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	6,240,350	2,033,229	3,533,710	8,651,990	859,095	2,511,052
Westbrook	ME0100846	50,000,000	50,000,000	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	7,447,100	1,285,000	1,631,000	9,816,000	3,227,000	1,038,000
Winslow	ME0102628	1,300,000	1,300,000	725,000	235,000	5,001	200,000	63,354	1,327,119	7,070	0	164,549	70,144	237,400	601,045	3,654,519	876,296	193,076
Winterport S.D.	ME0100749	680,000	680,000	102,000	252,000	18,000	0	0	0	0	60,000	90,000	0	0	138,000	0	0	108,000
Yarmouth	ME0100765	1,000	1,000															
Total Annual Discharge Volume (Gallons)		**6,203,441,000**	**6,202,279,600**	**1,819,925,699**	**2,678,291,397**	**2,347,466,902**	**2,258,781,405**	**1,212,991,196**	**1,289,260,178**	**472,341,866**	**874,838,678**	**515,981,907**	**548,577,356**	**294,507,766**	**495,565,153**	**455,326,859**	**359,840,335**	**346,742,558**
Total Annual Discharge Volume (Billion Gallons)		**6.20**	**6.20**	**1.82**	**2.68**	**2.35**	**2.26**	**1.21**	**1.29**	**0.47**	**0.87**	**0.52**	**0.55**	**0.29**	**0.50**	**0.46**	**0.36**	**0.35**

Notes: For legibility, discharge volume data for years 1989-2006 are not shown. Permittees highlighted in gray no longer maintain a CSO permit. Numbers in blue are estimated from LTCP/MP or subsequent high flow. Biddeford CSO volumes 2005-2016 have been adjusted due to under-estimation of flows.

Maine CSO Permittee Annual Number of CSO Discharge Events

Permittee	NPDES Permit No.	1987	1988	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Auburn S.D.	ME0100005	80	80	42	59	61	37	11	8	5	5	2	8	2	2	5	4	3
Bangor	ME0100781	53	53	25	65	78	73	54	29	27	34	20	28	21	23	34	16	16
Bar Harbor	ME0101214 & ME0102466	155	155	10	27	28	19	6	13	6	17	5	2	3	7	14	5	8
Bath	ME0100021	64	64	25	29	21	20	12	23	18	18	8	14	10	14	15	17	14
Belfast	ME0101532	7	7	5	4	3	6	3	0	0	0	1	0	0	2	3	2	3
Biddeford	ME0100048	180	180	70	53	46	28	100	146	77	88	48	57	55	41	45	43	43
Brewer	ME0100072	95	95	38	59	56	50	45	5	3	3	1	2	0	4	4	2	8
Bucksport	ME0100111	53	53	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Calais	ME0100129	15	15	8	10	14	8	6	14	8	14	6	7	9	15	6	2	2
Cape Elizabeth	ME0102806	5	5	5	11	17	12	6	11	2	12	2	6	2	4	2	1	2
Corinna S.D.	ME0100153	30	30															
Dover-Foxcroft	ME0100501	8	8															
East Millinocket	ME0100196	11	11															
Fairfield	ME0102393	15	15	0	0	0	0	0	0	0								
Fort Kent U.D.	ME0102369	10	10															
Gardiner	ME0101702	40	40	2	8	2	12	6	6	3	3	2	2	5	5	5	5	3
Greater Augusta U.D.	ME0100013	80	80	29	34	35	32	37	29	22	29	17	17	29	35	26	24	11
Hallowell W.D. - 2008 GAUD	ME0101010	14	14	3														
Hampden	ME0102512	1	3	1	0	1	1	1	0	0	0	1	1	0	1	2	1	2
Kennebec S.T.D.	ME0100854	15	15	1	4	0	0	0	1	0	0	1	0	0	1	0	0	0
Kittery	ME0100285	7	7															
Lewiston	ME0100994	80	80	38	71	58	68	45	38	27	23	37	35	28	24	27	15	14
Lewiston-Auburn W.P.C.A.	ME0101478	80	80	29	38	36	44	37	22	32	26	17	17	10	20	19	23	14
Lincoln S.D.	ME0101796	10	10															
Lisbon	ME0100307	5	5															
Livermore Falls	ME0100315																	
Machias	ME0100323	15	15	5	12	13	9	7	9	6	13	7	8	7	11	7	5	1
Madawaska	ME 0101681	16	16	17	18	32	17	10	8	3	7	0	0	3	3	2	4	5
Mechanic Falls S.D.	ME0100391	42	42	9	42	42	18	39	28	17	30	17	25	12	12	16	12	6
Milford	ME0102695	8	8	0	4	1	3	2	1	0	1	1	1	0	0	1	2	0
Milo W.D.	ME0100439	3	3	2	1													
Old Town	ME0100471	25	25	4	4	0	1	0	0	0	0	1	1	0	2	2	3	2
Orono	ME0100498	30	30	6	7	3	3	2	0	0	0	2	4	0	1	2	3	3
Paris U.D.	ME 0100951	5	5	2	2	0	4	0	4	0	0	0	0	0	0	0	0	0
Portland & PWD	City-ME0101435 / PWD-ME0102075	100	100	58	87	104	79	88	70	63	75	58	56	38	49	46	41	61
Presque Isle	ME0100561	26	26															
Randolph	ME0102423	23	23	1	9	7	3	2	2	1	2	0	2	0	2	1	1	1
Rockland	ME0100595	23	23	0	0	0							0	0	0	0	0	0
Saco	ME 0101117	44	44	12	12	9	10	4	21	15	19	13	12	7	15	6	17	15
Sanford S.D.	ME0100617	10	10	0	0	0	0	0	0	0								
Skowhegan	ME0100625	160	160	55	58	17	23	21	25	36	28	20	23	23	21	23	21	16
South Portland	ME0100633	23	23	5	10	10	12	13	12	7	9	2	3	2	4	3	3	2
Westbrook (PWD)	ME0100846	50	50	55	50	11	12	16	13	60	70	49	38	2	6	4	3	2
Winslow	ME0102628	20	20	3	3	3	2	3	9	1	0	1	3	1	1	2	3	2
Winterport S.D.	ME0100749	8	8	1	1	1	0	0	0	0	1	2	0	0	1	0	0	3
Yarmouth	ME0100765	4	4															
Total Number of CSO Discharge Events		**1748**	**1750**	**568**	**792**	**709**	**606**	**576**	**547**	**439**	**527**	**341**	**372**	**269**	**326**	**322**	**278**	**262**

