CAPACITY, MANAGEMENT, OPERATIONS, MAINTENANCE (CMOM)

REPORT







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SECTION 1.0 - 2020 CMOM PROGRAM SUMMARY

A. <u>Certification Statement</u>

This 2020 Annual Report is submitted to fulfill the requirements of Hallsdale-Powell Utility District's (HPUD's) Consent Order #WPC-14-0044 as agreed upon in August 2014. This Consent Order is a legal agreement between the Tennessee Department of Environment & Conservation (TDEC) and HPUD. The purpose of the Consent Order is to address sanitary sewer overflows (SSOs) in the HPUD sanitary sewer system in an effort to improve water quality throughout HPUD service area. In accordance with the 2014 Consent Order, this report details the results of activities undertaken during the annual reporting period beginning January 1, 2020 and ending December 31, 2020.

Like most entities in 2020, COVID-19 brought changes to HPUD and how normal day to day operations were performed. COVID-19 affected several of HPUD's normal activities due to staffing restrictions at times, accessibility to facilities/businesses, and programs for outreach. HPUD has been able to continue with collection system improvement projects but had to reprioritize how internal operations took place for the safety of its employees and customers.

The format of this report will follow the outline presented within the Table of Contents and is presented in response to the information requested in the Consent Order. All pertinent and supplemental data, maps and background documentation will be retained on file in the main office located at 3745 Cunningham Drive, Knoxville, Tennessee and is available upon request.

v la well

Signature

3-31-2021

Date

B. <u>Purpose and Scope</u>

The Capacity, Management, Operation, & Maintenance Program (CMOM) Annual Report provides a summary of CMOM Program activities (past and planned) and is intended to be a communication tool. The report is intended for District staff, regulatory authorities, customers, and the general public. The report serves four general purposes:

- To provide an annual overview of the activities completed under the CMOM Program;
- To describe and document changes to the CMOM Program on an annual basis, which may include changes to objectives, strategies, and performance measures;
- To describe the activities that are planned or currently being undertaken to support the CMOM Program;
- To continue compliance with the August 2014 Agreement between the District and State of Tennessee, Department of Environment and Conservation (TDEC) which requires that HPUD provide an annual report regarding implementation and performance of the CMOM program.

C. <u>Overview of HPUD Infrastructure</u>

HPUD's wastewater system serves approximately 24,022 wastewater connections which covers an area of roughly 146 square miles. The District runs from North Knox County into Union County and extends into portions of Anderson County.

The District has a total of 481 miles of sewer mains, of which 440 miles are gravity sewer lines. HPUD maintains a 5-million-gallon (MG) sewer storage tank, 22 wastewater lift stations, 9,743 manholes, and operates two wastewater treatment plants. The main wastewater treatment plant, Beaver Creek WWTP, is operated and manned twenty-four hours a day and in 2020 averaged treatment of 10.19 million gallon-per-day (MGD). The second wastewater plant, Raccoon Valley WWTP, is an unmanned treatment facility that averaged .149 MGD.

Figure 1. HPUD's Wastewater Infrastructure

No. of Sewer Connections	24,022
Service Area	146 square miles
Wastewater Treatment Plants	2
Decentralized Treatment Plants	2
Rated Treatment Plant Capacity	9.7 million gallons per day
Daily Max WWTP Flow	18 million gallons per day
Treated Wastewater	3.13 billion gallons per year
Sewer Storage Tank	5 MG capacity
Wastewater Lift Stations	22
Sewer Manholes	9,743
Force Main & Gravity Sewer	481 miles

D. Roles and Responsibilities for CMOM Program

The Sewer Collection Department, under the direct supervision of the Collection System Project Supervisor, includes a staff of full-time employees who divide their time between operation and maintenance of the sewer collection system. HPUD's Chief Operating Officer also devotes significant time to the management and oversight of the sewer collection system.

Figure 2. Roles and Responsibilities for CMOM Program

Title	Role or Responsibility					
Board of Commissioners	Develops policy for District					
General Manager	Manages all personnel, procurement, budget, operations, and management of HPUD departments and activities					
Assistant General Manager	Serves as the assistant to the General Manager and has the authority to conduct the same duties/responsibilities as the General Manager, under his direction and approval.					
Chief Operating Officer	Manages the daily operation of all water and wastewater facilities, water distribution, sewer collection and construction activities					

Manager of Field Operations	Manages the HPUD operations/crews for the collection and distribution systems daily.				
Collection System Project Supervisor	Directs HPUD's daily sewer operations, responds to sewer problems, assists engineer/contractor on sewer projects, implements the SORP.				
Manager of Safety, Environmental and	Manages safety procedures, environmental				
Field Services	programs, and oversees daily field services				
Safety and Education Coordinator	Oversees education and outreach efforts with schools, residents, and local businesses.				

