

March 1, 2020

Ms. Stephanie Allen P.E.
Washington Department of Ecology
N.W. Regional Office
3190 160th Avenue S.E.
Bellevue, WA 98008-5452

Re: Annual CSO Report in accordance with NPDES Permit No. WA-002407-4, Section S8.C.

Dear Ms. Allen:

The purpose of this letter report is to fulfill NPDES requirements for CSO reporting in accordance with Chapter 173-245 of the Washington Administrative Code.

Introduction

On December 17, 2010, the Department of Ecology issued NPDES permit No. WA-022407-4 to the City of Mount Vernon. Section S8 of this permit includes details on; CSO location(s), planning requirements, and annual reporting requirements. The NPDES Fact Sheet describes the CSO system, characterizes overflow events, and CSO discharge regulatory requirements.

The following is a list of significant CSO compliance dates and timelines:

1. CSO Annual Report submitted by April 1st each year.
2. Complete Construction of the Central CSO Interceptor no later than December 31, 2000.
3. Provide an amendment to the CSO Reduction Plan in conjunction with the City's application for NPDES permit renewal.
4. Record frequency and volume of CSO discharges as soon as construction of portions of the Central Interceptor allows. Direct recording of frequency and volume of CSO discharges shall commence no later than December 31, 2000.

5. Provide modulating controller for the motor operated sluice gate at the manhole upstream from the WWTP influent pump station no later than December 31, 2000.
6. Submit a CSO Control Effectiveness Report by March 31, 2012. If analysis indicates that the 2009 WWTP Upgrade will not bring the system into compliance with “greatest reasonable reduction” as defined in WAC 173-245-020(22), a report including alternatives for achieving control by the January 1, 2015, deadline must also be submitted.
7. Upgrade WWTP to provide treatment/storage of CSO flows to reduce overflow events to an average of one per year no later than January 1, 2015. For each specific CSO reduction construction project, the Permittee must prepare and submit approvable plans and specifications to Ecology for review and approval in accordance with WAC 173-240.

Annual CSO Report - 2019

WAC 173-245-090 Schedule Updates—Monitoring – Reporting.

(1) By the anniversary date of its sewage treatment plant NPDES permit, in conjunction with its annual assessment for prevention of facilities overloading where applicable, a municipality shall submit an annual CSO report to the Department for review and approval which;

(a) Details the past year’s frequency and volume of combined sewage discharged from each CSO site, or group of CSO sites in close proximity. Field monitoring is necessary to estimate these parameters. The report shall indicate whether a CSO site or group of sites has increased over the baseline annual condition. If any increase has occurred, the municipality shall propose a project and schedule to reduce that CSO site or group of sites to or below its baseline condition:

Below is a summary of CSO frequency and volume for 2019. The CSO summary also compares the volume and frequency of 2019 events with estimates of the adopted Comprehensive Sewer and Combined Sewer Overflow Reduction Plan.

On March 24, 1998, the Central CSO Regulator began service. That project included systems to accurately measure CSO volume and duration. This system uses transducers to measure surface water levels at each CSO site. All CSO discharges flow over a Cipoletti weir. Surface water levels greater than the Cipoletti weirs are used to compute the CSO volume and duration. The flow equation for a Cipoletti weir is shown in Section 3, page 8 of the Operation and Maintenance Manual approved by DOE.

CSO Volume and Frequency Summary 2019 Table 1

DATE OF EVENTS	OVERFLOW POINT	TOTAL VOL. GALLONS
September 15, 2019	Division Street	18,000
September 15, 2019	Park Street	46,000
October 21, 2019	Division Street	1,400,000
October 21, 2019	Park Street	555,000
Total Number of Events 2019		4
Projected Number of Events (CSO Plan Figure V-25)		12
Total Annual MG 2019		2,019,000
Projected Annual MG (CSO Plan Figure V-24)		34,000,000

Below is a summary of the 5-year moving average of the number of untreated discharge events per outfall calculated annually. The 5-year moving average will be used to assess compliance with the 1 discharge per year per outfall on average as stated in DOE's Order on Consent No. DE 96WQ-N105 starting on January 1, 2015.

5-YEAR MOVING AVERAGE Table 1b

YEAR	EVENTS AT DIVISION STREET OUTFALL	EVENTS AT PARK STREET OUTFALL
2015	2	2
2016	0	0
2017	0	0
2018	1	1
2019	2	2
AVERAGE	1.0	.8

The CSO volume and number of events for 2019 are below the Comprehensive Sewer and Combined Sewer Overflow Reduction Plan, 1995 estimate. Estimates for volume are shown in Figure V-24 of the plan. Estimates for the frequency of CSO events are shown on Figure V-25 of the Comprehensive Sewer and Combined Sewer Overflow Reduction Plan.

For 2019, the WSU/Skagit County Cooperative Extension located west of Mount Vernon, recorded 26.96 inches of precipitation. For the purposes of this report, 26.96 inches of precipitation, recorded by the WSU Extension will be used.

- (i) When a CSO site has been reduced to an average of one overflow per year through the use of storage or separation, the Department may consider reducing the monitoring requirement to frequency verification.**

Mount Vernon's CSO frequency did meet this parameter in 2019. Mount Vernon has agreed to continue working towards maintaining average of one overflow per year.

- (ii) If the selected CSO control project is at site treatment and discharge, the Department may issue a modification to the applicable sewage treatment plant permit or issue a separate NPDES permit for that discharge. The permit or permit modification shall include effluent limits, flow capacity limits, and reporting requirements. The total treated and untreated annual discharge from an at-site treatment plant shall not increase above the baseline annual.**

The City has developed a comprehensive, representative monitoring program that measures the frequency, duration, flow rate, volume, and pollutant concentration and assesses the impact of the CSOs on the receiving waters. The monitoring program may include necessary CSO effluent and ambient in-stream monitoring and, where appropriate, other monitoring protocols such as biological assessment, toxicity testing and sediment sampling as determined by the Department of Ecology. This sampling plan will be sufficient to allow characterization of CSO discharges and their water quality impacts and to facilitate evaluation of control plan alternatives.

In 2019, there were 2 CSO events at each overflow location. Sampling was successfully gathered during the second overflow event. During the first overflow the short duration and overflow amount (64,000 gallons)

there were limited sampling cycles resulting in sample volumes too small to accurately run tests.

(b) Explain the previous year's CSO reduction accomplishments.