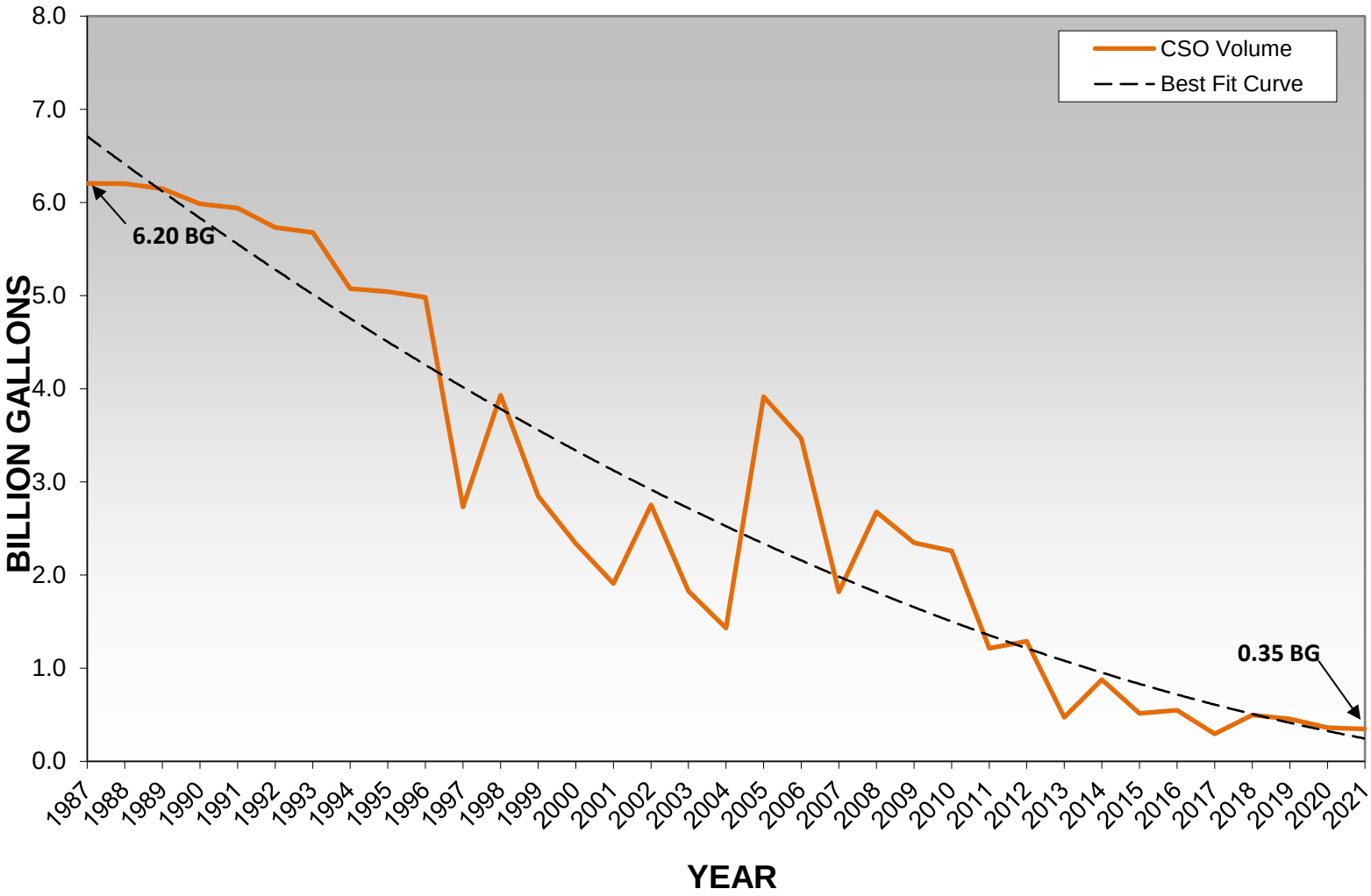
Note: For legibility, discharge event data for years 1989-2006 are not shown. Permittees highlighted in gray no longer maintain a CSO permit. Numbers in blue are estimated from LTCP/MP or other source.

Maine CSO Permittee Annual Number of CSO Outfalls

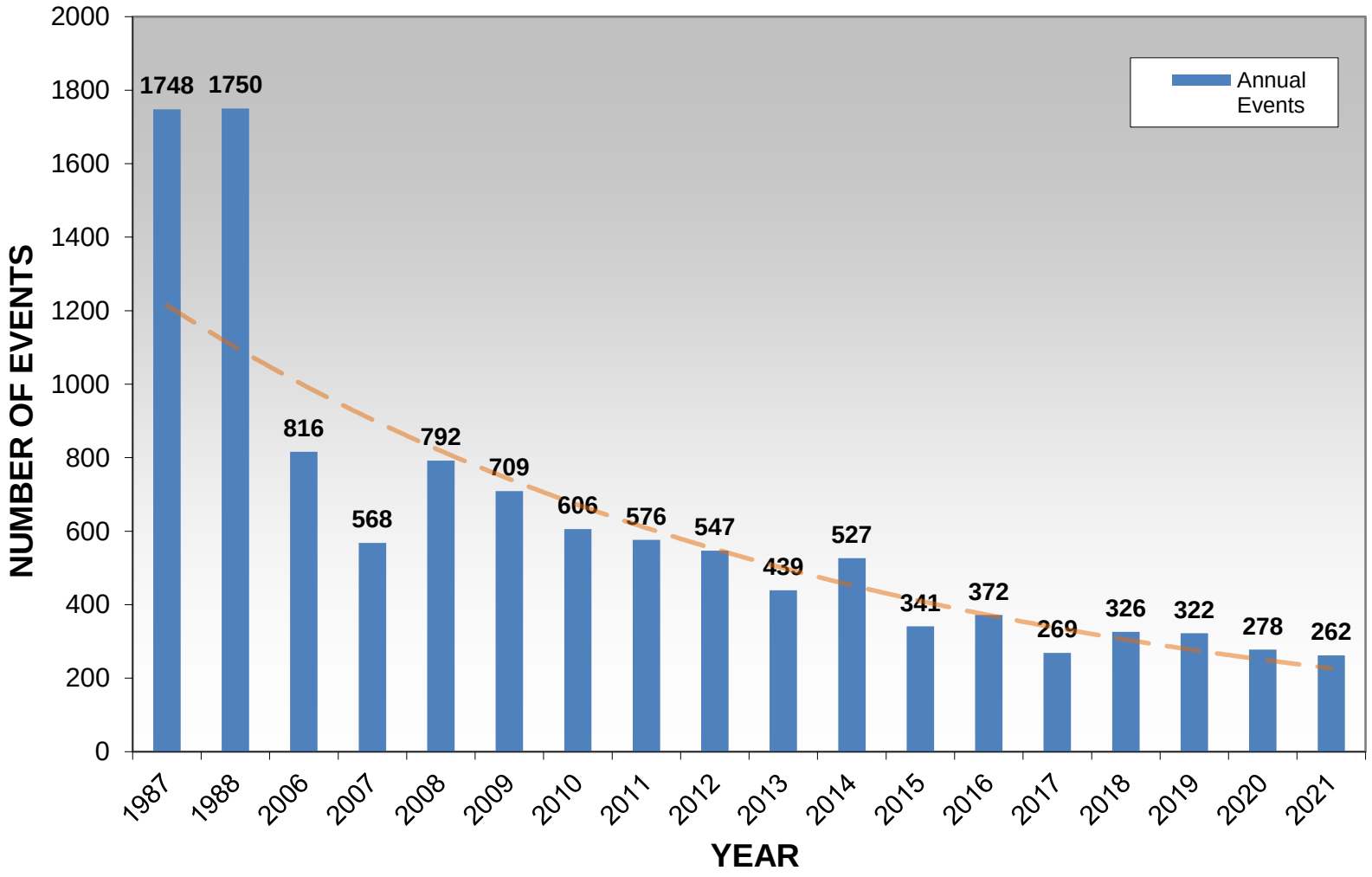
Permittee	NPDES Permit No.	Year Unknown	1987	1988	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Auburn S.D.	ME0100005	11	11	11	4	3	3	3	2	3	2	2	1	2	2	2	2	2	1
Bangor	ME0100781	22	22	22	11	7	7	7	9	9	9	9	9	9	9	8	8	8	8
Bar Harbor	ME0101214 & ME0102466	5	5	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Bath	ME0100021	9	9	9	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Belfast	ME0101532	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Biddeford	ME0100048	16	16	16	11	10	10	10	10	10	8	8	8	8	7	7	7	7	7
Brewer	ME0100072	10	10	10	6	6	6	5	5	4	4	4	4	4	4	4	4	4	4
Bucksport	ME0100111	2	2	2	2	1	1	1	1	1	1	1	1	1	0	0	0	0	0
Calais	ME0100129	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	3
Cape Elizabeth	ME0102806	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Corinna S.D.	ME0100153	5	5	5															
Dover-Foxcroft	ME0100501	15	15	15															
East Millinocket	ME0100196	5	5	5															
Fairfield	ME0102393	3	3	3	2	2	2	2	2	2	0								
Fort Kent U.D.	ME0102369	6	6	6															
Gardiner	ME0101702	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Greater Augusta U.D.	ME0100013	31	31	31	23	24	23	22	22	19	18	18	18	18	18	18	18	18	16
Hallowell W.D. – 2008 GAUD	ME0101010	1	1	1	1	-	-	-	-	-	-	-							
Hampden	ME0102512	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Kennebec S.T.D.	ME0100854	5	5	5	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2
Kittery	ME0100285	3	3	3															
Lewiston	ME0100994	32	32	32	23	22	22	20	18	18	16	11	10	8	8	8	8	8	8
Lewiston-Auburn W.P.C.A.	ME0101478	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Lincoln S.D.	ME0101796	1	1	1															
Lisbon	ME0100307	6	6	6															
Livermore Falls	ME0100315	5	5	5															
Machias	ME0100323	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Madawaska	ME 0101681	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mechanic Falls S.D.	ME0100391	4	4	4	1	3	3	3	3	3	2	2	2	2	2	2	2	2	2
Milford	ME0102695	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Milo W.D.	ME0100439	3	3	3	3	3													
Old Town	ME0100471	4	4	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Orono	ME0100498	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Paris U.D.	ME 0100951	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
Portland & PWD	City-ME0101435 / PWD-ME0102075	42	42	42	33	33	33	32	32	31	31	31	31	30	30	30	30	29	28
Presque Isle	ME0100561	1	1	1															
Randolph	ME0102423	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Rockland	ME0100595	8	8	8	2	2	2					1	1	1	1	1	1	1	1
Saco	ME 0101117	9	9	9	5	6	5	4	4	4	4	4	4	4	4	2	2	2	2
Sanford S.D.	ME0100617	3	3	3	2	1	1	1	1	1	0								
Skowhegan	ME0100625	10	10	10	9	8	7	7	7	7	7	7	7	7	7	5	5	5	5
South Portland	ME0100633	35	28	28	5	6	6	6	6	6	6	6	6	6	6	4	4	4	4
Westbrook (PWD)	ME0100846	7	7	7	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Winslow	ME0102628	2	2	2	1	1	1	2	2	2	2	2	2	3	3	3	2	2	2
Winterport S.D.	ME0100749	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yarmouth	ME0100765	2	2	2															
Total Annual CSO Discharge Outfalls		**350**	**338**	**338**	**183**	**177**	**171**	**164**	**163**	**159**	**149**	**145**	**143**	**142**	**140**	**133**	**131**	**130**	**123**