E. <u>CMOM Program Overview</u>

The CMOM Program provides a method for HPUD to summarize the current and planned projects and programs that are in place to help HPUD achieve goals related to the elimination of sanitary sewer overflows, to improve effluent quality, and to ensure adequate system capacity. As part of this effort, HPUD has completed this 2020 annual review of the Program in conjunction with evaluating the performance measures outlined in the Program.

1. Management Plan

HPUD's CMOM Management Plan describes the approach that the District is undertaking to ensure all necessary activities and programs are in place in order to support the CMOM Program. The report is intended for District staff, regulatory authorities, customers, and the general public.

Each year, the annual report details the progress toward meeting objectives of the Plan. The following is a list of the some of the major accomplishments that have helped move the CMOM Program forward:

- Continued implementation of the Collection System Preventative Maintenance Inspection (PMI) Program in order to identify, pinpoint, and prioritize areas of the collection system that need rehabilitation or replacement;
- Use of the Geographic Information System (GIS) data as the basis for the asset management system for collection system & treatment plant infrastructure.

2. <u>Performance Measures and Management Review</u>

The review of the performance measures is intended to be an evaluation of the District's status with respect to achieving its CMOM objectives. The purpose of the performance measures is to track District activities over time and gauge achievement of CMOM program objectives. Some of these performance measures have been selected as key measures to gauge the overall performance of HPUD in the areas of collection system operations and maintenance and capacity assurance. *(See Attachment 1: Spreadsheet - Performance Measures and Management).*

3. Data and Asset Management

As in previous years, the District continues to improve asset management processes and data quality and accuracy. The District continues to evaluate and monitor the process of tracking capital project costs at the asset level to verify the accuracy of these assets and costs associated with them.

HPUD continues to utilize Cityworks and Geographic Information System (GIS) to track and evaluate assets. Cityworks is used to track customer issues, service requests, and work orders HPUD receives daily. HPUD uses GIS to track and locate upgrades and changes to the sewer system. HPUD also uses GIS as a tracking and assessment tool for PMI which helps evaluate assets to develop rehabilitation and construction projects. These rehabilitation projects are then entered in the Combined Rehab database and shown in GIS.

4. Capital Improvements Plan

HPUD utilizes the 5-year Capital Improvements Plan (CIP) to ensure adequate financial resources are set aside to fund required components of the sewer capital improvements plan. The CIP is discussed in more detail in Section 5.0 of this report and a summary of the plan is included in Appendices as (See Attachment 2: Spreadsheet - Sewer System Capital Improvements Plan (CIP)).

5. Sewer Overflow Response Plan

The Sewer Overflow Response Plan (SORP) describes the measures the District has put in place for response, containment, clean up, stream sampling and analysis, public notification, and regulatory reporting of overflows in the collection system. The SORP details the steps to be taken when a potential overflow is identified, categorization of whether it is a wet weather or dry weather SSO, and if it reaches State Waters.

Historically, the District has collected data about pipe defects, line blockages, mechanical or electrical equipment problems, and inflow and infiltration, which are the primary causes of sanitary sewer overflows.

The Collection System Project Supervisor maintains the SSO tracking spreadsheet. Overflow data is also incorporated into the GIS. The following section of this report details specifics about SSO data captured during this reporting period. **(See Attachment 3: Map - 2020 SSO Locations)**

a. Summary of SSO Data

As in 2019, February 2020 brought excessive rain in our area. In HPUD's district over ten inches of rain fell in the month, of which eight were within a ten-day period. This caused HPUD's SSO numbers to increase dramatically for the month. The month of February alone accounted for approximately 40% of HPUD's SSOs in 2020. For the 2020 calendar year, there were a total of 207 SSOs (Jan 1, 2020 to Dec. 31, 2020) due to either operational issues or wet weather events throughout the HPUD service area. A total of 180 of the discharges were due to wet weather events and caused by inflow/infiltration. The other 27 discharges were dry weather overflows as reflected in the following chart.



Of the 27 recorded dry weather SSO events during the 2020 annual reporting period, most were caused by operational issues such as line blockages caused by roots or debris. All SSOs are periodically reviewed to identify if any problems exist that warrant the need for a larger-scale inspection or rehabilitation projects.

b. Summary of SSO Events by Cause

All SSOs, regardless of the cause, are immediately responded to and the problems are remediated as soon as possible. Parts of the collection system, where blockages occur, are put on a cleaning program to be inspected and cleaned as needed or placed on a schedule for rehabilitation or replacement. The following chart depicts a summary of SSO events by cause for the 2020 calendar year.