- The Mount Vernon City Council awarded the bid for the 2019 Sanitary and Storm Sewer Lining Project to Insituform Technologies, LLC in the amount of \$699,406.77. The project includes the lining of 4,474 feet of sanitary and 2690 feet of storm sewer pipe that have been showing signs of infiltration. This process will extend the useful life of the collection system and reduces groundwater infiltration, potentially reducing CSO flows.
- During 2019 WWTP personnel continued to monitor the Central CSO Regulator while incorporating operational and maintenance refinements. Technical Systems Inc. located in Lynnwood, WA performed annual calibration of the flow measuring devices.
- In 2019, approximately 851 catch basins were cleaned; preventing sediment from entering the combined sewer.
- In 2019, 2422 catch basins were inspected and were either cleaned or determined that cleaning was not needed at that time.
- In 2019, the City of Mount Vernon Street Sweeping and Storm Sewer Maintenance programs removed a total of 713 tons of street sweeping debris and 193 tons of storm and sanitary grit. Removing debris before it enters the combined sewer system or tributary sewer reduces pollution, and controls solid and floatable materials in CSOs.
- The Skagit County Household Hazardous Waste Collection Center is open 5 days a week. These services provided are mostly free to the public. The Solid Waste Transfer Station accepts hazardous waste that may otherwise be disposed in the sewer system.

Waste Motor Oil is collected at (3) Skagit County facilities by Thermo Fluids for energy recovery and recycling. Waste oil is also collected at several auto parts stores.

Fluorescent lights are collected and shipped from the Ovenell transfer station. The recycling service is Ecolights NW for fluorescent lights and CFL's. All other wastes are disposed of through Clean Harbors Environmental.

(c) List the projects planned for the next year.

- WWTP personnel will continue monitoring the Central CSO Regulator and incorporate operational and maintenance refinements as needed. Technical Systems Inc. will continue to calibrate the overflow measuring devices on an annual basis.
- The City will continue to enforce local pretreatment standards and grease trap maintenance requirements which are included in the Cities Sewer Ordinance.
- The City has budgeted \$1,000,000 in 2020, to increase its ongoing sewer rehabilitation program using the cured in place pipe lining process.
- The City will be completing a study on the potential of upsizing our influent pump station header. Upsizing the header may allow for higher flows to be pumped through our treatment plant reducing the potential for a CSO.
- The Wastewater staff is evaluating replacement pumps for two of our influent pumps. These pumps will be replacing two aging pumps that were installed in 1988 and modified several times to increase flow. We will be looking at pumps that are resistant to clogging and with the potential to pump a slightly higher volume.

(2) In conjunction with its application for renewal of its NPDES permit, the municipality shall submit an amendment to its CSO reduction plan. The amendment shall include:

(a) An assessment of the effectiveness of the CSO reduction plan to date: and

(b) A re-evaluation of the CSO sites' project priority ranking; and

(c) A listing of projects to be accomplished in the next five years based upon priorities and estimated revenues. The Department of Ecology may incorporate such schedule into an administrative order or the applicable NPDES permit.

(a) Part 1 of this report includes a complete assessment of the volumes and frequency of the past year's CSO events.

Mount Vernon initiated a Comprehensive Sewer Plan update in 1999. That update, which was completed in 2003, has addressed CSO reduction, and assessed the effectiveness of CSO reductions to that date.

After the WWTP Upgrade Phase 1 was completed in August 2009, Mount Vernon began collecting data to conduct an assessment of its effectiveness to reduce CSO's. The evaluation of the WWTP Upgrade Phase 1 that was completed by HDR Engineering determined that the WWTP should be in compliance with the Department of Ecology's requirements of no more than one overflow per year.

(b) There has been no change in the CSO sites' priority ranking.

(c) WWTP Upgrade Phase 2 is described in the *City of Mount Vernon Wastewater Treatment Plant Upgrade Facilities Plan, October 2005*. Phase 2 improvements, when needed to meet processing demands, will address the needs of both the liquid stream and solids stream treatment. Potential improvements include; constructing a new influent pump station, replacing the effluent pumps, installing two high-rate clarification modules to handle flow above the maximum capacity of the secondary treatment process or providing additional CSO storage.

Other CIP Plan Projects aimed at reducing CSO s include:

S-07-04 Sewer Restoration Program fund has been established to line or replace aging sewer piping each year from the Sewer Capital Reserve Funds for sewer rehabilitation;

S-06-01 Combined Sewer System Improvements. This CIP identifies a phased program for planning, repair, replacement, and improvements to the Combined Sewer system. Phase 1 is development of a comprehensive plan establishing alternatives, cost estimates, and recommendations for the Combined Sewer system improvements. Estimates on the total cost and phasing of work would be a product of a comprehensive engineering report. General goals of Phase 1 planning work include; improving flow capacity by separation of combined sanitary and storm where feasible. The City has agreed to DOE Order on Consent No. DE 96WQ-N105 which requires Mount Vernon to meet state Combined Sewer Overflow reduction requirements no later than January 1, 2015.

- On October 20, 2006 the City advertised for bids for the WWTP Phase 1 Upgrade. Bids were opened on December 12, 2006 and Council approved the award of the low bid to McClure and Sons on January 10, 2007. The bid was formally awarded on January 22, 2007. On January 24, 2007, Council approved an amended project budget, increasing the total from \$25.7 Million to \$38.5 Million. McClure and Sons Inc. was originally issued Notice to Proceed on February 26, 2007. Contract Change Order #1

changed the official project start date to April 16, 2007. The project was substantially completed on August 18, 2009 and reached final completion on October 21, 2009. The project included CSO storage, and increased the WWTP Peak Hour Flow from 12 MGD to 16.5 MGD.

S8, Combined Sewer Overflows

Along with the annual CSO report, the Permittee shall report the number of new sewer connections permitted to connect directly to or upstream of any portion of the CSO system. This report shall summarize the actual number of residential and commercial connections. For residential connections, the Permittee shall report the population equivalent of the connections. For commercial connections, the Permittee shall report the population equivalent of permitted flow for the connections.

2019 COMBINED SEWER OVERFLOW REW CALCULATION, Table 2

Commercial Address	S.F.	Acreage
1901 Hoag Road	57681	1.32
Total	57681	1.32
Residential		REU's
Multi-Family Residential Dwelling Certificates of Occupancy	6 x 2.0 REU's =	12
Single Family Residential Dwelling Certificates of Occupancy	88 x 2.45 REU's =	215.6
Population Equivalents Subtotal		227.6
Commercial		
1.32 Acres x 1000 GDPA = 1320	1320/75 GPCD =	17.6
Population Equivalents Total		245

- *Certificates of Occupancy are issued by the Development Services Department when completed facilities pass inspection. Certificates of Occupancy may or may not be issued in the same year as the building permits.*

The CSO Control Policy published on April 19, 1994 in the Federal Register (59 FR 18688), lists nine minimum controls to reduce the magnitude, frequency, and duration of CSOs and their impacts on receiving water bodies.

