PHILADELPHIA'S WET WEATHER MANAGEMENT PROGRAMS

COMBINED SEWER MANAGEMENT PROGRAM ANNUAL REPORT

National Pollutant Discharge Elimination System (NPDES) Permits
Nos. PA0026689, PA0026662, PA0026671

STORMWATER MANAGEMENT PROGRAM ANNUAL REPORT

National Pollutant Discharge Elimination System (NPDES) Permit
No. PA 0054712

Reporting Period July 1st 2021 to June 30th 2022

Submitted to:

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Water Quality Management

And

ENVIRONMENTAL PROTECTION AGENCY – REGION III
Water Protection Division

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Combined Sewer Management Program Annual Report

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I. Management and Control of CSOs

This report is submitted pursuant to meeting the requirements of NPDES Permits #'s PA0026662, PA0026671, and PA0026689; PART C, I. Other Requirements, Combined Sewer Overflows (CSOs), III. Implementation of the Long Term CSO Control Plan, C. Watershed-Based Management, IV. Monitoring and Assessment. This section requires that the permittee submit an Annual CSO Status Report. The purpose of this report is to document the status and changes made to programs implemented by the City of Philadelphia (City), during Fiscal Year 2022 (FY22), which encompasses the period of July 1st, 2021 through June 30th, 2022, to manage and reduce the CSOs permitted to discharge to waters of the Commonwealth of Pennsylvania.

II. Implementation of the Nine Minimum Controls

The Philadelphia Water Department (PWD) submitted an Updated Nine Minimum Control Report to the Department on June 1, 2013 to supplement the 1995 report and describe current activities as a result of new technology or practices. The nine minimum controls (NMCs) are low-cost actions or measures that can reduce CSO discharges and their effect on receiving waters, do not require significant engineering studies or major construction, and can be implemented in a relatively short time frame.

II.A NMC 1 - Proper Operation and Regular Maintenance Programs for the Sewer System and the CSOs

II.A.1 Implement a Comprehensive Geographic Information System (GIS) of the City Sewer System

To ensure PWD's investment in GIS is as accurate and up to date as possible, edits and improvements are made to data on a daily basis. PWD utilizes the GIS coverages as the foundation for many of its operations including maintenance management, capital improvements, and hydraulic modeling. During FY22, GIS layers were updated and maintained to ensure the accurate tracking and reporting of PWD assets and infrastructure.

II.A.2 Implement a Comprehensive Sewer Assessment Program (SAP)

PWD continues to implement a comprehensive SAP to provide inspection of the collection system using closed circuit television (CCTV) and sonar. The SAP is a critical tool for operations and maintenance as it provides information on existing pipe conditions and helps to locate where repairs are needed. The program is also used to guide the capital improvement program to ensure that the existing sewer systems are adequately maintained, rehabilitated, and reconstructed.

CCTV inspections are conducted/managed by PWD's Flow Control group and also performed by PWD contractors. During FY22, 38.21 miles of sewer inspections were completed via CCTV, averaging about 3.18 miles a month as shown in **Table II.A.2-1 Monthly TV Inspections.** In addition, the CCTV Unit completed a total of 837 inspections of green stormwater infrastructure systems during FY22.

Table II.A.2-1 Monthly TV Inspections

Date	Collector Systems (Miles Inspected)
Jul-21	2.00
Aug-21	2.07
Sep-21	1.89
Oct-21	2.86
Nov-21	2.35
Dec-21	3.66
Jan-22	3.21
Feb-22	3.68
Mar-22	5.25
Apr-22	3.79
May-22	3.93
Jun-22	3.52
Average	**3.18**
Total	**38.21**

II.B NMC 2 - Maximum Use of the Collection System for Storage

II.B.1 Continue to Institutionalize a Comprehensive Monitoring and Modeling Program

Monitoring

PWD maintains an extensive monitoring network throughout the combined sewer system including rain gages, pump stations, and connections from adjacent outlying communities. Information on the monitoring network with an updated listing of the monitors, rain gages, and pumping stations can be found in **Appendix B - Flow Monitoring**.

Modeling

The hydrologic and hydraulic models will be updated as needed to support Nine Minimum Controls implementation and reporting.

II.B.2 Continue to Operate and Maintain a Network of Permanent and Temporary Flow Monitoring Equipment

PWD continues to maintain a CSO permanent monitoring network and temporary monitoring programs to support planning for CSO control projects and to minimize dry weather overflows and tidal inflows.

Permanent Flow Monitoring Program

PWD uses a network of permanent flow monitors that are connected to a newer data acquisition system (TELOG) which uses cellular-based telemetry and improved enterprise data management software. As of FY22, the Collector System Monitoring Network is connected to over 320 sites at various locations including CSO regulators, eain gauges, pump stations, interceptors, chemical feed tanks and hydraulic control points which collect over 720 individual measurements with over a ninety percent operational status. All monitoring devices deployed throughout the PWD collection system continually store data

and periodically communicate monitoring information back to the Collector Systems Headquarters for review and use by staff. The listing of permanent flow monitors can be found in **Appendix B – Flow Monitoring.**

Temporary Flow Monitoring Program

PWD maintains its temporary flow monitoring program, initiated in July 1999, which consists of deploying portable flow meters throughout targeted Philadelphia sewershed areas to quantify sanitary and combined flow from the sewer system and characterize the tributary sewersheds. During FY22, PWD monitored 40 sites for the purposes of model calibration, inflow/infiltration (I/I) identification, design support, etc. The listing of all temporary flow monitors, their location, and the deployment projects can be found in **Appendix B – Flow Monitoring: Table 6 – Listing of all Temporary Flow Monitors Deployed by Projects.**

II.B.3 Continue to Evaluate the Collection System to Ensure Adequate Transport Capacity for Dry and Wet Weather Flow

Long Term Control Plan Update

System-wide hydrologic and hydraulic (H&H) models have been developed in support of the Long Term CSO Control Plan Update (LTCPU). Model evaluations have been performed to evaluate the system performance benefits of various system improvement scenarios.

The evaluations of the system-wide models were completed in FY08 to support the LTCPU. Since 2008 EPA's Stormwater Management Model (SWMM) has been updated to SWMM 5. PWD continues to update the H&H models as needed to support planning and regulatory reporting needs. A summary overview of the H&H model rebuild is provided with a full description included in Appendix C of the Year 10 Evaluation and Adaptation Plan (EAP).

PC-30 Extreme Wet Weather Overflow

PWD continues to monitor PC-30. For additional information on other efforts conducted for this site, please refer to **Section III.B.2.: Table III.B.2-1** on page 34.

Flood Risk Management

PWD has a robust flood risk management program to analyze and reduce property damage from flooding and basement backups. Aspects of this program include property data collection, implementing individual property mitigation when appropriate, sewer system H&H analysis to understand flood prone areas, and developing policies to reduce flood risk in the city.

Flood Relief Project Summary

More recently, the focus of PWD's flood risk management efforts include: South Philadelphia, Northern Liberties, Germantown, and Eastwick. The goal of these efforts is to improve the conveyance of stormwater by targeting peak flow and volume reduction and reducing the potential for flooding. Hydrologic and hydraulic modeling indicates that sewer system improvements or source reduction can sometimes reduce the frequency and/or severity of flooding events. However, the potential benefits of structural improvements to the city's drainage infrastructure must always be counterbalanced by the financial, economic, and social impacts of implementation. PWD continues to refine and optimize mitigation alternatives to minimize negative impacts to communities.

South Philadelphia

In FY22, PWD has been re-evaluating the effectiveness of the Moore Street Storm Flood Relief Project. The project originally involved the construction of 8' x 12' reinforced concrete box sewers that drain to the Delaware River. PWD's refined modeling methodology at the parcel level demonstrated less net benefits constructing the box sewers compared to modifying the regulating chamber.

Northern Liberties

Storm Flood Relief sewer projects were initiated in the Northern Liberties neighborhood to reduce flood risk in the combined sewer neighborhoods of Northern Liberties, Fishtown, Port Richmond and Lower Kensington. **Table II.B.3-1** demonstrates the status of the Northern Liberties SFR program at the end of FY22:

Table II.B.3-1 Northern Liberties SFR Sewer Improvement Projects

Project Name	Location	Project Status
Northern Liberties Phase 1	Delaware Avenue and Laurel Street	Construction Complete (2011)
Northern Liberties Phase 2	Canal Street Chamber	Construction Complete (2016)
Northern Liberties Phase 3	Delaware Ave to River (Undertaken by Sugar House)	Construction Complete (2016)
Northern Liberties Phase 4	Canal & Laurel Sts. to Germantown Ave. &Wildey St.	Construction Complete (2016)
Northern Liberties Phase 5	Germantown Ave. from Wildey St. to Girard Ave.	Construction Completed (2022)
Northern Liberties Phase 6	Germantown Ave. & Thompson St. to Master & Randolph Sts.	In Design at 90%

Germantown

The East Germantown section of Philadelphia was impacted by flooding from intense rainstorms, such as Hurricane Irene (8/27/11) and Tropical Storm Lee (9/7/11). In FY22 PWD reached the 70% Design milestone of the N. 21st Street Sewer Improvement Project which aims to reduce residual flooding in this area. PWD also applied for FEMA's Building Resilient Infrastructure & Communities (BRIC) grant to further evaluate a 30' tunnel concept for flood risk reduction and CSO storage.

Eastwick

The Eastwick neighborhood is located in a naturally low-lying area in southwest Philadelphia. The neighborhood has experienced severe riverine flooding from multiple storms including Hurricane Floyd, Hurricane Irene, Tropical Storm Lee, and Hurricane Isaias. The City of Philadelphia, acting through PWD, executed the Federal Cost Share Agreement in May 2019 to move forward with the feasibility study through the Continuing Authorities Program. The United States Army Corps of Engineers (USACE) are actively working towards the completion of the Tentatively Selected Plan (TSP) has not been completed and it is not clear ifthe study will be ready for review by the end of CY 2022. The USACE has experienced setbacks with soil contamination concerns at the adjacent landfill and additional hydrologic and hydraulic modeling requirements.

II.B.4 Fully Integrate the Real-Time Control Facility into the Operations of PWD

Real Time Control Evaluation

Several projects were previously evaluated for Real Time Control; for additional information on these projects, please refer to Section 2.1 Evaluate Real Time Control in LTCP on page 10 of the 1996 Annual CSO Status Report and Section II.B.3.4 Real Time Control Evaluation on page 26 of the CSO-Stormwater FY10 Annual Report. For details regarding the current operational statuses of the City's real time control CSO regulator sites, see **Section II.B.5** below.

There are currently three projects in the Department's design process that are being evaluated for the use of real-time control technology:

D-05 CSO Regulator (State Road and Magee Avenue)

The D05 regulator is being examined for additional CSO capture through the installation of a new, enlarged interceptor connection with a real-time controlled sluice gate. As of FY22, this project is in the 90% design stage and is slated for completion in FY24. This project is expected to result in enhanced storage and conveyance of wet weather flows via modification to an existing computer controlled CSO.

Thomas Run Relief Sewer (R-01)

A capital construction project for the modification of the Thomas Run relief sewer has been initiated. The project is evaluating the potential for this system to be maximized for in-line storage during wet weather by creating a new interceptor connection and CSO regulator site at the outfall of this storm flood relief system and will consider the effectiveness of real-time control.

Southwest Drainage District Regulator Modification (S-05, S-20, S-26)

The primary project goal is to increase the flow capacity through each regulator to decrease CSO volumes in the Southwest Drainage District. The project will include increasing the opening area of the existing DWOs, removal of existing Brown & Brown regulators, and will consider implementation of locally actuated, real-time, flow control at each site. This project was initiated in FY21 and currently has a target bid of FY25.

II.B.5 Operate and Maintain In-Line Collection Storage System Projects Contained within the LTCP

Main Relief

The Main Relief project is operating as designed with a 7.5-foot static dam. The current configuration achieves an overflow reduction of approximately 30 MG annually.

Tacony Creek Park (T-14)

The T14 storage sewer provides combined sewer overflow capture in the Northeast Drainage District (NEDD). The T-14 storage sewer system is operating under automated controls and reducing overflow volume during wet weather events. T-14 operated at the full design level during FY22.

Rock Run Relief (R-15)

The Rock Run Relief Sewer provides flood relief to combined sewer areas upstream of regulator T-8 in the Northeast Drainage District (NEDD). An inflatable dam was constructed in the Rock Run Relief Sewer to allow for utilization of in-system storage to retain combined flows during wet weather events. The Rock Run storage facility operated at the full design capacity during FY22.

Computer-Controlled CSO Regulators

PWD has eight computer-controlled CSO regulators that are configured to maximize storage during wet weather. All the computer-controlled regulators are in the Northeast drainage district (NEDD). Five of the eight computer-controlled regulator sites had control upgrades installed in FY17. In FY21, D-07 was put back into service with the completion of upgrades to the computer control system. In FY-22, D-11 was put back into service with the completion of upgrades to the computer control system. F-25 is scheduled for upgrades during FY23.

II.C NMC 3 - Review and Modification of Pretreatment Requirements to Assure CSO Impacts Are Minimized

II.C.1 Expand the Pretreatment Program to Include Significant Industrial Users (SIUs) Whose Facilities Contribute Runoff to the Combined Sewer System

The City of Philadelphia's Pretreatment Program regulates all significant industrial users (SIUs) that discharge into PWD's service area, which includes SIUs in both separate and combined sewer systems. The City continually reevaluates the Pretreatment Program to determine if improvements can be made. Through annual monitoring and inspection activities, PWD currently regulates 121 SIUs that discharge to the sanitary system. PWD conducts SIU program review and inspections on a calendar year cycle, having inspected all 121 permitted facilities during the 2021 calendar year.

PWD also maintains a website to inform the public and industries of permitting regulations, requirements and other information that may benefit or impact industrial users. Information on the City of Philadelphia's Pretreatment Program and industrial requirements is located at the following web address: water.phila.gov/industrial-waste.

II.C.2 Incorporate Guidance on BMPs for Industrial Stormwater Discharges into Stormwater Management Regulations Guidance

The Philadelphia Stormwater Management Guidance Manual was developed to assist developers in meeting the requirements of the Philadelphia Stormwater Regulations and is updated when necessary to incorporate new information. The current version of the manual is available at http://www.pwdplanreview.org/manual/.

Please refer to the MS4 Annual Report **Section F.5.g - Stormwater BMP Handbook and Construction Site BMP Sediment & Erosion Control Checklist** on page 30 for additional information on the updated manual.

II.C.3 Continue to Serve as a Member of the Philadelphia Inter-Governmental Scrap and Tire Yard Task Force

The Scrap Yard Task Force (SYTF) was created to address numerous complaints about the operation of scrap metal and auto salvage businesses, which may cause polluted runoff to enter the city's sewers, blight in city neighborhoods, and contribute to short dumping and other environmental hazards to area waterways.

The SYTF has been in operation since it was reorganized in September of 2008 and conducts regular inspections and meetings, inspecting scrap facilities each month to bring businesses conducting these activities into compliance. The SYTF will occasionally inspect facilities that do not fit the strict definitions of either a junkyard or metal recycler but present potential for negative impact on the environment and surrounding area. Some of these include sites with tire accumulations, overflow lots, other recycling facilities, and shipping operations. The SYTF also responds to community complaints related to facilities or properties that are considered a nuisance or problematic in a given neighborhood.

The core agencies involved in the SYTF are PWD, PADEP's Solid Waste division, Philadelphia Department of Licenses and Inspections (L&I), Philadelphia Police Auto Squad and the Philadelphia Fire Dept. Hazmat Administration Unit. Each attending agency performs specific tasks as dictated by their primary regulatory mission. For example, PWD inspects sites for water and sewer violations, as well as violations that may be referred to the PADEP Clean Water division. PWD was the coordinating entity that designates the facilities to be visited. Over recent years, staffing from attending agencies for this program has waned and reallocated to other priorities. The priority of this program began to evolve as additional concerns occurred from numerous junk yard fires and complaints about vehicle related nuisance businesses. In FY22 after a long hiatus following the pandemic, with scheduling of attending agencies being the biggest barrier to the delay, SYTF conducted one meeting and inspected three facilities in Southwest Philadelphia

II.D NMC 4 - Maximization of Flow to the Publicly Owned Treatment Works (POTW) for Treatment

II.D.1 Continue to Analyze and Implement Non-Capital Intensive Steps to Maximize the Wet Weather Flow to the POTW

Modified Regulator Plan

The Modified Regulator Plan (MRP) was designed to deliver more flow to the WPCPs more frequently and enable greater pollutant removals. The projected flow increase associated with the MRP was completely implemented by the submission of the 1997 Annual Combined Sewer Overflow Status Report. Additional plan implementation efforts were included in the Updated Nine Minimum Controls Report which can be found online by accessing the following link: http://water.phila.gov/pool/files/NMC_Report_Final.pdf.

Maximization of Wet Weather Treatment in the LTCPU

PWD completed and submitted a comprehensive Wet Weather Facility Plan on June 1, 2016, which provides details including schedule, cost and anticipated performance for each project presented in and supersedes the FCPs. More details on these plans can be accessed at the following link: http://water.phila.gov/reporting/ltcp/.

II.D.2 Continue the Program Which Requires Flow Reduction Plans in Agreements to Treat Wastewater Flows from Satellite Collection Systems Where Violations of Contractual Limits are Observed

PWD provides wastewater service to some of its neighboring communities. Communities that exceed their contractual limits must develop flow reduction plans, under PWD review. In FY22, there were no significant updates to the Wholesale Wastewater Customer contracts. The list of outlying community contracts can be found below in **Table II.D.2-1: Listing of Wholesale Wastewater Customer Contracts and Capacities**.

Table II.D.2-1 Listing of Wholesale Wastewater Customer Contracts and Capacities

Customers	Average Annual Daily Flow Maximum (MGD)	Maximum Daily Flow (MGD)	Instantaneous Maximum Rate (Cubic ft./sec)	Maximum Annual BOD Loadings (1,000's lbs.)	Maximum Annual SS Loadings (1,000's lbs.)
Northeast Plant					
Abington	2.97	4.45	9.54	2,102	2,481
Bensalem	6.13	-	11.74	5,340	3,734
Bucks	24	33.00	74.26	13,400	13,400
Cheltenham	-	-	26	-	-
Lower Moreland	1.90	2.85	5.88	729	966
Lower Southampton	7.14	9.28	15.79	5,500	6,000
Southwest Plant					
DELCORA	50.00	75.00	155.00	21,771	19,487
Lower Merion	14.50	-	31.57	6,871	7,250
Springfield (Erdenheim)	3.20	-	6.65	3,100	3,300
Upper Darby	17.00	-	35.00	6,831	7,348
Southeast Plant					
Springfield (Wyndmoor)	1.00	-	1.93	300	400

II.D.3 Use Comprehensive Monitoring and Modeling Program to Identify Suburban Communities where Excessive Rainfall-dependent I/I Appear to be Occurring

The US EPA's SWMM was used to develop the watershed-scale model for the combined and separate sanitary sewer systems. Suburban communities are modeled as separate sanitary sewersheds that load to the PWD sewer network. The rainfall response from these sheds is calibrated to flow monitoring data collected at each respective connection to PWD sewer network (if the sewershed is not monitored then a reference shed is used to obtain the rainfall response). Presently, permanent and temporary flow monitors are installed at 62 connections. **Appendix B – Flow Monitoring: Table 2** contains the list of all known connections, their location and whether the connection is permanently monitored.

II.D.4 Maintain and Modify Combined Sewer Collection System/Chambers to send more flow to the POTW

PWD monitors regulating chambers regularly. Issues are identified and addressed as soon as possible. Modifications include the following:

- C-04: Installed flap gate on C-04 outfall to prevent backflow into the interceptor and sewer gas from escaping. Repairs completed 7/13/2022.
- T-13: Installed new 9" dam just downstream of the slot. Previous dam was found to be damaged during 6-3-2021 inspection. Repairs completed 6/16/2021.
- S-07: Added 6" of stop logs to prevent dry weather discharges. Upgrade completed 5/20/2021.
- S-47: Filled in missing section of dam to match the outer sections. Repairs completed 5/12/2021.

Appendix D – FY22 NPDES Annual CSO Status Report: Table 2 shows the CSO volume, duration, and frequency of overflow events per permitted outfall for the rainfall that fell in FY22 utilizing SWMM 5 model version 2017.B.02.04. Table 3 shows the same statistics as table 2 but for the typical year rainfall utilizing the SWMM model that support the Year 10 EAP submitted in May 2022.

II.E NMC 5 - Prohibition of CSOs during Dry Weather

II.E.1 Optimize the Real-Time Control Facility to Identify and Respond to Blockages and (non-chronic) Dry Weather Discharges

Regular inspections, reactive inspections, and maintenance of combined sewer overflow (CSO) regulators are performed throughout the city to ensure that sediment accumulations and/or blockages are identified and corrected immediately to avoid dry weather overflows. PWD utilizes a remote monitoring network system daily to help identify locations showing abnormal flow patterns.

CSO Regulator Inspection & Maintenance Program

PWD maintains 175 CSO regulator chambers with regulator devices that control the diversion of wastewater flow to the interceptor system and 26 storm relief diversion chambers that allow excess flow during storm events to be diverted to storm relief sewers. These chambers discharge through 164 NPDES permitted point sources which make up the CSO outfalls. The maintenance of the chambers is critical to the performance of the system in that they control the frequency, duration, and quantity of CSO discharges.

PWD continues to implement its policy of conducting next day follow-up inspections at sites that experience a dry weather discharge. Ongoing assessment of all inspection scheduling continues to ensure that CSO regulators are inspected at the frequency required to ensure timely response to operational issues and minimize the likelihood of dry weather discharges. During FY22, Flow Control crews completed 4,070 inspections on 201 CSO regulator sites and storm relief diversion chambers. The crews cleared 228 CSO regulator blockages to prevent possible discharges from developing. There were 5 dry weather discharges total during FY22. Details of the inspections during FY22 can be found beginning on page 13 of **Appendix C – FY22 CSO Maintenance Program Annual Report.**

Tide Gate Inspection and Maintenance Program

Eighty-nine (89) tide gates are located at approximately half of the CSO regulator chambers in the city's system and prevent tidal inflow into the combined sewer system from the estuary receiving water body. Maintenance of the gates is critical to system performance because inflow from the receiving water body can adversely affect the combined sewer system and treatment facilities by reducing system capacities, potentially causing dry weather discharges. In FY22, CSO tide gate preventative maintenance was completed at 13 of the tidally affected CSO regulator sites. Summaries of the tide gate inspection and maintenance completed during the past fiscal year are on page 26 of **Appendix C – FY22 CSO Maintenance Program Annual Report**, which documents the locations of tide gate preventative maintenance performed in FY22.

Routine Grit Cleaning

PWD regularly inspects regulators, pump stations, junction chambers and sewers which are known to accumulate grit. These sites are scheduled for flushing and vacuuming on an as-needed basis.

Somerset Grit Chamber Cleaning/D-25 Regulating Chamber

During FY14, the Somerset grit chamber was removed from service because the upstream regulator (D-25) was being relocated. This relocation project was completed during FY16. During FY22, PWD cleaned and removed a total of 6.13 tons of debris and grit from the D-25 regulating chamber.

D-45 Regulating Chamber

During FY22, PWD cleaned and removed a total of 22.51 tons of debris and grit from the D-45 regulating chamber.

Central Schuylkill Pumping Station Grit Pocket Cleaning

During FY22, the two grit pockets at the CSPS siphon were not cleaned due to the rehabilitation of the station, the on-going pandemic and vendor availability. Additional information on the CSPS cleaning activities conducted in FY22 is available on page 26 of **Appendix C – FY22 CSO Maintenance Program Annual Report.**

II.F NMC 6 - Control of Solid and Floatable Materials in CSOs

II.F.1 Control the Discharge of Solids and Floatables by Cleaning Inlets and Catch Basins

PWD's Inlet Cleaning Unit (ICU) is responsible for inspecting and cleaning stormwater inlets within the city. When fully staffed, there are forty-one inlet cleaning crews whose primary duties include cleaning, removing and properly disposing of debris (solids and floatables) from inside city inlets as well as street level cleaning in the vicinity of inlets to prevent debris from entering the collection system and waterways. Other duties include inspection of inlet conditions and referral of structural defects to the Sewer Maintenance Unit for repair to ensure proper function. Crews are responsible for cleaning high volume traffic areas, retrieving and installing inlet covers, replacing missing inlet covers, installing locking covers, and unclogging choked inlet traps and outlet pipes so inlets can take water. A high level of focus is placed on responding to customer complaints of flooding, blockages, and foul odors.

During FY22, the ICU was responsible for maintenance of approximately 72,000 stormwater inlets connected to the city's combined and separate storm sewer systems (gray inlets). ICU is also responsible for cleaning of pretreatment on stormwater inlets connected to green stormwater infrastructure (green

inlets). By the end of the year, ICU was responsible for monthly preventative maintenance of approximately 1,835 green inlets. Fiscal year totals for work on GSI-connected inlets included 10,919 inlet inspections and 10,519 pretreatment cleanings.

Statistics related to the ICU's work productivity during FY22 and the previous two fiscal years can be found in **Table II.F.1-1**, below. The quantities for inlets inspected, inlets cleaned, debris removed and pounds per inlet during FY22 include work conducted at both gray and green inlets. The process of dewatering debris at a central location has increased cleaning efficiency (higher number of inlets cleaned) and decreased the weight of materials taken for disposal.

Table II.F.1-1: Inlet Cleaning Statistics

	FY20	FY21	FY22
Total Inlets Inspected	106,567	124,446	116,070
Total Inlets Cleaned	93,453	106,627	102,129
Total Covers Replaced	74	96	65
Total Covers Retrieved	63	49	102
Total Covers Chained	1,547	1,498	1,307
Debris Removed (tons)	4,192	4,796	5,126
Avg. Lbs./ Inlet	99	98	133

II.F.2 Continue to Fund and Operate the Waterways Restoration Team (WRT)

PWD's Waterways Restoration Team (WRT) is a multi-crew force dedicated to performing stream examinations, infrastructure protection projects and cleanup work throughout the city including large trash and debris removal and restoration of eroded streambanks and streambeds. WRT's stream examinations consist of assessing a variety of field conditions including waterway, infrastructure, site access and sewage discharge assessments. WRT waterway maintenance work involves debris removal, stream restoration work, and assisting with sewer maintenance work to help provide a safe work environment while protecting stream ecosystems. WRT works in partnership with Philadelphia Parks and Recreation (PPR) staff and various Friends of the Parks groups to maximize resources and build positive relationships with our communities.

During FY22, WRT conducted 365 stream examinations and performed maintenance 543 times. WRT removed a total of 525 tons of debris from the city's waterways (**Table II.F.2-1**). Of the total debris removed, most of the weight can be attributed to large organic material (e.g. trees) that have fallen into the waterways and restricted flow, thus increasing the potential for bank erosion and/or damage to infrastructure.

Table II.F.2-1 Waterways Restoration Team – Annual Activity Summary FY13-FY22

Activity	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22
Total Tons Removed	1416	710	918	1130	817	1582	1070	618	613	525
Cars Removed	4	4	9	2	2	1	0	2	0	3
Tires Removed	4756	1428	427	1069	1153	859	1713	1983	535	1559
Shopping Carts Removed	27	20	67	38	87	74	203	20	3	8
# of Stream Site Cleanups	467	686	645	721	872	933	997	764	545	543
# of Stream Site Exams	*	438	369	378	374	272	381	357	479	365

*This metric was not available until FY14

II.F.3 Continue to Operate and Maintain a Floatables Skimming Vessel

The skimming vessel is used as a control measure to remove floatable material from the Schuylkill and Delaware River. These traditionally large vessels also increase public awareness and help to educate on the impact of floatables to Philadelphia's receiving waterways. The PWD currently has three (3) skimming vessels: a large marine vessel, the R.E. Roy; a smaller pontoon vessel; and a small general workboat.

Large Floatables Skimming Vessel – R.E. Roy

The 39-foot skimmer vessel is operated for approximately five days per week, for about 7 months out of the year, or more as appropriate conditions allows (i.e. weather). The vessel's main purpose is to perform general debris collection and removal on both these rivers, while also serving as a mechanism for public relations events. During the 141 days of on-water operation in FY22, a total 215 cubic yards debris and floatable material were removed from the Delaware and Schuylkill Rivers (**Table II.F.3-1**). During the FY22 season, the R.E. Roy continued sorting and separating recyclable material, which equated to 4,815 lbs. This recycling procedure on the R.E. Roy was significantly optimized during FY16 resulting in a nearly 4-fold improvement in amount collected in comparison to the previous year. In addition, the R.E. Roy initiated a partnership with Bridgestone through their Tires4Ward Program to recycle the tires collected from skimming operations to be reused for rubberized asphalt, construction materials, landscaping mulch, consumer products and as tire-derived fuel for energy.

Table II.F.3-1 Debris Collected and Days of Operation by R.E. Roy Skimming Vessel

Date	Total Tons Removed*	Cubic Yards Collected	Recyclables Collected (lbs.)	Days in Operation	Days on Schuylkill	Days on Delaware
July 2021	0.10	30	297	20	12	8
August 2021	0.97	40	1026	20	12	8
September 2021	0.97	45	837	26	17	9
October 2021	0.10	40	738	23	13	10
November 2021	4.00	25	675	17	8	9
December 2021	RE Roy Out of Service (Dry-docked & Winterized) for Winter Season					
January 2022						
February 2022						
March 2022						
April 2022						
May 2022	0.65	10	261	11	8.5	2.5
June 2022	1.00	25	981	24	13	11
FY22 Total	**7.79**	**215**	**4815**	**141**	**83.5**	**57.5**

* *Tons removed* is not a monthly metric and is only calculated when floatables/debris are removed from the shipyard and transported to the weigh station at the trash collection facility. Additional focus on the recycling of tires and wheels has decreased the total tons of debris removed.

Small Skimming Vessels

PWD operates and maintains a smaller skimming vessels to retrieve floating trash and debris from the Schuylkill and Delaware Rivers within Philadelphia. The smaller skimming vessels are more effective in tight spaces found in marinas, among piers, and in near shore (shallow) areas. PWD's small skimming vessel fleet includes a s small general workboat and a 22' landing craft boat that has a dropdown bow gate that allows items to be loaded on and off the boat more easily.

PWD's workboat conducted skimming operations and other activities in the tidal portions of the Delaware and Schuylkill rivers, specifically in areas not desirable or accessible by the larger skimming vessels. The marine flotsam and floatables are picked with long handled pickers or hand netted from the water surface by employees standing on the vessel deck or from the shoreline when necessary. The materials are emptied and segregated into separate bags for trash and recyclable material. The bags are stored on deck, until they are offloaded when the work boat is docked.

Due to staffing issues in 2022, operations were limited. The skimming vessel was operational from April to October 2021, equating to 7 deployments during FY22 resulting in the removal of 1,945.5 lbs. being removed.

Table II.F.3-2 FY22 Small Skimming Vessels Collection Metrics

Date	Total Removed (lbs.)	Mixed Trash Collected (lbs.)	Recyclables Collected (lbs.)	Tires Collected	Location	Watershed
7/15/2021	100	100	0	0	Upper Delaware Between Frankford Arsenal Ramp & Betsy Ross Bridge	Delaware
8/18/2021	310	170	140	4	Strawberry Mansion Bridge & Boathouse Row on non-tidal Schuylkill River	Schuylkill
8/25/2021	155	80	75	0	Upper non-tidal Schuylkill River between 3-sisters statue and boathouse row	Schuylkill
9/14/2021	350	290	60	1	Strawberry Mansion Bridge & Boathouse Row on non-tidal Schuylkill River	Schuylkill
9/28/2021	255	255	0	2	Strawberry Mansion Bridge & City Line Avenue Bridge	Schuylkill
10/12/2021	495	475	20	3	Strawberry Mansion Bridge And Fairmount Dam.	Schuylkill
10/20/2021	277.5	237.5	40	4	Non-tidal Schuylkill River between Strawberry Mansion Bridge And Belmont Intake	Schuylkill
Total	**1,942.5 lbs.**	**1,607.5 lbs.**	**335 lbs.**	**14 tires**		

II.F.4 Other Floatables Control Activities

Other activities practiced within the city are conducted with the intention of managing floatables. These initiatives provide integral components to ensure additional floatable and solids do not enter the city's waterways and surrounding areas. Some of these activities are described below.

Volunteer Water Adjacent Cleanups

The City has embraced the value of supporting and conducting volunteer water adjacent land-based cleanups with local partners and communities in areas in Philadelphia and surrounding region. These volunteer cleanup events provide an opportunity to make a significant difference in a given area within a few hours with the help of people willing to volunteer their time. The cleanup events also serve as opportunities to provide important information and public outreach about PWD's and the City's programs and how the volunteers' efforts are beneficial not only on an environmental/ecological standpoint but also helps promote social behavior changes.

United By Blue Cleanups

In 2016, PWD began to partner with United By Blue (UBB), a Philadelphia-based sustainable outdoor apparel company who conducts annual stream cleanups programs. Part of the company's business model includes the amiable mission: "For every product sold, United By Blue removes one pound of trash from oceans and waterways through company organized and hosted cleanups." PWD partners with UBB by recommending litter-prone locations that are adjacent to Philadelphia waterways, promoting and supporting volunteer based cleanup events hosted by UBB, and helping coordinate pick up of event collections by PWD's Waterways Restoration Team (WRT) or the Philadelphia Streets

Department staff. Much of the work conducted by UBB are often in locations under the purview of PWD's floatables control and pollution prevention programs. In FY22, , UBB cleanups have slowly ramped up following concerns with the COVID-19 pandemic resulting in 5 cleanups in the fall of 2021 through the USA, one in Philadelphia. And another round of cleanups in 2022 with 2 locations in Philadelphia. In addition, UBB continues to offer a DIY Cleanup Kit which includes all the tools that a person would need to organize their own cleanup anytime, including a pair of work gloves, two large bags (blue for recycling, white for trash), exclusive enamel waves pin and a how-to guide. During the pandemic, United by Blue began to focus their efforts on dumpsite cleanups that require heavy machinery and less public volunteer efforts to achieve their mission waterway cleanup targets, one notable dumpsite cleanup occurred in Philadelphia in December of 2021 resulted in over 146 tons being removed in just a few days.

Schuylkill Scrub

The Schuylkill Scrub is a program that encourages and supports cleanup events taking place during the spring throughout the entire Schuylkill watershed- from the headwaters in Schuylkill County down to its confluence with the Delaware River in Philadelphia from March 1st through May 31st every spring since 2009. The Schuylkill Action Network coordinates the initiative, along with multiple partners, with a shared goal of cleaning as many miles of road, stream, and parkland in the Schuylkill watershed. Their efforts help prevent trash from making its way into our drinking water sources and keep our land and waters clean, litter-free, and beautiful. The last advertised Schuylkill Scrub was held in calendar year 2022, with full data from the 2022 Scrubs pending. In calendar year 2021, approximately 3,000 tires and over 20,000 bags were collected at over 1,000 locations. In early 2022, the Schuylkill Action Network helped relaunch the "CleanSweep" app, an online dashboard and mobile app that mobilizes cleanup coordinators and volunteers by allowing users to organize cleanups, record results, find local cleanup events, report hot spots for trash and dumping and see their impacts.

Tookany/Tacony-Frankford Trash Task Force

In recent years, more targeted efforts to focus on litter have been initiated in the corridors surrounding the Tacony Creek watershed. PWD gathered members of different City agencies including Streets and Philadelphia Parks and Recreation (PPR), as well as representatives from the TTF Watershed Partnership (TTF), SEPTA, United by Blue, and Keep Philadelphia Beautiful (KPB), to initiate discussions and coordinate efforts to alleviate the litter problem and its impact on Tacony Creek.

The goal of the study is to establish trash resources and transport methods and then experiment with trash management practices which can then be applied to other drainage areas. The Task Force is continuing to research and explore methods for reducing the trash problem in the Tacony Watershed. During FY22, the TTF maintained the 20 trash cans in the Juniata neighborhood decorated by local artists which was supported by a grant provided by the Environmental Protection Agency's Trash Free Waters Program, Partnership for the Delaware Estuary, Mural Arts Philadelphia, and the Zero Waste and Litter Cabinet. This grant also brought another 30 trash cans to Southwest Philadelphia. TTF continued to partner with PowerCorpsPHL and the Alliance for Watershed Education to deploy Trail Ambassadors on a regular basis to walk the trail, clean the gateways and trail, and report dumping and other issues needing attention to Philly311. The consistent presence and reporting have resulted in quicker resolution of trash issues and a cleaner, more welcoming park. TTF continued to power through the pandemic, retooling previous programs and finding safe ways to build community connection such as distributing trash cleanup kits (each kit comes with a bag, gloves, a cotton mask, a long-armed trash picker, and a map of Tacony Creek Park to guide them on their cleanup journey), offering virtual tours of

park, and conducting community meetings over Zoom (virtually) to discuss park issues and how to address them. This new approach to cleanup resulted over 45 cleanups and over 538 bags of trash and debris removed, including one cleanup in the spring of 2022 that included local sanitation advocate, Terrill Haigler, aka YaFav Trashman, and with the support of PWD crews removed nearly 10 tons in one day.

Love Your Park

Love Your Park is a collaboration between Fairmount Park Conservancy, Philadelphia Parks & Recreation, and Philadelphia's Park Friends Network. They work together to support communities in activating City neighborhood parks and watershed natural areas, with a focus on volunteering. Their flagship events are Love Your Park Week in May and the Love Your Park Fall Service Day in November, when over 5,000 volunteers support City parks. This year-round Neighborhood Park Stewardship program supports a network of 135 community-run park friends groups, and our regular volunteer opportunities invite groups and individuals to get involved. These programs continued in 2022, resulting in numerous volunteer events and engaged thousands of volunteers. During these weeks, volunteers helpedplant trees, weeding and mulching over a thousand existing trees, removing several tons of trash from our parks and waterways, and collecting thousands of bags of organic plant debris (like branches and leaves) for composting. Love Your Park continued implementing Love your Park Solo Cleanups, encouraging park users to safely clean up trash and litter individually or with their families as they enjoy Philly parks this year.

Friends of the Wissahickon Cleanups

The Friends of the Wissahickon (FOW) has conducted park cleanups within the Wissahickon Valley Park for many years. The Wissahickon Creek is a treasure to many Philadelphians and visitors to the area, who are searching for an escape to nature, providing a stunning green space for hiking, biking, and fishing. During 2021 and 2022, over 100 volunteers, with FOW and Philadelphia Parks & Recreation, planted over 600 trees at a ravine in the woods near Houston Meadow. Among them, white oaks, which play a critical role in the health of the park's ecosystem as a source of food and habitat for many species of plants, insects, and birds, supporting more life forms than any other North American tree. The planting correlates directly to water quality and climate change: More trees equal more water filtration and more carbon absorbed from the air. In addition, FOW supported 143 volunteer service days—an annual record (including 14 corporate groups, the most ever) which translated to nearly 9,400 hours that 1,142 volunteers. During the pandemic, FOW initiated solo stewards program, called Wissheroes, in the 275 Wissheroes were identified collecting over 5,000 lbs. of litter in the park over 118 sessions. In total during the last year, FOW with the support of volunteers and partners including PWD removed over 42,000 sqft of invasive plants and 13.7 tons of litter, they also planted 1,017 native trees and shrubs.

Philadelphia Canoe Club Partnership

In the Spring of 2019, PWD established a partnership with the Philadelphia Canoe Club (PCC), as they expressed an increased desire to help the city with some of the environmental issues they observe daily from their clubhouse located on the bank of the confluence of the Wissahickon Creek and Schuylkill River, within the Fairmount Park System of Philadelphia. The Philadelphia Canoe Club is a dedicated group of canoeists and kayakers promoting paddling, and paddlesports in the Philadelphia area, training new paddlers, and leading trips all over the US and has been in existence since 1905. Together with PWD and other local partners, PCC helps recruit volunteers to cleanup areas around the Wissahickon Creek and Schuylkill River. This year (2022), PCC recruited over 45 volunteers during Earth week (April 23rd) to tackle the debris the area of land, basically an island between the the Schuylkill River and

Manayunk Canal that is often forgotten and a plagued dumping site. In total, nearly 4 tons were removed in one single day by PCC volunteers and PWD crews.

Bridgestone Tires4ward Partnership

In the summer of 2016, PWD established a partnership with Bridgestone, a tire manufacturer, to recycle tires collected from PWD-sponsored cleanup events including efforts conducted by the Waterways Restoration Team (WRT), Floatables Skimming Vessels and other cleanup activities. Bridgestone or one of its associated partners collects these tires at one of PWD's maintenance facilities as part of their Tires4ward program. This program was initiated to support Bridgestone's goals of ensuring that one spent tire or any tire been taken out of use goes on to another valuable purpose such as for "use as material in rubberized asphalt, construction materials, landscaping mulch and as tire-derived fuel for energy" for every tire sold. Activities with the Tires4ward program were limited with large scale cleanup activities only slowly ramping up and did not result in a significant amount of discarded tires. PWD plans to continue working with this partnership in future years

Repair, Rehabilitation, and Expansion of Outfall Debris Grills and Grit Cleanings

Debris grills are maintained regularly at sites where the tide introduces large floating debris into the outfall conduit. This debris can become lodged in a tide gate, causing inflow from the receiving water. Additionally, debris grills provide entry restriction and some degree of floatables control.

Standard operating procedures require the inspection of debris during all regulator inspections unless the outfall is submerged at the time of inspection. During FY22, 96 debris grill maintenance events were completed. The list of the debris grill preventative maintenance activities is available on page 24 of **Appendix C – FY22 CSO Maintenance Program Annual Report.**

II.G NMC 7 - Pollution Prevention

II.G.1 Continue to Develop and Share a Variety of Public Information Materials Concerning the CSO LTCP

The Public Outreach and Participation conducted in FY22 for the Green City, Clean Waters program has been provided in **Section 7.0 - Public Outreach and Participation** starting on page 28 **of Appendix A – Green City, Clean Waters FY22 Annual Report** and **Section II.G.3 Continue to Provide Annual Information to City Residents about Programs via Traditional PWD Publications** on page 24 of this report.

II.G.2 Continue to Maintain Watershed Management and Source Water Protection Partnership Websites

In May 2018, PWD incorporated watershed protection projects and program information onto the City of Philadelphia's official website at https://water.phila.gov/sustainability/watershed-protection/. This provides an alternate channel for PWD customers and the public to learn about watershed protection initiatives. The website contains key plans and reports as well as detailed information on watershed partnerships, planning, public communication, and technology-based planning and assessment tools.

RiverCast

Philly RiverCast (http://www.phillyrivercast.org) is the first operable web-based recreational warning system in the United States. Using near real-time flow, precipitation, and turbidity data, the RiverCast algorithm translates predicted bacteria levels in the non-tidal Schuylkill River from Boathouse Row to Flatrock Dam in Manayunk into one of three ratings, each of which corresponds to suggested guidelines for safe recreation. RiverCast guidelines offer tools for the public to make informed decisions about recreation, and thus helps protect the public against illnesses caused by bacteria. Ultimately, RiverCast will help ensure continued safe recreational use of the Schuylkill River, while promoting public awareness of water quality concerns and indirectly engaging support for source water protection measures. More than 1.5 million users have visited the Philly RiverCast website since it launched in June 2005. In FY22 the website's design was updated to enhance the user experience.

Schuylkill Action Network

The Schuylkill Action Network (SAN) was established as a permanent watershed-wide organization charged with identifying problems, prioritizing projects, and securing funding sources to bring about real water quality improvement in the Schuylkill River watershed. The SAN is organized into a number of focused workgroups. One of the workgroups, the SAN Stormwater workgroup, was formed to identify a cost-effective approach to stormwater management through project prioritization and planning. The workgroup is a partnership of representatives from PWD, PADEP, EPA, DRBC, conservation districts, watershed organizations, municipalities, and other groups throughout the Schuylkill River watershed. The SAN website supports the SAN's Stormwater Workgroup by providing project and event information, SAN publications, and public messaging about restoring and protecting the Schuylkill River. The SAN Stormwater Workgroup's ultimate goal is to prevent or maximize reduction of stormwater runoff pollution. During its 19 years of existence, the workgroup has served as an advisory committee for state and local governments, an ordinance review board for municipalities, and a support group for large and small projects throughout the Schuylkill River watershed. During the last year, SAN projects have addressed important pollution sources including agriculture, abandoned mine drainage and stormwater. Efforts from SAN partners in the last calendar year are included in the following table (**Table II.G.2-1**):

Table II.G.2-1: Schuylkill Action Network Partner Progress

	Cumulative Progress of Watershed Partners (2003-2021)	Highlights from CY 2021
Agriculture Workgroup	• Constructed 177 manure storage facilities • Completed 185 barnyard or heavy use area construction • Installed 91 stream crossings • Planted 502 acres of riparian buffers of ag lands • Over 10,000 acres of agricultural lands have best management practices	• Construction of 2 manure storage facilities • Installation of 2 stream crossings • 2 new comprehensive nutrient management plan • 8.2 acres of riparian buffer planted
Abandoned Mine Drainage (AMD) Workgroup	• Received over $15M in AMD funding • Reduced annual watershed loadings of iron, aluminum, and manganese • Installed, monitored, and maintained five treatment systems	• Actively maintaining 5 AMD treatment systems • Approximately 190 tons of limestone sand added to Big Creek and West Creek • Restored 1,100 linear feet of stream habitat structure and bank stabilization through the Middleport Habitat Stabilization project with National Trout Unlimited • Upper and lower channels of Little Wolf Creek reconnected to prevent stream flow loss
Stormwater Workgroup	• Engaged over 25 schools in green stormwater infrastructure • SAN has hosted presentations, workshops, and tours for businesses, municipalities, and other professionals	• Stormwater Best Management Practices at the Philadelphia Zoo toured with 20 attendees. Installed 2 rain gardens at Children's House of Exton in Uwchlan Township
Pathogens & Point Source Workgroup	• Delaware Valley Early Warning System has reported over 450 events • SAN has promoted drug takeback events throughout the watershed • SAN has hosted tech transfer presentations and water utility forums for water and wastewater professionals to connect with resources and funding	• Delaware Valley Early Warning System grew to 450 registered users from 55 organizations Over 1,100 views on SAN social media promoting National Drug Takeback Day • $10,307,907 in water infrastructure projects granted through PENNVEST in the Schuylkill River Watershed
Engagement & Stewardship Workgroup	• Unites environmental education, outreach, recreation, stewardship, and volunteerism in the Schuylkill River Watershed • Coordinates yearly Schuylkill Scrub, a watershed-wide clean up initiative that takes place every spring	• Approximately 3,000 tires and over 20,000 bags of trash were collected at over 1,000 locations during the Schuylkill Scrub • Sponsorship of the Sojourn Steward and 2 Diversity Scholarships for the entire 5-day Sojourn. • Sponsored 1 student for Schuylkill Acts and Impacts program • Created 500 nature journaling kits including binoculars, field notebooks, and watershed maps. 330 of these kits were distributed to 6 teachers in the cities of Reading, Robesonia, Jenkintown and Philadelphia in 2021
Schuylkill River Restoration Fund	Since its inception in 2006, the SRRF has awarded $4.6M for over 120 projects that have helped restore the Schuylkill Watershed, as well as leveraged over $5M in other funding sources.	In 2021, the SRRF awarded $337,500 to 7 projects in the Schuylkill Watershed.

During its 19 years of existence, the SAN has grown to include nearly 350 organizational and individual partners working together to protect the Schuylkill River watershed. To communicate the accomplishments of the SAN Stormwater workgroup to stakeholders as well as other SAN workgroups, the SAN routinely updates their website, http://www.schuylkillwaters.org, with input from PWD, the SAN Planning Committee and other SAN workgroups. The website was redesigned in February 2018 and includes an internal component that allows for improved communication among SAN workgroup members and facilitates on-the-ground work. The SAN website, together with https://water.phila.gov/, provide data and reports from the source water assessments for the Schuylkill River.

Delaware Valley Early Warning System

The Delaware Valley Early Warning System (EWS) is an integrated monitoring, notification, and communication system designed to provide advanced warning of surface water contamination events to subscribing water suppliers, industrial surface water users and partner government agencies in the Schuylkill and Lower Delaware River Watersheds. The Delaware Valley EWS covers the entire length of the Schuylkill River as well as the Delaware River from the Delaware Water Gap to just below Wilmington, Delaware.

The EWS incorporates a monitoring network of nearly 90 online water quality data stations throughout the watershed. Real-time and historic flow data are applied to a time of travel model that generates a range of estimated arrival times for each intake in the system. This time of travel model is also incorporated into a spill simulation tool that can be used for planning and training purposes.

When a responding agency reports a water quality event via the EWS website or telephone hotline, the entire user base is notified almost instantaneously via email. In the case of a high-risk event, supplemental phone notifications are placed using CodeRed technology, allowing all users to receive an automated telephone notification in less than three minutes. EWS users can log in to the secure website to view additional event details, spill routing, and predicted arrival times to their intakes. Additionally, a sophisticated tidal modeling component has been developed to better predict and communicate the arrival times of spills on the tidal Delaware River with a user-friendly spill trajectory animation. The EWS received the Governor's Award for Environmental Excellence and is nationally recognized for its use of stakeholder partnerships to meet regional source water protection objectives. In 2016, the EWS was featured as a case study in EPA's publication Online Source Water Quality Monitoring: For Water Quality Surveillance and Response Systems.

In the last couple of years, PWD implemented significant updates to the EWS user interface. Notable updates include full mobile device (smartphone) functionality for the EWS web site and improved mapping and notification features. These updates were presented to EWS users through a series of regional trainings and webinars.

During FY22 a new website feature, the Flooding Forecast Viewer (FFV), was launched. Flooding events potentially trigger spills and discharges, and flood conditions can exacerbate sewer and storm water system releases, impact source water quality, disrupt product storage, and create additional risks for road incidents resulting in accidents and spills. The EWS Flood Forecast Viewer provides a 1-day flood forecast for major waterways in the EWS service area. The data used to indicate future flood conditions at 18 gages throughout the service area is downloaded from NOAA's Advanced Hydrologic Prediction Service (AHPS).

Other PWD Related Websites and Social Media

PWD Main Web Site
water.phila.gov
The official website for the Philadelphia Water Department (PWD) contains comprehensive information about stormwater management for our customers. Resources span from the CSO LTCPU to plain language statements to help the average customer understand the importance of stormwater management.

There is an ongoing website migration from www.phila.gov/water to water.phila.gov. Users who type in the phila.gov/water URL are redirected to water.phila.gov. The pages at www.phila.gov/water/wu/stormwater were migrated into the newer water.phila.gov website, and this URL will be referenced in future reports.

The pages at water.phila.gov/stormwater had 19,283 unique pageviews during FY22, with users spending an average of 2 minutes and 8 seconds on the pages. The Stormwater Grants page is geared to non-residential property owners interested in receiving grants to construct stormwater retrofit projects. The Stormwater Grants web page received 3998 unique page views in FY22.

PWD Parcel Viewer and Stormwater Billing online:
https://stormwater.phila.gov/

The stormwater.phila.gov microsite launched in FY20, continues to play an important role in showing users how their stormwater bill is calculated, how to apply for credits, or how to make appeals. The "parcel viewer" map application is the core of the site. Here, customers can search for a specific parcel or freely explore the map. When a parcel is clicked, data such as gross area, impervious area, and the monthly stormwater charge breakdown, are displayed. Users are encouraged to take actionable steps to reduce the amount of stormwater entering the sewer system and lower their stormwater bills. There were over 44,120 unique pageviews in FY22, averaging just over two minutes per session.

In June 2022, PWD launched Stormwater Connect - an online tool designed to link green stormwater vendors with non-residential property owners. Vendors and property owners sign up to share their specifications, specialties, and interests. Once vendors complete a profile, they can start searching potential projects that align with their expertise. When a property owner signs up, they will find a list of vendors that match their needs using filters, such as experience building particular GSI. Vendors they're interested in are notified. From there, vendors can request a direct follow-up. Once connected, they can confirm what is possible on the non-residential site and a Stormwater Grant team partnership can be formed. Then, the team applies for a grant, which can cover up to 100% of design and construction costs.

Since the web page was just recently launched, no data is available at this time. Data will be available for FY23.

Phillywatersheds.org
Watershed information was also housed on Phillywatersheds.org; however, PWD began archiving this site on September 1st, 2019. This content continues to be migrated to www.phila.gov/water and https://water.phila.gov . Phillywatersheds.org will remain an archived site that redirects to new locations until all content is moved or decommissioned. More information about content available on

the site is discussed below but notice that some content may no longer be housed on phillywatersheds.org, and no new content is being added.

In spring of 2021, PWD launched Green City, Clean Waters' official new landing page: water.phila.gov/green-city, replacing the decommissioned phillywatersheds.org and the official destination for Green City, Clean Waters on the web. During FY22, it received more than 11,500 page views.

Development Review Program Website

https://www.pwdplanreview.org/

Since its deployment in FY16, the use of this site has grown and continues to be one of the most used websites in the city, a testament to its effectiveness in helping developers to meet Philadelphia's stormwater regulations. Over 42,480 users accessed the site in FY22.

For more information on the activities conducted by the Development Review Program please refer to the MS4 Annual Report **Section F.5 – Monitor and Control Stormwater from Construction Activities** on page 22.

PWD Department on Social Media

Social media is an essential tool for engaging communities in the development of stormwater infrastructure projects and best-practices. These platforms are an important tool for disseminating departmental messaging about stormwater management, pollution prevention, and programs that improve the city's water resources. Social media is also an accessible tool for building and strengthening relationships with partner organizations and community groups.

The sections below describe the City's social media:

@PhillyH2O Blog

The @PhillyH20 Blog (water.phila.gov/blog/) launched in 2018 as a mobile-friendly "rolling collection of stories, tips, and news powered by the people of the Philadelphia Water Department."

The blog is part of a customer priority-focused digital strategy and provides quick access to information residents served by the department can use. The site often acts as a streamlined showcase of messaging campaigns that are amplified by press releases, social media, direct mail, and email.

Posts promote a wide variety of topics, including how to use the Basement Protection Program, which provides free plumbing improvements for those impacted by combined sewer overflows; community input meetings for GSI construction sites and other projects; updates about the progress of Green City, Clean Waters, and highlights of current programs and events and relevant partner initiatives.

There were a total of 21 posts in FY22. In FY22, the blog received over 38,000 page views. Our most read post highlights the historic Schuylkill flood of 1869. The aforementioned blog was viewed more than 1400 times in FY22. Although this post was first published in 2019, the major flooding on the Schuylkill on September 2, 2021, drove new traffic to this post through organic Google searches. The blog is the first to appear when searching "Schuylkill flood 1869." This blog was also linked from other major news outlets, contributing to views.

Facebook

As of spring 2021, PWD no longer uses the Green City, Clean Waters Facebook page. All Green City, Clean Waters content has been streamlined to the main PWD page. For that reason, future reports will not include metrics from GCCW Facebook.

The Philadelphia Water Department has a Facebook page located at http://www.facebook.com/PhillyH2O

The Fairmount Water Works (FWW) also maintains a Facebook page that extends the reach of departmental messaging. The page can be accessed at https://www.facebook.com/FairmountWW/

Between these two Facebook pages, the department has 6,785 followers.

- PWD page: 4,100 followers
- Fairmount Water Works page: 2,685 followers

Twitter

Twitter is a valuable communications channel for resolving customer complaints, providing customer information, and delivering news concerning the department, education, and water in general. The Department also builds connections with national and international peer cities and other stakeholders in the stormwater management field through Twitter.

The @PhillyH2O account increased followers by 360 in FY22, averaging 35 tweets per month. By the end of FY22, the Twitter account had close to 10,000 followers.

Nextdoor

The Philadelphia Water Department maintains a NextDoor.com account with over 150,000 followers representing Department customers in city neighborhoods. With the elimination of public meetings and flyer-distribution in spring 2020, the platform has proved a valuable tool for hyper-local outreach. Posts containing detailed information about construction projects supporting the LTCPU are made available to communities directly impacted.

A total of 185 posts received 199,159 impressions from Philadelphia users in FY22.

LinkedIn

The Philadelphia Water Department LinkedIn account had a total of 5,500 followers at the end of FY22. The Department continued to share both employment-based posts and general information pertaining to the utility and services.

PWD Department Videos

PWD hosts videos on Vimeo, YouTube, and all social media platforms. Video content provides information about topics including:

- Why infrastructure investment is needed to reduce sewer overflows
- How green and traditional infrastructure protects waterways
- Careers building and maintaining infrastructure, and more.

PWD video content includes animation. While some content is highly produced with support from contracted professionals, videos produced in-house by Public Affairs staff also play an important role in communicating with residents.

Videos not shared on social media can be accessed at the following links:

- http://www.vimeo.com/phillywatersheds
- http://www.youtube.com/pwdepartment

Between YouTube and Vimeo, the videos have been viewed over 6,050 in FY22. Much of the Department's video views are experienced through Facebook, Instagram and Twitter, where we cannot track views for the fiscal year.

II.G.3 Continue to Provide Annual Information to City Residents about Programs via Traditional PWD Publications

The PWD develops numerous publications for the public that are distributed throughout the city at advisory committee meetings, public meetings and other public events, in addition to being distributed through the water/sewer/stormwater bill to PWD customers. The following publications, meetings and events have been shared with and/or involved the public during FY22:

Media Advisories and Press Releases

2022	
06/04	Today at 12p: Water Department to Unveil Art and Poetry Installations Inspired by Flooding Workshops
06/02	Media Alert: June Events Help Water Customers Enroll in Assistance Programs
06/01	Media alert: Water Department to Unveil Art and Poetry Installations Inspired by Flooding Workshops
05/03	Philadelphia's First Oyster Shell Recycling Lot Opens in Southwest
03/08	March Events Offer Help with Phila. Utility Bills
02/25	Media Alert: Phila. Water Dept. Files Formal Notice of 2022 Rate Proceedings
02/07	#UtilityFairsPHL: Virtual Help with Lowering Water and Other Philadelphia Utility Bills
02/03	Press Release: PWD Launches 2022 water customer survey
01/04	$3M Grant Awarded for 'Floating Water Workshop' at Fairmount Water Works

2021	
12/07	Philadelphia Selected to Apply for $246M in Critical Water System Financing
11/29	Road Closure Alert: Sewer Replacement to Close Cresheim Valley Dr. Starting Nov. 8
11/04	Water Department Presents Stormwater Pioneers Award to School District
11/03	Media Event: Water Department to present Stormwater Pioneers Award to School District.
11/01	Washington Ave Lane Closure Alert: Westbound Traffic to Use Single Center Lane
11/01	Sewer Replacement to Close Cresheim Valley Drive Starting Nov. 8
10/20	Media Event: Phila. Marks 10 Years of Green Infrastructure Effort with Celebration, Tours
10/14	Event Alert: Phila. Marks 10 Years of Green Infrastructure Effort with Celebration, American Street Tours
10/06	Traffic Advisory: 2900 Hunting Park Ave. Reopens
10/05	TODAY: Water Dept., Mural Arts to Unveil North Phila. 'Drink More Tap' Mural
09/30	Water Dept., Mural Arts Unveil 2nd North Phila. 'Drink More Tap' Mural

09/24 Media Advisory: Delaware River Fest Starts Today with Brewery Night
09/21 TODAY: Water Dept., Mural Arts to Unveil North Phila. 'Drink More Tap' Mural
09/20 Water Dept., Mural Arts to Unveil North Phila. 'Drink More Tap' Mural
07/22 Media Alert: New Report Shows How Safe Water Is in Philadelphia

Publications
Annual Consumer Confidence Report of 2021 Water Quality Data

Billstuffers
- July 2021, Plastic Bag Ban
- August 2021, Fairmount Water Works Pool Exhibit
- September 2021, FY22 Rate Increase

Events/Campaigns
The ongoing global pandemic continued to limit in person programming in FY22, so campaigns and events included virtual and digital components when appropriate.

Utility Fairs
During the spring and early summer of 2022, PWD participated in weekly virtual (and one in-person) Utility Fairs with PGW and PECO. Customers met with utility representatives to receive one-on-one help with applying for affordability programs and payment agreements before shutoffs resumed.

POOL Exhibit opening
In spring 2022, POOL: A Social History of Segregation officially opened at the Fairmount Water Works. The multi-disciplinary museum exhibition helps to illuminate a history of segregated swimming in America and its connection to present-day drowning issues affecting Black communities.

Drink More Tap murals/music
To increase awareness of the City's top-quality tap water, the Philadelphia Water Department partnered with Mural Arts Philadelphia to create pieces of visual and performing arts in collaboration with communities where buying bottled water is most common. The works have a recurring theme: Drink More Tap. During the fall of 2021, PWD and Mural Arts officially unveiled two Drink More Tap murals in North Philadelphia, including one at Penrose Recreation Center and another at Cruz Recreation Center. Learn more: *https://water.phila.gov/drops/drink-more-tap/*

GCCW 10-Year
During FY22, Public Affairs continued the digital communications campaign celebrating the 10th anniversary of Green City, Clean Waters.

In October 2021, PWD hosted an outdoor celebration for this milestone along North American Street - the site of major green renovations, encompassing new GSI managing close to 90 million gallons of stormwater annually from the area's combined sewer system. Hundreds of people joined the festivities, which included the official ribbon cutting of the American Street Improvement Project and speakers from the Streets Department and City Council. Learn more about the anniversary series: https://water.phila.gov/drops/gccw10

Wingo-WHAT?!
Since early 2021, PWD's Public Affairs division has collaborated with 2020-2021 Philadelphia Poet Laureate Trapeta B. Mayson to curate Wingo-WHAT?! — a creative intervention using poetry to spread awareness around Germantown flooding.

Thanks to a grant from the U.S. Water Alliance, Wingo-WHAT?! started summer/fall 2021 with workshops around Germantown. Mayson guided participants as they composed poems about flooding and water. After the workshops, verses were placed on sidewalks in flood-prone areas using decals and rain-activated paint. In June of 2022, PWD hosted a culminating event at Maplewood Mall in Germantown to unveil the sidewalk art.

The project is part of an effort to lay the foundation for a community engagement process. Working closely with residents will be integral to future infrastructure investments aimed at reducing flooding in Germantown where sewers can be overwhelmed by heavy rainfall.

"Wingo-WHAT?!" is based on the relationship between the historic Wingohocking Creek, now almost completely transformed into underground sewers, and infrastructure flooding. WHAT stands for "Water History Arts-activation Transformation."

For more information, visit: *water.phila.gov/wingo-what*

Stormwater Pioneers
In November 2021, PWD presented the annual Stormwater Pioneers award to the School District of Philadelphia at Southwark School—one of 13 public schools honored this year as champions of green stormwater infrastructure.

The Stormwater Pioneers program recognizes the best in stormwater management on property not owned by the City of Philadelphia. These schools display exceptional commitment to maintaining stormwater infrastructure and use their green tools as inspiration for education and community engagement.

GSI Spotlight Tours at National Conferences
In the spring 2022, PWD Public Affairs representatives were featured at the WaterNow Alliance's national Tap Into Resilience Summit at the University of Penn. PWD reps were featured in panel discussions and a guided tour of Penn Park's green stormwater infrastructure, which diverts 2,000,000 gallons of stormwater from our sewer system every year.

In June 2022, PWD's Public Engagement Team partnered with the GSI Unit to lead a tour of Wissinoming Park and Carmella Playground for the national Greater & Greener conference that took place in Philadelphia this year.

II.G.4 Continue to Support the Fairmount Water Works Interpretive Center
As detailed in the table below, during FY22, more than 9,000 people were engaged virtually, remotely, off-site and through exterior tours of the Fairmount Water Works during the second COVID-19 shortened year. The Interpretive Center was greatly impacted in September 2021 by Hurricane Ida. Still in recovery mode from 2020 flooding, the Interpretive Center experienced record-breaking flooding again, which severely impacted staff/visitor access and program delivery. Attendance numbers are much lower when compared with pre-pandemic/flood-free years, but we saw a 56% increase in FY22 when

compared to FY21. Visitors consisted of organized exterior tours for adults, families and children, ongoing activities with school groups and summer camps, and the opening of the Ed Grusheski Memorial Exhibition - *Ripple Effect* (April - June 2022). Outreach efforts* (**Table II.G.4-1)** include teachers and students participating in Understanding the Urban Watershed middle years curriculum project; partnership with North American Association for Environmental Education and National Oceanic and Atmospheric Association and Concilio constituents.

Table II.G.4-1 Fairmount Water Works Interpretive Center – FY22 Education Center Attendance

Types of Attendance	Visitors
General FWW Visitors	2,534
School Groups, Camps and Recreational Center	4,707
Tours	77
Outreach Efforts*	1,857

II.H NMC 8 - Public Notification to Ensure that the Public Receives Adequate Notification of CSO Occurrences and CSO Impacts

PWD has developed and will continue to develop a series of informational brochures and other materials about its CSO discharges and the potential effects these discharges have on the receiving waters. In addition, PWD has enlisted watershed organizations and partnerships to assist in this endeavor to raise the level of citizen awareness about the function of CSO and stormwater outfalls through a variety of educational mediums.

II.H.1 Launch a Proactive Public Notification Program Using Numerous Media Sources

PWD is advancing a proactive public notification program that uses print, internet, outfall signage, and other media to distribute information on the locations of CSOs, information on hazards, and potential public actions.

CSO Outfall Signage

In summer 2007, PWD initiated a pilot project to install 13 informative signs at CSO outfalls throughout the city. During a follow-up survey in October 2007, it was found that 5 of the 13 signs had been either removed or vandalized. Currently each CSO outfall location, except for 8 inaccessible locations, has an identification sign installed which helps the public to accurately identify an outfall when reporting a problem. During FY22, PWD continued to assess the feasibility of installing updated informational signage at the City's CSO outfalls. PWD performed preliminary assessments for outfalls accessible both by land and boat, which included documentation of the CSO outfall structure material, condition, and mounting assessments for signage.

Other Notification Measures

PWD continues to develop informational materials and maintain websites to educate the public about its CSO discharges and the potential effect on receiving waters. PWD has found that one of the best ways for public notification of CSOs is through the traditional public outreach programs described in NMC7: Pollution Prevention Program, please refer **Section II.G – NMC 7- Pollution Prevention** on page 17.

II.H.2 Expand the Internet-Based Notification System (RiverCast) to the Tidal Section of the Lower Schuylkill River

In order to expand the web-based water quality forecasting system for the Schuylkill River, RiverCast, PWD developed another internet-based notification system called CSOcast in 2008, which reports on the overflow status of outfalls in every CSO shed.

The website is built using the Google Maps API which allows for the dynamic loading of geographically referenced data that can be viewed with a familiar and user-friendly interface. The map is available 24 hours a day and displays the most up-to-date data available. PWD is constantly updating and improving the notification system as well as the flow monitoring network to deliver the best information possible to the public.

During FY22, CSOcast had a total of 3741 pageviews. The CSOcast notification system can be accessed through: https://water.phila.gov/maps/csocast/.

II.I NMC 9 - Monitoring to Effectively Characterize CSO Impacts and the Efficacy of CSO Controls

II.I.1 Report on the Status and Effectiveness of Each of the NMCs in the Annual CSO Status Report

The Combined Sewer Management Program Annual Report, combined with the Stormwater Management Program Annual Report, will be submitted in September of each year, documenting the previous fiscal year activities.

III. Implementation of the LTCP

Table III.B-1: Summary of 1997 CSO LTCP Capital Projects

Project	Status
Real Time Control (RTC) Program	
RTC - Main Relief Sewer Storage (R-7 through R-12)	Complete
RTC - Tacony Creek Park Storage (T-14)	Complete
RTC - Rock Run Relief Sewer Storage (R-15)	Complete
Establish RTC Center	Complete
RTC & Flow Optimization (Southwest Main Gravity Interceptor, Cobbs Creek Cut-Off, and Lower Schuylkill West Side)	Complete
Targeted Infiltration/Inflow Reduction Programs	On-Going
Solids & Floatables Control Program	On-Going
85% CSO Capture Pennypack Watershed (P1 through P5)	Complete
Eliminate Outfalls: Dobson's Run Phase I	Complete
Eliminate Outfalls: Dobson's Run Phase II & III	Complete
Eliminate Main & Shurs Overflow (R-20)	Complete
Eliminate 32nd & Thompson Outfall (R-19)	Complete
Collection System Improvements	
Upgrade Frankford Siphon	Complete
Somerset Interceptor Sewer Conveyance Improvements	Complete
Cobbs Creek Low Level Conveyance Improvements	Complete
Cobbs Creek Low Level Control Project	Complete
Water Pollution Control Plant (WPCP) Wet Weather Treatment Maximization Program	Complete

III.A CSO LTCP Update

The full Philadelphia Combined Sewer Overflow LTCPU report can be found at the following address: https://water.phila.gov/green-city/.

Please refer to **Appendix A – Green City, Clean Waters FY22 Annual Report** for an update on implementation progress.

III.B Capital Improvement Projects

III.B.1 On-going Capital Improvement Projects

Please see **Table III.B.1-1** – Status updates for On-going Capital Improvement Projects on page 30.

Table III.B.1-1 – Status updates for On-going Capital Improvement Projects

Project	Status	Update / Reference
Completion and Operation of the Real-time Control Center and Rehabilitate and Maintain the Monitoring Network	Completed in 2003	For details on FY16 maintenance of monitoring network please refer to Appendix C-FY19 Program Maintenance Annual Report.
WPCP Wet Weather Treatment Maximization (NE)	Evaluated and implemented options from the Jan. 2000 Stress Testing Report	Refer to Section III.B.1.2 WPCP Wet Weather Treatment Maximization (NE) on page 66 of the CSO-Stormwater FY12 Annual Report
Evaluate Stress Test Report Options in the LTCPU	Completed March 2009 (all three WPCPs)	Refer to Section III.B.1.2.1 Evaluate Stress Test Report Options in the LTCPU on page 69 of the CSO-Stormwater FY12 Annual Report
Implement Options 1, 2, and 4 from the Stress Test Report (NE)	Completed January 2006	Refer to Section III.B.1.3.2 Implement Options 1, 2, and 4 from the Stress Test Report on page 91 in the CSO-Stormwater FY10 Annual Report.
Plan, Design, and Construct Options 5 & 7 of the Stress Test Report to Increase the Secondary Plant Capacity to 435 MGD	Completed February and August 2012	Refer to Section III.B.1.2.3 Plan, Design, and Construct Options 2 & 6 from the Stress Test Report on page 70 in the CSO-Stormwater FY 2012 Annual Report.
Explore increasing the preliminary treatment, primary treatment, and final effluent disinfection treatment capacities in excess of the existing secondary treatment capacity at the NE WPCP	Plan was originally submitted to the PADEP on June 1, 2013. The NE Facility Concept Plan (FCP) was revised based on comments from PADEP and re-submitted on December 31, 2013.	A Wet Weather Facility plan was submitted on June 1, 2016 which supersedes the FCP. These plans are available on-line through the following website: https://water.phila.gov/green-city/
Initiate the Facility Planning and Design for the By-pass Conduit	PADEP approved on April 1, 2009, the bypass of secondary treatment for 100 MGD of additional wet weather flow at NE WPCP	As described in the LTCPU, PWD committed to the expansion of the NE WPCP to include a 215 million gallon/day secondary treatment bypass. PWD proceeded with a design and the bypass of the plant secondary processes for total plant flows that exceed 435 MGD is currently under construction. Project renamed as NEWPCP High Flow Management System.
Report to the DEP the Status of these Projects in the Annual Status Reports when Major Work Elements Are Completed	N/A	The CSO Annual Report continues to include information in the WPCP wet weather treatment maximization at the NE WPCP
85% Capture (NE) - 85% Flow Capture Technical Report	August 2008	Refer to Section III.B.1.3 85% Capture (NE) on page 71 of the CSO-Stormwater FY 2012 Annual Report.
In-Line System Storage Projects (NE)	N/A	Reported on in Section II.B.5 Operate and Maintain In-line Collection Storage System Projects Contained Within the LTCP of this report, starting on page 5.

Project	Status	Update / Reference
Implementation of the Southwest Plant Stress Test Report Option 1	Option 1, to inspect and repair leaking weirs and concrete surfaces in the final sedimentation tanks at the Southwest Plant, was completed in April of 2002	Option 1 and other improvements were also discussed in further detail within the Facility Concept Plan for the Southwest Water Pollution Control Plant that was submitted to the PADEP on June 1, 2013. This plan is available on-line through the following website: https://water.phila.gov/pool/files/SW-Facility-Concept-Plan-Final_FINAL.pdf
Real Time Control (RTC) and Flow Optimization for the Southwest Drainage (SW) - Implementation of Projects for Real Time Control (RTC) and Flow Optimization for the Southwest Drainage District	Completed April 2010	Refer to Section III.B.1.8 Real Time Control and Flow Optimization for the Southwest Drainage on page 74 of the CSO-Stormwater FY12 Annual Report.
RTC/Main Relief Sewer Storage (SW) - Construction and Implementation of Main Relief Sewer Storage and Real-time Control		Refer to **Section II.B.5 Main Relief** on page 5 of this report
Eliminate CSO/Dobson Run Project (SW) - Construction and Implementation of the Dobson's Run Project	Phases I completed in 1998; Phases II and III were completed by 2011.	Refer to Section III.B.1.10 Eliminate CSO/Dobson's Run Project on page 95 of the CSO-Stormwater FY11 Annual Report
Eliminate CSO/Main and Shurs Off-Line Storage (SW) - Construction and Implementation of the Main and Shurs Off-line Storage Project	Please see section III.B.1 below for status	Please see section III.B.1 below for update

III.B.1 On-going Capital Improvement Projects

Eliminate CSO/Main and Shurs Off-Line Storage (SW) - Construction and Implementation of the Main and Shurs Off-line Storage Project

The Upper Schuylkill East Side Interceptor Sewer (USES) is located along the Schuylkill River adjacent to the Manayunk Canal in the northwest section of Philadelphia. It conveys sewage from collection systems which serve the northwest section of the City. During extreme wet weather events, the USES exceeded its capacity and overflows occurred at relief point R-20 into a storm sewer upstream of storm water outfall S-052-5. To abate the hydraulic overload conditions in the USES, PWD finished construction of a four-million-gallon offline storage tank in May of 2013, which captures and stores excess flows. The tank would serve to eliminate surcharges and prevent overflow conditions at the R-20 relief location.

The Venice Island Storage Facility is currently in service and operating as designed. In FY22, the facility took on water for 17 major storms, 2 of those being tropical storms. The total captured volume was approximately 8.24 MG of sanitary wastewater. The weir elevation at the R20 relief window remained at 65 inches during FY22.

There was one event during FY22 in which the tank was at full capacity due to the Manyaunk Canal and Schuylkill River breaching the banks of Venice Island. This occurred during Tropical Storm/Hurricane Ida on 09/01/2021. The return period for this storm was greater than 50 years.