6. Fats, Oil, & Grease Program

As part of the Fats, Oil, & Grease Program (FOG), HPUD has continued to outsource grease trap inspections. Since late 2009, HPUD has contracted with Robert G. Campbell & Associates (RGC&A) to conduct grease and grit trap inspections. For the calendar year of 2020, RGC&A conducted 317 inspections on 175 businesses. The number of inspections is down from previous years due to COVID-19 with businesses being closed and/or businesses limiting accessibility into their establishments. The frequency of the inspections varies as to the type of business and whether follow up inspections are necessary.

Contracting with a third party for inspections and management of the program has enabled HPUD Collection System staff to be more effective in the operation and maintenance of the collection system. HPUD staff periodically reviews the written FOG Program and updates it as needed.

HPUD started a "Can the Grease" campaign. Customers are encouraged to pick up a grease can lid to cover the grease until it cools and can be disposed of properly. This campaign offers residential customers a solution to grease disposal.



7. System Evaluation and Corrective Action Plan

The Corrective Action Plan & Engineering Report (CAP-ER) was submitted to TDEC on March 17, 2015 and HPUD received approval on May 23, 2015. In response to TDEC's review of HPUD's System Evaluation and CAP-ER, HPUD continues progress toward meeting the following objectives:

- Continue to address HPUD's Infiltration and Inflow (I/I) problem;
- Continue to identify collection system rehabilitation priorities;
- Complete Capital Improvement Projects;
- Continue the Preventative Maintenance Inspection (PMI) program;

- Continue with lift station improvements;
- Continue calibration and monitoring of HPUD's nine (9) permanent flow monitoring stations.

One of the tools utilized to develop the District's CAP-ER is HPUD's collection system hydraulic model. Currently, HPUD uses the collection system hydraulic model to verify compacity for any new developments. As collection system assets are updated with new developments and/or system improvements the new updates are added to the hydraulic model.

Once the remaining Interceptor projects are complete, HPUD will recalibrate the hydraulic model to help identify which area(s) in the collection system to focus efforts for the future. It will be important to verify once these projects are complete that the collection system reacts and operates the way the model has projected with the new upgrades. The updated and calibrated collection system hydraulic model is and will continue to be used to perform the capacity assessments. The objectives of the capacity assessment included the following objectives:

- Identify locations and causes of hydraulic constraints in the collection system;
- Assess the Beaver Creek WWTP ability to accommodate/treat peak flows,
- Assess how existing sewer system performance will be improved by planned rehabilitation and improvement projects, and
- Assess the performance of planned rehabilitation projects to accommodate future population growth.

8. <u>CMOM Communication Plan</u>

The CMOM Communication Plan documents the types and frequency of communications that are prepared and distributed regarding the status of the CMOM Program and the CMOM Annual Report. The District maintains communication with the Tennessee Department of Environment and Conservation (TDEC), the Board of Commissioners, HPUD employees, and HPUD customers on a regular basis.

The Board of Commissioners meet monthly to determine policy issues related to finance, personnel, operations, water and sewer system improvements, and other HPUD business. HPUD utilizes its quarterly customer newsletter, "WaterWorks", the CMOM Annual Report, and a dedicated website, <u>www.hpudactnow.org</u>, to inform customers about projects related to the sewer collection system. The CMOM update was given in a presentation during the board meeting on June 16, 2020 to the Board of Commissioners and public who attended the meeting. HPUD is also in the process of updating and revitalizing the ACT NOW website. In 2020,

HPUD's main communication tool focused on using social media, Twitter (@hpudknox) and Facebook, to keep customers informed of projects and emergencies.



In the Works: HPUD contractor, Merkel Brothers Construction, Inc., recently began construction on a new sewer line between Ventura Drive and Scenic View Circle. This sewer line improvement project is designed to reduce unwanted inflow & infiltration in the collection system.



A. Completed, Ongoing, and Planned Collection System Projects FY 2020

As previously mentioned, HPUD had to change daily operations internally due to staffing restrictions, accessibility to facilities/businesses, and for the general safety of HPUD's employees and customers. These changes limited the normal collection system internal inspections and operations throughout the year. HPUD was able to keep the collection system projects moving forward with little to no interruption. The major collection system projects that were completed, ongoing, and planned in 2020 included the following:

1. <u>Preventative Maintenance & Inspection Program</u>

In 2006, HPUD established a Preventative Maintenance and Inspection (PMI) Program to target problematic areas in the collection system to help prevent sanitary sewer overflows (SSOs). The Preventative Maintenance and Inspection activities include techniques such as manhole inspections, smoke testing, closed-circuit television (CCTV) inspection, preconditioning, and pipeline cleaning.