Note: For legibility, outfall data for years 1989-2006 are not shown. Permittees highlighted in gray no longer maintain a CSO permit. Numbers in blue are estimated from LTCP/MP or other source.

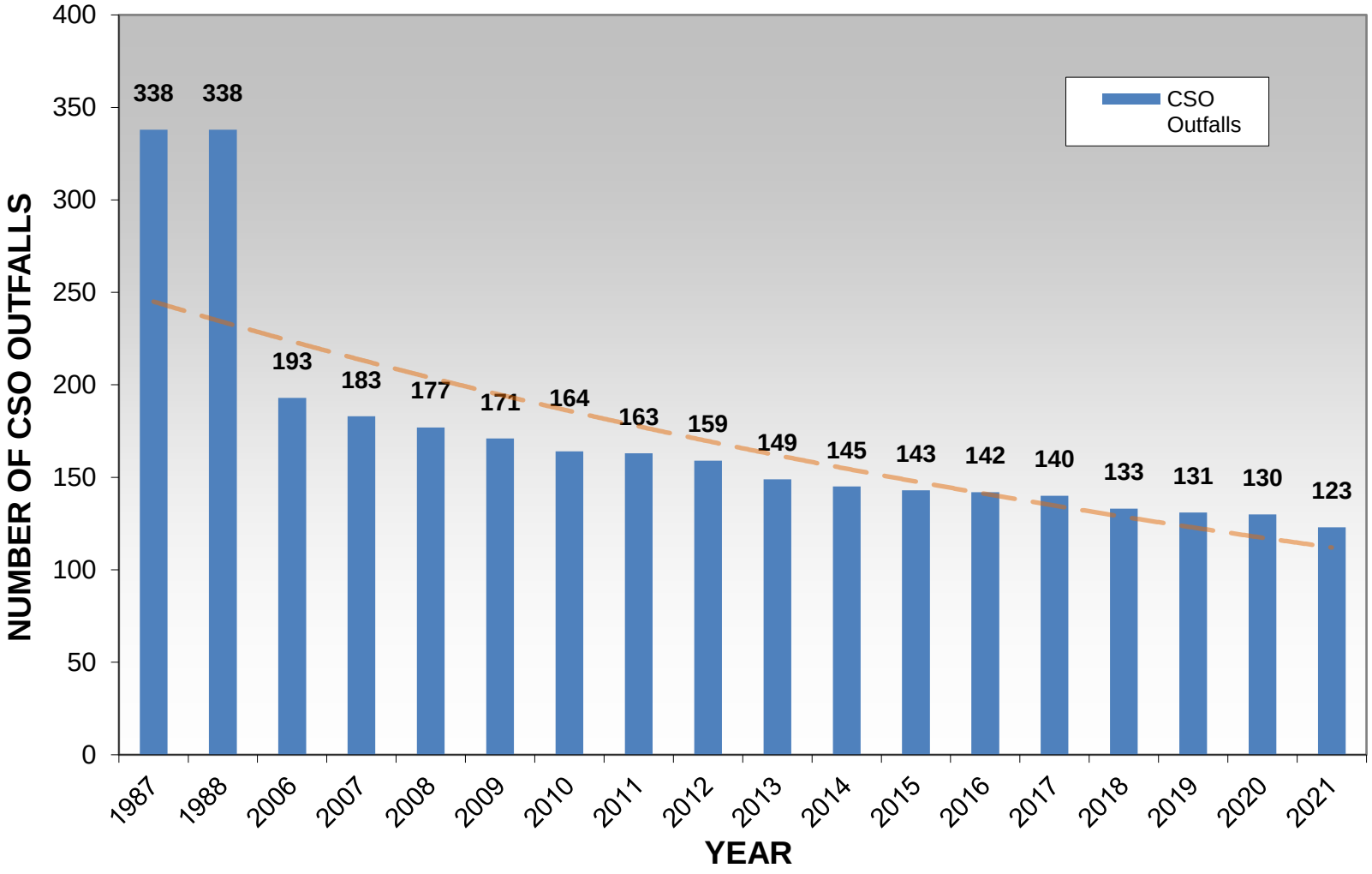
Maine – Statewide Combined Sewer Overflow (CSO) Volume Discharged