2.11 Nine Minimum Controls

The CSO Control Policy requires that a Phase I permit require the permittee to immediately implement technology-based requirements, which at a minimum include NMC, as determined on a best professional judgment (BPJ) basis by the NPDES permitting authority. The NMC are:

1. Proper operation and regular maintenance programs for the sewer system.

Mount Vernon has a comprehensive operation and maintenance program in place for the CSO Regulator, Pump Stations, and Collection system; within the combined sewer service basin. The Pump Station preventative maintenance program dates back to 1977; the Collection System program to 1981 and the CSO Regulator Program to 1998, when it was put in operation. SOPs are written for the pump stations and the CSO regulator. Maintenance tasks are performed on a weekly, monthly, quarterly, bi-annually, and annual basis.

The CSO overflow structures are checked weekly and cleaned monthly if needed. Flow control gates are operated and lubricated quarterly. The CSO flow volumes are computed by measuring the depth of flow over a Cipoletti weir with a transducer. The depth of each reservoir can be monitored in real time using WWTP SCADA so maximization of storage in each can be verified. The transducer is cleaned and checked for operation with a target quarterly. It is calibrated by a technical contractor annually. A high weir level condition sends an alarm to the Wastewater Treatment Plant Hub computer which dials out to a paging company which pages on call Operators. Each over flow weir has an enclosure with a flow meter and sampler installation. The samplers are automatically triggered by an overflow event. Sequential samples are taken over the course of the “first flush” CSO event.

All pump stations have telemetry alarm systems that also will cause an operator to be called out in the event of a malfunction. All sanitary pump stations have fixed standby power sources; except for two which have quick connect plugs for portable generators. All pump station hours and level measuring devices are checked weekly. Monthly, all alarms are checked, wetwells and floats or other level measuring devices are cleaned. Annually, the generators are serviced, amps and volts are checked, UPSs and telemetry batteries are checked, check valves are disassembled and cleaned, wet well

pump down rates are recorded, and routine electrical maintenance is performed.

The comprehensive collection system maintenance program in the combined sewer service area has “hot spot areas” listed which are cleaned and/or de-rooted annually. Mount Vernon has never had a dry weather CSO.

2. Maximum use of the collection system for storage.

Mount Vernon has been maximizing the use of storage in the Central CSO Interceptor since it was put into operation on March 24, 1998. It provides up to 1.1 million gallons of storage in five sections of pipe or reservoirs. The maximum levels are controlled by weir elevations in the three overflow structures; and the weir plates in each of the flow control structures. The CSO Regulator is intended to operate as a passive CSO reduction facility requiring minimal attention during storms. During storm events, operators monitor levels at each overflow structure through a visual display generated by depth signals from locally mounted transducers. Baffle plates, weir plates, and overflow weirs have been adjusted to best utilize the storage volumes in the system during storm events. Flows and levels of pollutants discharged from CSO outfalls are minimized by prudent operation of the CSO storage system and wastewater treatment plant.

In 2012 the City of Mount Vernon Wastewater Utility installed an automated control gate at Flow Control Structure C. In April 2013 the gate was made operational from the Wastewater Treatment Plant. This provided a means to assure maximum storage in the CSO Regulator which will in has reduced the amount of Combined Sewer Overflows. In 2014 the City of Mount Vernon Wastewater Utility also automated the gate installed at Flow Control Structure B which allows for maximum storage and reduction of Combined Sewer Overflows.

In 2014 the City of Mount Vernon Wastewater Utility staff raised the height of the overflow weirs at all 3 overflow locations. This has proven to help maximize storage and reduce the total gallons of overflow.

3. Review and modification of pretreatment requirements to assure CSO impacts are minimized.

The City of Mount Vernon Wastewater Utility has worked cooperatively with the Department of Ecology since the inception of the NPDES permitting system. This cooperation ensures that all commercial and industrial users of the wastewater treatment system are in compliance with pretreatment regulations.

Mount Vernon conducted a comprehensive Industrial User Survey in 2002, 2009, and again in 2015. In each case, a list of Industrial Users was submitted to DOE in conjunction with NPDES Permit Section S6.E.

Mount Vernon has worked with HDR Engineering Inc. to develop Sewer Ordinance revisions and local pre-treatment standards that were adopted by City Council on February 10, 2010, with the passage of Ordinance #3481.

Mount Vernon has tracked the amount of household hazardous waste collected since 1999. The Skagit County Household Hazardous Waste Collection Center is open 5 days each week and the first Saturday of each month. These services are provided free to the public. The Solid Waste Transfer Station accepts hazardous waste that may otherwise be disposed in the sewer system.

4. Maximization of flow to the publicly owned treatment works (POTW) for treatment.

Mount Vernon has had a policy of maximizing flow through the POTW since the first WWTP was constructed in 1948; as evidenced by historical plant flow data. The Mount Vernon Wastewater Utility has minimized CSO flows through the prudent operation of the CSO storage system and the Wastewater Treatment Plant. The Upgraded WWTP currently has a Maximum Month Wet Weather Design flow of 15.0 MGD and a Maximum Hour Design Flow of 22 MGD. The Upgrade converted an existing .376 MGAL Primary Clarifier and a .5 MGAL Secondary Clarifier into CSO storage units. If the secondary unit processes show signs of being hydraulically overloaded, Influent flow will be directed to the two CSO storage units through the use of a manually operated gate valve.

In 2011 the City of Mount Vernon Wastewater Utility installed an automated polymer system on the Secondary Clarifiers. This will aid in the settling of solids during high flows allowing for greater sustained pumping volumes which will potentially reduce Combined Sewer Overflows. The Wastewater Utility staff has also modified the weir height for the .5 MGAL Secondary Clarifier. This adjustment will allow it to be used as a fourth Secondary Clarifier during times of extended high flows.

5. Prohibition of CSOs during dry weather.

The Mount Vernon Wastewater Utility has had a comprehensive sewer maintenance program in place since 1981, which greatly reduces the chance of

any dry weather CSOs. If a dry weather overflow should occur, the City would follow the same public notification procedures as we use in the event of a separated system overflow. We would notify the Department of Ecology and the Skagit County Health Department as soon as possible as well as local radio stations to notify the public. We have level sensors in place to notify staff in the event that a CSO overflow structure is reaching a level close to overflowing. Mount Vernon has never had a dry weather CSO.

6. Control of solid and floatable materials in CSOs.

The CSO interceptor, in operation since 1998, has a scum plate mounted two feet before each overflow weir to restrict the discharge of floatables when an overflow is occurring. At the Park Street and Division Street CSO outfalls there are manually cleaned barscreens, which prevent debris from reaching the river. The barscreens are each checked routinely and cleaned as needed. The scum plates and screens have controlled the discharge of floatables to the river during CSO events. During CSO events, flow velocities in the reservoirs are decreased to the point where some solids settling occur. These solids are retained in the sewer system and resulted in the reduction of average CSO concentrations to 39 mg/l of BOD and 78 mg/l of TSS during characterization. After each CSO event, adjustable weir plate baffles allow the flushing of settled solids to the Wastewater Treatment Plant. The floatables are pressure washed from the scum baffles during routine maintenance of the overflow structures.