Grit accumulation is a known USES issue that reduces interceptor capacity and the effectiveness of the Venice Island storage tank. PWD performs periodic grit surveys of the USES to better understand grit type and accumulation frequency. PWD performed a sonar inspection on the lower reach of the USES interceptor in FY19 which showed minimal grit deposition at that time. Routine level trending of the R-20 interceptor sensor indicated that grit deposition was not enough to warrant an interceptor cleaning during FY22. PWD will continue to track grit deposition in the USES. By taking a proactive approach, PWD can schedule flushing and sewer cleaning to maximize capacity of the interceptor and the Venice Island storage tank's effectiveness.

III.B.2 New Capital Improvement Projects to be Included in LTCPU

Please see **Table III.B.2-1** – Status updates for New Capital Improvement Projects to be included in LTCPU on page 34.

PC-30 Parallel Relief Sewer

The project and all stipulations of the COA regarding the parallel relief sewer were completed on 12/27/11. As of July 2013, the parallel relief sewer and all appurtenances have been operating as designed. In FY19 two float switches were installed at PC-0030 to monitor overflows at the location with greater accuracy.

During FY22, there was one un-monitored and one monitored overflow event at manhole PC-0030.

On July 12, 2021, an intense thunderstorm, with a greater than 1000-year return interval, occurred in the Northeast region of Philadelphia. During the wet weather event, the level sensor located at PC-0030 was malfunctioning. A redundant site just downstream of PC-0030, H-09 at the confluence of the

Byberry and Poquessing Interceptors, was used to analyze the storm. Results showed that PC-0030 overflow around 1.65 MG and reached a max level around 190 inches. Crews in the field were able to verify the overflow after the event.

On September 1, 2021, the remnants of Hurricane Ida struck Philadelphia causing intense flooding throughout the region. The maximum PC-0030 level was 175 inches with the overflow (top of manhole) at 166 inches. The estimated overflow volume was around 0.77 MG, although crews were unable to visually confirm the overflow.

Detailed information regarding PC-30 can be found in the reports submitted to PADEP each month.

Table III.B.2-1 – Status updates for New Capital Improvement Projects to be Included in LTCPU

Project	Status	Update / Reference
Asset and Capacity Management Program		
Geographic Information System	Ongoing	Refer to Section II.A.1 Implement a Comprehensive Geographic Information System (GIS) of the City sewer system on page 1
Sewer Assessment Program	Ongoing	Refer to Section II.A.2 Implement a Comprehensive Sewer Assessment Program (SAP) on page 1
Monitoring and Modeling Program	Ongoing	Refer to II.B.1 Continue to Institutionalize a Comprehensive Monitoring and Modeling Program on page 2
Inflow/Infiltration (I/I) Controls		
Tide Inflow	Completed in 1999	PWD continues to inspect and maintain all tide gates to ensure their correct performance. Refer to Section 2.1.2 Corrective Actions – Tide Inflow on page 28 of the 2001 CSO Annual Status Report
Sewer Assessment Program		Refer to Section II.A.2 Implement a Comprehensive Sewer Assessment Program (SAP) on page 1 of this report
Infrastructure Assessments	Completed in 2008; PWD continues to monitor and inspect for problem areas	Refer to Section III.B.2.2 Infrastructure Assessments on page 82 of the CSO-Stormwater FY08 Annual Report
Interceptor Relining	• Cobbs Creek Interceptor (CC) – Ongoing (~50% Complete) • Tacony Creek Interceptor (TC) – Ongoing (~50% Complete)	• CC – Phase 2 – In Contract Management ~ 5,100 ft. • CC – Phase 4 – In Construction (90% Complete) ~ 8,350 ft. • TC – Phase 3 – Design 30% ~ 6,550 ft. • TC – Phase 4 – Design 90% ~ 5,825 ft. • TC – Phase 4 – Design 90% ~ 6,400 ft.
PC-30 Parallel Relief Sewer	COA stipulations completed on 12/27/11. Operating as designed as of July 2013. Floats installed in FY19.	During FY22, there were 2 overflow events at manhole PC-0030. Both due to intense wet weather events which were Tropical Storm Ida and the 1000-year return interval storm. The overflow level is at 166 in. with two float switches acting as high level and overflow alarms.
Sewer Separation		
	Sewer separation was studied and modeled as one of the options in the LTCPU and deemed cost prohibitive. No sewer separation projects have been identified or implemented during the reporting period.	
New Storage Facilities		
	PWD is continuing to investigate opportunities to construct off-line CSO storage facilities to maximize existing sewer treatment capacity and increase the volume of CSO captured and treated. No new storage facility projects have been implemented during the reporting period.	

III.C Watershed-Based Management - Continue to Apply the Watershed Management Planning Process and Produce and Update the Watershed Implementation Plans

Watershed Alliance of Southeastern Pennsylvania

In 2013, PWD and its designated watershed partnership facilitator, the Pennsylvania Environmental Council (PEC), initiated the Watershed Alliance of Southeastern PA to unite the watershed partnerships in the Philadelphia area. The Alliance members became an integral component of the Upstream Suburban Philadelphia Cluster, part of the Delaware River Watershed Initiative (DRWI), created in 2014. Since 2014, PEC has facilitated DRWI Upstream Suburban Philadelphia partners including watershed groups and academic institutions. This partnership has implemented over 30 stormwater management and watershed restoration larger capital projects and over 100 smaller homeowner stormwater management projects. PEC and partners also conduct education and outreach programs that promote homeowner and large landowner stormwater management best practices. The partnership also conducts extensive monitoring of project impacts and general water quality conditions, including citizen science volunteers who monitor stream health. The overall effort seeks to improve water quality and manage stormwater where it falls, to benefit Philadelphia area watershed residents both inside and upstream of the City. In FY22, PEC continued its support of the implementation of the Upstream Philadelphia Cluster.

Implementation Planning - Development of Target Approach for Meeting Goals and Objectives

The culmination of the watershed management planning process often results in an Integrated Watershed Management Plan (IWMP), or a watershed-specific planning document. The process for developing watershed planning documents has evolved and depends on the interests of the partnerships. Table III.C.1-2 contains the status of the various plans in each of Philadelphia's watersheds. Information on the each of the watersheds and the completed plans can be found at www.phillywatersheds.org/your_watershed. Many of the recommended management options in the TTF and Cobbs Creek IWMPs have been institutionalized a city-wide basis and continue to be implemented.

The watersheds in the MS4 section of the city have undergone a slightly different process. In these watersheds (Pennypack, Poquessing, and Wissahickon), the stakeholder goals and objectives were established through the development of Rivers Conservation Plans and Act 167 Plans. PWD has decided to work with the watershed partners through these existing watershed-based planning efforts. Details on the Act 167 Plans can be found in **Section III.C.3.7 Basin-Specific Stormwater Management Plans (ACT 167)** on page 48. The Act 167 process has met PWD's goal to have watershed-wide commitment to the watershed planning process and allows the process to be partner-driven and focus on implementation.

Table III.C.1-2 – Planning by Watershed

Watershed	Preliminary Reconnaissance	Watershed Monitoring Program	River Conservation Plan	Watershed Management Plan	Implementation Commitment Status
Delaware River (tidal, non-tidal)	Monitoring Only		Completed in 2011	PWD continues to work with watershed partners on implementing specific projects.	Philadelphia commitment documented in the LTCPU and its supplements.
Cobbs-Darby Creeks	2003	2003	Darby RCP completed in 2005 by Darby Creek Valley Association	Completed 2004	Philadelphia commitment documented in the LTCPU and its supplements.
Tacony-Frankford Creek	2000/2001	2004	Completed in 2004	Completed 2005	Philadelphia commitment documented in the LTCPU and its supplements.
Pennypack Creek	2002	2007-2008	Completed in 2005	Act 167 Stormwater Management Plan approved in July 2013	Philadelphia is implementing the Act 167 Plan through the Philadelphia Stormwater Management Regulations.
Schuylkill River (tidal, non-tidal)	Monitoring Only		Completed in 2001 by the Academy of Natural Sciences, Natural Lands Trust, and the Conservation Fund	PWD continues to work with watershed partners on implementing specific projects.	Documented in the LTCPU and its supplements.
Poquessing Creek	2001	2008-2009	Completed in 2007	Act 167 Stormwater Management Plan approved August 28, 2013.	Philadelphia is implementing the Act 167 Plan through the Philadelphia Stormwater Management Regulations.
Wissahickon Creek	2001	2005-2006	Completed in 2000 by FPC	Act 167 Stormwater Management Plan approved on July 10, 2015	A Wissahickon TMDL Implementation Plan was submitted in 2012. Implementation plan depends on watershed partnership support for a watershed-wide initiative.

III.C.1 LAND: Wet-Weather Source Control

Watershed management fosters the coordinated implementation of programs to control sources of pollution, reduce polluted runoff, and promote managed growth in the city and surrounding areas, while protecting the region's drinking water supplies, fishing and other recreational activities, and preserving sensitive natural resources such as parks and streams.

PWD is committed to a balanced "land-water-infrastructure" approach to achieve its watershed management and CSO control goals. Where appropriate, this method includes infrastructure-based approaches, but focuses on implementation of a range of land-based stormwater management techniques and physical reconstruction of aquatic habitats where appropriate. The ultimate goal of PWD's approach is to regain the resources in and around streams that have been lost due to urbanization, both within the City of Philadelphia and in the surrounding counties, while achieving regulatory compliance objectives in a cost-effective manner. Central to all of these planning programs is a commitment to greening, sustainability, open space, waterfront revitalization, outdoor recreation, and quality of life.

The wet-weather source controls have been formalized in the LTCPU and its supplements, including the Consent Order and Agreement signed on June 1, 2011, which formally approved the Green City, Clean Waters program. Detailed information on the land-based wet-weather source controls can be found in **Appendix A – Green City, Clean Waters FY22 Annual Report**.

III.C.1.1 Ordinance and Regulations Modifications - Continue to review and revise stormwater management regulations for development and redevelopment

PWD's Stormwater Management Regulations became effective in Philadelphia on January 1, 2006, which provided PWD with an opportunity to ensure development/redevelopment that protects our water resources, reduces neighborhood flooding, and improves the quality of life in our communities. The Stormwater Management Regulations are triggered when a project disturbs 15,000 or more square feet of earth. Effective July 1, 2015, the Stormwater Regulations were updated to improve and strengthen PWD's stormwater programs. For more information on PWD's Regulations, please see the MS4 Annual Report **Section F.5.b – Post-Construction Stormwater Management in New Development and Redevelopment** on page 27.

III.C.1.2 Guidance on Stormwater Management Regulations Implementation

PWD staff in charge of Stormwater Regulation implementation are available to the development community to discuss both general questions as well as technical details regarding specific projects. Guidance is provided by PWD staff as it relates to regulatory applicability as well as stormwater management implementation and approach. For improved accessibility, PWD staff have utilized virtual meetings that have allowed for the department to be more available on short-notice to applicants. PWD staff continue to be available for pre-application meetings and project discussions on demand as needed. To request a meeting with PWD staff, Applicants are directed to use the online pre-application meeting request form: https://www.pwdplanreview.org/apply/application/pre_app_meeting.

III.C.1.3 Implementation of Stormwater BMPs and LID - Continue to implement best management and LID demonstration

PWD continues to implement stormwater BMPs and LID, now referred to as Green Stormwater Infrastructure (GSI) through the Green City, Clean Waters program. Please refer **to Appendix A – Green City, Clean Waters FY22 Annual Report** for a detailed description on the City's implementation of GSI during FY22.

III.C.1.4 Catch Basin Control Program - Continue to maintain the trapped inlets

PWD continues to maintain all City-owned inlets and catch basins to ensure they are clear and operating correctly. For a full description of the activities conducted by inlet cleaning programs during FY22, please refer to **Section II.F.1 Control the Discharge of Solids and Floatables by Cleaning Inlets and Catch Basins** on page 10.

III.C.1.5 Impervious Cover Disconnection - Evaluate the feasibility of separating the stormwater runoff from large impervious land tracts for management and direct discharge

PWD is working to separate stormwater runoff from large impervious tracts of land using incentives and regulatory-based approaches. Projects that apply for PWD's Stormwater Incentives are evaluated for disconnection potential and encouraged to construct connections to available separate storm sewer or private stormwater outfalls where feasible.

III.C.1.6 Reforestation - Work to implement reforestation demonstration projects to provide additional tree canopy

Green Stormwater Infrastructure Projects

Community greening and tree planting is a key component of green stormwater infrastructure and the Green City, Clean Waters plan. PWD has been planting trees as part of the GSI projects. Please refer to **Appendix A – Green City, Clean Waters FY22 Annual Report** for information on trees planted as part of GSI projects implemented in the city.

Street Tree Planting

As part of supporting the City's GreenWorks goals, PWD has partnered with PPR to conduct street tree plantings. PPR contracted trees to be planted in the right-of-way in front of properties and on public lands. During FY22, 569 street trees were planted through this contract.

TreePhilly Yard Tree Program

TreePhilly is a community forestry program-led by PPR, in partnership with ~~the~~ Fairmount Park Conservancy. TreePhilly directly engages all Philadelphians in improving their communities by planting and maintaining trees. Through TreePhilly's Yard Tree Giveaway program, Philadelphia residents can sign up for free yard trees for their private property (front, back, and side yards). In FY22 the Yard Tree Giveaway program distributed approximately 1,600 trees for residents to plant on their private property and planted 100 trees in partnership with community groups. This included improvements to accessibility of the programming such as door-to-door delivery of trees.

Pennsylvania Horticultural Society's Tree Plantings

PWD is an active partner and supporter of TreeVitalize and PHS's other tree planting programs. TreeVitalize was developed by the Pennsylvania Department of Conservation and Natural Resources to increase the tree canopy in the five-county Philadelphia area. TreeVitalize partners with numerous community Tree Tenders groups throughout this area in order to plant trees in neighborhoods lacking sufficient tree canopy. During FY22, PHS tree planting events resulted in 2,916 trees planted in Philadelphia.

Table III.C.1.6 -1 Pennsylvania Horticultural Society's FY22 Tree Plantings in Philadelphia

# of Trees	Pennsylvania Horticultural Society's Tree Plantings
1,072	PHS Philadelphia TreeVitalize/Tree Tenders street and yard trees (Bethune Elementary School; street tree plantings in many low/mod income areas and over 40 neighborhoods, including Centennial Parkside, Fairhill, Germantown, Hunting Park, Kensington, Lower Moyamensing, Point Breeze, and Spring Garden).
1,708	TreeVitalize Watersheds riparian plantings (11 by John Bartram Association (Community Boathouse Watershed Revitalization), 125 by Audubon Mid-Atlantic (Whitby Meadow), 176 by TTF Watershed partnership (Friends Hospital), 248 by Fairmount Park Conservancy (Houston Ravine), 565 by Fairmount Park Conservancy (Tacony Creek Park and Olney Meadows), 150 by Schuylkill Center for Environmental Education (Meig's Run Riparian Afforestation), and 433 by Riverfront North Partnership (Pennypack on the Delaware)).
16	PHS Philadelphia Public Landscapes (Navy Yard, Manayunk Pop Up Garden, Azalea Garden).
20	PHS Philadelphia Urban Design (Geary Park).
100	PHS Philadelphia LandCare (vacant lots).
2,916	TOTAL TREES

III.C.2 Water Ecosystem Restoration and Aesthetics

III.C.2.1 Waterways Restoration Team - Continue the assignment of a dedicated clean-up team to remove cars, shopping carts, and other debris, from CSO receiving waters

During FY22, the Waterways Restoration Team has continued their program which includes removal of cars, shopping carts, and other debris from receiving waters. Please refer to **Section II.F.2 Continue to Fund and Operate the Waterways Restoration Team** on page 10 for information pertaining to the Waterways Restoration Team's activities during FY22.

III.C.2.2 Waterways Restoration Team - Evaluate the capabilities of this crew in performing minor stream bank and bed repair around outfall pipes and to remove debris at these outfalls

During FY22, the Waterways Restoration Team continued their program, which includes conducting minor stream bank and bed repairs around outfalls and removing debris around them. Please refer to **Section II.F.2 Continue to Fund and Operate the Waterways Restoration Team** on page 11 for information pertaining to the Waterways Restoration Team's activities during FY22.

III.C.2.3 Stream Habitat Restoration - Propose and implement demonstration projects to address habitat degradation by engineering the stream channels to modern day flows and directly reconstructing the aquatic habitat

PWD employs natural stream channel design (NSCD) and associated stormwater management BMPs as a means to improve the health of aquatic communities in receiving waters with degraded flow and habitat alterations due to stormwater runoff. PWD implements a targeted approach to stream restoration to optimize capital funds and ecological uplift. PWD's stream habitat restoration program integrates environmental stressor reduction and streamside sewer asset protection and/or relocation.

Project Name	Stream Length (ft)| Drainage Area (acres)	Description
Status: **Complete**		
Saylor Grove	150 acres	• First stormwater wetland constructed by PWD in the fall of 2005. • The one-acre wetland treats~70 million gallons of urban stormwater a year before it reaches the Monoshone Creek. • This project is now monitored regularly through a formal inspection protocol. Monitoring efforts at this site are now included in the Wissahickon TMDL monitoring efforts. • Site is scheduled for a maintenance dredging in the Fall 2020.
Cathedral Run Stormwater Wetland	90 acres	• Cathedral Run Wetland is a stormwater management facility that is about an acre in area and treats ~90 acres of drainage area. • The wetland removes sediment and nutrients from storm runoff while helping reduce the peak volume reaching Cathedral Run and Wissahickon Creek.
Marshall Road Stream Restoration	900 feet	• Goal was to stabilize an exposed section of the Cobbs Creek Interceptor. • Through funding from a Growing Greener Grant in 2003, PWD embarked on full scale stream restoration design to stabilize the 900 ft segment of the Creek. • Construction was completed in 2006. • PWD has maintained an active role in seasonal and annual monitoring of the restoration site and continually evaluates the long-term success of the project.
Whitaker Ave Stream Restoration	2200 feet	• 2,200 foot stretch of the Tacony Creek main stem that begins 500 feet downstream of the Whitaker Avenue bridge and ends about 800 feet upstream of the Fishers Lane bridge. • PWD, in partnership with the USACE – Philadelphia District, bid and constructed this project which was completed in November 2010. • PWD began its monitoring program at this site in spring 2011.
Indian Creek CSO Storage and Daylighting	2100 feet	• Located within the Cobbs Creek Watershed at the confluence of the East and West branches of Indian Creek in Morris Park, Philadelphia, Pennsylvania. • Included the construction of a new stream channel by removing approximately 700 ft. of the West Branch Indian Creek from a brick culvert. Also included bank stabilization of the existing creek and the associated forested riparian buffer around the new channel. The new stream channel reconnects the West Branch to the East Branch of Indian Creek. • The existing brick culvert was converted into temporary storage for Combined Sewer Overflow (CSO) during wet weather events reducing the total CSO discharges into the Cobbs Creek Watershed. Estimated removal of approximately 2 million gallons of combined sewage discharge to Indian Creek annually.

Project Name	Stream Length (ft)| Drainage Area (acres)	Description
Wises Mill Stream Restoration	1000 feet	• 1st/2nd order tributary to the Wissahickon Creek • Stream was fully assessed and determined to be a significant source of sediment to Wissahickon Creek through bank erosion and sediment transport processes. • The project is currently in the project monitoring phase.
Bells Mill Stream Restoration	5100 feet	• 2nd order tributary to the Wissahickon Creek • The tributary arises from an outfall near the intersection of Lykens Lane and Bells Mill Roads. It then travels through a wooded area parallel to Bells Mill Road for approximately 5,100 ft before reaching the confluence with the Wissahickon Creek. • Energy dissipating structures such as rock vanes and channel-spanning boulder step structures were installed.
Gorgas Run Stream Restoration	2100 feet	• Gorgas Run is a steep headwater tributary to the Wissahickon Creek with a drainage area of 499 acres. • High peak stormwater flows have severely degraded Gorgas Run • PWD used NSCD principles to restore the 1,800 feet of stream channel that encompasses Gorgas Run and another 300 feet of tributary to Gorgas Run. • Rehabilitation of the stream corridor included in-stream stabilization structures, repairs and protection for PWD and Fairmount Park infrastructure, stabilization of stormwater gullies below Henry Avenue and park trail enhancements.
Wissahickon Creek Ridge Ave 2nd Dam	200 feet	• Bank restoration around exposed manhole at the dam on Wissahickon Creek upstream of the Ridge Ave culvert. • The project restored approximately 200 feet of stream bank.
Pauls Run Stream Restoration	500 feet	• Approximately 350 feet of stream restoration along Pauls Run, tributary to Pennypack Creek to protect an exposed sanitary sewer and stabilize the stream channel.
Wises Mill Wetland	92 acres	• System of 3 stormwater wetlands with total surface area of approximately 2 acres. • Manages stormwater from a 92 acre drainage area. • PWD monitoring sediment accumulation and vegetation within the wetlands. • PWD has conducted site maintenance recently including construction of an armored channel between the wetlands to fix gully erosion, repairs to a berm that separates the wetland from the Wises Mill Run stream channel, and installation of a larger outlet inflow pipe for proper drainage of the wetlands.
Carpenters Woods	600 feet	• Project addressed significant gully erosion downstream of 3 outfalls. • Included construction of channel bed armoring, bank revetments, and vegetation to stabilize the channels and enhance the forest off Mount Pleasant Rd in northwest Philadelphia.
Cathedral Run Stream Restoration	300 feet	• The culvert below Forbidden Drive trail had become clogged with debris and the banks upstream of the structure had eroded and bed downgraded. • The project constructed bank and bed stabilization structures in the area just upstream of the culvert.
Rex Ave	300 feet	• Project included stabilization of a portion of the stream channel parallel to Rex Avenue.
Cresheim Creek St. Martins	450 feet	• Construction of 3 grade control structures (cross-vanes) and bank revetments on both sides of the stream channel below the pedestrian bridge off St. Martins Road.

Project Name	Stream Length (ft)| Drainage Area (acres)	Description
Hartwell Lane	300 feet	• Restoration of the stream channel upstream of a culvert structures that conveys PWD's Wissahickon High Level Interceptor. • Includes 3 cross vanes for grade control and bank revetments on both sides of Hartwell Run. • Bank revetments and scour protection downstream of the culvert. • Masonry repairs were made to the culvert structures.
Status: **In Construction**		
Cresheim Creek Interceptor and Outfall	200 feet	• Project goals include reconfiguration of the intercepting sewer crossing between the two culverts near Woodbrook Lane, replacement of a deteriorated outfall, and installation of bank stabilization and grade control features in the stream channel. • Design was finalized and project advanced to the construction phase during FY21. Construction is expected to be completed in FY23.
Millbourne Cobbs Creek Bank Stabilization	500 feet	• The project goals comprise protection of a 3'-6" brick sewer exposed near the channel downstream of Millbourne Dam and stabilization of two separate portions of the downstream left side of Cobbs Creek. • The design includes concrete encasement and boulder toe revetments to protect the existing brick sewer and the access roadway, replacement of an undersized and collapsed corrugated metal pipe with a larger RCP culvert, and removal of the compromised stormwater conduit to promote proper drainage beneath the sewer maintenance access road. • Construction is expected to be completed in FY23.
Status: **In Design**		
Cresheim Creek Outlet Tunnel	300 feet	• The end of the culvert tunnel has degraded and the stream banks and bed around the culvert have significantly eroded. The erosion has exposed a 36 inch water main that was previously in the bank next to the culvert. The water main passes through the culvert, creating blockage for water flow through the culvert. • The project will relocate the water main below the culvert, repair and/or rebuild storm and sanitary infrastructure, and stabilize stream banks downstream of the culvert exit.
Cardone Outfall Bank Stabilization at Rock Run	350 feet	• A stormwater outfall owned by the adjacent Cardone Factory and draining its parking lot has been collapsing into the stream due in part to its location directly across from the Rock Run regulator. • The regulator's flows have also resulted in about 70 LF of active bank erosion downstream of the outfall. • This project aims to stabilize the outfall structure, protect the eroded bank with a new boulder wall tying in to an existing wall, and enhance the stream channel upstream of the outfall using an engineered riffle with riprap bank protection.
Park Line Dr Interceptor - Gorgas Chute and Outfall	250 feet	• Project work is to occur across three sites. • Site 1 includes stabilization and structural repairs to the interceptor crossing and installation of a plunge pool and stream bank stabilization structures at the sewer crossing down the trail from the intersection of Park Line Dr and Hortter St. • Site 2 includes repairs to the concrete chute that conveys storm runoff flows to Gorgas Run from the outfall near Fountain St. • Site 3 includes the installation of new pipe from the collapsed outfall off of Henry Ave that has created a large gully crossing the Yellow Trail and a new outfall structure discharging under the trail into Gorgas Run.

Project Name	Stream Length (ft)| Drainage Area (acres)	Description
Neill Drive Stream Corridor Restoration	1600 feet	• The stream channel is deeply entrenched and eroding. There is a significant amount of exposed and vulnerable PWD infrastructure including sanitary sewers, a sanitary force main, a water main crossing, and damaged stormwater outfalls. • The project will protect the vital infrastructure and stabilize eroding banks.
Sandy Run Stream Restoration, Infrastructure Protection and Stormwater Wetland	500 feet	• The objective of the design will relocate a sewer crossing downstream of the Ryan Avenue Bridge and include related stream restoration elements such as floodplain reconnection.
Pennypack Corridor Improvement Project at Holme Ave	1500 feet	• Two sanitary sewer crossings are exposed in the mainstem of the Pennypack Creek between Holme Ave and Axe Factory Run. Increased widening and downcutting of the channel over time has destabilized the banks and stranded a manhole. • Project design consists of installing grade control measures to protect the assets in-place, removing the manhole, stabilizing banks to prevent further erosion and widening, and increasing floodplain connectivity along this reach to the maximum extents possible.
Mount Moriah Streambank and Cobbs Creek Interceptor Stabilization	500 feet	• Located along Cobbs Creek in the "3 bridges" area adjacent to Mt. Moriah Cemetery, about 350 ft of a 5'-0" brick interceptor and its manholes are exposed along the left bank in multiple areas of the reach. • Work will focus on protecting the sewer in-place using bank protection structures while also employing stream restoration principles to optimize the compromised flow pattern through the three bridges.
Benton Brook Stream Restoration	1200 feet	• The project will address streambank erosion and exposed infrastructure along Benton Brook in the Pennypack Creek Watershed.
Flat Rock Dam Flow Diversion	TBD	• Project goals include improving flow to the Manayunk Canal by effectively diverting more flow through the canal and remove the dam designation from the City owned portion of the dam. • Work associated with the project is focused on the headworks of the Manayunk Canal but will improve conditions along length of the canal. • Project to address structural integrity concerns and restore flow to the canal, while also providing water quality and aesthetic benefits, including higher dissolved oxygen and greater inhibition of algal blooms
Green Tree Run Outfall Stabilization	200 feet	• Objective: stabilize the stream channel around the 54 inch outfall just off Shawmont Ave at Minerva Rd. The gabion baskets have collapsed into the stream channel and the banks continue to erode. • The private property owner signed an easement agreement with Streets when the outfall was originally installed and has complained about the discharge from the outfall causing the erosion of the stream channel.
Roosevelt Blvd Dam Removal	1000 feet	• This project will lower the existing dam by 4 feet and stabilize the walls protecting the trail by installing bank protection measures. • Periodic flooding and erosion of the adjacent Pennypack Trail surface will be reduced through the lowering of the dam crest elevation. • A culvert conveying a tributary will be repaired as it has collapsed and is causing further damage on the trail. • A rock ramp will be constructed to promote fish passage.

Project Name	Stream Length (ft)| Drainage Area (acres)	Description
Tacony Creek - Reach 6 (Juniata Dam Removal)	1000 feet	• Project will improve water quality and aquatic habitat and provide fish passage. • The Juniata dam is on the Tacony Creek, approximately 700-feet upstream from the Castor Ave. bridge . The dam is in good condition however, much of the upstream impoundment was filled by sediment. • The combination of the reduced flow velocity and nutrient-rich sediment supply are suspected of reducing the available dissolved oxygen in the water column. • The height of the dam also presents a complete barrier to fish passage during the majority of flow conditions.
Status: **On Hold**		
Tacony Creek - Reaches 4-5	2500 feet	• This project entails the restoration of Tacony Creek Reaches 4 and 5 as identified by the Tacony Creek Restoration and Ecosystem Enhancement Program, 4/28/2010. • Objective: restore ~2500 feet of stream channel, enhancement of floodplain wetlands, improvement of the riparian buffer, the completion of a paved Fairmount Park trail connection from Tabor Road to I and Ramona Sts, and implementation of green infrastructure at five trail entrances. • This project will connect with the existing Whitaker Avenue stream rehabilitation project.
Woodland Dam Removal	TBD	• Will investigate, select, design and construct the best alternative to reestablish fish passage along Cobbs Creek. • After selection of a recommend type of fish passage design, concurred by both the Corps and PWD, the project will progress to plans and specifications, and construction contingent on the availability of funds.

III.C.2.4 Wetland Enhancement and Construction

Three stormwater treatment wetlands facilities were designed and implemented to remove pollutants and mitigate peak flows, while providing aesthetic and ecological benefits. These projects are:

- Saylor's Grove (Construction Completed in 2006)
- Wise's Mill (Construction Completed in 2012)
- Cathedral Run (Construction Completed in 2012)

In total, these three facilities receive and treat stormwater from more than 300 acres of the MS4 service area. Because these projects were completed as part of PWD's Wissahickon Sediment TMDL Implementation Plan, a more detailed description of the Department's efforts has been provided in **Section D - Wissahickon Sediment TMDL Monitoring plan implementation** of the Stormwater Management Program Report. PWD is working to maintain these project sites.

Watershed Mitigation Registry

PWD has continued investigating projects and partnerships that could potentially be suited for the state's mitigation banking program.

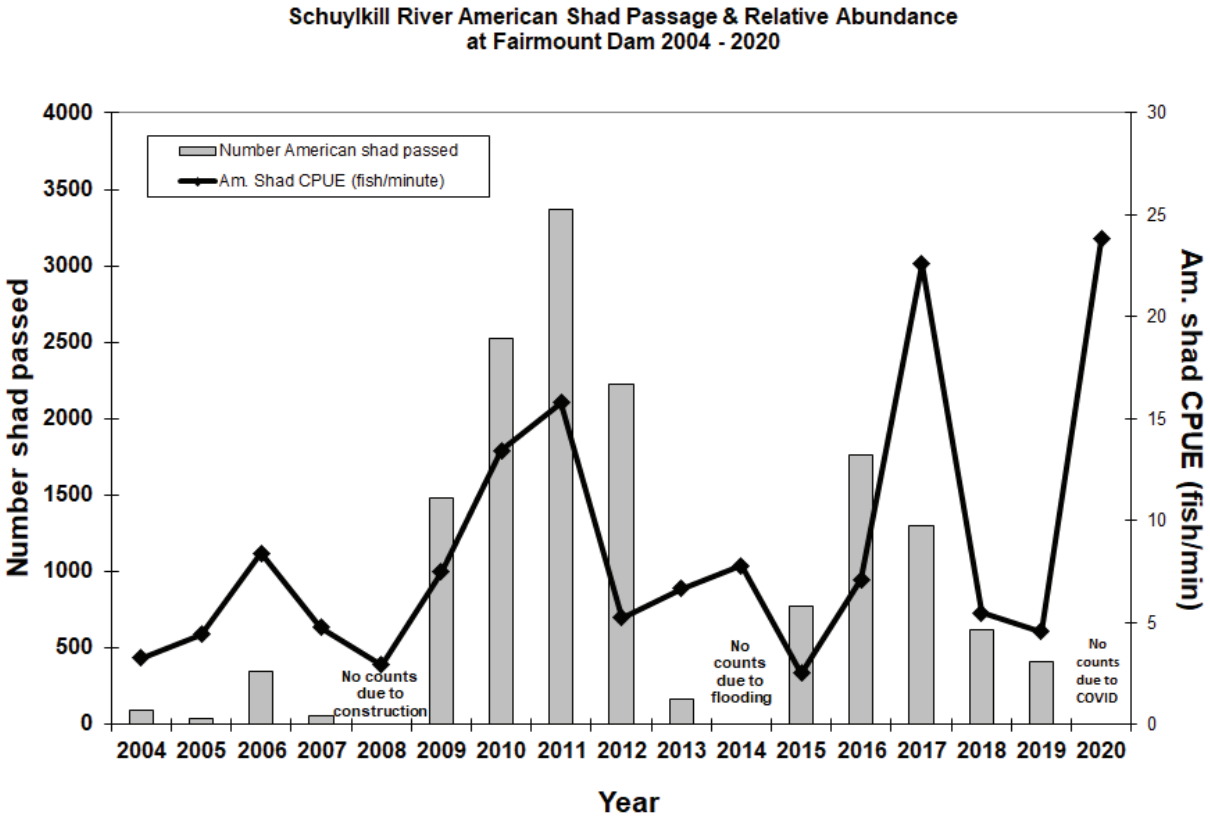
III.C.2.5 Fish Passage Projects

Schuylkill River: Fairmount Fishway

The Fairmount Dam Fishway located on the western side of the Fairmount Dam, was completed in 1979. In 2009, through a joint cooperative agreement with the USACE, the City of Philadelphia upgraded many features of the fishway to improve hydraulics and overall fish passage efficiency.

Adult American Shad relative abundance (number of shad per hour of electrofishing) in the Schuylkill River in 2020 ranked 1st overall in the time-series (2002-2020). The 2020 CPUE at Fairmount Dam (1,433.1 shad/hour) was more than double the time series average (2002 – 2020). It should be noted that boat electrofishing survey effort in 2020 (4.81 hours) was slightly less than time series average (5.45 hours) due to COVID-19 pandemic. The 2020 American Shad passage at Fairmount Fishway has not been evaluated due to staffing restrictions related to COVID-19. The Fairmount Fishway remained fully open and operational during the 2020 season, and video monitoring recordings were captured and archived. Video is available from the entire passage season and passage may be enumerated at a later date. Hatchery contribution for the Schuylkill River adult shad was 75% in 2020; the third lowest hatchery contribution observed in the time series and below the 13-year average of 88%.

Figure III.C.2.5 -1 Catch-Per-Unit-Effort and Fish Passage of American Shad



Pennypack Creek: Rock Ramp Fishway at Sanitary Sewer Crossing

A rock ramp fishway was constructed in Pennypack Creek in 2007 in an attempt to alleviate the excessive drop in water surface elevation caused by the sanitary sewer crossing of the creek which prevented fish from moving upstream of this site. PWD electrofishing surveys of the tidal Pennypack Creek have documented a limited spawning population of anadromous Alewife and Blueback Herring several miles downstream of the rock ramp fishway. Both juvenile and adult Striped Bass have been collected in the tidal portion, but not above the rock ramp. No adult Hickory Shad have been collected above or below the rock ramp; no larvae were stocked 2016 to 2020 by PA Fish and Boat Commission, who had been stocking larvae for several years in an attempt to establish a self-sustaining wild population, which has yet to have been realized.

III.C.2.6 Riparian Buffer Creation and Enhancement

Environment, Stewardship & Education Division

PWD continues to support Philadelphia Parks and Recreation, which undertakes a broad range of environmental restoration activities throughout the park system. Restoration activities have been ongoing since 2008. These efforts have been discussed in previous years; for more details and a full list of these activities, please refer to Section III.C.2.6 Environment, Stewardship & Education Division on page 121 of the CSO-Stormwater FY12 Annual Report.

Riparian Buffer component of Stream Restoration Projects

Riparian buffer enhancement will be evaluated in all stream restorations that are completed. Typically, riparian buffer enhancement activity includes invasive species management, live-stake planting, native tree and shrub planting, and native seed mix application. Invasive species management usually begins one to two years prior to construction. Once the construction of the stream restoration project is complete, a landscaping plan is implemented which includes all the applications mentioned above. Please refer to **Section III.C.2.3 Stream Habitat Restoration** on page 39 and **Section III.C.2.4 Wetland Enhancement and Construction** on page 45 in this report for more information on these topics.

PWD and PP&R Stream Projects Coordination

The PWD and PP&R Stream Projects Coordination Meeting Series (formerly the Natural Lands Team), was initiated in 2011, is a group comprised of members from PWD's Ecological Restoration Unit, Waterways Restoration Team, Public Affairs, PWD Design Branch and staff from Philadelphia's Department of Parks and Recreation. Bi-monthly meetings are held to coordinate a wide range of projects that affect the city's stream corridors and natural areas. Through centralizing the myriad of ongoing and upcoming projects, this group works to improve efficiency and communication. Projects include but are not limited to stream restoration, wetland creation, stormwater management, infrastructure protection and invasive species management. During FY22, PWD and PP&R Stream Projects group convened to discuss upcoming projects and potential issues that could be addressed by the team members.

III.C.3 Other Watershed Projects

III.C.3.1 River Conservation Plan - Continue to work in partnership with local partners to complete and implement River Conservation Plans (RCPs)

All River Conservation Plans (RCPs) are available for viewing at: https://water.phila.gov/reporting/watershed-plans-reports/ under each respective watershed's key documents.

Table III.C.3-1: River Conservation Plan References

River Conservation Plans	Complete Date	Previous Reference
Darby Creek	2005	Page 121 of the CSO-Stormwater FY 2008 Annual Report
Tacony-Frankford	2004	Page 74 of the FY 2005 Stormwater Annual Report
Pennypack	2005	Page 122 of the CSO-Stormwater FY 2008 Annual Report
Poquessing	2007	Page 155 of the CSO-Stormwater FY 2010 Report
Delaware Direct	2011	Page 151 of the CSO-Stormwater FY 2011 Annual Report

III.C.3.2 Watershed Information Center - Create a website to serve as a Watershed Information and Technology Center

The City maintains several websites that provide information on our watersheds and activities within them, please refer to **Section II.G.2 Continue to Maintain Watershed Management and Source Water Protection Partnership Websites** on page 17 and **Section II.H.2 Expand the Internet-Based Notification System (River cast) to the Tidal Section of the Lower Schuylkill River** on page 28 for additional information on the websites.

III.C.3.3 Integrated Water Use Status Networks - Pilot a communication and water quality monitoring network that supports the identification and analysis of water quality events

PWD has two communication and water quality monitoring networks. RiverCast supports the identification and analysis of water quality events to support recreational water use status decisions (swimming, triathlons, rowing, etc.) and makes this information available in real time to the public. EWS is used to monitor water quality and notify water utilities about such events as hazardous substance spills or sudden changes in water quality.

Please refer to **Section II.G.2 Continue to Maintain Watershed Management and Source Water Protection Partnership Websites** on page 17 for details about these communication and water quality monitoring systems.

III.C.3.4 Integrated Water Use Status Networks - Evaluate the technical and fiscal needs to expand the network into additional receiving waters where recreational uses are taking place.

Please refer to **Section II.H.2 Expand the Internet-based Notification System (Rivercast) to the Tidal Section of the Lower Schuylkill River** on page 28 for information pertaining to this topic.

III.C.3.5 Interpretive Signage - Continue to implement interpretive signage

Green Stormwater Infrastructure and Restoration Locations Signage

Information on the Green City, Clean Waters Signage Program can be found within **Appendix A- Green City, Clean Waters FY22 Annual Report**.

III.C.3.6 Interpretive Centers - Continue to support existing educational interpretive centers to educate citizens about their community and the water environment

PWD supports several existing educational centers including FWW and many public outreach efforts conducted by partners. Please refer to **Section II.G.3 Continue to Provide Annual Information to City Residents about Programs via Traditional PWD Publications** on page 24 and **Section II.G.4 Continue to Support the Fairmount Water Works** on page 26 for more information on activities done in FY22 by the FWW and partner sponsored events.

III.C.3.7 Basin-Specific Stormwater Management Plans (Act 167) - Continue to support the State Act 167 Storm water Management Planning process and integrate the results of these efforts into the watershed management plans and implementation plans

As of July 10, 2015, all Act 167 plans have been approved. Please refer to **Table III.C.1-2 Planning by Watershed** on page 36 for more information.

III.C.3.8 Sewage Facility Planning - Continue to review sewage facility planning modules and downstream sewage conveyance and treatment facilities to ensure that adequate capacity exists within these systems to accommodate flow

During FY21, PWD reviewed 1,875 "Sewage Facilities Planning Module Application Mailers" for projects requiring building permits within Philadelphia County. During the same period, PWD issued 53 sanitary sewer capacity certifications for projects in tributary municipalities.

III.C.4 Monitoring and Assessment

III.C.4.1 NPDES – Quarterly Special Discharge Monitoring Report

PWD is committed to submitting the Quarterly Special Discharge Monitoring Report (DMR) documenting the Department's CSO discharges during the specified time periods. This report is due 45 days after the end of each quarter, and is submitted by February 15, May 15, August 15, and November 15 of each year. During FY22, four DMRs were submitted within the 45-day timeframe. These reports are also referred to as Quarterly Combined Sewer Overflow Status Reports.

III.C.4.2 NPDES - Annual CSO Status Report

Monitoring and characterization of CSO impacts from a combined wastewater collection and treatment system are necessary to document existing conditions and to identify water quality benefits achievable by CSO mitigation measures. The tables included in **Appendix D** and other information provided within this annual report represent the average annual CSO overflow statistics for period July 1, 2021 – June 30, 2022 as required in the NPDES Permit. Please refer to **Table 1 in Appendix D – NPDES – FY22 CSO Status Report** for a listing of all CSO permitted outfalls. The tables have been organized to present overflows by the specific receiving water into which the CSOs from a given interceptor system discharge. In order to be consistent, the column headings are presented in the same format found in the System Hydraulic Characterization (SHC) and NMC Documentation.

III.C.4.3 Rotating Basin Approach to Watershed Monitoring - Continue to implement a rotating basin approach to watershed monitoring in CSO receiving waters in order to characterize the impact of CSO discharges and other pollutant/pollution sources and the efficacy of CSO controls and watershed restoration practices.

The Rotating Basin Approach has been replaced with a "Comprehensive Watershed Monitoring Program," a monitoring strategy developed by PWD to comply with both the City's stormwater and CSO permit requirements and to assist with the Source Water Protection Program's objectives. Please refer to Appendix 5 of the COA report for more details.

Please refer MS4 Annual Report **Section F.2.Step 1.b – Preliminary physical, chemical and biological quality assessment** on page 8 for information about Comprehensive Watershed Monitoring Program.

Stormwater Management Program
Annual Report

National Pollutant Discharge Elimination System (NPDES) Permit
No. PA 0054712
Reporting Period July 1, 2021 to June 30, 2022

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Section F

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Part I Permit Conditions

Section A Applicability and Limitation on Coverage

The City will comply with the permit language on what are authorized and unauthorized stormwater discharges.

Section B Legal Authority

In accordance with the National Pollutant Discharge Elimination System (NPDES) regulations contained in 40 C.F.R. Sections 122.26(d)(1)(ii) and (d)(2)(i), the City maintains adequate legal authority to enforce the Stormwater Management Program through the Philadelphia Code (Code) and the Water Department (PWD) Regulations.

Code Section 13-603 regulates discharges into the storm sewer system and includes penalties for violations. Code Section 13-603(4)(a) grants PWD and the Department of Licenses and Inspections (L&I) the authority to require compliance, including issuing regulations, and investigating, inspecting, and monitoring all premises. Under the City's zoning provisions in Code Sections 14-301(10) and 14-704(3), PWD has the authority to regulate stormwater management on a City-wide basis. Code Section 14-306(1) grants PWD and L&I specific enforcement authority for zoning violations. The Code can be accessed at https://codelibrary.amlegal.com/codes/philadelphia/latest/overview.

PWD Regulations further provide PWD legal authority to enforce the Stormwater Management Program. Section 500 prohibits cross connected sewer laterals and Chapter 6 implements the authority to regulate stormwater management for new and redevelopment in the City. PWD Regulations can be accessed at https://www.phila.gov/water/wu/ratesregulationsresp/Pages/Regulations.aspx.

This Annual Report is submitted to the Pennsylvania Department of Environmental Protection (PADEP) and the US EPA, in accordance with requirements of the City of Philadelphia's NPDES Stormwater Management Permit No. PA 0054712. The report documents the Fiscal Year 2022 (FY22) progress completed in order to comply with the requirements during the reporting period from July 1, 2021 to June 30, 2022.

Section D Sediment Total Maximum Daily Load (TMDL) for Wissahickon Creek

Wissahickon Sediment TMDL Monitoring Plan Implementation

PWD submitted a Wissahickon Siltation TMDL Implementation Plan Update in March 2018. This document includes updates on the 2012 Siltation TMDL Implementation Plan's four components: stream restoration, stormwater wetlands, inlet catch basin cleaning, City of Philadelphia Stormwater Regulations and the estimated sediment reduction associated with these activities. A more detailed Wissahickon Siltation TMDL Monitoring Report (with appendices) was also submitted in March 2018. The Monitoring report includes results from cross-sectional survey analysis of stream restoration projects, photo monitoring, in-stream evaluations of stream restoration structures and Hydraulic and Hydrologic modeling of stormwater wetlands.

Section E Pollutant Minimization Plan for Polychlorinated Biphenyls in the City's MS4

During the fifteenth year of the PCB PMP, the following tasks were accomplished:

- 112 of the 337 remaining sites listed by EPA or other agencies as housing PCB containing devices were inspected.
- Wet-weather PCB sampling and analysis of the three WPCPs effluent was performed as required by the WPCP NPDES permits.
- PWD continued monitoring outlying township connections using EPA Method 680.
- PWD continued monitoring of groundwater discharged from new construction and remediation sites to ensure compliance with PWD's published PCB limit of "non-detection by EPA Method 608."
- PWD issued 19 groundwater discharge permits in calendar year 2021. Every permit was compliant with PWD's regulatory PCB limit of "non-detectable by EPA Method 608".
- PWD wet and dry weather WPCP effluent data have been entered into the DRBC PCB database.
- Overall, results of the 2021 sampling, show substantial reductions of 52-76% at SEWPCP and 55-67% at SWWPCP from the baseline PCB loading levels.
- PCB loadings at NEWPCP from March 2021 shows a reduction of 16% from the baseline loading, however the results from the October 2021 sample indicate high hexa and hepta homologs.

Additionally, the following initiatives were undertaken:

- PWD's PCB database, developed in 2017, is now being utilized to track and report the 2021 inspections.
- Each inspection location has been given a unique ID and geocoded in PWD's GIS database. Maps of PCB sites inspected in 2021 were created to display inspections by water pollution control plant drainage area.

Section F Stormwater Management

F.1. Source Identification

A description of PWD's MS4 Infrastructure, including stormwater outfalls, lengths of sanitary sewer, and lengths of stormwater sewer within Philadelphia are shown in Table F.1-1. The 205 "Non-PWD Owned" outfalls listed in the table are owned by other City agencies, private entities, or individuals. The PWD-owned stormwater outfall locations and MS4 areas are shown in Figure F.1-1.

Table F.1-1: Description of MS4 Infrastructure

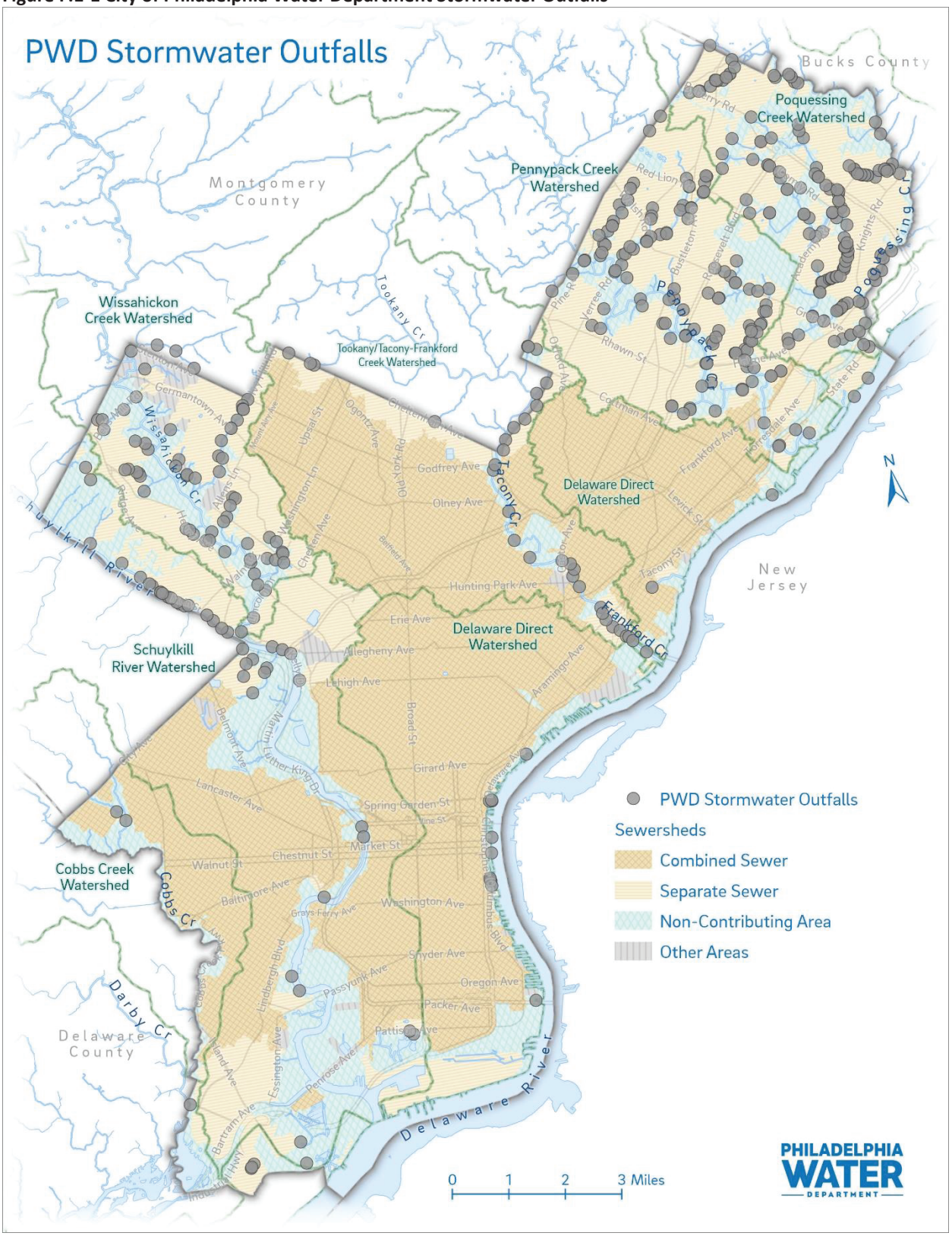
Watershed	Drainage Area (Square Miles)	Miles of Pipe			MS4 Outfalls Count	
		Stormwater	Sanitary	Total MS4	PWD Owned	Non-PWD Owned
Darby-Cobbs	-	1.02	0.81	1.82	3	-
Delaware Direct	3.15	79.81	52.68	132.49	18	122
Pennypack	11.67	234.93	234.03	468.96	130	14
Poquessing	8.00	154.71	156.52	311.23	141	19
Schuylkill	8.48	153.43	156.82	310.26	45	47
Tacony	2.47	54.46	59.02	113.48	34	1
Wissahickon	5.79	95.18	104.86	200.03	63	2
Total	**39.56**	**773.53**	**764.74**	**1538.27**	**434**	**205**

GIS Data Layers have been submitted within an ESRI file geodatabase, **PWD_Annual_Report_GIS_Data_2022.gdb** which can be found in the **digital download link**. The GIS Data Feature class filenames within the geodatabase are provided in **Table F.1-2**.

Table F.1-2: GIS Data Feature Classes within Geodatabase named - PWD_Annual_Report_GIS_Data_2022.mdb

- All_PWD_Monitoring_FY22
- GSI_Monitored_Locations_FY22
- Public_GSI_Projects_Completed_FY22
- Public_GSI_Projects_Planned_FY22
- Pollution_Migration_Events_FY22
- Active_Construction_Sites_FY22
- Verified_Regulations_FY22
- Verified_Retrofits_FY22
- New_Project_Submissions_FY22
- Technical_Approvals_FY22
- Hydrology_Centerline
- Hydrology_Polygon
- Land_Use_PCPC_2018Land_Use_PCPC_2022
- PCB_Locations_Known_Historical
- NPDES_Permitted_Dischargers_FY22
- Detention_Basins_Philadelphia
- Impervious_Surfaces_Planimetric_2004
- Major_Watersheds_Full_Extent
- Major_Watersheds_Philadelphia_Clip
- Sewersheds_FY22
- Census_Blocks_2020_Philadelphia
- Stormwater_Outfalls
- Stormwater_Outfalls_with_DrainageArea_Summary
- Stormwatersheds_Pennypack
- Stormwatersheds_Poquessing
- Stormwatersheds_Wissahickon
- Point_Sources_Wissahickon

Figure F.1-1 City of Philadelphia Water Department Stormwater Outfalls



Descriptions of the GIS layers referenced in **Table F.1-2** are provided below:

All_PWD_Monitoring_FY22
This layer presents the locations of PWD's chemical, fish, macroinvertebrate, and algae sampling sites. The contents of this feature class are discussed in **Section F.2.Step.1.b** on page 8.

GSI_Monitored_Locations_FY22
This layer presents the locations of existing green stormwater infrastructure projects actively monitored by PWD in Philadelphia County.

Public_GSI_Projects_Completed_FY22
This layer presents the locations of completed publicly implemented green stormwater infrastructure projects sorted by their current status within Philadelphia County.

Public_GSI_Projects_Planned_FY22
This layer presents the locations of planned publicly implemented green stormwater infrastructure projects sorted by their status within Philadelphia County.

Pollution_Migration_Events_FY22
This layer presents the locations of spills documented by PWD Industrial Waste Unit within Philadelphia in FY22. The contents of this layer are discussed in **Section F.7.a – Pollutant Migration/Infiltration to the MS4 System** on page 31.

Active_Construction_Sites_FY22
This layer presents the locations of active construction private development projects within Philadelphia in FY22. The contents of this layer are discussed in **Section F.5 – Monitor and Control Stormwater from Construction Activities** on page 22.

Verified_Regulations_FY22
This layer presents the locations of constructed and verified private development projects subjected to stormwater regulations within Philadelphia in FY22. The contents of this layer are discussed in **Section F.5 – Monitor and Control Stormwater from Construction Activities** on page 22.

Verified_Retrofits_FY22
This layer presents the locations of constructed and verified private retrofit development projects subjected to stormwater regulations within Philadelphia in FY22. The contents of this layer are discussed in **Section F.5 – Monitor and Control Stormwater from Construction Activities** on page 22.

New_Project_Submissions_FY22
This layer presents the locations of new project submissions for conceptual stormwater plan review in FY22. The contents of this layer are discussed in **Section F.5.b – Post-Construction Stormwater Management in New Development and Redevelopment** on page 27.

Technical_Approvals_FY22
This layer presents the locations of projects issued technical approvals by PWD in FY22. The contents of this layer are discussed in **Section F.5.b – Post-Construction Stormwater Management in New Development and Redevelopment** on page 27.

Hydrology_Centerline
This layer presents the surrounding watershed hydrology in a polyline based feature class.

Hydrology_Polygon
This layer presents the surrounding watershed hydrology in a polygon based feature class.

Land_Use_PCPC_2022
This layer presents Philadelphia land use as ascribed to individual parcel boundaries or units of land. Land use is the type of activity occurring on the land such as residential, commercial or industrial. Each unit of land is assigned to one of nine major classifications of land use (2-digit codes) and where possible more narrowly defined into one of 70 sub-classifications (3-digit codes).

PCB_Locations_Known_Historical
This layer presents the location of all known and historical PCB locations within Philadelphia. The contents of this layer are discussed in **Section E – Pollutant Minimalization Plan for Polychlorinated Biphenyls in the City's MS4** on page 2.

NPDES_Permitted_Dischargers_FY22
This layer presents the location within Philadelphia of all NPDES Industrial Stormwater permitted Discharger. The contents of this layer are discussed in **Section F.2.Step 1.c** on page 14 and a list of permitted facilities can be found in **Appendix J – NPDES Industrial Stormwater Permitted Sites – Philadelphia County.**

Detention_Basins_Philadelphia
This layer presents the location of all known stormwater detention basins within Philadelphia County.

Impervious_Surfaces_Planimetric_2004
This layer presents percent imperviousness and the amount of impervious area in Philadelphia County.

Major_Watersheds_Full_Extent
This layer presents the delineation of the Philadelphia County and surrounding counties' watershed boundaries including Darby-Cobbs, Delaware-Direct, Pennypack, Poquessing, Schuylkill, Tacony-Frankford, and Wissahickon watersheds.

Major_Watersheds_Philadelphia_Clip
This layer presents the delineation of the Philadelphia County's watershed boundaries including Darby-Cobbs, Delaware-Direct, Pennypack, Poquessing, Schuylkill, Tacony-Frankford, and Wissahickon watersheds.

Sewersheds_FY22
This layer presents the boundaries of the MS4, combined sewer, un-sewered, non-contributing, and stormwater only areas within Philadelphia County and the neighboring contributing areas.

Census_Blocks_2020_Philadelphia
This layer presents the results of the 2020 Census in Philadelphia County on a block level.

Stormwater_Outfalls
This layer presents locations of all permitted stormwater outfalls within Philadelphia County and the neighboring contributing areas.

Stormwater_Outfalls_with_DrainageArea_Summary
This layer presents locations of all permitted stormwater outfalls within Philadelphia County and the neighboring contributing areas. Drainage area analysis values are appended in the attribute table to display outfall metrics including total drainage area, total impervious drainage area, percent impervious, and runoff coefficient.

Stormwatersheds_Pennypack
This layer presents the stormwater drainage areas to receiving waterways and stormwater outfalls within the Pennypack Watershed.

Stormwatersheds_Poquessing
This layer presents the stormwater drainage areas to receiving waterways and stormwater outfalls within the Poquessing Watershed.

Stormwatersheds_Wissahickon
This layer presents the stormwater drainage areas to receiving waterways and stormwater outfalls within the Wissahickon Watershed.

Point_Sources_Wissahickon
This layer presents permitted Point source locations within the Wissahickon Watershed.

GIS Stormwater Data Conversion Geodatabase Layers
The City has previously submitted additional GIS data layers that will not be included this year. These layers include outfalls, manholes, inlets, and various pipe as listed in **TABLE F.1-3**. The reason for their removal is the City's policy to not release these data layers to the general public due to security concerns. PWD would make these layers available for viewing, should it be necessary.

Table F.1-3 GIS Data Feature Classes within Geodatabase named -StormwaterDataConversion.mdb

DataConv_GISAD_stBasin	DataConv_GISAD_stInletPipe
DataConv_GISAD_stBoring	DataConv_GISAD_stMeterChamber
DataConv_GISAD_stCasin	DataConv_GISAD_stOffsetAccess
DataConv_GISAD_stChamber	DataConv_GISAD_stOpenChannel
DataConv_GISAD_stCulvert	DataConv_GISAD_StormNetwork_Junctions
DataConv_GISAD_stDisconnectedInlet	DataConv_GISAD_stOutfall
DataConv_GISAD_stFitting	DataConv_GISAD_stPointFeature
DataConv_GISAD_stFlare	DataConv_GISAD_stPump
DataConv_GISAD_stForceMain	DataConv_GISAD_stRainGauges
DataConv_GISAD_stGravityMain	DataConv_GISAD_stStructure
DataConv_GISAD_stHostPipe	DataConv_GISAD_stTunnel
DataConv_GISAD_stManhole	DataConv_GISAD_stVentPipe
DataConv_GISAD_stManholeOther	DataConv_GISAD_stVirtualLink
DataConv_GISAD_stInlet	DataConv_GISAD_stVirtualNo

F.2. Discharge Management, Characterization, and Watershed-based Assessment and Management Program

Step 1. Preliminary Reconnaissance: Permit Issuance through end of Year 2

a. Land use and resource mapping

PWD has conducted extensive mapping of information relevant to stormwater management planning. Previously discussed in **Section F.1 – Source Identification** of this document on page 2, the GIS layers include MS4 outfalls and contributing drainage areas, land use, population, monitoring locations, and other relevant layers. The maps and supporting GIS layers are included in the **digital download link**.

b. Preliminary physical, chemical, and biological quality assessment

Comprehensive Watershed Monitoring Program

Comprehensive assessment of our waterways is integral to planning for the long-term health and sustainability of our water systems. By measuring all factors that contribute to supporting fishable, swimmable, and drinkable water uses, appropriate management strategies can be developed for each watershed land area that Philadelphia shares.

PWD has carried out extensive sampling and monitoring programs to characterize conditions in seven local watersheds**,** both within the county boundaries and outside counties/municipalities. From 1999 to 2022, PWD has implemented a comprehensive watershed assessment strategy, integrating biological, chemical and physical assessments to provide both quantitative and qualitative information regarding the aquatic integrity of the Philadelphia regional watersheds. This information was published in Comprehensive Characterization Reports (CCRs) and used to plan improvements to watersheds in the Southeast Region of Pennsylvania.

Monitoring Timeline Strategy

Prior to the creation of PWD's Comprehensive Watershed Monitoring Program, baseline assessments were conducted in all Philadelphia regional watersheds to assess the degree, location and type of impairments occurring within each system. Baseline assessments, encompassing benthic, fish, habitat and discrete water quality monitoring, were routinely completed on a watershed within one year. With the addition of continuous and wet-weather water quality monitoring, periphyton assessments, and specialized physical assessment programs (*e.g.*, FGM assessments), CCRs were typically accomplished on a two-year timeline.

PWD conducted benthic macroinvertebrate and physical habitat monitoring activities at 22 stream monitoring sites in spring 2021 **(Table F.2.Step 1.B-1).**

As described in PWD's *Comprehensive Watershed Monitoring Program: Proposed Strategy 2010-2015*, the scale of watershed stressors is so expansive and the BMP program is still in its early phase that full implementation is limited but will increase once the program is established. Therefore, PWD is focusing its monitoring efforts at maintaining a "sentinel" monitoring presence in each of the City's watersheds

rather than dedicating monitoring efforts to individual watersheds. This regional monitoring approach has been greatly enhanced through a partnership with USGS. Continuous water quality data are collected from 11 USGS gaging stations, and quarterly baseflow water samples are analyzed for microbial and nutrient parameters of concern. PWD also continues to assess performance of stormwater BMP projects as they are constructed.

Table F.2.Step 1.B-1 Overview of PWD Proposed Watershed Monitoring Activities 2010-2022

Watershed/Geographic Area	Activity	Period
PWD/USGS Gages	Continuous Water Quality Monitoring	2010-2022
PWD/USGS Gages	Quarterly Water Quality Grab Samples	2010-2022
Philadelphia Area Watersheds	Stormwater BMP Monitoring	2010-2022
Philadelphia Area Watersheds	Stream Restoration Project Monitoring	2010-2022
Cobbs Creek Watershed	Watershed-wide Comprehensive Assessment	2012-2013, 2021
Tookany-Tacony/Frankford Watershed	Watershed-wide Comprehensive Assessment	2013-2014, 2022
Wissahickon Creek Watershed	Tributary Assessment	2014-2015
Wissahickon Creek Watershed	Watershed-wide Comprehensive Assessment	2015-2016
Pennypack Creek Watershed	Tributary Assessment	2016-2017
Poquessing Creek Watershed	Watershed-wide Comprehensive Assessment	2018-2019
Schuylkill River Watershed	Tributary Assessment	2019

Monitoring Timeline

As described in the *Comprehensive Watershed Monitoring Program: Proposed Strategy 2010-2015*, PWD's current proposed strategy for watershed assessments includes a less intense, but ongoing monitoring effort within each watershed, primarily through a partnership with the USGS. It should be noted that although the monitoring plan nominally covers 2010-2015, the assessments of the Wissahickon, Pennypack and Poquessing watersheds are continuations of that plan and are thus included here. Currently, PWD's is focused on monitoring efforts to evaluate the performance of stormwater BMPs and restoration projects. Allowing 10 years before watershed re-assessment will potentially allow for a greater number of projects to be implemented.

The proposed strategy for watershed assessments 2010-2022 includes resuming watershed-scale bioassessment activities at several stations within targeted watersheds **(Table F.2.Step 1.B-2 Proposed Watershed Monitoring Timeline 2010-2022)**. These watershed scale reassessments should complement the "adaptive management" approach favored by the integrated watershed management plan implementation process and allow for the locations and methods of assessment to be changed, depending upon the number of projects implemented and their spatial distribution within the watershed. It is hoped that these data will be useful as a long-term record of water quality changes in the region, more appropriate for assessing the goals of a City-wide distributed green infrastructure program than an approach that focuses on individual watersheds.

Table F.2.Step 1.B-2 Proposed Watershed Monitoring Timeline 2010-2022

Watershed	BMP Monitoring	Quarterly WQ Grab sampling	Continuous WQ Monitoring	Annual WQ Summary	Bioassessment	Bioassessment Data Analysis
Cobbs	2010-2022	2010-2022	2010-2022	2010-2022	2012, 2021	2012-2013, 2022
Tacony-Frankford	2010-2022	2010-2022	2010-2022	2010-2022	2013, 2022	2013-2014
Wissahickon	2010-2022	2010-2022	2010-2022	2010-2022	2014-2016	2014-2016
Pennypack	2010-2022	2010-2022	2010-2022	2010-2022	2016-2018	2016-2018
Poquessing	2010-2022	2010-2022	2010-2022	2010-2022	2018	2018-2019

Water Quality Sampling and Monitoring

Guiding Principles of Urban Water Chemistry Assessment

PWD's water quality assessment strategy has been designed to facilitate separate analyses of dry weather (i.e., baseflow) and wet weather water quality conditions. This program has evolved over time, as personnel and technological improvements have improved our abilities to collect more data from an increasing number of sampling locations in a more efficient manner. Automated sampling, in particular, has greatly increased the temporal resolution of stormwater sampling at multiple sampling locations for a single storm event.

In order to comply with the State-regulated stormwater permit obligations, PWD worked with USGS to record continuous water quality data at 10 gage stations in the Philadelphia region from July 2021 through November 2021 and March 2022 through June 2022. Four types of sampling were performed as discussed below. Parameters were chosen based on state water quality criteria, or because they are known or suspected to be important in urban watersheds.

Discrete Water Chemistry Assessment

Each USGS/PWD cooperative monitoring gage site was sampled once during the course of a few hours, to allow for travel time and sample processing/preservation. Samples are collected during dry weather and parameters were chosen based on the conclusions from baseline sampling that indicated dry weather problems are primarily related to bacteria and nutrients. Results of samples collected to date are presented in **Appendix F – PWD Quarterly Dry Weather Water Quality Monitoring Program.** Previous annual reports describe PWD's extensive surface water grab sampling efforts dating back to 2002.

Boat run grab samples were not collected in FY22. PWD has collected 24 samples from the Schuylkill River and 49 samples from the Delaware River by boat since 2011. Results from quarterly dry weather grab sampling thus far are generally similar to data collected during the CCR data collection periods.

Continuous Water Quality Assessment

Each USGS/PWD cooperative monitoring gage site records water quality data for dissolved oxygen, temperature, flow, pH, and specific conductance. Selected locations are also instrumented for turbidity, precipitation and photosynthetically active radiation (PAR). These data are made available to the public in near real-time on the internet at https://www.usgs.gov/centers/pa-water/science/philadelphia-water-resources-monitoring-program. The monitoring results from FY21 are presented in **Appendix G – PWD-USGS Cooperative Water Quality Monitoring Program Annual Summary**.

In addition to continuously monitoring water quality at USGS gaging stations, PWD continued deployment of an in situ self-contained data logging continuous water quality monitoring sonde (YSI Inc. Model EXO2) in the tidal Schuylkill River at SC048 (Schuylkill River at the Navy Yard) from March – November in 2021 and will be monitored between March and November in 2022.

Long-term continuous monitoring for TMDL compliance and building a long-term water quality data record for the aforementioned watersheds will be accomplished in 2010-2022 through a partnership with the USGS. Results from City-wide continuous monitoring thus far are generally similar to data collected during the CCR data collection periods. For this reason, PWD will re-evaluate whether additional water quality sampling is needed to characterize water quality in targeted watersheds on a case-by-case basis. Continuous water quality instruments will also be utilized in evaluating the performance of certain stormwater BMPs and assessing conditions in tidal portions of the Schuylkill and Delaware Rivers as well as Frankford Creek.

Groundwater Monitoring

A city-wide groundwater level monitoring network will provide long-term monthly data documenting current water levels and trends in groundwater elevations throughout the City, helping to track the impacts of widespread implementation of stormwater management practices (SMPs) and global climate change. Data from the groundwater monitoring network will also be used to calibrate a Philadelphia groundwater model and update the USGS groundwater contour map of Philadelphia (Paulachok 1984).

PWD and USGS identified existing wells that would be suitable for the network and obtained permission for site access. Once wells were identified and accessible, well condition and suitability for inclusion in the monitoring network were investigated by continuous water level monitoring and remote video camera inspection when accessible. Wells that met acceptance criteria were added to the monitoring network. After examining readily available information about existing wells, PWD elected to drill additional wells in order to provide better spatial distribution of wells in the monitoring network. Current status of the groundwater monitoring network and a summary of data collected through June 30, 2022 are presented in **Appendix H – PWD/USGS Groundwater Monitoring Program**.

Biological Monitoring

The biological monitoring protocols employed by PWD are based on methods developed by the US EPA (Barbour et al. 1999) and the PADEP. These procedures are as follows:

- Rapid Bioassessment Protocol III (Benthic Macroinvertebrate Sampling)
- Periphyton Assessment (Algae Monitoring)

Macroinvertebrate Assessments

As described in the PWD *Comprehensive Watershed Monitoring Program: Proposed Monitoring Strategy 2010-2015*, PWD's approach is intended to be a compromise, recognizing not only the benefits of collecting data from randomly selected sites but also the importance of maintaining a monitoring effort at consistent locations over time. This plan is based on a similar monitoring program that USGS has implemented in Chester County (Reif 2002, Reif 2004). The plan reflects the manpower constraints of collecting and processing samples with the PADEP ICE protocol. It is hoped that this approach will achieve some of the benefits of a randomized approach, while providing periodic re-evaluation of our watersheds required to inform the watershed planning process and comply with environmental mandates **(Table F.2-3 Proposed Benthic Invertebrate Monitoring Timeline 2011-2022).**

Table F.2-3: Proposed Benthic Invertebrate Monitoring Timeline 2011-2022

Period	Monitoring Activity (number of samples*)
2011	USGS gage samples (9); Randomly selected sites (16)
2012	Cobbs Creek (6**); USGS gage samples (9); Random (10)
2013	Tookany/Tacony Creek (10**) USGS gage samples (9); Random (6)
2014	Wissahickon Creek Tributaries (15); USGS gage samples (9); Random (1)
2015	Wissahickon Creek (10**); USGS gage samples (8); Random (4)
2016	Pennypack Creek Tributaries (11**); USGS gage samples (9); Random (5)
2017	Pennypack Creek (12**); USGS gage samples (9); Random (4)
2018	Poquessing Creek (12**); USGS gage samples (9); Random (4)
2019	Schuylkill River Tributaries (3); USGS gage samples (8); Random (3)
2020	USGS gage samples (6); Random (2)
2021	Cobbs Creek (6**); USGS gage samples (9); Random (7)
2022	Tookany/Tacony Creek (10**); USGS gage samples (9); Random (6)*

* Number of samples estimated, actual number of samples may vary

** Number of monitoring sites excludes 2 USGS gage sites in target watershed

During March and April 2021, PWD conducted Rapid Bioassessment Protocols (RBP III) at 22 (n=22) locations within Philadelphia area watersheds. Sampling was conducted at 9 USGS gages in the PWD/USGS Cooperative Monitoring program, 6 sites in the targeted Cobbs Creek watershed, and 7 randomly selected sites. These data are presented in **Appendix I – PWD Wadeable Streams Benthic Macroinvetebrate and Physical Habitat Assessments**. In spring 2022, PWD sampled 9 USGS gages, 10 sites in the Tookany/Tacony Creek Watershed, and 6 randomly chosen sites.

Algae Assessments

Chlorophyll-a measurements may be used to provide information for the parameterization of water quality models. In spring 2016, PWD began a pilot effort to collect continuous chlorophyll-a data at three USGS stations along the Delaware River: 01467200 (Ben Franklin Bridge), 014670261 (Delaware River near Pennypack Woods), and 01463500 (Trenton). In addition, PWD deployed two buoys in the Delaware River (at Pea Patch Island and upstream of the confluence with the Schuylkill River) from March-November. Sondes attached to these buoys monitor continuous chlorophyll-a levels. Bi-weekly grab samples are collected and analyzed at these locations to calibrate the sensors.

Physical Monitoring

Physical Habitat Assessments

Habitat assessments are conducted along with benthic macroinvertebrate monitoring and thus the habitat assessment strategy is described under the heading **Biological Monitoring – Macroinvertebrate Assessments**, above. PWD assesses stream physical habitat condition using PADEP Instream Comprehensive Evaluation (ICE) protocols. During calendar year 2021, PWD conducted physical habitat assessments at 8 locations within Philadelphia area watersheds. Sampling was conducted at 9 USGS gages in the PWD/USGS Cooperative Monitoring program, 6 sites in the targeted Cobbs Creek watershed, and 7 randomly selected sites. These data are presented in **Appendix I – PWD Wadeable Stream Benthic Macroinvertebrate and Physical Habitat Assessments**. In spring 2022, PWD sampled 9 USGS gages, 10 sites in the targeted Tookany/Tacony Creek Watershed, and 6 randomly chosen sites.

Fluvial Geomorphologic (FGM) / Infrastructure Analysis

Fluvial Geomorphologic (FGM) studies establish the physical attributes of the stream, identify areas of concern, and provide recommendations for rehabilitation of the stream corridors and floodplains. To date, FGM analysis has been conducted on the Darby-Cobbs, Tookany/Tacony-Frankford, Wissahickon, Pennypack, and Poquessing Creeks. Analysis was conducted in order to characterize channel morphology, disturbance, stability, and habitat parameters as well as to provide a template for hydrologic and hydraulic modeling and serve as a baseline for assessing channel bank and bed changes. Data provided from the FGM analyses will also serve to develop reach rankings within each watershed in order to prioritize restoration strategies. In FY22, designs were advanced for several stream restoration and riparian infrastructure protection projects throughout Philadelphia's watersheds. Of these, two projects continued through the construction phase. These projects will reduce streambank erosion, improve aquatic habitat, and protect critical infrastructure in the stream corridor. Planning studies are also being developed by a dedicated stream restoration planning group to identify and prioritize stream restoration and infrastructure protection project opportunities throughout the City's watersheds.