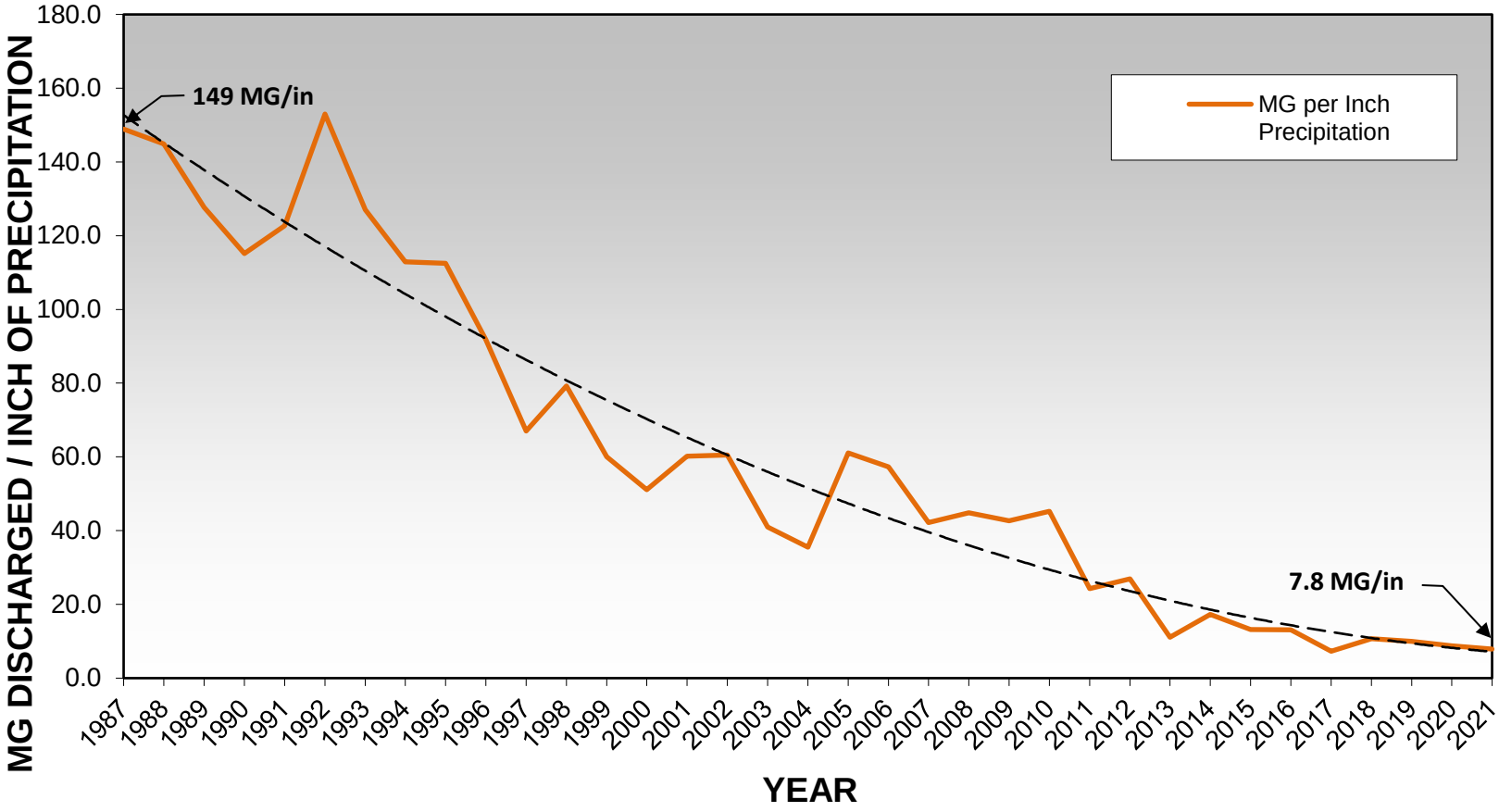
Maine – Statewide Combined Sewer Overflow (CSO)
Annual Number of Discharge Events



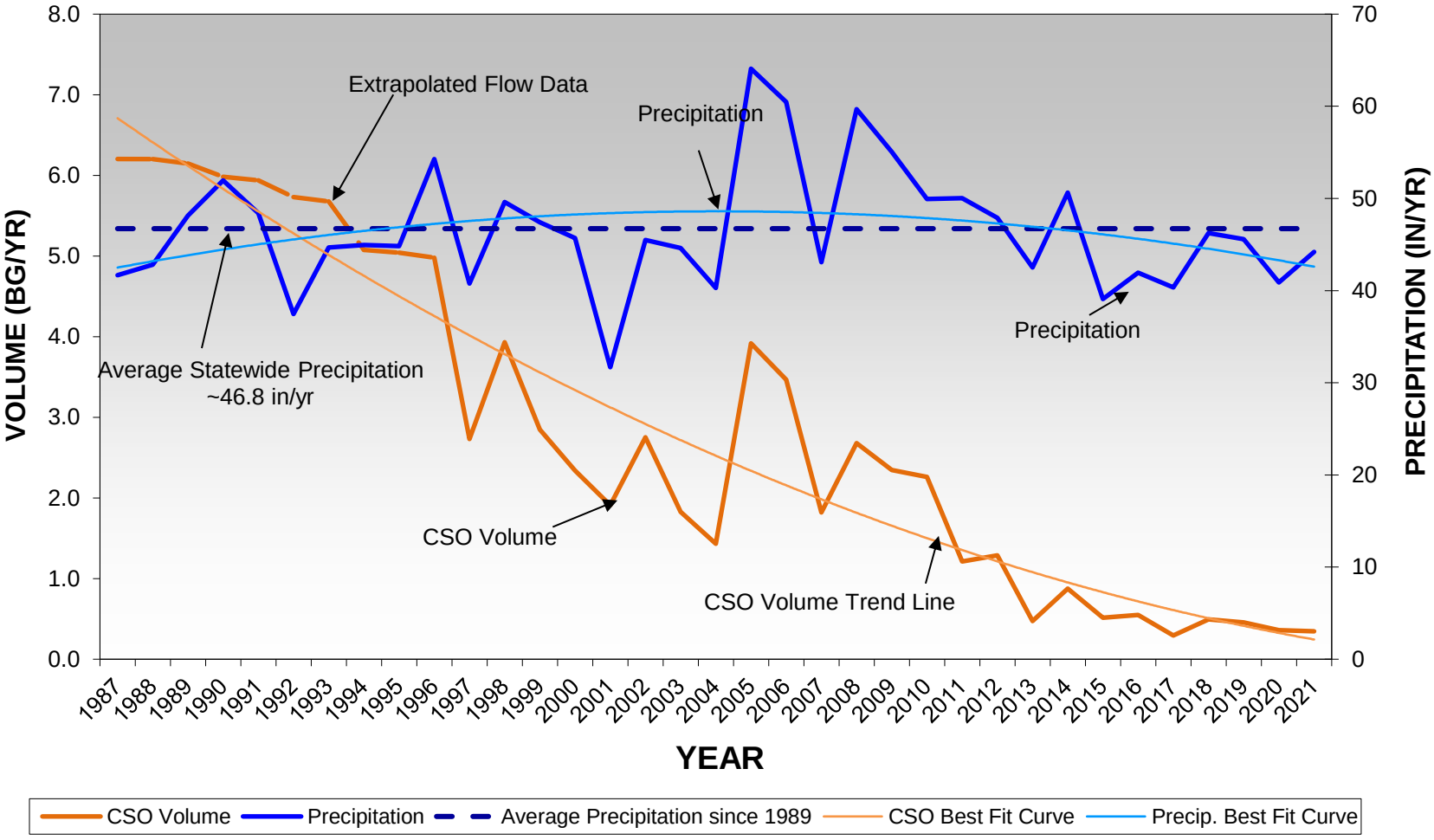
Maine – Statewide Combined Sewer Overflow (CSO) Outfalls