7. Pollution Prevention.

Mount Vernon has consistently had CSO volumes, much less than baseline predictions for average annual rainfall totals. In 2019, there was two overflows at each overflow location totaling 2,019,000 gallons. This is in comparison to a baseline of 128.0 MGAL for a total annual rainfall of 26.96 in. ***(Please see figure V16, attached)***. Characterization of CSO discharges has shown that secondary treatment standards are usually met for BOD. TSS secondary treatment standards are theoretically met when averaging treatment plant effluent with a CSO to arrive at a maximum weekly TSS under 45mg/l.

The City of Mount Vernon Street Sweeping program works to remove debris before it enters the combined sewer system or tributary sewer reducing pollution, and reducing settleable solids and floatable materials in CSOs.

The City has always had a catch basin cleaning program, now described in the Comprehensive Storm Water Plan. Most catch basins in Mount Vernon are cleaned or inspected every summer. Clean catch basins are important because they help prevent pollution and control settleable solids and floatable material

in CSOs. The City has enlisted the help of volunteers to stencil storm drain covers, including those in the combined sewer service area, with warnings not to dump pollutants into salmon spawning streams.

8. Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts.

- Both CSO outfalls 002 and 003 have had signs posted since 1999, advising the public of the potential discharge of untreated sewage and phone numbers of Skagit County Health Department representatives who will provide additional information about the CSOs.
- The City conducts IDD&E (Illicit Discharge Detection and Elimination) training annually for outside staff, which can help minimize the amount of pollutants that enter the combined sewer system.

9. Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

- **Mapping the drainage area for the CSS, including the locations of all CSO outfalls and receiving waters**

A map of the CSS drainage area and the CSO interceptor, including outfalls, completed in 1997, has been attached. *(Please refer to figures 1 and 2).*

- **Identifying, for each receiving water body, designated and existing uses, applicable water quality criteria, and whether water quality standards (WQS) are currently being attained for both wet weather and dry weather**

The CSO outfalls discharge into the Skagit River, which has designated uses of Core Summer Salmonid Habitat and Primary Contact Recreation in the vicinity of those outfalls. Characteristic uses include the following: water supply, (domestic, industrial, agricultural); stock watering; fish migration; fish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation.

In 1994 and 1995 DOE conducted field studies to assess existing water quality conditions in the Lower Skagit River. DOE subsequently completed a Total Maximum Daily Load (TMDL) study of the Lower Skagit River for DO in 1997. The studies and modeling evaluated the effect of current and projected waste loads and non-point loads on dissolved oxygen. At that

time the DO criterion for our receiving waters, 8.0 mg/l was being met. The TMDL recommended loading allocations for ammonia during dry weather to assure that it would continue to be achieved in the future.

As a result of samples collected by Entranco in 1993 for fecal coliform, the Skagit River was placed on the "303(d)" list requiring a TMDL for fecal coliform. The DOE completed a TMDL for Fecal coliform in 2000. Fecal coliform standard violations were observed during wet weather as well as dry so the fecal TMDL applies year round. The TMDL study identified five sources as high priority for reducing the discharge of bacteria. The City of Mount Vernon entered into a consent order with the Department of Ecology to reduce combined sewer overflows to once per year by 2015. The first phase of the correction effort was constructed in 1998 and has reduced CSO overflows by 90%. When CSOs occur during daylight hours, Mount Vernon samples for fecal coliform above and below CSO discharge points. In 2004, the geometric mean of samples taken above both CSO outfalls was 45 cfu/100 ml and downstream was 432 cfu/100mls.

- **Developing a record of overflow occurrences (number, volume, frequency, and duration)**

This information has been developed and compiled in detail since 1998.

- **Compiling existing information on water quality impacts associated with CSOs e.g., beach closings, evidence of floatables wash-up, fish kills, sediment accumulation, and the frequency, duration, and magnitude of instream WQS violations.**

The Mount Vernon Wastewater Utility has characterized CSO flows for BOD, TSS, pH, NH₃-N and Settleable Solids, starting in 1998. The discharge from the CSO regulator approaches secondary treatment standards, especially when averaged with WWTP effluent over a 7 day period. The impact on the river during wet weather is minimal. Even though CSO discharges are not disinfected, no CSO's have ever occurred during dry weather so no beach closures were necessary.

HISTORICAL SUMMARY

- On April 11, 1996, the City of Mount Vernon signed Order on Consent No. 96WQ-N105 to fulfill the legal requirements of Chapter 173-245 of the Washington Administrative Code (WAC). The purpose of those

requirements is to reduce the environmental impact of combined storm water and raw sewage discharges on the waters of the State of Washington.

- The City of Mount Vernon submitted a Comprehensive and Combined Sewer Overflow Reduction plan in April of 1991. This plan was adopted by the City Council and the Department of Ecology in 1995.
- The City has submitted annual CSO reports each year since 1996.
- **Order on Consent part III. B**, required construction of an oversized sewer interceptor line to transport and store the majority of CSO flows by the year 2000. Mount Vernon completed construction of its 1.1 MGAL interceptor in 1998, reducing CSO events by approximately 90%.
- **Order on Consent part II. K**, required that the City meet NPDES permit condition S4.B, Plans for Maintaining Adequate Capacity in the WWTP. In 1995, the City submitted a draft engineering report that assessed the existing capacity of the plant and identified improvements to increase the capacity sufficiently to treat increased CSO flows to the plant. The report titled *Mount Vernon Wastewater Treatment Plant Evaluation* dated 1995 was approved by DOE and resulted in a re-rating of the plant ADWW flow from 4.0 MGD to 5.6 MGD when NPDES permit WA-002407-4 was reissued in October 2001.
- **Order on Consent part III. B**, required that the motor operated sluice gate at the manhole upstream from the wastewater treatment plant influent pump station be provided by a modulating controller by December 31, 2000. This was completed in 1999.
- **Order on Consent part III. C**, requires upgrading the Park Street Pump Station with new pumps no later than January 1, 2015. On February 13, 2002, the Mount Vernon City Council adopted the final Draft of the **Comprehensive Sewer Plan Update dated 2001**.

Chapter 4, Combined Sewer Overflows, **Alternative 2C**, recommended upgrading the Park Street Pump Station to separate and convey CSO and storm flows of up to 24 MGD to the WWTP. The Capital Improvement Plan has this scheduled for the year 2013.