Summary of Monitoring Locations

Biological, physical and chemical monitoring locations are based on 3 criteria: 1) appropriate habitat heterogeneity; 2) access availability; and 3) proximity to USGS stream gaging stations and PADEP 305b monitoring sites. In general, the number of monitoring sites is proportional to the size of the drainage and the watershed's link magnitude (i.e., number of 1st order streams). Maps of assessment sites by watershed and program (biological, chemical, or physical) are available as GIS data.

Quality Assurance/Quality Control (QA/QC) and Data Evaluation

PWD has planned and carried out an extensive sampling and monitoring program to characterize conditions in Philadelphia's watersheds. Sampling and monitoring follow the Standard Operating Protocols (SOPs) and Quality Manual as maintained by PWD's Bureau of Laboratory Services (BLS). These documents cover the elements of quality assurance, including field and laboratory procedures, chain of custody, holding times, collection of blanks and duplicates, and health and safety.

They are intended to help the program achieve a level of quality assurance and control that is acceptable to regulatory agencies. More information regarding SOPs for chemical and biological assessments is available from BLS.

c. Inventory of Point and Non-Point sources

At the end of FY22, there are 111 NPDES permitted dischargers in Philadelphia County, as shown in **Appendix J – NPDES Industrial Stormwater Permitted Sites – Philadelphia County**. This listing was downloaded from the PADEP Environment Facility Compliance Tracking System (eFACTS). The eFACTS website can be accessed through the following link: http://www.ahs.dep.pa.gov/eFACTSWeb/default.aspx.

PWD is also actively involved in developing estimates of non-point source pollutants. The results of this analysis are described in the hydrologic models in **Section G - Assessment of Controls** on page 40.

d. Preliminary problem assessment

CCRs were completed for the Wissahickon (2007), Pennypack (2009) and the Poquessing (2010) Creek Watersheds. These reports include analysis of data collected over the monitoring period and present a characterization of problems within the watershed. The reports for each watershed are available to the public through the internet at the following address: http://water.phila.gov/reporting/watershed-plans-reports/.

Step 2. Watershed Plan Development: Permit issuance through end of Year 5

For information on the status of the Act 167 plans, please refer to the CSO Annual Report **Table III.C.1-2 - Planning by Watershed** on page 36 for more information.

Step 3. Watershed Plan Implementation and Performance Monitoring: Permit issuance through expiration

a. Dry Weather Water Quality and Aesthetics

Operate the Defective Lateral Program

Over the last fiscal year, PWD has continued to successfully operate its Defective Lateral Program. A detailed discussion of this program is provided within this report in **Section F.3 - Detection, Investigation, and Abatement of Illicit Connections and Improper Disposal** on page 20.

Debris removal from waterways impacted by storm water discharges

PWD continues to employ the Waterways Restoration Team (WRT) to remove debris and conduct small scale stream restoration projects within the City's waterways. Please refer the CSO Annual Report **Section II.F – NMC 6 - Control of Solid and Floatable Materials in CSOs** on page 10 for information about debris removal from waterways impacted by storm water discharges.

Lincoln Drive sewer relining

PWD completed the Lincoln Drive sewer relining in 2004. Additional information on this project was reported in previous reports; please refer to Section F.2.3.a.iii on page 261 of the FY10 CSO-Stormwater Annual Report.

Stormwater Outfall Dry Weather Inspections

The City maintains a stormwater outfall inspection program in compliance with the MS4 permit. All 434 of the City's permitted stormwater outfalls are scheduled to be inspected by the Industrial Waste unit at least once each permit cycle. Those with dry weather flow are sampled for fecal coliform and fluoride analysis. The results of these samples are reported on a quarterly basis and summarized in this annual report. During FY22, 77 outfall inspections were conducted, and 31 samples were taken due to observed dry weather flow as part of the Permit inspection program.

Those outfalls identified as priority outfalls under the MS4 permit are inspected quarterly. During FY22, 41 outfall inspections were conducted, and 35 samples were taken due to observed dry weather flow as part of the Priority Outfall inspection program.
During FY22, 77 outfall inspections were conducted, and 31 samples were taken due to observed dry weather flow as part of the Permit inspection program. The sample results are used on the Stormwater Outfall Priority Score list.

The full details of program accomplishments for FY22 can be found in **Appendix N – FY22 Defective Lateral Connection Quarterly Status Reports.**

Table F.2-4: Stormwater Outfall Inspection Program – 5 Year Summary

	Permit Inspection Program		Priority Outfall Program	
Fiscal Year	**Inspections**	**Samples**	**Inspections**	**Samples**
2018	117	57	41	37
2019	123	70	40	36
2020	96	62	46	39
2021	262	126	42	39
2022	77	31	41	35
Total	**675**	**346**	**210**	**186**

Defective Lateral Program - Priority Outfalls

7th & Cheltenham Avenue Outfall (T-088-01)

As of June 30, 2022, DCG program activities have performed 2,831 complete tests in this sewershed, identifying 134 cross-connections, all of which have been abated.

The locations of dry weather diversion devices, and the number of inspections, blockages, and discharges found by the Flow Control unit during FY22 are listed below.

Table F.2-5: 7th & Cheltenham Ave – Diversion Devices - FY22 Summary

Location	ID #	Inspections	Blockages	Discharges
Plymouth St. west of Pittsville St.	CFD-01	39	0	0
Pittsville St. south of Plymouth St.	CFD-02	36	3	1
Elston St. east of Bouvier St.	CFD-03	33	0	0
Ashley St. west of Bouvier St.	CFD-04	25	0	0
Cheltenham Ave. east of 19th St.	CFD-05	17	0	0
Verbena St. south of Cheltenham Ave.	CFD-06	14	0	0
Cheltenham Ave. east of 7th St.	CFD-07	79	18	1
7th St. south of Cheltenham Ave.	CFD-08	74	2	1

Inspections and fecal coliform sampling at this outfall continue quarterly. Results for the outfall samples during FY22 are listed below.

Table F.2--6: 7th & Cheltenham Ave - Fecal Coliform Results – FY22 Summary

Date	Fecal Count (MPN per 100 ml)
09/21/2021	5,475
12/21/2021	648,800
02/10/2021	17,329
05/06/2022	637

Monastery Avenue Outfall (W-060-01)

As of June 30, 2022, DCG program activities have performed 637 Complete tests in this sewershed, identifying 17 cross-connections, of which 16 have been Abated.

The locations of dry weather diversion devices and the number of inspections, blockages, and discharges found by the Flow Control unit during FY22 are listed below.

Table F.2-7: Monastery Ave - Diversion Devices - FY22 Summary

Location	ID#	Inspections	Blockages	Discharges
Jannette St. west of Monastery Ave.	MFD-01	21	0	0
Green La. North of Lawnton St.	MFD-02	20	0	0

Inspections and fecal coliform sampling at this outfall continue quarterly. Results for the outfall samples during FY22 are listed below.

Table F.2-8: Monastery Ave - Fecal Coliform Results – FY22 Summary

Date	Fecal Count (MPN per 100 ml)
07/16/2021	146
12/17/2021	1,354
03/23/2022	NF*
06/27/2022	2,720

Note: * NF indicates that no flow was observed

Monoshone Creek Outfalls (W-068-05)

Additional areas of focus: W-060-04, W-060-08, W-060-09, W-060-10, W-060-11, W-068-04

As of June 30, 2022, DCG program activities have performed 2,750 complete tests in these sewershed areas, identifying 95 cross-connections, 94 of which have been abated. Most of the efforts have been in the W-068-05 sewershed area which is by far the largest in terms of drainage area and properties served.

Inspections and fecal coliform sampling at the W-068-05 outfall continue quarterly. Results for the outfall samples during FY22 are listed below.

Table F.2-9: Monoshone Creek (W-068-05 Outfall) - Fecal Coliform Results – FY22 Summary

Date	Fecal Count (MPN per 100 ml)
07/16/2021	24,196
12/17/2021	7,701
03/23/2022	5,172
06/29/2022	98,040

Manayunk Canal Outfalls (S-051-06, S-058-01, S-059-01 through S-059-11)

As of June 30, 2021, DLC program activities have performed 2,479 complete tests in these sewershed areas, identifying 63 cross-connections, all of which have been abated. Most of the efforts have been in the S-059-04 sewershed area.

Inspections and fecal coliform sampling at the following outfalls continue quarterly. Results for the outfall samples during FY22 are listed below.

Table F.2-10: Manayunk Canal - Fecal Coliform Results – FY22 Summary

Outfall	Fecal Count (MPN per 100 mL)			
	08/26/2021	*12/15/2021*	*03/02/2022*	*04/25/2022*
S-058-01	NF*	187	41	86
S-059-01	3,255	1,789	3,076	6,867
S-059-02	51,720	>24,196	57,940	22,470
S-059-03	241,960	>241,960	435,200	>241,960
S-059-04	3,640	46,110	NF*	1,050
S-059-05	3,880	NF*	NF*	NF*
S-059-07	NF*	NF*	NF*	NF*
S-059-09	64,880	24,196	1,090	92,080

Note: * NF indicates that no flow was observed

Defective Lateral Program - Other Important Outfalls

Sandyford Run Outfall (P-090-02)

As of June 30, 2022, DCG program activities have performed 5,810 complete tests in this sewershed, identifying 88 cross-connections, all of which have been abated. The location of the dry weather diversion device and the number of inspections, blockages, and discharges found by the Flow Control unit during FY22 are listed below.

Table F.2-11: Sandyford Run - Diversion Device - FY22 Summary

Location	ID#	Inspections	Blockages	Discharges
Brous and Lexington Aves.	PFD-01	86	9	2

Table F.2-12: Sandyford Run – Diversion Device - Fecal Coliform Results – FY22 Summary

Date	Fecal Count (MPN per 100 ml)
09/28/2021	19,863
12/02/2021	<10
03/23/2022	<10
04/29/2022	22

Franklin and Hasbrook Outfall (T-089-04)

As of June 30, 2022, DCG program activities have performed 1,021 complete tests in this sewershed, identifying 46 cross-connections, all of which have been abated. The location of the dry weather diversion device and the number of inspections, blockages, and discharges found by the Flow Control unit during FY22 are listed below.

Table F.2-13: Franklin and Hasbrook - Diversion Device - FY22 Summary

Location	ID#	Inspections	Blockages	Discharges
Franklin and Hasbrook	CFD-01	86	9	3

The Outfall was inspected throughout the year but was found to be clean and dry during all quarterly visits.

Please refer to **Section F.3 - Detection, Investigation, and Abatement of Illicit Connections and Improper Disposal** on page 20 for additional information on activities conducted for the Defective Lateral Program.

Priority Outfall Closure Testing

Investigation will continue within each particular outfall area (sewershed) until the Priority outfall status may be closed. During FY22, none of the Priority outfalls were authorized to be removed from the list by PADEP.

Healthy Living Resources

Develop integrated storm water management plans

PWD developed integrated stormwater management plans for all of the City's watersheds. Please refer to the CSO Annual Report in **Section III.C.3.7 - Basin-Specific Stormwater Management Plans (ACT 167)** on page 48 for an explanation of the City's watersheds stormwater management plans.

Assess the benefits of implementing a Natural Stream Channel Design (NSCD) and effectiveness of the NSCD restoration approach

PWD has conducted several projects that have been designed with Natural Stream Channel Design concepts in mind. As each of PWD's NSCD projects are constructed, PWD realizes the importance of the extensive monitoring and O&M that accompanies such projects. Each project provides the opportunity to learn about what techniques do and do not work in their respective hydrologic and hydraulic regimes. In order to assess the effectiveness of these NSCD projects, PWD conducts post implementation monitoring at each site that includes the measurement of relevant biological, habitat, and physical parameters to be used in comparison to pre-construction conditions. For a description of activities conducted for PWD's stream restoration, and wetland creation projects, please refer to the CSO Annual Report **Sections III.C.2.3 Stream Habitat Restoration** on page 39 and **III.C.2.4 Wetland Enhancement and Construction** starting on page 45.

Wet Weather Water Quality and Quantity

Implement several BMP projects

PWD and its partners have implemented many BMP projects throughout the City including GSI, stream restoration, and wetland creation projects. For a complete listing of both completed and current GSI projects in the CSS, please refer to the **Appendix A - Green City, Clean Waters FY22 Annual Report**. For a description of activities conducted for PWD's stream restoration, and wetland creation projects, please refer to the CSO Annual Report **Sections III.C.2.3 Stream Habitat Restoration** on page 39 and **III.C.2.4 Wetland Enhancement and Construction** starting on page 45.

Monitor three demonstration BMPs

PWD is committed to ensuring stormwater BMPs owned and operated by the City are maintained. This commitment is often evaluated through monitoring of these sites. PWD is currently monitoring multiple stormwater BMP project types – for example, stormwater tree trenches, stormwater planters, and porous pavement – and continue to develop and improve monitoring protocols. Monitoring activities for PWD's green stormwater infrastructure projects during FY22 are documented within **Appendix A: Green City, Clean Waters FY22 Annual Report Section-Appendix 4: GSI Monitoring Status Report**. PWD has detailed activities conducted during FY22 for PWD's stream restoration, and wetland creation; please refer to the CSO Annual Report **Sections III.C.2.3 Stream Habitat Restoration** on page 44 and **III.C.2.4 Wetland Enhancement and Construction** starting on page 45.

F.3 Detection, Investigation, and Abatement of Illicit Connection and Improper Disposal

a. Prevention of Illicit Discharges

Sewer and Lateral Inspections

The City requires plumbing permits for connections to the municipal sewer system. The permit affords the property owner an inspection of the plumbing work performed. Corrections of defective connections are confirmed to ensure that the ultimate discharge to the receiving waters does not contain sanitary waste. PWD reviewed 1644 new sewer and storm connections during FY22. This numbers includes all connections (storm, sanitary and /or combined sewers). A single project or permit may also have one connection or multiple connections.

b. Investigation of Illicit Discharge Sources

Rank the MS4 outfalls according to their priority for corrective actions

PWD maintains a stormwater outfall monitoring system in compliance with the MS4 permit issued by the PADEP. Samples are collected for outfalls that have dry weather flow and analyzed for fecal coliform and fluoride. Priority outfalls have been established through the 1998 Stormwater Consent Order and Agreement and internally, additional areas of focus have been added to maintain progress in the screening, testing and abating program and for efficient crew deployment. Priority Outfalls are sampled on a quarterly basis. Refer to **page 15** of this report for FY22 priority outfall summaries.

Investigate dry weather flow to identify sewer lateral defects

During FY22, the DCG performed 298 complete dye tests with 30 defective connections found and 14 abatements completed. Details of FY22 activities are listed below.

Table F.3-1: Defective Connections Program – FY22 Summary

Quarter	CY2021-Q3	CY2021-Q4	CY2022-Q1	CY2022-Q2	Total
Date Coverage	Jul1-Sep30	Oct1-Dec31	Jan1-Mar31	Apr1-Jun30	**FY22**
Completed Tests	116	15	50	117	**298**
No Cross Connections	106	7	43	112	**268**
Cross Connection Identified	10	8	7	5	**30**
Abatements *	0	4	4	5	**13**

Note: *Some cross connections abated may have been identified in prior fiscal years

Reports of potential dry weather discharge from the stormwater system are also investigated, primarily through the Industrial Waste and/or Sewer Maintenance units. During FY22, 60 incidents were investigated. For details, refer to **Appendix P – Sanitary Infiltration Events for Potential Sewage Discharges** during FY22.

The DCG Field Investigation SOP was updated in March 2017. A copy is available upon request.

d. Abatements

Written notice about sewer lateral defects

The Plumbing Repair Programs unit handles customer communications (through letters, telephone or site visits) and is responsible for the abatement of the defects identified.

Abatements of Cross Connections

Due to the data entry delays, cost information is not available for all completed abatements in FY22. Details of 13 abatements and costs are listed below.

Table F.3-2 Defective Connection Abatement – 5 Year Summary

Fiscal Year	# Cross Connections Abated		Total Cost of Abatements
	Residential	Commercial	
2018	56	7	$562,747.33
2019	57	4	$555,933.30
2020	69	1	$701,210.00
2021*	11	1	$103,211.00
2022	12	1	$83,852.00
Total	205	14	$2,006,953.63

*Cost data was only available for 12 of the 31 abatements in FY21

Residential Properties Cross Connections Abatement

During FY22, 12 residential abatements were completed at a cost of $83,352.00.

Commercial and Industrial Properties Cross Connections Abatement

During FY22, 1 commercial abatement was completed at a cost of $500.00.

Defective Connections Abatement Schedule

All defective connections are required to be abated within 120 days of discovery, in compliance with the MS4 permit. Please view **Appendix N – FY22 Defective Lateral Quarterly Reports** for more details.

Defective Connections Abatement Confirmation Tests

All abatements completed during FY22 were tested to confirm that the abatement was completed properly.

e. Defective Connection Program Reporting

Illicit connection program quarterly report

Defective Lateral Quarterly Reports are submitted four times a year to Andrew Sinclair at PADEP as part of the reporting requirements of the City of Philadelphia NPDES Storm Water Management Permit No. PA 0054712. The report covers three-month periods staring in January, April, July, and October which are submitted no later than 45 days from the end of the reporting period. The Quarterly reports were submitted as required during FY22, and **Appendix P – FY22 Defective Lateral Quarterly Reports** contains all of these reports.

Illicit connection program quarterly report contents

The report content within the illicit connection program quarterly reports has not changed in FY22. All required information is included in **Appendix P – FY22 Defective Lateral Quarterly Reports**.

F.4 Monitor and Control Pollutants from Industrial Sources

a. Applications/Permits

The City obtains NPDES permits/discharge information from industries if they contribute significant amounts of stormwater into the City's sewer system. Industries that contribute stormwater directly into a waterway or discharge non-industrial waste into the system usually coordinate directly with the PADEP. A list of NPDES permits that involve stormwater associated with industrial activities in the City were obtained from the PADEP's website and are listed in **Appendix J – NPDES Industrial Stormwater Permitted Sites**.

b. Inspections

Industrial inspections

The Philadelphia Local Emergency Planning Committee (PLEPC) is the entity tasked with meeting the responsibilities of SARA Title III.

As part of the MS4 permit requirement, the City is required to perform a stormwater inspection at all SARA Title III facilities located in the MS4 each fiscal year. In FY22, PWD conducted a stormwater inspection at all 175 SARA Title III facilities located in the MS4.

Industrial waste inspection forms

The Industrial Waste Inspection Form was updated in 2006 to include a stormwater inspection section. A copy of the form can be found in previous reports; please refer to Appendix O of the CSO-Stormwater FY09 Annual Report.

c. Monitoring/Enforcement

Industrial DMR submission

When necessary, the City shall request DMRs or additional sampling from the PADEP for surrounding industries to ensure compliance with NPDES effluent limitations.

NPDES permits enforcement

Should PWD personnel observe a violation of NPDES permit terms and conditions, PWD will report the violation immediately and notify PADEP, on a case-by-case basis.

F.5 Monitor and Control Stormwater from Construction Activities

Stormwater runoff is a concern both during construction and post-construction. Integrated in the City's development review process, PWD is provided the authority to review and regulate the runoff from

earth disturbance activities to improve water quality. Additionally, post-construction stormwater management plan review extends beyond peak rate control and encompasses water quality and water quantity technical requirements for more frequent storm events. Efforts continue to be focused on improving plan review for both Erosion & Sedimentation (E&S) as well as post-construction stormwater management. The following sections document the progress made so far in terms of stormwater runoff from construction activities including the collaboration between the Philadelphia development community, multiple City Departments, and State agencies.

During FY22, PWD performed numerous tasks in direct compliance with the NPDES Permit as well as tasks that support the ongoing growth of the stormwater management program for development construction activities. Some of the FY22 activities include the following:

- Continued coordination efforts with Philadelphia Licenses and Inspections (L&I) regarding permit review and issuance for private development projects applicable to the Stormwater Regulations. At a minimum, the L&I issuance of a Zoning, Demolition, Site, and Building permit was coordinated appropriately between the two agencies. L&I supports PWD in enforcement measures through the issuance of Stop Work Orders and withholding Certificate of Occupancy permits for sites that are non-compliant. PWD continues to serve as a reviewing entity in L&I's online permit program, eCLIPSE, by providing pre-requisite signoff on applicable permits. Applicants no longer have to visit PWD offices in order to obtain sign-off, thus streamlining the permitting process.
- Continued coordination with the PADEP Southeast Regional Office Waterways and Wetlands Program through regular project communication and periodic meetings with PADEP and southeast region conservation district staff. The periodic meetings provide a platform to discuss regional and district updates, permitting services and projects, and other various topics. PWD also regularly participated in pre-application and project meetings with PADEP staff and applicants to discuss upcoming projects and active projects.
- Scheduled and held coordination meetings with local universities and other large landowners to discuss upcoming or current development projects as well as identify ways to strengthen communication and streamline the review and post-construction inspections process. Additionally, projects in enforcement are discussed, deadlines are communicated, and guidance is provided to bring projects back into compliance.
- Continued to implement erosion and sediment (E&S) compliance as an element of all active construction inspections by ensuring appropriate controls are in place throughout construction activity. Potential E&S issues or violations are documented as part of an inspection report provided to the on-site representative. The reports identify the required corrective actions, and active construction inspectors will return to the site to verify compliance. E&S violations may trigger active construction enforcement actions such as a Stop Work Order, requiring continued coordination through L&I.
- Continued to update website content to provide clear and accessible resources to the applicant to support quality submittals and efficient reviews. In Summer 2021, PWD launched a new GIS based tool called the Reg Finder to allow applicants to determine which Stormwater Regulations will apply to their projects before submitting to PWD.
- Continued to review projects applying for stormwater-based zoning incentives including Philadelphia's Green Roof Density Bonus, which was incorporated into the Zoning Code in 2015. This bonus offers exceptions to certain residential density rules for development projects that include a green roof. In calendar year 2018, the bonus was expanded to allow eligibility for existing buildings undergoing renovation or expansion. The green roof must meet PWD's

requirements and be approved by PWD before the bonus can be awarded. In FY22, PWD approved 36 projects citywide as eligible to apply for this bonus. PWD also reviewed multiple projects that were seeking height bonuses across the East Callowhill and Central Delaware overlays by providing stormwater open space and/or manage stormwater runoff from the public rights of way (ROW) that front their property

- Continued to attend bi-monthly Business Industry Association (BIA) meetings for the Government Affairs/Fix It Philly subcommittee. In these meetings, representatives from the development community including developers, architects, and engineers come together with City agency representatives from PWD, L&I, Planning, and Streets to discuss policy and legislation impacting development in Philadelphia to ensure a transparent and efficient development process.
- In past fiscal years PWD would hold Development Services Committee (DSC) meetings with representatives from the development community including developers, designers, large landowners, and attorneys to discuss ideas for improving the PWD stormwater regulatory review and inspections program to better streamline development in the City. In FY22, PWD engaged directly with developer stakeholder groups such as the BIA and Sustainable Business Network on topics such as L+I eCLIPSE permitting and guidance manual updates. PWD continued to conduct reviews of stormwater management plans and maintain the website to allow online submittal of plans and requests for pre-application meetings.

A summary of plan review activities city-wide in FY22 is presented in **Table F.5-1** on page 25.

a. Construction Site Runoff Control

PWD reviews and approves E&S Plans, along with Post-Construction Stormwater Management Plans, for all development sites disturbing more than 15,000 square feet of earth citywide. For E&S plans, PWD follows policies and practices as provided within the PADEP E&S Control Manual. PWD conducts coordinated reviews with the PADEP for projects disturbing more than one acre of earth.

Site inspections of E&S controls are conducted on a reoccurring basis and in response to any received complaints during active construction. The purpose of reoccurring inspections is to monitor E&S controls on projects where construction and earth moving activities are active, and to require site operators to maintain E&S controls as needed. PWD inspects controls such as, but not limited to, rock construction entrances, silt fencing, inlet protection, stockpile location and protection, and concrete washouts. During an inspection, the inspector communicates with the construction manager or site representative and requests to see a copy of the on-site E&S Plan. Photographs are taken documenting site conditions. An inspection report detailing any out-of-compliance items is generated and distributed to the site manager, and then maintained as part of PWD's electronic project file. Failure to adhere to the requirements in the inspection reports can result in a Notice of Violation or a Stop Work Order. For more information regarding enforcement actions, see **Section F.5.e** on page 29.

The sites visited cover all of Philadelphia including both separate storm sewer areas and combined sewer areas as depicted in **Figure F.5-1** on page 26.

Table F.5-1: FY22 Summary of Plan Review Activities

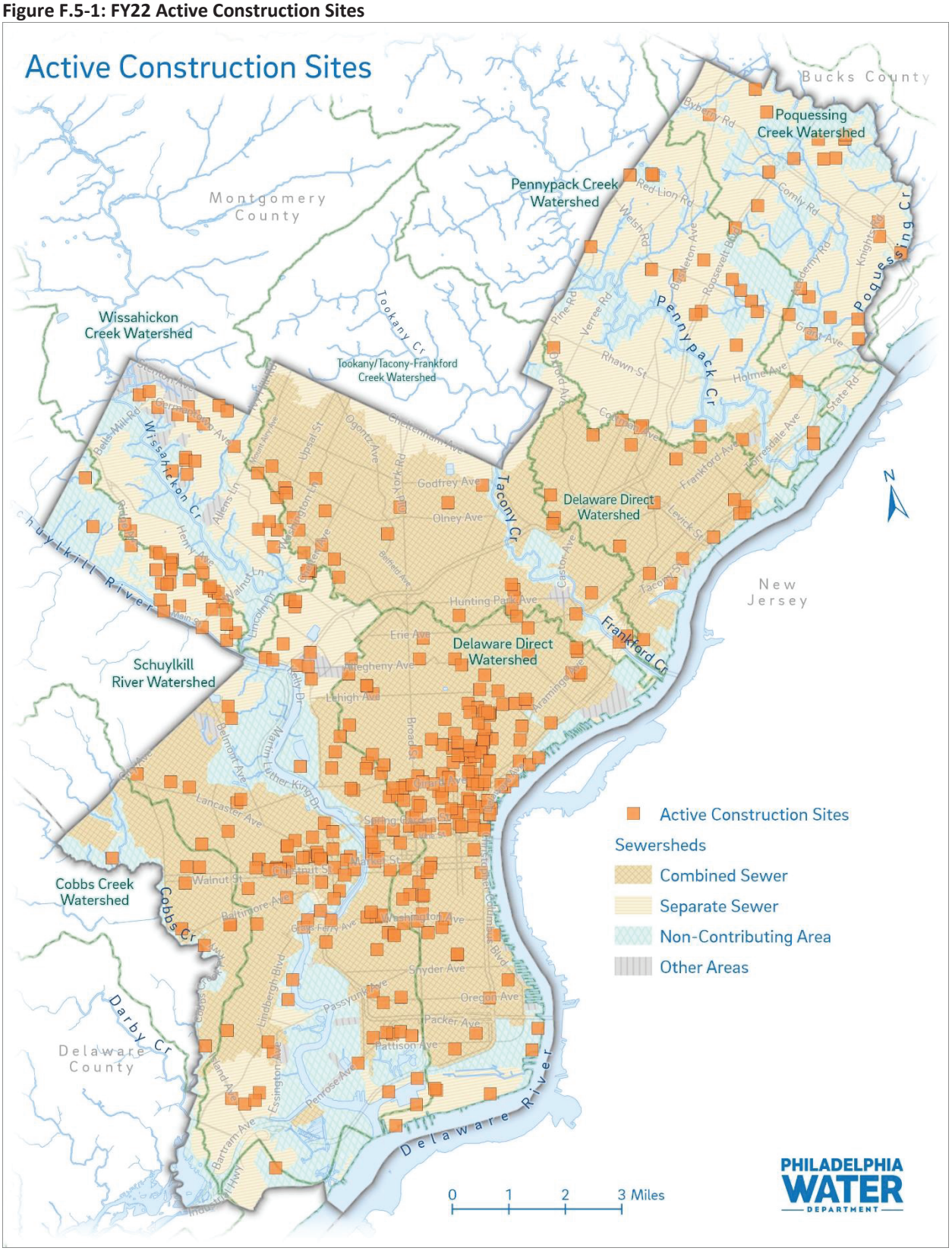
	Jul. '21	*Aug. '21*	*Sep. '21*	*Quarter Total*	*Oct. '21*	*Nov. '21*	*Dec. '21*	*Quarter Total*	*Jan. '22*	*Feb. '22*	*Mar. '22*	*Quarter Total*	*Apr. '22*	*May. '22*	*Jun. '22*	*Quarter Total*	*FY 22 Total*
Conceptual Review Stage																	
Approvals	17	14	14	45	15	7	8	30	10	12	25	47	13	17	12	42	164
Rejections	63	47	53	163	31	31	44	106	54	59	42	155	40	51	47	138	562
Reviews	87	67	77	231	54	42	57	153	67	79	71	217	64	73	69	206	807
New Project Submittals	32	32	35	99	33	27	27	87	38	33	31	102	24	30	44	98	386
Average Review Time (days)	9.0	6.9	7.5	7.8	11.7	10.9	11.1	11.2	7.8	5.4	5.7	6.3	9.0	4.7	6.3	6.7	8.0
Post Construction Stormwater Management Plan Review Stage																	
Administrative Screenings	1	5	29	35	18	10	7	35	5	10	9	24	12	9	10	31	125
Technical Approvals Issued	15	7	10	32	12	11	25	48	5	7	5	17	10	4	3	17	114
Rejections	36	33	36	105	39	37	51	127	32	31	39	102	39	36	43	118	452
Full Technical Reviews	76	62	68	206	78	75	112	265	59	55	62	176	63	63	59	185	832
New Project Submittals Received	49	29	47	125	36	32	24	92	19	27	30	76	27	22	34	83	376
Average Number of Reviews per Approval	4.3	3.4	4.1	4.0	4.1	3.9	4.5	4.2	4.2	4.7	5.4	4.8	4.7	4.8	4.3	4.6	4.4
Average Approval Time (days)	160	278	137	192	239	150	180	189	216	187	206	203	463	186	314	321	226
Acres of Earth Disturbance Approved	21.4	9.1	17.1	47.7	30.6	24.4	32.9	87.8	9.1	7.8	17.6	34.6	34.2	5.4	3.4	43.1	213.2
Acres of Green Roofs Approved	0.5	0.9	1.8	3.3	3.2	1.7	3.6	8.5	1.1	0.2	1.8	3.1	0.6	0.0	0.4	1.0	15.9
Acres of Porous Pavement Approved	0.2	0.0	0.3	0.5	1.7	0.6	1.2	3.4	0.2	0.2	1.4	1.8	0.5	0.1	0.4	1.0	6.7
DEP Reviews																	
New Coordinated Reviews	9	8	5	22	9	7	8	24	5	5	9	19	16	9	7	32	97
Erosion and Sedimentation Plan Review																	
Defer to DEP	0	0	0	0	1	0	2	3	0	1	1	2	0	0	0	0	5
Approved	15	8	7	30	11	7	17	35	7	8	6	21	9	11	3	23	109
Rejected	16	13	17	46	16	14	27	57	12	9	14	35	19	14	15	48	186
Not Applicable	35	20	29	84	17	22	16	55	13	16	20	49	13	11	23	47	235
Total Inspections																	
New Sites Inspected	20	28	26	74	37	20	31	88	11	25	34	70	41	74	227	342	574
Total Inspections	316	296	307	919	341	288	260	889	267	358	350	975	354	375	361	1090	3873
Active Construction Inspections at Project Sites with MS4 Sewers	89	64	84	237	87	78	76	241	75	96	80	251	89	83	97	269	998
Post Construction Inspections at Project Sites with MS4 Sewers	5	1	1	7	7	2	2	11	1	8	5	14	4	3	2	9	41
Total Inspections at Project Sites with MS4 Sewers	94	65	85	244	94	80	78	252	76	104	85	265	93	86	99	278	1039
Active Construction Inspections at Project Sites with Combined Sewers	194	189	172	555	197	182	146	525	162	224	232	618	223	261	229	713	2411
Post Construction Inspections at Project Sites with Combined Sewers	12	17	17	46	16	7	16	39	2	4	7	13	14	13	14	41	139
Total Inspections at Project Sites with Combined Sewers	206	206	189	601	213	189	162	564	164	228	239	631	237	274	243	754	2550

Please note: In FY09, PWD changed the Technical Screening to more of an administrative check to better mirror the DEP's administrative check.

PWD Screenings are no longer included in the Technical Review count.

Total Inspections includes projects in "Non-Contributing" sewered areas.

Figure F.5-1: FY22 Active Construction Sites



b. Post-Construction Stormwater Management in New Development and Redevelopment

Adopted in January 2006, the Philadelphia Stormwater Regulations enabled PWD to review plans for both new and redevelopment sites throughout the City to ensure water quality and quantity were part of the proposed management plan. Since 2006, PWD has collected and synthesized feedback from the development community regarding improvements to the stormwater plan review program. With the signing of a Consent Order and Agreement with the PADEP in June 2011, PWD saw an opportunity to increase stormwater management from land development projects while simultaneously implementing business-friendly improvements to the program. Updates are made to the Stormwater Regulations to improve and strengthen PWD's stormwater programs and stay current in policy procedures. The Philadelphia Stormwater Management Regulations are available online at http://www.phila.gov/water/PDF/PWDregCH6.pdf.

c. Applications/Permits

Across the entire city during FY22, 386 unique projects were submitted to PWD for conceptual review through the program's website. PWD approved full technical plans for 114 projects during FY22 citywide. It should be noted that this number does not include plans re-submitted for review, some of them multiple times. The distribution of development projects that submitted post-construction stormwater management plans for review is presented in **Table F.5-2 & 3**.

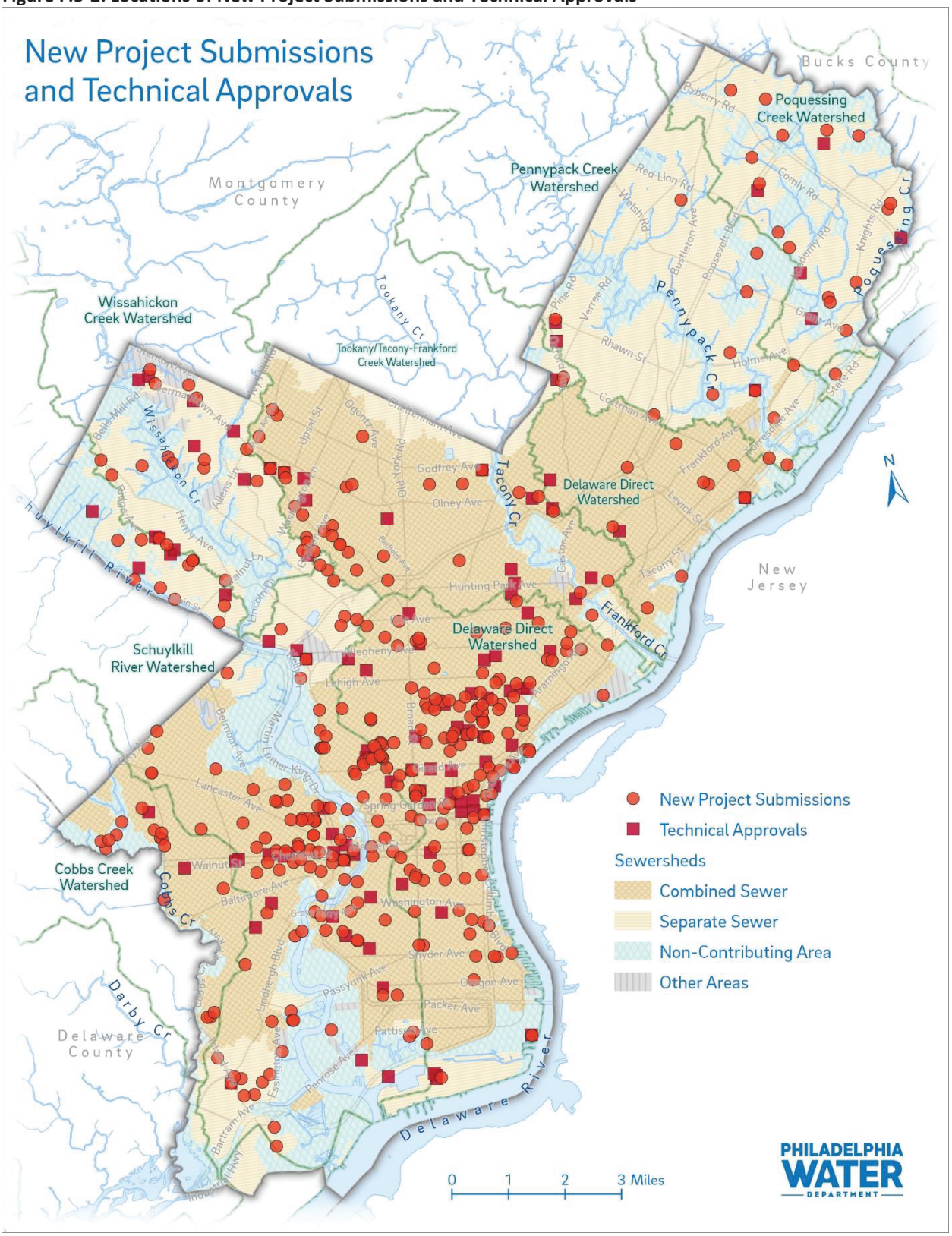
Table F.5-2: Approved Stormwater Plan Location Summary by Contributing Area

Drainage Type	Number of Locations
Combined Sewer Area	81
Non-Contributing Area	6
Separate Sewer Area	27
Total	**114**

Table F.5-3: Approved Stormwater Plan Location Summary by Watershed

Drainage Watershed	Number of Locations
Delaware River	44
Poquessing Creek	5
Pennypack Creek	3
Schuylkill River	34
Tacony/Frankford Creek	15
Wissahickon Creek	9
Darby-Cobbs Creek	4
Total	**114**

Figure F.5-2: Locations of New Project Submissions and Technical Approvals



d. Inspections

PWD requires a pre-construction meeting prior to commencement of earth moving activities for projects applicable to post-construction stormwater management requirements. In FY22, PWD conducted 115 pre-construction meetings citywide for development projects. During the pre-construction meeting, both the approved E&S Control Plan and the approved Post-Construction Stormwater Management Plan (PCSMP) are discussed with the construction manager and property owner representative. Post-Construction Stormwater Management inspections are discussed in **Section F.8** on page 32.

The active construction inspection program continued in FY22 by conducting inspections of stormwater structural controls on applicable land development sites. PWD stormwater inspectors conducted site visits for 419 active sites citywide during FY22. Technical plan review staff was also on-site, as needed, to verify construction of the SMPs was completed in accordance with the approved plan. In the case that concerns are identified regarding SMP installation during construction, the technical plan reviewer will discuss the necessary corrective actions for the project with the PWD inspector, as well as the project's engineering and construction manager.

PWD construction stormwater inspectors observe the installation of SMPs and erosion and sedimentation controls during active construction for development sites. During FY22, PWD was able to maintain its presence in the field by conducting 998 active construction inspections on 109 sites in the separate sewered areas of the city. Many sites were visited multiple times to ensure compliance with appropriate requirements **(Table F.5-4)**.

Table F.5-4: Active Construction Inspection Site Location Summary

Drainage Watershed	Number of Locations
Combined Sewer Area	280
Non-Contributing Area	30
Separate Sewer Area	109
Total	**419**

e. Monitoring/Enforcement

As part of the 2017 EPA AOCC CWA-03-2017-0146DN, PWD was required to develop an SOP to detail enforcement procedures for responding to E&S control issues when established enforcement methods do not result in compliance. In FY22, PWD continued to use the Repeat Offenders SOP as a guide when implementing enforcement action.

The SOP outlines Notice of Violations which includes a deadline for compliance and re-inspection. If a project remains out of compliance, PWD may coordinate with the L&I to issue a Stop Work Order. PWD also coordinates with L&I to hold the building Certificate of Occupancy for any projects where major issues are identified during the construction process. In some cases, projects may fall out of compliance after enforcement actions were previously taken during the construction period.

PWD issues a Notice of Violation to sites when significant or persistent issues with E&S controls or the installation of required SMPs are not addressed in a timely manner. In FY22, PWD issued a Notice of Violation (NOV) to 24 projects under construction citywide. Eight of these NOVs were associated with projects that received a previous NOV in FY21. In addition, PWD issued follow-up NOV notices to the projects in order to ensure full compliance. Of the 24 active NOVs issued in FY22, 13 have been partially

or fully resolved bringing the site back into compliance. The major compliance issues for active construction projects include improper installation or absence of E&S controls, contractor not following the approved plans, and non-permitted construction activity.

f. NPDES Permit Requests

PWD continues to provide Conservation District functions for the City of Philadelphia for NPDES Construction Permitting Requirements and Chapter 102 Regulations relating to Erosion and Sedimentation Pollution Control. PWD continues to receive notifications and coordinate reviews for permitting. For more information and full details on this process described in previous reports; please refer to Section F.5.f NPDES Permit Requests on page 204 of the CSO-Stormwater FY12 Annual Report.

g. Stormwater BMP Handbook and Construction Site BMP Sediment & Erosion Control Checklist

The Stormwater Management Guidance Manual Version 3.0 represents a comprehensive revision released in conjunction with the updated Stormwater Regulations on July 1, 2015. Since 2015, the Manual has received two subsequent updates; Version 3.1 released on July 2, 2018 and Version 3.2 released on October 1, 2020. Primarily a web-based resource, this version of the manual is organized to reflect the life cycle of a development project from initial submission through operation and maintenance. In addition to providing context on the regulatory framework for stormwater management in the city, the manual builds upon over a decade of program growth and technological advancements to streamline the technical design requirements and clearly document the plan review process for applicants. The PWD leveraged feedback from design engineers to clarify existing content, provide new resources and develop a fully searchable and accessible online manual. The manual is located on the web at https://www.pwdplanreview.org/manual/introduction.

F.6 Watershed, Combined Sewer Overflow (CSO), and Source Water Protection Programs

PWD, through the Planning and Environmental Services Division (PESD), strives to reduce the amount of point and non-point discharges entering regional waterways and improve the environmental health of the region so that all waters are fishable and swimmable. The main programs within PESD, in addition to the Stormwater Management Program, that work together to improve regional ecological health, water quality, and sustainability are: Watershed Planning, Source Water Protection Program, CSO Management Program, and Wetlands Mitigation Registry. The Watershed Planning Program is presently explained in detail throughout **Section III.C of the CSO Annual Report** on page 35.

Source Water Protection Program

PWD's Source Water Protection Program embodies PWD's multi-barrier approach to ensuring the safety and quality of Philadelphia's drinking water, whose sources consist of the Schuylkill and Delaware Rivers. The Source Water Protection Program conducts planning, research, and on-the-ground projects to better understand and address priority sources of water quality impairment in the 10,000 square mile upstream area encompassing Philadelphia's source watersheds. The staff works closely with PWD water treatment plant operators to anticipate and respond to emergencies and challenges to conventional treatment technology. PWD continues to implement the Source Water Protection Program and has

discussed it in full detail in the past. For more information on this program, please refer to the following sections:

- Schuylkill Action Network
  Please refer the CSO Annual Report **Section II.G.2 – Schuylkill Action Network** on page 18 for information about this topic.
- Delaware Valley Early Warning System
  Please refer the CSO Annual Report **Section II.G.2 – Delaware Valley Early Warning System** on page 20 for information about this topic.
- RiverCast
  Please refer the CSO Annual Report **Section II.G.2 – RiverCast** on page 18 information about RiverCast.

Combined Sewer Overflow Management Program

The Combined Sewer Overflow management program works to implement technically viable, cost effective improvements and operational changes that mitigate the impacts of combined sewer overflows. Please refer to **Section I Management and Control of CSOs** on page 1 in the CSO Annual Report for additional information.

Watershed Mitigation Registry

Please refer to the CSO Annual Report **Section III.C.2.4 – Wetland Enhancement and Construction** on page 45 for information about the Watershed Mitigation Registry.

F.7 Miscellaneous Programs and Activities

a. Pollutant Migration/Infiltration to the MS4 System

PWD responds to all notifications and reported complaints of liquid, solid, or gaseous pollutants within Philadelphia. A list of all pollutant migration events in the MS4 section of the City that occurred in FY22 is presented in **Appendix M – FY22 Pollutant Migration/Infiltration**.

b. Public Education and Awareness

Public Education Literature

The City takes an active role in providing information and education to the public and our community. Several events and programs are conducted each year in which the City provides numerous amounts of literature to the public. Please refer to the CSO Annual Report **Section II.G – Pollution Prevention** on page 17 for information about this topic.

c. Pesticides, Herbicides, and Fertilizer Controls

Integrated Pest Management protocol

The majority of the City does not use pesticides or conduct any practices that require the use of the Integrated Pest Management (IPM) protocol. The City is currently focusing on invasive plant management through the use of herbicide to remove invasive plants.

The Philadelphia Health Department uses larvicides, Bacillus Sphaericus (brand name Vectolex), Methoprene (Altosid), and Spinosad (Natular), to prevent mosquito breeding. These larvicides are approved for use in the stormwater catch basins and are applied as such. The IPM protocol is followed when using the larvicides by inspecting the catch basins before treatments, using the least toxic or non-toxic product, and submitting a request for repairs when necessary. PWD and the Department of Public Health work closely together. This collaboration has resulted in the Health Department receiving maps with locations of the City's storm water inlets and surface basins. This allows PWD improved access to refer concerns of pests in the water collections systems for treatment by Health Department staff.

All associated Philadelphia Health Department staff are certified pest control applicators in accordance with Pennsylvania Department of Agriculture. To maintain this certification, on-going training is required. The Philadelphia Health Department holds several on-site trainings per year for staff.

Education materials to private pesticide users

The Philadelphia Health Department provides educational materials to organizations, companies and/or individuals upon request. Often private exterminators, especially companies that handle pest control work for City facilities, request this information since most buildings in the City contract out for pest control work through the individual Departments. Health Department Sanitarians (Inspectors) have this information available to provide to the public.

d. Snow Management Plan

The City faces winter storms that bring potentially dangerous accumulations of ice, sleet, freezing rain, and snow. To mitigate the impact of these storms, the Streets Department has prepared a Snow and Ice Operations Plan which provides a detailed outline of the City's response to adverse winter weather conditions. The plan includes the salt storage locations at the six Highway Districts. The updated Snow and Ice Removal Operations Plan for winter 2021-2022 is provided in **Appendix O - City of Philadelphia Snow and Ice Operations Plan Winter 2021-2022**. Please refer to Appendix O on page 40 for information about salting practices in the city.

e. Municipal/Hazardous Waste, Storage, Treatment, and Processing Facilities

The City's one active waste transfer station, Northwest Transfer Station, is located at Domino Lane and Umbria Street in the Roxborough section of the City. Due to the existing facility's progressive deterioration a new waste transfer facility has been designed at the same location and the construction project is scheduled to be advertised in July 2022. The proposed design includes stormwater management best practices. Such practices include an oil/water separator piped to by all trench drains in the facility and three lined rain gardens to manage stormwater runoff on site.

F.8 Best Management Practices (BMPs)

a. Submit storm sewer discharge ordinance

The authority for PWD to adopt stormwater regulations is found within Title 14 Zoning and Planning Code under §14-704(3) Stormwater Management. PWD maintains Stormwater Regulations as Chapter 6 of PWD's regulations. These regulations were originally adopted in 2006 and were most recently updated in July of 2015. These regulations require stormwater management on development projects that exceed an earth disturbance threshold of 15,000 square feet. For more information regarding

PWD's regulation updates within the last year, see **Section F.5.b. – Post-Construction Stormwater Management in New Development and Redevelopment** on page 27.

PWD has added documentation to a website (http://www.pwdplanreview.org) to provide the development community a means of accessing the most recent stormwater management information.

b. Commercial and Residential Source Controls

b.i. Mingo Creek Surge Basin

A capital construction project for the rehabilitation of Mingo Creek is currently in contract management and is targeted for bid in FY23. The rehabilitation project is in response to flooding in the Eastwick area of Philadelphia because of the Cobbs Creek overtopping. For more information on this project, please refer to Section F.8.b.i on page 214 of the CSO-Stormwater FY12 Annual Report.

b.ii. Existing privately owned structural controls

To ensure ongoing SMP maintenance of private facilities, PWD continues to utilize four means: executing Operation & Maintenance Agreements, maintaining comprehensive operations and maintenance information, conducting post-construction maintenance inspections, and enforcing on non-compliant projects.

An Operation and Maintenance agreement between the property owner and PWD is executed and recorded against the property as part of the PWD post-construction stormwater management plan process. These agreements outline the SMP(s) on the private site and stipulate maintenance requirements. The agreements also include language granting PWD the authority to inspect on-site SMPs and even perform maintenance on behalf of the property owner if necessary.

PWD maintains comprehensive operations and maintenance information geared toward the private development community in Chapter 4 of the Philadelphia Stormwater Management Guidance Manual. Each SMP section provides guidance on SMP maintenance activities, including a recommended SMP maintenance schedule and maintenance factsheets are available as a quick resource for the property owner. In addition, as part of the post-construction stormwater management plan review process, projects must create an SMP Maintenance Guide. The SMP Maintenance Guide is unique to each project and includes a site map and Maintenance Schedule Form for each SMP to allow the owner to track maintenance activities for the site. As an additional resource, PWD has compiled an O&M Manual for property owners. Please see links below for more information:

- Philadelphia Stormwater Management Guidance Manual, Chapter 4
- Maintenance Schedule and Fact Sheets
- SMP Maintenance Guide
- O&M Manual for Property Owners

Post-construction maintenance inspections of private facilities were conducted through the reporting period. PWD utilizes visual inspections and specialized inspection techniques to assess the performance of private SMPs. PWD conducts post-construction maintenance inspections on all applicable private facilities. As projects are identified for maintenance inspection, the PWD post-construction inspection staff contacts the property owner to schedule the inspection. PWD attempts to conduct the inspection with the property owner or their maintenance representative present so any concerns or questions can

be verbally discussed. After inspection, a post-construction inspection report is generated and issued to the property owner. Any required corrective actions are identified in the report along with a deadline for resolution. After actions are taken, PWD re-inspects the property and compliant sites are closed until their next routine inspection date. Inspectors will provide guidance to the property owner to ensure corrective actions are resolved. In addition to visual inspections, PWD has identified other effective methods and technologies, including closed-circuit television, surveys of critical system elevation points, confined space, pole-mounted camera photography, and wet weather inspections. PWD will continue to evaluate and refine post-construction inspection protocols. In FY22, PWD performed 41 post-construction inspections in the MS4 and 188 post-construction inspections citywide.

Referral for enforcement is pursued if compliance is not achieved within the timeframe specified during the post-construction inspection process. PWD initiates an enforcement case with the issuance of a post-construction enforcement letter to the property owner if a post-construction stormwater management plan (PCSMP) is found to be insufficiently maintained. This notification includes a description of any issues identified and a timeline to achieve compliance. The City is authorized to compel maintenance of SMPs on private property under the Philadelphia Code and PWD Regulations. Development sites that are subject to PSWMR, as well as properties that have grant-funded SMPs, are required to maintain the SMP(s) to function as designed. If initial notification is unsuccessful at bringing action from the property owner, PWD can compel compliance through several enforcement tools, including notices of violation, fines, court action, and/or a nuisance abatement and lien by the City. For non-compliant projects, PWD will also suspend any applicable stormwater billing credits if corrective actions are not completed. In FY22, PWD successfully resolved 13 enforcement cases consisting of 43 SMPs in the combined sewer area of the city. Of the enforcement cases closed, escalated enforcement tools were utilized consisting of three NOVs. PWD will continue to work with property owners to ensure that SMPs are inspected and maintained in accordance with Regulations and recorded O&M agreements.

c. Development plans review

PWD and the City Planning Commission provide review of drainage plans for new and redevelopment. The drainage plans address both flood control and potential stormwater pollutants under the authority of the Philadelphia Code. Please refer to **Section F.5 – Monitor and Control Stormwater from Construction Activities** on page 22 for additional information.

d. Street Cleaning Program

During FY22, the Streets Department developed the Mechanical Street Cleaning Pilot Program as part of the City of Philadelphia's commitment to reduce trash and litter conditions in the City's most vulnerable communities. Mechanical street cleaning is an effective tool in reducing litter from city streets and preventing trash and debris from entering the water systems.

The Streets Department launched Phase II in 14 neighborhoods identified through the Litter Index as having the highest concentration of litter. These areas have been identified as requiring additional city services to supplement cleaning efforts in the area. The program runs from early May through November 30th to coincide with the warmer-weathered months and decrease the potential for snow and ice. Some streets in each pilot area receive sidewalk cleaning maintenance along with mechanical broom cleaning weekly. Since FY14 the Streets Department has initiated monthly street sweeping operations on routes along the Tookany/ Tacony Frankford, Wissahickon, Cobbs Creek and Pennypack watersheds within the city.

In addition, the Center City District (CCD) and University City District (UCD) conduct sidewalk cleaning. Heavily-trafficked commercial streets and areas receive daily sweeping with pans and brooms and mechanical cleaning. Other areas with a high density are cleaned at least twice weekly with machines (some areas are cleaned daily). Sidewalks also get a monthly power washing, except in winter, to remove accumulated stains, gum and grime. In FY22, 39,152 miles of streets were mechanically cleaned. Through a variety of fee-for-service arrangements, CCD crews clean several adjacent commercial and residential areas and provide a 24-hour deployment to clean the three and a half mile long underground subway concourse and Center City's two regional rail stations.

Public awareness of litter

The City promotes, develops, and implements litter reduction programs in an effort to increase public awareness of litter as a source of stormwater pollution. There are about 500 solar-powered, compaction litter receptacles in Center City, and another 460 in other commercial districts throughout the city. Over 600 standard wire baskets are also in place through the Philadelphia More Beautiful Committee (PMBC) Adopt-A-Basket program, which provides block captains with wire waste baskets to distribute and manage across city neighborhoods. PMBC also organizes neighborhood cleaning events citywide. Such cleaning efforts are bolstered every April by the Philly Spring Cleaning day, a citywide anti-litter event partnering various city agencies and neighborhood community groups, which is an annual event. Although last year the event was cancelled due to the COVID 19 pandemic, this year it was held in the Spring with a second Citywide cleanup scheduled for the Fall as well. These efforts are bolstered by Philadelphia's SWEEP program. SWEEP officers, employees of the Streets Department, work with residential communities to address locations with problematic amounts of litter and short dumping. In cases of non-compliance, SWEEP officers will issue warnings and citations to the appropriate individuals.

e. Animal Waste and Code Enforcement

Educational material regarding control of animal waste

The Philadelphia Code and Charter Chapter 10.100 – Animals and Chapter 10.700 – Refuse and Littering address the proper clean-up of pet waste and applicable fines and penalties. In addition, signs advertising said penalties are displayed city-wide in an effort to prevent residents from violating this statute. The City of Philadelphia also provides the text of this code online at http://municipalcodes.lexisnexis.com/codes/philadelphia/.

PWD provides additional information on pet waste to the public including how it affects stormwater and why to pick it up through its website located at the following site: http://water.phila.gov/drops/dog-waste/

Dog Waste Control Program

PWD launched an innovative approach to address dog waste in targeted neighborhoods in July of 2010. Through a pilot project in the Delaware Watershed, the Partnership for the Delaware Estuary found that many dog-owners are unaware of the connection of dog waste to water pollution. Building on almost of decade of experience, PWD redeveloped the dog waste program in FY18 to more broadly appeal to dog owners across the City. The new program will expand outreach into community dog parks, City-owned parks and various events hosted by organizations across the city. More information can be found at the following website: http://www.delawareestuary.org/manage-dog-waste/.

f. Flood Management and Flood Control Devices

Structures built within the floodplain

All development within the Special Flood Hazard Area (SFHA), which is identified on FEMA's Flood Information Rate Maps (FIRM's), is reviewed and approved per the City's codes and regulations found in both Zoning and Building codes. L&I will identify all City parcels within the SFHA, and upon an application submission will determine whether the floodplain codes apply. If the development site itself is determined to be within the SFHA, structures built will be designed to an elevation of Base Flood Elevation (BFE) plus a safety factor of at least 18 inches. The L&I will maintain records of compliance for all development located with the SFHA. Licenses and Inspections issued 260 permits in total, that includes separate building, MEP, and alteration permits.

Evaluate new and existing structural drainage controls

Our evaluation of structural drainage controls was discussed in further detail in **Section F.8.b.ii - Existing privately owned structural controls** on page 33 of this report.

Work is being done on sections of the city that have chronic flooding to eliminate or reduce these occurrences; please refer to CSO Annual Report **Section II.B.3 – Flood Relief Project Summary** on page 3 for more information about the SFR projects and details on evaluating structural drainage controls.

Streambank Restoration and Wetland Enhancement

Please refer to the CSO Annual Report **Section III.C.2.3 – Stream Habitat Restoration** on page 39 for information pertaining to streambank restoration.

Please refer to the CSO Annual Report **Section III.C.2.4 – Wetland Enhancement and Construction** on page 45 for information pertaining to wetland enhancement.

g. Sanitary Infiltration Controls

Limit sanitary infiltration

As part of the Cross-Connection Repair Program, PWD has conducted 1,659 abatements to correct cross connection in sewer laterals since 1994; 13 abatements were completed in FY22 alone. PWD also has in place twelve (12) dry weather diversion devices which divert sanitary flow back into the sanitary sewer but still allow stormwater to pass through during wet weather events. PWD estimates that these abatements and dry weather diversion devices have prevented over 233.13 million gallons of contaminated flow from entering our waterways since the inception of the program and about 1.83 million gallons during FY22. Please refer to **Section F.3 – Detection, Investigation, and Abatement of Illicit Connection and Improper Disposal** on page 20 for more information on the Cross-Connection Repair Program.

In addition, as part of PWD's Sewer Maintenance Program, sewer lining is routinely conducted on both sanitary and storm sewers. Lining sewers helps to reinforce, seal, and rehabilitate the existing sewers, specifically preventing infiltration to allow the pipe capacity to be reserved for sanitary and storm flow. Apart from those being done under consent orders, there are several sewer lining projects in the City that originate from sewer maintenance issues like street cave-ins, depressions, backups, as well as sewer assessment meetings.

As a part of PWD's commitment to improvement of water quality and aesthetics in dry weather, large sewer lining projects began on the entire length of intercepting sewers along the Tookany/Tacony-Frankford and Cobbs Creeks. Please refer to **Appendix A Green City, Clean Waters FY22 Annual Report Section 1.1 Interceptor Rehabilitation Program** on page 1 for more information on the interceptor relining project.

Construction of a storage tank upstream of relief sewer manhole R-20, located at Main Street and Shurs Lane, to capture and store excess flows was completed during November of 2013. The consent order requirement for sewer linings to be done around regulator R-20 in an effort to reduce inflow and infiltration has been completed. Please refer to CSO Annual Report **Section III.B.1– Construction and Implementation of the Main and Shurs Off-line Storage Project** on page 32 for more information on the Main and Shurs Off-line Storage Project and efforts to reduce inflow and infiltration at R-20.

PWD constructed a parallel relief sewer in December of 2011 to eliminate overflows at manhole PC-30 as per a consent order issued by the DEP. The overflows at PC-30 were caused by a combination of various factors which influence the hydraulic carrying capacity of the Poquessing Creek Interceptor during wet weather events. In FY22, PWD continued to monitor the effectiveness of this relief sewer. There were also several sewer lining projects done under the consent order for PC- 30 area in conjunction with the relief sewer being constructed. Please refer to CSO Annual Report **Section III.B.2. – PC-30 Parallel Relief Sewer** on page 32 for more information on the PC-30 Relief Sewer.

Investigate, remediate, and report sanitary infiltration

PWD responds to all citizen complaints of liquid, solid, or gaseous pollutants within Philadelphia. A database called the Sewage Pollution Incident & Location Log (SPILL), which stores information about unintentional sanitary discharges including the date reported, problem location, spill type, description, and abatement date, is maintained. Detailed information on the events found on the SPILL database of reported sewage pollution incidents in FY22 are found within in **Appendix L – FY22 Sanitary Infiltration Events**. The following locations have been identified by the Department as locations suffering from chronic discharges of sanitary sewage to the storm sewer system and/or waterways. A description of the specific site issues and the current status of remediation efforts is provided for each location:

Neill Drive Pumping Station

The Department had been operating a bypass force main on the Neill Drive pump station since March 2020 due to a failure in the force main near the pump station. The force main was put back into service on May 12th, 2021. The bypass main was decommissioned, flushed and disassembled for haul away by PWD's contractor shortly thereafter.

In FY22, no further issues with force main were encountered. However, there was a dry weather overflow event that occurred on 1/24/2022. The event was caused by a tripped circuit breaker. To prevent similar issues in the future, a project to install a permanent generator at the station has been initiated and currently has a targeted bid of FY25.

Navy Yard Force Mains

Issues with the force mains associated with Pump Station 603 in the Philadelphia Navy Yard have been ongoing for several years, and the Department saw significant progress in the necessary upgrade and rehabilitation of a portion of these mains in the past fiscal year. The force main and associated pumping

station are integral in conveying sanitary flows out of the western area of the Navy Yard to the Southeast Water Pollution Control Plant.

Pump Station 603

In 2021, PNBC-603 experienced multiple force main breaks due to the corrosive effluent from PNCB-648 eroding the inner wall of the main. After years of recurring breaks, a two-phase project was initiated in 2021 to replace the force main with a corrosive resistant material in its entirety. The first half of the project entailed replacing the main starting at the station and ending around 1000 ft west of Broad St. The construction of this project is substantially complete, and the work done was reviewed by PWD construction on January 6th, 2022. The second phase of the project is currently being expedited and includes replacing the rest of the main from the first phase to the discharge manhole near PNBC-796. In FY22, five SSO were experienced due to the extreme corrosion of the 8" force main. All SSO volumes were contained within the street, and there was no observed discharge to nearby stormwater inlets in any of the incidents.

Pump Station 648

Force main deterioration issues have been ongoing for several years at this location and the Department completed major overhaul of Pump Station 648, which discharges to Pump Station 603, and the cast iron force main in 2020. The project consisted of replacing the force main with HDPE and all internal station piping, pumps and fittings with stainless steel to help resist corrosion.

Hortter Street Sewer

On December 13th, 2020, PWD responded to the fourth SSO along the 300 and 400 blocks of W Hortter Street in the last four years. The Department has completed several CCTV inspections of sanitary and storm sewers in this street, with the most recent occurring in February 2019. The primary causes of the SSOs have been heavy debris accumulation and failures in the terracotta pipe sanitary sewer installed in the late 1800s, resulting in the restriction of flows and discharge through manholes or privately owned fresh-air-inlets. The Department has been able to adequately and timely respond to the SSO incidents by completing sewer flushing and cleaning activities and point repairs when necessary. PWD continues to monitor this location so that it can mitigate the occurrence of any future SSOs until the sewer reconstruction project is complete.

During FY22, one SSO was experienced due to a choked section of sewer. The choked sewer was cleared, and cleanup was conducted by Sewer Maintenance. The Department issued Notice to Proceed on 2/23/2022 for the sewer reconstruction project. The current anticipated construction completion date is 6/8/2023.

Cresheim Valley Drive (CV-0145)

The PWD previously identified a hydraulic overload along a 1,000-foot section of separate sanitary sewer in the Cresheim Valley. A hydraulic model analysis revealed a portion of this system was hydraulically limited during wet weather events with a 1-year return interval. Pursuant to Chapter 94 reporting requirements, the PWD notified the DEP of this restriction and submitted a Corrective Action Plan (CAP) as a component of its Chapter 94 Report for the 2020 calendar year. Construction of the new intercepting sewer began in November 2021, and the sewer is in service as of March 2022. The project replaced approximately 1,500' of the former egg-shaped Creshiem Valley intercepting sewer and replaced it with 42" centrifugally cast fiberglass pipe that is watertight at all joints, connections and

manholes. This project successfully eliminated the hydraulic restriction that existed between manholes CV-138 and CV-137. A full update to the CAP was provided in the Chapter 94 Report for CY2021.

On-lot septic/disposal system

During FY22, one complaint of a malfunctioning on-lot sewage disposal system was investigated and serviced. Also, during FY22, 7 applications were reviewed for the installation or repair of on-lot sewage disposal systems, and 4 permits were approved. In addition, 967 portable toilet permits were issued. PWD continues to support the inspection and remediation of these systems.

h. Spill Prevention and Response

The City's response plan to respond to and contain harmful spills that may discharge to the municipal separate storm sewer system is managed by the Office of Emergency Management.

In order to protect PWD's structures and treatment processes, PWD staff respond to oil and chemical spills and other incidents that have the potential to threaten the water supply or impact the sewer system, twenty-four hours per day, seven days per week. PWD responds to all incidents that can impact the sewer system or endanger PWD employees. This includes both the sanitary sewer system and the storm sewer system. PWD supervises cleanup activities and assesses environmental impact. PWD inspectors also investigate various other types of complaints. In FY22, 147 pollution migration events occurred. A list of all pollutant migration events in the MS4 section of the City that occurred in FY22 is presented in **Appendix M – Pollutant Migration/Infiltration**.

i. Public Reporting of Illicit Discharges, Improper Disposal

The City encourages residents to report the occurrence of illicit discharges that may impact the sewer system and water bodies. To facilitate the timely reporting of such events, PWD operates a Municipal Dispatcher 24 Hours/Day, 7 Days/Week to handle reports from the public. In addition, a customer service hotline (215 685-6300) is also operated that provides the ability to connect to the Dispatcher. This information is distributed in mailings, as well as online at http://www.phila.gov/water/contact_us.html.

Upon the reporting of such an incident, a PWD inspector is immediately dispatched to the site to investigate and determine the source of the discharge, as well as the extent of impact on the receiving water body. Each incident is logged into an electronic database that enables tracking of the details of each occurrence.

PWD received 1,051,049 phone calls in FY22. Currently PWD does not track phone calls specifically related to illicit discharges and improper disposals in the MS4 area, but instead tracks much broader topics including sewage backup, flooding, street cave-ins and water service disruptions.

Philly 311

Philly311 was created to help eliminate the need to sort through the numerous phone numbers and hotlines available to contact the City government. A customer service specialist will connect the user to the information and services they may need either by calling 3-1-1, asking a question on the website or through Twitter @philly311. A Philly 311 mobile app is available for iPhone, Android, or Blackberry devices to report issues such as graffiti, potholes, litter and more. For more information on uses of Philly311, please visit: http://www.phila.gov/311/. During FY22, Philly 311 transferred 2,898 non-emergency inlet and hydrant requests to Customer Service Call Center.

j. Used Oil and Toxic Material Disposal

The City continues to facilitate the proper disposal of used oil and other toxic materials. This program includes collections events, distribution of educational materials, the operation of a website, and a hotline accessible to the public. For more information on the hazardous waste program please visit: http://www.philadelphiastreets.com/hazardous-waste.

k. Storm Water Inlet Labeling/Stenciling

Since 2015, PWD's stormwater inlet labeling program has included watershed specific markers representing the seven watersheds in Philadelphia. Each marker features a unique color scheme and an animal native to its respective watershed. Storm drain marking kits are assembled and distributed to volunteers, both individually and through partnerships with community and environmental organizations; kits include enough supplies to mark 15 storm drains as well as educational tip cards to inform the public about how their actions can reduce stormwater runoff pollution. PWD continues to utilize its web-based marking app to track which storm drains are marked by volunteers.

In FY22, a total of 127 storm drain marking kits were distributed to volunteers leading to 1,254 storm drains being marked throughout Philadelphia. Nine watershed and civic organizations and 13 schools were engaged with the program, both in the distribution of kits and the installation of markers. Additionally, eight public presentations were given about the program and its connection to stormwater runoff; one presentation was recorded and is available online for interested groups to learn more about the storm drain marking program. Follow ups with volunteers occur monthly to encourage the installation of distributed markers.

Section G Assessment of Controls

PWD has selected a set of effective post-construction stormwater management controls to address problems identified in the waterways and documented these controls in the Stormwater Management Guidance Manual. Philadelphia's stormwater management regulation obligates all development and redevelopment projects subject to these regulations to implement the identified controls. The requirements of the stormwater regulations were developed through the Act 167 planning process in coordination with neighboring counties. The requirements are explained in detail in Section 1.2.1 of the Stormwater Management Guidance Manual and summarized below.

Water Quality

The Water Quality requirement focuses on the removal of both runoff volume and pollutants and is similar to requirements in surrounding states and other major cities across the country. Because flow rates and velocities were identified as significant causes of aquatic ecosystem impairment, infiltration is emphasized as the preferred water quality management practice unless evidence is provided that it is infeasible on a particular site. Additional water quality benefits are provided, in part, by slowing water down and allowing suspended solids and associated pollutants to settle.

The Water Quality requirement stipulates infiltration of the first 1.5 inches of runoff from all directly connected impervious area (DCIA) within the limits of earth disturbance. The initial 2006 regulations required 1.0 inch of runoff to be managed, based on water budget analyses and precedents for control

of the 90th percentile event set by Maryland and other nearby states with similar climates. This requirement has been increased in 2015 to 1.5 inches based on evidence provided by simulations showing that this level of control will further reduce the volume and flow rate of runoff to waterways.

Channel Protection

Erosion of stream beds and banks caused by high volumes and velocities of urban runoff was identified as a significant contributing factor to aquatic ecosystem impairment in Philadelphia's stream systems. For this reason, a channel protection requirement was incorporated in the stormwater regulations. This requirement is based on the concept of effective channel forming discharge and is similar to precedents set by Maryland and other nearby states with similar climates and geology.

The Channel Protection requirement stipulates the detention and release of runoff from the one-year, 24-hour Natural Resources Conservation Service Type II design storm event for all DCIA within the limits of earth disturbance at a maximum rate of 0.24 cfs per acre of directly connected impervious drainage area in no more than 72 hours.

Flood Control

Act 167 Plans identified peak rates of runoff as a contributing factor to out-of-bank flooding events in Philadelphia and surrounding counties. To address peak rate control, geographically specific requirements were incorporated in Philadelphia's stormwater regulations and manual.

The Flood Control requirement stipulates that a development project meet or reduce peak rates of runoff, as determined by its Flood Management District, from predevelopment to post-development conditions during certain storm events.

There are approximately 20.7 square miles of impervious area in the portion of the City that falls under the MS4 permit. Since July 2010, approximately 1.66 square miles (1,050 acres) of directly connected impervious area are tributary to completed or approved green stormwater infrastructure. This is approximately 7.9% of the impervious area.

Section H Fiscal Resources

Maintain adequate program funding

During FY22, the City provided fiscal resources needed to support operation and maintenance of the Stormwater Management Program. The budget for the upcoming FY23 budget is available upon request.

Annually submit fiscal analysis

The conditions of the NPDES permit can be achieved through appropriate budget planning supporting the projects and assessments critical to a successful program. Any funding changes will be included as part of subsequent annual reports.

APPENDIX A

Green City, Clean Waters

FY 2022 Annual Report

Eleventh Annual Report for the City of Philadelphia's Consent Order and Agreement on Green City, Clean Waters

Reporting period July 1, 2021 – June 30, 2022

Submitted to
The Commonwealth of Pennsylvania
Department of Environmental Protection
And
The United States Environmental Protection Agency

By the City of Philadelphia Water Department
September 30, 2022

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Glossary of Acronyms

AOCC	Administrative Order for Compliance on Consent
BMP	Best Management Practice
BOD	Biological Oxygen Demand
City	City of Philadelphia
CMP	Comprehensive Monitoring Plan
COA	Consent Order and Agreement
CSO	Combined Sewer Overflow
EAP	Evaluation and Adaptation Plan
FWWIC	Fairmount Water Works Interpretive Center
GA	Greened Acre
GIS	Geographic Information Systems
GSI	Green Stormwater Infrastructure
LTCPU	Long Term Control Plan Update
NASSCO	National Association of Sewer Service Companies
NPDES	National Pollutant Discharge Elimination System
O&M	Operation and Maintenance
PACP	Pipeline Assessment Certification Program
PADEP	Pennsylvania Department of Environmental Protection
PCSMP	Post Construction Stormwater Management Plan
PennDOT	Pennsylvania Department of Transportation
PIDC	Philadelphia Industrial Development Corporation
PPR	Philadelphia Parks and Recreation
PSWMR	Philadelphia Stormwater Management Regulations
PWD	Philadelphia Water Department
SDP	School District of Philadelphia
SIUA	Soak It Up Adoption
SMP	Stormwater Management Practice
SRT	Simulated Runoff Testing
UUW	Understanding the Urban Watershed
US EPA	United States Environmental Protection Agency
WPCP	Water Pollution Control Plant
WQBEL	Water Quality-Based Effluent Limit

1.0 Introduction

In 2011, the Consent Order and Agreement (COA) between the City of Philadelphia (City) and the Pennsylvania Department of Environmental Protection (PADEP), and in 2012 the Administrative Order for Compliance on Consent (AOCC) between the City and the United States Environmental Protection Agency (US EPA), formalized the regulatory approval of the *Green City, Clean Waters* program and amended the 2009 CSO Long Term Control Plan Update (LTCPU). This is the eleventh Annual Report submitted under the requirements of the COA. Fiscal Year 2022 (FY22) covers the City's *Green City, Clean Waters* implementation progress activities that occurred between July 1, 2021, and June 30, 2022.

The PADEP granted the Philadelphia Water Department (PWD) a force majeure extension for the requirements and deliverables associated with the Year 10 Performance Standards of the COA due to impacts from the COVID-19 pandemic. This extended the Year 10 implementation deadline from June 1, 2021, to December 31, 2021, and extended the submission deadline for the Year 10 Evaluation and Adaptation Plan (EAP) to May 30, 2022.

The Year 10 EAP submitted on May 30, 2022 to PADEP can be found at https://water.phila.gov/pool/files/gccw-year-10-eap.pdf. The Year 10 EAP provides a comprehensive assessment of program progress at the Year 10 milestone, including an assessment of compliance with Water Quality Based Effluent Limits (WQBEL) Performance Standards and an updated assessment of receiving water conditions. The FY22 COA Annual Report will focus on the progress accomplished in FY22.

1.1 Water Quality Based Effluent Limit Performance Standards

The Water Quality-Based Effluent Limits (WQBEL) performance standards are broken into incremental targets that must be achieved by the City every five years of the 25-year program. With the recent achievement of the Year 10 milestone, this report includes water pollution control plant and collection system improvements, interceptor lining, and greened acre (GA) interim progress towards the Year 15 WQBEL targets. Volume reduction and mass capture are only reported every 5 years with updated values recently included in the Year 10 EAP. **Table 1-1: Water Quality-Based Effluent Limits** displays the cumulative progress achieved at Year 10 and includes the upcoming Year 15 (2026) WQBEL targets.

