

Allegany County Combined Sewer Overflows - Long Term Control Plan –Update –Braddock Run Sanitary District

On December 14, 2001 the Maryland Department of the Environment (MDE) filed a Consent Decree and Judgment (Consolidated Case No. 01-C-00-18342-L) against the Allegany County Sanitary Commission (ACSC), the City of Frostburg, the LaVale Sanitary Commission, and the City of Cumberland. The Consent Decree and Judgment requires each entity to develop and implement a Long Term Control Plan (LTCP) for their CSO's as required by their discharge permits and to take actions necessary to prevent future unauthorized CSO discharges to Waters of the State.

Although this LTCP was specifically prepared for the Braddock Run Sanitary District, much of the information contained applies to all districts.

Since the ACSC serves a population of less than 75,000, the EPA CSO Control Policy states that the ACSC is eligible for small system consideration, which requires a less formal LTCP. At a minimum, however, the LTCP shall include:

- A. Compliance with the Nine Minimum Controls (NMC)
 - 1. Proper Operation and Regular Maintenance Program
 - 2. Maximization of Storage in the Collection System
 - 3. Review and Modification of Pretreatment Requirements
 - 4. Maximization of Flow to the POTW for Treatment
 - 5. Elimination of CSO's during Dry Weather
 - 6. Control of Solid and Floatable Materials in CSO's
 - 7. Pollution Prevention Programs to Reduce Contaminants in CSO's
 - 8. Public Notification
 - 9. Monitoring to Characterize CSO Impacts and the Efficacy of CSO Controls
- B. Consideration of Sensitive Areas
- C. Post Construction Compliance Monitoring Program
- D. Public Participation

A. Compliance with the Nine Minimum Controls

As part of ACSC's Plan of Action for Combined Sewer Overflow Control Policy, which was submitted and approved by MDE in April, 1998, the Allegany Department of Public Works, on behalf of the ACUD, implemented the Nine Minimum Controls. The following is an update of the NMC status.

1. Proper operation and regular maintenance program.

- 1.1 Organizational Structure: Operational responsibility of the ACSC is delegated to Allegany County Utilities Division (ACUD). Below lists personal associated with this LTCP. All staff is shown on the attended organization chart.

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1.2 Planning and Budget

Operation and Maintenance (O&M) of the combined sewer overflows (CSO) regulated by State Discharge Permit No. 95-DP-3144 and NPDES Permit No. MD0067407 is under the supervision of the Area Supervisor. The operating cost for the CSO's is included in the estimated annual cost of the Braddock Run Sanitary District (BRSD). Operating costs for the BRSD for Fiscal Years FY 1998 through FY 2015 are available on the County website and are summarized in Table 1.

1.3 Critical Facilities

There are three (3) critical facilities that ACUD operates that directly affect the overflow of the permitted CSO's, 1) Wrights Crossing Pumping Station (WCPS), 2) a regulating baffle, and 3) the interceptor and manholes.

1.3.1 Wrights Crossing Pumping Station

The WCPS receives the combined sewer flow from Frostburg and some small neighboring communities and pumps it to the Braddock Run Interceptor and then to LaVale Sanitary Commission's system that conveys the combined sewer flow to the City of Cumberland's Wastewater Treatment Plant. The WCPS is monitored daily and the pumped flows and tank levels recorded. The CSO's will be visually monitored on a day-to-day basis during wet weather. ACUD has installed flow meters at the overflows to more accurately report the flow from the CSO's. The station is also monitored remotely and alarmed through the supervising control of data acquisition system. (SCADA). A significant upgrade will be completed December 2016.

1.3.2 Regulating Baffle

The regulating baffle that ACUD operates is located in a manhole in the Grahamtown area. The baffle when lowered causes flow to discharge into an old combined sewer. This is necessary to maximize the flow to the WCPS and to prevent hydraulic backup of the interceptor between the baffle and WCPS that has previously caused residential property damage. Through years of experience, County personnel have learned to adjust the baffle to maximize flow to the WCPS and prevent backups into homes.