- **Order on Consent part III. D**, requires upgrading the wastewater treatment plant to provide treatment/storage of CSO flows to reduce overflow events to an average of one per year no later than January 1, 2015.

The Comprehensive Plan Update recommends constructing high rate primary facilities and CSO disinfection facilities to reach the limit of one untreated CSO per year by 2015.

- Out of water work in construction of new 48-inch outfall was completed in October 2003. In water phase of the construction was completed in November 2005.
- In 2003, the City entered into an agreement with HDR Inc. to provide engineering services for pre-construction planning and conceptual design of the Wastewater Treatment Facility Improvements through 2020. These improvements include an upgrade of the existing treatment plant to provide increased hydraulic and organic wet weather treatment capacity. This work includes improvements to the influent pumping system, pretreatment screening and grit removal, primary clarification, secondary treatment, and disinfection for the effluent.
- On April 1, 2004 the City obtained Public Works Trust Fund Loan Number PW-02-691-PRE-120 to fund the pre-design services; including the preparation of a pre-design report, and the development of 30% design drawings and specifications. The 30% pre-design work accommodates alternatives for CSO reduction, and growth related expansion of the WWTP.
- In 2003 the City of Mount Vernon coordinated with the Washington State Department of Transportation to construct two 18-inch sewer pipes on the 2nd Street Bridge replacement. The 18-inch pipes provide additional storm and combined sewer flow conveyance across Interstate 5, and can also accommodate future separation of the drainage basin.
- In 2003 the City of Mount Vernon coordinated with WSDOT to include storm water conveyance improvements within the 2nd Street Bridge Project boundary. This improvement will provide for projected storm water capacity needs as separation and redevelopment occur in the basin.
- The City received the Final Wastewater Treatment Plant Upgrade Pre-design Report on September 27, 2004. The Report includes plans to upgrade and expand the wastewater treatment plant WWTP by 2009. The pre-design report was incorporated into the CSP and the City Comprehensive Plan. The pre-design work includes upgrading the WWTP and increasing plant organic and hydraulic capacity. The pre-design report includes a recommendation to include High Rate Clarification (HRC), as an alternative for treatment of wet weather flows. HRC of wet

weather flows is presented as a means of complying with an agreement with DOE to reduce Combined Sewer Overflows. This agreement requires Mount Vernon to reduce overflow events to an average of one per year no later than January 1, 2015.

- On September 20, 2004, the City of Mount Vernon received \$1 million from Public Works Trust Fund Loan Number PW-04-691-PRE-117 for the Final Design of Phase 1 of the Wastewater Treatment Plant Upgrade.
- On August 25, 2004, the Mount Vernon City Council authorized the Mayor to enter into an agreement with HDR Engineering Inc., in the amount of \$3,034,345 for final design, bid documents and construction management services for Phase 1 of the WWTP Upgrade. On January 6, 2005 HDR Engineering Inc. was issued notice to proceed on WWTP Phase 1 Final Design.
- In May 2005 the City of Mount Vernon submitted a loan application to the Public Works Trust Fund Board for \$12.5 Million to fund the Wastewater Treatment Plant Upgrade. Of the \$12.5 Million requested, \$7 Million was awarded.
- On June 29, 2005, the Mount Vernon City Council moved to support the revised cost of the Wastewater Treatment Plant Upgrade to \$25.7 Million.
- On August 16, 2005, DOE approved the City of Mount Vernon Sewer Comprehensive Plan Amendment. The amendment incorporates provisions to accommodate High Rate Clarification (HRC) into WWTP Phase 2 improvements. HRC of wet weather flows is presented as a means of complying with an Order on Consent with DOE to reduce Combined Sewer Overflows. This agreement requires Mount Vernon to reduce overflow events to an average of one per year no later than January 1, 2015.
- On October 13, 2005, the Mount Vernon Developmental Services Department issued a Determination of Non-Significance for the City of Mount Vernon Wastewater Treatment Plant Phase 1 Upgrade Early Fill and Grade Permit.

- On October 20, 2005, DOE approved the Facility Plan and “essentially complete” Plans and Specifications for the Wastewater Treatment Plant Upgrade Phase 1 improvements. The WWTP Phase 1 improvements will include provisions for additional on-site storage and treatment of CSO flows. Improvements are expected to accommodate a Peak Hour Flow of 22 MGD. Current Peak Hour Flow is 12 MGD.
- On October 31, 2005, the City submitted a State Revolving Fund Loan application requesting \$17.6 Million to assist in funding the Wastewater Treatment Plant Upgrade. (Before the loan agreement was finalized on January 24, 2007 the amount was increased to \$20,359,763).
- In October 2006, HDR Engineering Inc. completed the final WWTP Phase 1 Upgrade Design and Bid Documents which were approved by DOE on December 7, 2006.
- On October 20, 2006 the City advertised for bids for the WWTP Phase 1 Upgrade. Bids were opened on December 12, 2006 and Council approved the award of the low bid to McClure and Sons on January 10, 2007. The bid was formally awarded on January 22, 2007. On January 24, 2007, Council approved an amended project budget, increasing the total from \$25.7 Million to \$38.5 Million.
- On May 16, 2006 the City executed a Public Works Trust Fund loan agreement for \$7 Million. In July 2006 the City received a funding letter from DOE for a SRF loan that will total \$20,359,763, including the 10% bid overrun allowance and 5% for change orders only. On January 24, 2007, City Council authorized the Mayor to execute the SRF loan agreement. In 2007 the City applied for a second Public Works Trust Fund Loan for \$10 Million. The loan agreement was approved by the City Council on February 13, 2008.
- On May 7, 2007 an SRF construction loan agreement for \$20,359,763, between the City and DOE, was executed.
- McClure and Sons Inc. was issued Notice to Proceed on February 26, 2007. Construction of the project was started on April 16, 2007. (Contract Change Order #1 changed the construction start date from February 26 to April 16, 2007).

- The WWTP Upgrade Phase 1 project was substantially complete on August 18, 2009 and reached final completion on October 21, 2009. It included .876 MGAL of CSO storage in two units, and increased the WWTP Peak Hour Flow from 12 MGD to 16.5 MGD. The peak flow can be increased to 22 MGD, the Design Maximum Hour Flow of the WWTP, by increasing Influent pumping capacity.

Please notify me if there are any questions regarding this report.