Table 1-1: Water Quality-Based Effluent Limits

Metric	Units	Base Line Value	Cumulative Amount as of Year 5 (2016)	Cumulative Amount as of Year 10 (2021)	Year 15 WQBEL Target
NE WPCP Improvements	*Percent Complete*	0	Reported progress in Year 5 EAP	**Reported progress in Year 10 EAP**	To report progress in Year 15 EAP
SE WPCP Improvements	*Percent Complete*	0			
SW WPCP Improvements	*Percent Complete*	0			
Miles of Interceptor Lined	*Miles*	0	7.5	**9.2**	14.5
Overflow Reduction Volume	*Million Gallons Per Year*	0	1,710	**3,080**	3,619
Total GAs	*GAs*	0	837.7	**2,196****	3,812
Equivalent Mass Capture *(TSS)*	*Percent*	62%	70.5%	**77.5%**	Report value
Equivalent Mass Capture *(BOD)*	*Percent*	62%	88.9%	**~100.0%***	Report value
Equivalent Mass Capture *(Fecal Coliform)*	*Percent*	62%	72.0%	**77.1%**	Report value

*BOD5 capture has met or exceeded the 85% equivalent mass capture. The amount of BOD5 captured has met or exceeded the load reduction that is associated with 85 percent capture volume treated using primary clarification and disinfection using the end-of-pipe treatment technology.

** As reported in the Year 10 EAP. The application of the revised GA calculation method increases this total to 2,531 GAs with the same project lists. See Appendix 4 for more details.

1.2 Green City, Clean Waters Greened Acres

Greened Acres (GA) are achieved through three implementation approaches: Public Retrofits, Private Development, and Incentivized Retrofits. **Table 1-2: Cumulative Greened Acres** displays the cumulative program progress towards meeting the Year 25 GA target at the end of Year 11; these GAs were calculated using the revised calculation method presented in Section 2 and Appendix B of the Year 10 EAP.

Table 1-2: Cumulative Greened Acres

Implementation Approach	Cumulative Number of Projects (FY11-FY22)	Cumulative GAs (FY11-FY22)
Public Retrofits	293	824
Private Development	460	842
Incentivized Retrofits	110	951
Total	**863**	**2,617**

It is important to note that project specific GA values are subject to change and do not remain constant over time. A project's GA value is calculated using the best available information based on phase and site conditions which can result in adjustments. The designed GA is established from final design

drawings and is then informed and updated upon the completion of construction to produce an as-built GA value. The as-built value can be updated post construction as maintenance and monitoring data is gathered to create an as-maintained GA value when appropriate. The GA calculation method revision introduced in the Year 10 EAP is another example of the dynamic nature of the GA metric. The Greened Acre calculation method revision is based upon applying a data-driven understanding of performance gained through 10 years of program implementation, data collection, and analyses to date.

The revised calculation method now accounts for storage, infiltration, and slow release processes where applicable. This revision is specifically associated with the method for calculating the Wd term in the GA equation. The Greened Acre definition as defined in the COA remains the same. Formerly, the method for calculation of the depth of runoff managed is defined as equivalent to the available storage volume in the GSI system, with the following formula:

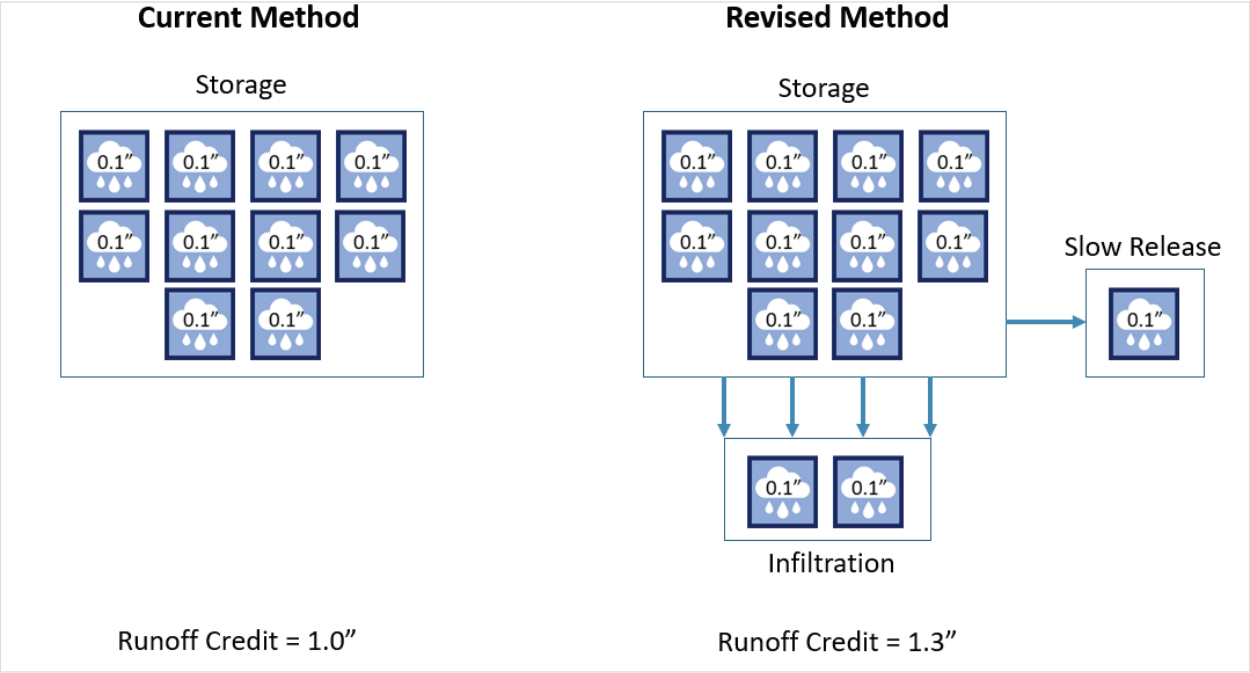
$$Wd(in) = \frac{V_{storage}(ft^3)}{DCIA(ft^2)} * 12\left(\frac{in}{ft}\right)$$

The revised method for calculation of the depth of runoff managed accounts for storage, infiltration, and slow-release processes, with the following formula:

$$Wd(in) = \frac{\left(V_{storage}(ft^3) + V_{infiltration}(ft^3) + V_{slow\ release}(ft^3)\right)}{DCIA(ft^2)} * 12\left(\frac{in}{ft}\right)$$

If the processes of infiltration and slow release are not accounted for where applicable, the calculation method will underestimate the runoff volume that is managed by GSI. This concept is demonstrated in Figure 4-1 below.

Figure 1-1: Diagram representing the accounting of runoff using the former method as compared to the revised method



The Year 10 EAP reported 2,196 GAs that were calculated using the former GA calculation method. **Appendix 4** presents the reported Year 10 EAP projects with their revised GA value as calculated using the method outlined in Section 2 and Appendix B of the Year 10 EAP. The recalculated Year 10 GA values now reflect a one-time increase of 335 in the Year 10 EAP reported GAs.

2.0 Implementation Tracking and Reporting

2.1 Green City, Clean Waters Program Tracking System

Currently the existing databases and systems track program implementation and support data requests for internal and external reporting. The development of the *Green City, Clean Waters* program tracking system has integrated the data from the various Water Department systems to streamline and present program wide implementation progress in one location.

During FY22, enhancements made to the *Green City, Clean Waters* program tracking system included user interface and mapping modernization, improvements to the visual display of graphs and charts, and updates to calculated metrics based on feed system changes. The data-governance team at PWD continues to ensure proper programmatic alignment across the various source databases for metrics calculations and reporting.

Table 2-1: FY22 Status Updates for Existing Databases and Systems

Existing Databases and Systems	Status
PlanIT	PWD's tracking system that stores information from site evaluations conducted on locations throughout Philadelphia. All sites must undergo an initial evaluation to determine the feasibility of green infrastructure before they can be transferred to CIPIT to begin design phase. In FY22, a new feature called an editable grid was added to significantly improve management of packaged data and reduce edit times. Auto-population of various fields was also added to improve data quality.
GreenIT	PWD's metrics tracking system for all public green stormwater infrastructure (GSI) projects. GreenIT tracks estimated, designed, built, and maintained compliance metrics. The GreenIT Data Entry Application is used to create metrics reports by consultants and staff that are directly uploaded to the GreenIT database. In FY22, redeveloped GreenIT user interface using newer technology which enables the application to run in any modern browsers. Updated application authentication to use PWD Active Directory domain In FY22, work began on an embedded review/approval process, automatic data transfer, and synchronization between GreenIT and the GreenIT Data Entry Application. Updates based on the GA calculation method revision are planned for early FY23.
CIPIT	CIPIT is PWD's Capital Program Information Tracking System. In FY22, no major changes occurred.
Stormwater Plan Review Database	PWD's tracking system that stores metrics and detailed stormwater management practice (SMP) data of private development projects that are subject to the Philadelphia Stormwater Regulations, as well as voluntary stormwater management retrofit projects. The database is designed to track workflows related to reviews and inspections, including the status of conceptual and technical reviews, record drawing reviews, active and post-construction inspections, and post-construction enforcement. In the past year, the database has been undergoing a redevelopment effort which is expected to be completed in FY23. The new application will offer expanded functionality and accessibility for internal stakeholders as well as the Philadelphia development community. It will provide a system that stays current with functionality and technology.

Existing Databases and Systems	Status
Geographic Information System (GIS) Asset Tracking	GIS is used to track the location of all PWD assets. This includes public retrofit, private development and incentivized retrofit SMPs. In FY22, PWD continued to add geotechnical testing information to in-house GIS datasets, completing > 80% of the backlog of contracts; there are plans to make this dataset publicly available to researchers and other interested parties once the backlog has been completed. Additionally, greening metrics for GSI projects, including proposed tree count, vegetated area and species richness, began to be tracked at the Planning stage; previously, these metrics were not tracked until later in the design process, if at all. Collecting data on these metrics will assist PWD with quantifying triple bottom line (social, environmental, economic) benefits of its green stormwater infrastructure.
Maintenance Management Systems	Inspection and maintenance activities for public green stormwater infrastructure are tracked in PWD's Cityworks work order management system. This system is linked to the City's GIS data and provides tools to track and manage work performed on other PWD assets such as fire hydrants, inlets, water mains, and sewers.

2.2 Reporting Metrics

Green Stormwater Infrastructure through Public Implementation

The information in GreenIT is used to produce compliance reporting outputs for the completed and planned public project tables in Appendices 1 and 2 of this report. The Public Completed Projects reporting format and metric definitions are described in Table 1 in **Appendix 1**. The Public Planned Projects reporting format is described in Table 1 in **Appendix 2**.

Green Stormwater Infrastructure through Private Development

Information from the Stormwater Plan Review Database is used to produce reporting outputs for completed Private Development and Incentivized Retrofits project tables in **Appendix 3**. The reporting format is described in Table 1 in **Appendix 3**.

Stormwater Management Types

SMP types used for public implementation are described in Table 2 of **Appendix 1** and SMP types used for private implementation are defined in Table 2 of **Appendix 3**.

3.0 Water Pollution Control Plant and Collection System Project Progress

3.1 Water Pollution Control Plant and Collection System Project Progress

Upgrades to increase the peak flow capacity at each of the City's Water Pollution Control Plants (WPCPs) were described in the Wet Weather Facility Plan, submitted on June 1, 2016. During FY22, PWD has continued working towards completing the projects committed to in the Wet Weather Facility Plan. Within the following sections, progress in FY22 on these projects is presented. The *Green City, Clean Waters* Wet Weather Facility Plan can be referenced here: http://water.phila.gov/pool/Wet_Weather_Facility_Plan_website.pdf.

3.1.1 Northeast Water Pollution Control Plant

Within Table 3-1, the seven Northeast WPCP improvements committed to in the Wet Weather Facility Plan are listed with their required operation years, as approved by the PADEP. To date, five improvements have been completed and the remaining two improvements are on track for completion by the required operation date.

Table 3-1: Status of Northeast WPCP Improvements

Northeast WPCP Improvements	Anticipated Completion	Project Status (FY22)
Facility Improvements		
Remove Double Deck Effluent Channel in Final Sedimentation Tanks Set 2	6/1/2016	Complete (FY16)
New (4 x 48") conduits from Preliminary Treatment Building to Primary Sedimentation Tanks Set 1	6/1/2016	Complete (FY16)
High Flow Management System	6/1/2021	Complete (FY19)
Gravity Sludge Thickeners	6/1/2021	Complete (FY19)
Preliminary Treatment Building #2	6/1/2031	In Construction
New Influent Baffles in Primary Sedimentation Tanks Set	6/1/2031	In Planning
Operational Improvements		
Operate with minimal sludge blanket when Gravity Sludge Thickeners in service	6/1/2021	Complete (FY19)

3.1.2 Southeast Water Pollution Control Plant

All Southeast WPCP improvement commitments in the Wet Weather Facility Plan were completed in FY16, meeting the required operation date of June 1, 2016. For more detailed information, please see the *Green City, Clean Waters* Wet Weather Facility Plan or the Year 5 EAP.

3.1.3 Southwest Water Pollution Control Plant

Within **Table 3-2**, the Southwest WPCP improvement committed to in the Wet Weather Facility Plan is listed with its associated required operation year. The project has been completed prior to the required operation date.

Table 3-2: Status of Southwest WPCP Improvements

Southwest WPCP Improvements	Anticipated Completion	Project Status (FY22)
Facility Improvements		
Additional Effluent Pump	6/1/2026	Complete (FY19)

3.2 Philadelphia Collection System Improvements

Within **Table 3-3**, the three Collection System improvements committed to in the Wet Weather Facility Plan are listed with their required operation dates. Two of the improvements were completed, meeting the required deadlines. The other improvement identified is a study to evaluate CSO regulator capacities and identify improvements, if necessary. This study is ongoing and is anticipated to continue throughout the implementation of the LTCPU, as PWD is committed to maintaining and improving the efficiency of the collection system. Additional Collection System improvements are described below.

Table 3-3: Status of Collection System Improvements

Collection System Improvements	Anticipated Completion	Project Status (FY22)
Improvements		
NE Second 66" Frankford Grit Chamber Bypass In Service	6/1/2016	Complete (FY16)
NE Frankford High Level Second Barrel Rehabilitation	6/1/2016	Complete (FY16)
All Districts: Balancing CSO Regulator Wet Weather Capacities	Study - Ongoing	On Track

3.2.1 Additional Collection System Improvements

PWD continues to conduct research and evaluate tools and technologies used within the Collection System and at the WPCPs to enhance performance when possible. PWD studies and evaluates potential collection system and WWFP projects to determine feasibility and cost effectiveness for inclusion in a Combined Sewer Overflow (CSO) mitigation program to expand upon or in addition to the projects committed to in the Wet Weather Facility Plan submitted in June 2016.

42nd Street Pump Station Expansion

Based on evaluation of the collection system, as well as considering the necessary operation upgrades, it was determined that there are advantages to replacing the combined sewer pump station located at 42nd Street with a station of larger pumping capacity. To support this expansion, modifications to regulating chamber S-50 would also be considered part of the pump station expansion project. A preliminary feasibility study has been completed to determine the constructability and sizing of the pump station. The study determined that the current 8 MGD (peak flow) pump station could be expanded to 60-100 MGD. This upgrade would accommodate increased flow to the SW WPCP and help reduce CSO volume. The project is currently in the design phase and CSO volume reduction will be dependent on final sizing of the pump station.

Frankford Creek Crossing

The project will replace the four separate pipes of the Frankford Creek Siphon with single box sewer in order to remove a flow constriction in the Upper Delaware Low Level Interceptor. The new box sewer will result in approximately 100 million gallons of CSO volume reduction in a typical year precipitation (based on the Year 5-EAP submissions) and provide the capacity required for operation of the new D-05 chamber and other future improvements in the NEDD. In FY22, construction of temporary bypass system commenced and is estimated to be completed in FY 23.

There are currently three projects in the Department's design process that are being evaluated for the use of real-time control technology:

D-05 CSO Regulator (State Road and Magee Avenue)

The D05 regulator is being examined for additional CSO capture through the installation of a new, enlarged interceptor connection with a real-time controlled sluice gate. As of FY22, this project is in the 90% design stage and is slated for completion in FY24. This project is expected to result in enhanced storage and conveyance of wet weather flows via modification to an existing computer controlled CSO.

Thomas Run Relief Sewer (R-01)

A capital project for the modification of the Thomas Run relief sewer has been initiated. The project is evaluating the potential for this system to be maximized for in-line storage during wet weather by creating a new interceptor connection and CSO regulator site at the outfall of this storm flood relief system and will consider the effectiveness of real-time control.

Southwest Drainage District Regulator Modification (S-05, S-20, S-26)

The primary project goal is to increase the flow capacity through each regulator to decrease CSO volumes in the Southwest Drainage District. The project will include increasing the opening area of the existing DWOs, removal of existing Brown & Brown regulators, and will consider implementation of locally actuated, real-time, flow control at each site. This project was initiated in FY21 and currently has a target bid of FY25.

3.4 Interceptor Relining and Rehabilitation

FY22 Progress on Miles of Interceptor Lined

The WQBEL Performance Standards requires 6 miles of interceptor lining completed by the end of Year 10 (2021) which was achieved.

Looking at progress towards the Year 15 target, there are 2.6 miles in construction or in contract management, and 3.3 miles in design (**Table 3-4**). Prior to scoping rehabilitation efforts, each interceptor segment is inspected to determine condition and need for rehabilitation. An evaluation of Tacony Creek Intercepting Sewer Lining Phase 3 (**Table 3-4**, In Design) confirms that this segment of the Frankford High Level (FHL) interceptor is in serviceable condition and any observed defects, such as root intrusion or surface spalling, can be corrected with spot repairs and debris removal. This section of the FHL is approximately 6,000 linear feet in length originating just downstream of Regulator T-14 and terminating near the intersection of O Street and Erie Avenue. The inspection concluded that application of a continuous liner to the FHL, as has been pursued with the other segments listed in the WQBEL Performance Standards, is not recommended to correct infiltration or exfiltration in this case; the rehabilitation work can be completed at a much lower cost by pursuing the recommended spot repairs and debris removal rather than relining the full section of the interceptor.

Table 3-4: Interceptor Relining FY22 Status

Project Name	Street Extents	Length (Miles)
Construction Complete		**9.2**
60th and Cobbs Creek Parkway to 75th and Wheeler Sewer Lining	60th and Cobbs Creek Parkway to 75th and Wheeler	2.2
Cobbs Creek Park to 63rd and Market Sewer Lining	Cobbs Creek Park to 63rd and Market	0.5
Cobbs Creek Interceptor Phase 1 CIPP Lining	63rd and Market to 62nd and Baltimore	1.6
Tacony Creek Intercepting Sewer Lining Phase 1	Chew & Rising Sun to I & Ramona	1.9
Tacony Creek Intercepting Sewer Lining Phase 2	2nd St & 64th Ave to Chew & Rising Sun; DRW Mascher to Tacony Interceptor; Cheltenham Ave to Crescentville & Godfrey	1.3
Cobbs Creek Interceptor Lining Phase 3	City Avenue to D R/W in former 67th Street	1.7
In Construction		**1.6**
Cobbs Creek Intercepting Sewer Lining Phase 4 (Indian Creek Branch)	City Avenue to D R/W in former 67th Street	1.6
In Contract Management		**1.0**
Cobbs Creek Intercepting Sewer Lining Phase 2	61st and Baltimore to 60th and Warrington	1.0
In Design		**3.3**
Tacony Creek Intercepting Sewer Lining Phase 3	I & Ramona to O & Erie	1.0
Upper Frankford LL Collector/Tacony Intercepting Sewer Lining Phase 4	Castor & Wyoming to Frankford/Hunting Park	1.1
Upper Frankford Creek LL Collector/Tacony Intercepting Sewer Lining Phase 5	Frankford/Hunting Park to Luzerne & Richmond	1.2
Total Anticipated Miles of Interceptor Lined		**15.1**

4.0 Green Stormwater Infrastructure through Public Implementation

The programmatic strategies for achieving public GAs are benchmarked in four phases: planning, design, construction, and post-construction maintenance. The following four subsections describe the progress made during FY22 for each of these phases. **Table 4-1** summarizes Public GSI projects and GAs for FY22. Later in this section, **Figure 4.2** displays the Planned and Completed Public GSI projects. A full list of completed public projects can be found in Appendix 1 and a full list of planned public projects can be found in Appendix 2.

Table 4-1: FY22 Summary of Public Green Stormwater Infrastructure

	End of FY22			Cumulative
Project Phase	**In Design**	**In Contract Development**	**In Construction**	**Completed**
Number of Projects	184	83	31	**293**
Current Number of GAs	TBD*	320	115	**824**

*An accurate GA value cannot be provided until the design phase is completed.

4.1 Planning Approaches for Green Stormwater Infrastructure Implementation

PWD has continued to evaluate entire neighborhoods and specific sites to identify appropriate locations to site GSI footprints. During FY22, PWD continued to streamline a planning district-based approach to develop a diverse set of project types that range from smaller green street SMPs to larger systems on parcels while also considering specific community needs. PWD staff strategically prioritize and package projects to move forward to design phase in a steady queue. In FY22, PWD continued to refine planning strategies to ensure compliance with future implementation targets including short-term and long-term policy recommendations for achieving maximum stormwater management. This past year progress was made on integrating GSI planning efforts with water and sewer projects. Planning also strengthened the direct feedback loop with maintenance to improve system siting and SMP type selection. PWD's planning team continued to find and initiate GSI projects to meet future compliance needs mostly through siting street projects.

Planning Outreach and Coordination

PWD works closely with a variety of partners to implement the *Green City, Clean Waters* program throughout all stages of a project. During the planning phase, PWD continues to coordinate the siting of GSI footprints with city agency partners, community groups, and other stakeholders via regular communication and meetings. The Mayor's initiative, Rebuild Community Infrastructure (Rebuild), continues to push forward with implementation and PWD has coordinated closely with project users to incorporate stormwater management in Rebuild projects. PWD continues to maximize stormwater management on all types of GSI projects, beyond just PWD-led capital planning efforts. PWD provides recommendations for maximizing the amount of stormwater managed on private development sites that have the potential to manage additional drainage or right of way (ROW) and recommends private properties with potential to manage large amounts of drainage areas to apply for stormwater retrofit grants.

4.2 Design Approaches

In FY22, PWD continued work on streamlining the design process through coordination and improvement of design guidance.

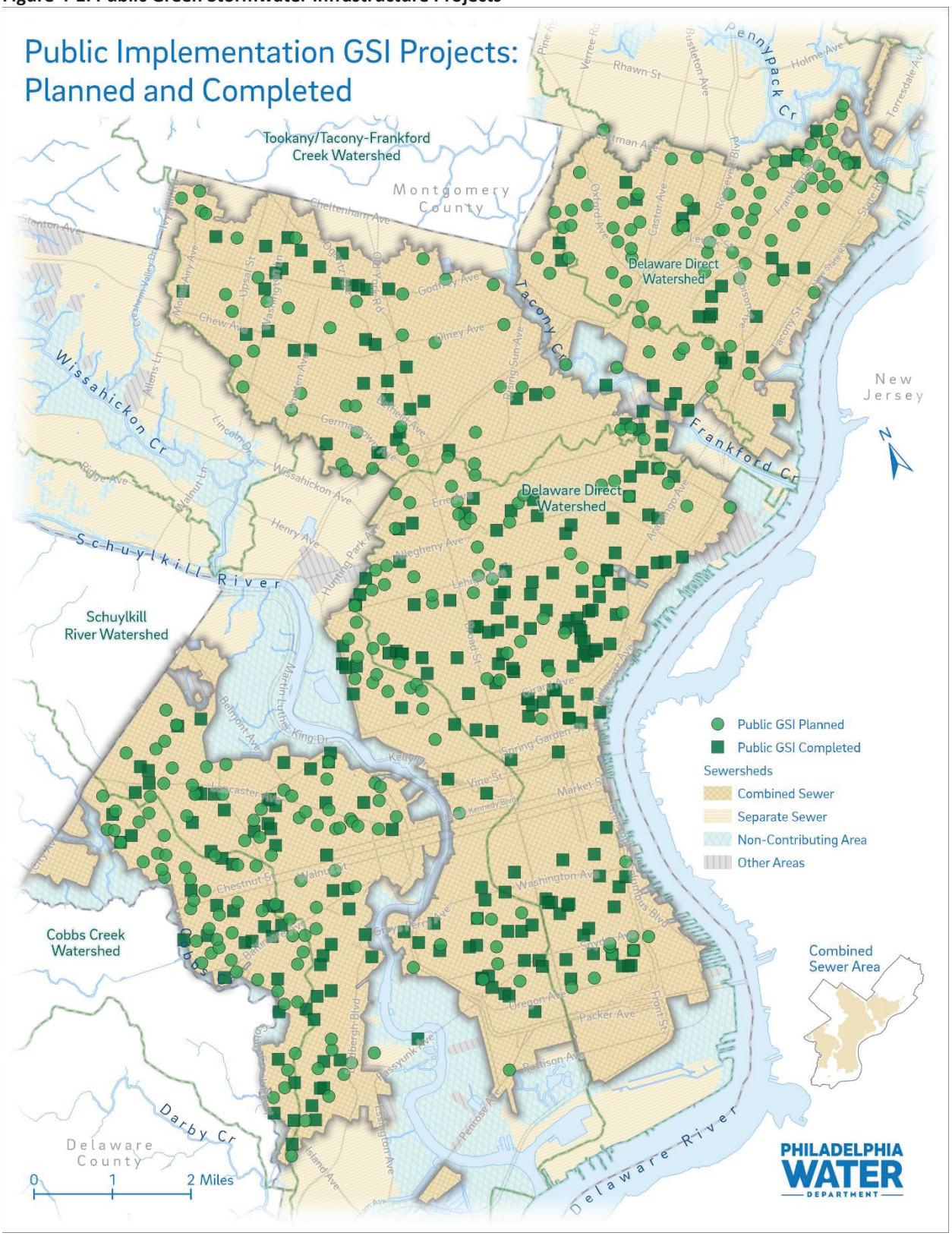
- Ongoing coordination meetings within PWD to facilitate project reviews and improve feedback, including:
    - Implemented new workflow to streamline and improve the quality of integrated capital alignment projects across various asset types (green/water/sewer).
    - Continued work on assessment of dynamic design including developing, testing, and updating dynamic sizing tool and preparing report with recommendations for implementation.
    - Developed design submission review checklists to guide internal PWD reviewers on the administrative steps.
- Coordinated updates to the city's Street Tree Placement criteria with Parks & Recreation and the Streets Department, increasing viable locations for street tree plantings.
- Developed internal PWD Policy Guidance on Prioritizing Tree Planting to include street trees to the greatest extent possible and avoid placing systems in ways which preclude future street tree plantings.
- Continued to update the Streets Design Guidance for GSI Projects. Updates include requirements for fencing and landscape edging as well as defining the maximum drop for surface systems in the right-of-way.
- Published "best of" construction photos library to improve the feedback cycle between design and construction with the external PWD GSI design community.
- Ongoing updates to existing procedures, standards, and guidance building on feedback from operations, monitoring, partner agencies, and other PWD units.

4.3 Construction

In FY22, PWD continued work on streamlining and improving the construction process through staff training, guidance updates, and coordination:

- Refined annual updates to the GSI Master Specifications and Bid Item List/Engineering Estimate template. Continued work of reconciling specification differences for green-only and green on water/sewer projects.
- Continued implementation of a pilot program for performance testing of systems that are fully lined with geomembranes. Lessons learned from testing and field modifications are directly informing design and construction improvements. Continued research and modifications to design and construction guidance to improve performance of fully lined and partially lined systems.

Figure 4-1: Public Green Stormwater Infrastructure Projects



4.4 Public Green Stormwater Infrastructure Maintenance Program

To ensure the function and sustainability of stormwater management infrastructure investments, PWD continues to implement a GSI maintenance program. Table 4-2 provides a count of SMPs by type currently in PWD's maintenance program. PWD implements post construction maintenance in accordance with the Green Infrastructure Maintenance Manual.

Table 4-2: FY22 PWD SMP Types in Maintenance

SMP Types	Total Number of SMPs
Tree Trench	489
Rain Garden	153
Stormwater Planter	126
Stormwater Bump out	122
Infiltration/Storage Trench	368
Pervious Paving	12
Green Roof	3
Swale	44
Basin	4
Stormwater Tree	82
Drainage Well	4
ROW Connection	86
Green Gutter	1
Wetland	4
Total Number of SMPs	**1,498**

4.4.1 Inspections

While PWD has prescribed maintenance frequencies for GSI, practice and experience have determined that pre-maintenance inspections are the best method to determine the level of maintenance required. At each SMP that has surface features, PWD completed pre-maintenance surface inspections.

Inspection of Surface Elements

In FY22, PWD conducted 3,708 pre-maintenance surface inspections. The condition of the site at the time of the pre-maintenance inspection determined whether maintenance is required. PWD also performs dry weather and wet weather inspections for a more comprehensive assessment. By the conclusion of FY22, PWD completed 3,699 dry weather inspections and 93 wet weather inspections. In FY22, PWD conducted a total of 7,500 surface inspections.

Inspection of Subsurface Elements

The objective of the subsurface inspection program is to observe and assess all structural components of SMPs that exist below street level. Inspections are performed in dry weather conditions as capturing discernable video during wet weather conditions is difficult. Inspection staff are certified through the National Association of Sewer Service Companies' (NASSCO) Pipeline Assessment Certification Program (PACP).

PWD completed a total of 399 post-construction inspections and 902 post-maintenance inspections. The post-construction inspections were associated with 148 SMPs and a total of 4.8 miles of pipe. The post-maintenance inspections were associated with a total of 375 SMPs and 10.6 miles of pipe. The

conditions of each pipe run at the time of the inspection determined whether maintenance was completed and if any structural defects were present.

4.4.2 Maintenance

PWD's GSI maintenance program operates through three types of maintenance activities to adequately address the maintenance needs of PWD's GSI. Maintenance events associated with surface maintenance, subsurface maintenance and porous maintenance are summarized in **Table 4-3**.

Table 4-3: FY22 Summary of Maintenance Events by Type

Work Order Type	Number of FY22 Events
Surface	**13,004**
Surface Inspection	3,708
Surface Maintenance -Routine	6,053
Surface - Mulching	752
Surface - Pruning	254
Surface Maintenance -Watering	506
Tree Maintenance	434
Trench Drain Maintenance	170
Work Zone Protection	1
Aesthetic	627
Signage Repair	104
Surface Vegetation Cutback	325
Snow Removal	6
Rough Mowing	64
Surface Maintenance - Reactive	**351**
Surface Vegetation Repair	206
Earthwork	28
Surface Structural Repair	85
Drainage Modification	32
Subsurface	**14,043**
Subsurface – Post Construction Inspection	399
Subsurface Maintenance	910
Inlet Cleaning	1,032
Subsurface Inlet Protection Maintenance	684
Surface Inlet Protection Maintenance	10,960
Non-Standard Subsurface Inspection	38
Non-Standard Subsurface Maintenance	6
Subsurface Structural Repair	12
Emergency Abatement Request	2
Porous	**12**
Routine Porous Maintenance	5
Restorative Porous Maintenance	7
Total	**27,410**

PowerCorpsPHL

Over the past decade, the City and PWD have implemented new strategies to promote the economic and social growth of the City and meet environmental, ecological and business missions. In support of these initiatives, and to augment PWD's GSI aesthetic maintenance responsibilities, PWD entered into

partnership with PowerCorps_PHL. PowerCorps is a City of Philadelphia AmeriCorps initiative designed to engage youth, ages 18-26, which transforms lives through service and workforce development. Table 4-4 summarizes the type and amount of material collected by PowerCorps in FY22.

Table 4-4: PowerCorps_PHL Trash and Debris Removal in FY22

Amount collected (in pounds)	Amount collected (in tons)
71,544	**35.8**

5.0 Green Stormwater Infrastructure through Private Development

5.1 Philadelphia Stormwater Management Regulations

The Philadelphia stormwater management regulations (PSWMR) were revised in January of 2006 and July of 2015, providing the foundation of the private sector's role in stormwater management. In July 2018, the regulations were further updated to change how streets are regulated. The City of Philadelphia requires stormwater management for land development projects in the City of Philadelphia with 15,000 or more square feet of earth disturbance. Plans for proposed projects must be submitted for conceptual review to pursue a zoning permit, while the submission of detailed stormwater management plans must receive a technical review and approval prior to obtaining a building permit.

A summary of constructed GAs through private development projects by watershed are listed below in **Table 5-1**. A full list of completed private development projects can be found in Table 1 **Appendix 3**. At the end of this section, **Figure 5.2** displays the completed green infrastructure installed through private development and incentivized retrofits.

Table 5-1: FY22 Cumulative Completed Greened Acres by Watershed through Private Development

Watershed	Darby-Cobbs	Delaware	Pennypack	Tookany-Tacony/ Frankford	Schuylkill	Cumulative Completed
Number of Projects	17	205	2	60	176	460
Greened Acres	21	370	4	118	329	**842**

Expedited Review

PWD offers a service level goal of no more than a fifteen-day review for all projects submitting for post-construction stormwater management plan review. However, projects that use preferred green stormwater management approaches are eligible for an expedited, five-day review. PWD offers two types of expedited review: 1) disconnection green review and 2) surface green review. The disconnection green review ensures redevelopment projects that disconnect 95% or more of the post-construction impervious area (DCIA) using features such as green roofs, porous pavement and new tree canopy will receive a review response within five days. The surface green review expands the number of eligible projects by including both new development and redevelopment projects that manage 100% of the post-construction DCIA through bioinfiltration and bioretention basins as well as the practices that qualify for the disconnection green review. In FY22, a total of twenty-six projects qualified for an expedited review in the combined sewer, with twenty-two projects selecting the disconnection green review and four project selecting the surface green review.

Active Construction Inspections

For the projects that proceed to construction, the installations of SMPs are inspected by PWD during construction. Active construction inspections are completed for both PSWMR and incentivized retrofit projects in accordance with standard inspection procedures. During FY22, PWD conducted 2,411 inspections during active construction in the combined sewer area.

Construction Verification Initiative

PWD continued to refine a construction verification process with the goal of assessing individual projects prior to counting GAs toward compliance totals. This process emphasizes communication efforts from the start of the development project so property owners can adequately plan for record drawing creation. Throughout construction and at the time of construction completion, PWD conducts inspections of the site to observe and document installation of the approved SMPs. PWD also continued to perform outreach at the close of construction to solicit record drawings from project engineers and owners. These record drawings allow PWD to verify SMP installation and function.

In addition to this process, PWD continued to pursue a verification initiative to gather documentation of approvals that have not otherwise been verified and create record drawings to document the constructed conditions. To date, 202 projects totaling 292 GAs have been inspected and verified through this supplemental approach.

I-95 Reconstruction Project

Pennsylvania Department of Transportation (PennDOT) is reconstructing Interstate 95 (I-95) in Philadelphia. Three components of the I-95 reconstruction project support stormwater management: 1) disconnection of stormwater from the combined sewer system; 2) ensuring that redevelopment occurs in a manner consistent with the PSWMR; and 3) installation of GSI in the public right-of-way.

The work on I-95 in Philadelphia is broken into two sectors: Sector A and Sector B. The multi-phased work between Bleigh Avenue and Race Street is known collectively as Sector A. Sector A of the I-95 Reconstruction Project is divided into five major design sections, moving from north to south: CPR, BSR, BRI, AFC, and GIR. Each of these sections is further subdivided into a total of twenty-four construction subsections. Sector B encompasses the area from Race Street to Girard Point Bridge (airport side). At present, Sector B has two design sections delineated, Section CAP from Chestnut to Walnut, and Section CSP from Vine Street to Girard Point Bridge (airport side). Some of the design and construction work for Sector B may be concurrent with the work in Sector A.

A graphic illustrating the I-95 Reconstruction Project sections is featured below in **Figure 5-1**.

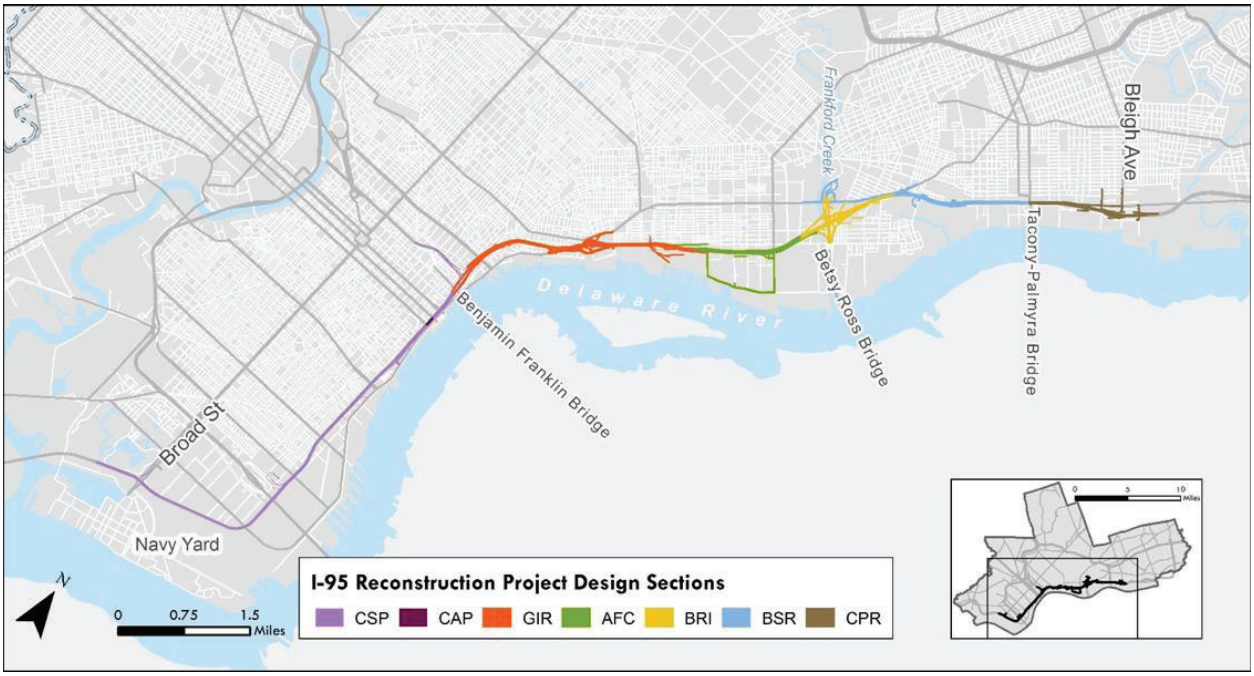


Figure 5-1: I-95 Reconstruction Project Sections

Project updates for the construction subsections with significant design or construction progress in FY22 are summarized in **Table 5-2.**

Table 5.2: I-95 Construction Section FY22 Updates and Anticipated Bid Dates

Section	Project Description/ Update	FY22 Project Phase	Completion Date
Sector A – Between Bleigh Avenue and Race Street			
Section CPR (Cottman-Princeton Ramp Area)			
CP2	Six new separate stormwater outfalls have been completed in Cottman Avenue, Princeton Avenue, Magee Avenue, Disston Street, Unruh Avenue, and Bleigh Avenue. The stormwater pipes are designed to accept the drainage from the highway as well as the area in between the highway and the Delaware River as development occurs.	Completed	2017
CP3	Relocation of approximately 1500 feet of sanitary sewer.	In Construction	(2024)
Section BSR (Bridge Street Ramp Area)			
BS1	Construction underway. Work includes the construction of one bioretention system, one media filter, two vortech separators, and one new outfall in Levick Street will be constructed to treat stormwater from the mainline highway.	In Construction	(2022)
BS4	New PWD storm sewers, inlets, and new outfalls were installed to covey the new Adams Street runoff. Three basins with amended soils and impervious liners were constructed to treat stormwater from the new interchange ramps.	Completed	2020

Section	Project Description/ Update	FY22 Project Phase	Completion Date
BS2	Work will include two bioinfiltration basins and five bioretention basins to manage stormwater from the mainline highway. Also proposing 9 tree trenches which will be owned and maintained by PWD. A portion of the drainage area to the tree trenches is existing impervious ROW which will be banked for trade in future phases of the 95 expansion project. Anticipated bid date calendar year 2022.	In Design	(2026)
BS3	Reconstruction of Aramingo Avenue from Church Street to Tacony Street; continuing north on Harbison Avenue to Amtrak overpass. Project is anticipated to be bid in 2026.	In Design	(2030)
BS5	Extension of Delaware Avenue from its current terminus at Orthodox Street to Tacony Street. Anticipated bid date end of calendar year 2024.	In Design	(2026)
Section BRI (Betsy Ross Interchange Area)			
BR0	PWD sanitary and storm sewer culverts were relocated. Stormwater runoff from the reconstructed portions of the highway and ramps was treated by under-drained bioretention and water quality units then directly discharged to the Frankford Creek, removing the drainage area from the CSO system.	Completed	2017
BR2	Under construction. Basins built in BR0 will be reused in BR2 and new basins will be installed. The new basins will be sized for future phases as well. All basins will have forebays, be non-infiltrating, and have amended soils and underdrains with a rock layer and liner. The PennDOT-owned outfall locations in BR2 will be reconstructed in the same locations as existing outfalls. Anticipated complete date calendar year 2023.	In Construction	(2023)
BR3	Reconstruction of northbound lanes of I-95 from Wheatsheaf Lane to just north of Margaret Street. Anticipated bid date calendar year 2024.	In Design	(2027)
BR4	Reconstruction of the southbound lanes of I-95 from Wheatsheaf Lane to just north of Margaret Street. Anticipated bid date calendar year 2027.	In Design	(2030)
BR5	Includes work related to the Conrail/NJ Transit railroad line. Bridge over northbound ramps to the Betsy Ross Bridge and Aramingo Avenue will be rehabilitated. Anticipated bid date calendar year 2027.	In Design	(2028)
Section AFC (Ann to Frankford Creek Area)			
AF1	Streetscape work within the Richmond Street right-of-way between Allegheny and Westmoreland is not subject to the stormwater regulations. Improvements to Melvale Street will be managed by two infiltration trenches that will be owned and maintained by PWD.	Completed	2020
AF2	Construction underway. Work includes rebuilding of side streets prior to mainline construction. Proposing a net decrease in impervious area and a GSI tree trench along Castor avenue. The managed area will be banked for future phases. Anticipated completion date calendar year 2023.	In Construction	(2023)
AF3	Reconstruction of northbound I-95 and its structures between Ann Street and the Frankford Creek. Anticipated bid date calendar year 2025.	Planning	(2027)
AF4	Reconstruction of southbound I-95 and its structures between the Frankford Creek and Ann Street. Anticipated bid date calendar year 2028.	In Design	(2031)

Section	Project Description/ Update	FY22 Project Phase	Completion Date
Section GIR (Girard Avenue Interchange Area)			
GR1	The reconstruction of Richmond Street was managed by street trees and a bioretention basin. A new separate sewer system was constructed and connected below the regulators in Dyott Street and Cumberland Street.	Completed	2017
GR2	The mainline highway areas are managed by multiple bioretention basins along the side of the highway.	Completed	2016
GR3	GR3 is the north bound mainline highway segment. One separate sewer outfall was constructed in Cumberland Street. In Dyott Street, a pipe was constructed that ties in below the regulating chamber. A sewer was found in the old Lehigh Avenue right of way and rehabilitated to separate a portion of the highway drainage. Stormwater is managed in GR3 using bioretention basins, infiltration basins, and detention basins. The basins are designed to manage the water quality volume.	Completed	2018
GR4	GR4 is the southbound mainline highway segment and is currently under construction. Stormwater is managed in GR4 using bioretention basins, infiltration basins, and detention basins. The basins are designed to manage the water quality volume. Anticipated completion date calendar year 2022.	In Construction	(2022)
GR5/ GR6	Reconstruction of I-676/Vine Street ramp connections with northbound/southbound I-95. Anticipated bid date for GR6 is calendar year 2023. Anticipated bid date for GR5 calendar year 2023.	In Design	(2029)
Sector B – Race Street to Girard Point Bridge (Airport Side)			
Section CSP (Central and South Philadelphia Area)			
CAP	CAP project is a 600' wide structure spanning over I-95 and Christopher Columbus Blvd between Walnut and Chestnut Streets. An area of fill will gently slope from the structure to the Delaware River waterfront. A vegetated park, recreational areas, walkways and several building structures are proposed on the CAP structure and fill area. The majority of the CAP structure is proposed to function as a green roof and remaining DCIA proposed to be managed by a cistern with runoff re-used as gray-water for the restroom facilities and a subsurface detention basin. Earth disturbance in 95 and Columbus will be minimal under the CAP. Areas outside of LOD, managed by the CAP are eligible for management banking. All SWM components must be designed and built in accordance with the Green Stormwater Infrastructure design standards. Anticipated bid date calendar year 2022.	In Design	(2026)
CSP - I-95 NB/SB between Race Street and Girard Point Bridge		**Planning Study Underway**	

5.2 Incentives for Private Property Owners to Implement Green Stormwater Infrastructure

PWD offers incentives to private property owners to implement stormwater management practices on existing properties that reduce stormwater pollution to the city's sewers and surrounding waterways and enhance water quality in the region's watersheds. A summary of completed GAs from incentivized retrofit projects by watershed are listed below in **Table 5-3**. A full list of completed incentivized retrofit projects is in Table 2 of **Appendix 3**.

Table 5-3: FY22 Cumulative Completed Greened Acres by Watershed through Incentivized Retrofits

Watershed	Darby-Cobbs	Delaware	Pennypack	Tookany-Tacony/ Frankford	Schuylkill	Cumulative Completed
Number of Projects	0	34	6	33	37	**110**
Incentivized GAs	0	348	45	260	297	**951**

Zoning Bonuses

The Philadelphia Zoning Code incentivizes stormwater management through height and density bonuses. PWD helps determine the criteria for earning a bonus, but the code is written by the Philadelphia City Planning Commission and enacted by City Council, which limits PWD's control over the process.

Green Roof Density Bonus

The Philadelphia Zoning Code offers incentives to projects citywide that install green roofs by providing exceptions to certain residential density rules. To be eligible for these exceptions, the project must be located in the designated zoning districts and propose to cover at least sixty percent (60%) of the roof with green roof. In July 2018, the Zoning Code was amended to allow eligibility for existing buildings. New building construction must involve at least 5,000 square feet of disturbance and existing buildings must have a minimum footprint of 5,000 square feet. The green roofs are designed to PWD standards and inspected by PWD during construction. PWD also executes operation & maintenance agreements with the project owners, ensuring long-term maintenance and functionality of the green roof system. Projects submitted for this bonus sized between 5,000 square feet and 15,000 square feet of disturbance were not required to install stormwater management practices to comply with PSWMR. These bonus projects make up at least half of the bonus submissions. In FY22, a total of thirty-nine projects took advantage of the green roof density bonus, thirty-five of which were located in the combined sewer.

Height Bonus

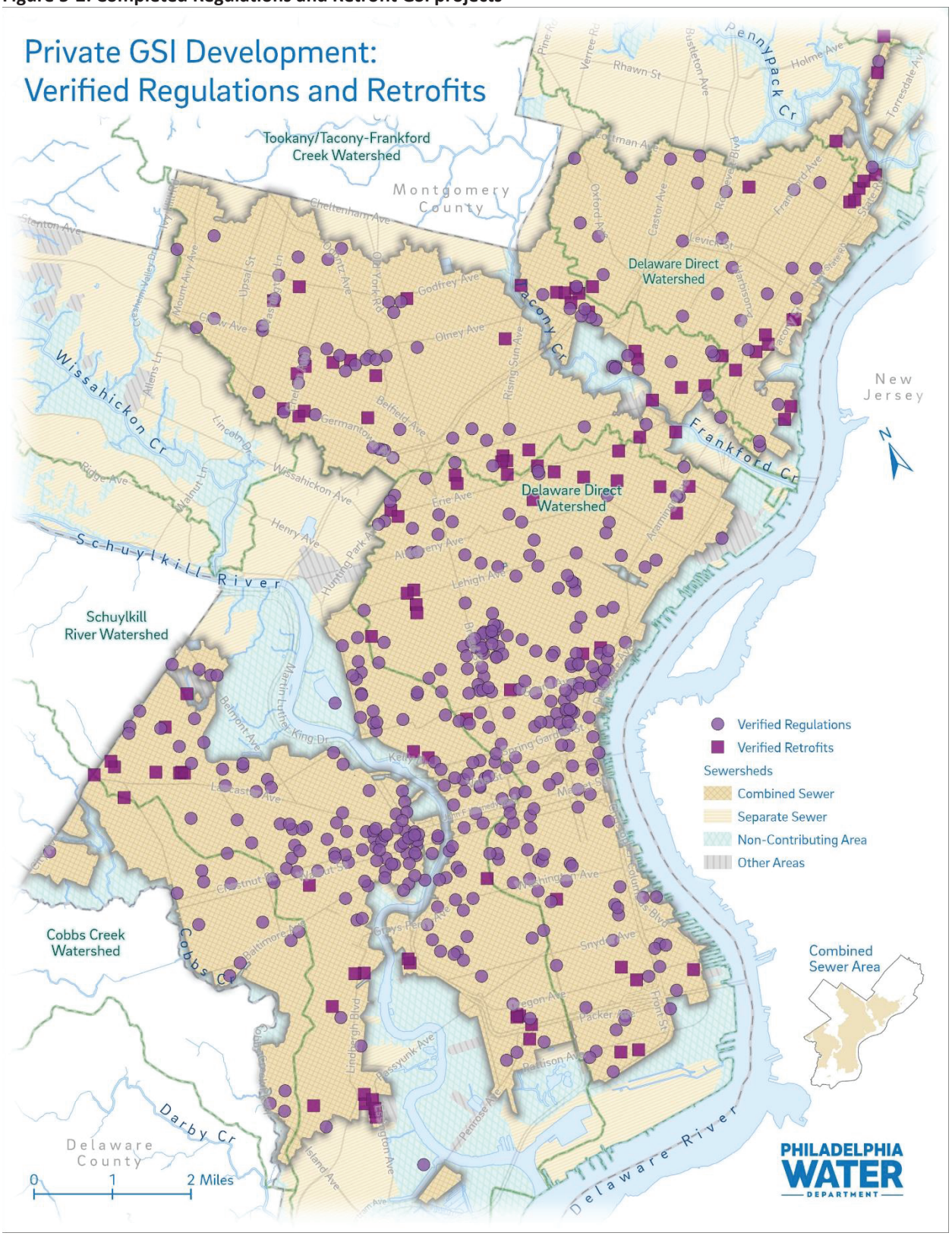
The Philadelphia Zoning Code offers incentives to projects in the East Callowhill and Central Delaware overlays that provide stormwater open space and/or manage stormwater runoff from the public rights of way (ROW) that front their property. PWD also executes operation and maintenance agreements with the project owners who take advantage of these bonuses, ensuring long-term maintenance and functionality of the SMPs. To date 3 projects have received PCSMP approval using the ECO overlay bonus and one of those projects has started construction. One project has received PCSMP approval using the CDO overlay bonus and is under construction.

Stormwater Pioneers

In 2014, PWD started Stormwater Pioneers, a recognition program for excellence in design and construction of stormwater management practices on private property. Since that time, PWD has honored a total of 19 projects across multiple properties. Most recently, in 2021, PWD selected its newest Stormwater Pioneer: The School District of Philadelphia. The School District was honored for their leadership and commitment to GSI maintenance for 13 stormwater grant-funded projects. For these schoolyard projects, the School District of Philadelphia has demonstrated exceptional commitment to maintenance, education, and community engagement around green stormwater infrastructure. After a project is built, long-term maintenance is critical to the functionality of stormwater management systems. The Stormwater Pioneers acknowledges the property owners in this important responsibility.

Over the years, the Stormwater Pioneers program has brought together elected officials, community members, private landowners and department officials to recognize the importance of stormwater management on private property. Some past awardees were celebrated with a press event and a short video was created to highlight the project. Most critically, PWD prepares a case study about each project to help other developers and business owners learn from these successful case studies. More information about the Stormwater Pioneers program including past awardees and the 2021 Stormwater Pioneers is available at https://www.phila.gov/water/wu/stormwater/Pages/Pioneers.aspx.

Figure 5-2: Completed Regulations and Retrofit GSI projects



5.3 Post Construction Maintenance of Private Facilities

To ensure ongoing SMP maintenance of private facilities constructed through the stormwater management regulations or grant-funded projects, PWD continues to use the following combination of tools: executing Operation and Maintenance (O&M) agreements, conducting post-construction maintenance inspections, utilizing enforcement, and administering stormwater credits.

An Operation and Maintenance agreement between the property owner and PWD is executed and recorded against the property as part of the PWD post-construction stormwater management plan process. These agreements outline the SMP(s) on the private site and stipulate maintenance requirements. The agreements also include language granting PWD the authority to inspect on-site SMPs and even perform maintenance on behalf of the property owner if necessary.

PWD maintains comprehensive operations and maintenance information geared toward the private development community in Chapter 4 of the Philadelphia Stormwater Management Guidance Manual. Each SMP section provides guidance on SMP maintenance activities, including a recommended SMP maintenance schedule and maintenance factsheets are available as a quick resource for the property owner. In addition, as part of the post-construction stormwater management plan review process, projects must create an SMP Maintenance Guide. The SMP Maintenance Guide is unique to each project and includes a site map and Maintenance Schedule Form for each SMP to allow the owner to track maintenance activities for the site. As an additional resource, PWD has compiled an O&M Manual for property owners. Please see links below for more information:

- Philadelphia Stormwater Management Guidance Manual, Chapter 4
- Maintenance Schedule and Fact Sheets
- SMP Maintenance Guide
- O&M Manual for Property Owners

Post-construction maintenance inspections of private facilities were conducted through the reporting period. PWD utilizes visual inspections and specialized inspection techniques to assess the performance of private SMPs. PWD conducts post-construction maintenance inspections on all applicable private facilities. As projects are identified for maintenance inspection, the PWD post-construction inspection staff contacts the property owner to schedule the inspection. PWD attempts to conduct the inspection with the property owner or their maintenance representative present so any concerns or questions can be verbally discussed. After inspection, a post-construction inspection report is generated and issued to the property owner. Any required corrective actions are identified in the report along with a deadline for resolution. After actions are taken, PWD re-inspects the property and compliant sites are closed until their next routine inspection date. Inspectors will provide guidance to the property owner to ensure corrective actions are resolved. In addition to visual inspections, PWD has identified other effective methods and technologies, including closed-circuit television, surveys of critical system elevation points, confined space, pole-mounted camera photography, and wet weather inspections. PWD will continue to evaluate and refine post-construction inspection protocols. In FY22, PWD performed 139 post-construction inspections in the combined sewer areas of the city.

Referral for enforcement is pursued if compliance is not achieved within the timeframe specified during the post-construction inspection process. PWD initiates an enforcement case with the issuance of a post-construction enforcement letter to the property owner if a post-construction stormwater management plan (PCSMP) is found to be insufficiently maintained. This notification includes a

description of any issues identified and a timeline to achieve compliance. The City is authorized to compel maintenance of SMPs on private property under the Philadelphia Code and PWD Regulations. Development sites that are subject to PSWMR, as well as properties that have grant-funded SMPs, are required to maintain the SMP(s) to function as designed. If initial notification is unsuccessful at bringing action from the property owner, PWD can compel compliance through several enforcement tools, including notices of violation, fines, court action, and/or a nuisance abatement and lien by the City. For non-compliant projects, PWD will also suspend any applicable stormwater billing credits if corrective actions are not completed. In FY22, PWD successfully resolved 13 enforcement cases consisting of 43 SMPs in the combined sewer area of the city. Of the enforcement cases closed, escalated enforcement tools were utilized consisting of three NOVs. PWD will continue to work with property owners to ensure that SMPs are inspected and maintained in accordance with Regulations and recorded O&M agreements.

Stormwater Credits

Non-residential property owners are eligible for stormwater credits, a direct reduction to the monthly stormwater charge, if they own and maintain stormwater management practices that reduce stormwater flows and volume to the City's sewer systems and surrounding waterways. Retrofit and development projects are eligible for credits against their stormwater charge upon completion of construction, and owners must renew their credits every four years. With the credits renewal application, owners may provide maintenance logs and/or PWD may perform an inspection to demonstrate that the SMPs continue to be functional. PWD approved or renewed 107 combined sewer area (257 citywide) stormwater billing credit applications during the reporting period. Failure to adhere to the credit requirement will result in the suspension or termination of the billing reduction.

6.0 Data Collection and Analysis

6.1 Green Stormwater Infrastructure Post-Construction Monitoring

Proposed methodologies for the *Green City, Clean Waters* monitoring program were outlined in a revised CMP that was submitted on January 10, 2014 and approved on May 28, 2014 by PADEP. PWD has updated methods through new standard operating procedures (SOPs) that better reflect current techniques.

Monitoring and testing green stormwater infrastructure are essential to evaluate its effectiveness in managing stormwater and reducing CSOs. PWD uses post-construction monitoring and post-construction testing at the SMP and system levels to ensure functionality, evaluate the performance of stormwater management practices and to provide information for improvements to design and maintenance. FY22 monitoring activities are described in detail in **Appendix 5 GSI Monitoring Status Report.** FY22 updates on non-green infrastructure components of the CMP can be referenced in Section **F.2 Step 1.b. of the Stormwater Management Program Annual Report.**

PWD has completed its 5-year green stormwater infrastructure pilot program and results were reported in the Year 5 Evaluation and Adaptation Plan. Information on the selected sites, associated variables and results are available here:
https://water.phila.gov/pool/files/Year5_EAPBody_website.pdf.

7.0 Public Outreach and Participation

PWD continues to enhance current tools and experiment with new strategies to engage as broad a range of residents, ratepayers, and stakeholders as possible. In FY22, PWD engaged approximately 26,490 individuals through a variety of outreach, engagement, public education, and green program participation initiatives.

In order to adhere to best practices and safely engage with the public during the on-going COVID-19 pandemic, PWD and its partners canceled most in-person programming in FY22. However, public outreach, notification, education, and engagement about green stormwater infrastructure (GSI) projects in Philadelphia's neighborhoods continued as outlined in the *Green City, Clean Waters* program.

7.1 Green Stormwater Infrastructure Notification & Outreach Process for Green Programs

During FY22 approximately 2,011 community members attended and participated in at least 58 community meetings or events (both in-person and/or virtual) where PWD informed and educated the public about GSI projects and/or promoted the status of drinking water quality in the city through the Drink More Tap and Philly Water Bar experiences.

In response to the pandemic, PWD's Public Engagement Team pivoted to holistic digital engagement, including hosting and presenting at virtual meetings, a digital 10-year celebration of *Green City, Clean Waters,* and a digital component of outreach centered on GSI projects early in the design phase and in the pre-construction phase.

As a complement to digital outreach, PWD also increased production of its "Project Pages" as an online resource for public-facing GSI project information. An example of a neighborhood scaled PWD GSI Project Page can be seen here water.phila.gov/projects/cobbs-creek-area-gsi-projects/ and an example of a singular PWD GSI Project Page can be seen here water.phila.gov/projects/p50246/.

Examples and associated metrics of this digital engagement can be found in Table 7-1 below. The digital campaign, 'A Decade in the Community', a multi-part blog series to celebrate *Green City, Clean Waters'* 10th anniversary can be found here: water.phila.gov/drops/gccw10/. During FY22, the *Green City, Clean Waters* 10-Year Anniversary Drops Page received 4,125 pageviews.

Table 7-1: FY22 Public Engagement Team Digital Outreach Metrics

New Public Engagement Digital Metrics	FY22
Early GSI Design GovDelivery Notification Total Recipients	3,795
Early GSI Design GovDelivery Average Email Open Rate	48.3%
GSI Bid GovDelivery Notification Total Recipients	4,187
GSI Bid GovDelivery Notification Average Email Open Rate	57.8%

The use of traditional outreach strategies to notify residents about GSI projects in their neighborhoods combined with the use of digital outreach strategies resulted in an approximate outreach total of over

9,743 residents for FY22, not including the pageviews from the *Green City, Clean Waters* 10-year anniversary campaign.

Finally, in FY22 two *Green City, Clean Waters* Action Committee meetings were held with approximately 30 local and regional environmental stakeholders and partners in attendance.

7.2 Public Education and Outreach Programs

Green City, Clean Waters 10-Year Celebration

During FY22, PWD continued the digital communications campaign celebrating the 10th anniversary of *Green City, Clean Waters*. Table 7-2 details different celebrations throughout FY22.

Table 7-2: FY22 *Green City, Clean Waters* Celebrations

Date	Effort	Description	Relevant Links
October 2021	*Green City, Clean Waters* 10-year Celebration on American Street	• Outdoor celebration for milestone along North American Street • Major green renovations • New GSI managing close to 90 million gallons of stormwater annually from the area's combined sewer system. • Over 200 people joined the festivities on the city's largest 'complete green street.'	American Street Improvement Project Year 10 Evaluation and Adaptation Plan
November 2021	Spotlighting Philadelphia's GSI Through Tours at National Conferences	• Tour for water professionals from across the nation. • Stops included some of PWD's largest rain gardens, some private sites and a best-practice stream daylighting site.	The Interstate Council on Water Policy Cira Greene Indian Creek in Morris Park
April 2022	Spotlighting Philadelphia's GSI Through Tours at National Conferences	• Featured in panel discussions and guided a tour of Penn Park's green stormwater infrastructure, which diverts 2,000,000 gallons of stormwater from our sewer system every year.	WaterNow Alliance Tap Into Resilience Summit
June 2022	Spotlighting Philadelphia's GSI Through Tours at National Conferences	• Led a tour of Wissinoming Park and Carmella Playground for the national Greater & Greener conference	Wissinoming Park Greater & Greener conference

PWD Customer Contact List

The PWD customer contact list is a distribution list of email addresses that is updated with contact information collected at public events and meetings hosted by PWD. Communications include:

Email

- Maintain distribution list of email addresses
    - Correspondence includes standard communication about *Green City, Clean Waters* programs, targeted communications about planned infrastructure work in their neighborhood or ZIP code, or other best practice information and critical updates for PWD customers
    - 28,662 email and SMS subscribers at the conclusion of FY22

E-billing

- The Philadelphia Water Revenue Bureau maintains a list of e-billing subscribers
    - Subscribers receive bill information via email
    - There were more than 220,000 e-billing subscribers that PWD often interacts with and/or sends bulletins to at the conclusion of FY22

Targeted Communication

- Bulletins at the neighborhood or ZIP code level
    - Highest performing communications with open rates above 50% (Table 7-1)

Subscribers in the PWD lists signed up to receive PWD updates under several GovDelivery topics, including Customer Assistance Programs, Events, Alerts & Notifications, Employment & Contract Opportunities, Infrastructure & Environment News, PWD Partners, Philadelphia Press, and neighborhood or project-based topic lists including the Germantown Green Tools Outreach list and Cottman Avenue Streetscape list.

Green City, Clean Waters Interpretive Signage

In FY22, PWD continued to develop the interpretive *Green City, Clean Waters* permanent signage, which included new designs and additional fabrication and installation. This process also included site visits, coordination with property owners/partners, and promotion of the signage. To date, PWD has installed a total of 183 *Green City, Clean Waters* interpretive signs at 118 sites, with an additional 26 signs to be installed at 10 new sites in FY23.

Additionally, custom signage for signature sites such as American Street and Cruz Recreation Center was developed, detailing unique public engagement processes and special features. Please visit PWD's Flickr page for images of the installed signage.

Rain Check – A Green Homes Program

Rain Check, a program in partnership with the Pennsylvania Horticultural Society (PHS) and the Sustainable Business Network (SBN), seeks to install stormwater management tools on residential properties within the Combined Sewer Outfall (CSO) area of Philadelphia. Participation in the Rain Check program is highlighted in Table 7-3. More information on the program is available at: www.pwdraincheck.org**.**

The Rain Check program hosted 20 workshops in FY22, which reached 1,346 PWD customers and resulted in 606 stormwater management tools installed on residential properties throughout the city.

Table 7-3: FY22 Rain Check Metrics

Rain Check Metrics	FY22
Workshops Hosted	20
Workshop Attendees*	1,346
Total Number of Residential Tools Installed	606
Rain Barrel Installations**	454
Metal Downspout Planter Installations**	114
Permeable Paving Installations**	33
Rain Garden Installations**	5

**Workshop Attendees: This represents the total number of people who attended a Rain Check workshop. These hour-long educational workshops are mandatory for participation in Rain Check. Some FY22 attendees had their tools installed in FY22, while others may have their tools installed in FY23.*
***Installations Completed: For some participants who signed up this FY, the installation of their tools is still in progress*

Soak It Up Adoption – A Green Communities Program

The FY22 Soak It Up Adoption (SIUA) program seeks to provide small annual grants to eligible organizations and serves a dual purpose: to clean and help PWD maintain these public GSI sites and to engage local residents about what GSI is and how it is connected to *Green City, Clean Waters.* SIUA comprises 15 total organizations with 44 individuals acting as representatives in their respective communities.

Fifteen organizations participated in the Soak It Up Adoption (SIUA) program in FY22. Through these grants, 44 community representatives were paid to help clean and maintain 104 public GSI sites and removed ~59,377 pounds (lbs) of residential waste and engaged ~5,138 local residents.

Links to relevant programmatic information are outlined below:

- SIUA Home Page - water.phila.gov/adoption/
- SIUA 'In the News' - water.phila.gov/adoption/community/
- SIUA 'My Favorite Thing' - vimeo.com/307276902

Figure 7-2: SIUA Digital Engagement Example (APM, March 2022)

Traditionally SIUA partners engage residents and their community in-person to highlight their adopted infrastructure, however, due to the pandemic, most of the engagement was digital and conducted through social media, e-newsletters, etc. The pre-pandemic (in-person) events included guided tours, tabling sessions at local public events, and presentations at civic association meetings.

Table 7-4 provides metrics used by PWD to track the Soak It Up Adoption program throughout FY22. These figures reflect the variety of adopted stormwater management practices (SMPs), the amount of trash collected, and the number of people engaged.

Table 7-4: FY22 Soak It Up Adoption (SIUA) Metrics

Soak It Up Adoption Partner List	Number of SMPs Adopted	*Amount of Residential Waste Collected (LBS)	Number of Residents Engaged
Asociación Puertorriqueños en Marcha (APM)	15	6,251	1,357
Centennial Parkside Community Development Corporation (CPCDC)	6	7,107	40
Cloud 9 Rooftop Solutions	4	4,394	41
Frankford Community Development Corporation (FCDC)	2	15,478	3,285
Friends Rehabilitation Center (FRP)	6	602	68
Make the World Better (MTWB)	10	3,830	<25
Newbold Community Development Corporation (NBCDC)	9	700	<25
North10 & Hunting Park Community Gardens**	6	0**	0**
Northern Liberties Neighbors Association (NLNA)	11	654	<25
Roxborough Manayunk Conservancy (RMC)	2	2,683	61
South Kensington Community Partners (SKCP)	7	1,429	135
Southwest Community Development Corporation (SWCDC)	21	12,561	80
Tookany-Tacony Frankford Watershed Partnership - Friends of Vernon Park & Cayuga Triangle Sites (TTF)	5	3,684	52
TOTALS:	**104 SMPs**	**~59,377 lbs.**	**~5,138 engagements**

*All SIUA partners collected trash in 30-gallon paper bags then the total weights were converted from the bag's base unit (gallons) into pounds (lbs).
**New SIUA partner accepted at the end of FY22.

7.3 PWD Public Education & Urban Watersheds Education Curriculum via The Fairmount Water Works Interpretive Center (FWWIC) & Partners

In FY22, the Fairmount Water Works Interpretive Center (FWWIC) and partners hosted about 9,983 individuals in environmental education and outreach events that featured *Green City, Clean Waters* and/or urban waters themed educational content. FWWIC and its educators offered programming on-site, in the field, in the classroom, and on the water, working with partners like the Tookany/Tacony-Frankford Watershed Partnership, the Partnership for the Delaware Estuary, Philadelphia Parks & Recreation, and the Philadelphia School District.

Visitor engagement consisted of organized exterior tours for adults, families and children, ongoing activities with school groups and summer camps, and the opening of the POOL Exhibition [partially funded by the Pew Center for Arts & Heritage (March 2022)] and the Ed Grusheski Memorial Exhibition, 'Ripple Effect' (April - June 2022). Outreach efforts included encouraging teachers and students to participate in the *Understanding the Urban Watershed (UUW)* middle years curriculum project, which is a partnership with NAAEE/NOAA and Concilio constituents.

FWWIC continues to develop and deploy *Understanding the Urban Watershed (UUW)* to both teachers and students across Philadelphia. *Understanding the Urban Watershed* is a cross-disciplinary curriculum that consists of 6 Units, with multiple Learning Experiences in each Unit that are accessible online here (www.resourcewater.org/). The website provides links to instructional materials, resources, videos, and differentiated learning opportunities. Teachers are encouraged to provide engaging student field experiences and hands-on exploration to complement classroom instruction.

Understanding the Urban Watershed is also aligned with the School District of Philadelphia (District) core content and Education for Sustainability standards for 6th, 7th, and 8th grades. Development and implementation of the curriculum has been a collaborative effort with the District Offices of Curriculum, Instruction and Assessment, and Environmental Management & Services. The curriculum is an exemplar for goals and targets as outlined in the District's Sustainability Plan, GreenFutures, and is easily embedded into core curriculum because the Units are aligned with Academic (Science, ELA Math, and SS) and Education for Sustainability Standards. All standards and performance indicators are assessed using performance criteria.

The FWWIC was greatly impacted in September 2021 by Hurricane Ida. While still recovering from 2020 flooding, the center experienced additional record-breaking flooding during the hurricane, which severely impacted staff/visitor access and program delivery. As a result, attendance numbers are much lower than in pre-pandemic/flood-free years, but there has been a 56% increase in FY22 compared to FY21.

Table 7-5: FY22 Fairmount Water Works Interpretive Center (FWWIC) Metrics

FWWIC Types of Visitors & Attendance	FY22
General FWWIC Visitors	2,534
School Groups, Camps & Recreational Centers	4,707
Tours	77
Special Events	811
Outreach Efforts	1,857
FY22 Total Visitors	**9,983**

The UUW Curriculum offers students, teachers, schools, and the community active learning experiences about the value of water, water systems, and civic action and responsibility. It connects students to Philadelphia and the role they play on their block, in their school, and throughout their city, with a goal to achieve positive local and global impacts through experiential watershed education.

Appendix 1

Completed Public Green Stormwater Infrastructure Projects

Completed Public Green Infrastructure Reporting Metrics

The Public Completed Projects reporting format and metric definitions are described in Table 1 below.

Table 1: Public Reporting Metric Definitions

Metric	Definition
Work Number	Work Number is a unique assigned identifier from the CIPIT program. A CIPIT work number is attached to construction proposals, bids, work orders, contracts and invoices
Project ID	This is a unique number, which is assigned automatically by the system when the project is created.
System Number	Unique identifier for system. Composed of the project ID and the System ID.
Construction Completion Date	Date PWD inspector confirmed completion of GSI system.
Storage Volume	The volume of runoff managed by the system. For all systems, the entire depth of the system is counted, except for detention/slow-release systems that are completely lined with an impermeable liner. For those systems, only the depth above the orifice is counted.
New Trees	Total number of new trees planted in association with a system. This number also includes non-SMP trees, which are trees planted as part of a project but are not part of a stormwater management system.
Drainage Area (acres)	Area, in square footage, of impervious and/or pervious surface(s) flowing into a system(s) and SMP(s).
Greened Acres (acre-inch)	Greened Acres is a metric that accounts for the conversion of a highly impervious urban landscape through the implementation of projects that reduce storm water runoff. A Greened Acre is described as an acre of impervious cover connected (tributary) to a combined sewer that subsequently is reconfigured to utilize green stormwater infrastructure to manage at least one inch of stormwater runoff. If storage is provided, systems can credit up to two inches of the stormwater runoff from that acre. The best available Greened Acre value is pulled from the database for regulatory reporting.
SMP Type(s)	A Stormwater Management Practice (SMP) is a technique that controls the rate and volume of stormwater runoff and/or improves runoff water quality. Multiple SMP types can be grouped together in a larger GSI system. The SMP types were originally defined in Table 2-1 of the IAMP.
Program	Current public programs which a greened acre can be assigned to include: • Alleys/Driveways • Campuses • Facilities • Industry and Business • Open Space • Parking • Schools • Streets • Vacant Land

Metric	Definition
Green Construction Cost	Projects with a status of Construction Complete will have a finalized cost of construction provided.
Partner(s)	External entities involved in a project.
Watershed	The City of Philadelphia watershed where the project is located. Four of the City's seven watersheds fall at least partially within the combined sewer area. These watersheds are: • Cobbs-Darby Creek Watershed • Delaware Direct Watershed • Tookany/Tacony-Frankford Creek Watershed • Schuylkill River Watersheds

Table 2: Public SMP Definitions

Public SMP Type Definitions	
Field/Metric	**Definition/Purpose**
Basin*	A stormwater basin is a basin or depression that is vegetated with mowed grass. It is designed to detain and release stormwater runoff and/or infiltrate where feasible.
Blue Roof	A blue roof is a storage system designed into a roof surface such that the roof retains stormwater. Blue roofs are designed to reduce the rate of stormwater runoff.
Bump-out*	A stormwater bump-out is a vegetated curb extension that intercepts gutter flow. It is designed to detain and release stormwater runoff and/or infiltrate where feasible.
Cistern/Rain Barrel	A cistern/rain barrel is a tank or storage receptacle that captures and stores runoff and can thereby reduce runoff volume. The stored water may be used to serve a variety of non-potable water needs (e.g., irrigation).
Depaving	Depaving projects remove existing impervious pavement and restore the surface with grass, other types of vegetation, or loose materials (stone, mulch, etc.) such that the area can thereafter be considered pervious area. Depaving projects remove contributing impervious area from the sewer system.
Drainage Well	A stormwater drainage well is manhole structure designed to manage stormwater runoff by receiving stormwater from upstream collection and pretreatment systems and then discharging the stormwater into the surrounding soils through perforations in the manhole. It is designed to infiltrate stormwater.
Green Gutter	A green gutter is a narrow and shallow landscaped strip along a street's curb line. It is designed to manage stormwater runoff by placing the top of the planting media in the green gutter lower than the street's gutter elevation allowing stormwater runoff from both the street and sidewalk to flow directly into the green gutter. It is designed to slowly infiltrate stormwater
Green Roof	A green roof is a vegetated surface installed over a roof surface.
Infiltration/Storage Trench	An infiltration/storage trench is a subsurface structure designed to detain and release stormwater runoff and/or infiltrate where feasible.
Non-SMP Tree	A non-SMP tree is a planted tree that does not have stormwater directed to it.
Pervious Paving	Pervious paving is a hard permeable surface commonly composed of concrete, asphalt or pavers. It is designed to detain and release stormwater runoff and/or infiltrate where feasible.