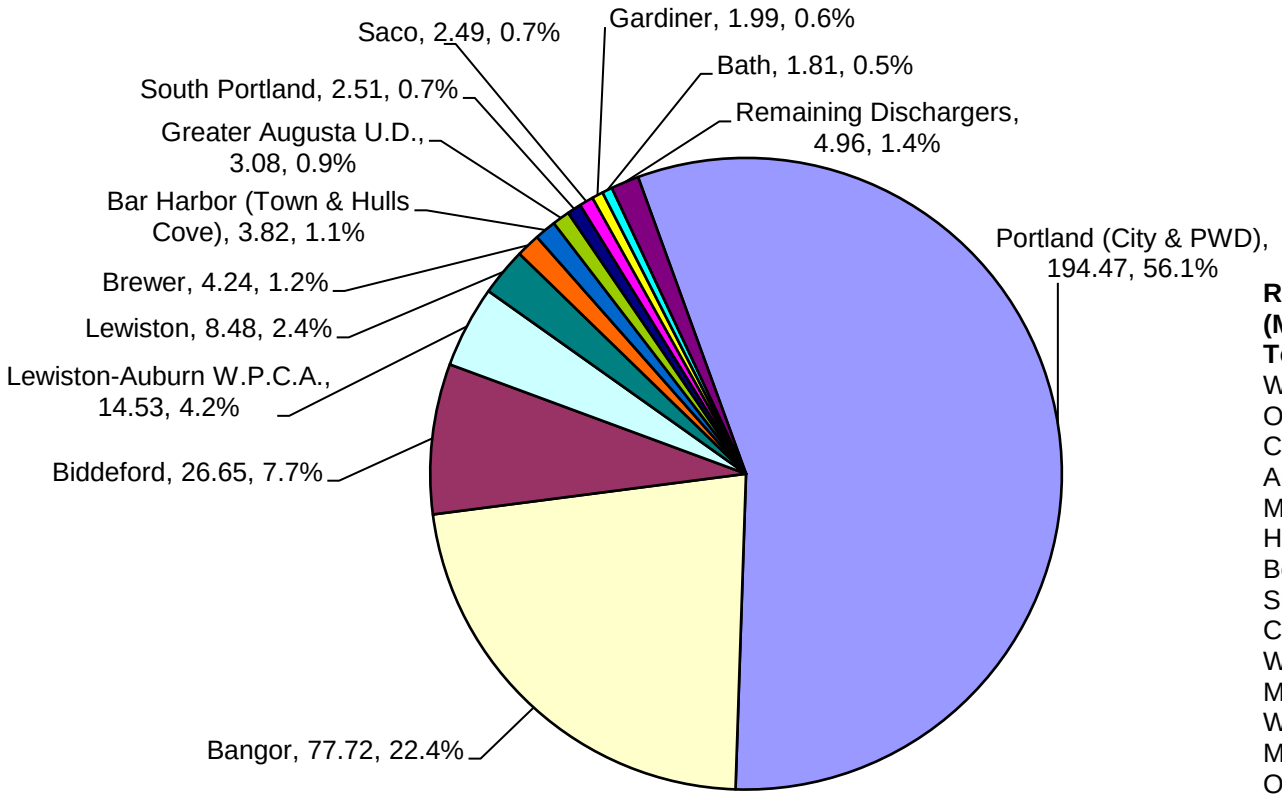
Maine – Statewide Combined Sewer Overflow (CSO)
Annual Volume Discharged per Inch of Precipitation



Maine – Yearly CSO Volumes and Precipitation



Maine 2021 CSO Flow Comparison
34 CSO Permittees
29 Dischargers – 0.35 Billion Gallons