Results of these investigations have been captured digitally and integrated into HPUD's Geographic Information System (GIS). A final summary report is prepared detailing the problems found and the priority in which they should be addressed. These problems or defects are then put in a rehabilitation or construction project to be repaired by outside contractors or HPUD crews.

In 2020, HPUD contracted with Compliance Envirosystems (CES) to clean and CCTV the gravity sewer lines around the Gibbs community due to excessive water that was seen at some of HPUD's lift stations in the February rain. CES also performed cleaning and CCTV of the gravity sewer lines in the HP07 basin that has had a few chronic overflows at the bottom of the basin and is seeing some new development. CES inspected approximately 152,000 LF of mainly 8-inch diameter gravity sewer. *(See Attachment 4: Map – 2020 CCTV Inspections)*

2. Flow Monitoring

One of the key tools for enabling Hallsdale-Powell Utility District to analyze the performance of the sewer collection system is flow monitoring. Since 2004, HPUD has maintained continuous Flow Monitoring Units throughout the collection system. These flow monitoring devices have been installed within selected manholes at locations which are able to provide the best information to HPUD about how the collection system is performing on dry days and wet weather days.

During 2020, the Hallsdale-Powell Utility District continued long-term flow monitoring at nine locations, along with rainfall monitoring at three locations. During 2020, the average flow observed was 10.19 million gallons per day (mgd). HPUD saw a peak flow of 25.7 mgd and low flow of 4.8 mgd. *(See Attachment 5: Map - Long-Term Flow Monitoring Locations)*

3. <u>Beaver Creek Interceptor Replacement Projects</u>

Phase 1: The Beaver Creek Interceptor Improvement Project consists of replacing the existing 36-inch diameter interceptor beginning at the Beaver Creek WWTP and continuing for approximately 10,900 linear feet into the HPUD collection system near Powell Presbyterian Church in Powell.

The existing interceptor will be replaced with a new 48-inch diameter interceptor, accompanying manholes and other structures, 300 linear feet of sewer line near West Emory Road and Clinton Highway, and 2,200 linear feet of sewer line replacement. An additional 14,500 linear feet of lines and manholes are planned to be rehabilitated as part of the project.

Jacobs Engineering rebid this project in October 2019 and the project was awarded to Garney Construction. The project duration is 670 days, making the final completion on January 31, 2022. Garney Construction began work at the end of February 2020 and the project is currently 46% complete.

Phase 2: The Beaver Creek Interceptor Improvement Project Phase 2 is the continuation of replacing the existing 36-inch diameter with a new 48-inch diameter interceptor from where Phase 1 stopped approximately 13,740 linear feet to Morton View Lane. The project also includes the replacement of approximately 3,300 linear feet of gravity sewer line ranging from 12-inch to 8-inch in diameter.

Jacobs Engineering bid this project on January 7, 2020, and the project was awarded to Cleary Construction. The Notice to Proceed was given on April 27, 2020. The project duration is 900 days, making the completion date October 14, 2022. Currently, Cleary Construction is 35% complete with the project.

Phase 3: The Beaver Creek Interceptor Improvement Project Phase 3 continues with the replacement of the existing 36-inch diameter interceptor from behind Morton View Lane to the east side of Interstate 75. This project consists of approximately 5,500 linear feet of the new 48-inch diameter interceptor along with the improvement of approximately 650 linear feet of smaller diameter pipes in the area.

Robert G. Campbell & Associates (RC&A) awarded the project to Cleary Construction, Inc. with the Notice to Proceed date of October 15, 2018. Cleary Construction completed this project, and the new 48-inch interceptor was in service as of October 2019. *(See Attachment 6: Map – Beaver Creek Interceptor Replacement Projects)*

4. Brown Gap Interceptor Replacement Project

The Brown Gap Interceptor project started at Brown Gap Road and extends upstream to Beeler Road. The project consists of upsizing the existing sewer mains which includes the following: approximately 10,140 linear feet of 21-inch diameter pipe, 658 linear feet of 16-inch diameter pipe, and 3,600 linear feet of pipe ranging from 12-inch to 8-inch in diameter. It also includes the replacement of the existing manholes and service connections.

Due to left over funds on the project, the scope has been increased to include the replacement of approximately 2,300 linear feet upstream. This will include the replacement of all manholes and service connections.

Robert G. Campbell & Associates (RC&A) awarded the project to Hurst Excavating with the Notice to Proceed date of January 15, 2019. All the pipelines were installed and in service by the end March 2021. *(See Attachment 7: Map – Brown Gap Interceptor Replacement Project)*



5. Downtown Powell Sewer Rehabilitation Project

Hallsdale-Powell Utility District is working with Robert G. Campbell & Associates (RGC&A) on a rehabilitation project to upgrade the sanitary sewer system in downtown Powell. The project includes the gravity sewer main line pipe bursting of approximately 5.600 linear feet of 8-inch in diameter and 10,500 linear feet of cured in place pipe (CIPP). The project will also rehabilitate/repair the sewer laterals and manholes associated with the main line rehabilitation.

