

CITY OF ANACORTES

2000 CSO REPORT

GENERAL INFORMATION

Discharge number 002 was monitored with a Marsh-McBirney Model 256A flow meter.

The Model 256A flow meter measures level and velocity and reports flows to the treatment plant via a radio telemetry system. When the meter is active the plant control system is programmed to activate an alarm that indicates overflow at this CSO. The plant data acquisition system computes daily flow totals.

Discharge number 003 was monitored with Marsh-McBirney Model 260 portable flow meter system.

The Model 260 flow meter measures level and velocity. The level and velocity measurements are stored in the meter, in the field. The meter is periodically "uploaded" to a laptop computer. During the upload, level, velocity and error logs are transferred to the computer. The Marsh-McBirney Co. Floware for Windows version 2.80.2.8 software package was used to compute flows from this information.

The following information applies to the flow meter systems at Discharge #002 and #003:

1. The flow meter level and velocity-sensing device was placed directly in the outfall pipes. The flow monitored was actual flow discharged.
2. The flow meters detect levels in excess of 0.4 inches. In pipe flows that do not reach or exceed 0.4 inches are not measured.
3. The flow meters detect velocity only when the level is in excess of one inch. Therefore the flow cannot be totaled unless the level in the pipe exceeds one inch.
4. The flow meters were set to record the level and velocity for 60 seconds, once every fifteen minutes.
5. Flow information is reported from 12:00 p. m. (midnight) to 11:59:59 p. m. (midnight) on the indicated day.

Discharge number 004 was monitored with a Krohne Magmeter, type IFS-4000/PF. The rate of the flow rate measured by this meter is reported to the wastewater treatment plant via a radio telemetry system. The plant data acquisition system totals the flow data and includes the information on plant reports.

Rainfall reported is recorded at the Anacortes Wastewater Treatment Plant by a tipping bucket rain gauge. Rainfall totals are reported from 7:00 a. m. on the indicated day to 6:59:59 a. m. on the following day.

Daily flow totals for Discharge #002 and #004 are included in appendix A.

Daily flow totals for Discharge #003 are included in appendix B.

Rainfall data is included in appendix C.

Appendix D includes a map of the City of Anacortes, including wastewater pump stations identified by number.

Appendix E contains information from previous annual CSO reports and overflow information for CSO discharge #004.

Appendix F contains a copy of the public notice advertised in the City of Anacortes paper of record, the Anacortes American, announcing the availability of the annual CSO report.

**DETAIL OF FREQUENCY, VOLUME AND COMPARISON TO BASELINE
CONDITION, DISCHARGE NO. 002, "B" AVE. CSO**

FREQUENCY and VOLUME

As stated previously, discharge number 002 was monitored with a Marsh-McBirney Model 256A flow meter. Flow information from the meter is transmitted to the treatment plant via a radio telemetry system. Reports of this flow data are generated on a daily and monthly basis. This meter occasionally reports discharge amounts of from one to three gallons. These amounts reported are a result of noise from the flow meter or in the telemetry system. The day after this shows up on the report the flow channel has been examined and no evidence of any overflow exists.

There are no overflow events to report for 2000.

Total rainfall measured in 2000 was 20.13

Discharge from this CSO can be caused by failure of an adjacent wastewater pump (PS #3) station. No overflow events occurred in 2000 as a result of failure of PS #3. During the year 2000 significant improvements were made to PS #3. Most notably the pump station is now connected to a standby emergency power generator.

COMPARISON TO BASELINE

Annual precipitation in 2000 was less than in 1995, 1996, 1997, 1998 or 1999. There were no overflow events. Overflow events and the annual baseline are charted and included at the end of this section.

**DETAIL OF FREQUENCY, VOLUME AND COMPARISON TO BASELINE
CONDITION, DISCHARGE NO. 003, "M" AVE. CSO**

The flow meter is routinely read on a monthly basis. A meter was in service continuously for the entire monitoring period.

There were no overflow events in 2000.

Total rainfall measured in 2000 was 20.13

COMPARISON TO BASELINE

Annual precipitation in 2000 was less than in 1995, 1996, 1997, 1998 or 1999. There were no overflow events. Overflow events and the annual baseline are charted and included at the end of this section.

2000
DETAIL OF FREQUENCY, VOLUME AND COMPARISON TO BASELINE
CONDITION, DISCHARGE NO. 004, "Q" AVE. CSO

Previous reports contain considerable detail explaining the history of this CSO. Reports from 1997, 1998 and 1999 are included in Appendix E; these reports explain some of the history of this CSO.

The CSO was active one time during 2000. The event was caused by maintenance activity at the wastewater treatment plant. A written report was submitted to the Department explaining this event. A copy of this report is included in Appendix E. It is noteworthy that the flow for the period of the maintenance related overflow event very closely approximates the typical plant flow for this period of time. This is what would be expected to overflow during this period of time, verifying the accuracy of the instrument.

Annual precipitation in 2000 was less than in 1997, 1998 or 1999. No chart has been included for this CSO as there is no overflow data (related to inflow and infiltration) to present on the chart.

CSO REDUCTION ACCOMPLISHMENTS

1. A storm sewer directly connected to the sanitary sewer was discovered in 1998. The storm sewer serves a three-square block area, Commercial Avenue to O Avenue (one block) and from 10th Street to 13th Street. This area is in the down town area of Anacortes and is mostly asphalt. Several attempts have been made to remove this storm sewer connection. Ground-penetrating radar was used to establish the location of the entire length of the pipe. The pipe was exposed and a manhole has been installed on the pipe. It has been determined that the Port of Anacortes damaged the storm water outfall during maintenance activities. Some of the work that must be completed to accomplish the needed repairs to this drainage system must be performed below the high water line in Puget Sound. Permitting requirements have delayed the project until July 15, 2001. After this time the project will begin with the intent of permanently removing the storm sewer connection from the sanitary sewer system.
2. Continued turnover in the City of Anacortes Engineering Dept. has again caused a delay in the completion of an I & I reduction project. The City of Anacortes requested bids on a project to make repairs to 33 badly leaking sanitary sewer manholes. Unfortunately the results of the bidding were unsatisfactory. All bids were rejected. Possibly the project will be re-bid and the manholes will be repaired in 2001.
3. Sewer pump station #3 is adjacent to CSO discharge #2. A failure of pump station #3 will cause discharge from CSO #2. Numerous improvements to this pump station have been completed which dramatically improve the reliability of the station, including replacement of the pumps and controls and connecting a stand-by emergency generator. This will virtually eliminate any possibility of CSO discharge caused by a pump station failure. The CSO meter has also been connected to emergency power.
4. Pump station #3 force main was replaced and redirected to pump station #15. This removed the discharge of PS #3 from the drainage basin served by CSO discharge #003. This may or may not reduce the number of overflow events from CSO #3. If CSO #3 is active for an I & I related event the removal of PS #3 discharge from the drainage basin will reduce the overflow volume discharged from CSO #003.
5. Three badly leaking manholes were repaired and lined with fiberglass and/or epoxy. This will prevent some I & I from entering the drainage basin served by CSO #004.
6. The City of Anacortes has replaced 985 feet of old, damaged and leaking sanitary sewer pipelines.

PLANNED IMPROVEMENTS

The improvements planned for 2001 are as follows:

1. Remove the storm sewer connection to the sanitary sewer identified in #1 above.
2. The City of Anacortes is committed to repairing the 33 leaking manholes as identified in #2 above.
3. The City of Anacortes will replace 1100 feet of leaking sewer lines in 2001.