Sincerely,



Gary Duranceau
City of Mount Vernon Public Works
Wastewater Division Manager

Attachments/2019 CSO Event Report
Figures V-16, 24, & 25
Figures 1& 2

c/WWTP CSO File 2019

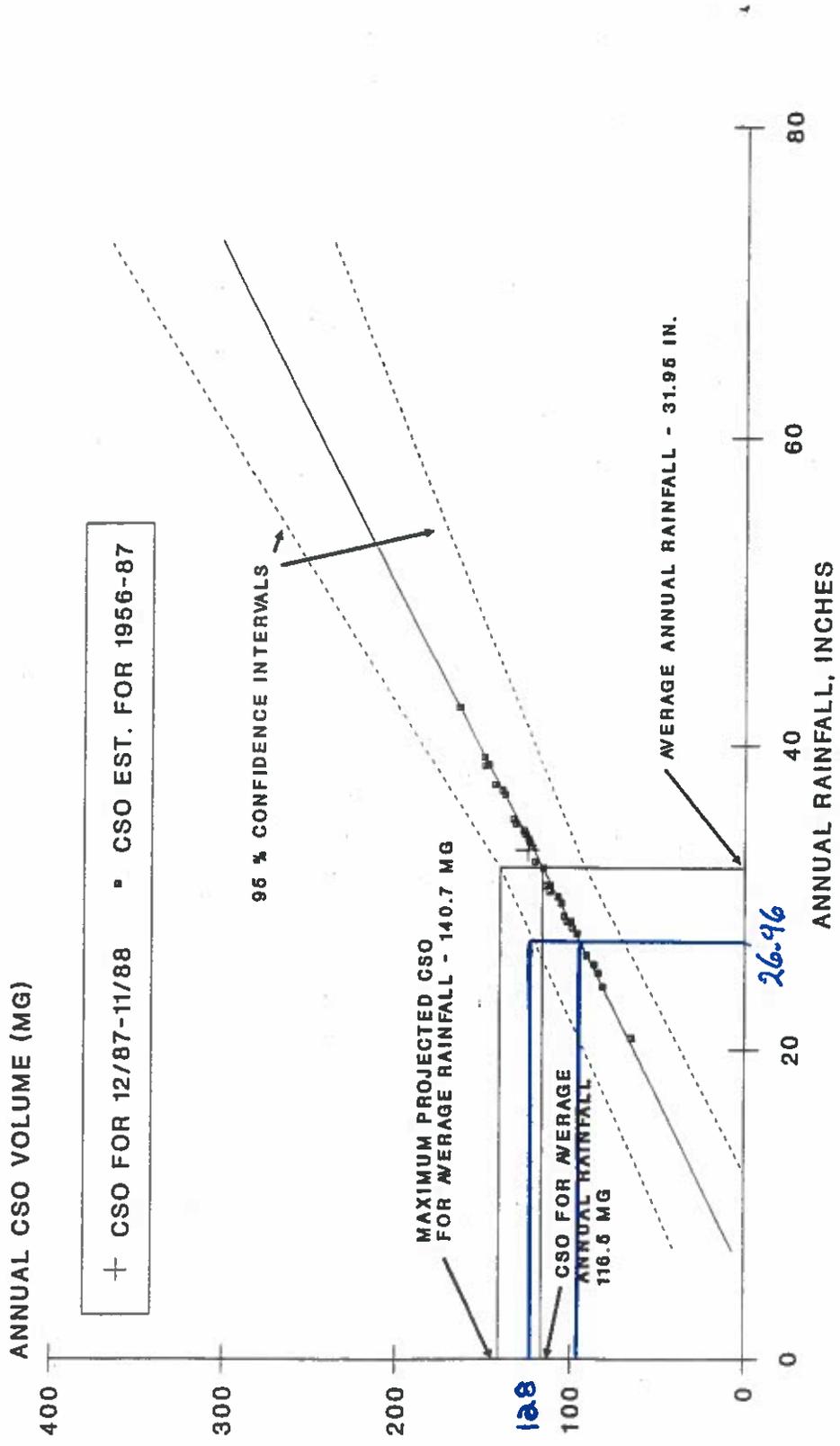


FIGURE V-16
 CSO BASELINE FOR THE MOUNT VERNON SEWER