Public SMP Type Definitions	
Planter*	A stormwater planter is a structure filled with soil media and planted with vegetation or trees. It is designed to detain and release stormwater runoff and/or infiltrate where feasible. Planters often contain curb edging or fencing as barrier protection around the planter.
Rain Garden	A rain garden is a shallow vegetated area designed to detain and release stormwater runoff and/or infiltrate where feasible. Rain gardens may also be referred to as bio-infiltration basins and bio-retention basins. They are typically integrated into landscape features (e.g. median strips) and are non-mowed areas
Stormwater Tree	A stormwater tree is planted in a specialized tree pit that has stormwater runoff directed to its pit. It is designed to manage stormwater by placing the top of the planting media in a tree pit lower than the street's gutter elevation and connecting the tree pit to an inlet which directs runoff from the street into the tree pit. It is designed to detain and release stormwater runoff and/or infiltrate where feasible.
Swale	A swale is a channel designed to convey stormwater. It can be designed to attenuate and/or infiltrate where feasible.
Tree Trench*	A stormwater tree trench is a subsurface infiltration/storage trench that is planted with trees. They are typically linear features that are constructed between the curb and the sidewalk. It is designed to detain and release stormwater runoff and/or infiltrate where feasible.
Wetland*	A stormwater wetland is a vegetated basin designed principally for pollutant removal. It typically holds runoff for periods longer than 72 hours and may include a permanent pool. Wetlands can also detain and release stormwater runoff.

*The word 'stormwater' was previously included in these types but was removed because it was redundant.

Table 3: Completed Public Green Stormwater Infrastructure Projects

Work Number	Project ID	System Number	Project Name	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost **	Partner(s)	Watershed
20391	1056	1056-2	Ashville/Ditman/Rhawn etal	04-May-20	Combined	4438	11	0.8	1.6	Tree Trench	Streets	$552,000.00	Philadelphia Water Department	Delaware,Pennypack
		1056-3		04-May-20	Combined	2774		0.4	0.8	Infiltration/Storage Trench	Streets			Delaware,Pennypack
		1056-1		04-May-20	Combined	2462		0.3	0.7	Tree Trench	Streets			Delaware,Pennypack
20400	306	306-1	Ontario, "A" - Glenwood / Glenwood	24-Mar-17	Combined	820	9	0.1	0.3	Tree Trench	Streets	$411,000.00	Philadelphia Water Department	Delaware
		306-2		24-Mar-17	Combined	574		0.1	0.2	Tree Trench	Streets			Delaware
		306-3		24-Mar-17	Combined	1287.35		0.2	0.4	Tree Trench	Streets			Delaware
		306-4		24-Mar-17	Combined	1763		0.3	0.6	Tree Trench	Streets			Delaware
		306-5		24-Mar-17	Combined	1000.35		0.2	0.3	Tree Trench	Streets			Delaware
20422	517	517-1	Woodland / 56th	06-May-16	Combined	1684	5	0.2	0.3	Tree Trench	Streets	$175,000.00	Philadelphia Water Department	Schuylkill
		517-2		06-May-16	Combined	2393.62		0.3	0.7	Tree Trench	Streets			Schuylkill
20439	584	584-1	Ellsworth / 20th etal	07-Nov-18	Combined	1683.06	10	0.3	0.5	Tree Trench	Streets	$577,000.00	Philadelphia Water Department	Delaware,Schuylkill
		584-2		07-Nov-18	Combined	1748		0.2	0.5	Tree Trench	Streets			Delaware,Schuylkill
		584-3		07-Nov-18	Combined	1150		0.2	0.3	Tree Trench	Streets			Delaware,Schuylkill
		584-5		07-Nov-18	Combined	1527		0.3	0.5	Tree Trench	Streets			Delaware,Schuylkill
20443	411	411-1	Juniata : Cayuga/Claridge/Lawndale etal Ferko Playground	08-Dec-17	Combined	41803.92	0	7.2	12.7	Bumpout, Infiltration/Storage Trench	Open Space	$2,987,000.00	Philadelphia Water Department	TTF
20444	563	563-1	Corinthian / Fairmount	26-Mar-19	Combined	3779	5	0.9	1.3	Tree Trench	Streets	$763,000.00	Philadelphia Water Department	Delaware,Schuylkill
		563-4		26-Mar-19	Combined	1382		0.2	0.4	Infiltration/Storage Trench	Streets			Delaware,Schuylkill
		563-2		26-Mar-19	Combined	3935		0.6	1.2	Tree Trench	Streets			Delaware,Schuylkill
		563-3		26-Mar-19	Combined	2442		0.4	0.7	Infiltration/Storage Trench	Streets			Delaware,Schuylkill
20456	994	994-1	Tulpehocken / Mansfield / Lowber / Duval / Johnson	14-Dec-17	Combined	3103	0	0.5	0.9	Infiltration/Storage Trench	Streets	$562,000.00	Philadelphia Water Department	TTF
		994-4		14-Dec-17	Combined	814		0.1	0.3	Infiltration/Storage Trench	Streets			TTF
		994-2		14-Dec-17	Combined	1131		0.3	0.4	Infiltration/Storage Trench	Streets			TTF
		994-3		14-Dec-17	Combined	1302		0.4	0.5	Infiltration/Storage Trench	Streets			TTF
20458	1006	1006-1	Bridge/Creston/Darrah/Penn	23-Apr-18	Combined	1886	7	0.3	0.6	Tree Trench	Streets	$1,257,000.00	Philadelphia Water Department	Delaware
		1006-2		23-Apr-18	Combined	4702		0.6	1.3	Infiltration/Storage Trench	Streets			Delaware
		1006-3		23-Apr-18	Combined	2459		0.3	0.6	Tree Trench	Streets			Delaware
		1006-4		23-Apr-18	Combined	2122		0.3	0.6	Tree Trench	Streets			Delaware
		1006-5		23-Apr-18	Combined	2299		0.4	0.8	Infiltration/Storage Trench	Streets			Delaware
		1006-6		23-Apr-18	Combined	2855		0.7	1.0	Infiltration/Storage Trench	Streets			Delaware
20461	1066	1066-5	Frankford / Pacific / Wheatsheaf	22-Aug-16	Combined	2400	0	0.5	0.8	Infiltration/Storage Trench	Streets	$617,000.00	Philadelphia Water Department	Delaware,TTF
		1066-4		22-Aug-16	Combined	1092.937		0.2	0.4	Infiltration/Storage Trench	Streets			Delaware,TTF
		1066-3		22-Aug-16	Combined	1479.84		0.3	0.5	Infiltration/Storage Trench	Streets			Delaware,TTF
		1066-1		22-Aug-16	Combined	588		0.1	0.2	Infiltration/Storage Trench	Streets			Delaware,TTF
		1066-6		22-Aug-16	Combined	1084		0.2	0.4	Infiltration/Storage Trench	Streets			Delaware,TTF
		1066-2		22-Aug-16	Combined	1112		0.2	0.3	Infiltration/Storage Trench	Streets			Delaware,TTF
20475	1042	1042-2	31st / 34th / 35th / Wharton	09-Jul-21	Combined	843.88	9	0.2	0.3	Tree Trench	Streets	$318,000.00	Philadelphia Water Department	Schuylkill
		1042-1		06-Aug-21	Combined	1682.94		0.3	0.5	Tree Trench	Streets			Schuylkill
20480	1266	1266-1	Somerset / 7th	05-Jun-20	Combined	3343.45	4	0.5	1.0	Tree Trench	Streets	$186,000.00	Philadelphia Water Department	Delaware
20489	1136	1136-1	Angora / Cedar / Yewdall / 57th	26-Feb-19	Combined	2464.47	0	0.4	0.8	Infiltration/Storage Trench	Streets	$388,000.00	Philadelphia Water Department	Cobbs-Darby
		1136-2		26-Feb-19	Combined	1047.53		0.2	0.3	Infiltration/Storage Trench	Streets			Cobbs-Darby
		1136-3		26-Feb-19	Combined	924.42		0.2	0.3	Infiltration/Storage Trench	Streets			Cobbs-Darby
20490	1206	1206-1	Wishart/Clementine/Elkhart/Helen/Jasper	18-Jan-19	Combined	849.65	0	0.2	0.3	Infiltration/Storage Trench	Streets	$315,000.00	Philadelphia Water Department	Delaware
		1206-3		18-Jan-19	Combined	1171.84		0.3	0.4	Infiltration/Storage Trench	Streets			Delaware
		1206-2		18-Jan-19	Combined	1194.19		0.1	0.3	Infiltration/Storage Trench	Streets			Delaware
20497	1215	1215-1	44th / Larchwood / Osage / Pine	22-Nov-19	Combined	1437	4	0.2	0.4	Tree Trench	Streets	$116,000.00	Philadelphia Water Department	Schuylkill
20499	1248	1248-1	Crease / Frankford / Mascher / Thompson / Girard	26-May-21	Combined	1174.71	0	0.3	0.4	Infiltration/Storage Trench	Streets	$248,000.00	Philadelphia Water Department	Delaware
40224	240	240-1	PERCY STREET / WEBSTER STREET	18-Jul-11	Combined	657	0	0.1	0.2	Pervious Paving	Streets	$48,283.00	Philadelphia Water Department	Delaware

Work Number	Project ID	System Number	Project Name	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost **	Partner(s)	Watershed
40330	289*	289-11	Coral, Sergeant-Huntingdon / Sepviva, Susquehanna - Dauphin	27-Jan-10	Combined	37.6	17	0.0	0.0	Stormwater Tree	Streets	$209,000.00	Philadelphia Water Department	Delaware
		289-12		27-Jan-10	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		289-13		27-Jan-10	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		289-14		27-Jan-10	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		289-15		27-Jan-10	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		289-17		27-Jan-10	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		289-7		27-Jan-10	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		289-18		27-Jan-10	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		289-16		27-Jan-10	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		289-10		27-Jan-10	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		289-8		27-Jan-10	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		289-6		27-Jan-10	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		289-5		27-Jan-10	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		289-4		27-Jan-10	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		289-3		27-Jan-10	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		289-2		27-Jan-10	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		289-1		27-Jan-10	Combined	962		0.6	0.3	Infiltration/Storage Trench	Streets			Delaware
		289-9		27-Jan-10	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
40368	234	234-1	Franklin, Berks - Norris / Norris - Diamond /16th Street / Dauphin Street	24-Oct-13	Combined	601	32	0.2	0.2	Tree Trench	Streets	$184,925.00	Philadelphia Water Department	Delaware
		234-2		24-Oct-13	Combined	1128		0.3	0.4	Tree Trench	Streets			Delaware
		234-3		24-Oct-13	Combined	525		0.2	0.2	Tree Trench	Streets			Delaware
		234-4		24-Oct-13	Combined	2343		0.4	0.8	Tree Trench	Streets			Delaware
		234-5		24-Oct-13	Combined	2618		0.4	0.8	Tree Trench	Streets			Delaware
40577	441*	441-42	Wagner St.,12th - Broad; Rockland St., 11th - Broad	08-Apr-11	Combined	37.6	21	0.0	0.0	Stormwater Tree	Streets	$924,000.00	Philadelphia Water Department	TTF
		441-25		08-Apr-11	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			TTF
		441-27		08-Apr-11	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			TTF
		441-28		08-Apr-11	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			TTF
		441-31		08-Apr-11	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			TTF
		441-45		08-Apr-11	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			TTF
		441-32		08-Apr-11	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			TTF
		441-39		08-Apr-11	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			TTF
		441-43		08-Apr-11	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			TTF
		441-22		08-Apr-11	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			TTF
		441-7		08-Apr-11	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			TTF
		441-38		08-Apr-11	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			TTF
		441-2		08-Apr-11	Combined	3160		2.0	1.0	Infiltration/Storage Trench	Streets			TTF
		441-11		08-Apr-11	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			TTF
		441-1		08-Apr-11	Combined	480		0.4	0.2	Infiltration/Storage Trench	Streets			TTF
		441-21		08-Apr-11	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			TTF
		441-3		08-Apr-11	Combined	1902		1.7	0.6	Infiltration/Storage Trench	Streets			TTF
		441-5		08-Apr-11	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			TTF
		441-8		08-Apr-11	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			TTF
		441-12		08-Apr-11	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			TTF
		441-13		08-Apr-11	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			TTF
		441-14		08-Apr-11	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			TTF
		441-15		08-Apr-11	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			TTF
		441-16		08-Apr-11	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			TTF

Work Number	Project ID	System Number	Project Name	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost **	Partner(s)	Watershed
40599	233	233-1	Belgrade / Crease / Marlborough	20-Dec-12	Combined	847	1	0.2	0.3	Infiltration/Storage Trench	Streets	$26,835.00	Philadelphia Water Department	Delaware
		233-2		20-Dec-12	Combined	416		0.1	0.1	Infiltration/Storage Trench	Streets			Delaware
40607	235	235-2	Northern Liberties Flood Relief	15-Jul-16	Combined	530	13	0.2	0.2	Tree Trench	Streets	$147,000.00	Philadelphia Water Department	Delaware
		235-4		15-Jul-16	Combined	791		0.1	0.3	Tree Trench	Streets			Delaware
40659	207	207-1	Waterview Rec Center Stormwater Management Improvements	01-Jul-08	Combined	1751	4	0.3	0.6	Pervious Paving, Tree Trench	Streets	$50,000.00	Pennsylvania Horticultural Society	TTF
		207-2		01-Jul-08	Combined	42.42		0.0	0.0	Planter	Streets			TTF
		207-3		01-Jul-08	Combined	42.42		0.0	0.0	Planter	Streets			TTF
40662	218	218-3	Green Streets Pilot Project - Passyunk Avenue Locations	05-Mar-13	Combined	5137	0	0.7	1.3	Bumpout	Streets	$0.00	Streets Department	Schuylkill
40669	331	331-1	Hope St. / 2nd St. / Hancock St.	08-Feb-16	Combined	1274	0	0.2	0.5	Pervious Paving	Streets	$240,000.00	Philadelphia Water Department	Delaware
40713	288	288-1	Mole. Webster, Rodman	15-Aug-18	Combined	1078.64	6	0.2	0.4	Pervious Paving	Streets	$153,000.00	Philadelphia Water Department	Delaware
40750	304	304-2	Adams / Church / Penn	09-Mar-20	Combined	1184	1	0.2	0.4	Infiltration/Storage Trench	Streets	$317,000.00	Philadelphia Water Department	TTF
		304-1		09-Mar-20	Combined	710		0.2	0.3	Tree Trench	Streets			TTF
40755	305	305-1	Ellsworth / Federal / Wharton	25-Sep-19	Combined	1594	2	0.3	0.5	Tree Trench	Streets	$233,000.00	Philadelphia Water Department	Delaware
		305-2		25-Sep-19	Combined	1251		0.2	0.4	Infiltration/Storage Trench	Streets			Delaware
40771	301	301-1	Dauphin / Sepviva etal	26-Aug-15	Combined	1588	10	0.3	0.5	Pervious Paving	Streets	$133,000.00	Philadelphia Water Department	Delaware
		301-2		26-Aug-15	Combined	1444		0.2	0.4	Tree Trench	Streets			Delaware
		301-3		26-Aug-15	Combined	1598		0.2	0.4	Pervious Paving	Streets			Delaware
40773	469	469-1	Galloway/Roseberry etal	13-Jun-18	Combined	1311.6	5	0.2	0.4	Tree Trench	Streets	$105,000.00	Philadelphia Water Department	Delaware
40784	406	406-1	Conestoga / Thompson	25-Nov-19	Combined	902.39	0	0.2	0.3	Infiltration/Storage Trench	Streets	$169,000.00	Philadelphia Water Department	Schuylkill
		406-2		25-Nov-19	Combined	1067.24		0.2	0.4	Infiltration/Storage Trench	Streets			Schuylkill
40795	443	443-13	Cobbs Creek GSI	10-Jul-19	Combined	3428.09	58	0.6	1.1	Bumpout, Infiltration/Storage Trench	Streets	$3,644,000.00	Philadelphia Water Department	Cobbs-Darby
		443-12		10-Jul-19	Combined	3177.37		0.4	0.8	Bumpout, Infiltration/Storage Trench	Streets			Cobbs-Darby
		443-11		10-Jul-19	Combined	2016.66		0.3	0.6	Infiltration/Storage Trench	Streets			Cobbs-Darby
		443-9		10-Jul-19	Combined	4195.94		0.6	1.2	Tree Trench	Streets			Cobbs-Darby
		443-8		10-Jul-19	Combined	2389.92		0.3	0.7	Tree Trench	Streets			Cobbs-Darby
		443-7		10-Jul-19	Combined	1008		0.2	0.3	Rain Garden	Open Space			Cobbs-Darby
		443-10		10-Jul-19	Combined	4738.27		0.7	1.3	Tree Trench	Streets			Cobbs-Darby
		443-18		11-Jun-20	Combined	1467.4		0.3	0.5	Infiltration/Storage Trench	Streets			Cobbs-Darby
		443-17		11-Jun-20	Combined	573		0.1	0.2	Infiltration/Storage Trench	Streets			Cobbs-Darby
		443-16		11-Jun-20	Combined	2135.2		0.4	0.7	Rain Garden	Open Space			Cobbs-Darby
		443-15		11-Jun-20	Combined	1902		0.3	0.6	Infiltration/Storage Trench, Rain Garden	Open Space			Cobbs-Darby
		443-14		11-Jun-20	Combined	8390		1.4	2.7	Basin, Infiltration/Storage Trench, Rain Garden	Open Space			Cobbs-Darby
		443-5		11-Jun-20	Combined	4533		0.7	1.3	Infiltration/Storage Trench, Rain Garden	Open Space			Cobbs-Darby
		443-1		11-Jun-20	Combined	2233		0.5	1.1	Rain Garden	Open Space			Cobbs-Darby
		443-6		11-Jun-20	Combined	3917		0.4	0.9	Infiltration/Storage Trench, Rain Garden	Open Space			Cobbs-Darby
		443-4		11-Jun-20	Combined	1862.26		0.3	0.5	Infiltration/Storage Trench	Streets			Cobbs-Darby
		443-3		11-Jun-20	Combined	1896.66		0.3	0.5	Infiltration/Storage Trench	Streets			Cobbs-Darby

Work Number	Project ID	System Number	Project Name	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost **	Partner(s)	Watershed
40796	1086	1086-27	Sepviva Street	27-Dec-12	Combined	37.6	32	0.0	0.0	Stormwater Tree	Streets	$150,000.00	Philadelphia Water Department	Delaware
		1086-19		27-Dec-12	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		1086-20		27-Dec-12	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		1086-21		27-Dec-12	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		1086-22		27-Dec-12	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		1086-23		27-Dec-12	Combined	28		0.0	0.0	Stormwater Tree	Streets			Delaware
		1086-24		27-Dec-12	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		1086-26		27-Dec-12	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		1086-17		27-Dec-12	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		1086-16		27-Dec-12	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		1086-25		27-Dec-12	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		1086-9		27-Dec-12	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		1086-15		27-Dec-12	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		1086-2		27-Dec-12	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		1086-3		27-Dec-12	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		1086-18		27-Dec-12	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		1086-7		27-Dec-12	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		1086-10		27-Dec-12	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		1086-11		27-Dec-12	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		1086-12		27-Dec-12	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		1086-13		27-Dec-12	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		1086-14		27-Dec-12	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		1086-1		27-Dec-12	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
		1086-6		27-Dec-12	Combined	37.6		0.0	0.0	Stormwater Tree	Streets			Delaware
40798	518	518-1	Ludlow / Hirst / Robinson	16-Jul-20	Combined	835	28	0.2	0.3	Infiltration/Storage Trench	Streets	$638,000.00	Philadelphia Water Department	Cobbs-Darby
		518-4		16-Jul-20	Combined	923		0.3	0.3	Infiltration/Storage Trench	Streets			Cobbs-Darby
		518-2		16-Jul-20	Combined	932		0.2	0.3	Infiltration/Storage Trench	Streets			Cobbs-Darby
		518-3		16-Jul-20	Combined	661		0.2	0.2	Infiltration/Storage Trench	Streets			Cobbs-Darby
40799	556	556-1	Cleveland/Gratz/Greene/Robert s	01-Nov-18	Combined	2883.99	0	0.4	0.8	Infiltration/Storage Trench	Streets	$144,000.00	Philadelphia Water Department	TTF
		556-2		01-Nov-18	Combined	1433		0.4	0.5	Infiltration/Storage Trench	Streets			TTF
40816	554	554-4	Weikel / Witte / Gaul	07-Jan-19	Combined	653	5	0.1	0.2	Tree Trench	Streets	$710,000.00	Philadelphia Water Department	Delaware
		554-7		07-Jan-19	Combined	787		0.2	0.3	Infiltration/Storage Trench	Streets			Delaware
		554-5		07-Jan-19	Combined	638		0.1	0.2	Infiltration/Storage Trench	Streets			Delaware
		554-3		07-Jan-19	Combined	1714		0.3	0.6	Infiltration/Storage Trench	Streets			Delaware
		554-2		07-Jan-19	Combined	2350		0.3	0.7	Stormwater Tree, Tree Trench	Streets			Delaware
		554-1		07-Jan-19	Combined	3795		0.4	0.7	Tree Trench	Streets			Delaware
		554-6		07-Jan-19	Combined	1058		0.2	0.4	Infiltration/Storage Trench	Streets			Delaware
40817	1293	1293-3	C/F/Mayfield/Rosehill/Hartville	29-Jan-18	Combined	2271	0	0.6	0.7	Infiltration/Storage Trench	Streets	$270,000.00	Philadelphia Water Department	Delaware
		1293-1		29-Jan-18	Combined	565		0.1	0.2	Infiltration/Storage Trench	Streets			Delaware
		1293-2		29-Jan-18	Combined	1260		0.3	0.4	Infiltration/Storage Trench	Streets			Delaware
40821	504	504-2	9th / Mifflin / Pierce	19-Dec-18	Combined	1194	2	0.2	0.3	Tree Trench	Streets	$567,000.00	Philadelphia Water Department	Delaware
40824	525	525-1	52nd / 53rd / Gainor	20-Mar-20	Combined	1472.65	11	0.3	0.5	Tree Trench	Streets	$335,000.00	Philadelphia Water Department	Schuylkill
		525-2		20-Mar-20	Combined	1004.66		0.3	0.3	Tree Trench	Streets			Schuylkill
		525-3		20-Mar-20	Combined	2462.6		0.5	0.9	Tree Trench	Streets			Schuylkill
40828	657	657-1	Brandywine / Green / Melon / North	07-Jun-17	Combined	1217	2	0.3	0.4	Tree Trench	Streets	$113,000.00	Philadelphia Water Department	Delaware
40829	990	990-1	Galloway / Orianna / Leithgow	27-Sep-19	Combined	1255	0	0.2	0.4	Infiltration/Storage Trench	Streets	$249,000.00	Philadelphia Water Department	Delaware
		990-2		27-Sep-19	Combined	635		0.2	0.2	Infiltration/Storage Trench	Streets			Delaware
40844	989	989-1	Master / Wanamaker / Hobart	03-Jul-19	Combined	2669.66	0	0.6	1.2	Infiltration/Storage Trench	Streets	$198,000.00	Philadelphia Water Department	Schuylkill
		989-2		15-Oct-20	Combined	1918.55		0.5	0.7	Infiltration/Storage Trench	Streets			Schuylkill
40862	1064	1064-1	8th / 12th / Lemon / North	27-May-20	Combined	2067.81	6	0.3	0.6	Tree Trench	Streets	$263,000.00	Philadelphia Water Department	Delaware
		1064-2		27-May-20	Combined	1583.2		0.2	0.5	Infiltration/Storage Trench	Streets			Delaware
40863	1010	1010-2	Bouvier / Monument / Willington / 17th	03-Jun-19	Combined	1109	3	0.2	0.4	Infiltration/Storage Trench	Streets	$489,000.00	Philadelphia Water Department	Delaware
		1010-5		03-Jun-19	Combined	2034.34		0.2	0.5	Tree Trench	Streets			Delaware
		1010-1		03-Jun-19	Combined	1788.4		0.3	0.6	Infiltration/Storage Trench	Streets			Delaware
		1010-4		03-Jun-19	Combined	530		0.1	0.2	Infiltration/Storage Trench	Streets			Delaware
		1010-3		03-Jun-19	Combined	1333.5		0.2	0.4	Infiltration/Storage Trench	Streets			Delaware

Work Number	Project ID	System Number	Project Name	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost **	Partner(s)	Watershed
40865	1057	1057-2	Crowson / Stokes / Woodlawn	30-Aug-18	Combined	675.24	0	0.2	0.2	Infiltration/Storage Trench	Streets	$534,000.00	Philadelphia Water Department	TTF
		1057-3		30-Aug-18	Combined	822.15		0.2	0.3	Infiltration/Storage Trench	Streets			TTF
		1057-4		30-Aug-18	Combined	829.26		0.3	0.3	Infiltration/Storage Trench	Streets			TTF
		1057-5		30-Aug-18	Combined	1571.63		0.4	0.5	Infiltration/Storage Trench	Streets			TTF
		1057-6		30-Aug-18	Combined	503.7		0.1	0.2	Infiltration/Storage Trench	Streets			TTF
		1057-1		30-Aug-18	Combined	1034		0.2	0.3	Infiltration/Storage Trench	Streets			TTF
40866	1065	1065-1	Creighton / Spring / Vogdes / Race	17-Sep-21	Combined	1462.22	0	0.3	0.5	Infiltration/Storage Trench	Streets	$134,000.00	Philadelphia Water Department	Cobbs-Darby
40891	1062	1062-6	Wynnefield, Monument - 170' W. of 50th	25-May-17	Combined	808.55	13	0.2	0.2	Tree Trench	Streets	$595,000.00	Philadelphia Water Department	Schuylkill
		1062-7		25-May-17	Combined	5457.5		0.8	1.6	Tree Trench	Streets			Schuylkill
		1062-5		25-May-17	Combined	3276		0.4	0.9	Tree Trench	Streets			Schuylkill
		1062-3		25-May-17	Combined	2183.5		0.6	0.8	Infiltration/Storage Trench	Streets			Schuylkill
		1062-2		25-May-17	Combined	1859		0.3	0.6	Tree Trench	Streets			Schuylkill
		1062-4		25-May-17	Combined	2926		0.6	0.9	Tree Trench	Streets			Schuylkill
40900	1058	1058-1	Medary Avenue from 13th Street to Broad Street	31-May-16	Combined	1604.52	0	0.3	0.6	Infiltration/Storage Trench	Streets	$161,000.00	Philadelphia Water Department	TTF
		1058-2		31-May-16	Combined	868		0.2	0.3	Infiltration/Storage Trench	Streets			TTF
40903	656	656-1	Market / 43rd / Ludlow / 45th	07-Sep-16	Combined	541.44	3	0.1	0.2	Tree Trench	Streets	$71,000.00	Philadelphia Water Department	Schuylkill
40906	1246	1246-1	Church / Orchard / Ruan / Salem	12-Mar-20	Combined	866.66	0	0.1	0.3	Infiltration/Storage Trench	Streets	$122,000.00	Philadelphia Water Department	TTF
40918	1149	1149-1	Loudon / Carlisle	28-Sep-17	Combined	1379	0	0.4	0.5	Infiltration/Storage Trench	Streets	$134,000.00	Philadelphia Water Department	TTF
		1149-2		28-Sep-17	Combined	572		0.1	0.2	Infiltration/Storage Trench	Streets			TTF
40928	1275	1275-2	SR1026 Section H04	06-Sep-19	Combined	5371	28	0.7	1.4	Tree Trench	Streets	Unknown	Pennsylvania Department of Transportation	TTF
		1275-3		06-Sep-19	Combined	1731		0.2	0.4	Tree Trench	Streets			TTF
		1275-4		06-Sep-19	Combined	2520		0.5	0.8	Tree Trench	Streets			TTF
		1275-5		06-Sep-19	Combined	1083		0.1	0.3	Tree Trench	Streets			TTF
		1275-6		06-Sep-19	Combined	2578		0.3	0.6	Tree Trench	Streets			TTF
		1275-1		06-Sep-19	Combined	3521		0.5	0.9	Tree Trench	Streets			TTF
40938	1423	1423-1	I-95 Section AF1	04-Aug-20	Combined	2133	0	0.6	1.3	Infiltration/Storage Trench	Streets	Unknown	Pennsylvania Department of	Delaware
		1423-2		04-Aug-20	Combined	1897		0.4	0.7	Infiltration/Storage Trench	Streets			Delaware
50001	14*	14-1	Passyunk Square Model Neighborhood	17-Sep-13	Combined	1452	0	0.5	0.6	Infiltration/Storage Trench, Rain Garden	Streets	$873,261.00	Philadelphia Water Department	Delaware
	15*	15-2		17-Sep-13	Combined	1535.98	4	0.3	0.5	Tree Trench	Streets			Delaware
	16*	16-1		17-Sep-13	Combined	1111.8	5	0.2	0.3	Tree Trench	Streets			Delaware
	162*	162-3		17-Sep-13	Combined	2040.81	13	0.4	0.7	Tree Trench	Streets			Delaware,Schuylkill
		162-2		17-Sep-13	Combined	1236		0.3	0.4	Bumpout, Tree Trench	Streets			Delaware,Schuylkill
		162-1		17-Sep-13	Combined	604		0.1	0.2	Bumpout, Tree Trench	Streets			Delaware,Schuylkill
		162-4		17-Sep-13	Combined	1316.13		0.2	0.3	Tree Trench	Streets			Delaware,Schuylkill
	313*	313-1		17-Sep-13	Combined	1452	0	0.3	0.4	Infiltration/Storage Trench	Streets			Delaware
50002	8*	8-1	New Kensington Model Neighborhood	04-Nov-11	Combined	1704.86	3	0.6	0.5	Tree Trench	Streets	$173,494.00	Philadelphia Water Department	Delaware
		8-2		04-Nov-11	Combined	1681		0.5	1.0	Rain Garden	Streets			Delaware
50003	12*	12-1	Northern Liberties Model Neighborhood	08-Feb-13	Combined	163.35	7	0.1	0.1	Infiltration/Storage Trench	Streets	$454,930.00	Philadelphia Water Department	Delaware
		12-3		08-Feb-13	Combined	335.5		0.1	0.1	Tree Trench	Streets			Delaware
		12-4		08-Feb-13	Combined	478.83		0.1	0.1	Tree Trench	Streets			Delaware
	91*	91-1		08-Feb-13	Combined	1463		0.4	0.4	Bumpout, Tree Trench	Streets			Delaware

Work Number	Project ID	System Number	Project Name	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost **	Partner(s)	Watershed
50005	1*	1-2	Green Street Project in 16th Street	10-Nov-10	Combined	1280	6	0.3	0.4	Tree Trench	Streets	$402,396.00	Philadelphia Water Department	Delaware
		1-3		10-Nov-10	Combined	600		0.2	0.2	Tree Trench	Streets			Delaware
		1-1		10-Nov-10	Combined	1676		0.5	0.7	Tree Trench	Streets			Delaware
	18*	18-1		10-Nov-10	Combined	609.4	8	0.3	0.2	Tree Trench	Streets			Schuylkill
	9*	9-1		10-Nov-10	Combined	494	5	0.1	0.1	Tree Trench	Streets			Delaware
		9-2		10-Nov-10	Combined	778.8		0.1	0.3	Tree Trench	Streets			Delaware
50006	187	187-2	Columbus Square Park Infrastructure Demonstration Project	26-May-10	Combined	20	0	0.0	0.0	Planter	Streets	$65,506.00	Philadelphia Industrial Development Corporation	Delaware
		187-3		26-May-10	Combined	882		0.2	0.3	Infiltration/Storage Trench, Planter	Streets			Delaware
		187-1		26-May-10	Combined	20		0.0	0.0	Planter	Streets			Delaware
50007	21*	21-1	Blue Bell Inn Triangle Stormwater Improvements	31-Oct-13	Combined	2066.45	12	0.6	1.2	Swale	Streets	$278,000.00	Philadelphia Water Department	Cobbs-Darby
50009	20*	20-10	Queen Lane Bumpouts	14-May-11	Combined	1357.2	13	0.3	0.6	Tree Trench	Streets	Unknown	Philadelphia Water Department	TTF
50010	19*	19-4	Barry Playground - Tree Trenches	14-Oct-13	Combined	4463	36	0.5	1.1	Tree Trench	Streets	$975,000.00	Philadelphia Water Department	Schuylkill
		19-3		14-Oct-13	Combined	2180		0.4	0.7	Tree Trench	Streets			Schuylkill
		19-2		14-Oct-13	Combined	3979		0.6	1.2	Tree Trench	Streets			Schuylkill
		19-1		14-Oct-13	Combined	2776.5		0.7	0.9	Tree Trench	Streets			Schuylkill
		19-5		14-Oct-13	Combined	2745		0.3	0.6	Tree Trench	Streets			Schuylkill
50011	194	194-1	N. 3rd St and Wildey St	01-Jun-09	Combined	849	24	0.2	0.4	Rain Garden	Open Space	$22,236.00	Pennsylvania Horticultural Society	Delaware
50012	186	186-1	Cliveden Park Extended Detention	01-Oct-07	Combined	876.1	0	0.6	0.3	Rain Garden	Open Space	$175,000.00	Pennsylvania Horticultural Society	TTF
		186-2		01-Oct-07	Combined	3687		0.6	1.2	Rain Garden	Open Space			TTF
50013	208	208-1	West Mill Creek Stormwater Tree Trench	01-Jul-06	Combined	311	4	0.2	0.1	Tree Trench	Streets	$66,050.00	Pennsylvania Horticultural Society	Schuylkill
		208-2		01-Jul-06	Combined	456		0.1	0.2	Tree Trench	Streets			Schuylkill
		208-3		01-Jul-06	Combined	63		0.0	0.0	Pervious Paving	Streets			Schuylkill
50014	181	181-1	47th and Grays Ferry Rain Garden	01-Apr-07	Combined	1260	7	0.4	0.7	Rain Garden	Vacant Land	$16,000.00	Pennsylvania Horticultural Society	Schuylkill
50015	185	185-1	Clark Park Stormwater Bed	01-Nov-07	Combined	3080	0	0.7	0.9	Infiltration/Storage Trench	Open Space		Pennsylvania Horticultural Society	Schuylkill
50016	196	196-1	Mill Creek Farm	01-May-06	Combined	360	4	0.3	0.5	Rain Garden, Swale	Streets	$57,850.00	Pennsylvania Horticultural Society	Schuylkill
50019	154*	154-3	Anna B. Day School, Epiphany of Our Lord, Francis Scott, Dickinson Sq	25-Nov-14	Combined	2349	15	0.5	1.0	Tree Trench	Streets	$948,000.00	Philadelphia Water Department	TTF
		154-4		25-Nov-14	Combined	2925.8		0.4	0.8	Tree Trench	Streets			TTF
		154-1		25-Nov-14	Combined	1853.2		0.4	0.7	Tree Trench	Streets			TTF
		154-2		25-Nov-14	Combined	2754		0.4	0.9	Tree Trench	Streets			TTF
	17*	17-1		25-Nov-14	Combined	2635	5	0.4	0.9	Bumpout, Infiltration/Storage Trench	Streets			Delaware
		17-2		25-Nov-14	Combined	1015		0.2	0.4	Tree Trench	Streets			Delaware
	79*	79-1		25-Nov-14	Combined	619.48	1	0.1	0.2	Infiltration/Storage Trench	Streets			Delaware
	81*	81-1		25-Nov-14	Combined	1606	2	0.3	0.5	Tree Trench	Streets			Delaware
		81-2		25-Nov-14	Combined	1374		0.2	0.5	Infiltration/Storage Trench	Streets			Delaware

Work Number	Project ID	System Number	Project Name	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost **	Partner(s)	Watershed
50020	157*	157-1	Welsh and Wakisha School	23-Apr-13	Combined	899.8	19	0.2	0.3	Tree Trench	Streets	$679,000.00	Philadelphia Water Department	Delaware
		157-2		23-Apr-13	Combined	1234		0.3	0.4	Tree Trench	Streets			Delaware
		157-3		23-Apr-13	Combined	943		0.2	0.3	Tree Trench	Streets			Delaware
	2*	2-1		23-Apr-13	Combined	989	7	0.3	0.3	Infiltration/Storage Trench, Rain Garden	Streets			Delaware
		2-2		23-Apr-13	Combined	827.8		0.2	0.3	Tree Trench	Streets			Delaware
	245*	245-1		23-Apr-13	Combined	973.6	7	0.2	0.3	Tree Trench	Streets			Delaware
	296*	296-1		23-Apr-13	Combined	1034	4	0.2	0.3	Tree Trench	Streets			Delaware
	312*	312-2		23-Apr-13	Combined	1130	7	0.3	0.4	Tree Trench	Streets			Delaware
		312-1		23-Apr-13	Combined	1182.6		0.3	0.4	Tree Trench	Streets			Delaware
50022	13	13-1	Madison Park	16-Dec-11	Combined	402	13	0.2	0.2	Infiltration/Storage Trench	Open Space	$99,412.00	Philadelphia Industrial Development Corporation	Delaware
50023	192	192-2	Herron Playground porous basketball court	02-Oct-12	Combined	2150	12	0.2	0.4	Pervious Paving	Open Space	$190,959.00	Department of Public Property	Delaware
		192-1		02-Oct-12	Combined	539		0.1	0.3	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware
50024	170	170-1	Work in Shissler Playground Blair and Hewson Street	10-Oct-10	Combined	1533	4	0.2	0.4	Infiltration/Storage Trench	Open Space	$50,000.00	Department of Recreation	Delaware
		170-2		10-Oct-10	Combined	1499.6		0.2	0.4	Tree Trench	Open Space			Delaware
50025	223*	223-1	A.S. Jenks School, Sacks Playground, Smith Elementary, St. Thomas Aquinas	22-Oct-13	Combined	1684	18	0.3	0.5	Tree Trench	Streets	$1,150,000.00	Philadelphia Water Department	Delaware
		223-2		22-Oct-13	Combined	1690		0.3	0.5	Tree Trench	Streets			Delaware
	224*	224-1		22-Oct-13	Combined	2813.25	12	0.4	0.8	Tree Trench	Streets			Delaware
		224-2		22-Oct-13	Combined	1625.4		0.3	0.5	Tree Trench	Streets			Delaware
		224-3		22-Oct-13	Combined	2130.6		0.4	0.8	Tree Trench	Streets			Delaware
	227*	227-1		22-Oct-13	Combined	1843.35	18	0.3	0.7	Tree Trench	Streets			Schuylkill
		227-2		22-Oct-13	Combined	1291.4		0.3	0.6	Tree Trench	Streets			Schuylkill
		227-3		22-Oct-13	Combined	1588.25		0.3	0.7	Tree Trench	Streets			Schuylkill
50026	210*	210-1	Daroff School, Shepard Rec Center, Sayre School, Andrew Hamilton School	13-Dec-12	Combined	2048	42	0.4	0.7	Infiltration/Storage Trench	Streets	$1,659,000.00	Philadelphia Water Department	Cobbs-Darby
		210-2		13-Dec-12	Combined	3420		0.5	1.1	Tree Trench	Streets			Cobbs-Darby
		210-3		13-Dec-12	Combined	2828		0.5	0.9	Tree Trench	Streets			Cobbs-Darby
	211*	211-1		13-Dec-12	Combined	2765	73	0.6	0.9	Bumpout, Tree Trench	Streets			Schuylkill
		211-3		13-Dec-12	Combined	2799		0.4	0.9	Tree Trench	Streets			Schuylkill
		211-2		13-Dec-12	Combined	3718		0.4	0.8	Basin, Planter, Tree Trench	Streets			Schuylkill
	216*	216-1		13-Dec-12	Combined	4551	14	1.0	2.0	Tree Trench	Streets			Cobbs-Darby
	231*	231-1		13-Dec-12	Combined	2511	39	0.5	0.8	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		231-2		13-Dec-12	Combined	4884		0.8	1.5	Bumpout, Planter, Tree Trench	Streets			Cobbs-Darby,Schuylkill
		231-3		13-Dec-12	Combined	2915		0.6	1.0	Tree Trench	Streets			Cobbs-Darby,Schuylkill

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50027	212*	212-1	Samuel Huey School, Bryant School, Christy Rec Center,	23-Nov-12	Combined	2786	15	0.4	0.9	Tree Trench	Streets	$952,000.00	Philadelphia Water Department	Cobbs-Darby
		212-2		23-Nov-12	Combined	1507		0.2	0.4	Tree Trench	Streets			Cobbs-Darby
		212-3		23-Nov-12	Combined	886		0.1	0.3	Tree Trench	Streets			Cobbs-Darby
	213*	213-1		23-Nov-12	Combined	1102.61	19	0.2	0.3	Tree Trench	Streets			Cobbs-Darby
		213-2		23-Nov-12	Combined	1771.1		0.3	0.6	Tree Trench	Streets			Cobbs-Darby
		213-3		23-Nov-12	Combined	2582.43		0.5	1.1	Tree Trench	Streets			Cobbs-Darby
	214*	214-1		23-Nov-12	Combined	752.57	11	0.1	0.2	Tree Trench	Streets			Cobbs-Darby
		214-2		23-Nov-12	Combined	2051.75		0.3	0.7	Tree Trench	Streets			Cobbs-Darby
	215*	215-1		23-Nov-12	Combined	2534.28	16	0.4	0.8	Tree Trench	Streets			Cobbs-Darby
		215-2		23-Nov-12	Combined	3886.36		0.6	1.2	Tree Trench	Streets			Cobbs-Darby
	59*	59-1		23-Nov-12	Combined	3251.22	5	0.5	1.0	Tree Trench	Streets			Cobbs-Darby
50028	175*	175-1	Phila. Military Academy/MLK Rec Center/FD Elementary /Towey Rec Center	24-Dec-12	Combined	5051	20	0.7	1.5	Tree Trench	Streets	$606,000.00	Philadelphia Water Department	Delaware
	176*	176-1		24-Dec-12	Combined	2401	14	0.5	0.9	Tree Trench	Streets			Delaware
	177*	177-1		24-Dec-12	Combined	3800	10	0.4	0.7	Tree Trench	Streets			Delaware
		177-2		24-Dec-12	Combined	3389.8		0.6	1.1	Tree Trench	Streets			Delaware
	178*	178-1		24-Dec-12	Combined	2904	6	0.3	0.7	Tree Trench	Streets			Delaware
		178-2		24-Dec-12	Combined	1348		0.1	0.3	Tree Trench	Streets			Delaware
50029	147*	147-1	Morris Leeds School, Pleasant Playground, Simons Rec. Center	10-May-13	Combined	709	32	0.3	0.3	Infiltration/Storage Trench	Streets	$1,152,000.00	Philadelphia Water Department	TTF
	179*	179-7		10-May-13	Combined	1517.88	80	0.2	0.4	Tree Trench	Streets			TTF
		179-14		10-May-13	Combined	1974.17		0.3	0.6	Tree Trench	Streets			TTF
		179-13		10-May-13	Combined	2387.35		0.4	0.8	Tree Trench	Streets			TTF
		179-12		10-May-13	Combined	1443		0.5	0.5	Tree Trench	Streets			TTF
		179-11		10-May-13	Combined	2498.65		0.4	0.8	Tree Trench	Streets			TTF
		179-10		10-May-13	Combined	1337		0.2	0.5	Tree Trench	Streets			TTF
		179-8		10-May-13	Combined	1700		0.2	0.5	Tree Trench	Streets			TTF
		179-6		10-May-13	Combined	3804.89		0.6	1.3	Tree Trench	Streets			TTF
		179-5		10-May-13	Combined	4188		0.6	1.2	Tree Trench	Streets			TTF
		179-4		10-May-13	Combined	2778		0.5	1.0	Tree Trench	Streets			TTF
		179-3		10-May-13	Combined	2585.74		0.5	0.8	Tree Trench	Streets			TTF
		179-2		10-May-13	Combined	1950		0.3	0.6	Tree Trench	Streets			TTF
		179-1		10-May-13	Combined	1472.98		0.3	0.6	Tree Trench	Streets			TTF
		179-9		10-May-13	Combined	1532		0.2	0.4	Tree Trench	Streets			TTF
50030	171	171-1	KendertonField, Cecil B.Moore, Congeso de Latinos, HM Stanton School	27-Sep-18	Combined	1528	11	0.2	0.5	Tree Trench	Streets	$1,331,000.00	Philadelphia Water Department	Delaware
		171-2		27-Sep-18	Combined	1238		0.3	0.4	Tree Trench	Streets			Delaware
		171-3		27-Sep-18	Combined	2356		0.4	0.7	Tree Trench	Streets			Delaware
	172	172-5		27-Sep-18	Combined	1943	14	0.4	0.6	Infiltration/Storage Trench	Streets			Delaware
		172-1		27-Sep-18	Combined	3921		0.5	1.0	Bumpout, Tree Trench	Streets			Delaware
		172-2		27-Sep-18	Combined	3573		0.3	0.7	Bumpout, Tree Trench	Streets			Delaware
		172-3		27-Sep-18	Combined	1721		0.4	0.5	Bumpout, Tree Trench	Streets			Delaware
		172-4		27-Sep-18	Combined	1534		0.2	0.4	Tree Trench	Streets			Delaware
	173	173-1		27-Sep-18	Combined	1152	5	0.2	0.4	Tree Trench	Streets			Delaware
		173-2		27-Sep-18	Combined	1276		0.2	0.4	Tree Trench	Streets			Delaware
50031	123	123-2	58th St. Connector -Greenway Ave.	15-Jan-13	Combined	1672	7	0.4	0.5	Tree Trench	Streets	$368,321.00	Pennsylvania Environmental Council	Cobbs-Darby,Schuylkill
		123-3		15-Jan-13	Combined	1534		0.3	0.6	Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
		123-1		15-Jan-13	Combined	1705		0.4	0.6	Rain Garden	Streets			Cobbs-Darby,Schuylkill
50032	180	180-1	PHS Tree Trenches	05-Nov-11	Combined	646	4	0.1	0.2	Tree Trench	Streets	$0.00	Pennsylvania Horticultural Society	Delaware
	324	324-1		05-Nov-11	Combined	768	3	0.2	0.3	Tree Trench	Streets			Delaware
	325	325-1		05-Nov-11	Combined	1088	4	0.2	0.3	Tree Trench	Streets			Delaware
	326	326-1		05-Nov-11	Combined	1047	6	0.4	0.3	Tree Trench	Streets			Delaware
	327	327-1		05-Nov-11	Combined	1029	4	0.2	0.3	Tree Trench	Streets			Delaware
	342	342-1		05-Nov-11	Combined	1292	4	0.3	0.6	Tree Trench	Streets			Delaware

Work Number	Project ID	System Number	Project Name	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost **	Partner(s)	Watershed
50033	46	46-1	Lancaster Ave 59th to 62nd Tree Trenches	01-Nov-10	Combined	2075	17	0.6	0.6	Tree Trench	Streets		Department of Commerce	Schuylkill
		46-2		01-Nov-10	Combined	782		0.1	0.2	Bumpout	Streets			Schuylkill
		46-3		01-Nov-10	Combined	1470		0.5	0.5	Rain Garden, Swale	Streets			Schuylkill
		46-4		01-Nov-10	Combined	3953		0.5	0.9	Swale	Streets			Schuylkill
50034	10*	10-1	Trenton and Norris, Thompson and Columbia	20-Sep-13	Combined	3428.28	3	0.7	1.4	Bumpout, Tree Trench	Streets	$581,000.00	Philadelphia Water Department	Delaware
	88*	88-1		20-Sep-13	Combined	2737.66	0	0.4	0.8	Infiltration/Storage Trench, Rain Garden	Streets			Delaware
50035	45	45-1	Ben Franklin Parkway Tree Trenches	01-Jun-11	Combined	1011	0	0.2	0.4	Infiltration/Storage Trench	Streets	$215,600.00	Fairmount Park Commission	Schuylkill
		45-2		01-Jun-11	Combined	852		0.2	0.3	Infiltration/Storage Trench	Streets			Schuylkill
		45-3		01-Jun-11	Combined	1698		0.2	0.5	Infiltration/Storage Trench	Streets			Schuylkill
50036	228*	228-1	29th / Cambria / William Cramp / Barton / Hunting Park	25-Apr-14	Combined	1189.35	2	0.2	0.4	Tree Trench	Streets	$623,000.00	Philadelphia Water Department	Delaware
	277*	277-1		25-Apr-14	Combined	3380	11	0.6	1.1	Tree Trench	Streets			Delaware
		277-2		25-Apr-14	Combined	1500.35		0.3	0.6	Tree Trench	Streets			Delaware
	278*	278-1		25-Apr-14	Combined	4884.55	5	0.9	1.6	Tree Trench	Streets			TTF
	50*	50-1		25-Apr-14	Combined	3353	0	0.6	1.1	Bumpout, Infiltration/Storage Trench	Streets			Delaware,Schuylkill
50037	250*	250-1	Cassidy/Overbrook/Shoemaker /Cathedral/Durham/sister Clara/James Rhoads/Belmont	09-Sep-13	Combined	2261	29	0.4	0.8	Tree Trench	Streets	$1,547,000.00	Philadelphia Water Department	Schuylkill
		250-2		09-Sep-13	Combined	2675		0.4	0.8	Tree Trench	Streets			Schuylkill
		250-3		09-Sep-13	Combined	1561		0.2	0.5	Tree Trench	Streets			Schuylkill
	251*	251-1		09-Sep-13	Combined	3614	13	0.6	1.1	Tree Trench	Streets			Schuylkill
	252*	252-1		09-Sep-13	Combined	1467	15	0.3	0.5	Tree Trench	Streets			Schuylkill
		252-2		09-Sep-13	Combined	1466		0.3	0.5	Tree Trench	Streets			Schuylkill
	253*	253-1		09-Sep-13	Combined	2989	39	0.6	1.0	Tree Trench	Streets			Schuylkill
		253-3		09-Sep-13	Combined	2818		0.6	1.0	Tree Trench	Streets			Schuylkill
		253-2		09-Sep-13	Combined	1288		0.2	0.3	Tree Trench	Streets			Schuylkill
	254*	254-1		09-Sep-13	Combined	1488	4	0.2	0.5	Tree Trench	Streets			Schuylkill
		254-2		09-Sep-13	Combined	1809		0.3	0.6	Tree Trench	Streets			Schuylkill
	255*	255-1		09-Sep-13	Combined	3159	9	0.6	1.1	Tree Trench	Streets			Cobbs-Darby
		255-2		09-Sep-13	Combined	2617		0.4	0.8	Tree Trench	Streets			Cobbs-Darby
	256*	256-1		09-Sep-13	Combined	3189	3	0.6	1.1	Tree Trench	Streets			Schuylkill
	257*	257-1		09-Sep-13	Combined	2921	12	0.6	0.9	Tree Trench	Streets			Schuylkill
50038	247*	247-1	Donald/Wilson/Vare/StephenGirard/Southwark/Markward/Cherry/JulianAbele	16-May-13	Combined	3565.9	7	0.5	1.0	Tree Trench	Streets	$1,336,000.00	Philadelphia Water Department	Schuylkill
	258*	258-1		16-May-13	Combined	3728	23	0.7	1.2	Tree Trench	Streets			Schuylkill
	259*	259-1		16-May-13	Combined	6155.04	18	0.8	1.7	Tree Trench	Streets			Schuylkill
		259-2		16-May-13	Combined	2777.6		0.4	0.9	Tree Trench	Streets			Schuylkill
	260*	260-1		16-May-13	Combined	2991.26	20	0.5	0.9	Tree Trench	Streets			Schuylkill
		260-2		16-May-13	Combined	1480		0.3	0.6	Tree Trench	Streets			Schuylkill
	261*	261-1		16-May-13	Combined	1604	6	0.2	0.4	Tree Trench	Streets			Schuylkill
	262*	262-1		16-May-13	Combined	2029	3	0.4	0.7	Tree Trench	Streets			Delaware
50039	268*	268-1	Temple / William Gray / Dick Elementary / Parking Lot 12th and Diamond	01-Aug-14	Combined	1714.8	9	0.4	0.6	Tree Trench	Streets	$889,000.00	Philadelphia Water Department	Delaware
		268-2		01-Aug-14	Combined	1495		0.2	0.5	Infiltration/Storage Trench	Streets			Delaware
		268-3		01-Aug-14	Combined	1015		0.2	0.3	Tree Trench	Streets			Delaware
	269*	269-5		01-Aug-14	Combined	1605	21	0.2	0.4	Tree Trench	Streets			Delaware
		269-1		01-Aug-14	Combined	1600.55		0.3	0.5	Tree Trench	Streets			Delaware
		269-2		01-Aug-14	Combined	1776.15		0.3	0.6	Tree Trench	Streets			Delaware
		269-3		01-Aug-14	Combined	1303.3		0.2	0.4	Tree Trench	Streets			Delaware
		269-4		01-Aug-14	Combined	1402.2		0.2	0.4	Tree Trench	Streets			Delaware
	270*	270-2		01-Aug-14	Combined	2708	11	0.3	0.6	Tree Trench	Streets			Delaware
		270-1		01-Aug-14	Combined	3933		0.3	0.7	Tree Trench	Streets			Delaware
	283*	283-1		01-Aug-14	Combined	1985	1	0.3	0.6	Tree Trench	Streets			Delaware

Work Number	Project ID	System Number	Project Name	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost **	Partner(s)	Watershed
50040	153	153-6	Yorktown Green Streets	13-Sep-18	Combined	1327	15	0.3	0.5	Infiltration/Storage Trench, Planter	Streets	$1,418,000.00	Philadelphia Water Department	Delaware
		153-5		16-Oct-18	Combined	891		0.2	0.4	Infiltration/Storage Trench, Planter	Streets			Delaware
		153-4		07-Nov-18	Combined	997		0.2	0.4	Infiltration/Storage Trench, Planter	Streets			Delaware
		153-3		11-Dec-18	Combined	1004		0.2	0.4	Infiltration/Storage Trench, Planter	Streets			Delaware
		153-1		20-Feb-19	Combined	1666		0.5	0.9	Infiltration/Storage Trench, Planter	Streets			Delaware
		153-2		14-Mar-19	Combined	2677		0.5	1.0	Infiltration/Storage Trench, Planter	Streets			Delaware
50041	167*	167-1	Longstretch, Little Sisters of Poor, McCresh Plground, Cobbs Crk Pkwy. Island	13-Jan-14	Combined	2798	33	0.4	0.8	Tree Trench	Streets	$1,232,000.00	Philadelphia Water Department	Schuylkill
		167-2		13-Jan-14	Combined	2733		0.5	1.0	Tree Trench	Streets			Schuylkill
		167-3		13-Jan-14	Combined	4354		0.8	1.6	Tree Trench	Streets			Schuylkill
	264*	264-1		13-Jan-14	Combined	4488	13	0.8	1.6	Planter, Tree Trench	Streets			Cobbs-Darby
	265*	265-2		13-Jan-14	Combined	1446	12	0.2	0.4	Infiltration/Storage Trench	Streets			Cobbs-Darby
		265-3		13-Jan-14	Combined	2587		0.5	0.9	Infiltration/Storage Trench	Streets			Cobbs-Darby
		265-4		13-Jan-14	Combined	1481		0.3	0.5	Infiltration/Storage Trench	Streets			Cobbs-Darby
		265-5		13-Jan-14	Combined	1212		0.2	0.4	Tree Trench	Streets			Cobbs-Darby
		265-1		13-Jan-14	Combined	1754		0.3	0.5	Tree Trench	Streets			Cobbs-Darby
	266*	266-1		13-Jan-14	Combined	3312	6	0.8	1.4	Infiltration/Storage Trench, Rain Garden	Streets			Cobbs-Darby
50042	271*	271-1	Bridesburg Sch., Dorsey Plygrnd, Roosevelt Plygrnd, Magnolia Cem.,Carmell	30-Sep-13	Combined	1929.9	3	0.4	0.8	Infiltration/Storage Trench, Rain Garden	Streets	$1,765,000.00	Philadelphia Water Department	Delaware
		271-2		30-Sep-13	Combined	1108		0.2	0.5	Infiltration/Storage Trench	Streets			Delaware
		271-3		30-Sep-13	Combined	4671		0.6	1.1	Tree Trench	Streets			Delaware
	272*	272-3		30-Sep-13	Combined	1685	16	0.3	0.6	Tree Trench	Streets			Delaware,TTF
		272-7		30-Sep-13	Combined	2760.68		0.4	0.7	Tree Trench	Streets			Delaware,TTF
		272-6		30-Sep-13	Combined	2446		0.3	0.7	Tree Trench	Streets			Delaware,TTF
		272-4		30-Sep-13	Combined	1673		0.3	0.5	Tree Trench	Streets			Delaware,TTF
		272-2		30-Sep-13	Combined	1438		0.3	0.5	Tree Trench	Streets			Delaware,TTF
		272-1		30-Sep-13	Combined	1127.65		0.2	0.3	Tree Trench	Streets			Delaware,TTF
		272-5		30-Sep-13	Combined	1583.28		0.3	0.5	Tree Trench	Streets			Delaware,TTF
	273*	273-3		30-Sep-13	Combined	1725	35	0.3	0.5	Tree Trench	Streets			Delaware
		273-1		30-Sep-13	Combined	2213		0.3	0.6	Tree Trench	Streets			Delaware
		273-2		30-Sep-13	Combined	1814		0.3	0.5	Tree Trench	Streets			Delaware
	274*	274-4		30-Sep-13	Combined	1667	42	0.3	0.5	Infiltration/Storage Trench, Planter	Streets			Delaware
		274-3		30-Sep-13	Combined	1122		0.1	0.2	Tree Trench	Streets			Delaware
		274-1		30-Sep-13	Combined	3559		0.6	1.1	Tree Trench	Streets			Delaware
		274-2		30-Sep-13	Combined	2091		0.3	0.5	Tree Trench	Streets			Delaware
	275*	275-1		30-Sep-13	Combined	1968.4	2	0.3	0.5	Tree Trench	Streets			Delaware

Work Number	Project ID	System Number	Project Name	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost **	Partner(s)	Watershed
50043	279*	279-1	Harpers Hollow, Wakefield Park	04-Dec-12	Combined	2996	0	0.6	1.1	Basin	Open Space	$474,000.00	Philadelphia Water Department	TTF
	281*	281-1		04-Dec-12	Combined	1798	0	0.4	0.8	Rain Garden	Open Space			TTF
		281-2		04-Dec-12	Combined	2769		0.5	1.0	Rain Garden	Open Space			TTF
50044	280	280-4	Wister Woods, Kemble Park	21-Jan-15	Combined	2008	69	0.3	0.6	Infiltration/Storage Trench	Open Space	$2,360,000.00	Philadelphia Water Department	TTF
		280-1		21-Jan-15	Combined	21592		3.1	6.1	Rain Garden, Swale	Open Space			TTF
		280-2		21-Jan-15	Combined	5052		0.7	1.4	Infiltration/Storage Trench	Open Space			TTF
		280-3		21-Jan-15	Combined	7996		1.2	2.4	Infiltration/Storage Trench	Open Space			TTF
	282	282-1		21-Jan-15	Combined	9158	7	0.9	1.8	Rain Garden	Open Space			TTF
		282-2		21-Jan-15	Combined	11228		1.3	2.6	Rain Garden	Open Space			TTF
		282-3		21-Jan-15	Combined	11275		1.3	2.6	Rain Garden	Open Space			TTF
		282-4		21-Jan-15	Combined	9504		1.3	2.6	Rain Garden	Open Space			TTF
50045	292	292-1	Ben Franklin Parkway 16-19th St.	16-Mar-17	Combined	3338	0	0.5	1.1	Infiltration/Storage Trench	Streets	Unknown	Philadelphia Parks & Recreation	Schuylkill
		292-2		16-Mar-17	Combined	1920		0.3	0.5	Infiltration/Storage Trench	Streets			Schuylkill
		292-3		16-Mar-17	Combined	1680		0.2	0.5	Infiltration/Storage Trench	Streets			Schuylkill
		292-4		16-Mar-17	Combined	1322		0.2	0.3	Infiltration/Storage Trench	Streets			Schuylkill
		292-5		16-Mar-17	Combined	2424		0.3	0.6	Infiltration/Storage Trench	Streets			Schuylkill
		292-6		16-Mar-17	Combined	2414		0.5	0.8	Infiltration/Storage Trench	Streets			Schuylkill
50046	243*	243-1	Womrath Park	27-Sep-12	Combined	3539	7	1.1	1.2	Infiltration/Storage Trench, Rain Garden, Swale	Open Space	$540,000.00	Philadelphia Water Department	TTF
50047	366	366-6	Philadelphia Zoo Green Streets Project	29-May-13	Combined	797.05	5	0.1	0.3	Rain Garden	Streets	$357,687.00	Philadelphia Zoo	Schuylkill
		366-9		29-May-13	Combined	697.47		0.1	0.2	Infiltration/Storage Trench	Streets			Schuylkill
		366-10		29-May-13	Combined	816		0.1	0.2	Infiltration/Storage Trench, Planter	Streets			Schuylkill
		366-8		29-May-13	Combined	649.96		0.1	0.2	Infiltration/Storage Trench	Streets			Schuylkill
		366-5		29-May-13	Combined	582		0.1	0.2	Rain Garden	Streets			Schuylkill
		366-4		29-May-13	Combined	813.8		0.2	0.4	Rain Garden	Streets			Schuylkill
		366-3		29-May-13	Combined	385		0.1	0.1	Rain Garden	Streets			Schuylkill
		366-1		29-May-13	Combined	874.88		0.2	0.3	Rain Garden	Streets			Schuylkill
		366-2		29-May-13	Combined	894		0.2	0.4	Infiltration/Storage Trench, Rain Garden	Streets			Schuylkill
50048	375	375-1	Kinsey Sch./National Cem./Rowen Sch./Wagner Sch.	26-Oct-17	Combined	3997	10	0.7	1.3	Tree Trench	Streets	$1,108,000.00	Philadelphia Water Department	TTF
		375-2		26-Oct-17	Combined	2069.79		0.3	0.5	Tree Trench	Streets			TTF
	377	377-1		26-Oct-17	Combined	591	0	0.1	0.2	Infiltration/Storage Trench, Rain Garden, Swale	Streets			TTF
		377-2		26-Oct-17	Combined	720		0.2	0.4	Infiltration/Storage Trench, Rain Garden, Swale	Streets			TTF
		377-3		26-Oct-17	Combined	587		0.2	0.3	Infiltration/Storage Trench, Rain Garden, Swale	Streets			TTF
	378	378-1		26-Oct-17	Combined	3260	9	0.6	1.2	Tree Trench	Streets			TTF
	379	379-1		26-Oct-17	Combined	3457	11	0.6	1.2	Tree Trench	Streets			TTF
		379-2		26-Oct-17	Combined	1913		0.4	0.6	Tree Trench	Streets			TTF
50049	291	291-1	Sharswood & Our Lady of Carmel Schs./ St. Monica/ Taggart Sch.	27-Sep-17	Combined	3023.35	3	0.4	0.8	Tree Trench	Streets	$1,235,000.00	Philadelphia Water Department	Delaware
		291-3		27-Sep-17	Combined	2062.85		0.3	0.6	Infiltration/Storage Trench	Streets			Delaware
		291-2		27-Sep-17	Combined	874.52		0.2	0.3	Tree Trench	Streets			Delaware
	388	388-3		27-Sep-17	Combined	984.89	5	0.2	0.3	Tree Trench	Streets			Delaware
		388-4		27-Sep-17	Combined	1478.59		0.3	0.5	Infiltration/Storage Trench	Streets			Delaware
		388-2		27-Sep-17	Combined	1493.82		0.4	0.5	Tree Trench	Streets			Delaware
		388-1		27-Sep-17	Combined	2006.45		0.3	0.6	Infiltration/Storage Trench	Streets			Delaware
	389	389-2		27-Sep-17	Combined	1306.13	3	0.2	0.5	Tree Trench	Streets			Delaware
		389-1		27-Sep-17	Combined	2176.5		0.5	0.7	Infiltration/Storage Trench	Streets			Delaware

Work Number	Project ID	System Number	Project Name	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost **	Partner(s)	Watershed
50051	392	392-1	73rd/Elmwood Pk./Patterson Sch./Connell Pk./Mother Mary Sch./St. James Ch.	03-Feb-15	Combined	4871	8	0.8	1.6	Tree Trench	Streets	$2,526,000.00	Philadelphia Water Department	Cobbs-Darby,Schuylkill
		392-2		03-Feb-15	Combined	4663		0.9	1.5	Tree Trench	Streets			Cobbs-Darby,Schuylkill
	393	393-1		03-Feb-15	Combined	4901	9	0.9	1.8	Infiltration/Storage Trench, Rain Garden	Streets			Schuylkill
		393-2		03-Feb-15	Combined	2267		0.4	0.7	Tree Trench	Streets			Schuylkill
		393-3		03-Feb-15	Combined	3855		0.8	1.2	Rain Garden, Tree Trench	Streets			Schuylkill
		393-4		03-Feb-15	Combined	1081		0.1	0.3	Infiltration/Storage Trench	Streets			Schuylkill
		393-5		03-Feb-15	Combined	4995		0.9	1.6	Tree Trench	Streets			Schuylkill
	394	394-1		03-Feb-15	Combined	1425	6	0.2	0.4	Tree Trench	Streets			Schuylkill
		394-2		03-Feb-15	Combined	3184		0.6	1.0	Tree Trench	Streets			Schuylkill
		394-3		03-Feb-15	Combined	881		0.1	0.3	Infiltration/Storage Trench	Streets			Schuylkill
	396	396-1		03-Feb-15	Combined	4331	17	0.7	1.4	Tree Trench	Streets			Schuylkill
		396-2		03-Feb-15	Combined	1413		0.4	0.7	Tree Trench	Streets			Schuylkill
		396-3		03-Feb-15	Combined	3229		0.5	1.0	Tree Trench	Streets			Schuylkill
	397	397-1		03-Feb-15	Combined	3846	8	0.7	1.2	Tree Trench	Streets			Schuylkill
		397-2		03-Feb-15	Combined	1831.5		0.4	0.7	Tree Trench	Streets			Schuylkill
	398	398-1		03-Feb-15	Combined	12536	18	2.2	3.9	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		398-2		03-Feb-15	Combined	3931		0.4	0.8	Tree Trench	Streets			Cobbs-Darby,Schuylkill
50052	335	335-1	Chelten Hills Cem./Finley Pg./Ivy Hills Cem./Pennypacker Sch./ Sedgwick Sta.	12-Mar-18	Combined	6081	2	1.0	1.8	Bumpout, Infiltration/Storage Trench	Streets	$2,256,000.00	Philadelphia Water Department	TTF
	380	380-5		12-Mar-18	Combined	1544	0	0.2	0.4	Infiltration/Storage Trench	Streets			TTF
		380-12		12-Mar-18	Combined	2048		0.3	0.6	Infiltration/Storage Trench, Swale	Streets			TTF
		380-11		12-Mar-18	Combined	1534		0.2	0.4	Infiltration/Storage Trench	Streets			TTF
		380-10		12-Mar-18	Combined	1560		0.3	0.5	Infiltration/Storage Trench	Streets			TTF
		380-6		12-Mar-18	Combined	3284		0.4	0.8	Bumpout, Infiltration/Storage Trench	Streets			TTF
		380-4		12-Mar-18	Combined	2922		0.4	0.7	Bumpout, Infiltration/Storage Trench	Streets			TTF
		380-3		12-Mar-18	Combined	2709		0.4	0.8	Bumpout, Infiltration/Storage Trench	Streets			TTF
		380-2		12-Mar-18	Combined	2615		0.4	0.7	Bumpout, Infiltration/Storage Trench	Streets			TTF
		380-1		12-Mar-18	Combined	5493		1.1	1.7	Infiltration/Storage Trench	Streets			TTF
		380-9		12-Mar-18	Combined	3185		0.5	1.0	Infiltration/Storage Trench, Swale	Streets			TTF
	383	383-1		12-Mar-18	Combined	3622	0	0.6	1.2	Infiltration/Storage Trench	Streets			TTF
		383-2		12-Mar-18	Combined	2952		0.6	0.9	Infiltration/Storage Trench	Streets			TTF
50053	314	314-1	Logan Sch./Wayne/Windrim/Richmond Lib./Stokley/Vacant Lot/Skev. Pk./Westmoreland	28-Mar-18	Combined	1465	16	0.3	0.5	Tree Trench	Streets	$1,843,000.00	Philadelphia Water Department	TTF
		314-2		28-Mar-18	Combined	1746.1		0.4	0.6	Tree Trench	Streets			TTF
		314-3		28-Mar-18	Combined	2932.4		0.8	1.0	Tree Trench	Streets			TTF
	384	384-1		28-Mar-18	Combined	4170	9	0.7	1.3	Tree Trench	Streets			Delaware
	385	385-1		28-Mar-18	Combined	2054.1	7	0.4	0.7	Tree Trench	Streets			Delaware
		385-2		28-Mar-18	Combined	905		0.1	0.3	Tree Trench	Streets			Delaware
	386	386-2		28-Mar-18	Combined	1793	5	0.2	0.4	Tree Trench	Streets			Delaware
		386-3		28-Mar-18	Combined	1853		0.3	0.6	Tree Trench	Streets			Delaware
	413	413-1		28-Mar-18	Combined	1365	0	0.2	0.4	Bumpout, Infiltration/Storage Trench	Streets			TTF
		413-2		28-Mar-18	Combined	1093		0.2	0.3	Bumpout, Infiltration/Storage Trench	Streets			TTF
	439	439-1		28-Mar-18	Combined	2770	3	0.4	0.8	Tree Trench	Streets			Delaware

Work Number	Project ID	System Number	Project Name	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost **	Partner(s)	Watershed
50055	246	246-1	40th St./Drexel COMAD/Malcom X Pk./42nd St.Vacant Lot/Beeber Sch./Upland Way	20-Mar-19	Combined	2458	13	0.4	0.7	Tree Trench	Streets	$1,938,000.00	Philadelphia Water Department	Schuylkill
		246-2		20-Mar-19	Combined	2794		0.4	0.8	Tree Trench	Streets			Schuylkill
	344	344-1		20-Mar-19	Combined	2506	3	0.3	0.6	Tree Trench	Streets			Schuylkill
	399	399-1		20-Mar-19	Combined	2525	29	0.3	0.6	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		399-2		20-Mar-19	Combined	3759		0.7	1.2	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		399-3		20-Mar-19	Combined	1605		0.3	0.5	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		399-4		20-Mar-19	Combined	3382		0.5	1.0	Tree Trench	Streets			Cobbs-Darby,Schuylkill
	400	400-4		20-Mar-19	Combined	5082	0	0.8	1.6	Infiltration/Storage Trench, Swale	Streets			Schuylkill
		400-1		20-Mar-19	Combined	3279		0.5	1.0	Bumpout, Infiltration/Storage Trench, Swale	Streets			Schuylkill
		400-2		20-Mar-19	Combined	1756		0.2	0.4	Bumpout, Infiltration/Storage Trench, Swale	Streets			Schuylkill
		400-3		20-Mar-19	Combined	1704		0.2	0.4	Bumpout, Infiltration/Storage Trench, Swale	Streets			Schuylkill
50057	417	417-1	Stenton Ave. & E. Washington Ln.	08-Jul-14	Combined	2326	0	0.3	0.6	Rain Garden	Streets	$34,000.00	Streets Department	TTF
50059	410	410-1	Harrowgate Park	01-Sep-16	Combined	1842	0	0.3	0.5	Infiltration/Storage Trench, Rain Garden	Open Space	$808,000.00	Philadelphia Water Department	Delaware
		410-2		01-Sep-16	Combined	2885		0.4	0.8	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware
		410-3		01-Sep-16	Combined	4048.95		0.4	0.8	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware
		410-4		01-Sep-16	Combined	5789		0.8	1.5	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware
50060	416	416-8	Hunting Park	30-Aug-19	Combined	2233	29	0.3	0.6	Rain Garden	Open Space	$1,818,000.00	Philadelphia Water Department	Delaware,TTF
		416-6		19-Sep-19	Combined	972		0.2	0.4	Rain Garden	Open Space			Delaware,TTF
		416-4		07-Oct-19	Combined	2894		0.4	0.8	Infiltration/Storage Trench	Open Space			Delaware,TTF
		416-5		02-Nov-19	Combined	2955		0.4	0.8	Infiltration/Storage Trench	Open Space			Delaware,TTF
		416-2		15-Nov-19	Combined	6476		0.9	1.8	Infiltration/Storage Trench	Open Space			Delaware,TTF
		416-10		31-Jan-20	Combined	10061		1.4	2.8	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware,TTF
		416-9		31-Jan-20	Combined	15146		2.1	4.2	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware,TTF
		416-3		31-Jan-20	Combined	1828		0.3	0.5	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware,TTF
		416-1		31-Jan-20	Combined	1642		0.2	0.4	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware,TTF
		416-7		24-Nov-20	Combined	1963		0.3	0.5	Infiltration/Storage Trench	Open Space			Delaware,TTF
50061	471	471-1	Bustleton Avenue South, TIGER 3 Project (w/PWD Green Streets Funding)	08-Feb-16	Combined	2650	0	0.5	0.9	Infiltration/Storage Trench	Streets	$188,000.00	Streets Department	Delaware
50062	470	470-4	TIGER III: Woodland Ave. Corrdor (For PWD Green Streets Program)	14-Dec-15	Combined	1024	15	0.2	0.3	Tree Trench	Streets	$438,000.00	Streets Department	Cobbs-Darby,Schuylkill
		470-3		14-Dec-15	Combined	3118		0.6	1.0	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		470-1		14-Dec-15	Combined	1820		0.4	0.7	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		470-2		14-Dec-15	Combined	770		0.2	0.3	Tree Trench	Streets			Cobbs-Darby,Schuylkill