Robert G. Campbell & Associates (RC&A) awarded the project to Hurst Excavating with the Notice to Proceed date of February 17, 2020. This project is in the process of finishing final punch list items and should be complete by the end of April 2021. *(See Attachment 8: Map – Downtown Powell Sewer Rehabilitation Project)*



6. North Fork Phase 2 Interceptor Replacement Project

Hallsdale-Powell Utility District worked with WK Dickson to design improvement options to the North Fork Interceptor sewer due to overflows during large rain events and the future development in the area. These improvements will begin at Ledgerwood Road and extend upstream toward Stillbrook Ln.

WK Dickson awarded the project to Merkel Bros. Construction with a Notice to Proceed date of October 10, 2020. All the pipelines were installed and in service by March 2021. *(See Attachment 9: Map – North Fork Phase 2 Interceptor Replacement Project)*

7. <u>Temple Acres Sewer Rehabilitation Project</u>

Hallsdale-Powell Utility District is working with WK Dickson on the rehabilitation of the gravity sewer mains, manholes, and customer service connections in the Temple Acres neighborhood. The sewer mains in this area are primarily concrete that are deteriorating and in need of rehabilitation/replacement. This neighborhood also contributes to the flow into the North Fork Interceptor Phase 2 project. The rehabilitation project consists of approximately 13,000 linear feet of 8-inch diameter cured in place pipe (CIPP), rehabilitation of 60 manholes, and 115 customer service connections.

WK Dickson awarded the project to SAK Construction with a Notice to Proceed date of August 24, 2020. The project's main items are complete, and the contractor is working on a punch list to reach substantial completion. *(See Attachment 10: Map – Temple Acres Sewer Rehabilitation Project)*

8. Bishop Road/Taggart Lane Sewer Improvements Project

Hallsdale-Powell Utility District worked with Cannon & Cannon, Inc. for improvements to the sewer mains located around Bishop Road, E Emory Road, and Taggart Lane due to overflows during large rain events, the potential of future development in the area, and the TDOT Bishop Road relocation project. These improvements will be concentrated around Bishop Road at E Emory Road and extend to HPUD's Interceptor line.

Cannon & Cannon, Inc. awarded the project to Merkel Bros. Construction with the Notice to Proceed date of November 20, 2020. The project will be completed in early summer 2021. Currently, Merkel Bros. Construction is 62% complete.

(See Attachment 11: Map – Bishop Road/Taggert Lane Sewer Improvements Project)

B. <u>Completed, Ongoing and Planned Wastewater Treatment Plant Projects</u>

The major wastewater treatment projects that were completed, ongoing, and planned in 2020 included the following:

1. Beaver Creek Clarifier and Hydraulic Capacity Improvements Project

Hallsdale-Powell Utility District is currently working with Fox PE and in construction on a project that consists of improvements to maximize capacity from clarifiers for peak loading. The project includes demolition of the existing chlorine contact tank and installation of ultraviolet disinfection equipment at the Beaver Creek WWTP.

Fox PE awarded the contract to Southern Constructor Inc. in spring of 2020. The UV system is online and providing daily disinfection to the effluent water. A new lift station has also been installed to help with the discharge of clean water. The next portion of the project will focus on improvements to the clarifiers. The project is set to be completed by the end of 2021.

C. Completed, Ongoing and Planned Lift Station Projects

The major lift station projects that were completed, ongoing, and planned in 2020 included the following:

1. Bright Lane Lift Station

Hallsdale-Powell Utility District worked with W.K. Dickson to relocate and redesign the Bright Lane lift Station. The new lift station was repositioned on the same property with a new wet well, controls, etc. These improvements help HPUD's assets in this area with potential future development. The construction of this project was completed in early summer 2020.



2. <u>Temple Baptist Lift Station</u>

HPUD has also completed improvements to the existing Temple Baptist Lift Station. The improvements to this station include new pumps and controls. The improvements to this lift station will allowed HPUD to replace aging equipment and make the lift station operate more efficiently. The construction on this project was completed in fall 2020.



3. <u>Red Hawk & Brushy Valley Lift Stations</u>

HPUD is working with WK Dickson for improvements to the Red Hawk and Brushy Valley Lift Stations. These improvements will repair aging parts, update system controls, and make the stations more efficient in the future.