 SYSTEM: ESTIMATED CSO VS ANNUAL RAINFALL

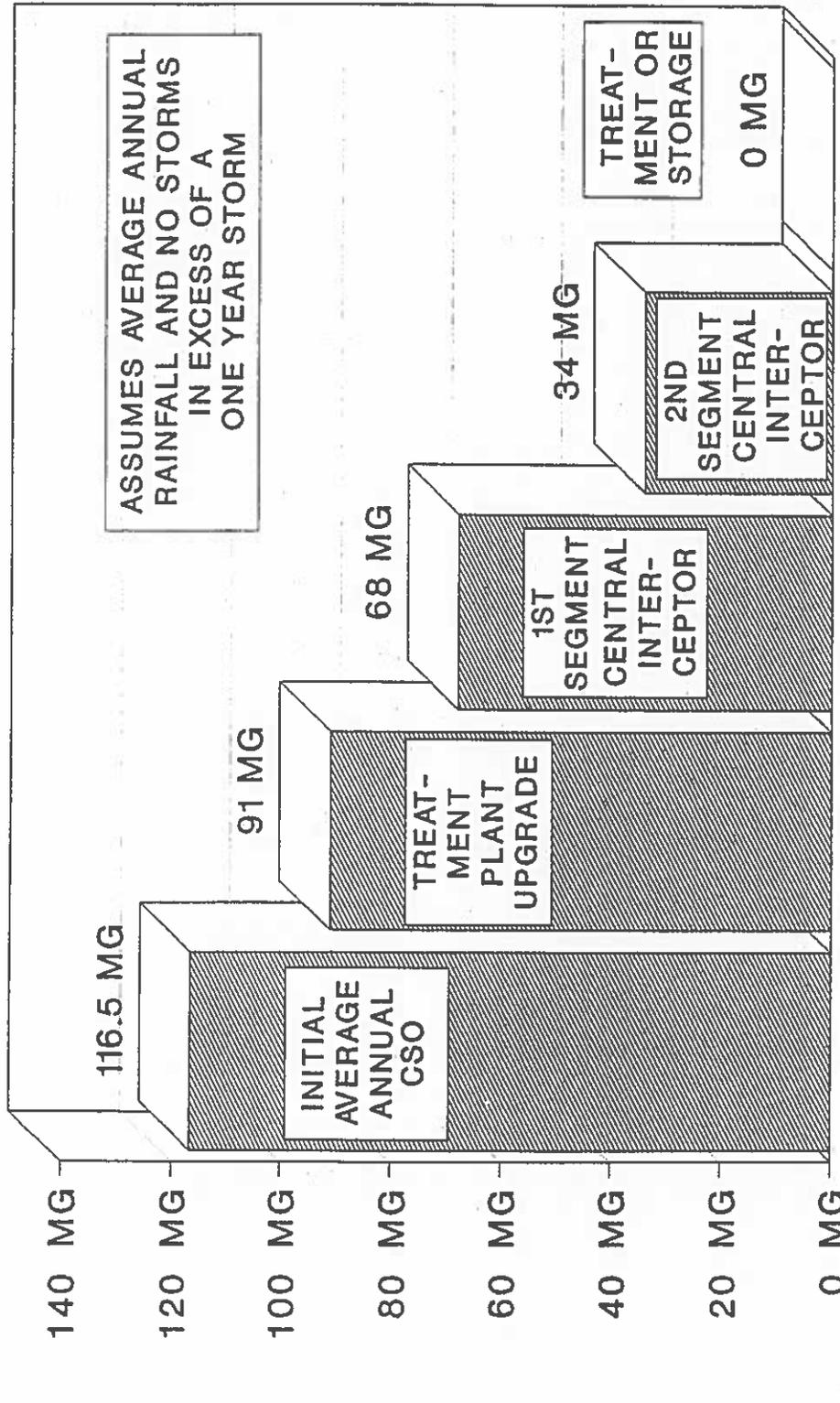


FIGURE V-24
 ESTIMATED ANNUAL OVERFLOWS
 WITH CSO REDUCTION FACILITIES



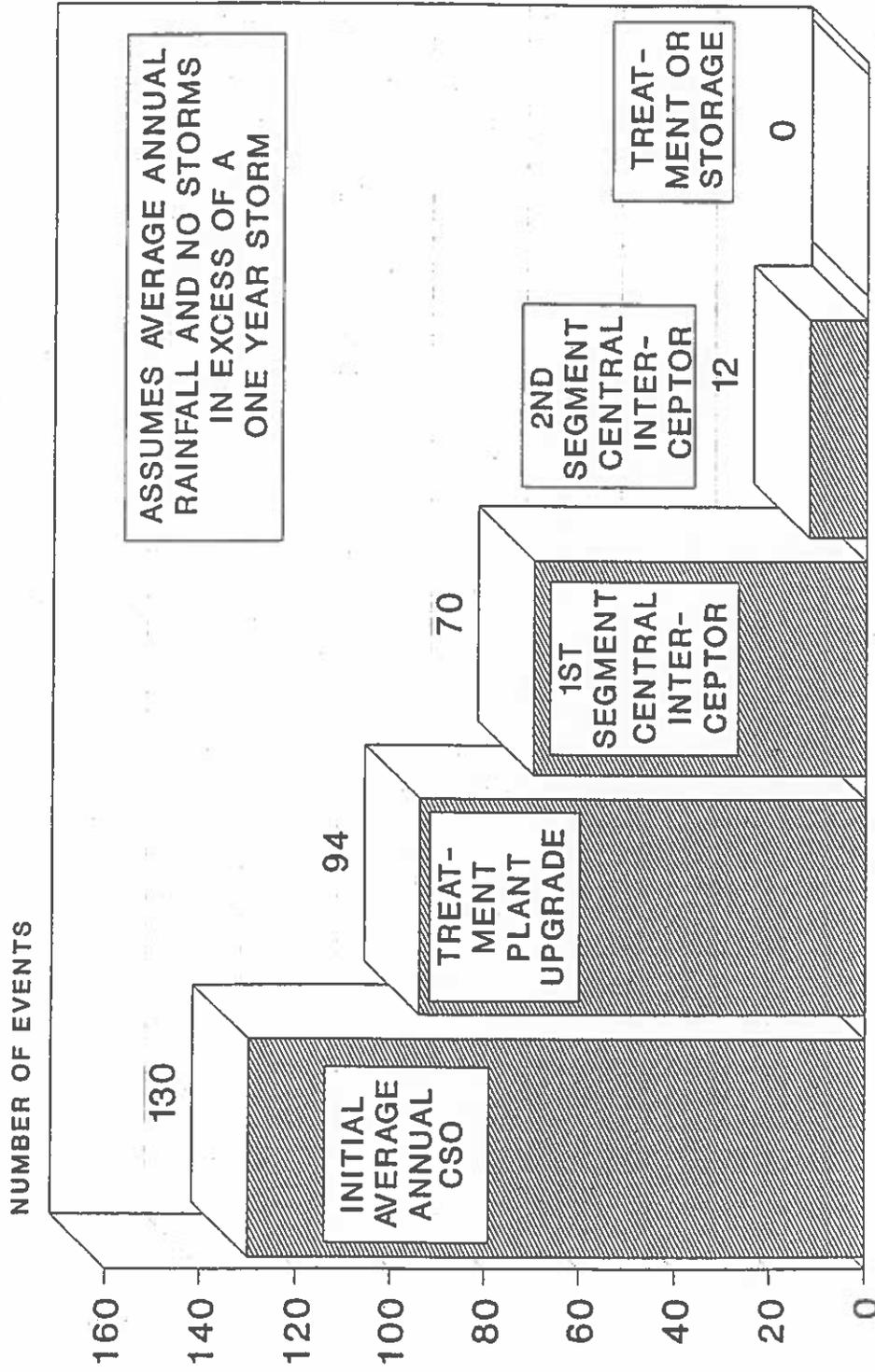
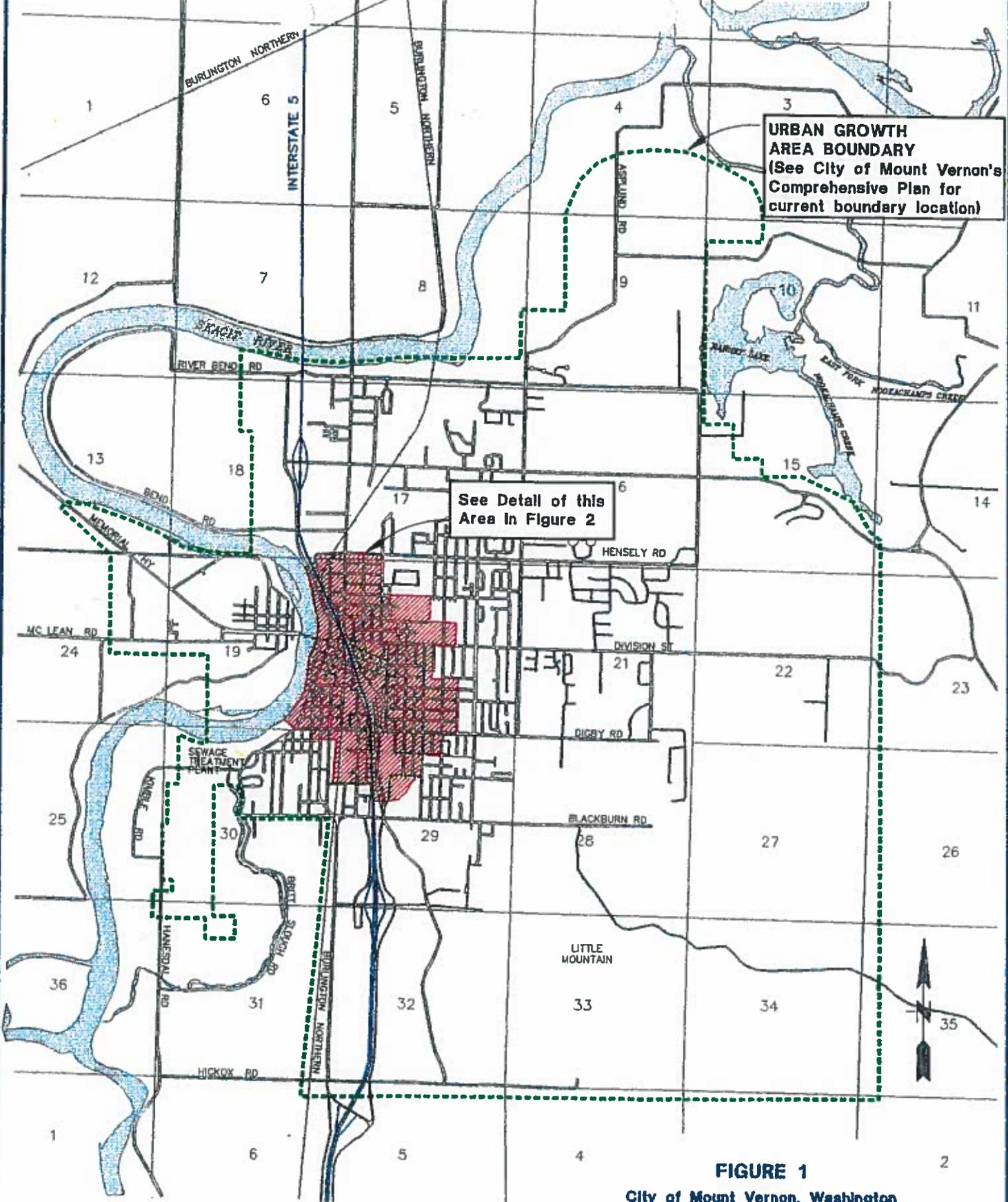