Work Number	Project ID	System Number	Project Name	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost **	Partner(s)	Watershed
50063	310	310-1	Eadom St. Parking Lot - 5312-50 Eadom	02-May-12	Combined	3973	20	0.8	1.2	Rain Garden	Parking	$0.00	Philadelphia Water Department	Delaware
		310-2		02-May-12	Combined	1949		0.3	0.6	Rain Garden	Parking			Delaware
		310-3		02-May-12	Combined	675		0.1	0.2	Rain Garden	Parking			Delaware
		310-4		02-May-12	Combined	223		0.0	0.0	Rain Garden	Parking			Delaware
		310-5		02-May-12	Combined	2689		0.6	0.8	Rain Garden	Parking			Delaware
		310-6		02-May-12	Combined	1289		0.1	0.3	Rain Garden	Parking			Delaware
50065	367	367-1	Panati Playground	14-May-15	Combined	3770	8	0.9	1.3	Infiltration/Storage Trench, Rain Garden	Open Space	$227,000.00	Department of Public Property	Delaware
50067	276	276-1	29th and Cambria PWD Facility Parking Lot	31-Oct-16	Combined	3963.23	58	0.8	1.3	Swale, Tree Trench	Streets	$1,023,000.00	Philadelphia Water Department	Delaware
		276-2		31-Oct-16	Combined	4301.74		0.9	1.4	Swale, Tree Trench	Streets			Delaware
50068	244	244-1	Ingersoll Commons	08-Nov-16	Combined	6056	17	0.7	1.4	Infiltration/Storage Trench, Rain Garden, Swale	Open Space	$795,000.00	Philadelphia Water Department	Delaware
50069	511	511-6	Callowhill St. from 2nd St. to 7th St.	05-Feb-16	Combined	27.2	10	0.0	0.0	Stormwater Tree	Streets	$0.00	Streets Department	Delaware
		511-10		05-Feb-16	Combined	27.2		0.0	0.0	Stormwater Tree	Streets			Delaware
		511-9		05-Feb-16	Combined	27.2		0.0	0.0	Stormwater Tree	Streets			Delaware
		511-7		05-Feb-16	Combined	27.2		0.0	0.0	Stormwater Tree	Streets			Delaware
		511-5		05-Feb-16	Combined	27.2		0.0	0.0	Stormwater Tree	Streets			Delaware
		511-4		05-Feb-16	Combined	27.2		0.0	0.0	Stormwater Tree	Streets			Delaware
		511-3		05-Feb-16	Combined	27.2		0.0	0.0	Stormwater Tree	Streets			Delaware
		511-2		05-Feb-16	Combined	27.2		0.0	0.0	Stormwater Tree	Streets			Delaware
		511-1		05-Feb-16	Combined	27.2		0.0	0.0	Stormwater Tree	Streets			Delaware
		511-8		05-Feb-16	Combined	27.2		0.0	0.0	Stormwater Tree	Streets			Delaware
50070	524	524-1	Benson Park	13-Nov-15	Combined	0	0	0.0	0.2	Pervious Paving	Open Space	$6,000.00	Department of Public Property	Delaware
		524-2		13-Nov-15	Combined	700		0.2	0.3	Infiltration/Storage Trench	Open Space			Delaware
50071	475	475-1	Green2015 - Phase I - Collazo (2.37 GA)	23-Jun-17	Combined	5697.21	16	1.2	1.9	Infiltration/Storage Trench, Rain Garden	Open Space	$353,000.00	Trust for Public Lands	Delaware
50075	479	479-1	Green2015 - Phase I - William Dick Elementary	13-Jun-14	Combined	8738.01	0	1.5	2.9	Rain Garden	Schools	$207,000.00	Trust for Public Lands	Delaware
50077	322	322-1	Baker, Heston, Haverford Triangle	16-Sep-16	Combined	944	10	0.2	0.3	Infiltration/Storage Trench	Vacant Land	$739,000.00	Philadelphia Water Department	Schuylkill
		322-2		16-Sep-16	Combined	3056		0.6	0.9	Rain Garden	Vacant Land			Schuylkill
		322-3		16-Sep-16	Combined	1574.15		0.4	0.7	Infiltration/Storage Trench, Rain Garden, Swale	Vacant Land			Schuylkill
	530	530-1		16-Sep-16	Combined	1419	0	0.3	0.5	Infiltration/Storage Trench, Rain Garden	Streets			Schuylkill
	558	558-1		16-Sep-16	Combined	3638	4	0.7	1.3	Infiltration/Storage Trench, Rain Garden	Vacant Land			Schuylkill
50078	303	303-1	Clearview Community Park & Morris Estate Park	07-Oct-16	Combined	3531	0	0.7	1.5	Infiltration/Storage Trench, Rain Garden	Vacant Land	$866,000.00	Philadelphia Water Department	TTF
	642	642-6		07-Oct-16	Combined	1978	13	0.4	0.7	Tree Trench	Open Space			TTF
		642-3		07-Oct-16	Combined	4670		0.8	1.5	Infiltration/Storage Trench, Rain Garden	Open Space			TTF
		642-2		07-Oct-16	Combined	1037		0.3	0.6	Tree Trench	Open Space			TTF
50079	401	401-3	Guerin Recreation Center	23-Jul-18	Combined	0	1	0.0	0.1	Depaving	Open Space	$1,148,000.00	Philadelphia Water Department	Schuylkill
		401-2		23-Jul-18	Combined	9563		1.3	2.6	Infiltration/Storage Trench	Open Space			Schuylkill
		401-1		23-Jul-18	Combined	5641		0.7	1.5	Infiltration/Storage Trench	Open Space			Schuylkill
50080	588	588-2	Penn Street Trail	13-Jun-13	Combined	1260	25	0.6	0.6	Rain Garden	Streets	$0.00	Delaware River Waterfront Corporation	Delaware
		588-3		13-Jun-13	Combined	447		0.2	0.3	Rain Garden	Streets			Delaware
50082	597	597-1	33rd and Dauphin St. Sept Bus Loop Green Streets Project	31-Jul-13	Combined	481.17	0	0.1	0.1	Infiltration/Storage Trench	Streets	$0.00	Septa	Schuylkill

Work Number	Project ID	System Number	Project Name	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost **	Partner(s)	Watershed
50083	151	151-6	Weccacoe Playground	09-Dec-16	Combined	0	9	0.0	0.0	Depaving	Open Space	$119,000.00	Pennsylvania Horticultural Society	Delaware
		151-1		09-Dec-16	Combined	1181		0.3	0.4	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware
		151-2		09-Dec-16	Combined	0		0.0	0.0	Depaving	Open Space			Delaware
		151-3		09-Dec-16	Combined	0		0.0	0.0	Depaving	Open Space			Delaware
		151-4		09-Dec-16	Combined	0		0.0	0.1	Depaving	Open Space			Delaware
		151-5		09-Dec-16	Combined	0		0.0	0.0	Depaving	Open Space			Delaware
50084	487	487-1	Moss Playground/Carmella Playground	13-Jan-20	Combined	6088	15	1.0	2.0	Tree Trench	Open Space	$1,742,000.00	Philadelphia Water Department	Delaware
		487-2		13-Jan-20	Combined	11478		1.7	3.5	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware
	580	580-1		13-Jan-20	Combined	4241	0	0.7	1.4	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware,TTF
		580-2		13-Jan-20	Combined	5611		0.8	1.6	Rain Garden	Open Space			Delaware,TTF
		580-3		13-Jan-20	Combined	1775		0.2	0.5	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware,TTF
		580-4		13-Jan-20	Combined	4630		0.8	1.6	Rain Garden	Open Space			Delaware,TTF
		580-5		13-Jan-20	Combined	1943		0.3	0.5	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware,TTF
		580-6		13-Jan-20	Combined	875		0.1	0.3	Infiltration/Storage Trench	Open Space			Delaware,TTF
50085	574	574-1	Ralph Brooks Park	08-Oct-15	Combined	1609	5	0.3	0.5	Infiltration/Storage Trench, Rain Garden	Open Space	$152,000.00	Philadelphia Industrial Development Corporation	Schuylkill
50088	546	546-1	Rowland and Crispin	11-Sep-20	Combined	2009	16	0.3	0.6	Bumpout, Infiltration/Storage Trench	Streets	$5,079,000.00	Philadelphia Water Department	Delaware
		546-5		11-Sep-20	Combined	2380		0.4	0.8	Bumpout, Infiltration/Storage Trench	Streets			Delaware
		546-7		11-Sep-20	Combined	4188		0.8	1.3	Infiltration/Storage Trench, Planter, Swale	Streets			Delaware
		546-6		18-Nov-20	Combined	1475		0.2	0.5	Tree Trench	Streets			Delaware
		546-8		18-Nov-20	Combined	3616		0.6	1.2	Infiltration/Storage Trench, Swale	Streets			Delaware
		546-2		30-Sep-21	Combined	1009		0.2	0.4	Tree Trench	Streets			Delaware
		546-3		30-Sep-21	Combined	2120		0.3	0.6	Infiltration/Storage Trench, Planter	Streets			Delaware
		546-4		30-Sep-21	Combined	3112		0.6	1.0	Infiltration/Storage Trench, Planter	Streets			Delaware
	595	595-11		09-Sep-20	Combined	3785	16	0.7	1.2	Bumpout, Infiltration/Storage Trench	Streets			Delaware,Pennypack
		595-12		09-Sep-20	Combined	3027		0.5	1.0	Bumpout, Infiltration/Storage Trench	Streets			Delaware,Pennypack
		595-9		09-Sep-20	Combined	6412		1.1	2.1	Bumpout, Infiltration/Storage Trench	Streets			Delaware,Pennypack
		595-10		30-Nov-21	Combined	876		0.1	0.3	Infiltration/Storage Trench	Streets			Delaware,Pennypack
		595-6		01-Dec-21	Combined	1040		0.2	0.3	Tree Trench	Streets			Delaware,Pennypack
	596	596-3		26-May-20	Combined	1899	6	0.3	0.6	Bumpout, Infiltration/Storage Trench	Streets			Pennypack
		596-4		26-May-20	Combined	1361		0.2	0.4	Bumpout, Infiltration/Storage Trench	Streets			Pennypack
		596-2		27-May-20	Combined	4244		0.7	1.4	Bumpout, Infiltration/Storage Trench	Streets			Pennypack
		596-1		27-May-20	Combined	3903		0.6	1.3	Bumpout, Infiltration/Storage Trench	Streets			Pennypack

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50089	455	455-2	Erie, Francis Hopkins, and Mariana Bracetti	29-Oct-19	Combined	6567	0	0.9	1.8	Infiltration/Storage Trench, Planter	Streets	$1,819,000.00	Philadelphia Water Department	TTF
		455-1		29-Oct-19	Combined	1911		0.3	0.5	Bumpout, Infiltration/Storage Trench	Streets			TTF
	459	459-2		23-Oct-19	Combined	899	3	0.4	0.5	Infiltration/Storage Trench, Planter	Streets			TTF
		459-1		29-Oct-19	Combined	8729		1.8	3.0	Planter, Tree Trench	Streets			TTF
	586	586-3		22-Oct-19	Combined	1580	7	0.3	0.5	Tree Trench	Streets			TTF
		586-1		25-Oct-19	Combined	2800		1.1	1.1	Planter, Tree Trench	Streets			TTF
		586-2		25-Oct-19	Combined	2818		0.4	0.7	Infiltration/Storage Trench, Planter	Streets			TTF
50091	589	589-1	Stinger Square	06-Jul-16	Combined	1475	15	0.2	0.5	Infiltration/Storage Trench	Open Space	$232,000.00	Pennsylvania Horticultural Society	Schuylkill
		589-2		06-Jul-16	Combined	1558		0.4	0.5	Infiltration/Storage Trench, Rain Garden	Open Space			Schuylkill
50097	483	483-1	Black Coyle McBride Playground	10-Jul-19	Combined	2711	4	0.5	1.0	Infiltration/Storage Trench	Open Space	$1,200,000.00	Philadelphia Water Department	Delaware
	634	634-1		30-Mar-18	Combined	1683	3	0.3	0.5	Tree Trench	Streets			Delaware
	637	637-2		16-Aug-18	Combined	3322	11	0.6	1.0	Tree Trench	Streets			Delaware
		637-1		05-Nov-18	Combined	1371		0.2	0.3	Tree Trench	Streets			Delaware
	638	638-2		09-Jan-18	Combined	786	6	0.1	0.2	Tree Trench	Streets			Delaware
		638-3		02-Feb-18	Combined	958		0.1	0.2	Tree Trench	Streets			Delaware
	993	993-1		06-Aug-18	Combined	1471	2	0.2	0.4	Tree Trench	Streets			Delaware
50098	1007	1007-1	Neighborhood Parks - Wissinoming Park	15-Feb-18	Combined	2225	25	0.6	0.7	Infiltration/Storage Trench, Rain Garden	Open Space	$500,000.00	Pennsylvania Horticultural Society	Delaware
		1007-2		15-Feb-18	Combined	4815		1.0	1.5	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware
50101	608	608-3	Kingsessing Recreation Center and Street Locations	31-Oct-18	Combined	5410	17	0.7	1.4	Infiltration/Storage Trench, Rain Garden	Open Space	$1,789,000.00	Philadelphia Water Department	Schuylkill
		608-1		15-Jan-19	Combined	9421		1.6	3.0	Infiltration/Storage Trench, Rain Garden	Open Space			Schuylkill
		608-4		19-Feb-19	Combined	3661		0.6	1.1	Infiltration/Storage Trench	Open Space			Schuylkill
		608-2		04-Jun-19	Combined	16397		2.2	4.4	Infiltration/Storage Trench, Rain Garden	Open Space			Schuylkill
	1049	1049-4		18-Dec-18	Combined	1312	12	0.2	0.4	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		1049-3		08-Jan-19	Combined	1405		0.2	0.4	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		1049-1		06-Mar-19	Combined	793		0.1	0.3	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		1049-2		19-Mar-19	Combined	1349		0.2	0.4	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		1049-5		26-Mar-19	Combined	1194		0.2	0.4	Tree Trench	Streets			Cobbs-Darby,Schuylkill
50102	1012	1012-1	Gray's Ferry Neighborhood Disconnection SMP Lanier Park	06-Oct-16	Combined	224448	0	0.0	0.0	Infiltration/Storage Trench	Open Space	$3,692,000.00	Philadelphia Water Department	Schuylkill
50103	1024	1024-1	Drainage Well	07-Sep-18	Combined	561.38	0	0.2	0.2	Drainage Well	Streets	$583,000.00	Philadelphia Water Department	Cobbs-Darby
	1025	1025-1		07-Sep-18	Combined	258.31	0	0.2	0.3	Drainage Well	Streets			Delaware
	1029	1029-1		07-Sep-18	Combined	458.27	0	0.4	0.3	Drainage Well	Streets			Delaware
50104	578	578-1	Stenton Park and Streets Locations	04-Jun-18	Combined	7803	20	1.1	2.1	Infiltration/Storage Trench	Open Space	$2,294,000.00	Philadelphia Water Department	TTF
		578-3		18-Oct-18	Combined	6416		0.8	1.7	Infiltration/Storage Trench, Rain Garden	Open Space			TTF
		578-2		18-Oct-18	Combined	6283		0.8	1.6	Infiltration/Storage Trench, Rain Garden	Open Space			TTF
		578-5		19-Oct-18	Combined	1466		0.2	0.5	Tree Trench	Open Space			TTF
		578-4		07-Dec-18	Combined	2714		0.3	0.6	Rain Garden	Open Space			TTF
	1050	1050-1		06-Apr-18	Combined	2078	34	0.3	0.6	Tree Trench	Streets			TTF
		1050-9		14-May-18	Combined	1273		0.2	0.4	Tree Trench	Streets			TTF
		1050-5		17-May-18	Combined	2693		0.4	0.9	Infiltration/Storage Trench	Streets			TTF
		1050-2		24-May-18	Combined	3651		0.5	1.0	Tree Trench	Streets			TTF
		1050-3		14-Jun-18	Combined	1292		0.2	0.5	Tree Trench	Streets			TTF
		1050-8		29-Aug-18	Combined	2525		0.5	0.9	Tree Trench	Streets			TTF
		1050-7		29-Aug-18	Combined	1620		0.3	0.5	Tree Trench	Streets			TTF
		1050-4		15-Oct-18	Combined	1770		0.3	0.6	Tree Trench	Streets			TTF
		1050-6		30-Nov-18	Combined	1709		0.3	0.6	Tree Trench	Streets			TTF

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50105	1051	1051-2	Francis Myers Recreation Center and Streets Locations	17-Nov-20	Combined	4330	70	0.6	1.2	Tree Trench	Streets	$4,242,000.00	Philadelphia Water Department	Cobbs-Darby,Schuylkill
		1051-1		17-Nov-20	Combined	8410		1.8	3.5	Green Gutter, Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
		1051-3		25-Jan-21	Combined	2092		0.5	0.6	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		1051-4		25-Jan-21	Combined	1135		0.2	0.4	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		1051-5		25-Jan-21	Combined	1567		0.3	0.5	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		1051-6		25-Jan-21	Combined	1548		0.3	0.5	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		1051-7		25-Jan-21	Combined	2894		0.4	0.8	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		1051-9		16-Apr-21	Combined	2506		0.4	0.8	Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
		1051-10		16-Apr-21	Combined	1902		0.3	0.6	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		1051-11		16-Apr-21	Combined	1676		0.4	0.9	Bumpout, Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
		1051-12		16-Apr-21	Combined	3058		0.4	0.8	Bumpout, Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
		1051-14		22-Apr-21	Combined	2359		0.4	0.7	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		1051-17		22-Apr-21	Combined	901		0.1	0.3	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		1051-8		22-Apr-21	Combined	1898		0.4	0.6	Bumpout, Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
		1051-15		28-Apr-21	Combined	3188		0.4	0.9	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		1051-18		21-May-21	Combined	4218		0.6	1.2	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		1051-20		02-Jun-21	Combined	653		0.1	0.2	Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
		1051-22		02-Jun-21	Combined	3282		0.6	1.0	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		1051-21		02-Jun-21	Combined	2531		0.4	0.8	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		1051-16		10-Jun-21	Combined	2674		0.4	0.8	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		1051-13		15-Jul-21	Combined	4459		0.9	1.5	Bumpout, Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
		1051-19		15-Jul-21	Combined	1325		0.2	0.4	Tree Trench	Streets			Cobbs-Darby,Schuylkill
50108	1053	1053-1	Fotterall Square Streets	12-May-21	Combined	1274	24	0.2	0.4	Bumpout, Infiltration/Storage Trench	Streets	$1,693,000.00	Philadelphia Water Department	Delaware
		1053-10		12-May-21	Combined	1842		0.4	0.6	Tree Trench	Streets			Delaware
		1053-4		13-May-21	Combined	1634		0.2	0.5	Tree Trench	Streets			Delaware
		1053-5		13-May-21	Combined	1840		0.3	0.6	Tree Trench	Streets			Delaware
		1053-2		13-May-21	Combined	766		0.1	0.3	Bumpout, Tree Trench	Streets			Delaware
		1053-3		17-Sep-21	Combined	3587.7		0.5	1.0	Tree Trench	Streets			Delaware
		1053-6		17-Sep-21	Combined	1469		0.2	0.5	Bumpout, Infiltration/Storage Trench	Streets			Delaware
		1053-9		20-Sep-21	Combined	1560		0.3	0.5	Tree Trench	Streets			Delaware
		1053-7		15-Feb-22	Combined	936		0.2	0.4	Infiltration/Storage Trench	Streets			Delaware
		1053-8		04-Mar-22	Combined	1585		0.3	0.5	Infiltration/Storage Trench, Planter	Streets			Delaware
	1054	1054-1		07-Mar-22	Combined	1786	3	0.3	0.6	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware

Work Number	Project ID	System Number	Project Name	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost **	Partner(s)	Watershed
50109	1023	1023-7	Osage Ave from 42nd to 43rd	28-Mar-19	Combined	40	11	0.0	0.0	Stormwater Tree	Streets	$197,000.00	Philadelphia Water Department	Schuylkill
		1023-11		28-Mar-19	Combined	40		0.0	0.0	Stormwater Tree	Streets			Schuylkill
		1023-10		28-Mar-19	Combined	40		0.0	0.0	Stormwater Tree	Streets			Schuylkill
		1023-1		28-Mar-19	Combined	40		0.0	0.0	Stormwater Tree	Streets			Schuylkill
		1023-8		28-Mar-19	Combined	40		0.0	0.0	Stormwater Tree	Streets			Schuylkill
		1023-6		28-Mar-19	Combined	40		0.0	0.0	Stormwater Tree	Streets			Schuylkill
		1023-5		28-Mar-19	Combined	40		0.0	0.0	Stormwater Tree	Streets			Schuylkill
		1023-4		28-Mar-19	Combined	40		0.0	0.0	Stormwater Tree	Streets			Schuylkill
		1023-3		28-Mar-19	Combined	40		0.0	0.0	Stormwater Tree	Streets			Schuylkill
		1023-2		28-Mar-19	Combined	40		0.0	0.0	Stormwater Tree	Streets			Schuylkill
		1023-9		28-Mar-19	Combined	40		0.0	0.0	Stormwater Tree	Streets			Schuylkill
50110	242	242-1	North Morris Park	03-Jul-21	Combined	8165	68	2.3	2.8	Infiltration/Storage Trench, Rain Garden	Streets	$2,290,000.00	Philadelphia Water Department	Cobbs-Darby
50111	376	376-4	Mt. Airy Church	29-Oct-18	Combined	1771	15	0.2	0.5	Tree Trench	Streets	$967,000.00	Philadelphia Water Department	TTF
		376-5		29-Oct-18	Combined	1590		0.2	0.4	Tree Trench	Streets			TTF
		376-6		29-Oct-18	Combined	2545		0.4	0.8	Tree Trench	Streets			TTF
		376-1		29-Oct-18	Combined	4812		0.7	1.3	Bumpout, Infiltration/Storage Trench	Streets			TTF
		376-3		29-Oct-18	Combined	1284		0.2	0.4	Bumpout, Infiltration/Storage Trench	Streets			TTF
		376-2		29-Oct-18	Combined	1891		0.3	0.5	Bumpout, Infiltration/Storage Trench	Streets			TTF
50112	1055	1055-1	Botanic Ave	09-Feb-18	Combined	5745	50	0.4	0.7	Rain Garden	Streets	$500,000.00	Philadelphia Parks & Recreation	Schuylkill
		1055-2		09-Feb-18	Combined	1526		0.7	0.5	Rain Garden	Streets			Schuylkill
		1055-3		09-Feb-18	Combined	9540		1.5	2.9	Infiltration/Storage Trench, Rain Garden	Streets			Schuylkill
50113	600	600-1	37th and Mount Vernon Playground	16-Dec-16	Combined	2006	5	0.3	0.5	Infiltration/Storage Trench, Rain Garden	Open Space	$72,000.00	Trust for Public Lands	Schuylkill
50118	1059	1059-3	Street Crossings - Aramingo, Cedar, Cambria, Almond	30-Jul-20	Combined	1261	5	0.3	0.4	Tree Trench	Streets	$1,213,000.00	Philadelphia Water Department	Delaware
		1059-4		26-Aug-20	Combined	1618		0.3	0.5	Tree Trench	Streets			Delaware
		1059-5		25-Nov-20	Combined	2353		0.4	0.8	Bumpout, Tree Trench	Streets			Delaware
		1059-2		03-Dec-20	Combined	3643		0.9	1.2	Infiltration/Storage Trench	Streets			Delaware
		1059-1		14-Dec-20	Combined	2605		0.4	0.9	Infiltration/Storage Trench, Rain Garden	Streets			Delaware
50119	1067	1067-4	Cement Park (Northern Liberties Rec Center)	08-May-19	Combined	3191	0	0.5	1.0	Rain Garden	Streets	$1,222,000.00	Philadelphia Water Department	Delaware
		1067-3		08-May-19	Combined	1661		0.3	0.5	Basin, Infiltration/Storage Trench, Planter	Streets			Delaware
		1067-2		08-May-19	Combined	1024		0.1	0.3	Infiltration/Storage Trench, Rain Garden	Streets			Delaware
		1067-1		08-May-19	Combined	3163		0.7	1.1	Infiltration/Storage Trench	Streets			Delaware
	1068	1068-1		08-May-19	Combined	1603	5	0.3	0.5	Infiltration/Storage Trench, Planter	Streets			Delaware
50120	1070	1070-12	McPherson Streets	24-Mar-21	Combined	1116	56	0.3	0.6	Infiltration/Storage Trench	Streets	$1,924,000.00	Philadelphia Water Department	Delaware
		1070-1		24-Mar-21	Combined	3019		0.6	1.2	Tree Trench	Streets			Delaware
		1070-16		24-Mar-21	Combined	2454		0.6	1.0	Tree Trench	Streets			Delaware
		1070-15		24-Mar-21	Combined	1677		0.3	0.5	Tree Trench	Streets			Delaware
		1070-13		24-Mar-21	Combined	1688		0.3	0.6	Infiltration/Storage Trench	Streets			Delaware
		1070-11		24-Mar-21	Combined	1019		0.2	0.3	Tree Trench	Streets			Delaware
		1070-8		24-Mar-21	Combined	2012		0.4	0.6	Tree Trench	Streets			Delaware
		1070-7		24-Mar-21	Combined	1689		0.3	0.5	Tree Trench	Streets			Delaware
		1070-6		24-Mar-21	Combined	2747		0.5	1.0	Infiltration/Storage Trench, Tree Trench	Streets			Delaware
		1070-5		24-Mar-21	Combined	1478		0.2	0.5	Tree Trench	Streets			Delaware
		1070-4		24-Mar-21	Combined	2078		0.4	0.7	Tree Trench	Streets			Delaware
		1070-3		24-Mar-21	Combined	3136		0.6	1.0	Tree Trench	Streets			Delaware
		1070-10		24-Mar-21	Combined	1437		0.3	0.6	Tree Trench	Streets			Delaware
		1070-14		24-Mar-21	Combined	2088		0.3	0.6	Tree Trench	Streets			Delaware

Work Number	Project ID	System Number	Project Name	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost **	Partner(s)	Watershed
50122	1077	1077-1	Mount Sinai	07-Jun-19	Combined	4959	2	0.9	1.8	Infiltration/Storage Trench	Open Space	$3,652,000.00	Philadelphia Water Department	Delaware,TTF
		1077-2		30-Aug-19	Combined	2646		0.5	1.0	Tree Trench	Vacant Land			Delaware,TTF
	1083	1083-8		20-Dec-18	Combined	2766	59	0.5	0.9	Tree Trench	Streets			Delaware,TTF
		1083-9		20-Dec-18	Combined	1115		0.2	0.4	Tree Trench	Streets			Delaware,TTF
		1083-5		04-Jan-19	Combined	2975		0.6	1.1	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
		1083-6		01-Apr-19	Combined	7304		1.3	2.3	Infiltration/Storage Trench, Swale	Streets			Delaware,TTF
		1083-7		01-Apr-19	Combined	5245		1.0	1.9	Infiltration/Storage Trench, Swale	Streets			Delaware,TTF
		1083-4		03-Apr-19	Combined	7041		1.0	2.0	Bumpout, Tree Trench	Streets			Delaware,TTF
		1083-3		03-Apr-19	Combined	2539		0.4	0.9	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
		1083-2		03-Apr-19	Combined	2689		0.4	0.8	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
		1083-11		01-May-19	Combined	1852		0.3	0.6	Tree Trench	Streets			Delaware,TTF
		1083-12		03-May-19	Combined	2263		0.4	0.7	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
		1083-10		06-May-19	Combined	3808		0.7	1.3	Bumpout, Tree Trench	Streets			Delaware,TTF
		1083-1		20-Jun-19	Combined	837		0.2	0.3	Infiltration/Storage Trench	Streets			Delaware,TTF
		1083-14		17-Jul-19	Combined	3737		0.7	1.2	Planter, Tree Trench	Streets			Delaware,TTF
		1083-13		29-Jul-19	Combined	1353		0.3	0.5	Infiltration/Storage Trench, Planter	Streets			Delaware,TTF
50123	1084	1084-6	Allegheny Ave Safety Corridor Improvement Project (MPMS 85417)	10-Jan-19	Combined	2086	0	0.3	0.5	Infiltration/Storage Trench	Streets	Unknown	Pennsylvania Department of Transportation	Delaware
		1084-7		10-Jan-19	Combined	1598		0.2	0.4	Infiltration/Storage Trench	Streets			Delaware
		1084-5		10-Jan-19	Combined	1582		0.2	0.4	Infiltration/Storage Trench	Streets			Delaware
		1084-3		10-Jan-19	Combined	1027		0.2	0.3	Infiltration/Storage Trench	Streets			Delaware
		1084-2		10-Jan-19	Combined	1485		0.2	0.4	Infiltration/Storage Trench	Streets			Delaware
		1084-1		10-Jan-19	Combined	1419		0.2	0.4	Infiltration/Storage Trench	Streets			Delaware
		1084-4		10-Jan-19	Combined	1293		0.2	0.3	Infiltration/Storage Trench, Rain Garden	Streets			Delaware
		1084-8		10-Jan-19	Combined	1106		0.1	0.3	Infiltration/Storage Trench	Streets			Delaware
50124	1085	1085-1	Trenton and Auburn Playground	05-Feb-20	Combined	55349	0	7.7	15.4	Infiltration/Storage Trench	Open Space	$3,167,000.00	Philadelphia Water Department	Delaware
50125	1087	1087-6	Lawncrest Streets Southeast	02-Sep-21	Combined	5881	9	1.0	2.0	Bumpout, Infiltration/Storage Trench	Streets	$2,604,000.00	Philadelphia Water Department	Delaware,TTF
		1087-5		02-Sep-21	Combined	5216		1.0	1.7	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
		1087-9		03-Sep-21	Combined	2627		0.5	0.9	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
		1087-8		03-Sep-21	Combined	4494		0.7	1.5	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
		1087-7		06-Sep-21	Combined	5031		1.0	2.0	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
		1087-1		07-Sep-21	Combined	3866		0.7	1.5	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
		1087-3		08-Sep-21	Combined	6721		1.2	2.4	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
		1087-4		08-Sep-21	Combined	5698		1.0	2.1	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
		1087-2		08-Sep-21	Combined	5982		1.1	2.2	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF

Work Number	Project ID	System Number	Project Name	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost **	Partner(s)	Watershed
50129	1127	1127-1	Girard Park and Warriner Post Park	29-Jun-20	Combined	5602	11	0.8	1.7	Rain Garden, Tree Trench	Vacant Land	$2,352,000.00	Philadelphia Water Department	Schuylkill
	1128	1128-1		29-Jun-20	Combined	4925	8	0.8	1.6	Bumpout, Tree Trench	Streets			Schuylkill
		1128-2		29-Jun-20	Combined	4395		0.6	1.1	Bumpout, Tree Trench	Streets			Schuylkill
		1128-3		29-Jun-20	Combined	5064		0.9	1.7	Bumpout, Tree Trench	Streets			Schuylkill
	1129	1129-4		10-Jan-20	Combined	4439.43	19	0.6	1.1	Tree Trench	Streets			Schuylkill
		1129-3		10-Jan-20	Combined	1015.28		0.1	0.3	Bumpout, Infiltration/Storage Trench	Streets			Schuylkill
		1129-5		13-Jan-20	Combined	1373.69		0.2	0.3	Tree Trench	Streets			Schuylkill
		1129-7		17-Jan-20	Combined	4214.42		0.6	0.9	Infiltration/Storage Trench	Streets			Schuylkill
		1129-6		17-Jan-20	Combined	4530		0.7	1.4	Tree Trench	Streets			Schuylkill
		1129-2		21-Feb-20	Combined	690		0.1	0.2	Tree Trench	Streets			Schuylkill
		1129-1		21-Feb-20	Combined	1139.18		0.1	0.3	Tree Trench	Streets			Schuylkill
50132	1137	1137-5	Max Myers	25-Nov-19	Combined	1262	17	0.2	0.4	Bumpout, Infiltration/Storage Trench	Streets	$3,089,000.00	Philadelphia Water Department	Delaware
		1137-6		25-Nov-19	Combined	790		0.1	0.2	Infiltration/Storage Trench	Streets			Delaware
		1137-7		25-Nov-19	Combined	5851		0.8	1.6	Tree Trench	Streets			Delaware
		1137-4		25-Nov-19	Combined	3237		0.5	1.0	Infiltration/Storage Trench	Streets			Delaware
		1137-3		25-Nov-19	Combined	2893		0.7	1.3	Infiltration/Storage Trench	Streets			Delaware
		1137-2		25-Nov-19	Combined	20572		3.2	6.4	Infiltration/Storage Trench, Planter	Streets			Delaware
		1137-1		19-May-21	Combined	12427		1.8	3.7	Infiltration/Storage Trench, Rain Garden, Swale	Open Space			Delaware
	1138	1138-8		25-Nov-19	Combined	1562	11	0.2	0.4	Infiltration/Storage Trench	Streets			Delaware
		1138-1		25-Nov-19	Combined	1208		0.2	0.3	Tree Trench	Streets			Delaware
		1138-2		25-Nov-19	Combined	796		0.1	0.2	Bumpout, Infiltration/Storage Trench	Streets			Delaware
		1138-3		25-Nov-19	Combined	709		0.1	0.2	Bumpout, Infiltration/Storage Trench	Streets			Delaware
		1138-4		25-Nov-19	Combined	3928		0.7	1.2	Infiltration/Storage Trench	Streets			Delaware
		1138-5		25-Nov-19	Combined	818		0.1	0.2	Bumpout, Infiltration/Storage Trench	Streets			Delaware
		1138-6		25-Nov-19	Combined	2930		0.4	0.9	Bumpout, Tree Trench	Streets			Delaware
50134	1140	1140-2	Wharton Square Greening Improvements	08-Feb-19	Combined	1279	11	0.3	0.5	Rain Garden	Open Space	$1,088,000.00	Philadelphia Water Department	Schuylkill
		1140-3		13-Feb-19	Combined	9545		2.0	3.1	Rain Garden, Tree Trench	Open Space			Schuylkill
50138	1145	1145-7	Buist Avenue Green Streets and Buist Park Improvements	19-Nov-19	Combined	1822	21	0.4	0.6	Bumpout, Tree Trench	Streets	$2,579,000.00	Philadelphia Water Department	Schuylkill
		1145-13		19-Nov-19	Combined	3074		0.5	0.9	Bumpout, Tree Trench	Streets			Schuylkill
		1145-12		19-Nov-19	Combined	2736		0.4	0.8	Bumpout, Infiltration/Storage Trench	Streets			Schuylkill
		1145-11		19-Nov-19	Combined	2709		0.5	0.9	Bumpout, Tree Trench	Streets			Schuylkill
		1145-10		19-Nov-19	Combined	769		0.1	0.3	Bumpout, Infiltration/Storage Trench	Streets			Schuylkill
		1145-8		19-Nov-19	Combined	961		0.1	0.3	Bumpout, Infiltration/Storage Trench	Streets			Schuylkill
		1145-6		19-Nov-19	Combined	892		0.1	0.3	Bumpout, Infiltration/Storage Trench	Streets			Schuylkill
		1145-5		19-Nov-19	Combined	1435		0.3	0.5	Bumpout, Infiltration/Storage Trench	Streets			Schuylkill
		1145-4		19-Nov-19	Combined	1107		0.1	0.3	Infiltration/Storage Trench	Streets			Schuylkill
		1145-3		19-Nov-19	Combined	2011		0.4	0.7	Bumpout, Infiltration/Storage Trench	Streets			Schuylkill
		1145-2		19-Nov-19	Combined	957		0.2	0.3	Infiltration/Storage Trench	Streets			Schuylkill
		1145-1		19-Nov-19	Combined	2226		0.3	0.6	Bumpout, Tree Trench	Streets			Schuylkill
		1145-9		19-Nov-19	Combined	1601		0.3	0.5	Bumpout, Tree Trench	Streets			Schuylkill
	1146	1146-1		19-Nov-19	Combined	7861	3	1.3	2.6	Bumpout, Infiltration/Storage Trench, Rain Garden	Open Space			Schuylkill

Work Number	Project ID	System Number	Project Name	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost **	Partner(s)	Watershed
50143	1195	1195-1	Parkside Edge - Green Streets Buyback	19-Jan-18	Combined	11930	0	0.8	1.6	Infiltration/Storage Trench, Rain Garden	Open Space	$1,163,000.00	Fairmount Park Commission	Schuylkill
		1195-2		19-Jan-18	Combined	4341		0.6	1.2	Rain Garden	Open Space			Schuylkill
		1195-3		19-Jan-18	Combined	9397		1.2	2.4	Rain Garden	Open Space			Schuylkill
50145	1163	1163-1	Nelson Playground and Hissey Playground Green Improvement	07-Feb-20	Combined	1861	6	0.3	0.6	Infiltration/Storage Trench, Rain Garden	Open Space	$636,000.00	Philadelphia Water Department	Delaware
		1163-2		07-Feb-20	Combined	8344		1.4	2.6	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware
50146	1197	1197-1	Point Breeze Vacant Lots	21-May-19	Combined	1749.9	3	0.3	0.6	Infiltration/Storage Trench, Rain Garden	Vacant Land	$2,193,000.00	Philadelphia Water Department	Schuylkill
	1198	1198-2		25-Oct-18	Combined	1314	43	0.3	0.4	Tree Trench	Streets			Schuylkill
		1198-3		29-Oct-18	Combined	8816		1.7	3.3	Tree Trench	Streets			Schuylkill
		1198-4		09-Nov-18	Combined	1131.6		0.2	0.3	Tree Trench	Streets			Schuylkill
		1198-1		19-Nov-18	Combined	873.7		0.1	0.3	Infiltration/Storage Trench	Streets			Schuylkill
		1198-8		28-Jan-19	Combined	3303.8		0.5	1.0	Tree Trench	Streets			Schuylkill
		1198-6		14-Mar-19	Combined	979		0.2	0.3	Bumpout, Infiltration/Storage Trench	Streets			Schuylkill
		1198-7		03-May-19	Combined	4255.5		0.5	0.9	Infiltration/Storage Trench, Rain Garden	Streets			Schuylkill
50148	1200	1200-4	Elmwood Medians Package	08-Oct-20	Combined	3831	21	0.6	1.2	Infiltration/Storage Trench, Rain Garden	Streets	$942,000.00	Philadelphia Water Department	Cobbs-Darby,Schuylkill
		1200-5		08-Oct-20	Combined	1283		0.2	0.4	Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
		1200-2		08-Oct-20	Combined	3278		0.5	1.0	Infiltration/Storage Trench, Rain Garden	Streets			Cobbs-Darby,Schuylkill
		1200-1		08-Oct-20	Combined	7164		1.1	2.2	Infiltration/Storage Trench, Rain Garden	Streets			Cobbs-Darby,Schuylkill
		1200-3		08-Oct-20	Combined	2578		0.4	0.8	Infiltration/Storage Trench, Rain Garden	Streets			Cobbs-Darby,Schuylkill
50149	1202	1202-5	Erie and Rising Sun Street Improvements	30-Jul-19	Combined	1274	30	0.3	0.4	Infiltration/Storage Trench, Planter	Streets	$1,690,000.00	Philadelphia Water Department	Delaware
		1202-12		30-Jul-19	Combined	1659		0.4	0.6	Infiltration/Storage Trench	Streets			Delaware
		1202-11		30-Jul-19	Combined	1456		0.3	0.5	Tree Trench	Streets			Delaware
		1202-10		30-Jul-19	Combined	1303		0.2	0.5	Tree Trench	Streets			Delaware
		1202-9		30-Jul-19	Combined	1077		0.3	0.4	Tree Trench	Streets			Delaware
		1202-8		30-Jul-19	Combined	4158		0.9	1.4	Tree Trench	Streets			Delaware
		1202-6		30-Jul-19	Combined	1031		0.3	0.4	Tree Trench	Streets			Delaware
		1202-4		30-Jul-19	Combined	2074		0.3	0.6	Tree Trench	Streets			Delaware
		1202-3		30-Jul-19	Combined	921		0.2	0.3	Infiltration/Storage Trench	Streets			Delaware
		1202-2		30-Jul-19	Combined	1316		0.3	0.4	Tree Trench	Streets			Delaware
		1202-1		30-Jul-19	Combined	1239		0.3	0.4	Tree Trench	Streets			Delaware
		1202-7		30-Jul-19	Combined	1230		0.3	0.4	Tree Trench	Streets			Delaware
	1379	1379-1		30-Jul-19	Combined	5811	3	0.8	1.6	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware
50150	1015	1015-1	Hagert Playground	10-Feb-17	Combined	1941	1	0.4	0.7	Infiltration/Storage Trench, Rain Garden	Open Space	$251,000.00	Philadelphia Water Department	Delaware
		1015-2		10-Feb-17	Combined	2283		0.4	0.7	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware
50151	1204	1204-1	Reading Viaduct	13-Jun-18	Combined	1091	0	0.1	0.3	Bumpout, Infiltration/Storage Trench	Streets	Unknown	Center City District	Delaware

Work Number	Project ID	System Number	Project Name	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost **	Partner(s)	Watershed
50152	1209	1209-6	Athletic Square	29-Jan-20	Combined	1098	9	0.2	0.3	Infiltration/Storage Trench	Streets	$813,000.00	Philadelphia Water Department	Schuylkill
		1209-1		29-Jan-20	Combined	733.02		0.1	0.3	Tree Trench	Streets			Schuylkill
		1209-2		29-Jan-20	Combined	1659		0.3	0.6	Tree Trench	Streets			Schuylkill
		1209-3		29-Jan-20	Combined	1862.63		0.3	0.6	Infiltration/Storage Trench, Planter	Streets			Schuylkill
		1209-4		29-Jan-20	Combined	1243		0.2	0.3	Infiltration/Storage Trench	Streets			Schuylkill
		1209-5		29-Jan-20	Combined	2001.55		0.3	0.6	Infiltration/Storage Trench	Streets			Schuylkill
50155	488	488-5	Smith Playground Green Improvements	22-May-18	Combined	1081	8	0.2	0.3	Infiltration/Storage Trench	Open Space	$678,000.00	Philadelphia Industrial Development Corporation	Schuylkill
		488-1		22-May-18	Combined	970		0.2	0.3	Infiltration/Storage Trench	Open Space			Schuylkill
		488-2		22-May-18	Combined	4257		0.8	1.5	Rain Garden, Tree Trench	Open Space			Schuylkill
		488-3		22-May-18	Combined	2249		0.4	0.8	Infiltration/Storage Trench	Open Space			Schuylkill
		488-4		22-May-18	Combined	2168		0.4	0.8	Infiltration/Storage Trench	Open Space			Schuylkill
50157	1240	1240-9	Kensington Green Street Improvements	13-Mar-20	Combined	830	18	0.2	0.3	Tree Trench	Streets	$983,000.00	Philadelphia Water Department	Delaware
		1240-1		17-Mar-20	Combined	1146		0.2	0.4	Tree Trench	Streets			Delaware
		1240-8		19-Mar-20	Combined	1436		0.4	0.5	Tree Trench	Streets			Delaware
		1240-6		20-Mar-20	Combined	748		0.2	0.2	Infiltration/Storage Trench	Streets			Delaware
		1240-7		20-Mar-20	Combined	4510		0.7	1.3	Tree Trench	Streets			Delaware
		1240-4		20-Mar-20	Combined	1481		0.3	0.5	Tree Trench	Streets			Delaware
		1240-3		20-Mar-20	Combined	861		0.2	0.3	Tree Trench	Streets			Delaware
		1240-5		20-Mar-20	Combined	932		0.2	0.3	Tree Trench	Streets			Delaware
		1240-2		20-Mar-20	Combined	490		0.1	0.2	Tree Trench	Streets			Delaware
50158	1221	1221-2	53rd and Baltimore	11-May-21	Combined	6233	0	0.8	1.6	Infiltration/Storage Trench, Rain Garden	Streets	$247,000.00	Streets Department	Cobbs-Darby
		1221-1		27-Aug-21	Combined	3099		0.5	1.0	Infiltration/Storage Trench, Rain Garden	Streets			Cobbs-Darby
50160	1242	1242-10	Kensington Neighborhood Greening Phase 2	08-Apr-21	Combined	2647	17	0.5	0.8	Infiltration/Storage Trench	Streets	$1,338,000.00	Philadelphia Water Department	Delaware
		1242-8		08-Apr-21	Combined	1184		0.2	0.4	Tree Trench	Streets			Delaware
		1242-4		08-Apr-21	Combined	1030		0.2	0.3	Tree Trench	Streets			Delaware
		1242-2		08-Apr-21	Combined	2418		0.5	0.7	Tree Trench	Streets			Delaware
		1242-9		08-Apr-21	Combined	915		0.2	0.3	Infiltration/Storage Trench	Streets			Delaware
		1242-7		08-Apr-21	Combined	1268		0.2	0.4	Tree Trench	Streets			Delaware
		1242-1		08-Apr-21	Combined	1993		0.3	0.6	Infiltration/Storage Trench	Streets			Delaware
		1242-3		08-Apr-21	Combined	2511		0.4	0.8	Infiltration/Storage Trench	Streets			Delaware
50162	1265	1265-1	Cedar Park Neighborhood Streets Package 1	17-Feb-20	Combined	1105	16	0.2	0.3	Tree Trench	Streets	$2,156,000.00	Philadelphia Water Department	Cobbs-Darby,Schuylkill
		1265-6		11-Mar-20	Combined	1448		0.2	0.5	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		1265-4		11-Mar-20	Combined	1214		0.3	0.4	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		1265-7		06-May-20	Combined	1253		0.2	0.4	Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
		1265-2		20-May-20	Combined	2042		0.3	0.6	Bumpout, Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
		1265-3		20-May-20	Combined	1563		0.3	0.5	Bumpout, Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
		1265-9		20-May-20	Combined	1123		0.2	0.3	Bumpout, Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
		1265-11		08-Jun-20	Combined	1821		0.3	0.6	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		1265-10		02-Jul-20	Combined	2992		0.5	1.0	Bumpout, Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
		1265-12		06-Jul-20	Combined	1483		0.3	0.5	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		1265-13		20-Jul-20	Combined	926		0.2	0.3	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		1265-14		29-Jul-20	Combined	1439		0.2	0.4	Bumpout, Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
		1265-15		31-Aug-20	Combined	704		0.2	0.3	Tree Trench	Streets			Cobbs-Darby,Schuylkill
		1265-8		15-Sep-20	Combined	876		0.3	0.3	Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
		1265-5		18-Sep-20	Combined	1261		0.2	0.4	Tree Trench	Streets			Cobbs-Darby,Schuylkill

Work Number	Project ID	System Number	Project Name	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost **	Partner(s)	Watershed
50167	1267	1267-1	Wissinoming	29-Oct-21	Combined	66213	78	11.4	22.7	Rain Garden, Wetland	Open Space	$8,152,000.00	Philadelphia Water Department	Delaware
		1267-3		05-Nov-21	Combined	47461		6.4	12.8	Infiltration/Storage Trench	Open Space			Delaware
		1267-2		05-Nov-21	Combined	22842		3.1	6.2	Infiltration/Storage Trench	Open Space			Delaware
50170	1272	1272-10	East Park Greenways	11-Feb-22	Combined	1444	6	0.3	0.5	Bumpout, Tree Trench	Streets	$1,679,000.00	Philadelphia Water Department	Schuylkill
		1272-9		05-Apr-22	Combined	2749		0.5	0.9	Bumpout, Tree Trench	Streets			Schuylkill
	1273	1273-1		13-Aug-20	Combined	1819	15	0.3	0.6	Infiltration/Storage Trench, Rain Garden	Streets			Schuylkill
		1273-2		13-Aug-20	Combined	1470		0.3	0.5	Infiltration/Storage Trench, Rain Garden	Streets			Schuylkill
		1273-7		06-May-21	Combined	2493		0.5	0.8	Infiltration/Storage Trench, Rain Garden	Streets			Schuylkill
		1273-6		20-Jan-22	Combined	4424		0.9	1.4	Infiltration/Storage Trench, Rain Garden	Streets			Schuylkill
		1273-5		09-Feb-22	Combined	2179		0.5	0.7	Infiltration/Storage Trench, Rain Garden	Streets			Schuylkill
		1273-8		11-Feb-22	Combined	6303		1.1	2.0	Tree Trench	Streets			Schuylkill
		1273-3		05-Apr-22	Combined	1840		0.4	0.6	Infiltration/Storage Trench	Streets			Schuylkill
		1273-4		05-Apr-22	Combined	1370		0.3	0.4	Infiltration/Storage Trench	Streets			Schuylkill
50171	1274	1274-1	South Street Headhouse Square	12-May-21	Combined	12779.63	0	2.2	4.4	Infiltration/Storage Trench	Streets	$646,000.00	Department of Commerce	Delaware
50174	1279	1279-6	Tioga Green Streets Phase I & II	08-Jun-20	Combined	1987	29	0.3	0.6	Tree Trench	Streets	$1,689,000.00	Philadelphia Water Department	Delaware
		1279-7		05-Aug-20	Combined	2034		0.3	0.6	Infiltration/Storage Trench	Streets			Delaware
		1279-3		05-Aug-20	Combined	1431		0.4	0.6	Tree Trench	Streets			Delaware
		1279-2		05-Aug-20	Combined	883		0.1	0.3	Tree Trench	Streets			Delaware
		1279-1		05-Aug-20	Combined	1127		0.2	0.5	Tree Trench	Streets			Delaware
		1279-5		07-Aug-20	Combined	1732		0.2	0.5	Tree Trench	Streets			Delaware
		1279-12		05-Oct-20	Combined	923		0.2	0.3	Tree Trench	Streets			Delaware
		1279-11		05-Oct-20	Combined	1460		0.3	0.5	Tree Trench	Streets			Delaware
		1279-10		06-Oct-20	Combined	2402		0.4	0.7	Tree Trench	Streets			Delaware
		1279-14		06-Oct-20	Combined	1115		0.2	0.4	Tree Trench	Streets			Delaware
		1279-8		07-Oct-20	Combined	2766		0.6	1.0	Infiltration/Storage Trench, Tree Trench	Streets			Delaware
		1279-9		07-Oct-20	Combined	1282		0.2	0.4	Tree Trench	Streets			Delaware
		1279-4		08-Oct-20	Combined	1087		0.2	0.4	Infiltration/Storage Trench	Streets			Delaware
		1279-13		27-Oct-20	Combined	1748		0.3	0.6	Infiltration/Storage Trench	Streets			Delaware

Work Number	Project ID	System Number	Project Name	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost **	Partner(s)	Watershed
50175	1281	1281-1	American Street Corridor Improvements	30-Aug-18	Combined	3227	269	0.5	0.9	Infiltration/Storage Trench, Rain Garden	Streets	$4,847,000.00	Streets Department	Delaware
		1281-6		05-Sep-18	Combined	1778		0.2	0.5	Infiltration/Storage Trench, Rain Garden	Streets			Delaware
		1281-5		12-Sep-18	Combined	1805		0.2	0.5	Infiltration/Storage Trench, Rain Garden	Streets			Delaware
		1281-3		28-Nov-18	Combined	1265		0.3	0.4	Tree Trench	Streets			Delaware
		1281-2		02-Apr-19	Combined	696		0.1	0.2	Tree Trench	Streets			Delaware
		1281-7		28-Jun-19	Combined	5014		0.6	1.3	Tree Trench	Streets			Delaware
		1281-15		19-Nov-20	Combined	11715		1.6	3.2	Infiltration/Storage Trench	Streets			Delaware
		1281-17		19-Nov-20	Combined	6771		0.9	1.8	Swale	Streets			Delaware
		1281-16		19-Nov-20	Combined	5431		0.7	1.4	Infiltration/Storage Trench	Streets			Delaware
		1281-18		19-Nov-20	Combined	6057		0.8	1.6	Swale	Streets			Delaware
		1281-24		01-Dec-20	Combined	3551		0.5	0.9	Infiltration/Storage Trench	Streets			Delaware
		1281-40		01-Dec-20	Combined	3191		0.4	0.9	Infiltration/Storage Trench	Streets			Delaware
		1281-23		01-Dec-20	Combined	4054		0.6	1.1	Infiltration/Storage Trench	Streets			Delaware
		1281-22		01-Dec-20	Combined	4057		0.5	1.1	Infiltration/Storage Trench	Streets			Delaware
		1281-21		01-Dec-20	Combined	4458		0.6	1.3	Infiltration/Storage Trench	Streets			Delaware
		1281-19		01-Dec-20	Combined	5570		0.7	1.5	Swale	Streets			Delaware
		1281-20		01-Dec-20	Combined	7304		1.0	2.0	Infiltration/Storage Trench, Swale	Streets			Delaware
		1281-25		11-Dec-20	Combined	6744		0.7	1.3	Infiltration/Storage Trench	Streets			Delaware
		1281-30		11-Dec-20	Combined	6167		0.8	1.7	Swale	Streets			Delaware
		1281-29		11-Dec-20	Combined	4144		0.4	0.8	Swale	Streets			Delaware
		1281-28		11-Dec-20	Combined	3231		0.4	0.8	Infiltration/Storage Trench	Streets			Delaware
		1281-31		11-Dec-20	Combined	8133		0.9	1.8	Infiltration/Storage Trench, Swale	Streets			Delaware
		1281-27		11-Dec-20	Combined	5019		0.7	1.4	Infiltration/Storage Trench	Streets			Delaware
		1281-32		11-Dec-20	Combined	3879		0.5	1.1	Infiltration/Storage Trench, Swale	Streets			Delaware
		1281-36		12-Dec-20	Combined	5900		0.8	1.6	Bumpout, Tree Trench	Streets			Delaware
		1281-38		12-Dec-20	Combined	4466		0.7	1.4	Infiltration/Storage Trench	Streets			Delaware
		1281-35		12-Dec-20	Combined	3366		0.5	0.9	Tree Trench	Streets			Delaware
		1281-4		05-Apr-21	Combined	3145		0.5	0.9	Infiltration/Storage Trench	Streets			Delaware
		1281-33		20-Apr-21	Combined	2375		0.3	0.7	Tree Trench	Streets			Delaware
		1281-34		20-Apr-21	Combined	6408		0.9	1.7	Tree Trench	Streets			Delaware
		1281-41		20-Apr-21	Combined	4035		0.5	1.1	Tree Trench	Streets			Delaware
		1281-42		20-Apr-21	Combined	3661		0.5	1.0	Infiltration/Storage Trench	Streets			Delaware
		1281-9		21-Apr-21	Combined	6479		0.9	1.8	Tree Trench	Streets			Delaware
		1281-10		21-Apr-21	Combined	7223		0.8	1.7	Tree Trench	Streets			Delaware
		1281-11		21-Apr-21	Combined	4097		0.5	1.0	Tree Trench	Streets			Delaware
		1281-13		21-Apr-21	Combined	6198		0.8	1.7	Swale	Streets			Delaware
		1281-14		21-Apr-21	Combined	5196		0.5	0.9	Swale	Streets			Delaware
		1281-12		21-Apr-21	Combined	2272		0.3	0.6	Infiltration/Storage Trench	Streets			Delaware
		1281-26		21-May-21	Combined	3236		0.5	0.9	Infiltration/Storage Trench	Streets			Delaware
		1281-37		25-May-21	Combined	7784		1.0	2.1	Bumpout, Tree Trench	Streets			Delaware
		1281-39		25-May-21	Combined	7947		1.0	2.1	Infiltration/Storage Trench, Rain Garden	Streets			Delaware

Work Number	Project ID	System Number	Project Name	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost **	Partner(s)	Watershed
50177	1287	1287-9	Wayne and Manheim Streets	10-Jun-20	Combined	868	21	0.2	0.3	Infiltration/Storage Trench	Streets	$1,776,000.00	Philadelphia Water Department	Schuylkill,TTF
		1287-12		10-Jun-20	Combined	1084		0.2	0.3	Tree Trench	Streets			Schuylkill,TTF
		1287-5		10-Jun-20	Combined	2058		0.3	0.6	Tree Trench	Streets			Schuylkill,TTF
		1287-4		10-Jun-20	Combined	1998		0.3	0.6	Tree Trench	Streets			Schuylkill,TTF
		1287-6		10-Jun-20	Combined	1525		0.2	0.5	Tree Trench	Streets			Schuylkill,TTF
		1287-7		05-Nov-20	Combined	1911		0.5	0.6	Infiltration/Storage Trench	Streets			Schuylkill,TTF
		1287-10		05-Nov-20	Combined	1128		0.2	0.3	Infiltration/Storage Trench	Streets			Schuylkill,TTF
		1287-8		05-Nov-20	Combined	1687		0.5	0.5	Infiltration/Storage Trench	Streets			Schuylkill,TTF
		1287-1		05-Nov-20	Combined	1603		0.2	0.4	Tree Trench	Streets			Schuylkill,TTF
		1287-3		05-Nov-20	Combined	1555		0.2	0.5	Tree Trench	Streets			Schuylkill,TTF
		1287-2		05-Nov-20	Combined	2486		0.3	0.7	Tree Trench	Streets			Schuylkill,TTF
		1287-13		03-Dec-20	Combined	1301		0.2	0.4	Tree Trench	Streets			Schuylkill,TTF
		1287-11		03-Dec-20	Combined	1985		0.3	0.6	Infiltration/Storage Trench	Streets			Schuylkill,TTF
50179	1288	1288-9	Berks & Sedgley Greening	25-Oct-18	Combined	1049	17	0.2	0.4	Infiltration/Storage Trench	Streets	$1,795,000.00	Philadelphia Water Department	Schuylkill
		1288-8		25-Oct-18	Combined	2016		0.4	0.6	Infiltration/Storage Trench	Streets			Schuylkill
		1288-11		29-Oct-18	Combined	1483		0.3	0.6	Tree Trench	Streets			Schuylkill
		1288-7		30-Oct-18	Combined	1260		0.2	0.5	Tree Trench	Streets			Schuylkill
		1288-10		09-Nov-18	Combined	2109		0.3	0.6	Infiltration/Storage Trench	Streets			Schuylkill
		1288-4		05-Dec-18	Combined	1347		0.3	0.5	Infiltration/Storage Trench, Planter	Streets			Schuylkill
		1288-2		05-Dec-18	Combined	807		0.1	0.2	Infiltration/Storage Trench	Streets			Schuylkill
		1288-1		05-Dec-18	Combined	1201		0.2	0.4	Infiltration/Storage Trench, Planter	Streets			Schuylkill
		1288-3		20-Dec-18	Combined	862		0.2	0.3	Tree Trench	Streets			Schuylkill
		1288-5		14-Feb-19	Combined	5680		1.2	1.9	Infiltration/Storage Trench, Rain Garden	Streets			Schuylkill
		1288-6		28-Feb-19	Combined	2328		0.7	0.8	Infiltration/Storage Trench	Streets			Schuylkill
50182	1296	1296-10	Feltonville Plaza	17-Mar-22	Combined	2081	13	0.3	0.6	Tree Trench	Streets	$1,295,000.00	Philadelphia Water Department	TTF
		1296-9		18-Mar-22	Combined	1261		0.2	0.5	Infiltration/Storage Trench	Streets			TTF
		1296-11		18-Mar-22	Combined	2182		0.5	0.7	Infiltration/Storage Trench	Streets			TTF
		1296-8		24-Mar-22	Combined	2008		0.4	0.7	Bumpout, Infiltration/Storage Trench	Streets			TTF
		1296-2		24-Mar-22	Combined	1264		0.3	0.4	Infiltration/Storage Trench	Streets			TTF
		1296-5		04-Apr-22	Combined	1247		0.3	0.4	Infiltration/Storage Trench	Streets			TTF
		1296-7		05-Apr-22	Combined	3315		0.5	0.9	Bumpout, Tree Trench	Streets			TTF
		1296-1		08-Apr-22	Combined	1042		0.2	0.4	Infiltration/Storage Trench, Rain Garden	Streets			TTF
		1296-4		20-Apr-22	Combined	1647		0.3	0.5	Infiltration/Storage Trench	Streets			TTF
		1296-3		20-Apr-22	Combined	1097		0.3	0.4	Infiltration/Storage Trench	Streets			TTF
		1296-6		20-Apr-22	Combined	3282		0.5	1.0	Bumpout, Infiltration/Storage Trench	Streets			TTF
50184	1299	1299-8	Port Richmond Green Streets Improvements	07-Oct-20	Combined	2321	35	0.3	0.6	Tree Trench	Streets	$1,653,000.00	Philadelphia Water Department	Delaware,TTF
		1299-11		07-Oct-20	Combined	2955		0.5	0.9	Tree Trench	Streets			Delaware,TTF
		1299-10		07-Oct-20	Combined	1799		0.3	0.5	Tree Trench	Streets			Delaware,TTF
		1299-3		07-Oct-20	Combined	1034		0.2	0.3	Infiltration/Storage Trench	Streets			Delaware,TTF
		1299-9		07-Oct-20	Combined	1420		0.3	0.4	Tree Trench	Streets			Delaware,TTF
		1299-12		07-Oct-20	Combined	1597		0.2	0.4	Tree Trench	Streets			Delaware,TTF
		1299-6		07-Oct-20	Combined	2077		0.4	0.6	Tree Trench	Streets			Delaware,TTF
		1299-4		07-Oct-20	Combined	1262		0.2	0.4	Tree Trench	Streets			Delaware,TTF
		1299-2		07-Oct-20	Combined	1775		0.3	0.5	Infiltration/Storage Trench	Streets			Delaware,TTF
		1299-1		07-Oct-20	Combined	1724		0.3	0.5	Tree Trench	Streets			Delaware,TTF
		1299-7		07-Oct-20	Combined	2187		0.3	0.6	Infiltration/Storage Trench	Streets			Delaware,TTF
		1299-5		07-Oct-20	Combined	2459		0.4	0.8	Infiltration/Storage Trench	Streets			Delaware,TTF

Work Number	Project ID	System Number	Project Name	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost **	Partner(s)	Watershed
50187	1302	1302-1	Palmer Park	22-Jan-21	Combined	2581	2	0.5	0.9	Infiltration/Storage Trench	Streets	$561,000.00	Philadelphia Water Department	Delaware
	1303	1303-1		22-Jan-21	Combined	1721	3	0.3	0.6	Infiltration/Storage Trench, Planter	Streets			Delaware
		1303-2		22-Jan-21	Combined	629		0.2	0.2	Tree Trench	Streets			Delaware
50189	1307	1307-2	Newbold Green Street Improvements	04-Jun-20	Combined	2805	17	0.4	0.8	Tree Trench	Streets	$969,000.00	Philadelphia Water Department	Schuylkill
		1307-3		16-Jun-20	Combined	1351		0.2	0.4	Tree Trench	Streets			Schuylkill
		1307-4		02-Jul-20	Combined	1384		0.3	0.5	Tree Trench	Streets			Schuylkill
		1307-5		31-Jul-20	Combined	1156		0.2	0.3	Tree Trench	Streets			Schuylkill
		1307-6		18-Aug-20	Combined	1156		0.3	0.4	Tree Trench	Streets			Schuylkill
		1307-7		25-Aug-20	Combined	2195		0.3	0.7	Tree Trench	Streets			Schuylkill
		1307-8		08-Sep-20	Combined	1594		0.3	0.5	Tree Trench	Streets			Schuylkill
50190	1308	1308-1	Clayborn & Lewis Streets GSI	12-Oct-20	Combined	6028	4	1.1	2.3	Tree Trench	Streets	$1,201,000.00	Philadelphia Water Department	Schuylkill
		1308-3		10-Feb-22	Combined	3140		0.5	1.0	Bumpout, Infiltration/Storage Trench	Streets			Schuylkill
		1308-4		10-Feb-22	Combined	6376		0.9	1.7	Bumpout, Infiltration/Storage Trench	Streets			Schuylkill
50194	1315	1315-2	East Parkside Streets	29-Mar-22	Combined	1138.63	18	0.3	0.4	Tree Trench	Streets	$1,212,000.00	Philadelphia Water Department	Schuylkill
		1315-4		31-Mar-22	Combined	1148.18		0.2	0.3	Tree Trench	Streets			Schuylkill
		1315-3		26-Apr-22	Combined	2534		0.4	0.7	Bumpout, Infiltration/Storage Trench	Streets			Schuylkill
		1315-5		26-Apr-22	Combined	1842.04		0.3	0.6	Tree Trench	Streets			Schuylkill
		1315-1		26-Apr-22	Combined	2898.73		0.4	0.9	Bumpout, Tree Trench	Streets			Schuylkill
		1315-7		27-Apr-22	Combined	1462.98		0.4	0.5	Infiltration/Storage Trench	Streets			Schuylkill
		1315-6		07-Jun-22	Combined	5346.79		1.2	2.4	Tree Trench	Streets			Schuylkill
50195	290	290-1	Windrim Avenue Green Street	06-Apr-19	Combined	3830	0	0.6	1.2	Bumpout, Infiltration/Storage Trench	Streets	$949,000.00	Philadelphia Water Department	TTF
		290-2		06-Apr-19	Combined	1839		0.3	0.6	Bumpout, Infiltration/Storage Trench	Streets			TTF
		290-3		06-Apr-19	Combined	4782		0.6	1.2	Bumpout, Infiltration/Storage Trench	Streets			TTF
50211	1347	1347-3	Mifflin Square	23-May-22	Combined	3780	13	0.7	1.2	Tree Trench	Open Space	$1,246,000.00	Philadelphia Water Department	Delaware
		1347-4		23-May-22	Combined	2883		0.4	0.8	Tree Trench	Open Space			Delaware
		1347-2		23-May-22	Combined	6415		0.9	1.8	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware
50212	1348	1348-1	Fairmount Ave Greening Improvements	19-May-20	Combined	2179	16	0.5	0.7	Infiltration/Storage Trench	Streets	$1,175,000.00	Philadelphia Water Department	Delaware,Schuylkill
		1348-2		04-Jun-20	Combined	1920		0.3	0.6	Tree Trench	Streets			Delaware,Schuylkill
		1348-5		17-Jun-20	Combined	2527		0.4	0.7	Tree Trench	Streets			Delaware,Schuylkill
		1348-3		25-Jun-20	Combined	1254		0.2	0.4	Tree Trench	Streets			Delaware,Schuylkill
		1348-9		07-Aug-20	Combined	1576		0.3	0.5	Tree Trench	Streets			Delaware,Schuylkill
		1348-8		07-Aug-20	Combined	1474		0.2	0.4	Tree Trench	Streets			Delaware,Schuylkill
		1348-6		07-Aug-20	Combined	2475		0.3	0.6	Tree Trench	Streets			Delaware,Schuylkill
		1348-4		07-Aug-20	Combined	1054		0.3	0.4	Infiltration/Storage Trench	Streets			Delaware,Schuylkill
		1348-7		07-Aug-20	Combined	5740		0.9	1.8	Infiltration/Storage Trench	Streets			Delaware,Schuylkill

Work Number	Project ID	System Number	Project Name	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost **	Partner(s)	Watershed
50217	1359	1359-3	Lawncrest Streets North	26-Oct-20	Combined	1053	10	0.2	0.3	Infiltration/Storage Trench	Streets	$1,699,000.00	Philadelphia Water Department	Delaware,TTF
		1359-4		26-Oct-20	Combined	1732		0.5	0.6	Infiltration/Storage Trench	Streets			Delaware,TTF
		1359-2		26-Oct-20	Combined	1062		0.2	0.4	Infiltration/Storage Trench	Streets			Delaware,TTF
		1359-1		26-Oct-20	Combined	1855		0.5	0.6	Tree Trench	Streets			Delaware,TTF
		1359-12		04-Nov-20	Combined	1504		0.3	0.5	Tree Trench	Streets			Delaware,TTF
		1359-6		09-Nov-20	Combined	915		0.2	0.3	Infiltration/Storage Trench	Streets			Delaware,TTF
		1359-14		11-Nov-20	Combined	1368		0.4	0.4	Infiltration/Storage Trench	Streets			Delaware,TTF
		1359-13		11-Nov-20	Combined	1743		0.4	0.5	Infiltration/Storage Trench	Streets			Delaware,TTF
		1359-5		17-Nov-20	Combined	1184		0.3	0.4	Infiltration/Storage Trench	Streets			Delaware,TTF
		1359-9		07-Jan-21	Combined	1652		0.3	0.5	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
		1359-8		07-Jan-21	Combined	833		0.1	0.2	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
		1359-10		27-Jan-21	Combined	584		0.1	0.2	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
		1359-11		19-Apr-21	Combined	1421		0.3	0.5	Tree Trench	Streets			Delaware,TTF
		1359-7		19-Apr-21	Combined	2673		0.7	0.8	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
50229	1383	1383-1	Columbia Field	11-Dec-20	Combined	10064	12	1.4	2.8	Infiltration/Storage Trench, Rain Garden	Open Space	$520,000.00	Philadelphia Water Department	Delaware
50232	1387	1387-1	Waterloo Playground	10-Nov-21	Combined	2550	12	0.4	0.8	Tree Trench	Open Space	$320,000.00	Make the World Better	Delaware
		1387-2		10-Nov-21	Combined	2096		0.5	0.8	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware
50235	1392	1392-2	Heitzman Playground Streets	22-Oct-20	Combined	3460	7	0.7	1.1	Tree Trench	Streets	$1,097,000.00	Philadelphia Water Department	Delaware,TTF
		1392-7		22-Oct-20	Combined	1709		0.4	0.5	Infiltration/Storage Trench	Streets			Delaware,TTF
		1392-6		22-Oct-20	Combined	3076		0.6	1.1	Infiltration/Storage Trench	Streets			Delaware,TTF
		1392-5		22-Oct-20	Combined	1334		0.3	0.4	Tree Trench	Streets			Delaware,TTF
		1392-3		22-Oct-20	Combined	1812		0.4	0.6	Infiltration/Storage Trench	Streets			Delaware,TTF
		1392-1		22-Oct-20	Combined	1614		0.3	0.5	Tree Trench	Streets			Delaware,TTF
		1392-4		22-Oct-20	Combined	2005		0.5	0.7	Infiltration/Storage Trench	Streets			Delaware,TTF
50237	1394	1394-1	Frankford and Belgrade	30-Sep-21	Combined	980.4	0	0.3	0.4	Infiltration/Storage Trench	Streets	$122,000.00	Streets Department	Delaware
64056	564	564-1	Two (2) 30 Million Gallon Storage Capacity Tanks at East Park - GC	25-Feb-20	Combined	1637	0	0.5	0.6	Rain Garden	Open Space	Unknown	Philadelphia Water Department	Schuylkill
90055	1539	1539-1	Hydrant Relocation and Green Streets Buyback: 2035 E Lehigh Ave. & Frankford Ave.	23-Jul-21	Combined	3273.8	8	0.6	1.0	Tree Trench	Streets	$220,000.00	Private Developer	Delaware
Total Greened Acres:									**824**					

* PennVest project

** Reported construction costs may vary from past fiscal years. Beginning in FY19, PWD developed the capability to track Green Construction Cost, costs specifically associated with Green Stormwater Infrastructure line items.

Appendix 2

Planned Public Green Stormwater Infrastructure Projects

Planned Public Green Infrastructure Reporting Metrics

The Public Planned Projects reporting format and metric definitions are described in Table 1 below.

Table 1: Public Reporting Metric Definitions

Metric	Definition
Work Number	Work Number is a unique assigned identifier from the CIPIT program. A CIPIT work number is attached to construction proposals, bids, work orders, contracts and invoices
Project ID	This is a unique number, which is assigned automatically by the system when the project is created.
System Number	Unique identifier for system. Composed of the project ID and the System ID.
Completion Date Estimate	Estimated date of construction completion.
Status	Current project status. Statuses include: In Design, Contract Management (In Projects Control), and In Construction.
Greened Acres (acre-inch)	Greened Acres is a metric that accounts for the conversion of a highly impervious urban landscape through the implementation of projects that reduce storm water runoff. A Greened Acre is described as an acre of impervious cover connected (tributary) to a combined sewer that subsequently is reconfigured to utilize green stormwater infrastructure to manage at least one inch of stormwater runoff. If storage is provided, systems can credit up to two inches of the storm water runoff from that acre. The best available Greened Acre value is pulled from the database for regulatory reporting.
Estimated SMP Type(s)	A Stormwater Management Practice (SMP) is a technique that controls the rate and volume of stormwater runoff and/or improves runoff water quality. Multiple SMP types can be grouped together in a larger GSI system. The SMP types were originally defined in Table 2-1 of the IAMP.
Program	Current public programs which a greened acre can be assigned to include: • Alleys/Driveways • Campuses • Facilities • Industry and Business • Open Space • Parking • Schools • Streets • Vacant Land
Estimated Construction Cost	Projects with a status of Construction Complete will have a finalized cost of construction provided. Prior to construction completion PWD provides the engineers estimate for construction cost.
Potential Partner(s)	External entities involved in a project.