1.3.3 Interceptor and Manholes

The manhole used for the regulating baffle is visually monitored during wet weather events daily. During long periods of dry weather, the manhole is typically not monitored. ACUD proposes to visually inspect the regulating manhole a minimum of one (1) time per week during dry weather and a minimum of one (1) time per day during wet weather. ACUD also to visually monitor all manholes between the baffle and WCPS one (1) time per year. The annual monitoring of the manholes will eventually assist in decreasing the CSO occurrences. Several rehabilitation projects are shown on Table 2.

1.4 Procedures for Routine Maintenance

The WCPS has been and will continue to be maintained daily. The regulating baffle manhole has been and will continue to be visually monitored daily during wet weather and at least once a week during dry weather. The remaining manholes between the WCPS and regulating baffle will be monitored at least once per year.

1.5 Non-Routine Maintenance and Emergency Situations

Quick response is essential during emergency situations. The appropriate personnel can be contacted during off-hours by calling Allegany County Civil Defense (301-777-7112). Civil Defense has the phone numbers of people responsible for the BRSD in which the CSO's and associated appurtenances are located. Key personnel are available via pagers and cell phones around-the-clock. The SCADA system will alert personnel to equipment failures and high water conditions.

1.6 Monitoring

ACUD will formulate the appropriate check sheets and forms to complete during the visual monitoring of the manholes used to adjust the regulating baffle and annual monitoring of the manholes. The appropriate personnel will review the

check sheets and forms from the previously mentioned tasks and maintenance will be scheduled (if deemed necessary).

The County installed a SCADA system at the WCPS. This allows remote monitoring and various alarm transmissions.

1.7 Training

Hands-on experience is required for the training of new employees. Experienced employees will teach operation, maintenance, and safety procedures on-site.

1.8 Review of Operation and Maintenance Plans

O & M plans will be reviewed periodically and modified as necessary. The Area Supervisors and office personnel will be involved during review of O & M plans.

2. Maximization of storage in the collection system.

2.1 Adjustment of Regulating Baffle

ACUD will have personnel visually monitor the manhole used to adjust the baffle on a daily basis during wet weather and a minimum of once a week during dry weather.

2.2 Reduction of Inflows

The Allegany County Commissioners have adopted utility use regulations that prohibit, and aid in eliminating, illegal connections of downspouts, floor drains, footer drains, area drains and other stormwater connections that discharge into ACUD's collection system. The regulations establish a penalty for violations. The County hired RJN Group, Inc., a consulting engineer to perform and prepare a Sanitary Sewer Evaluation Study (SSES) in 2004. Since 2004 ACUD has actively been building an I&I crew with equipment to perform SSES in house. County. There are four full time employees on the crew. The county has purchased smoke testing equipment, CCTV crawler camera, CCTV push camera combination Vac Truck and a pole camera. These pieces of equipment enable the ACUD to inspect and clean our sewers and manholes.

Frostburg's LTCP is to separate their storm and sanitary sewers thus reducing inflow.

2.3 Removal of Obstructions to Flow

The annual visual monitoring of the manholes will help establish a list of "problem manholes" (manholes where sedimentation build up occurs frequently and or obstructions are observed). The "problem manholes" may be monitored more frequently as deemed necessary.

ACUD has instituted a program of biannual utility right of way (ROW cleaning). This provided better access of men and equipment to inspect and repair the lines. Backups and clogs can be detected much sooner and clear ROW's minimize root problems.

ACUD also has an active notification process for upcoming projects. All construction projects have been preceded by at least one public meeting. A list of recent projects are attached

3. Review and modification of pretreatment requirements.

It is the ACUD's belief that no non-domestic discharges exist within the combined system.

4. Maximization of flow to the POTW for treatment.

The upgraded WCPS has the following capacities:

- Pumps 3 VFD pumps
- Average daily flow - 1.3 - mgd
- Peak Flow – 2 pumps -4.2 mgd
- Peak Flow – 1 pump – 2.8 mgd
- Min capacity – 1 pump lowest – 1.0 mgd
- Grit removal at influent grinder capacity exceed the pump capacity.