Lift station reliability continues to be a focus of the HPUD collection system improvement efforts. The District's Capital Improvements Plan (CIP) has provisions for continued upgrades and rehabilitation of existing pump stations. HPUD personnel will continue to monitor the pump station's performance within the collection system to determine if any sites will require major rehabilitation in future years.

SECTION 3.0 - EDUCATION AND OUTREACH ACTIVITIES

A. Supplemental Environmental Project / Educational Classroom Visits

During a typical year, Hallsdale-Powell Utility District participates in several education/outreach events. However due to Covid-19 and closures, HPUD was unable to be as involved. One of HPUD's main education/outreach goals is to provide students and its customers information about the processes involving water treatment and the wastewater process and how it impacts their daily life. As the community begins to open and return to normal in the coming year, HPUD plans to participate in the following events:

- Water on Wheels trailer and classroom experience
- WaterFest at Ijams Nature Center (Water Quality Forum)
- Halls Outdoor Classroom Celebration (Halls Business & Professional Assoc.)
- Brickey-McCloud STEM Night
- Medication Take-Back (Metro Drug Coalition)



B. Utility Tours - HPUD Wastewater Treatment Plant

One of the most significant educational outreach efforts that HPUD supports is to provide tours of the Beaver Creek Wastewater Treatment Plant. The water and wastewater industries have become more technologically advanced over time, so it is vital to attract young people into careers within the industry. Much like the education and outreach as businesses return to normal, we hope to be able to provide more on-site tours of our facilities.

HPUD was able to provide one on-site tour in March 2020 to Worley Builders, Inc. They are a local construction company that selects an area business to visit that connects to their business. They were interested in the Beaver Creek Wastewater Treatment Plant, to help determine future development within our District. They also wanted to better understand the drive behind the sewer rates when new home buyers ask.



Worley Builders, Inc. tours BCWWTP

C. <u>Professional Memberships</u>

In addition to these activities, HPUD participates in the following local organizations:

- Beaver Creek Watershed Education Committee
- Water Quality Forum
- Halls and Powell Business and Professional Associations
- Knox County and Union County Emergency Planning Committees

A. Engineering Support and Management

The District relies on engineering support and management and good sound financial management to fund sewer system improvements over the next ten (10) years. HPUD relies on support from various consultants to assist in the implementation of a comprehensive Corrective Action Plan and Engineering Report (CAP-ER). The CAP-ER established short and long-term actions to address hydraulic deficiencies including prioritization, alternative analysis, and a schedule for completion of these steps.

The District utilizes several consultants to assist HPUD with implementing the components of the 2006 Wastewater Master Plan, as well as the long-term CAP-ER for improvements to the collection system. HPUD will continue the Preventative Maintenance and Inspection (PMI) Program and develop a list of priority repairs to the collection system. This work is essential in assisting HPUD manage assets and the collection system.

B. Financial Management

HPUD continues to develop a solid capital improvement and financial plan to fund the improvements required as a result of this Consent Order. The Budget for Fiscal Year 2022 (April 1,2021 - March 31, 2022) was presented for consideration at the March Board Meeting which was held on March 8, 2021. Discussion at the March Board Meeting also focused on the revised water and sewer rate schedule for FY 2022. The Board of Commissioners approved the revised rates and adopted the revised rate schedule, which incorporates a three (3%) percent increase in water rates and a six percent (6%) increase in sewer rates. These rates will become effective on April 1, 2021.

HPUD remains committed to ensuring rates support the Capital Improvement Projects outlined in our Capital Improvements Plan (CIP) through FY 2025. To ensure our customers understand the importance of these rate changes, there is a continued communication effort by the District using the HPUD website, newsletters, mailers and pamphlets and newspaper article.

SECTION 5.0 - OVERVIEW OF FIVE-YEAR CAPITAL IMPROVEMENTS PLAN

Most of the one-year and five-year capital improvements projects have been described in different sections of the Annual report. A summary of the one-year and five-year CIP is included in the Appendices. The strategy of formulating a Capital Improvements Plan for at least a five-year period requires continuing data analysis, prioritization of system defects, and possible revision of implementation schedules from year to year.