Metric	Definition
Watershed	The City of Philadelphia watershed where the project is located. Four of the City's seven watersheds fall at least partially within the combined sewer area. These watersheds are: • Cobbs Creek Watershed • Delaware Direct Watershed • Tookany/Tacony-Frankford Creek Watershed • Schuylkill River Watersheds

Table 2: Planned Public Green Stormwater Infrastructure Projects

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
20479	1451		Combined	Delaware, TTF	Streets	Design	Infiltration Storage Trench, Stormwater TreeTrench,		TBD	2025	TBD
20533	1625		Combined	TTF	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
20538	1611		Combined	TTF	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
20545	1586		Combined	Cobbs-Darby	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
20559	1463	1463-1	Combined	Delaware	Streets	Design	Tree Trench		TBD	2025	TBD
20573	1479		Combined	Delaware	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
20575	1465		Combined	TTF	Streets	Design	Infiltration Storage Trench, Stormwater TreeTrench,		TBD	2025	TBD
20578	1542		Combined	Delaware	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
20579	1466		Combined	Cobbs-Darby	Streets	Design	Infiltration Storage Trench, Stormwater TreeTrench,		TBD	2025	TBD
20587	1589		Combined	Schuylkill	Streets	Design	Stormwater Bump-out,		TBD	2025	TBD
20597	1543		Combined	Schuylkill	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
20599	1501	1501-1	Combined	Delaware	Streets	Design	Tree Trench		TBD	2025	TBD
		1501-2	Combined	Delaware	Streets	Design	Tree Trench		TBD	2025	
20604	1610		Combined	Delaware	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
20609	1484		Combined	Delaware	Streets	Design	Infiltration Storage Trench, Stormwater TreeTrench,		TBD	2025	TBD
20614	1494		Combined, Separate	Cobbs-Darby, Schuylkill	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
20619	1485		Combined, Separate	Delaware, Pennypack	Streets	Design	Infiltration Storage Trench,		TBD	2025	TBD
20622	1523		Combined	TTF	Streets	Design	Infiltration Storage Trench, Stormwater TreeTrench,		TBD	2025	TBD
20624	1530		Combined, Separate	Delaware, TTF	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
20636	1559		Combined	Cobbs-Darby	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
20639	1558		Combined	TTF	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
20645	1576		Combined	Delaware	Streets	Design	Infiltration Storage Trench, Stormwater TreeTrench,		TBD	2025	TBD
20651	1590		Combined, Separate	Delaware, Pennypack	Streets	Design	Stormwater Bump-out,Infiltration Storage Trench,Stormwater TreeTrench,		TBD	2025	TBD
20653	1581		Combined	Delaware	Streets	Design	Infiltration Storage Trench, Stormwater TreeTrench,		TBD	2025	TBD
20659	1617		Combined	Cobbs-Darby	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
20662	1650		Combined	TTF	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
20664	1624		Combined	TTF	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
40780	1496		Combined	Schuylkill	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
40794	168		Combined, Separate, Non-Contributing	TTF	Open Space	Design	Rain Garden,	Philadelphia Water Department	TBD	2025	TBD
40860	1443		Combined	Schuylkill	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
40864	1132		Combined	Schuylkill	Streets	Design	Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
40875	1515		Combined, Non-Contributing	Cobbs-Darby	Streets	Design	Infiltration Storage Trench,		TBD	2025	TBD
40923	1244		Combined	Delaware	Streets	Design	Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
40933	1521		Combined	Delaware	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
40975	1377		Combined	Schuylkill	Streets	Design	Infiltration Storage Trench, Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
40989	1340		Combined, Separate	Pennypack	Streets	Design	Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
41033	1505		Combined	Schuylkill	Streets	Design	Infiltration Storage Trench, Stormwater TreeTrench,		TBD	2025	TBD
41049	1398		Combined	Delaware	Streets	Design	Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
41064	1452		Combined	Delaware	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
41070	1435		Combined	Delaware, Schuylkill	Streets	Design	Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
41072	1609		Combined	Delaware	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
41080	1506		Combined	Schuylkill	Streets	Design	Infiltration Storage Trench,		TBD	2025	TBD
41098	1518		Combined	Cobbs-Darby	Streets	Design	Infiltration Storage Trench, Stormwater TreeTrench,		TBD	2025	TBD
41103	1492		Combined	Schuylkill	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
41105	1497		Combined	Cobbs-Darby	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
41116	1601		Combined	Schuylkill	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
41117	1551		Combined	Cobbs-Darby	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
41122	1514		Combined	Delaware	Streets	Design	Infiltration Storage Trench,		TBD	2025	TBD
41124	1540		Combined	TTF	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
41126	1549		Combined	Delaware	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
41135	1553		Combined	Delaware	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
41137	1588		Combined	Cobbs-Darby	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
41140	1643		Combined	Cobbs-Darby, Schuylkill	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
41144	1596		Combined	Delaware	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
41147	1623		Combined	Delaware	Streets	Design	Infiltration Storage Trench, Stormwater TreeTrench,		TBD	2025	TBD
41150	1593		Combined	Delaware	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
41151	1592		Combined	Delaware	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
41153	1595		Combined	Schuylkill	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
41164	1653		Combined	Delaware	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
41166	1640		Combined	Schuylkill	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,		TBD	2025	TBD
41167	1633		Combined	Delaware	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
41179	1644		Combined	Delaware	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
41180	1614		Combined	TTF	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
41181	1615		Combined	TTF	Streets	Design	Infiltration Storage Trench, Stormwater TreeTrench,		TBD	2025	TBD
41187	1621		Combined	Delaware, Schuylkill	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,		TBD	2025	TBD
41189	1629		Combined	TTF	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
41191	1637		Combined	Delaware	Streets	Design	Infiltration Storage Trench, Stormwater TreeTrench,		TBD	2025	TBD
41199	1646		Combined	Delaware	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD
41201	1654		Combined	Delaware	Streets	Design	Infiltration Storage Trench, Stormwater TreeTrench,		TBD	2025	TBD
50107	1052	1052-17	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Infiltration/Storage Trench, Planter	Philadelphia Water Department	TBD	2025	TBD
		1052-2	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Bumpout, Tree Trench	Philadelphia Water Department	TBD	2025	
		1052-5	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1052-1	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Infiltration/Storage Trench	Philadelphia Water Department	TBD	2025	
		1052-3	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1052-7	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1052-4	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1052-12	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Bumpout, Tree Trench	Philadelphia Water Department	TBD	2025	
		1052-16	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Bumpout, Tree Trench	Philadelphia Water Department	TBD	2025	
		1052-15	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1052-6	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1052-14	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Bumpout, Tree Trench	Philadelphia Water Department	TBD	2025	
		1052-9	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1052-11	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Bumpout, Tree Trench	Philadelphia Water Department	TBD	2025	
		1052-13	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50126	1088	1088-1	Combined	TTF	Streets	Design	Bumpout, Infiltration/Storage Trench	Streets Department	TBD	2025	TBD
		1088-2	Combined	TTF	Streets	Design	Bumpout, Infiltration/Storage Trench	Streets Department	TBD	2025	
		1088-3	Combined	TTF	Streets	Design	Infiltration/Storage Trench	Streets Department	TBD	2025	
		1088-4	Combined	TTF	Streets	Design	Infiltration/Storage Trench, Planter	Streets Department	TBD	2025	
	1262	1262-1	Combined	Delaware	Streets	Design	Bumpout, Infiltration/Storage Trench	Streets Department	TBD	2025	
		1262-2	Combined	Delaware	Streets	Design	Bumpout, Infiltration/Storage Trench	Streets Department	TBD	2025	
		1262-3	Combined	Delaware	Streets	Design	Bumpout, Infiltration/Storage Trench	Streets Department	TBD	2025	
50128	1090	1090-9	Combined	Delaware	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	TBD
		1090-3	Combined	Delaware	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1090-11	Combined	Delaware	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1090-4	Combined	Delaware	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1090-10	Combined	Delaware	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1090-1	Combined	Delaware	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1090-5	Combined	Delaware	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1090-7	Combined	Delaware	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1090-6	Combined	Delaware	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1090-2	Combined	Delaware	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1090-8	Combined	Delaware	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1090-13	Combined	Delaware	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1090-12	Combined	Delaware	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
	1107	1107-1	Combined	Delaware	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1107-2	Combined	Delaware	Streets	Design	Rain Garden, Tree Trench	Philadelphia Water Department	TBD	2025	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
	1269	1269-1	Combined	Delaware	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1269-2	Combined	Delaware	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
50139	1147	1147-8	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Infiltration/Storage Trench	Philadelphia Water Department	TBD	2025	TBD
		1147-7	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1147-11	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	TBD	2025	
		1147-10	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	TBD	2025	
		1147-1	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1147-4	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	TBD	2025	
		1147-9	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	TBD	2025	
		1147-3	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	TBD	2025	
		1147-2	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Infiltration/Storage Trench, Rain Garden	Philadelphia Water Department	TBD	2025	
		1147-6	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Infiltration/Storage Trench, Planter	Philadelphia Water Department	TBD	2025	
50141	1150		Combined	TTF	Streets	Design	Infiltration Storage Trench, Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50164	1258		Combined	TTF	Facilities	Design	Infiltration Storage Trench, Rain Garden,	Philadelphia Water Department	TBD	2025	TBD
50168	1271	1271-3	Combined	Cobbs-Darby	Streets	Design	Bumpout, Tree Trench	Philadelphia Water Department	TBD	2025	TBD
		1271-7	Combined	Cobbs-Darby	Streets	Design	Infiltration/Storage Trench	Philadelphia Water Department	TBD	2025	
		1271-6	Combined	Cobbs-Darby	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1271-8	Combined	Cobbs-Darby	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1271-2	Combined	Cobbs-Darby	Streets	Design	Infiltration/Storage Trench	Philadelphia Water Department	TBD	2025	
		1271-1	Combined	Cobbs-Darby	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1271-5	Combined	Cobbs-Darby	Streets	Design	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	TBD	2025	
		1271-4	Combined	Cobbs-Darby	Streets	Design	Infiltration/Storage Trench	Philadelphia Water Department	TBD	2025	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50169	1365		Combined	Schuylkill	Streets	Design	Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50176	1283	1283-10	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	TBD
		1283-3	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1283-16	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1283-15	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1283-14	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1283-13	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1283-12	Combined	Schuylkill	Streets	Design	Infiltration/Storage Trench	Philadelphia Water Department	TBD	2025	
		1283-11	Combined	Schuylkill	Streets	Design	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	TBD	2025	
		1283-8	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1283-7	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1283-6	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1283-1	Combined	Schuylkill	Streets	Design	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	TBD	2025	
		1283-4	Combined	Schuylkill	Streets	Design	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	TBD	2025	
		1283-2	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1283-9	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1283-5	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50206	1343	1343-6	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	TBD
		1343-3	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1343-8	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1343-7	Combined	Schuylkill	Streets	Design	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	TBD	2025	
		1343-4	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1343-1	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1343-2	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1343-5	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
50214	1353		Combined, Non-Contributing	Pennypack	Streets	Design	Stormwater TreeTrench,	Philadelphia Parks & Recreation	TBD	2025	TBD
50222	1374	1374-1	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	TBD
		1374-2	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1374-3	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1374-4	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Infiltration/Storage Trench, Tree Trench	Philadelphia Water Department	TBD	2025	
		1374-5	Combined	Cobbs-Darby, Schuylkill	Streets	Design	Infiltration/Storage Trench	Philadelphia Water Department	TBD	2025	
50240	1401		Combined	Cobbs-Darby	Open Space,Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50242	1404		Combined	TTF	Open Space,Streets	Design	Stormwater Basin,Stormwater Bump-out,Stormwater Planter,Swale,	Philadelphia Water Department	TBD	2025	TBD
50243	1405		Combined	Schuylkill	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50248	1414		Combined	Schuylkill	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50252	1420		Combined	TTF	Streets	Design	Stormwater Bump-out,Infiltration Storage Trench,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50253	1421	1421-4	Combined	Delaware, Schuylkill	Streets	Design	Infiltration/Storage Trench, Rain Garden	Philadelphia Water Department	TBD	2025	TBD
		1421-5	Combined	Delaware, Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1421-3	Combined	Delaware, Schuylkill	Streets	Design	Rain Garden, Tree Trench	Philadelphia Water Department	TBD	2025	
		1421-2	Combined	Delaware, Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1421-1	Combined	Delaware, Schuylkill	Streets	Design	Infiltration/Storage Trench	Philadelphia Water Department	TBD	2025	
		1421-6	Combined	Delaware, Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
50255	1425		Combined, Non-Contributing	Cobbs-Darby	Open Space,Streets	Design	Stormwater Bump-out,Infiltration Storage Trench,Rain Garden,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50258	1429	1429-6	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	TBD
		1429-8	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1429-5	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1429-4	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1429-3	Combined	Schuylkill	Streets	Design	Infiltration/Storage Trench	Philadelphia Water Department	TBD	2025	
		1429-2	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1429-1	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1429-7	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
50259	1431		Combined, Separate	Delaware, Pennypack	Streets	Design	Infiltration Storage Trench,	Streets Department	TBD	2025	TBD
50260	1433		Combined, Non-Contributing	Cobbs-Darby	Open Space,Streets	Design	Infiltration Storage Trench, Rain Garden, Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50263	1437		Combined, Separate	Delaware, Pennypack	Streets	Design	Stormwater Bump-out,Infiltration Storage Trench,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50265	1439		Combined	Cobbs-Darby	Open Space,Streets	Design	Stormwater Bump-out,Infiltration Storage Trench,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50269	1444		Combined	Delaware, Pennypack	Open Space,Streets	Design	Infiltration Storage Trench,	Philadelphia Water Department	TBD	2025	TBD
50270	1445	1445-1	Combined	Delaware	Open Space	Design	Infiltration/Storage Trench, Rain Garden	Philadelphia Water Department	TBD	2025	TBD
		1445-4	Combined	Delaware	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1445-2	Combined	Delaware	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1445-3	Combined	Delaware	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
50274	1449		Combined	Cobbs-Darby, Schuylkill	Streets	Design	Stormwater Bump-out,Infiltration Storage Trench,Stormwater TreeTrench,		TBD	2025	TBD
50276	1454		Combined	Delaware, Pennypack	Streets	Design	Infiltration Storage Trench, Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50282	1462		Combined	Delaware	Streets	Design	Infiltration Storage Trench, Stormwater TreeTrench,	Streets Department	TBD	2025	TBD
50283	1467		Combined, Separate, Non-Contributing	TTF	Open Space,Streets	Design	Stormwater Bump-out,Infiltration Storage Trench,Rain Garden,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50284	1469		Combined	Delaware, Pennypack	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50286	1473		Combined	Cobbs-Darby	Streets	Design	Stormwater Bump-out,Infiltration Storage Trench,Stormwater TreeTrench,		TBD	2025	TBD
50287	1474		Combined	Schuylkill	Streets	Design	Stormwater TreeTrench,		TBD	2025	TBD

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50288	1475	1475-5	Combined	Delaware, Pennypack	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	TBD
		1475-8	Combined	Delaware, Pennypack	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1475-9	Combined	Delaware, Pennypack	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1475-6	Combined	Delaware, Pennypack	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1475-3	Combined	Delaware, Pennypack	Streets	Design	Bumpout, Tree Trench	Philadelphia Water Department	TBD	2025	
		1475-2	Combined	Delaware, Pennypack	Streets	Design	Bumpout, Tree Trench	Philadelphia Water Department	TBD	2025	
		1475-1	Combined	Delaware, Pennypack	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1475-7	Combined	Delaware, Pennypack	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1475-4	Combined	Delaware, Pennypack	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
50292	1480		Combined	Cobbs-Darby, Schuylkill	Streets	Design	Stormwater Bump-out,Infiltration Storage Trench,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50293	1481		Combined	Delaware	Streets	Design	Stormwater Bump-out,Infiltration Storage Trench,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50294	1482		Combined	Cobbs-Darby, Schuylkill	Streets	Design	Stormwater Bump-out,Swale,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50297	1490		Combined	Delaware	Streets	Design	Stormwater Bump-out,Infiltration Storage Trench,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50299	1495		Combined	Cobbs-Darby, Schuylkill	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50300	1498		Combined	Delaware	Streets	Design	Stormwater Bump-out,Infiltration Storage Trench,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50303	1502		Combined	Delaware	Streets	Design	Stormwater Bump-out,Infiltration Storage Trench,	Philadelphia Water Department	TBD	2025	TBD
50304	1503		Combined	Cobbs-Darby, Schuylkill	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50307	1509		Combined	Cobbs-Darby, Schuylkill	Open Space,Streets	Design	Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50309	1512		Combined	Delaware	Streets	Design	Infiltration Storage Trench, Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50310	1513		Combined	Schuylkill	Streets	Design	Stormwater Bump-out,Rain Garden,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50311	1516		Combined, Separate	Schuylkill, TTF	Streets	Design	Stormwater Bump-out,Infiltration Storage Trench,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50312	1517		Combined	Delaware, TTF	Streets	Design	Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50313	1519		Combined	Delaware	Streets	Design	Stormwater Bump-out,Infiltration Storage Trench,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50314	1522		Combined	Schuylkill	Streets	Design	Rain Garden,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50317	1527		Combined	Delaware, TTF	Streets	Design	Infiltration Storage Trench, Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50318	1528		Combined	Cobbs-Darby, Schuylkill	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50319	1531		Combined	Cobbs-Darby	Facilities,Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50321	1537		Combined	TTF	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50322	1538		Combined	TTF	Streets	Design	Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50323	1541		Combined	Cobbs-Darby	Streets	Design	Stormwater Bump-out,Infiltration Storage Trench,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50324	1545		Combined	Delaware, TTF	Streets	Design	Stormwater Bump-out,Rain Garden,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50325	1546	1546-1	Combined	Schuylkill	Streets	Design	Infiltration/Storage Trench, Rain Garden	Philadelphia Water Department	TBD	2025	TBD
		1546-2	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1546-3	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1546-4	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1546-5	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1546-6	Combined	Schuylkill	Streets	Design	Bumpout, Tree Trench	Philadelphia Water Department	TBD	2025	
		1546-7	Combined	Schuylkill	Streets	Design	Bumpout, Tree Trench	Philadelphia Water Department	TBD	2025	
		1546-8	Combined	Schuylkill	Streets	Design	Bumpout, Tree Trench	Philadelphia Water Department	TBD	2025	
		1546-9	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1546-10	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
		1546-11	Combined	Schuylkill	Streets	Design	Tree Trench	Philadelphia Water Department	TBD	2025	
50326	1548		Combined	Delaware, TTF	Open Space,Streets	Design	Stormwater Bump-out,Infiltration Storage Trench,Swale,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50327	1556		Combined	TTF	Streets	Design	Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50328	1557		Combined	TTF	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50329	1560	1560-1	Combined	TTF	Open Space	Design	Infiltration/Storage Trench, Rain Garden	Philadelphia Redevelopment Authority	TBD	2025	TBD
50330	1561		Combined	Delaware	Streets	Design	Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50331	1564		Combined	Cobbs-Darby	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50332	1568		Combined	Delaware	Streets	Design	Infiltration Storage Trench, Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50333	1571		Combined	Schuylkill	Open Space,Streets	Design	Stormwater Bump-out,	Philadelphia Water Department	TBD	2025	TBD
50334	1570		Combined	Delaware	Open Space	Design	Rain Garden,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50335	1573		Combined	Delaware	Streets	Design	Infiltration Storage Trench, Rain Garden, Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50336	1574		Combined	Cobbs-Darby	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50337	1575		Combined	Delaware	Open Space,Streets	Design	Infiltration Storage Trench, Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50338	1577		Combined, Separate	Delaware, Pennypack	Streets	Design	Stormwater Bump-out,Infiltration Storage Trench,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50339	1578		Combined	Schuylkill	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50340	1579		Combined	Delaware	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50341	1580		Combined	Cobbs-Darby	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50342	1583		Combined	Cobbs-Darby, Schuylkill	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50344	1584		Combined	Delaware	Streets	Design	Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50345	1585		Combined	Delaware	Open Space,Streets	Design	Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50346	1587		Combined	Delaware	Open Space,Streets	Design	Infiltration Storage Trench, Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50347	1594		Combined	Delaware	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50349	1597		Combined, Non-Contributing	Cobbs-Darby	Streets,Vacant Land	Design	Infiltration Storage Trench, Rain Garden,	Philadelphia Water Department	TBD	2025	TBD
50350	1598		Combined	Delaware	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50351	1599		Combined	Cobbs-Darby	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50352	1600		Combined	Delaware	Streets	Design	Stormwater Bump-out,Infiltration Storage Trench,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50353	1602		Combined	Delaware	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50354	1603		Combined	Schuylkill	Open Space,Streets	Design	Infiltration Storage Trench,	Philadelphia Water Department	TBD	2025	TBD
50355	1604		Combined, Storm Water Only	Schuylkill	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50356	1605		Combined	Delaware	Open Space,Streets,Vacant Land	Design	Infiltration Storage Trench, Rain Garden,	Philadelphia Water Department	TBD	2025	TBD
50357	1606		Combined, Separate	Delaware, Schuylkill	Streets	Design	Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50359	1608		Combined	Delaware	Streets	Design	Infiltration Storage Trench, Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50360	1612		Combined	Delaware	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50361	1613		Combined	Cobbs-Darby, Schuylkill	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50362	1616		Combined	Delaware, Schuylkill	Facilities,Streets	Design	Rain Garden,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50363	1618		Combined	Cobbs-Darby	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50364	1619		Combined	Delaware	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50365	1620		Combined	Schuylkill	Open Space,Streets	Design	Stormwater Bump-out,Rain Garden,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50366	1622		Combined	Delaware	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50367	1626		Combined, Non-Contributing	Delaware, TTF	Streets	Design	Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50368	1627		Combined	Schuylkill	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50369	1628		Combined	Delaware	Streets	Design	Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50370	1630		Combined	Delaware	Streets	Design	Infiltration Storage Trench, Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50371	1632		Combined	Delaware, TTF	Streets	Design	Rain Garden,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50372	1634		Combined	Cobbs-Darby	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50373	1635		Combined	Schuylkill	Streets	Design	Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50374	1636		Combined	Schuylkill	Open Space,Streets	Design	Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50375	1638		Combined	Delaware	Streets	Design	Stormwater Bump-out,Infiltration Storage Trench,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50376	1639		Combined	Delaware	Open Space,Streets	Design	Swale,Stormwater Wetland,	Philadelphia Water Department	TBD	2025	TBD
50377	1641		Combined	Schuylkill	Streets	Design	Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50378	1642		Combined	Delaware	Facilities,Open Space,Streets	Design	Stormwater Planter,Rain Garden,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50379	1645		Combined	Delaware, TTF	Open Space,Streets	Design	Infiltration Storage Trench,	Philadelphia Water Department	TBD	2025	TBD

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50380	1647		Combined	Delaware	Streets	Design	Stormwater Bump-out,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50381	1648		Combined	Delaware	Streets	Design	Rain Garden,Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50382	1649		Combined, Separate, Non-Contributing	Schuylkill	Open Space,Streets	Design	Infiltration Storage Trench, Rain Garden, Stormwater TreeTrench,	Philadelphia Water Department	TBD	2025	TBD
50384	1655		Combined	Schuylkill	Streets	Design		Philadelphia Water Department	TBD	2025	TBD
50385	1656		Combined	Delaware	Streets	Design		Philadelphia Water Department	TBD	2025	TBD
20417	1061	1061-1	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2024	$ 425,000.00
		1061-2	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.3	2024	
		1061-3	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.3	2024	
		1061-4	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	
		1061-5	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.6	2024	
20437	1124	1124-5	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.8	2024	$ 588,000.00
		1124-6	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
		1124-4	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.3	2024	
		1124-3	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.7	2024	
		1124-2	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.3	2024	
		1124-1	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	1.1	2024	
		1124-7	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
20464	1381	1381-1	Combined	TTF, Wissahickon	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.8	2024	$ 269,000.00
		1381-2	Combined	TTF, Wissahickon	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	
20472	1040	1040-1	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.6	2024	$ 96,000.00

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
20474	1243	1243-6	Combined	Delaware, TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.3	2024	$ 808,000.00
		1243-1	Combined	Delaware, TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.6	2024	
		1243-8	Combined	Delaware, TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2024	
		1243-7	Combined	Delaware, TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.7	2024	
		1243-5	Combined	Delaware, TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.6	2024	
		1243-4	Combined	Delaware, TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.3	2024	
		1243-2	Combined	Delaware, TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.6	2024	
		1243-3	Combined	Delaware, TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
20485	1126	1126-1	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	$ 464,000.00
		1126-2	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	
		1126-3	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	
		1126-4	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	
20487	1133	1133-2	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.6	2024	$ 298,000.00
		1133-1	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2024	
20517	1418	1418-2	Combined	TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	1.0	2024	$ 387,000.00
		1418-1	Combined	TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.7	2024	
		1418-3	Combined	TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
20525	1310	1310-1	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2024	$ 115,000.00

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
20536	1330	1330-1	Combined	TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.7	2024	$ 810,000.00
		1330-2	Combined	TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.3	2024	
		1330-3	Combined	TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.7	2024	
		1330-4	Combined	TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.8	2024	
		1330-5	Combined	TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.8	2024	
20546	1350	1350-2	Combined	TTF	Parking	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.2	2024	$ 267,000.00
		1350-1	Combined	TTF	Open Space	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.7	2024	
20552	1489	1489-3	Combined	Delaware	Streets	Contract Management	Tree Trench		1.4	2024	$ 1,011,000.00
		1489-2	Combined	Delaware	Streets	Contract Management	Tree Trench		0.9	2024	
		1489-1	Combined	Delaware	Streets	Contract Management	Tree Trench		1.2	2024	
		1489-4	Combined	Delaware	Streets	Contract Management	Tree Trench		0.4	2024	
20558	1376	1376-1	Combined	TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.7	2024	$ 1,000.00
20562	1395	1395-1	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2024	$ 310,000.00
		1395-2	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.3	2024	
20564	1419	1419-6	Combined	TTF	Vacant Land	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	$ 984,000.00
		1419-7	Combined	TTF	Industry & Business	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.7	2024	
		1419-5	Combined	TTF	Facilities	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.6	2024	
		1419-2	Combined	TTF	Facilities	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.6	2024	
		1419-1	Combined	TTF	Facilities	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.6	2024	
		1419-4	Combined	TTF	Facilities	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	1.0	2024	
		1419-3	Combined	TTF	Facilities	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2024	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
20583	1470	1470-2	Combined	TTF	Schools	Contract Management	Infiltration/Storage Trench		0.7	2024	$ 616,000.00
		1470-5	Combined	TTF	Facilities	Contract Management	Infiltration/Storage Trench		0.7	2024	
		1470-3	Combined	TTF	Facilities	Contract Management	Infiltration/Storage Trench		0.5	2024	
		1470-1	Combined	TTF	Facilities	Contract Management	Infiltration/Storage Trench		0.3	2024	
		1470-4	Combined	TTF	Facilities	Contract Management	Infiltration/Storage Trench		0.5	2024	
20588	1487	1487-2	Combined	TTF	Streets	Contract Management	Infiltration/Storage Trench		0.8	2024	$ 294,000.00
		1487-3	Combined	TTF	Streets	Contract Management	Infiltration/Storage Trench		0.6	2024	
20601	1464	1464-1	Combined	Schuylkill	Streets	Contract Management	Tree Trench		0.5	2024	$ 173,000.00
20625	1504	1504-1	Combined	TTF	Open Space	Contract Management	Tree Trench		0.7	2024	$ 155,000.00
20630	1547	1547-1	Combined	Delaware	Streets	Contract Management	Tree Trench		0.6	2024	$ 576,000.00
		1547-2	Combined	Delaware	Streets	Contract Management	Tree Trench		1.6	2024	
40736	236		Combined	Delaware	Streets	Contract Management	Infiltration Storage Trench, Stormwater Planter, Rain Garden, Stormwater TreeTrench,	Philadelphia Water Department	1.8	2024	$ 12,000.00
40826	1063	1063-2	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	1.1	2024	$ 445,000.00
		1063-1	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.7	2024	
40869	1289	1289-1	Combined	TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.2	2024	$ 175,000.00
		1289-2	Combined	TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.2	2024	
		1289-3	Combined	TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2024	
40880	1591	1591-1	Combined	TTF	Streets	Contract Management	Infiltration/Storage Trench		1.0	2024	$ 126,000.00
40899	1219	1219-1	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	$ 173,000.00
40904	1134	1134-1	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.3	2024	$ 168,000.00
		1134-2	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2024	
		1370-2	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.3	2024	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
40908	1370	1370-3	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	$ 460,000.00
		1370-1	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
		1370-4	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.3	2024	
		1370-5	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.3	2024	
40939	1331	1331-2	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.6	2024	$ 325,000.00
		1331-3	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
40951	1280	1280-1	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2024	$ 101,000.00
40965	1369	1369-1	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	$ 141,000.00
40985	1375	1375-1	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Stormwater Tree	Philadelphia Water Department	0.3	2024	$ 524,000.00
		1375-4	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Stormwater Tree	Philadelphia Water Department	0.3	2024	
		1375-3	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Stormwater Tree	Philadelphia Water Department	0.4	2024	
		1375-2	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Stormwater Tree	Philadelphia Water Department	0.3	2024	
40990	1355	1355-2	Combined	Cobbs-Darby	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	$ 555,000.00
		1355-3	Combined	Cobbs-Darby	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
		1355-1	Combined	Cobbs-Darby	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.3	2024	
41008	1402	1402-1	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.3	2024	$ 95,000.00
41068	1407	1407-1	Combined	Cobbs-Darby	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	$ 94,000.00
41071	1471	1471-1	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench		0.4	2024	$ 10,000.00
		1471-2	Combined	Schuylkill	Streets	Contract Management	Tree Trench		1.4	2024	
41149	1555	1555-1	Combined	Schuylkill	Streets	Contract Management	Tree Trench		0.6	2024	$ 194,000.00

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50090	539	539-1	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.7	2024	$ 1,786,000.00
		539-2	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
		539-3	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.3	2024	
		539-4	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	1.0	2024	
	540	540-3	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.9	2024	
		540-4	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	1.6	2024	
		540-1	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	1.4	2024	
		540-2	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.7	2024	
50180	1285	1285-3	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.3	2024	$ 1,544,000.00
		1285-8	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.6	2024	
		1285-7	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.9	2024	
		1285-6	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.3	2024	
		1285-4	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2024	
		1285-2	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.3	2024	
		1285-1	Combined	Schuylkill	Streets	Contract Management	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.8	2024	
		1285-5	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.8	2024	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50181	1290	1290-1	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.3	2024	$ 1,230,000.00
		1290-4	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.2	2024	
		1290-2	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.2	2024	
		1290-3	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.3	2024	
	1291	1291-1	Combined	Schuylkill	Facilities	Contract Management	Infiltration/Storage Trench, Planter	Philadelphia Water Department	0.5	2024	
		1291-2	Combined	Schuylkill	Parking	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	3.6	2024	
50186	1301	1301-3	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2024	$ 2,308,000.00
		1301-9	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Infiltration/Storage Trench, Tree Trench	Philadelphia Water Department	1.4	2024	
		1301-5	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.8	2024	
		1301-8	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	1.4	2024	
		1301-7	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	
		1301-6	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.3	2024	
		1301-2	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Infiltration/Storage Trench, Tree Trench	Philadelphia Water Department	1.0	2024	
		1301-1	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
		1301-11	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	1.3	2024	
		1301-10	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	1.5	2024	
		1301-4	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.6	2024	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50196	1318	1318-11	Combined	Schuylkill, TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	$ 3,368,000.00
		1318-8	Combined	Schuylkill, TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
		1318-12	Combined	Schuylkill, TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.6	2024	
		1318-14	Combined	Schuylkill, TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.6	2024	
		1318-10	Combined	Schuylkill, TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
		1318-9	Combined	Schuylkill, TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
		1318-13	Combined	Schuylkill, TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.8	2024	
		1318-6	Combined	Schuylkill, TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	
		1318-5	Combined	Schuylkill, TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.6	2024	
		1318-4	Combined	Schuylkill, TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.3	2024	
		1318-3	Combined	Schuylkill, TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
		1318-2	Combined	Schuylkill, TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	
		1318-1	Combined	Schuylkill, TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.3	2024	
		1318-7	Combined	Schuylkill, TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.8	2024	
	1319	1319-4	Combined	Schuylkill, TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	1.3	2024	
		1319-3	Combined	Schuylkill, TTF	Streets	Contract Management	Infiltration/Storage Trench, Rain Garden	Philadelphia Water Department	0.5	2024	
		1319-1	Combined	Schuylkill, TTF	Streets	Contract Management	Infiltration/Storage Trench, Rain Garden	Philadelphia Water Department	1.9	2024	
		1319-2	Combined	Schuylkill, TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	1.2	2024	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50198	1327	1327-5	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench, Planter, Rain Garden	Philadelphia Water Department	1.2	2024	$ 7,000.00
		1327-4	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
		1327-8	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.3	2024	
		1327-7	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench, Planter	Philadelphia Water Department	0.3	2024	
		1327-1	Combined	Schuylkill	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	0.8	2024	
		1327-3	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
		1327-2	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench, Planter	Philadelphia Water Department	0.6	2024	
		1327-6	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.6	2024	
50199	1328	1328-5	Combined	Schuylkill	Streets	Contract Management	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	1.0	2024	$ 6,000.00
		1328-10	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
		1328-9	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
		1328-8	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench, Planter	Philadelphia Water Department	0.4	2024	
		1328-6	Combined	Schuylkill	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	0.6	2024	
		1328-11	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.7	2024	
		1328-4	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
		1328-3	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.8	2024	
		1328-2	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
		1328-7	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.6	2024	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50200	1329	1329-6	Combined	Schuylkill	Streets	Contract Management	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.7	2024	$ 1,689,000.00
		1329-7	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.3	2024	
		1329-1	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
		1329-4	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.6	2024	
		1329-2	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
		1329-3	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.6	2024	
		1329-5	Combined	Schuylkill	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	1.2	2024	
50201	1335	1335-1	Combined	TTF	Vacant Land	Contract Management	Infiltration/Storage Trench, Rain Garden	Philadelphia Water Department	6.2	2024	$ 1,142,000.00
50202	1334	1334-1	Combined	TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	$ 657,000.00
		1334-2	Combined	TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.3	2024	
		1334-4	Combined	TTF	Open Space	Contract Management	Rain Garden, Tree Trench	Philadelphia Water Department	0.8	2024	
		1334-3	Combined	TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2024	
50203	1336	1336-3	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench, Rain Garden	Philadelphia Water Department	0.6	2024	$ 1,476,000.00
		1336-1	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	
		1336-4	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.8	2024	
		1336-5	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.9	2024	
		1336-6	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	1.7	2024	
		1336-7	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	1.5	2024	
		1336-2	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench, Rain Garden, Swale	Philadelphia Water Department	1.7	2024	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50204	1339	1339-4	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench, Rain Garden	Philadelphia Water Department	0.7	2024	$ 1,439,000.00
		1339-8	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.6	2024	
		1339-5	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.6	2024	
		1339-2	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench, Rain Garden	Philadelphia Water Department	0.7	2024	
		1339-1	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.7	2024	
		1339-7	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	
		1339-3	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench, Planter	Philadelphia Water Department	0.7	2024	
50205	1341	1341-6	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	$ 1,926,705.00
		1341-10	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
		1341-9	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
		1341-7	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
		1341-11	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.6	2024	
		1341-5	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
		1341-4	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench, Rain Garden	Philadelphia Water Department	1.4	2024	
		1341-3	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2024	
		1341-2	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.6	2024	
		1341-1	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.3	2024	
		1341-8	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.6	2024	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50207	1342	1342-7	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.2	2024	$ 1,770,000.00
		1342-12	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
		1342-11	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.3	2024	
		1342-10	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.3	2024	
		1342-9	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
		1342-8	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.3	2024	
		1342-6	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.3	2024	
		1342-5	Combined	Schuylkill	Streets	Contract Management	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.3	2024	
		1342-4	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	
		1342-3	Combined	Schuylkill	Streets	Contract Management	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	
		1342-1	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.6	2024	
		1342-2	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	
50210	1345	1345-3	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench, Rain Garden	Philadelphia Water Department	0.9	2024	$ 2,713,000.00
		1345-4	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench, Rain Garden	Philadelphia Water Department	0.5	2024	
		1345-1	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench, Rain Garden	Philadelphia Water Department	0.9	2024	
		1345-5	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench, Rain Garden	Philadelphia Water Department	2.7	2024	
		1345-6	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench, Rain Garden	Philadelphia Water Department	0.9	2024	
		1345-2	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench, Rain Garden	Philadelphia Water Department	3.9	2024	
		1345-7	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench, Rain Garden	Philadelphia Water Department	1.4	2024	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50213	1351	1351-5	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	$1,074,745
		1351-3	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
		1351-2	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
		1351-1	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
		1351-4	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.3	2024	
		1351-6	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
50215	1354	1354-2	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.3	2024	$ 1,507,000.00
		1354-4	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	1.3	2024	
		1354-5	Combined	Schuylkill	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	1.0	2024	
		1354-6	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.8	2024	
		1354-1	Combined	Schuylkill	Streets	Contract Management	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	
		1354-7	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.3	2024	
		1354-3	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	1.0	2024	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50218	1357	1357-1	Combined	Cobbs-Darby	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.6	2024	$ 2,558,895.00
		1357-7	Combined	Cobbs-Darby	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	0.6	2024	
		1357-10	Combined	Cobbs-Darby	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	
		1357-11	Combined	Cobbs-Darby	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.6	2024	
		1357-9	Combined	Cobbs-Darby	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	1.2	2024	
		1357-6	Combined	Cobbs-Darby	Streets	Contract Management	Tree Trench	Philadelphia Water Department	1.0	2024	
		1357-5	Combined	Cobbs-Darby	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	0.5	2024	
		1357-8	Combined	Cobbs-Darby	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	1.1	2024	
		1357-2	Combined	Cobbs-Darby	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.6	2024	
		1357-3	Combined	Cobbs-Darby	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	0.7	2024	
		1357-4	Combined	Cobbs-Darby	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.8	2024	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50219	1360	1360-5	Combined	Delaware	Streets	Contract Management	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	$ 2,674,750.00
		1360-12	Combined	Delaware	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	0.7	2024	
		1360-11	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2024	
		1360-10	Combined	Delaware	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	0.6	2024	
		1360-9	Combined	Delaware	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	0.8	2024	
		1360-8	Combined	Delaware	Streets	Contract Management	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	
		1360-6	Combined	Delaware	Streets	Contract Management	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	
		1360-4	Combined	Delaware	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	0.7	2024	
		1360-3	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.8	2024	
		1360-2	Combined	Delaware	Streets	Contract Management	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	
		1360-1	Combined	Delaware	Streets	Contract Management	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.8	2024	
		1360-7	Combined	Delaware	Streets	Contract Management	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.6	2024	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50220	1361	1361-7	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.8	2024	$ 3,199,000.00
		1361-3	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	1.3	2024	
		1361-11	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	1.6	2024	
		1361-10	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Bumpout, Infiltration/Storage Trench, Tree Trench	Philadelphia Water Department	1.9	2024	
		1361-9	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2024	
		1361-8	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
		1361-1	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	1.8	2024	
		1361-4	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	1.0	2024	
		1361-5	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.5	2024	
		1361-2	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	1.5	2024	
		1361-6	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	
50221	1363	1363-2	Combined	Delaware, TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.6	2024	$ 1,629,000.00
		1363-1	Combined	Delaware, TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.8	2024	
		1363-3	Combined	Delaware, TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.7	2024	
		1363-4	Combined	Delaware, TTF	Streets	Contract Management	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	1.1	2024	
		1363-5	Combined	Delaware, TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.7	2024	
		1363-6	Combined	Delaware, TTF	Streets	Contract Management	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.3	2024	
		1363-9	Combined	Delaware, TTF	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	1.5	2024	
		1363-10	Combined	Delaware, TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.3	2024	
		1363-8	Combined	Delaware, TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.6	2024	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50233	1389	1389-1	Combined	Cobbs-Darby	Streets	Contract Management	Infiltration/Storage Trench, Rain Garden, Swale	Philadelphia Water Department	0.5	2024	$ 1,294,000.00
	1390	1390-4	Combined	Cobbs-Darby	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
		1390-8	Combined	Cobbs-Darby	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.9	2024	
		1390-7	Combined	Cobbs-Darby	Streets	Contract Management	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	1.3	2024	
		1390-5	Combined	Cobbs-Darby	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.3	2024	
		1390-3	Combined	Cobbs-Darby	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
		1390-2	Combined	Cobbs-Darby	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
		1390-6	Combined	Cobbs-Darby	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	
50234	1388	1388-4	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.3	2024	$ 962,000.00
		1388-7	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
		1388-5	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
		1388-2	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.8	2024	
		1388-1	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.3	2024	
		1388-6	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
		1388-3	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50238	1396	1396-7	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	1.1	2024	$ 2,081,000.00
		1396-9	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	1.0	2024	
		1396-8	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
		1396-6	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.6	2024	
		1396-10	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
		1396-3	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
		1396-4	Combined	Delaware	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	1.0	2024	
		1396-2	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2024	
		1396-1	Combined	Delaware	Streets	Contract Management	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	1.1	2024	
		1396-5	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.8	2024	
		1396-11	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
50241	1403	1403-1	Combined	TTF	Open Space	Contract Management	Infiltration/Storage Trench, Swale	Philadelphia Water Department	1.9	2024	$ 1,380,000.00
		1403-3	Combined	TTF	Open Space	Contract Management	Rain Garden	Philadelphia Water Department	2.5	2024	
		1403-2	Combined	TTF	Open Space	Contract Management	Infiltration/Storage Trench, Swale	Philadelphia Water Department	1.6	2024	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50246	1412	1412-7	Combined	Schuylkill	Streets	Contract Management	Bumpout, Infiltration/Storage Trench, Tree Trench	Philadelphia Water Department	0.9	2024	$ 3,667,000.00
		1412-1	Combined	Schuylkill	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	1.9	2024	
		1412-9	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	1.1	2024	
		1412-12	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.6	2024	
		1412-8	Combined	Schuylkill	Streets	Contract Management	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	1.3	2024	
		1412-6	Combined	Schuylkill	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	1.2	2024	
		1412-4	Combined	Schuylkill	Streets	Contract Management	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.6	2024	
		1412-2	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.9	2024	
		1412-5	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.9	2024	
		1412-10	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	1.0	2024	
		1412-3	Combined	Schuylkill	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	1.7	2024	
		1412-11	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.3	2024	
50247	1413	1413-8	Combined	Delaware, TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.6	2024	$ 1,378,000.00
		1413-9	Combined	Delaware, TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	
		1413-4	Combined	Delaware, TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
		1413-5	Combined	Delaware, TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2024	
		1413-7	Combined	Delaware, TTF	Streets	Contract Management	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.6	2024	
		1413-3	Combined	Delaware, TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
		1413-2	Combined	Delaware, TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
		1413-10	Combined	Delaware, TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	
		1413-1	Combined	Delaware, TTF	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2024	
50257	1428	1428-1	Combined	Delaware	Facilities	Contract Management	Infiltration/Storage Trench, Rain Garden	Philadelphia Parks & Recreation	0.9	2024	$ 236,000.00
		1436-3	Combined	Cobbs-Darby	Streets	Contract Management	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	1.5	2024	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50262	1436	1436-8	Combined	Cobbs-Darby	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	$ 2,077,000.00
		1436-7	Combined	Cobbs-Darby	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
		1436-6	Combined	Cobbs-Darby	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.8	2024	
		1436-4	Combined	Cobbs-Darby	Streets	Contract Management	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.8	2024	
		1436-2	Combined	Cobbs-Darby	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
		1436-1	Combined	Cobbs-Darby	Open Space	Contract Management	Infiltration/Storage Trench, Rain Garden	Philadelphia Water Department	4.8	2024	
		1436-5	Combined	Cobbs-Darby	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
50264	1438	1438-1	Combined	Delaware	Vacant Land	Contract Management	Infiltration/Storage Trench, Rain Garden	Philadelphia Water Department	1.9	2024	$ 389,000.00
50266	1440	1440-1	Combined	TTF	Open Space	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	3.2	2024	$ 2,214,000.00
		1440-4	Combined	TTF	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	1.2	2024	
		1440-2	Combined	TTF	Open Space	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	4.5	2024	
		1440-3	Combined	TTF	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	1.0	2024	
50267	1441	1441-6	Combined	Pennypack	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	$ 1,188,000.00
		1441-7	Combined	Pennypack	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.6	2024	
		1441-1	Combined	Pennypack	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.6	2024	
		1441-3	Combined	Pennypack	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.3	2024	
		1441-4	Combined	Pennypack	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.6	2024	
		1441-5	Combined	Pennypack	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.7	2024	
		1441-2	Combined	Pennypack	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.8	2024	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50271	1446	1446-4	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench		0.7	2024	$ 2,032,000.00
		1446-11	Combined	Schuylkill	Streets	Contract Management	Tree Trench		0.5	2024	
		1446-10	Combined	Schuylkill	Streets	Contract Management	Tree Trench		1.3	2024	
		1446-9	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench		0.4	2024	
		1446-8	Combined	Schuylkill	Streets	Contract Management	Tree Trench		0.6	2024	
		1446-7	Combined	Schuylkill	Streets	Contract Management	Tree Trench		0.9	2024	
		1446-5	Combined	Schuylkill	Streets	Contract Management	Bumpout, Infiltration/Storage Trench		1.2	2024	
		1446-3	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench		1.1	2024	
		1446-2	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench		0.7	2024	
		1446-1	Combined	Schuylkill	Streets	Contract Management	Bumpout, Infiltration/Storage Trench		0.9	2024	
		1446-6	Combined	Schuylkill	Streets	Contract Management	Infiltration/Storage Trench		0.5	2024	
50272	1447	1447-2	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench, Planter	Philadelphia Water Department	0.5	2024	$ 1,119,000.00
		1447-3	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2024	
		1447-5	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	
		1447-4	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench, Rain Garden	Philadelphia Water Department	0.4	2024	
		1447-6	Combined	Delaware	Streets	Contract Management	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.7	2024	
		1447-1	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	1.0	2024	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50275	1450	1450-1	Combined	Pennypack	Streets	Contract Management	Tree Trench		0.8	2024	$ 1,177,000.00
		1450-6	Combined	Pennypack	Streets	Contract Management	Tree Trench		0.5	2024	
		1450-5	Combined	Pennypack	Streets	Contract Management	Infiltration/Storage Trench		0.6	2024	
		1450-2	Combined	Pennypack	Streets	Contract Management	Tree Trench		0.5	2024	
		1450-3	Combined	Pennypack	Streets	Contract Management	Tree Trench		2.1	2024	
		1450-4	Combined	Pennypack	Streets	Contract Management	Tree Trench		0.8	2024	
50279	1459	1459-1	Combined	TTF	Open Space	Contract Management	Tree Trench	Philadelphia Water Department	3.7	2024	$ 1,033,000.00
50281	1461	1461-6	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Tree Trench		1.2	2024	$ 13,000.00
		1461-7	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Tree Trench		0.9	2024	
		1461-5	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Bumpout, Tree Trench		1.0	2024	
		1461-3	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Tree Trench		0.4	2024	
		1461-2	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Bumpout, Tree Trench		0.9	2024	
		1461-1	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Tree Trench		0.8	2024	
		1461-4	Combined	Cobbs-Darby, Schuylkill	Streets	Contract Management	Bumpout, Tree Trench		1.5	2024	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50290	1477	1477-6	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.8	2024	$ 2,458,000.00
		1477-9	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.7	2024	
		1477-7	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2024	
		1477-5	Combined	Delaware	Streets	Contract Management	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.8	2024	
		1477-4	Combined	Delaware	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	1.2	2024	
		1477-12	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2024	
		1477-2	Combined	Delaware	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	1.0	2024	
		1477-1	Combined	Delaware	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	1.3	2024	
		1477-11	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2024	
		1477-10	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2024	
		1477-3	Combined	Delaware	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	1.1	2024	
		1477-8	Combined	Delaware	Streets	Contract Management	Infiltration/Storage Trench	Philadelphia Water Department	0.9	2024	
50296	1486	1486-2	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.3	2024	$ 2,000.00
		1486-8	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.8	2024	
		1486-7	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.7	2024	
		1486-6	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.3	2024	
		1486-5	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.6	2024	
		1486-3	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
		1486-1	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.9	2024	
		1486-4	Combined	Schuylkill	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50298	1491	1491-1	Combined	Delaware, TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.7	2024	$ 1,507,000.00
		1491-2	Combined	Delaware, TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
		1491-3	Combined	Delaware, TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	1.1	2024	
		1491-4	Combined	Delaware, TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.8	2024	
		1491-5	Combined	Delaware, TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
		1491-6	Combined	Delaware, TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
		1491-7	Combined	Delaware, TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.4	2024	
		1491-8	Combined	Delaware, TTF	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
50302	1500	1500-5	Combined	Delaware, TTF	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	1.7	2024	$ 2,540,000.00
		1500-8	Combined	Delaware, TTF	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	1.5	2024	
		1500-6	Combined	Delaware, TTF	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	1.5	2024	
		1500-3	Combined	Delaware, TTF	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	1.4	2024	
		1500-2	Combined	Delaware, TTF	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	1.4	2024	
		1500-1	Combined	Delaware, TTF	Streets	Contract Management	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.9	2024	
		1500-4	Combined	Delaware, TTF	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	1.3	2024	
		1500-7	Combined	Delaware, TTF	Streets	Contract Management	Bumpout, Tree Trench	Philadelphia Water Department	1.4	2024	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50316	1525	1525-1	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	$ 1,448,000.00
		1525-2	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
		1525-3	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
		1525-4	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
		1525-5	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.6	2024	
		1525-6	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	1.2	2024	
		1525-7	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
		1525-8	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.5	2024	
		1525-9	Combined	Delaware	Streets	Contract Management	Tree Trench	Philadelphia Water Department	0.6	2024	
50358	1607	1607-1	Combined	Schuylkill	Streets	Contract Management	Tree Trench		0.8	2024	$ 827,000.00
20483	1294	1294-1	Combined	Delaware	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.3	2023	$ 207,000.00
		1294-2	Combined	Delaware	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2023	
20486	1282	1282-1	Combined	Delaware	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.3	2023	$ 267,000.00
		1282-4	Combined	Delaware	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.2	2023	
		1282-2	Combined	Delaware	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.3	2023	
		1282-3	Combined	Delaware	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.3	2023	
20513	1338	1338-1	Combined	Delaware	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	1.2	2023	$ 302,000.00
40800	502	502-1	Combined	Cobbs-Darby	Streets	Construction	Tree Trench	Philadelphia Water Department	0.5	2023	$ 489,000.00
40839	995	995-1	Combined	Cobbs-Darby, Schuylkill	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2023	$ 390,000.00
		995-2	Combined	Cobbs-Darby, Schuylkill	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2023	
		995-3	Combined	Cobbs-Darby, Schuylkill	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2023	
40856	1060	1060-1	Combined	Schuylkill	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2023	$ 118,000.00
40877	1550	1550-2	Combined	Delaware	Streets	Construction	Infiltration/Storage Trench	Pennsylvania Department of Transportation	0.2	2023	TBD

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
40879	1550	1550-1	Combined	Delaware	Streets	Construction	Infiltration/Storage Trench	Pennsylvania Department of Transportation	0.3	2023	TBD
40888	1011	1011-1	Combined	Schuylkill	Streets	Construction	Tree Trench	Pennsylvania Department of Transportation	0.6	2023	TBD
		1011-2	Combined	Schuylkill	Streets	Construction	Tree Trench	Pennsylvania Department of Transportation	0.3	2023	
		1011-3	Combined	Schuylkill	Streets	Construction	Infiltration/Storage Trench	Pennsylvania Department of Transportation	0.4	2023	
		1011-4	Combined	Schuylkill	Streets	Construction	Tree Trench	Pennsylvania Department of Transportation	0.3	2023	
		1011-5	Combined	Schuylkill	Streets	Construction	Infiltration/Storage Trench	Pennsylvania Department of Transportation	0.3	2023	
		1011-6	Combined	Schuylkill	Streets	Construction	Tree Trench	Pennsylvania Department of Transportation	0.3	2023	
		1011-7	Combined	Schuylkill	Streets	Construction	Infiltration/Storage Trench	Pennsylvania Department of Transportation	0.3	2023	
		1011-8	Combined	Schuylkill	Streets	Construction	Tree Trench	Pennsylvania Department of Transportation	0.4	2023	
		1011-9	Combined	Schuylkill	Streets	Construction	Infiltration/Storage Trench	Pennsylvania Department of Transportation	0.3	2023	
		1011-10	Combined	Schuylkill	Streets	Construction	Infiltration/Storage Trench	Pennsylvania Department of Transportation	0.3	2023	
40945	1292	1292-3	Combined	Schuylkill	Streets	Construction	Tree Trench	Private Developer	0.2	2023	TBD
		1292-9	Combined	Schuylkill	Streets	Construction	Tree Trench	Private Developer	0.2	2023	
		1292-8	Combined	Schuylkill	Streets	Construction	Tree Trench	Private Developer	0.7	2023	
		1292-10	Combined	Schuylkill	Streets	Construction	Tree Trench	Private Developer	0.2	2023	
		1292-7	Combined	Schuylkill	Streets	Construction	Tree Trench	Private Developer	0.7	2023	
		1292-4	Combined	Schuylkill	Streets	Construction	Tree Trench	Private Developer	0.2	2023	
		1292-2	Combined	Schuylkill	Streets	Construction	Tree Trench	Private Developer	0.2	2023	
		1292-1	Combined	Schuylkill	Streets	Construction	Tree Trench	Private Developer	0.2	2023	
		1292-6	Combined	Schuylkill	Streets	Construction	Tree Trench	Private Developer	0.3	2023	
		1292-5	Combined	Schuylkill	Streets	Construction	Tree Trench	Private Developer	0.2	2023	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
40996	1366	1366-1	Combined	Delaware	Streets	Construction	Tree Trench	Philadelphia Water Department	0.3	2023	$ 123,000.00
41034	1399	1399-1	Combined	Schuylkill	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2023	$ 106,000.00
41039	1455	1455-1	Combined	Delaware	Streets	Construction	Tree Trench	Pennsylvania Department of Transportation	0.5	2023	TBD
		1455-2	Combined	Delaware	Streets	Construction	Tree Trench	Pennsylvania Department of Transportation	0.8	2023	
		1455-3	Combined	Delaware	Streets	Construction	Tree Trench	Pennsylvania Department of Transportation	0.4	2023	
		1455-4	Combined	Delaware	Streets	Construction	Tree Trench	Pennsylvania Department of Transportation	0.4	2023	
50088	595	595-7	Combined	Delaware, Pennypack	Streets	Construction	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.9	2023	$ 5,058,000.00
		595-8	Combined	Delaware, Pennypack	Streets	Construction	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	1.4	2023	
		595-5	Combined	Delaware, Pennypack	Streets	Construction	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	1.7	2023	
		595-4	Combined	Delaware, Pennypack	Streets	Construction	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	1.4	2023	
		595-3	Combined	Delaware, Pennypack	Streets	Construction	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	1.6	2023	
		595-1	Combined	Delaware, Pennypack	Streets	Construction	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.8	2023	
		595-2	Combined	Delaware, Pennypack	Streets	Construction	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	1.8	2023	
50110	242	242-2	Combined	Cobbs-Darby	Streets	Construction	Rain Garden	Philadelphia Water Department	3.2	2023	$ 2,357,000.00
50132	1138	1138-7	Combined	Delaware	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2023	$ 3,038,000.00

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50133	1139	1139-29	Combined	TTF	Streets	Construction	Tree Trench	Philadelphia Water Department	1.7	2023	$ 5,519,000.00
		1139-9	Combined	TTF	Streets	Construction	Tree Trench	Philadelphia Water Department	0.4	2023	
		1139-28	Combined	TTF	Streets	Construction	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	1.2	2023	
		1139-23	Combined	TTF	Streets	Construction	Infiltration/Storage Trench, Stormwater Tree	Philadelphia Water Department	1.2	2023	
		1139-20	Combined	TTF	Streets	Construction	Tree Trench	Philadelphia Water Department	0.7	2023	
		1139-19	Combined	TTF	Streets	Construction	Tree Trench	Philadelphia Water Department	0.6	2023	
		1139-18	Combined	TTF	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2023	
		1139-17	Combined	TTF	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.8	2023	
		1139-16	Combined	TTF	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.6	2023	
		1139-8	Combined	TTF	Streets	Construction	Tree Trench	Philadelphia Water Department	0.3	2023	
		1139-24	Combined	TTF	Streets	Construction	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.6	2023	
		1139-12	Combined	TTF	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2023	
		1139-14	Combined	TTF	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2023	
		1139-2	Combined	TTF	Streets	Construction	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.9	2023	
		1139-3	Combined	TTF	Streets	Construction	Tree Trench	Philadelphia Water Department	0.9	2023	
		1139-4	Combined	TTF	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2023	
		1139-5	Combined	TTF	Streets	Construction	Tree Trench	Philadelphia Water Department	0.5	2023	
		1139-6	Combined	TTF	Streets	Construction	Tree Trench	Philadelphia Water Department	0.5	2023	
		1139-7	Combined	TTF	Streets	Construction	Tree Trench	Philadelphia Water Department	0.3	2023	
		1139-15	Combined	TTF	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.6	2023	
		1139-10	Combined	TTF	Streets	Construction	Tree Trench	Philadelphia Water Department	0.6	2023	
		1139-11	Combined	TTF	Streets	Construction	Tree Trench	Philadelphia Water Department	0.7	2023	
		1139-13	Combined	TTF	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.5	2023	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
		1139-1	Combined	TTF	Streets	Construction	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.9	2023	
		1139-25	Combined	TTF	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.6	2023	
		1139-27	Combined	TTF	Streets	Construction	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	1.6	2023	
		1139-26	Combined	TTF	Streets	Construction	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.5	2023	$ 5,576,000.00
		1139-22	Combined	TTF	Streets	Construction	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	1.4	2023	
		1139-21	Combined	TTF	Streets	Construction	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	0.7	2023	
	1298	1298-2	Combined	TTF	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.8	2023	$ 5,519,000.00
		1298-1	Combined	TTF	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2023	$ 5,576,000.00
50134	1140	1140-1	Combined	Schuylkill	Open Space	Construction	Infiltration/Storage Trench, Rain Garden	Philadelphia Water Department	3.6	2023	$ 1,087,000.00
		1142-4	Combined	Schuylkill	Streets	Construction	Bumpout, Infiltration/Storage Trench	Philadelphia Housing Authority	0.3	2023	
		1142-8	Combined	Schuylkill	Streets	Construction	Infiltration/Storage Trench, Planter	Philadelphia Housing Authority	0.4	2023	
		1142-7	Combined	Schuylkill	Streets	Construction	Infiltration/Storage Trench, Planter	Philadelphia Housing Authority	0.5	2023	
50135	1142	1142-5	Combined	Schuylkill	Streets	Construction	Infiltration/Storage Trench, Planter	Philadelphia Housing Authority	0.3	2023	$ 305,000.00
		1142-2	Combined	Schuylkill	Streets	Construction	Infiltration/Storage Trench, Planter	Philadelphia Housing Authority	0.3	2023	
		1142-1	Combined	Schuylkill	Streets	Construction	Infiltration/Storage Trench, Planter	Philadelphia Housing Authority	0.4	2023	
		1142-6	Combined	Schuylkill	Streets	Construction	Infiltration/Storage Trench, Planter	Philadelphia Housing Authority	0.3	2023	
		1142-3	Combined	Schuylkill	Streets	Construction	Bumpout, Infiltration/Storage Trench	Philadelphia Housing Authority	0.4	2023	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50160	1242	1242-11	Combined	Delaware	Streets	Construction	Tree Trench	Philadelphia Water Department	0.8	2023	$ 1,338,000.00
50166	1264	1264-2	Combined	Delaware	Streets	Construction	Tree Trench	Philadelphia Water Department	0.3	2023	$ 1,645,000.00
		1264-6	Combined	Delaware	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	1.5	2023	
		1264-5	Combined	Delaware	Streets	Construction	Tree Trench	Philadelphia Water Department	0.3	2023	
		1264-1	Combined	Delaware	Streets	Construction	Tree Trench	Philadelphia Water Department	1.5	2023	
		1264-4	Combined	Delaware	Streets	Construction	Infiltration/Storage Trench, Planter	Philadelphia Water Department	1.8	2023	
		1264-3	Combined	Delaware	Streets	Construction	Bumpout, Tree Trench	Philadelphia Water Department	0.6	2023	
50190	1308	1308-2	Combined	Schuylkill	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.9	2023	$ 1,195,000.00
50192	1311	1311-1	Combined	Delaware	Open Space	Construction	Infiltration/Storage Trench	Philadelphia Water Department	7.7	2023	$ 2,972,000.00
		1311-2	Combined	Delaware	Streets	Construction	Tree Trench	Philadelphia Water Department	0.4	2023	
		1311-3	Combined	Delaware	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.4	2023	
50211	1347	1347-1	Combined	Delaware	Open Space	Construction	Tree Trench	Philadelphia Water Department	1.3	2023	$ 1,246,000.00

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50226	1382	1382-11	Combined	Delaware, TTF	Streets	Construction	Tree Trench	Philadelphia Water Department	1.4	2023	$ 3,279,000.00
		1382-19	Combined	Delaware, TTF	Streets	Construction	Tree Trench	Philadelphia Water Department	0.8	2023	
		1382-18	Combined	Delaware, TTF	Streets	Construction	Tree Trench	Philadelphia Water Department	0.9	2023	
		1382-17	Combined	Delaware, TTF	Streets	Construction	Tree Trench	Philadelphia Water Department	1.4	2023	
		1382-16	Combined	Delaware, TTF	Streets	Construction	Tree Trench	Philadelphia Water Department	2.5	2023	
		1382-15	Combined	Delaware, TTF	Streets	Construction	Tree Trench	Philadelphia Water Department	1.7	2023	
		1382-14	Combined	Delaware, TTF	Streets	Construction	Bumpout, Infiltration/Storage Trench	Philadelphia Water Department	1.1	2023	
		1382-12	Combined	Delaware, TTF	Streets	Construction	Tree Trench	Philadelphia Water Department	1.3	2023	
		1382-9	Combined	Delaware, TTF	Streets	Construction	Tree Trench	Philadelphia Water Department	1.4	2023	
		1382-7	Combined	Delaware, TTF	Streets	Construction	Tree Trench	Philadelphia Water Department	0.9	2023	
		1382-5	Combined	Delaware, TTF	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	1.4	2023	
		1382-3	Combined	Delaware, TTF	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.7	2023	
		1382-2	Combined	Delaware, TTF	Streets	Construction	Tree Trench	Philadelphia Water Department	0.9	2023	
		1382-1	Combined	Delaware, TTF	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.6	2023	
		1382-13	Combined	Delaware, TTF	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	3.4	2023	
50236	1393	1393-1	Combined	TTF	Open Space	Construction	Infiltration/Storage Trench, Rain Garden	Philadelphia Industrial Development Corporation	0.6	2023	$ 195,000.00
50245	1410	1410-1	Combined	Delaware	Open Space	Construction	Infiltration/Storage Trench	HACE	2.3	2023	$ 138,000.00

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50268	1442	1442-6	Combined	TTF	Streets	Construction	Inlet Disconnection	Pennsylvania Department of Transportation	0.5	2023	TBD
		1442-13	Combined	TTF	Streets	Construction	Inlet Disconnection	Pennsylvania Department of Transportation	0.5	2023	
		1442-12	Combined	TTF	Streets	Construction	Inlet Disconnection	Pennsylvania Department of Transportation	0.7	2023	
		1442-11	Combined	TTF	Streets	Construction	Inlet Disconnection	Pennsylvania Department of Transportation	0.1	2023	
		1442-10	Combined	TTF	Streets	Construction	Inlet Disconnection	Pennsylvania Department of Transportation	0.3	2023	
		1442-9	Combined	TTF	Streets	Construction	Inlet Disconnection	Pennsylvania Department of Transportation	0.7	2023	
		1442-7	Combined	TTF	Streets	Construction	Inlet Disconnection	Pennsylvania Department of Transportation	0.2	2023	
		1442-5	Combined	TTF	Streets	Construction	Inlet Disconnection	Pennsylvania Department of Transportation	0.2	2023	
		1442-4	Combined	TTF	Streets	Construction	Inlet Disconnection	Pennsylvania Department of Transportation	0.5	2023	
		1442-3	Combined	TTF	Streets	Construction	Inlet Disconnection	Pennsylvania Department of Transportation	0.7	2023	
		1442-2	Combined	TTF	Streets	Construction	Inlet Disconnection	Pennsylvania Department of Transportation	1.1	2023	
		1442-1	Combined	TTF	Streets	Construction	Inlet Disconnection	Pennsylvania Department of Transportation	1.3	2023	
		1442-8	Combined	TTF	Streets	Construction	Inlet Disconnection	Pennsylvania Department of Transportation	0.6	2023	
50315	1524	1524-3	Combined	Delaware	Streets	Construction	Tree Trench	Philadelphia Water Department	0.4	2023	$ 1,309,000.00
		1524-6	Combined	Delaware	Streets	Construction	Tree Trench	Philadelphia Water Department	1.0	2023	
		1524-7	Combined	Delaware	Streets	Construction	Tree Trench	Philadelphia Water Department	0.0	2023	
		1524-2	Combined	Delaware	Streets	Construction	Tree Trench	Philadelphia Water Department	0.7	2023	
		1524-1	Combined	Delaware	Streets	Construction	Rain Garden, Tree Trench	Philadelphia Water Department	1.8	2023	
		1524-5	Combined	Delaware	Streets	Construction	Infiltration/Storage Trench	Philadelphia Water Department	0.6	2023	
		1524-4	Combined	Delaware	Streets	Construction	Tree Trench	Philadelphia Water Department	0.4	2023	

Work Number	Project ID	SystemNumber	Sewer Type	Watershed	Program	Status	Estimated SMP Type(s)	Potential Partners(s)	Greened Acres (acre-inches)	Completion Date Estimate	Estimated Green Construction Cost
50320	1544	1544-2	Combined	Delaware	Vacant Land	Construction	Rain Garden, Tree Trench		1.6	2023	$ 778,000.00
90188	1582	1582-1	Combined	Delaware	Streets	Construction	Tree Trench	Pennsylvania Department of Transportation	0.4	2023	TBD
		1582-2	Combined	Delaware	Streets	Construction	Tree Trench	Pennsylvania Department of Transportation	0.3	2023	
		1582-3	Combined	Delaware	Streets	Construction	Tree Trench	Pennsylvania Department of Transportation	0.4	2023	
		1582-4	Combined	Delaware	Streets	Construction	Tree Trench	Pennsylvania Department of Transportation	0.4	2023	
		1582-5	Combined	Delaware	Streets	Construction	Tree Trench	Pennsylvania Department of Transportation	0.4	2023	
		1582-6	Combined	Delaware	Streets	Construction	Tree Trench	Pennsylvania Department of Transportation	0.4	2023	
		1582-7	Combined	Delaware	Streets	Construction	Tree Trench	Pennsylvania Department of Transportation	0.3	2023	
Total Greened Acres:									435		

Appendix 3

Completed Private Development and Incentivized Green Stormwater Infrastructure Projects

Completed Private Development and Incentivized Green Stormwater Infrastructure Reporting Metrics

The reporting format and metric definitions are described in Table 1 below.

Table 1: Private/Incentives Reporting Metric Definitions

Metric	Definition
Tracking Number	Tracking Number is a unique assigned identifier from the Stormwater Plan Review Database.
Watershed	The City of Philadelphia watershed where the project is located. Four of the City's seven watersheds fall at least partially within the combined sewer area. These watersheds are: • Cobbs Creek Watershed • Darby Creek Watershed • Delaware Direct Watershed • Tookany/Tacony-Frankford Creek Watershed • Schuylkill River Watershed
SMP Type(s)	A Stormwater Management Practice (SMP) is a technique that controls the rate and volume of stormwater runoff and/or improves runoff water quality. Multiple SMP types can be grouped together in a larger GSI system. The SMP types were originally defined in Table 2-1 of the IAMP.
Greened Acres (acre-inch)	Greened Acres is a metric that accounts for the conversion of a highly impervious urban landscape through the implementation of projects that reduce stormwater runoff. A Greened Acre is described as an acre of impervious cover connected (tributary) to a combined sewer that subsequently is reconfigured to utilize green stormwater infrastructure to manage at least one inch of stormwater runoff. If storage is provided, systems can credit up to two inches of the stormwater runoff from that acre. The best available Greened Acre value is pulled from the database for regulatory reporting.

Table 2: Private/Incentives SMP Type Definitions

Private / Incentives SMP Type Definitions	
Basin	Includes surface basins or depressions that are vegetated with mowed grass and subsurface infiltration and detention basins. In both cases, the basins are designed to detain and release stormwater runoff and/or infiltrate where feasible.
Bioinfiltration / Bioretention	A bioinfiltration/bioretention basin is a vegetated basin or depression designed to either infiltrate or release stormwater runoff.
Blue Roof	A blue roof is a storage system designed into a roof surface such that the roof retains stormwater. Blue roofs are designed to reduce the rate of stormwater runoff.
Cistern	Storage tanks (located either above or below ground) that capture and store runoff and can thereby reduce runoff volume. Stored water may drain by gravity or be pumped to its ultimate end use for a variety of non-potable water needs.
Depave	Depaving projects remove existing impervious pavement and restore the surface with grass, other types of vegetation, or loose materials (stone, mulch, etc.) such that the area can thereafter be considered pervious area. Depaving projects remove contributing impervious area from the sewer system. Categorized as a Disconnection and logged in square feet.

Private / Incentives SMP Type Definitions	
Disconnected Impervious Area	Impervious area that discharges to a pervious area. These types could be any of the following: Pavement - Runoff is designed to be directed to a vegetated area that allows for infiltration, filtration, and an increased time of concentration. Planters - At or above grade planter area and number of planters that do not contribute to water quality. Rooftop Area - Rooftop drainage directed to a vegetated area that allows for infiltration, filtration, and increased time of concentration. Tree Credit - New or existing tree canopy from an approved species list that extends over or is in close proximity to impervious area.
Green Roof	Vegetated surface installed over a roof surface. Green roofs are effective in reducing the volume and rates of stormwater runoff.
Porous Pavement	Permeable surface commonly composed of concrete, asphalt, pavers, turf, or rubber play surface. Stormwater flows through the porous surface during a rain event, then drains into the subbase beneath the pavement, where it is stored until it infiltrates into the soil.
WQ Treatment Device	Filter products that reduce pollutant levels by removing sediments, metals, hydrocarbons, and other pollutants from stormwater.