ACUD's Long Term Control Plan to eliminate overflows would be too contractually limit the amount of flow accepted from Frostburg such that the three (3) Counties permitted CSO's wouldn't become active. Once the City of Frostburg has completely separated their storm and sanitary sewers as per their LTCP, the Wrights Crossing Pump Station, with a capacity of 2.8 mgd, would be able to adequately pump flow from Frostburg and the County without overflows. This would necessitate Frostburg separating their sewers within an adequate time period. The time for implementing ACUD's LTCP would have to coincide with Frostburg's LTCP (see attached schedule). In the meantime, as much flow as possible will be pumped to the Cumberland Wastewater Treatment Plant for treatment and the Nine Minimum Controls will be adhered to.

Should Frostburg not reduce their flow to the capacity of the WCPS, Frostburg shall be required to permit the three (3) CSO points, if permitting is possible at that time.

To determine the amount of dry weather flow transmitted to the WCPS and LaVale, water consumption figures provided from the City of Frostburg were analyzed. Twenty five percent (25%) was added for an estimation of inflow and infiltration (I/I) as provided in Frostburg's approved LTCP. An additional twenty five percent (25%) was added for estimating wet weather flows.

Future Flow to Wrights Crossing Pump Station

The City of Frostburg produces approximately 900,000 gallons of water per day. Approximately 200,000 gpd is supplied to areas that are not served by the WCPS. These areas either do not have sewer service or them gravity-feed to LaVale or Georges Creek. The total flow to the WCPS was determined to be 680,000 gpd, adding a 25% I/I allowance for dry weather, the flow is 850,000 gpd (which is 47% of the WCPS's current capacity). County areas contribute 60,000 gpd of this flow and the remaining 790,000 gpd from Frostburg. The average wet weather flow to the WCPS was determined to be 1,020,000 gpd, which includes a 50% allowance for I/I.

Future Flows to LaVale

The average dry weather flow to LaVale was determined using the amount of water produced, provided by the City of Frostburg, subtracting actual water metered quantities and estimated flows from districts that do not drain to LaVale and adding areas which contribute wastewater but do not purchase Frostburg water.

Water Produced:	27,000,000 gal/mo
- Borden/Zihlman (metered):	- 570,000 gal/mo
- Route 36 (metered):	- 480,000 gal/mo
- Hoffman (metered):	- 60,000 gal/mo
- Carlos/Shaft (metered):	- 810,000 gal/mo
+ Clarysville/Harwood (80 homes) (130 gpd) (30 days):	+ 310,000 gal/mo
TOTAL FLOW TO LAVALE:	25,390,000 gal/mo

$$25,390,000 \text{ gal/mo} = 850,000 \text{ gpd}$$

Average dry weather flow to LaVale = (850,000 gpd) (25% I/I allowance) = 1,062,500 gpd = 1,100,000 gpd. The measured average daily flow in 2014 was 1.45 mgd peak 2.11 mgd.

The peak dry weather flow to LaVale was determined by adding actual water metered quantities and estimated flows (double dry weather flows) from areas which gravity feed to LaVale to the Wrights Crossing Pump Station flows.

Wrights Crossing Pump Station (850,000 gpd) (2): 1,700,000 gpd

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+ Frostburg Businesses (metered) (1,554,000 gal/mo) (2):	104,000 gpd
+ County Businesses (metered) (214,000 gal/mo) (2):	14,000 gpd
+ Eckhart Flats (240 homes) (130 gpd) (2):	62,000 gpd
+ Eckhart (500 homes) (130 gpd) (2):	130,000 gpd
+ <u>Clarysville/Harwood (80 homes) (130 gpd) (2):</u>	<u>21,000 gpd</u>
TOTAL FLOW TO LAVALE:	2,031,000 gpd

Peak dry weather flow to LaVale = 2,031,000 gpd

The average wet weather flow was determined by adding actual water metered quantities and estimated flows (adding 50% I/I allowance) from areas which gravity feed to LaVale to the Wrights Crossing Pump Station flows.