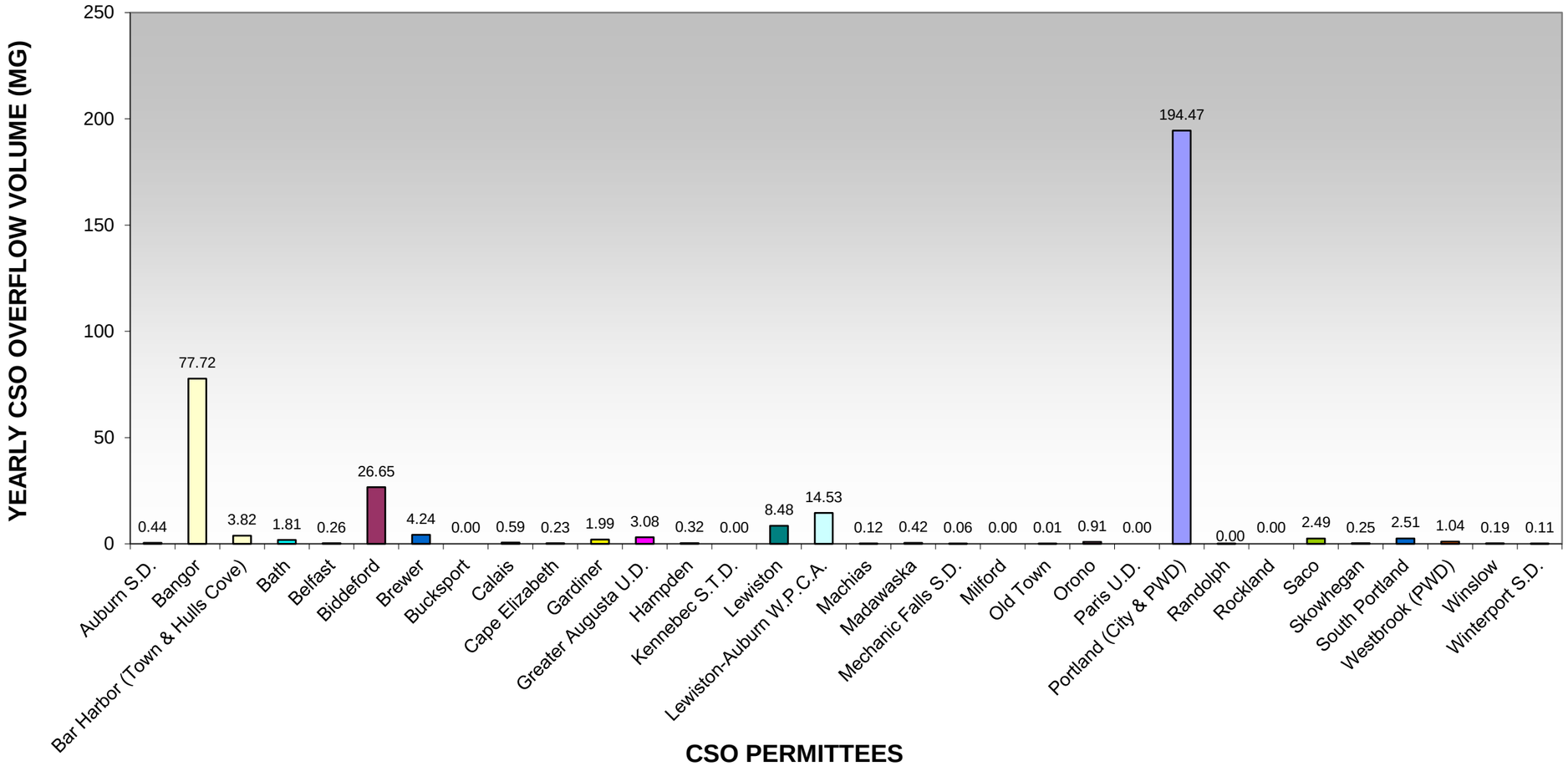


Five Permittees without CSO Discharge in 2021:
Bucksport
Kennebec S.T.D.
Milford
Paris U.D.
Rockland

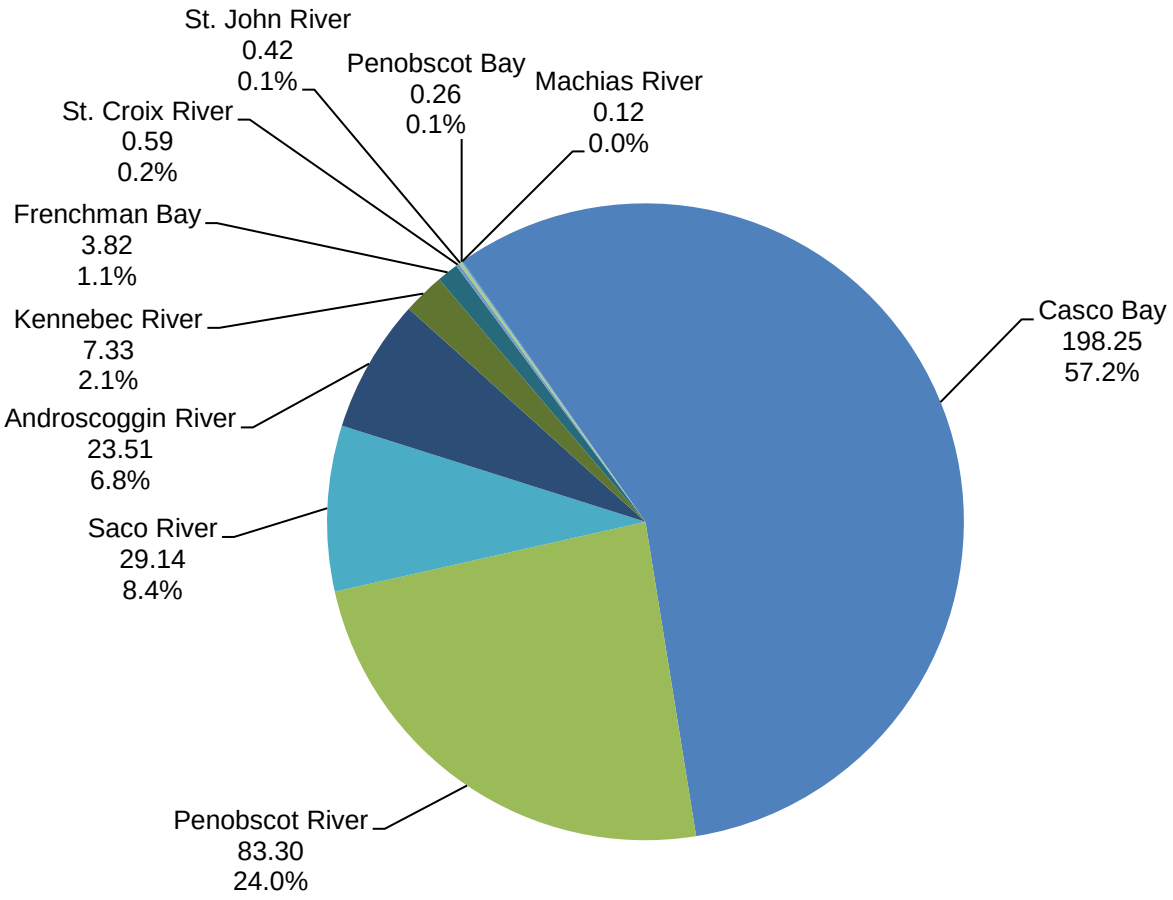
Remaining 15 Dischargers (Million Gallons, Percent of Total):
Westbrook, 1.04, 0.30%
Orono, 0.91, 0.26%
Calais, 0.59, 0.17%
Auburn S.D., 0.44, 0.13%
Madawaska, 0.42, 0.09%
Hampden, 0.32, 0.08%
Belfast, 0.26, 0.07%
Skowhegan, 0.25, 0.07%
Cape Elizabeth, 0.23, 0.06%
Winslow, 0.19, 0.04%
Machias, 0.12, 0.03%
Winterport S.D., 0.11, 0.02%
Mechanic Falls, 0.06, 0.0035%
Old Town, 0.01, 0.0004%
Randolph, 0.001, 0.00%