Several projects have been prioritized and placed into the five-year CIP as grant funding, SRF loans, and revenue bonds are available for financing the projects. *(Refer to Attachment 2: Spreadsheet – Sewer System Capital Improvements Plan*)

SECTION 6.0 - SUMMARY OF CMOM PROGRAM IMPLEMENTATION

The year 2020 has been challenging for everyone. Hallsdale-Powell Utility District has adapted as needed to continue serving its customers and improve its assets. Collection system internal inspections and repairs have been limited to avoid unnecessary contact with customers during the pandemic. HPUD has been able to keep construction projects moving throughout 2020. Hallsdale-Powell Utility District is continuing to prioritize and evaluate the sewer collection system upgrades and rehabilitation. As each project is completed, HPUD evaluates the effectiveness of the project and the surrounding area to see if additional improvements are needed to address issues in the collection system. By evaluating the effectiveness of each project, it allows HPUD to be more financially responsible for its customers, and to make sure the money for these projects is spent in critical areas that improve the collection system and eliminate SSOs. HPUD continues to track these collection system improvements and SSOs in the District's Geographic Information System (GIS). HPUD also uses other programs, consultants, and resources to analyze system issues to create the most effective and responsible plan for its system.

The completed, current, and planned collection system projects continue to be focused on reducing I & I, eliminating SSOs, and creating capacity for future development. HPUD's current interceptor projects from HPUD's Beaver Creek WWTP to just east of I-75 should reduce I & I, allow the conveyance of the additional flows during wet weather events, and alleviate several of the upstream chronic overflows. The interceptor replacement projects along with other line replacement projects are taking place in known problem areas. As things continue to move toward "normal" HPUD will continue with collection system investigation, rehabilitation, and replacement using both internal crews and contracted crews. *(Refer to Attachment 12: Map – 2020 Collection System Projects/Chronic SSOs)*

HALLSDALE-POWELL								
Program/Performance Measures	\$107	2018	5070	602 O				
Infrastructure From GIS								
# Gravity Lines (feet) # Encompany (feet)	2,290,422	2,298,089	2,309,227	2,323,200				
# Connections	22,992	24,420	25,946	24,022				
	· · · · · · · · · · · · · · · · · · ·	, 	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·				
Sanitary Sewer System Overflow Response	0.4	122	177	207				
# Overflows	245 700	722 500	1//	207				
# Overflows Reaching Waters	74	111	9,834,000	189				
# Estimated Gallons of Overflows Reaching Waters	106.500	450.000	9.592.000	1.993.000				
# Dry Weather Overflows # Wet Weather Overflow Events per NEDES Permit Language	14	15	16	27				
# Wet Weather Overflow Individual Releases	70	107	161	180				
# Overflows Cleaned Up	68	108	158	176				
# Overflows Reported on Electronic DMR		100	177					
# Overflows Initial Report Notification to TDEC # Overflows Follow-up Report Sent to TDEC within 5 Days	84	122	1//	207				
# Building Backups Due to Public System Failure during Dry Weather	16	1122	15	207				
# Building Backups Due to Public System Failure during Wet Weather	0	0	0	5				
<u>Lustomer Complaint Tracking</u> # Complaints Received	202	27/	206	272				
# Complaints Investigated	203	324	296	327				
# Complaints Resolved	267	304	280	306				
# Complaints determined to be Customer Private Line Issues	65	73	69	66				
Accorement and Drivitization Corrector								
Assessment and Prioritization - Corrosion	Nous Identified to Date	New a laboratificadate. Dete	News Identified to Date	News Island Calles Date				
# Locations Subject to Corrosion	None Identified to Date	None identified to Date	None identified to Date	None identified to Date				
# Corrosion Inspections Conducted # Corrosion Defects Identified	N/A N/A	N/A N/A	N/A N/A	N/A N/A				
		14/7	14/7	14774				
Manhole Inspection/ROW								
# Manholes in System	9,555	9,591	9,656	9,743				
# Manholes Inspected during the Calendar Year # Manholes Inspected since Program Began	664 9 771	0 9 771	1,375	452				
# Manholes mapeeted since Hogian began	270	0	76	0				
	273							
Flow Measurement (ADS)								
Year of Most Recent Flow Monitoring	2017	2018	2019	2020				
Instantaneous Peak Flow Observed(gnd)	21,960,000	20,552,200	25,140,000	23,440,000				
Average Flow Observed during Monitoring Period(gpd)	7,032,321	7,310,000	8,153,000	8,882,000				
Low Flow Observed during Monitoring Period(gpd)	4,340,000	4,370,00	4,032,000	4,836,000				
List Basins that Contribute Flow to this Basin	See System Map	See System Map	See System Map	See System Map				
CCTV Inspection (Contractor & Internal)	252.424	70.040	44.000	100.000				
# Feet Inspected by CCTV this Calendar Year # Feet Inspected since Program Began	252,404	76,946 2 739 748	41,003	2 940 957				
# Feet Cleaned for Inspection	108,901.8	0.0	0.0	6,908.0				
# Feet Cleaned for Routine or Scheduled Maintenance	56,455	53,117	53,114	0				
# Defects Identified by CCTV Inspection	2,090	0	0	795				
# Defects Catalogued or Recorded into Database	2,090	0	0	795				
Smoke Testing (Contractor & Internal)								
# Feet Smoke Tested this Year	0	0	0	0				
# Leaks Identified on Public System	0	0	0	0				
# Public System Leaks Repaired	0	0	0	0				
# Public System Leaks Not Repaired This Year # Leaks Identified on Private Service Connections	0	0	0	0				
	0	0	0	0				
Gravity Line Rehabilitation (Contractor & Internal)								
# Feet Gravity Lines Rehabilitated	12,292	32,234	7,242	34,497				
# Feet Rehabilitated Since Program Began	240,462	272,697	279,939	314,436				
# Feet Replaced	0	2818	7,242	17,096				
# Feet Replaced Since Program Began # Feet Sliplined	25,821 0	28,639 0	35,881 n	52,9// 0				
# Feet Sliplined Since Program Began	0	0	0	0				
# Feet Cured in Place	12,292	29,416	0	17,401				
# Feet Cured in Place Since Program Began	221,301	250,717	250,717	268,118				
# Manholes Rehabilitated # Manholes Rehabilitated Since Program Regan	96	246 1 874	29 1 QD2	34 1 027				
# Manholes Replaced	4	0	18	33				
# Manholes Replaced Since Program Began	113	113	131	164				
# Feet of Gravity Line Rehabilitation Inspected	12,292	32,234	7,242	34,497				
# Feet OF Gravity Line Kenabilitation Tested	U	U	U	T1,096				
Grease Program								
# Facilities Identified for Inclusion in Grease Program	157	160	175	175				
# Facilities with Installed Grease Devices	157	160	175	175				
# Grease Installation Inspections Conducted and Documented # Routine Grease Inspections	4 502	<u> </u>	9 526	1 317				
	502	, or	520	511				
Other Inspections								
# Construction Inspections # Pump Station Inspections	5	4	8	8 1 4 F				
# Documented Pump Station Inspections	401	314 314	282	145				
# Customer Owned Service Line (lateral) inspections	203	209	275	379				
(1) Note this number may not be quantifiable in wet weather								
⁽²⁾ Final data numbers were not available as of the date this report was prepared								