Wrights Crossing Pump Station (680,000 gpd) (1.5):	1,020,000 gpd
+ Frostburg Businesses (metered) (1,554,000 gal/mo) (1.5):	78,000 gpd
+ County Businesses (metered) (214,000 gal/mo) (1.5):	11,000 gpd
+ Eckhart Flats (240 homes) (130 gpd) (1.5):	47,000 gpd
+ Eckhart (500 homes) (130 gpd) (1.5):	98,000 gpd
+ <u>Clarysville/Harwood (80 homes) (130 gpd) (1.5):</u>	<u>16,000 gpd</u>
TOTAL FLOW TO LAVALE:	1,270,000 gpd

Average wet weather flow to LaVale = 1,270,000 gpd

The peak wet weather flow to LaVale was determined by adding actual water metered quantities and estimated flows (double average wet weather flows) from areas which gravity feed to LaVale to the Wrights Crossing Pump Station flows.

Wrights Crossing Pump Station (max pumping capacity):	4,200,000 gpd
+ Frostburg Businesses (metered) (1,554,000 gal/mo) (3):	155,000 gpd
+ County Businesses (metered) (214,000 gal/mo) (3):	21,000 gpd
+ Eckhart Flats (240 homes) (130 gpd) (3):	94,000 gpd
+ Eckhart (500 homes) (130 gpd) (3):	195,000 gpd
+ <u>Clarysville/Harwood (80 homes) (130 gpd) (3):</u>	<u>31,000 gpd</u>
TOTAL FLOW TO LAVALE:	4,696,000 gpd

Flow and water level are monitored at Red Hill in LaVale and the WCPS pump speeds will be reduced to prevent overflow in LaVale.

To measure dry weather and problem areas, the County has developed a metering plan to monitor the flows at points either entering or exiting their sewer system. There points were temporarily metered where the County flow enters Frostburg's system:

1. Western Frostburg at Catherine/Tisdale Streets

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2. Sand Spring Interceptor at Water Street
3. Upper Consol Road
4. Lower Consol Road

Also, Frostburg installed temporary meters the following ten (10) points where the Frostburg flow enters the County system:

1. Grahamtown Interceptor at Grant Street
2. Sand Spring Interceptor at Braddock Road
3. Sand Spring Interceptor at Howard Street
4. Braddock Estates
5. Warn's Lane
6. Willow Lane/Maple Terrace
7. Avenue A from Maplehurst County Club
8. Hoffman Hollow Road (Frostburg Industrial Park)
9. Main Street at Mountain Ridge High School.
10. Sheetz Plaza at Mountain Ridge High School.

The flows were monitored at these locations and excessive flows identified and were used in our I/I studies and rehabilitation projects. This project will be repeated to monitor progress.

5. Elimination of CSO's during dry weather.

Daily observances of the CSO's will identify if dry weather discharges occur. It is ACUD's belief that no dry weather discharges occur. Overflows may occur due to sedimentation build up and/or flow obstructions. The annual inspection of the manholes will assist in reducing CSO occurrences and duration. Dry weather overflows have been and will continue to be recorded using the record keeping process established. To lower the likelihood of power outages, an emergency generator has been installed grit removal improved and SCADA is installed. Table 1 lists major sewer rehabilitation projects completed or underway.

6. Control of solid and floatable materials in CSO's.

Outfall 001 has already been retrofitted with a screening device. The City of Frostburg is assisting in controlling solids with the purchase of an additional street-cleaning machine that will increase the quality of the street cleaning efforts. Street cleaning is necessary because of the anti-skid material used during the winter season.

7. Pollution prevention programs to reduce contaminants in CSO's.

The City of Frostburg has increased its street sweeping program to minimize grit and solids from entering the system that may cause buildup and blockage. ACUD of Frostburg Lane improved investigate Public Education Programs (PEP) to reduce the amount of street litter and household items that enter CSO outfalls. Allegany County has also established numerous recycling and refuse disposal bins throughout the County to assist in reduction of litter.

8. Public notification.

ACUD has posted signs at the CSO outfall points. The ACSC will inform the public of CSO discharges in the following manner:

Notifying the local newspaper and the Allegany County Health Department.