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

Maine 2021 CSO Flow Comparison by Permittee
0.35 Billion Gallons



Maine 2021 CSO Volume Discharged by Watershed
0.35 Billion Gallons



Receiving Waterbody, Overflow in Million Gallons (MG), Percent of Total

Maine Annual CSO Volume Discharged by Watershed

		Annual Discharge Volume (Gallons)					
	Permittee	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Androscoggin River	Auburn SD	814,738	1,117,809	1,656,736	997,100	219,600	439,796
	Lewiston-Auburn WPCA	18,694,000	21,856,000	25,735,000	28,518,000	33,659,000	14,531,000
	Lewiston	25,477,213	12,808,039	18,552,725	21,743,196	22,923,950	8,480,003
	Mechanic Falls SD	927,473	603,528	194,728	616,537	379,608	63,330
	Paris UD	0	0	0	0	0	0
	Sub Total	***45,913,424***	***36,385,376***	***46,139,189***	***51,874,833***	***57,182,158***	***23,514,129***
Casco Bay	Cape Elizabeth	251,000	277,000	375,000	432,000	2,000	230,000
	Portland-City & PWD	318,359,691	175,675,000	283,612,831	184,453,600	178,744,981	194,468,501
	South Portland	6,240,350	2,033,229	3,533,710	8,651,990	859,095	2,511,052
	Westbrook	7,447,100	1,285,000	1,631,000	9,816,000	3,227,000	1,038,000
	Sub Total	***332,298,141***	***179,270,229***	***289,152,541***	***203,353,590***	***182,833,076***	***198,247,553***
Frenchman Bay	Bar Harbor	277,000	225,200	562,221	2,757,979	971,376	3,816,271
	Sub Total	***277,000***	***225,200***	***562,221***	***2,757,979***	***971,376***	***3,816,271***
Kennebec River	Bath	1,608,037	1,697,081	3,753,899	2,800,232	2,874,579	1,806,487
	Gardiner	665,000	2,877,000	4,893,100	2,877,000	9,932,000	1,993,000
	Greater Augusta UD	7,120,000	3,680,000	3,771,000	3,482,000	6,074,000	3,082,000
	Kennebec STD	0	0	324,228	0	0	0
	Randolph	515,240	0	105,695	3,500	67,300	1,400
	Skowhegan	4,168,672	738,844	4,379,019	1,711,809	1,073,711	252,870
	Winslow	70,144	237,400	601,045	3,654,519	876,296	193,076
	Sub Total	***14,147,093***	***9,230,325***	***17,827,986***	***14,529,060***	***20,897,886***	***7,328,833***
Machias River	Machias	910,259	203,815	603,687	145,425	100,035	122,833
	Sub Total	***910,259***	***203,815***	***603,687***	***145,425***	***100,035***	***122,833***
Penobscot Bay	Belfast	0	0	305,071	330,905	96,444	264,774
	Rockland	0	0	0	0	0	0
	Sub Total	***0***	***0***	***305,071***	***330,905***	***96,444***	***264,774***
Penobscot River	Bangor	48,586,000	13,310,000	50,547,000	96,009,000	58,745,000	77,720,893
	Brewer	87,374	0	366,687	868,060	76,188	4,235,000
	Bucksport	0	0	0	0	0	0
	Hampden	151,055	0	1,250,000	1,933,080	244,200	319,902
	Milford	20,000	0	0	0	0	0
	Old Town	10,000	0	270,801	61,508	20,698	12,128
	Orono	1,461,000	0	1,460,000	698,817	1,192,467	905,504
	Winterport SD	0	0	138,000	0	0	108,000
	Sub Total	***50,315,429***	***13,310,000***	***54,032,488***	***99,570,465***	***60,278,553***	***83,301,427***
Saco River	Biddeford	99,492,656	49,504,091	70,814,300	69,451,000	34,644,000	26,649,500
	Saco	599,000	304,000	2,139,000	2,675,000	978,000	2,487,000
	Sub Total	***100,091,656***	***49,808,091***	***72,953,300***	***72,126,000***	***35,622,000***	***29,136,500***
St. Croix River	Calais	4,624,354	4,512,300	10,000,030	2,403,000	1,839,927	587,400
	Sub Total	***4,624,354***	***4,512,300***	***10,000,030***	***2,403,000***	***1,839,927***	***587,400***
St. John River	Madawaska	0	1,562,430	3,988,640	8,205,821	10,242	422,838
	Sub Total	***0***	***1,562,430***	***3,988,640***	***8,205,821***	***10,242***	***422,838***
	Total Annual Volume	**548,577,356**	**294,507,766**	**495,565,153**	**455,297,078**	**359,831,697**	**346,742,558**

Maine CSO Permittee Level of Treatment

	2017 Average Annual Rainfall (Inches): 40.35				2018 Average Annual Rainfall (Inches): 46.25				2019 Average Annual Rainfall (Inches): 45.57				2020 Average Annual Rainfall (Inches): 40.88				2021 Average Annual Rainfall (Inches): 44.19			
CSO Permittees	Total Volume[1,2] (MG)	Secondary Treatment	Primary Treatment	CSO	Total Volume[1,2] (MG)	Secondary Treatment	Primary Treatment	CSO	Total Volume[1,2] (MG)	Secondary Treatment	Primary Treatment	CSO	Total Volume[1,2] (MG)	Secondary Treatment	Primary Treatment	CSO	Total Volume[1,2] (MG)	Secondary Treatment	Primary Treatment	CSO
Bangor & Hampden	2,800.2	98.67%	0.86%	0.48%	3,300.6	97.57%	0.90%	1.53%	3,265.8	95.56%	1.50%	2.94%	2,851.3	96.44%	1.49%	2.07%	2,932.3	96.25%	1.09%	2.66%
Bar Harbor	385.4	99.94%		0.06%	439.5	99.87%		0.13%	422.0	99.35%		0.65%	349.9	99.72%		0.28%	380.3	99.00%		1.00%
Bath	700.9	96.76%	3.00%	0.24%	753.6	94.56%	4.94%	0.50%	782.5	95.24%	4.40%	0.36%	728.7	92.89%	6.72%	0.39%	711.4	92.36%	7.39%	0.25%
Belfast	210.4	100.00%		0.00%	229.9	99.87%		0.13%	240.2	99.86%		0.14%	202.0	99.95%		0.05%	231.4	99.89%		0.11%
Biddeford	943.4	94.75%		5.25%	1,249.0	94.33%		5.67%	1,142.9	93.92%		6.08%	1,011.6	96.58%		3.42%	869.1	96.93%		3.07%
Brewer	624.9	100.00%	0.00%	0.00%	652.2	99.95%	0.00%	0.05%	680.7	99.87%	0.00%	0.13%	680.4	99.99%	0.00%	0.01%	724.7	99.42%	0.00%	0.58%
Bucksport[3]	91.9	75.11%	24.89%	0.00%	110.6	96.23%	3.77%	0.00%	97.3	99.15%	0.85%	0.00%	107.1	98.19%	1.81%	0.00%	120.5	96.52%	3.48%	0.00%
Calais	224.6	94.71%	3.28%	2.01%	258.3	91.97%	4.16%	3.87%	238.7	95.59%	3.40%	1.01%	202.2	92.15%	6.94%	0.91%	190.0	96.91%	2.78%	0.31%
Gardiner & Randolph	388.2	99.26%	0.74%	0.00%	433.1	97.46%	1.41%	1.13%	408.1	97.74%	1.55%	0.71%	371.1	95.00%	2.31%	2.69%	349.5	98.98%	0.45%	0.57%
GAUD & Hallowell	1,383.7	99.47%	0.26%	0.27%	1,424.0	97.18%	2.55%	0.26%	1,853.8	98.40%	1.41%	0.19%	1,650.3	98.22%	1.41%	0.37%	1,311.0	99.22%	0.54%	0.24%
KSTD & Winslow	2,544.0	99.99%		0.009%	2,553.8	99.99%		0.01%	2,394.5	100.00%		0.00%	2,184.0	99.96%		0.04%	2,074.0	99.99%		0.01%
LAWPCA, Lewiston & Auburn	3,246.9	98.90%	0.00%	1.10%	3,379.6	98.64%	0.00%	1.36%	3,427.3	98.12%	0.39%	1.50%	3,434.3	97.53%	0.82%	1.65%	3,196.0	96.26%	3.01%	0.73%
Machias	94.8	99.79%		0.21%	87.2	99.31%		0.69%	85.3	99.83%		0.17%	62.7	99.84%		0.16%	65.2	99.81%		0.19%
Madawaska	141.8	98.90%		1.10%	129.6	96.92%		3.08%	129.6	93.67%		6.33%	123.9	99.99%		0.01%	105.8	99.60%		0.40%
Mechanic Falls	132.7	99.55%		0.45%	81.1	99.76%		0.24%	86.2	99.29%		0.71%	79.7	99.52%		0.48%	64.0	99.90%		0.10%
Old Town & Milford	486.0	99.90%	0.10%	0.000%	541.3	98.33%	1.62%	0.05%	579.3	99.11%	0.87%	0.02%	448.8	98.95%	1.04%	0.01%	471.8	99.05%	0.95%	0.00%
Orono	413.7	100.00%		0.00%	470.1	99.69%		0.31%	500.8	99.86%		0.14%	400.1	99.70%		0.30%	419.9	99.78%		0.22%
Paris UD	115.6	100.00%		0.00%	107.6	100.00%		0.00%	121.8	100.00%		0.00%	110.3	100.00%		0.00%	96.3	100.00%		0.00%
Portland & PWD[3]	6,657.6	94.15%	3.21%	2.64%	6,955.5	90.94%	4.88%	4.18%	6,100.6	92.90%	4.07%	3.02%	5,938.0	92.75%	4.24%	3.01%	5,552.8	92.92%	3.58%	3.50%
Rockland	906.2	90.50%	9.50%	0.00%	973.9	81.99%	18.01%	0.00%	998.0	75.94%	24.06%	0.00%	820.4	84.74%	15.26%	0.00%	868.0	87.31%	12.69%	0.00%
Saco	671.8	99.53%	0.43%	0.05%	811.3	99.26%	0.48%	0.26%	776.2	99.22%	0.43%	0.34%	784.0	99.51%	0.36%	0.12%	800.9	99.18%	0.51%	0.31%
Skowhegan	338.5	98.49%	1.30%	0.22%	336.6	97.97%	0.73%	1.30%	326.1	97.26%	2.22%	0.52%	262.8	95.65%	3.94%	0.41%	223.6	99.47%	0.37%	0.16%
South Portland & Cape Elizabeth	2,129.7	99.89%	0.00%	0.11%	2,232.6	98.89%	0.95%	0.16%	2,052.6	98.67%	0.89%	0.44%	2,001.5	99.81%	0.14%	0.04%	1,909.5	99.48%	0.37%	0.14%
Westbrook & PWD	1,109.5	99.88%		0.12%	1,211.7	99.87%		0.13%	1,157.2	99.15%		0.85%	1,115.1	99.71%		0.29%	1,081.8	99.90%		0.10%
SUM	**26,742.1**				**28,722.9**				**27,867.4**				**25,920.2**				**24,750.0**			
MEAN	**1,114.3**	**97.42%**	**3.40%**	**0.60%**	**1,196.8**	**97.11%**	**3.17%**	**1.04%**	**1,161.1**	**96.99%**	**3.29%**	**1.09%**	**1,080.0**	**97.37%**	**3.32%**	**0.70%**	**1,031.2**	**97.84%**	**2.66%**	**0.61%**
MEDIAN	**555.4**	**99.50%**	**0.80%**	**0.11%**	**596.7**	**98.48%**	**1.51%**	**0.26%**	**630.0**	**98.89%**	**1.46%**	**0.40%**	**564.6**	**99.23%**	**1.65%**	**0.28%**	**591.6**	**99.20%**	**1.02%**	**0.23%**