FIGURE V-25
 ESTIMATED FREQUENCY OF OVERFLOWS
 PER YEAR WITH CSO REDUCTION FACILITIES

S.C.S. K:\MAA1\MAA14007 10-20-97 @ 14:55



URBAN GROWTH AREA BOUNDARY
 (See City of Mount Vernon's Comprehensive Plan for current boundary location)

See Detail of this Area in Figure 2

LEGEND
 COMBINED SEWER AREAS

FIGURE 1
 City of Mount Vernon, Washington
 Central CSO Regulator
 Operation Maintenance Manual
COMBINED SEWER AREA



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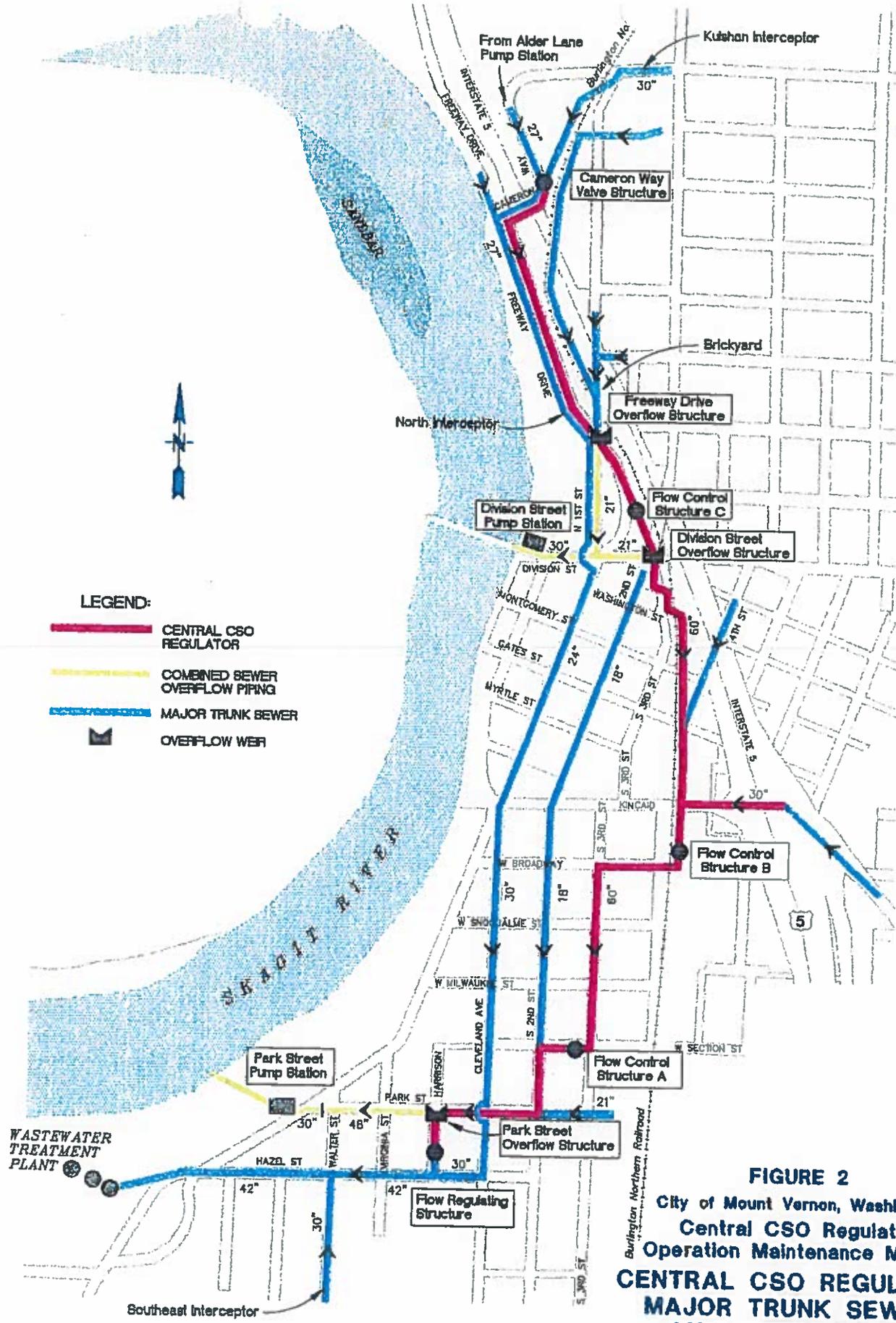


FIGURE 2
 City of Mount Vernon, Washington
 Central CSO Regulator
 Operation Maintenance Manual
**CENTRAL CSO REGULATOR,
 MAJOR TRUNK SEWERS
 AND INTERCEPTORS**