Posting CSO occurrences on Allegany County's home page on the internet (www.allconet.org).

ACUD is proposing not to notify downstream entities that draw their public drinking water from the CSO receiving waters because the nearest downstream entity that utilizes the North Branch of the Potomac River is Paw Paw, West Virginia, approximately 75 miles hydraulically downstream.

ACUD also has an active notification process for upcoming projects. All construction projects have been proceeded by at least one public meeting.

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

ACUD currently monitors the discharges of the CSO's and documents the number of occurrences, flow, and pollutant loadings. Water quality data for the receiving water body is being collected and recorded for evaluating the impact of CSO discharges. ACUD will be evaluating numerous monitoring devices that may be used in the monitoring program of the LTCP.

ACUD is monitoring Outfalls 001, 002, 003 and the receiving stream (Georges Creek) by sampling the following parameters:

B. Consideration of Sensitive Areas

Even though the CSO's are not located in sensitive areas, as determined by the CSO Control Policy, the ACSC will attempt to prohibit new overflows and to eliminate its existing overflows. The ACSC will limit the amount of flow from the City of Frostburg to its sewers, such that the existing system capacity will convey the wastewater to LaVale's system without any overflows.

Analyses will be performed to better determine the existing system's capacity. The flow limitation must be timed to coincide with Frostburg's LTCP.

NOTE: The closest public water intake form the ACUD's CSO receiving waters is approximately 75 miles downstream along the North Branch of the Potomac River in Paw Paw, West Virginia.

C. Post Construction Compliance Monitoring Program

The ACSC currently monitors the CSO discharges and documents the number of occurrences, flow, and pollutant loadings. Water quality data for the receiving water body is being collected and recorded for evaluating the impact of CSO discharges. After the CSO's are eliminated, the ACUD will monitor the flow of permanent meters in the sewer shed and continue to randomly sample and monitor outfall locations to verify the effectiveness of the CSO controls.

D. Public Participation

The ACUD has posted signs at the CSO outfall points.

The ACUD will notify (by letter) local committees such as the Georges Creek Watershed Association as necessary for updates on the progress of the CSO eliminations. Public meetings have been held as required at the start of all projects or when requested. ACUD also has an active notification process for upcoming projects. All current projects have been proceeded by at least one public meeting. As a minimum semi-annual joint progress meeting are held with the four parties of the consent order. MDE is also invited to participate and they receive copies of the meeting minutes. The bids of all construction projects are approved at a public meeting.

Interaction with MDE, including monitoring and reporting, will continue throughout the development of CSO controls and their eventual elimination.

The LTCP is located on the County's website (www.allconet.org), where reader comment can be registered

cso – long term control plan 2015 upgrade

Table 1

Operating Costs for BRSD

FY 1998 - \$ 856,766

FY 1999 - \$ 774,055

FY 2000 - \$ 688,344

FY 2001 - \$ 781,538

FY 2002- \$ 804,249

FY 2003 - \$ 827,685

FY 2004 - \$ 842,380

FY 2005 - \$ 955,531

FY 2006 - \$ 984,337

FY 2007 - \$1,117,244

FY 2008 - \$1,323,227

FY 2009 - \$1,438,634

FY 2010 - \$1,349,477

FY 2011 - \$1,365,019

FY 2012 - \$1,392,168

FY 2013 - \$1,659,259

FY 2014 - \$1,603,978

FY 2015 - \$1,805,720

Table 2

Utilities Sewer Projects

Completed Construction

Georges Creek WWTP ENR Upgrade

Braddock Run Sanitary District Phase 1,2,3, and 4

Miscellaneous Inflow and Infiltration Repairs (In-House)

Bedford Road Sanitary District Sewer Rehabilitation Phase 1,2, and 3

Jennings Run Sanitary District Sewer Rehabilitation Phase 1,2, and 3

Bedford Road Ioka Pressure Sewer Replacement

Under Design or Construction

Braddock Run Sanitary District Phase 5 and 6

Bedford Road Sanitary District Phase 4

Jennings Run Sanitary District Locust Grove Pump Station Upgrade