HALLSDALE-POWELL UTILITY DISTRICT - CAPITAL IMPROVEMENT PLAN								
Sewer Capital Improvements	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Total
Project B - Beaver Creek Interceptor Replacement Phase 2 RUS and 2019 Bonds	4,050,632	17,971,757						\$ 22,022,389
Beaver Creek Interceptor Replacement Phase 1 2019 Bonds	13,466,950	-						13,466,950
Sewer Line Improv. Along Bishop & Taggart Area 2019 Bonds	877,230							877,230
Temple Acres Sewer Rehab & Around Area 2019 Bonds	1,396,881							1,396,881
Downtown Powell Sewer Rehab 2019 Bonds	1,322,591							1,322,591
Project A - Intercaeptor Replacement - Beaver Creek along Knob Creek up Central Ave								-
Sewer Rehab Phase 5		1,500,000						1,500,000
Sewer Rehab Phase 6		1,500,000						1,500,000
Sewer Rehab Phase 7				4,000,000				4,000,000
Sewer Rehab Phase 8					4,000,000			4,000,000
Sewer Rehab Phase 9						5,000,000		5,000,000
Sewer Rehab Phase 10							5,000,000	5,000,000
North Fork Interceptor Imp. Phase 2	364,370							364,370
Sharps Chapel Sewer System	-			250,000				250,000
Beaver Creek WWTP Upgrades to add ACTIFLO wet weather system							7,500,000	7,500,000
Beaver Creek WWTP Clarifer Drive Replacements & Chlorine Chamber Imp.	5,440,000							5,440,000
Project C phase 2 Major's Property	617,610							617,610
Project C - Beaver Creek Interceptor Brown Gap to Beeler Road RUS	6,978,242							6,978,242
Miscellaneous Sewer Line Extensions	100,000	250,000	250,000	250,000	250,000			1,100,000
Wastewater Pump Station Improvements	200,000	350,000	100,000	100,000				750,000
Breaver Creek WWTP Membrane Replacement			592,603	592,603	592,603	592,603	592,603	2,963,015
Beaver Creek WWTP 3rd Influent coarse screen & ox ditch RAS				575,000				575,000
Sewer Equalization Storage about halfway between Brickey and the WWTP						15,000,000		15,000,000
Sewer Investigation	500,000	500,000	500,000	500,000	500,000	500,000		3,000,000
Total Sewer Capital Improvements	\$ 35,314,506	\$ 22,071,757	\$ 1,442,603	\$ 6,267,603	\$ 5,342,603	\$ 21,092,603	\$ 13,092,603	\$ 104,624,278