Notes: [1]Volume data was obtained from monthly Discharge Monitoring Reports entered and submitted through NetDMR by each Facility
[2]Total Volume: Total Volume Taken on by System = Secondary Treatment Volume + Primary Treatment Volume + CSO Volume + SSO Volume (SSO Volumes too small to effect Percentages, therefore not displayed)
[3]Updates were made to treatment volumes and percentages for 2018 and 2019 for Bucksport and Portland & PWD

July 2022 WW Staff Updates

Water St WWTF

Requesting Permit Modification

We are in the beginning stages of requesting a permit modification from the DEP to decrease the frequency of subbed out lab work. This includes decreases the frequency of the analytical chemistry set from 4 times/ year to once per year and decreasing the frequency of Bis (2-ethylhexyl) phthalate from 1/month to 1/year. The reason for this is that the results have consistently been below the detection level. We feel that if what we are required to test for is not present at a detectable level, we should not waste the rate payers money testing more frequently than is necessary.

Grit Removal System Upgrade

We recently completed the first portion (vortex generator) of the grit removal system that was installed in 1998 and at the end of its life expectancy. The second part consists of the grit classifiers (separation and removal) and will be presented to the council for approval. With the exception of two PLC's (scheduled for replacement this year) this is the final process equipment upgrade needed at the WWTF to replace the equipment installed in 1998.

Concrete Repairs and Painting

After the clarifier replacement project was completed, the WWTF staff applied a coat of paint to the outside of both tanks. This greatly improved the appearance of the facility from the street view as well as from inside the facility. We also hired Apex Construction to repair the concrete in the bioreactors (installed in 1965) and paint. The facility is looking cleaner and generally better than it has since the 1998 upgrade.

Biddeford Pool WWTF

Permit Renewal - Permit renewal still pending. Waiting on DEP to send us the draft.

Cross Training - We have spent the last 6 months or so cross training operators so most of the staff is familiar with the facility and rotates through the weekly duties. No longer dependent on just one person

MMP - Hydrogen/Hypochlorus Acid Generator project is still on going. I visited Craig Cunningham's office two weeks ago and he showed me the progress they have made on building the new unit. We should be ready to install it and try it out in a few months.

Pump Stations

Home Depot PS – Replaced the guide rail system for both pumps to correct issue of frequently blown gaskets, pumping inefficiencies, and difficulty removing pumps. I discussed having this project done by a contractor, but the wastewater staff was adamant that they could complete the job themselves. As always, they did a fantastic job getting the job done quickly and safely and saved the city thousands of dollars by doing it in house.

Parkside 2 – Recently completed a controls update project with ECM to remove the unsupported and out of data MOSCAD controls systems. We have updated the controls at 15 out of our 23 stations including all the top priority ones. New controls provide more data inputs and calculating power that now provides us with flow data we did not have before. The equipment (allen Bradley Micrologix 850) will be supported for the next 10 to 20 years and can be supported by most controls contractors. Standardizing the controls systems also means fewer spare parts needed, and easier troubleshooting for the staff.

Collections

New Collections Supervisor – Jeremy Court was recently awarded the collections system supervisor position. Jeremy holds the highest treatment plant and collections licenses and has performed all wastewater jobs on both the street and treatment plant side. I am looking forward to working with him to continue the good work we have done in the past, and look for better ways to do more in the future.

Vac Truck – We have been using the new Vactor over the last few months along with a new operator. Because we have been utilizing the SLRAT scanning tool to look for potential blockages and keeping the operator focused on preventative maintenance sewer cleaning, we have cleaned 7,779 ft of sewers in the last two months. Comparing this to previous years (9,731 ft in 2020 and 12,606 ft in 2021) we are on track to have cleaned more linier feet than any years prior.

CCTV Camera – Jeff will be presenting the council with a recommendation to purchase a battery operated CCTV system similar to the Tri Com system but at a much lower cost, and without the need of a truck or trained technician. This will allow us to fill in the gaps that come from sharing such a valuable resource, and keep the Tri Com CCTV operator focused on larger projects while we take care of the smaller ones.