Table 3: Completed Private Development Green Stormwater Infrastructure Projects

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
2005-0052-01	Combined	Verified	Lower Schuylkill River	19139	Subsurface Infiltration Basin	3.6
2005-0099-01	Combined	Verified	Lower Schuylkill River	19131	Surface Infiltration Basin	38.0
2006-0057-01	Combined	Verified	Delaware Direct	19123	Subsurface Detention Basin	0.0
2006-0063-01	Combined	Verified	Delaware Direct	19122	Subsurface Infiltration Basin	3.3
2006-0110-01	Combined	Verified	Delaware Direct	19140	Subsurface Detention Basin, Subsurface Infiltration Basin	1.0
2006-30TH-236-01	Combined	Verified	Lower Schuylkill River	19104	Surface Infiltration Basin	0.6
2006-9349-349-01	Combined	Verified	Delaware Direct	19123	Subsurface Detention Basin	0.1
2006-94-01	Combined	Verified	Delaware Direct	19148	Subsurface Detention Basin	2.2
2006-ANGE-268-01	Combined	Verified	Lower Schuylkill River	19104	Subsurface Infiltration Basin	1.3
2006-BRID-200-01	Combined	Verified	Delaware Direct	19137	Disconnected Impervious Area, Subsurface Infiltration Basin	0.7
2006-CINT-431-01	Combined	Verified	Lower Schuylkill River	19131	Surface Detention Basin	9.5
2006-COMM-328-01	Combined	Verified	Cobbs Creek	19139	Cistern, Porous Pavement, Subsurface Detention Basin	0.9
2006-EDWI-215-01	Combined	Verified	Delaware Direct	19136	Disconnected Impervious Area, Subsurface Detention Basin, Subsurface Infiltration Basin	0.8
2006-FEDE-409-01	Combined	Verified	Delaware Direct	19106	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.3
2006-GENE-192-01	Combined	Verified	Delaware Direct	19123	Disconnected Impervious Area, Subsurface Detention Basin	0.3
2006-HUNT-445-01	Combined	Verified	Delaware Direct	19133	Porous Pavement, Subsurface Infiltration Basin	2.0
2006-LAWT-291-01	Combined	Verified	Delaware Direct	19135	Subsurface Detention Basin	1.2

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
2006-LE22-460-01	Combined	Verified	Delaware Direct	19123	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	1.0
2006-MICH-419-01	Combined	Verified	Delaware Direct	19125	Porous Pavement, Subsurface Infiltration Basin	0.7
2006-MOOR-320-01	Combined	Verified	Delaware Direct	19148	Subsurface Detention Basin, Subsurface Infiltration Basin	0.6
2006-NATI-441-01	Combined	Verified	Delaware Direct	19106	Subsurface Detention Basin	0.5
2006-PILG-444-01	Combined	Verified	Delaware Direct	19111	Subsurface Infiltration Basin	1.4
2006-PROG-400-01	Combined	Verified	Delaware Direct	19122	Subsurface Infiltration Basin	5.5
2006-SOLI-300-01	Combined	Verified	Delaware Direct	19149	Bioretention, Subsurface Infiltration Basin	2.7
2006-TACO-337-01	Combined	Verified	Delaware Direct	19149	Subsurface Infiltration Basin	0.3
2006-TEMP-210-01	Combined	Verified	Delaware Direct	19122	Porous Pavement, Subsurface Detention Basin	0.6
2006-TEMP-245-01	Combined	Verified	Delaware Direct	19122	Subsurface Infiltration Basin	1.3
2006-VILL-194-01	Combined	Verified	Lower Schuylkill River	19145	Disconnected Impervious Area, Subsurface Infiltration Basin, Surface Detention Basin, Surface Infiltration Basin	26.8
2007-4839-625-01	Combined	Verified	Lower Schuylkill River	19131	Subsurface Detention Basin	1.0
2007-AROU-626-01	Combined	Verified	Tacony-Frankford Creek	19144	Subsurface Infiltration Basin	0.6
2007-BENC-482-01	Combined	Verified	Tacony-Frankford Creek	19124	Porous Pavement, Subsurface Detention Basin	1.2
2007-CECI-556-01	Combined	Verified	Delaware Direct	19121	Subsurface Detention Basin	1.1
2007-DREX-669-01	Combined	Verified	Lower Schuylkill River	19104	Cistern, Disconnected Impervious Area, Porous Pavement	0.8
2007-GAMB-624-01	Combined	Verified	Tacony-Frankford Creek	19124	Porous Pavement	0.1
2007-GAMB-701-01	Combined	Verified	Tacony-Frankford Creek	19124	Bioinfiltration, Disconnected Impervious Area, Porous Pavement	1.8

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
2007-GUIO-721-01	Combined	Verified	Lower Schuylkill River	19131	Disconnected Impervious Area, Porous Pavement, Subsurface Detention Basin	1.4
2007-HERR-690-01	Combined	Verified	Delaware Direct	19147	Disconnected Impervious Area, Porous Pavement	0.6
2007-HOWI-498-01	Combined	Verified	Delaware Direct	19123	Disconnected Impervious Area, Subsurface Detention Basin	0.3
2007-LASA-593-01	Combined	Verified	Tacony-Frankford Creek	19144	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	12.2
2007-MCDO-558-01	Combined	Verified	Delaware Direct	19133	Subsurface Detention Basin	0.5
2007-MCDO-560-01	Combined	Verified	Delaware Direct	19135	Subsurface Detention Basin	0.1
2007-MTTA-480-01	Combined	Verified	Delaware Direct	19123	Green Roof, Porous Pavement	0.3
2007-PASH-524-01	Combined	Verified	Cobbs Creek	19142	Subsurface Infiltration Basin	0.8
2007-POWE-679-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area	0.4
2007-SIMO-496-01	Combined	Verified	Tacony-Frankford Creek	19138	Bioinfiltration, Porous Pavement	0.9
2007-SOUT-557-01	Combined	Verified	Delaware Direct	19148	Subsurface Detention Basin	0.1
2007-THEM-495-01	Combined	Verified	Lower Schuylkill River	19131	Subsurface Detention Basin, Surface Detention Basin	6.4
2007-UNIV-633-01	Combined	Verified	Lower Schuylkill River	19104	Bioinfiltration, Disconnected Impervious Area, Subsurface Infiltration Basin	0.4
2007-WARN-651-01	Combined	Verified	Delaware Direct	19133	Subsurface Infiltration Basin	2.7
2007-WEST-684-01	Combined	Verified	Cobbs Creek	19139	Disconnected Impervious Area, Subsurface Detention Basin	0.0
2007-WILL-699-01	Combined	Verified	Delaware Direct	19134	Bioretention, Subsurface Detention Basin	5.0
2008-1600-898-01	Combined	Verified	Delaware Direct	19122	Bioretention	0.5
2008-2116-992-01	Combined	Verified	Lower Schuylkill River	19103	Bioretention, Disconnected Impervious Area, Green Roof, Surface Detention Basin	0.5

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
2008-2552-873-01	Combined	Verified	Delaware Direct	19134	Subsurface Infiltration Basin	0.7
2008-4014-979-01	Combined	Verified	Delaware Direct	19123	Disconnected Impervious Area, Subsurface Infiltration Basin	0.8
2008-BARN-986-01	Combined	Verified	Lower Schuylkill River	19130	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin, Subsurface Infiltration Basin	4.4
2008-CAST-875-01	Combined	Verified	Delaware Direct	19149	Subsurface Detention Basin	0.0
2008-CLAS-765-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Infiltration Basin	0.5
2008-COMM-763-01	Combined	Verified	Lower Schuylkill River	19130	Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Infiltration Basin	2.6
2008-DREX-788-01	Combined	Verified	Lower Schuylkill River	19104	Bioinfiltration, Porous Pavement, Subsurface Infiltration Basin	2.5
2008-DREX-950-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.2
2008-FRAN-921-01	Combined	Verified	Lower Schuylkill River	19104	Porous Pavement	0.3
2008-FRAN-994-01	Combined	Verified	Delaware Direct	19130	Porous Pavement, Subsurface Infiltration Basin	1.6
2008-MART-980-01	Combined	Verified	Delaware Direct	19147	Subsurface Infiltration Basin	0.6
2008-NAVA-893-01	Combined	Verified	Lower Schuylkill River	19146	Subsurface Infiltration Basin	9.7
2008-NEWK-958-01	Combined	Verified	Delaware Direct	19122	Bioinfiltration, Green Roof, Porous Pavement, Subsurface Detention Basin	5.3
2008-NEWL-839-01	Combined	Verified	Delaware Direct	19140	Subsurface Infiltration Basin	0.5
2008-NORT-1012-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Subsurface Infiltration Basin	0.5

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
2008-PROP-824-01	Combined	Verified	Lower Schuylkill River	19139	Disconnected Impervious Area, Porous Pavement, Subsurface Detention Basin, Subsurface Infiltration Basin	6.2
2008-ROLA-813-01	Combined	Verified	Tacony-Frankford Creek	19141	Green Roof, Subsurface Infiltration Basin	0.3
2008-ROTE-960-01	Combined	Verified	Delaware Direct	19148	Bioretention, Porous Pavement, Subsurface Detention Basin	1.1
2008-SCHM-902-01	Combined	Verified	Delaware Direct	19123	Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Infiltration Basin	6.0
2008-SHER-926-01	Combined	Verified	Delaware Direct	19122	Green Roof, Porous Pavement	0.2
2008-STRA-799-01	Combined	Verified	Lower Schuylkill River	19121	Porous Pavement, Subsurface Infiltration Basin	0.4
2008-STRA-802-01	Combined	Verified	Lower Schuylkill River	19121	Porous Pavement, Subsurface Infiltration Basin	0.4
2008-THEC-806-01	Combined	Verified	Delaware Direct	19103	Green Roof, Subsurface Detention Basin	0.2
2008-WALG-838-01	Combined	Verified	Delaware Direct	19146	Bioretention, Subsurface Infiltration Basin	0.5
2008-WOOD-864-01	Combined	Verified	Lower Schuylkill River	19104	Porous Pavement	0.5
2009-2007-1090-01	Combined	Verified	Delaware Direct	19148	Subsurface Detention Basin	28.8
2009-7149-1186-01	Combined	Verified	Delaware Direct	19135	Disconnected Impervious Area, Subsurface Infiltration Basin	0.8
2009-CANC-1145-01	Combined	Verified	Tacony-Frankford Creek	19124	Bioretention, Disconnected Impervious Area, Surface Detention Basin	6.2
2009-CONG-1210-01	Combined	Verified	Delaware Direct	19133	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	2.8
2009-DORA-1041-01	Combined	Verified	Lower Schuylkill River	19131	Porous Pavement, Subsurface Infiltration Basin	0.7
2009-FRAN-1130-01	Combined	Verified	Delaware Direct	19137	Disconnected Impervious Area, Subsurface Infiltration Basin	0.5

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
2009-GLOB-1016-01	Combined	Verified	Lower Schuylkill River	19131	Bioretention, Subsurface Detention Basin	1.8
2009-HAWT-1102-01	Combined	Verified	Delaware Direct	19147	Disconnected Impervious Area, Porous Pavement	0.3
2009-HELP-1138-01	Combined	Verified	Lower Schuylkill River	19153	Subsurface Infiltration Basin	3.7
2009-IATS-1023-01	Combined	Verified	Delaware Direct	19148	Green Roof, Subsurface Detention Basin	0.8
2009-JANN-1141-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Green Roof, Porous Pavement	0.3
2009-LAWR-1044-01	Combined	Verified	Delaware Direct	19140	Porous Pavement, Subsurface Infiltration Basin	3.0
2009-MANT-1033-01	Combined	Verified	Lower Schuylkill River	19104	Subsurface Infiltration Basin	4.6
2009-NEWH-1079-01	Combined	Verified	Lower Schuylkill River	19139	Disconnected Impervious Area, Subsurface Infiltration Basin	0.7
2009-NEWP-1166-01	Combined	Verified	Delaware Direct	19140	Disconnected Impervious Area, Subsurface Infiltration Basin	1.3
2009-NICE-1136-01	Combined	Verified	Tacony-Frankford Creek	19140	Bioretention, Subsurface Detention Basin	0.4
2009-PARK-1197-01	Combined	Verified	Lower Schuylkill River	19104	Bioinfiltration, Disconnected Impervious Area	1.6
2009-PASC-1226-01	Combined	Verified	Cobbs Creek	19142	Porous Pavement, Subsurface Infiltration Basin	4.7
2009-PECO-1133-01	Combined	Verified	Lower Schuylkill River	19146	Subsurface Infiltration Basin	4.0
2009-PENN-1019-01	Combined	Verified	Lower Schuylkill River	19104	Bioretention, Subsurface Detention Basin	3.9
2009-PENN-1144-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Detention Basin	0.4
2009-PHIL-1205-01	Combined	Verified	Delaware Direct	19148	Porous Pavement	14.6
2009-PRES-1037-01	Combined	Verified	Tacony-Frankford Creek	19150	Bioretention, Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	1.9
2009-PRIN-1147-01	Combined	Verified	Lower Schuylkill River	19121	Green Roof, Subsurface Infiltration Basin	1.1

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
2009-RODI-1176-01	Combined	Verified	Lower Schuylkill River	19130	Subsurface Infiltration Basin	0.3
2009-SCHU-1140-01	Combined	Verified	Lower Schuylkill River	19103	Disconnected Impervious Area	0.7
2009-SIST-1062-01	Combined	Verified	Lower Schuylkill River	19103	Disconnected Impervious Area	0.2
2009-SIST-1131-01	Combined	Verified	Lower Schuylkill River	19103	Disconnected Impervious Area, Green Roof, Subsurface Infiltration Basin	0.4
2009-STRA-1050-01	Combined	Verified	Lower Schuylkill River	19121	Subsurface Infiltration Basin	0.2
2009-STRA-1055-01	Combined	Verified	Lower Schuylkill River	19121	Subsurface Infiltration Basin	0.3
2009-TDBA-1072-01	Combined	Verified	Delaware Direct	19149	Bioinfiltration, Disconnected Impervious Area, Subsurface Infiltration Basin	1.5
2009-TEMP-1077-01	Combined	Verified	Delaware Direct	19122	Bioretention, Porous Pavement, Subsurface Detention Basin	0.9
2009-TEMP-1096-01	Combined	Verified	Delaware Direct	19122	Subsurface Detention Basin	2.7
2009-THEC-1174-01	Combined	Verified	Delaware Direct	19135	Bioretention, Disconnected Impervious Area, Green Roof	0.6
2009-THEM-1167-01	Combined	Verified	Delaware Direct	19121	Disconnected Impervious Area, Green Roof, Porous Pavement	0.4
2009-THEP-1173-01	Combined	Verified	Lower Schuylkill River	19140	Green Roof	0.1
2009-WALM-1045-01	MS4*	Verified	Delaware Direct	19148	Bioretention, WQ Treatment Device	8.0
2009-WEST-1222-01	Combined	Verified	Lower Schuylkill River	19139	Disconnected Impervious Area, Green Roof, Porous Pavement	1.4
2009-WOLC-1169-01	Combined	Verified	Tacony-Frankford Creek	19138	Bioinfiltration, Disconnected Impervious Area, Subsurface Detention Basin	1.7
2010-1800-1260-01	Combined	Verified	Lower Schuylkill River	19146	Disconnected Impervious Area, Subsurface Infiltration Basin	0.8

*Combined Sewer Disconnection

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
2010-1940-1435-01	Combined	Verified	Delaware Direct	19140	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	1.1
2010-3737-1331-01	Combined	Verified	Lower Schuylkill River	19104	Green Roof, Subsurface Detention Basin	0.3
2010-4109-1277-01	Combined	Verified	Lower Schuylkill River	19104	Green Roof, Porous Pavement	0.2
2010-411W-1300-01	Combined	Verified	Delaware Direct	19122	Bioretention, Subsurface Detention Basin	0.2
2010-4FRA-1464-01	Combined	Verified	Lower Schuylkill River	19103	Green Roof, Subsurface Detention Basin	0.9
2010-5526-1348-01	Combined	Verified	Darby Creek	19139	Porous Pavement, Subsurface Infiltration Basin	0.5
2010-8828-1321-01	Combined	Verified	Pennypack Creek	19136	Subsurface Infiltration Basin	2.0
2010-AGIL-1461-01	Combined	Verified	Delaware Direct	19121	Disconnected Impervious Area, Subsurface Infiltration Basin	2.3
2010-ARCH-1393-01	Combined	Verified	Delaware Direct	19122	Disconnected Impervious Area, Green Roof	0.2
2010-BRID-1233-01	Combined	Verified	Delaware Direct	19137	Porous Pavement, Subsurface Infiltration Basin	1.6
2010-BROA-1347-01	Combined	Verified	Tacony-Frankford Creek	19141	Subsurface Infiltration Basin	1.5
2010-CHOP-1367-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Green Roof, Surface Detention Basin	2.6
2010-CREA-1427-01	Combined	Verified	Delaware Direct	19125	Disconnected Impervious Area, Green Roof, Porous Pavement	0.3
2010-DICK-1410-01	Combined	Verified	Delaware Direct	19148	Disconnected Impervious Area, Porous Pavement	0.7
2010-DILW-1442-01	Combined	Verified	Lower Schuylkill River	19107	Disconnected Impervious Area, Subsurface Detention Basin, Surface Detention Basin	0.7
2010-DREX-1399-01	Combined	Verified	Lower Schuylkill River	19104	Green Roof, Subsurface Detention Basin	1.5
2010-EARL-1460-01	Combined	Verified	Lower Schuylkill River	19146	Disconnected Impervious Area, Subsurface Infiltration Basin	0.7
2010-ESPE-1288-01	Combined	Verified	Tacony-Frankford Creek	19140	Subsurface Infiltration Basin	1.7

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
2010-GEST-1346-01	Combined	Verified	Lower Schuylkill River	19131	Subsurface Detention Basin, Subsurface Infiltration Basin	1.1
2010-GRAN-1432-01	Combined	Verified	Lower Schuylkill River	19130	Green Roof, Subsurface Detention Basin	0.6
2010-HUNT-1351-01	Combined	Verified	Tacony-Frankford Creek	19140	Disconnected Impervious Area	0.1
2010-MOYE-1306-01	Combined	Verified	Delaware Direct	19125	Green Roof, Porous Pavement	0.6
2010-NORR-1475-01	Combined	Verified	Delaware Direct	19122	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	2.9
2010-NORT-1449-01	Combined	Verified	Tacony-Frankford Creek	19124	Subsurface Infiltration Basin	1.4
2010-PASC-1238-01	Combined	Verified	Cobbs Creek	19142	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	2.2
2010-PHIL-1362-01	Combined	Verified	Delaware Direct	19148	Bioretention, Surface Detention Basin	0.9
2010-PHIL-1469-01	Combined	Verified	Delaware Direct	19148	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin, Surface Detention Basin	3.4
2010-PLEA-1444-01	Combined	Verified	Tacony-Frankford Creek	19119	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.2
2010-PNKW-1360-01	Combined	Verified	Tacony-Frankford Creek	19140	Porous Pavement, Subsurface Infiltration Basin	4.2
2010-PROP-1376-01	Combined	Verified	Delaware Direct	19141	Bioinfiltration, Bioretention, Subsurface Infiltration Basin	2.9
2010-PSDC-1234-01	Combined	Verified	Delaware Direct	19147	Subsurface Infiltration Basin	1.4
2010-PSPH-1353-01	Combined	Verified	Lower Schuylkill River	19131	Green Roof, Subsurface Infiltration Basin	8.4
2010-STJO-1239-01	Combined	Verified	Lower Schuylkill River	19131	Bioinfiltration, Green Roof, Subsurface Infiltration Basin	1.3
2010-TEMP-1302-01	Combined	Verified	Delaware Direct	19122	Cistern, Disconnected Impervious Area, Subsurface Infiltration Basin	3.5

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
2010-THEF-1254-01	Combined	Verified	Lower Schuylkill River	19103	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	0.4
2010-UNIV-1312-01	Combined	Verified	Lower Schuylkill River	19104	Green Roof, Subsurface Detention Basin	0.7
2010-UNIV-1385-01	Combined	Verified	Lower Schuylkill River	19104	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	1.5
2010-WIST-1397-01	Combined	Verified	Lower Schuylkill River	19104	Green Roof, Subsurface Detention Basin	0.4
2011-3343-1653-01	Combined	Verified	Tacony-Frankford Creek	19144	Porous Pavement, Subsurface Infiltration Basin	0.8
2011-33RD-1697-01	Combined	Verified	Lower Schuylkill River	19132	Bioretention, Disconnected Impervious Area, Green Roof	0.1
2011-4240-1543-01	Combined	Verified	Lower Schuylkill River	19104	Subsurface Infiltration Basin	1.1
2011-822N-1632-01	Combined	Verified	Delaware Direct	19123	Green Roof, Porous Pavement	0.3
2011-8318-1655-01	Combined	Verified	Lower Schuylkill River	19121	Green Roof, Porous Pavement	0.2
2011-BOTT-1646-01	Combined	Verified	Tacony-Frankford Creek	19124	Bioretention, Subsurface Detention Basin	2.7
2011-CANC-1485-01	Combined	Verified	Tacony-Frankford Creek	19124	Green Roof	0.3
2011-CCTD-1535-01	Combined	Verified	Lower Schuylkill River	19139	Subsurface Infiltration Basin	1.8
2011-CHRI-1545-01	Combined	Verified	Delaware Direct	19147	Green Roof, Porous Pavement, Subsurface Infiltration Basin	1.0
2011-CONV-1491-01	Combined	Verified	Lower Schuylkill River	19107	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.3
2011-DIAM-1617-01	Combined	Verified	Delaware Direct	19140	Green Roof, Subsurface Detention Basin	0.4
2011-DOLL-1636-01	Combined	Verified	Tacony-Frankford Creek	19144	Subsurface Infiltration Basin	1.1
2011-DREX-1638-01	Combined	Verified	Lower Schuylkill River	19104	Bioretention, Disconnected Impervious Area, Green Roof	0.8
2011-EAST-1687-01	Combined	Verified	Delaware Direct	19107	Green Roof, Porous Pavement, Subsurface Detention Basin	0.3

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
2011-FAIR-1488-01	Combined	Verified	Delaware Direct	19130	Green Roof, Subsurface Detention Basin	0.4
2011-GREE-1706-01	Combined	Verified	Tacony-Frankford Creek	19138	Porous Pavement, Subsurface Detention Basin, Surface Infiltration Basin	2.0
2011-HAGE-1562-01	Combined	Verified	Delaware Direct	19125	Porous Pavement, Subsurface Infiltration Basin	2.1
2011-HAMI-1518-01	Combined	Verified	Lower Schuylkill River	19104	Cistern, Disconnected Impervious Area, Green Roof, Subsurface Infiltration Basin	2.1
2011-HOME-1571-01	Combined	Verified	Delaware Direct	19107	Bioretention, Green Roof, Subsurface Detention Basin	0.2
2011-I95S-1699-01	Combined	Verified	Delaware Direct	19125	Bioinfiltration, Bioretention, Surface Detention Basin	8.0
2011-JWSD-1674-01	Combined	Verified	Delaware Direct	19122	Disconnected Impervious Area, Subsurface Infiltration Basin	3.7
2011-KARA-1505-01	Combined	Verified	Lower Schuylkill River	19139	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	4.0
2011-MONT-1516-01	Combined	Verified	Delaware Direct	19122	Subsurface Infiltration Basin	3.6
2011-NEWB-1672-01	Combined	Verified	Lower Schuylkill River	19145	Green Roof, Porous Pavement	0.4
2011-NEWN-1620-01	Combined	Verified	Delaware Direct	19123	Green Roof, Porous Pavement, Subsurface Infiltration Basin	0.9
2011-NICE-1728-01	Combined	Verified	Tacony-Frankford Creek	19140	Porous Pavement, Subsurface Infiltration Basin	0.4
2011-NICE-1729-01	Combined	Verified	Tacony-Frankford Creek	19140	Porous Pavement, Subsurface Detention Basin	0.5
2011-NICE-1730-01	Combined	Verified	Tacony-Frankford Creek	19140	Porous Pavement, Subsurface Infiltration Basin	1.3
2011-NORT-1700-01	Combined	Verified	Tacony-Frankford Creek	19124	Porous Pavement, Subsurface Detention Basin	0.9
2011-PENN-1664-01	Combined	Verified	Lower Schuylkill River	19104	Porous Pavement	0.2

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
2011-PENN-1681-01	Combined	Verified	Lower Schuylkill River	19104	Green Roof	0.4
2011-PHIL-1596-01	Combined	Verified	Lower Schuylkill River	19104	Bioretention, Disconnected Impervious Area, Porous Pavement, Surface Detention Basin	3.5
2011-PROP-1483-01	Combined	Verified	Tacony-Frankford Creek	19144	Porous Pavement, Surface Infiltration Basin	1.6
2011-PROP-1662-01	Combined	Verified	Lower Schuylkill River	19130	Subsurface Infiltration Basin, Surface Infiltration Basin	3.7
2011-SAMU-1569-01	Combined	Verified	Delaware Direct	19111	Porous Pavement	0.4
2011-STMA-1508-01	Combined	Verified	Delaware Direct	19147	Green Roof, Porous Pavement, Subsurface Detention Basin, Subsurface Infiltration Basin	0.5
2011-TEMP-1622-01	Combined	Verified	Delaware Direct	19122	Blue Roof, Green Roof, Porous Pavement, Subsurface Infiltration Basin	2.2
2011-TEMP-1739-01	Combined	Verified	Delaware Direct	19122	Bioretention, Cistern, Porous Pavement, Subsurface Detention Basin, Subsurface Infiltration Basin	2.4
2011-THEB-1594-01	Combined	Verified	Tacony-Frankford Creek	19124	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin, Subsurface Infiltration Basin	1.6
2011-TOLL-1586-01	Combined	Verified	Lower Schuylkill River	19146	Disconnected Impervious Area, Green Roof, Subsurface Infiltration Basin	3.9
2012-1213-1925-01	Combined	Verified	Delaware Direct	19107	Cistern, Green Roof, Subsurface Detention Basin	0.3
2012-1220-1913-01	Combined	Verified	Delaware Direct	19123	Green Roof, Porous Pavement	0.4
2012-1426-1805-01	Combined	Verified	Lower Schuylkill River	19102	Blue Roof, Green Roof	0.3
2012-1900-1754-01	Combined	Verified	Lower Schuylkill River	19145	Green Roof, Porous Pavement	0.6

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
2012-1919-1929-01	Combined	Verified	Lower Schuylkill River	19103	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	1.2
2012-2549-1840-01	Combined	Verified	Delaware Direct	19125	Porous Pavement	1.0
2012-3601-2053-01	Combined	Verified	Lower Schuylkill River	19104	Bioretention, Subsurface Detention Basin	0.4
2012-412N-1844-01	Combined	Verified	Delaware Direct	19123	Green Roof, Porous Pavement, Subsurface Infiltration Basin	1.2
2012-600N-1963-01	Combined	Verified	Delaware Direct	19123	Green Roof, Porous Pavement	0.4
2012-701W-2002-01	Combined	Verified	Delaware Direct	19133	Disconnected Impervious Area, Porous Pavement, Subsurface Detention Basin, Subsurface Infiltration Basin	4.7
2012-810A-1974-01	Combined	Verified	Delaware Direct	19107	Bioretention, Subsurface Detention Basin	0.2
2012-915N-1854-01	Combined	Verified	Delaware Direct	19123	Porous Pavement, Subsurface Infiltration Basin	1.4
2012-AHMA-1831-01	Combined	Verified	Delaware Direct	19133	Disconnected Impervious Area, Subsurface Infiltration Basin	2.1
2012-BUIL-1807-01	Combined	Verified	Tacony-Frankford Creek	19111	Disconnected Impervious Area	0.1
2012-CANC-1770-01	Combined	Verified	Tacony-Frankford Creek	19124	Bioinfiltration, Green Roof	0.6
2012-CARP-1765-01	Combined	Verified	Delaware Direct	19146	Bioretention, Green Roof, Porous Pavement	0.4
2012-CENT-1791-01	Combined	Verified	Delaware Direct	19122	Porous Pavement	1.3
2012-CIRA-1937-01	Combined	Verified	Lower Schuylkill River	19104	Green Roof, Subsurface Detention Basin	2.0
2012-EPIS-1888-01	Combined	Verified	Lower Schuylkill River	19104	Green Roof, Subsurface Detention Basin	0.2
2012-ESPE-1947-01	Combined	Verified	Tacony-Frankford Creek	19140	Disconnected Impervious Area, Porous Pavement, Subsurface Detention Basin	3.7
2012-GARY-1938-01	Combined	Verified	Lower Schuylkill River	19146	Bioinfiltration, Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	1.4

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
2012-HUNT-1764-01	Combined	Verified	Tacony-Frankford Creek	19140	Disconnected Impervious Area, Porous Pavement	1.8
2012-INGE-1798-01	Combined	Verified	Delaware Direct	19121	Disconnected Impervious Area, Subsurface Infiltration Basin	0.9
2012-INGL-1949-01	Combined	Verified	Lower Schuylkill River	19131	Bioretention, Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	3.9
2012-LAWR-1945-01	Combined	Verified	Delaware Direct	19123	Green Roof, Porous Pavement	0.4
2012-LINC-2012-01	Combined	Verified	Delaware Direct	19148	Bioinfiltration, Porous Pavement	1.8
2012-PENN-1774-01	Combined	Verified	Lower Schuylkill River	19104	Bioinfiltration, Subsurface Detention Basin	1.1
2012-PRES-1785-01	Combined	Verified	Lower Schuylkill River	19131	Green Roof, Porous Pavement	0.5
2012-PROP-1883-01	Combined	Verified	Tacony-Frankford Creek	19138	Subsurface Infiltration Basin	2.3
2012-RIVE-2027-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Porous Pavement	3.3
2012-RODE-1835-01	Combined	Verified	Delaware Direct	19130	Subsurface Infiltration Basin	1.3
2012-SCHU-2065-01	Combined	Verified	Lower Schuylkill River	19146	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	3.4
2012-SENI-1900-01	Combined	Verified	Lower Schuylkill River	19145	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	0.4
2012-SOUT-1782-01	Combined	Verified	Delaware Direct	19102	Green Roof, Subsurface Detention Basin	0.8
2012-SPAR-1850-01	Combined	Verified	Delaware Direct	19148	Bioinfiltration, Disconnected Impervious Area, Porous Pavement	0.8
2012-SPRU-1813-01	Combined	Verified	Delaware Direct	19107	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.1
2012-SR00-2026-01	Combined	Verified	Delaware Direct	19125	Bioinfiltration, Bioretention	2.9
2012-STFR-1986-01	Combined	Verified	Delaware Direct	19125	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	0.3

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
2012-SYSC-1931-01	Combined	Verified	Delaware Direct	19148	Bioretention	3.9
2012-TDBA-2047-01	Combined	Verified	Delaware Direct	19149	Bioinfiltration, Disconnected Impervious Area, Subsurface Infiltration Basin	1.1
2012-THEM-1892-01	Combined	Verified	Delaware Direct	19106	Cistern, Disconnected Impervious Area, Green Roof, WQ Treatment Device	0.8
2012-TOLL-1898-01	Combined	Verified	Delaware Direct	19147	Disconnected Impervious Area, Green Roof	1.2
2012-UNIV-1848-01	Combined	Verified	Lower Schuylkill River	19104	Bioinfiltration, Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Detention Basin	1.6
2012-WISS-1891-01	Combined	Verified	Tacony-Frankford Creek	19138	Bioretention, Disconnected Impervious Area	1.3
2013-1118-2248-01	Combined	Verified	Delaware Direct	19107	Green Roof, Porous Pavement, Subsurface Detention Basin	0.8
2013-1323-2310-01	Combined	Verified	Delaware Direct	19122	Porous Pavement, Subsurface Infiltration Basin	0.8
2013-1601-2261-01	Combined	Verified	Delaware Direct	19148	Disconnected Impervious Area, Subsurface Infiltration Basin	1.5
2013-1900-2151-01	Combined	Verified	Lower Schuylkill River	19132	Bioretention, Subsurface Detention Basin, Surface Detention Basin	2.0
2013-1901-2109-01	Combined	Verified	Lower Schuylkill River	19146	Green Roof, Porous Pavement, Subsurface Infiltration Basin	0.6
2013-2012-2072-01	Combined	Verified	Lower Schuylkill River	19121	Green Roof, Porous Pavement	0.2
2013-2300-2240-01	Combined	Verified	Lower Schuylkill River	19146	Bioretention, Subsurface Detention Basin	0.9
2013-23RD-2272-01	Combined	Verified	Lower Schuylkill River	19140	Disconnected Impervious Area, Subsurface Infiltration Basin	0.6
2013-2413-2183-01	Combined	Verified	Delaware Direct	19132	Green Roof, Subsurface Infiltration Basin	0.8
2013-3541-2376-01	Combined	Verified	Delaware Direct	19134	Disconnected Impervious Area, Subsurface Infiltration Basin	1.0

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
2013-4783-2339-01	Combined	Verified	Pennypack Creek	19136	Disconnected Impervious Area, Porous Pavement, Subsurface Detention Basin	1.8
2013-708N-2316-01	Combined	Verified	Delaware Direct	19123	Bioinfiltration, Subsurface Infiltration Basin	0.6
2013-8268-2116-01	Combined	Verified	Delaware Direct	19123	Subsurface Infiltration Basin	0.8
2013-900S-2174-01	Combined	Verified	Delaware Direct	19147	Bioinfiltration, Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	1.4
2013-9THS-2075-01	Combined	Verified	Delaware Direct	19123	Subsurface Infiltration Basin	4.6
2013-ALDI-2287-01	Combined	Verified	Darby Creek	19151	Bioretention	0.3
2013-CECI-2157-01	Combined	Verified	Lower Schuylkill River	19121	Disconnected Impervious Area, Green Roof, Subsurface Infiltration Basin	1.6
2013-CHOP-2288-01	Combined	Verified	Delaware Direct	19145	Bioretention, Porous Pavement, Subsurface Detention Basin	1.2
2013-CIRA-2405-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.6
2013-COBB-2080-01	Combined	Verified	Cobbs Creek	19143	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	0.8
2013-DREX-2081-01	Combined	Verified	Lower Schuylkill River	19104	Subsurface Detention Basin, Surface Detention Basin	1.3
2013-EDBE-2293-01	Combined	Verified	Delaware Direct	19122	Subsurface Infiltration Basin	6.2
2013-FIRS-2202-01	Combined	Verified	Delaware Direct	19124	Bioinfiltration, Disconnected Impervious Area	6.2
2013-GRAC-2328-01	Combined	Verified	Delaware Direct	19134	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	0.6
2013-HALP-2134-01	Combined	Verified	Lower Schuylkill River	19121	Disconnected Impervious Area, Subsurface Infiltration Basin	1.6

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
2013-HELP-2241-01	Combined	Verified	Lower Schuylkill River	19153	Disconnected Impervious Area, Surface Infiltration Basin	2.0
2013-MAST-2259-01	Combined	Verified	Lower Schuylkill River	19121	Disconnected Impervious Area	0.6
2013-MUSE-2346-01	Combined	Verified	Lower Schuylkill River	19130	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	4.5
2013-NEUR-2140-01	Combined	Verified	Lower Schuylkill River	19104	Bioinfiltration, Bioretention, Disconnected Impervious Area, Green Roof, Porous Pavement	0.4
2013-NEWC-2114-01	Combined	Verified	Lower Schuylkill River	19104	Bioinfiltration, Disconnected Impervious Area, Green Roof, Porous Pavement	1.4
2013-ONER-2304-01	Combined	Verified	Lower Schuylkill River	19103	Bioretention, Green Roof, Subsurface Detention Basin	0.3
2013-PARK-2357-01	Combined	Verified	Lower Schuylkill River	19130	Bioinfiltration, Disconnected Impervious Area	1.0
2013-PHIL-2299-01	Combined	Verified	Delaware Direct	19102	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.2
2013-PROP-2163-01	Combined	Verified	Tacony-Frankford Creek	19141	Subsurface Infiltration Basin	1.2
2013-RESI-2173-01	Combined	Verified	Cobbs Creek	19143	Disconnected Impervious Area, Green Roof	0.1
2013-SETT-2085-01	Combined	Verified	Tacony-Frankford Creek	19144	Bioretention, Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Detention Basin	2.4
2013-SHOP-2250-01	Combined	Verified	Delaware Direct	19124	Green Roof, Subsurface Detention Basin, Subsurface Infiltration Basin	9.4
2013-STCH-2103-01	Combined	Verified	Delaware Direct	19134	Bioinfiltration, Bioretention, Disconnected Impervious Area	4.6
2013-STCH-2149-01	Combined	Verified	Delaware Direct	19134	Bioretention, Disconnected Impervious Area	3.8

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
2013-TACO-2197-01	Combined	Verified	Delaware Direct	19135	Bioinfiltration, Disconnected Impervious Area, Subsurface Detention Basin	2.1
2013-TAJD-2286-01	Combined	Verified	Delaware Direct	19122	Bioretention, Disconnected Impervious Area, Green Roof, Subsurface Detention Basin, Subsurface Infiltration Basin	1.3
2013-TALL-2349-01	Combined	Verified	Delaware Direct	19133	Bioinfiltration, Subsurface Infiltration Basin	2.9
2013-TEMP-2178-01	Combined	Verified	Delaware Direct	19140	Bioretention, Subsurface Detention Basin	1.1
2013-THES-2177-01	Combined	Verified	Delaware Direct	19123	Subsurface Infiltration Basin	1.3
2013-THES-2392-01	Combined	Verified	Lower Schuylkill River	19104	Blue Roof, Green Roof	0.6
2013-UPEN-2280-01	Combined	Verified	Lower Schuylkill River	19104	Subsurface Infiltration Basin	1.1
2014-1123-2645-01	Combined	Verified	Delaware Direct	19125	Subsurface Infiltration Basin	0.7
2014-1325-2469-01	Combined	Verified	Delaware Direct	19121	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	0.8
2014-1326-2422-01	Combined	Verified	Delaware Direct	19122	Subsurface Infiltration Basin	0.9
2014-1350-2658-01	Combined	Verified	Delaware Direct	19122	Bioretention, Subsurface Infiltration Basin	1.1
2014-1515-2746-01	Combined	Verified	Delaware Direct	19106	Porous Pavement, Subsurface Infiltration Basin	0.8
2014-1601-2434-01	Combined	Verified	Lower Schuylkill River	19103	Bioretention, Porous Pavement, Subsurface Detention Basin	0.3
2014-1601-2440-01	Combined	Verified	Lower Schuylkill River	19103	Bioretention, Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.7
2014-2013-2751-01	Combined	Verified	Delaware Direct	19125	Porous Pavement, Subsurface Infiltration Basin	0.5
2014-2201-2677-01	Combined	Verified	Lower Schuylkill River	19145	Subsurface Infiltration Basin, WQ Treatment Device	1.7

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
2014-2322-2715-01	Combined	Verified	Lower Schuylkill River	19130	Porous Pavement, Subsurface Infiltration Basin	0.9
2014-250N-2565-01	Combined	Verified	Delaware Direct	19106	Green Roof, Porous Pavement	1.2
2014-3600-2426-01	Combined	Verified	Lower Schuylkill River	19104	Bioretention, Green Roof, Subsurface Detention Basin, Surface Detention Basin	1.3
2014-420F-2574-01	Combined	Verified	Delaware Direct	19123	Disconnected Impervious Area, Subsurface Infiltration Basin	1.0
2014-4525-2505-01	Combined	Verified	Lower Schuylkill River	19139	Green Roof	0.3
2014-500W-2580-01	Combined	Verified	Delaware Direct	19106	Green Roof, Subsurface Detention Basin	0.4
2014-5454-2552-01	Combined	Verified	Tacony-Frankford Creek	19144	Bioretention, Porous Pavement, Subsurface Detention Basin	0.9
2014-5800-2463-01	Combined	Verified	Lower Schuylkill River	19131	Disconnected Impervious Area, Surface Infiltration Basin	1.2
2014-63RD-2502-01	Combined	Verified	Cobbs Creek	19139	Subsurface Infiltration Basin	1.9
2014-8365-2530-01	Combined	Verified	Delaware Direct	19123	Subsurface Infiltration Basin	1.5
2014-ALLE-2455-01	Combined	Verified	Delaware Direct	19125	Disconnected Impervious Area, Green Roof, Porous Pavement	0.4
2014-ALLE-2522-01	Combined	Verified	Delaware Direct	19133	Subsurface Infiltration Basin	0.8
2014-BLUM-2711-01	Combined	Verified	Lower Schuylkill River	19121	Porous Pavement, Subsurface Infiltration Basin	2.5
2014-CHIC-2755-01	Combined	Verified	Tacony-Frankford Creek	19124	Subsurface Infiltration Basin	0.8
2014-DOLL-2453-01	Combined	Verified	Delaware Direct	19135	Bioretention, Subsurface Detention Basin	1.5
2014-DREX-2457-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Porous Pavement	2.6
2014-ENVI-2646-01	Combined	Verified	Delaware Direct	19148	Bioretention, Subsurface Detention Basin, Surface Infiltration Basin	2.0
2014-GSTR-2443-01	Combined	Verified	Tacony-Frankford Creek	19124	Bioinfiltration, Subsurface Infiltration Basin	1.4
2014-HUNT-2525-01	Combined	Verified	Lower Schuylkill River	19140	Bioretention, Subsurface Detention Basin	0.9

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
2014-LASA-2425-01	Combined	Verified	Tacony-Frankford Creek	19144	Bioinfiltration, Porous Pavement, Subsurface Infiltration Basin	2.2
2014-NORT-2603-01	Combined	Verified	Delaware Direct	19123	Bioretention, Subsurface Detention Basin	0.5
2014-PAND-2762-01	Combined	Verified	Delaware Direct	19134	Subsurface Infiltration Basin	0.5
2014-PERE-2472-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Subsurface Detention Basin	0.6
2014-PHAG-2547-01	Combined	Verified	Lower Schuylkill River	19132	Bioretention, Subsurface Detention Basin	0.3
2014-PHAM-2476-01	Combined	Verified	Lower Schuylkill River	19121	Bio-infiltration/Bio-retention, Bioretention, Subsurface Detention Basin	1.6
2014-PHAO-2459-01	Combined	Verified	Lower Schuylkill River	19132	Bioretention, Porous Pavement, Subsurface Detention Basin	0.4
2014-SEPT-2614-01	Combined	Verified	Delaware Direct	19124	Disconnected Impervious Area, Green Roof	0.3
2014-STEN-2616-01	Combined	Verified	Tacony-Frankford Creek	19140	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	0.7
2014-STJO-2424-01	Combined	Verified	Delaware Direct	19122	Disconnected Impervious Area, Subsurface Infiltration Basin	6.9
2014-TEMP-2699-01	Combined	Verified	Delaware Direct	19121	Porous Pavement	0.4
2014-TRUE-2595-01	Combined	Verified	Delaware Direct	19123	Subsurface Infiltration Basin	1.5
2014-UNIV-2747-01	Combined	Verified	Lower Schuylkill River	19104	Porous Pavement	0.5
2014-VERN-2690-01	Combined	Verified	Tacony-Frankford Creek	19144	Disconnected Impervious Area, Porous Pavement	0.6
2014-VONC-2749-01	Combined	Verified	Lower Schuylkill River	19130	Disconnected Impervious Area, Subsurface Infiltration Basin	0.5
2014-WEST-2612-01	Combined	Verified	Lower Schuylkill River	19121	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	1.9
2014-WISS-2641-01	Combined	Verified	Delaware Direct	19135	Disconnected Impervious Area, Porous Pavement	0.4

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
2015-1002-2906-01	Combined	Verified	Delaware Direct	19123	Bioinfiltration, Porous Pavement, Subsurface Detention Basin	0.9
2015-2338-2915-01	Combined	Verified	Delaware Direct	19125	Subsurface Infiltration Basin	0.8
2015-2517-2803-01	Combined	Verified	Delaware Direct	19134	Green Roof, Porous Pavement, Subsurface Detention Basin	0.4
2015-3201-2786-01	Combined	Verified	Lower Schuylkill River	19104	Bioretention, Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.3
2015-3675-2955-01	Combined	Verified	Lower Schuylkill River	19104	Green Roof, Porous Pavement, Subsurface Detention Basin	0.7
2015-4050-2828-01	Combined	Verified	Lower Schuylkill River	19104	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	0.7
2015-40TH-2780-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Subsurface Infiltration Basin	1.2
2015-7092-2945-01	Combined	Verified	Delaware Direct	19147	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	0.8
2015-8385-2856-01	Combined	Verified	Delaware Direct	19123	Subsurface Infiltration Basin	1.8
2015-CAMD-2769-01	Combined	Verified	Delaware Direct	19134	Surface Infiltration Basin	3.4
2015-DLAT-2926-01	Combined	Verified	Delaware Direct	19120	Bioretention, Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Detention Basin	8.0
2015-GAUD-2962-01	Combined	Verified	Lower Schuylkill River	19140	Bioretention, Porous Pavement, Subsurface Detention Basin	0.6
2015-GROC-2925-01	Combined	Verified	Delaware Direct	19137	Bioretention, Subsurface Detention Basin	2.6
2015-JFKP-2951-01	Combined	Verified	Lower Schuylkill River	19102	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	1.1
2015-LANI-2871-01	Combined	Verified	Lower Schuylkill River	19145	Disconnected Impervious Area, Porous Pavement	0.3

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
2015-LASA-2848-01	Combined	Verified	Tacony-Frankford Creek	19144	Bioinfiltration, Porous Pavement	1.1
2015-PHIL-2982-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.2
2015-ROBE-2975-01	Combined	Verified	Tacony-Frankford Creek	19140	Bioretention, Subsurface Detention Basin	0.5
2015-ROYA-2911-01	Combined	Verified	Tacony-Frankford Creek	19124	Disconnected Impervious Area, Subsurface Infiltration Basin, Surface Detention Basin, Surface Infiltration Basin	4.5
2015-SOUT-2956-01	Combined	Verified	Lower Schuylkill River	19145	Bioretention, Subsurface Detention Basin, Surface Detention Basin	5.1
2015-TEMP-2829-01	Combined	Verified	Delaware Direct	19122	Porous Pavement, Subsurface Infiltration Basin	0.3
2015-TEMP-2964-01	Combined	Verified	Delaware Direct	19122	Porous Pavement, Subsurface Infiltration Basin	12.3
2015-TULI-2824-01	Combined	Verified	Delaware Direct	19122	Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Infiltration Basin	3.3
2015-UCHS-2939-01	Combined	Verified	Lower Schuylkill River	19104	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin, Subsurface Infiltration Basin	3.3
2015-WAYN-2771-01	Combined	Verified	Tacony-Frankford Creek	19144	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	1.2
2015-WYNN-2986-01	Combined	Verified	Lower Schuylkill River	19131	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	0.7
FY16-ADAM-4220-01	Combined	Verified	Tacony-Frankford Creek	19120	Bioinfiltration	1.1
FY16-BARI-4074-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Subsurface Infiltration Basin	0.8
FY16-BERN-4350-01	Combined	Verified	Lower Schuylkill River	19121	Subsurface Infiltration Basin	1.4

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
FY16-COLU-4303-01	Combined	Verified	Delaware Direct	19147	Disconnected Impervious Area, Subsurface Infiltration Basin	0.9
FY16-DREX-4244-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Porous Pavement	1.0
FY16-EAST-4017-01	Combined	Verified	Delaware Direct	19125	Subsurface Infiltration Basin	0.7
FY16-EAST-4179-01	Combined	Verified	Delaware Direct	19134	Bioinfiltration, Disconnected Impervious Area	0.5
FY16-FAIR-4011-01	Combined	Verified	Delaware Direct	19123	Subsurface Infiltration Basin	1.4
FY16-FEDE-4201-01	Combined	Verified	Lower Schuylkill River	19146	Subsurface Infiltration Basin	0.9
FY16-FIVE-4029-01	Combined	Verified	Tacony-Frankford Creek	19124	Bioinfiltration, Bioretention, Subsurface Infiltration Basin	1.1
FY16-FRAN-4076-01	Combined	Verified	Tacony-Frankford Creek	19124	Disconnected Impervious Area	0.0
FY16-HANO-4040-01	Combined	Verified	Lower Schuylkill River	19107	Subsurface Detention Basin	2.7
FY16-HELP-4027-01	Combined	Verified	Delaware Direct	19123	Disconnected Impervious Area, Subsurface Infiltration Basin	0.3
FY16-JACK-4123-01	Combined	Verified	Delaware Direct	19124	Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Infiltration Basin	2.2
FY16-KENS-4216-01	Combined	Verified	Delaware Direct	19125	Bioinfiltration, Porous Pavement	0.8
FY16-LASA-4354-01	Combined	Verified	Tacony-Frankford Creek	19141	Disconnected Impervious Area, Porous Pavement	0.2
FY16-LINC-4309-01	Combined	Verified	Delaware Direct	19146	Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Infiltration Basin	4.1
FY16-LOVE-4088-01	Combined	Verified	Tacony-Frankford Creek	19119	Bioinfiltration, Disconnected Impervious Area, Green Roof	0.3
FY16-LUCI-4053-01	Combined	Verified	Lower Schuylkill River	19139	Disconnected Impervious Area	0.3
FY16-NATI-4211-01	Combined	Verified	Delaware Direct	19106	Subsurface Detention Basin	1.7
FY16-NFRO-4270-01	Combined	Verified	Delaware Direct	19122	Subsurface Infiltration Basin	1.2

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
FY16-PROJ-4329-01	Combined	Verified	Delaware Direct	19122	Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Infiltration Basin	0.4
FY16-PROP-4298-01	Combined	Verified	Lower Schuylkill River	19103	Green Roof, Surface Detention Basin	0.0
FY16-RACE-4127-01	Combined	Verified	Delaware Direct	19106	Disconnected Impervious Area, Porous Pavement, Subsurface Detention Basin, WQ Treatment Device	2.0
FY16-SIMP-4337-01	Combined	Verified	Lower Schuylkill River	19131	Bioinfiltration, Disconnected Impervious Area, Subsurface Infiltration Basin	1.4
FY16-SMIT-4151-01	Combined	Verified	Lower Schuylkill River	19146	Disconnected Impervious Area, Porous Pavement	4.3
FY16-STJO-4085-01	Combined	Verified	Lower Schuylkill River	19145	Bioretention, Porous Pavement, Subsurface Detention Basin	1.7
FY16-TEMP-4178-01	Combined	Verified	Delaware Direct	19121	Bioretention, Porous Pavement, Subsurface Detention Basin	4.2
FY16-TEMP-4277-01	Combined	Verified	Delaware Direct	19122	Porous Pavement	0.4
FY16-THCH-4142-01	Combined	Verified	Lower Schuylkill River	19102	Blue Roof, Green Roof, Subsurface Detention Basin, WQ Treatment Device	1.3
FY16-UCHS-4213-01	Combined	Verified	Lower Schuylkill River	19104		0.0
FY16-USCI-4261-01	Combined	Verified	Lower Schuylkill River	19143	Bioinfiltration, Bioretention, Porous Pavement	1.4
FY16-WASH-4360-01	Combined	Verified	Lower Schuylkill River	19146	Bioinfiltration, Subsurface Infiltration Basin	2.4
FY17-ABIG-4691-01	Combined	Verified	Delaware Direct	19148	Bio-infiltration/Bio-retention, Subsurface Infiltration Basin	0.8
FY17-ALDI-4565-01	Combined	Verified	Tacony-Frankford Creek	19124	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin, WQ Treatment Device	2.7

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
FY17-AUTO-4659-01	Combined	Verified	Delaware Direct	19148	Subsurface Detention Basin, WQ Treatment Device	1.2
FY17-BROA-4539-01	Combined	Verified	Lower Schuylkill River	19130	Disconnected Impervious Area, Subsurface Detention Basin	1.0
FY17-CAMP-4378-01	Combined	Verified	Lower Schuylkill River	19140	Disconnected Impervious Area, Subsurface Infiltration Basin	0.9
FY17-CANT-4433-01	Combined	Verified	Delaware Direct	19148	Blue Roof, Disconnected Impervious Area, Porous Pavement	0.9
FY17-EALL-4578-01	Combined	Verified	Delaware Direct	19125	Porous Pavement, Subsurface Infiltration Basin	0.9
FY17-EAST-4468-01	Combined	Verified	Lower Schuylkill River	19121	Subsurface Detention Basin	1.1
FY17-EAST-4640-01	Combined	Verified	Cobbs Creek	19139	Bioinfiltration, Blue Roof, Disconnected Impervious Area, Green Roof, Subsurface Detention Basin, WQ Treatment Device	2.3
FY17-EGIR-4646-01	Combined	Verified	Delaware Direct	19125	Green Roof, Porous Pavement	0.5
FY17-HAMP-4618-01	Combined	Verified	Delaware Direct	19111	Bioinfiltration, Disconnected Impervious Area	2.5
FY17-LEED-4633-01	Combined	Verified	Tacony-Frankford Creek	19150	Bioinfiltration	5.2
FY17-LUCI-4480-01	Combined	Verified	Lower Schuylkill River	19139	Disconnected Impervious Area, Porous Pavement, Subsurface Detention Basin, Surface Detention Basin, WQ Treatment Device	1.0
FY17-MALB-4466-01	Combined	Verified	Delaware Direct	19125	Porous Pavement, Subsurface Infiltration Basin	0.7
FY17-NBRO-4434-01	Combined	Verified	Delaware Direct	19121	Bioinfiltration, Porous Pavement, Subsurface Detention Basin	0.0
FY17-NORT-4607-01	Combined	Verified	Lower Schuylkill River	19121	Subsurface Infiltration Basin	0.0
FY17-NTHS-4495-01	Combined	Verified	Lower Schuylkill River	19130	Green Roof, Subsurface Detention Basin	0.9

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
FY17-NTHS-4672-01	Combined	Verified	Delaware Direct	19122	Porous Pavement, Subsurface Infiltration Basin	3.1
FY17-PESS-4511-01	Combined	Verified	Lower Schuylkill River	19145	Surface Detention Basin	9.6
FY17-PHAA-4543-01	Combined	Verified	Lower Schuylkill River	19121	Porous Pavement, Subsurface Infiltration Basin	0.7
FY17-PHAN-4699-01	Combined	Verified	Delaware Direct	19122	Disconnected Impervious Area, Porous Pavement, Subsurface Detention Basin	2.5
FY17-PHIL-4417-01	Combined	Verified	Delaware Direct	19121	Subsurface Detention Basin, WQ Treatment Device	2.4
FY17-ROWE-4634-01	Combined	Verified	Tacony-Frankford Creek	19126	Bioinfiltration	1.2
FY17-SENI-4411-01	Combined	Verified	Lower Schuylkill River	19145	Disconnected Impervious Area, Porous Pavement, Subsurface Detention Basin, WQ Treatment Device	1.0
FY17-SOUT-4486-01	Combined	Verified	Lower Schuylkill River	19104	Green Roof, Subsurface Infiltration Basin	0.6
FY17-STHS-4755-01	Combined	Verified	Lower Schuylkill River	19146	Subsurface Infiltration Basin	1.2
FY17-STPI-4413-01	Combined	Verified	Cobbs Creek	19143	Bioinfiltration, Disconnected Impervious Area	0.5
FY17-TEMP-4573-01	Combined	Verified	Delaware Direct	19122	Disconnected Impervious Area, Porous Pavement	0.2
FY17-THAN-4446-01	Combined	Verified	Lower Schuylkill River	19146	Subsurface Detention Basin, WQ Treatment Device	1.0
FY17-VIEW-4457-01	Combined	Verified	Delaware Direct	19122	Bioinfiltration, Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Infiltration Basin	4.1
FY17-WALM-4419-01	Combined	Verified	Tacony-Frankford Creek	19114	Subsurface Detention Basin, WQ Treatment Device	15.7
FY17-WEND-4527-01	Combined	Verified	Cobbs Creek	19139	Subsurface Infiltration Basin	1.3

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
FY17-WGOD-4567-01	Combined	Verified	Tacony-Frankford Creek	19141	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	1.1
FY17-WHAR-4726-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Infiltration Basin	1.6
FY17-WIDE-4636-01	Combined	Verified	Tacony-Frankford Creek	19141	Bioinfiltration	4.5
FY17-WYNN-4704-01	Combined	Verified	Lower Schuylkill River	19131	Disconnected Impervious Area, Subsurface Infiltration Basin	0.8
FY17-XXXX-4458-01	Combined	Verified	Lower Schuylkill River	19131	Subsurface Infiltration Basin	2.3
FY18-ALBE-4973-01	Combined	Verified	Tacony-Frankford Creek	19141	Disconnected Impervious Area, Subsurface Infiltration Basin	1.9
FY18-BART-5075-01	Combined	Verified	Lower Schuylkill River	19143	Subsurface Infiltration Basin	6.1
FY18-CENT-5008-01	Combined	Verified	Tacony-Frankford Creek	19141	Bioinfiltration, Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	5.7
FY18-CHES-4832-01	Combined	Verified	Lower Schuylkill River	19104	Green Roof, Porous Pavement	0.2
FY18-CHES-4975-01	Combined	Verified	Lower Schuylkill River	19104	Bioretention, Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Detention Basin	1.2
FY18-DEST-4909-01	Combined	Verified	Delaware Direct	19123	Subsurface Infiltration Basin	5.9
FY18-ENOR-4838-01	Combined	Verified	Delaware Direct	19125	Bioinfiltration, Porous Pavement	0.9
FY18-GALA-5145-01	Combined	Verified	Tacony-Frankford Creek	19138	Bio-infiltration/Bio-retention, Subsurface Detention Basin	0.6
FY18-HSTX-5076-01	Combined	Verified	Delaware Direct	19134	Subsurface Detention Basin, WQ Treatment Device	1.3
FY18-IRVI-4922-01	Combined	Verified	Cobbs Creek	19143	Porous Pavement	0.8

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
FY18-LABO-5153-01	Combined	Verified	Delaware Direct	19122	Porous Pavement, Subsurface Detention Basin, WQ Treatment Device	1.8
FY18-MERC-4857-01	Combined	Verified	Cobbs Creek	19143	Disconnected Impervious Area, Subsurface Detention Basin, WQ Treatment Device	0.5
FY18-NRDS-4851-01	Combined	Verified	Lower Schuylkill River	19103	Subsurface Infiltration Basin	0.8
FY18-PARK-4775-01	Combined	Verified	Lower Schuylkill River	19131	Subsurface Detention Basin, WQ Treatment Device	1.6
FY18-PARK-4896-01	Combined	Verified	Lower Schuylkill River	19131	Disconnected Impervious Area	0.1
FY18-PEAB-4939-01	Combined	Verified	Delaware Direct	19122	Porous Pavement	0.2
FY18-PERK-5001-01	Combined	Verified	Delaware Direct	19130	Green Roof, Porous Pavement	0.3
FY18-PHAS-4886-01	Combined	Verified	Delaware Direct	19148	Bioretention, Disconnected Impervious Area	2.5
FY18-PHIL-5038-01	Combined	Verified	Delaware Direct	19107	Subsurface Detention Basin, WQ Treatment Device	1.6
FY18-QWEQ-5128-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Subsurface Infiltration Basin	1.7
FY18-RENO-4879-01	Combined	Verified	Cobbs Creek	19143	Bioinfiltration, Depave	2.6
FY18-SUSQ-5052-01	Combined	Verified	Lower Schuylkill River	19132	Bioretention	1.9
FY18-UHAU-5117-01	Combined	Verified	Delaware Direct	19125	Subsurface Detention Basin	1.9
FY18-WALN-4820-01	Combined	Verified	Cobbs Creek	19139	Subsurface Infiltration Basin	0.7
FY18-WEST-5167-01	Combined	Verified	Delaware Direct	19123	Bioretention	0.0
FY19-AUTO-5287-01	Combined	Verified	Lower Schuylkill River	19145	Subsurface Detention Basin, WQ Treatment Device	0.6
FY19-CASA-5240-01	Combined	Verified	Delaware Direct	19133	Subsurface Infiltration Basin	0.0
FY19-CHES-5484-01	Combined	Verified	Lower Schuylkill River	19104	Bioretention, Green Roof	0.9
FY19-DREX-5307-01	Combined	Verified	Lower Schuylkill River	19104	Subsurface Infiltration Basin	0.5

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
FY19-MARK-5603-01	Combined	Verified	Lower Schuylkill River	19139	Bioinfiltration	6.4
FY19-POPL-5344-01	Combined	Verified	Lower Schuylkill River	19131	Subsurface Detention Basin	0.7
FY19-TEMP-5500-01	Combined	Verified	Delaware Direct	19122	Green Roof	0.3
FY20-WECC-5809-01	Combined	Verified	Delaware Direct	19148	Subsurface Detention Basin, WQ Treatment Device	2.0
Total Greened Acres:						**842**

Table 4: Completed Incentivized Green Stormwater Infrastructure Projects

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
2012-5818-1784-01	Combined	Verified	Tacony-Frankford Creek	19144	Bioinfiltration	0.2
2012-WOLF-1792-01	Combined	Verified	Delaware Direct	19137		11.7
2013-CARD-2076-01	Combined	Verified	Delaware Direct	19124	Subsurface Detention Basin, Surface Detention Basin	60.6
2012-GSFS-2028-01	Combined	Verified	Tacony-Frankford Creek	19144	Bioretention, Depave	1.1
2013-1148-2105-01	Combined	Verified	Delaware Direct	19147	Green Roof, Subsurface Infiltration Basin, Surface Infiltration Basin	1.0
2013-CARD-2220-01	Combined	Verified	Tacony-Frankford Creek	19124	Surface Detention Basin	18.6
2013-SITE-2387-01	Combined	Verified	Lower Schuylkill River	19131	Subsurface Infiltration Basin	7.2
2013-SITE-2401-01	Combined	Verified	Lower Schuylkill River	19131	Subsurface Infiltration Basin	5.8
2014-GLOB-2467-01	Combined	Verified	Tacony-Frankford Creek	19124	Subsurface Detention Basin, Surface Detention Basin	0.8
2014-SITE-2501-01	Combined	Verified	Lower Schuylkill River	19131	Bioinfiltration	44.8
2014-WILL-2541-01	Combined	Verified	Delaware Direct	19140	Depave	0.2
2014-SITE-2549-01	Combined	Verified	Lower Schuylkill River	19145	Subsurface Infiltration Basin	6.0
2014-SITE-2550-01	Combined	Verified	Delaware Direct	19135	Subsurface Infiltration Basin	2.6
2014-SITE-2592-01	Combined	Verified	Lower Schuylkill River	19153	Subsurface Infiltration Basin	9.0
2014-SITE-2666-01	Combined	Verified	Lower Schuylkill River	19153	Subsurface Infiltration Basin	4.9
2014-SITE-2665-01	Combined	Verified	Lower Schuylkill River	19145	Subsurface Detention Basin, Subsurface Infiltration Basin	15.9
2014-SITE-2682-01	Combined	Verified	Lower Schuylkill River	19131	Subsurface Detention Basin, Surface Infiltration Basin	9.4
2014-WARR-2757-01	Combined	Verified	Tacony-Frankford Creek	19124	Bioretention	3.0
2015-3560-2776-01	Combined	Verified	Delaware Direct	19134	Subsurface Infiltration Basin	1.3
2015-MAYF-2796-01	Combined	Verified	Delaware Direct	19149	Bioretention	4.7

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
2015-MART-2832-01	Combined	Verified	Tacony-Frankford Creek	19138	Bioinfiltration, Subsurface Infiltration Basin	5.2
2015-SITE-2810-01	Combined	Verified	Lower Schuylkill River	19153	Subsurface Infiltration Basin	17.6
2015-MINK-2844-01	Combined	Verified	Lower Schuylkill River	19145	Basin, Surface Infiltration Basin	1.0
2015-SITE-2809-01	Combined	Verified	Tacony-Frankford Creek	19120	Subsurface Infiltration Basin	23.0
2015-LASA-2865-01	Combined	Verified	Tacony-Frankford Creek	19141	Surface Detention Basin	9.3
2015-SITE-2812-01	Combined	Verified	Pennypack Creek	19136	Subsurface Infiltration Basin	13.3
2015-LEAE-2888-01	Combined	Verified	Lower Schuylkill River	19036	Bioinfiltration, Bio-infiltration/Bio-retention, Porous Pavement, Subsurface Infiltration Basin	2.5
2015-STJA-2895-01	Combined	Verified	Tacony-Frankford Creek	19120	Subsurface Detention Basin, Surface Detention Basin, Surface Infiltration Basin	0.6
2015-LIGH-2907-01	Combined	Verified	Delaware Direct	19140	Surface Detention Basin	0.9
2015-TAGG-2931-01	Combined	Verified	Delaware Direct	19148	Bioinfiltration, Depave, Subsurface Detention Basin	1.0
2015-FRAN-2954-01	Combined	Verified	Delaware Direct	19130	Bioretention	0.7
2015-NORT-2977-01	Combined	Verified	Tacony-Frankford Creek	19124	Subsurface Detention Basin, Subsurface Infiltration Basin, WQ Treatment Device	22.2
FY16-SITE-4016-01	Combined	Verified	Lower Schuylkill River	19145	Subsurface Detention Basin	7.6
FY16-SITE-4020-01	Combined	Verified	Delaware Direct	19136	Subsurface Infiltration Basin	3.0
FY16-SITE-4039-01	Combined	Verified	Delaware Direct	19148	Subsurface Detention Basin, Surface Detention Basin	6.9
FY16-SITE-4025-01	Combined	Verified	Pennypack Creek	19136	Subsurface Detention Basin	13.4
FY16-LIND-4086-01	Combined	Verified	Tacony-Frankford Creek	19141	Bioinfiltration	1.4
FY16-ADAM-4101-01	Combined	Verified	Tacony-Frankford Creek	19124	Disconnected Impervious Area, Surface Detention Basin	2.4

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
FY16-SITE-4104-01	Combined	Verified	Tacony-Frankford Creek	19120	Subsurface Infiltration Basin	12.8
FY16-PHIL-4134-01	Combined	Verified	Lower Schuylkill River	19130	Green Roof	0.1
FY16-JOMA-4143-01	Combined	Verified	Tacony-Frankford Creek	19124	Surface Detention Basin	1.6
FY16-ADAI-4164-01	Combined	Verified	Delaware Direct	19125	Bioinfiltration, Depave	2.6
FY16-SITE-4189-01	Combined	Verified	Tacony-Frankford Creek	19120	Subsurface Detention Basin, Surface Detention Basin	15.8
FY16-CHES-4233-01	Combined	Verified	Lower Schuylkill River	19146	Depave, Porous Pavement, Subsurface Infiltration Basin, Surface Infiltration Basin	1.3
FY16-STHS-4226-01	Combined	Verified	Lower Schuylkill River	19145	Bioretention, Subsurface Detention Basin	5.3
FY16-GAUL-4273-01	Combined	Verified	Delaware Direct	19134	Subsurface Infiltration Basin	1.5
FY16-JMPA-4286-01	Combined	Verified	Lower Schuylkill River	19142	Bioinfiltration, Depave	0.8
FY16-LASA-4274-01	Combined	Verified	Tacony-Frankford Creek	19144	Subsurface Infiltration Basin, Surface Infiltration Basin	14.6
FY16-ISTR-4292-01	Combined	Verified	Delaware Direct	19134	Blue Roof	1.1
FY16-WAKE-4282-01	Combined	Verified	Delaware Direct	19137	Subsurface Detention Basin	8.7
FY16-RICH-4302-01	Combined	Verified	Delaware Direct	19137	Disconnected Impervious Area	12.2
FY16-NAME-4323-01	Combined	Verified	Tacony-Frankford Creek	19140	Subsurface Detention Basin	8.8
FY16-ESSI-4357-01	Combined	Verified	Lower Schuylkill River	19153	Subsurface Infiltration Basin	10.2
FY17-EERI-4396-01	Combined	Verified	Tacony-Frankford Creek	19124	Subsurface Infiltration Basin	4.6
FY17-ELUZ-4412-01	Combined	Verified	Tacony-Frankford Creek	19124	Subsurface Infiltration Basin	10.4
FY17-STMA-4406-01	Combined	Verified	Delaware Direct	19122	Bio-infiltration/Bio-retention	2.2
FY17-PASC-4472-01	Combined	Verified	Lower Schuylkill River	19143	Subsurface Detention Basin, Subsurface Infiltration Basin	9.2
FY17-STEN-4469-01	Combined	Verified	Tacony-Frankford Creek	19144	Subsurface Detention Basin	4.5

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
FY17-TACO-4444-01	Combined	Verified	Delaware Direct	19137	Subsurface Infiltration Basin	12.6
FY17-STHS-4442-01	Combined	Verified	Lower Schuylkill River	19145	Subsurface Detention Basin	15.9
FY17-GRAY-4520-01	Combined	Verified	Lower Schuylkill River	19143	Subsurface Detention Basin	16.3
FY17-WHEA-4544-01	Combined	Verified	Tacony-Frankford Creek	19124	Disconnected Impervious Area, Subsurface Infiltration Basin	14.0
FY17-NDAN-4582-01	Combined	Verified	Tacony-Frankford Creek	19140	Subsurface Detention Basin	31.8
FY17-ECHE-4667-01	Combined	Verified	Tacony-Frankford Creek	19144	Bioinfiltration, Subsurface Infiltration Basin	4.2
FY17-HIST-4671-01	Combined	Verified	Tacony-Frankford Creek	19144	Bioretention, Depave, Subsurface Detention Basin	0.7
FY17-OVER-4682-01	Combined	Verified	Lower Schuylkill River	19151	Bioinfiltration, Subsurface Infiltration Basin	2.5
FY17-EDMU-4680-01	Combined	Verified	Pennypack Creek	19136	Subsurface Infiltration Basin	5.0
FY17-POSE-4687-01	Combined	Verified	Pennypack Creek	19136	Subsurface Detention Basin	5.7
FY17-ECHE-4668-01	Combined	Verified	Tacony-Frankford Creek	19144	Bioinfiltration, Subsurface Infiltration Basin	4.4
FY17-ESSI-4624-01	Combined	Verified	Lower Schuylkill River	19153	Subsurface Detention Basin	13.1
FY17-ESSI-4628-01	Combined	Verified	Lower Schuylkill River	19153	Porous Pavement, Subsurface Detention Basin, WQ Treatment Device	9.1
FY17-FRAN-4728-01	Combined	Verified	Delaware Direct	19125	Green Roof	0.1
FY17-BAKE-4685-01	Combined	Verified	Delaware Direct	19134	Subsurface Infiltration Basin	3.4
FY17-CAST-4743-01	Combined	Verified	Delaware Direct	19134	Subsurface Detention Basin	7.9
FY17-BSTR-4742-01	Combined	Verified	Delaware Direct	19134	Subsurface Infiltration Basin	10.2
FY17-NTHS-4620-01	Combined	Verified	Delaware Direct	19140	Subsurface Detention Basin	15.9
FY17-EADO-4760-01	Combined	Verified	Delaware Direct	19137	Subsurface Infiltration Basin	5.9
FY18-WHUN-4834-01	Combined	Verified	Lower Schuylkill River	19140	Subsurface Infiltration Basin	2.6
FY18-WBUL-4819-01	Combined	Verified	Delaware Direct	19140	Subsurface Detention Basin	7.1
FY18-TALM-4904-01	Combined	Verified	Lower Schuylkill River	19131	Subsurface Detention Basin	1.2

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
FY18-PINN-4913-01	Combined	Verified	Lower Schuylkill River	19131	Subsurface Infiltration Basin	2.9
FY18-NORT-4846-01	Combined	Verified	Lower Schuylkill River	19140	Subsurface Infiltration Basin	4.1
FY18-COML-4942-01	Combined	Verified	Delaware Direct	19135	Subsurface Detention Basin	1.4
FY18-GRAY-4905-01	Combined	Verified	Lower Schuylkill River	19143	Subsurface Detention Basin	2.3
FY18-PRES-4972-01	Combined	Verified	Delaware Direct	19124	Subsurface Detention Basin	10.1
FY18-DEPA-4944-01	Combined	Verified	Tacony-Frankford Creek	19422	Subsurface Detention Basin	11.9
FY18-LASA-4980-01	Combined	Verified	Tacony-Frankford Creek	19144	Subsurface Infiltration Basin	3.3
FY18-EERI-4992-01	Combined	Verified	Delaware Direct	19124	Subsurface Infiltration Basin	11.6
FY18-TALM-4995-01	Combined	Verified	Lower Schuylkill River	19131	Subsurface Infiltration Basin	1.7
FY18-ACAD-4999-01	Combined	Verified	Pennypack Creek	19114	Subsurface Infiltration Basin	5.2
FY18-PAUL-4979-01	Combined	Verified	Tacony-Frankford Creek	19124	Subsurface Infiltration Basin	2.1
FY18-ORTH-5057-01	Combined	Verified	Tacony-Frankford Creek	19124	Subsurface Detention Basin, Subsurface Infiltration Basin	7.8
FY18-WHIT-5066-01	Combined	Verified	Tacony-Frankford Creek	19124	Subsurface Detention Basin, Subsurface Infiltration Basin	8.0
FY18-ADAM-5070-01	Combined	Verified	Tacony-Frankford Creek	19124	Subsurface Infiltration Basin	4.8
FY18-STOR-5156-01	Combined	Verified	Delaware Direct	19148	Subsurface Detention Basin	67.4
FY18-OREG-5175-01	Combined	Verified	Delaware Direct	19148	Subsurface Detention Basin	7.0
FY18-BALA-5159-01	Combined	Verified	Lower Schuylkill River	19131	Surface Detention Basin	24.4
FY19-WGLE-5243-01	Combined	Verified	Lower Schuylkill River	19132	Subsurface Infiltration Basin	7.8
FY19-WGLE-5241-01	Combined	Verified	Delaware Direct	19132	Subsurface Detention Basin	3.2
FY19-PEER-5261-01	Combined	Verified	Lower Schuylkill River	19145	Subsurface Detention Basin	3.2
FY19-ARDL-5323-01	Combined	Verified	Tacony-Frankford Creek	19138	Bioinfiltration	3.4
FY19-PEER-5346-01	Combined	Verified	Lower Schuylkill River	19151	Bioinfiltration, Subsurface Infiltration Basin	3.3

Tracking Number	Sewer Type	Category	Watershed	Zip	SMP Type(s)	Greened Acres
FY19-WLEH-5378-01	Combined	Verified	Lower Schuylkill River	19132	Bioretention, Subsurface Detention Basin	8.7
FY19-WLEH-5466-01	Combined	Verified	Lower Schuylkill River	19132	Subsurface Detention Basin, Subsurface Infiltration Basin	6.2
FY19-PATT-5479-01	Combined	Verified	Delaware Direct	19148	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	61.2
FY19-STRA-5600-01	Combined	Verified	Lower Schuylkill River	19132	Subsurface Detention Basin	13.1
FY19-LEON-5611-01	Combined	Verified	Delaware Direct	19122	Subsurface Infiltration Basin	0.0
FY19-HOLM-5609-01	Combined	Verified	Pennypack Creek	19136	Depave, Subsurface Detention Basin	2.0
FY20-PARK-5828-01	Combined	Verified	Lower Schuylkill River	19130	Green Roof	0.2
FY21-DEPA-6266-01	Combined	Verified	Tacony-Frankford Creek	19031	Subsurface Detention Basin	3.2
Total Greened Acres:						**951**

Appendix 4

Application of Revised Greened Acre Calculation to Reported Year 10 EAP

GSI Projects

A revision to the Greened Acre (GA) calculation method was presented in Section 2 and Appendix B of the Year 10 EAP submitted on May 30, 2022. The Year 10 EAP reported 2,196 GAs that were calculated using the former GA calculation method. **Table 1** displays the cumulative Greened Acres by implementation approach with the application of the calculation method revision. The recalculated Year 10 GA values now reflect a one-time increase of 335 in the Year 10 EAP reported GAs.

Table 1: Year 10 GSI Implementation with Revised Greened Acre Values

Implementation Approach	Reported Year 10 Values	Revised Greened Acre Values
Private Development	700	816
Public Investment	690	768
Incentivized Retrofits	806	947
Total	2,196	2,531

This appendix presents the completed Public, Private, and Incentivized Retrofit projects as reported in the Year 10 EAP with their updated Greened Acre value based on the application of the calculation revision to PWD's data tracking systems since the submittal of the EAP. **Table 2** presents the Private Development projects reported at Year 10 with their revised GA value. **Table 3** presents the Public projects reported at Year 10 with their revised GA value. **Table 4** presents the Incentivized projects reported at Year 10 with their revised GA value.

Table 2: Private Development Projects Reported in the Year 10 EAP with Revised GA Value

Tracking Number	Sewer Type	Category	Watershed Type	Zip	SMP Types	Reported Year 10 Greened Acre Value (acre-inches)	Revised Greened Acre Value (acre-inches)
FY18-LABO-5153-01	Combined	Verified	Delaware Direct	19122	Porous Pavement, Subsurface Detention Basin, WQ Treatment Device	1.7	1.8
FY16-COLU-4303-01	Combined	Verified	Delaware Direct	19147	Disconnected Impervious Area, Subsurface Infiltration Basin	0.5	0.9
2013-PHIL-2299-01	Combined	Verified	Delaware Direct	19102	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.2	0.2
FY17-WHAR-4726-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Infiltration Basin	1.2	1.6
2014-1601-2440-01	Combined	Verified	Lower Schuylkill River	19103	Bioretention, Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.7	0.7
FY16-RACE-4127-01	Combined	Verified	Delaware Direct	19106	Disconnected Impervious Area, Porous Pavement, Subsurface Detention Basin, WQ Treatment Device	1.9	2.0
2014-250N-2565-01	Combined	Verified	Delaware Direct	19106	Green Roof, Porous Pavement	1.2	1.2
FY19-TEMP-5500-01	Combined	Verified	Delaware Direct	19122	Green Roof	0.3	0.3
FY17-ABIG-4691-01	Combined	Verified	Delaware Direct	19148	Bio-infiltration/Bio-retention, Subsurface Infiltration Basin	0.6	0.8
FY18-WALN-4820-01	Combined	Verified	Cobbs Creek	19139	Subsurface Infiltration Basin	0.7	0.7
FY18-CHES-4975-01	Combined	Verified	Lower Schuylkill River	19104	Bioretention, Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Detention Basin	1.0	1.2
FY17-STHS-4755-01	Combined	Verified	Lower Schuylkill River	19146	Subsurface Infiltration Basin	0.9	1.2
2014-1326-2422-01	Combined	Verified	Delaware Direct	19122	Subsurface Infiltration Basin	0.9	0.9
2014-3600-2426-01	Combined	Verified	Lower Schuylkill River	19104	Bioretention, Green Roof, Subsurface Detention Basin, Surface Detention Basin	1.3	1.3
FY17-XXXX-4458-01	Combined	Verified	Lower Schuylkill River	19131	Subsurface Infiltration Basin	1.8	2.2
FY17-TEMP-4573-01	Combined	Verified	Delaware Direct	19122	Disconnected Impervious Area, Porous Pavement	0.2	0.2
FY16-WASH-4360-01	Combined	Verified	Lower Schuylkill River	19146	Bioinfiltration, Subsurface Infiltration Basin	2.0	2.4
FY18-GALA-5145-01	Combined	Verified	Tacony-Frankford Creek	19138	Bio-infiltration/Bio-retention, Subsurface Detention Basin	0.5	0.6
2014-1123-2645-01	Combined	Verified	Delaware Direct	19125	Subsurface Infiltration Basin	0.4	0.7
FY17-NTHS-4672-01	Combined	Verified	Delaware Direct	19122	Porous Pavement, Subsurface Infiltration Basin	2.1	3.0
2014-VONC-2749-01	Combined	Verified	Lower Schuylkill River	19130	Disconnected Impervious Area, Subsurface Infiltration Basin	0.5	0.5
2011-EAST-1687-01	Combined	Verified	Delaware Direct	19107	Green Roof, Porous Pavement, Subsurface Detention Basin	0.3	0.2
FY16-EAST-4017-01	Combined	Verified	Delaware Direct	19125	Subsurface Infiltration Basin	0.5	0.7
FY18-ALBE-4973-01	Combined	Verified	Tacony-Frankford Creek	19141	Disconnected Impervious Area, Subsurface Infiltration Basin	1.5	1.9
FY16-BERN-4350-01	Combined	Verified	Lower Schuylkill River	19121	Subsurface Infiltration Basin	1.2	1.4
FY16-FEDE-4201-01	Combined	Verified	Lower Schuylkill River	19146	Subsurface Infiltration Basin	0.9	0.9
FY17-PHAA-4543-01	Combined	Verified	Lower Schuylkill River	19121	Porous Pavement, Subsurface Infiltration Basin	0.6	0.7
FY20-WECC-5809-01	Combined	Verified	Delaware Direct	19148	Subsurface Detention Basin, WQ Treatment Device	1.9	2.0
FY16-STJO-4085-01	Combined	Verified	Lower Schuylkill River	19145	Bioretention, Porous Pavement, Subsurface Detention Basin	1.5	1.7
FY17-SOUT-4486-01	Combined	Verified	Lower Schuylkill River	19104	Green Roof, Subsurface Infiltration Basin	0.5	0.6
FY18-CHES-4832-01	Combined	Verified	Lower Schuylkill River	19104	Green Roof, Porous Pavement	0.2	0.2
2014-STEN-2616-01	Combined	Verified	Tacony-Frankford Creek	19140	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	0.5	0.7
FY17-PHIL-4417-01	Combined	Verified	Delaware Direct	19121	Subsurface Detention Basin, WQ Treatment Device	2.4	2.4
2013-SHOP-2250-01	Combined	Verified	Delaware Direct	19124	Green Roof, Subsurface Detention Basin, Subsurface Infiltration Basin	3.0	9.4
2014-500W-2580-01	Combined	Verified	Delaware Direct	19106	Green Roof, Subsurface Detention Basin	0.1	0.4
2015-1002-2906-01	Combined	Verified	Delaware Direct	19123	Bioinfiltration, Porous Pavement, Subsurface Detention Basin	0.8	0.9
FY17-PHAN-4699-01	Combined	Verified	Delaware Direct	19122	Disconnected Impervious Area, Porous Pavement, Subsurface Detention Basin	2.5	2.5
FY19-DREX-5307-01	Combined	Verified	Lower Schuylkill River	19104	Subsurface Infiltration Basin	0.4	0.5
FY16-UCHS-4213-01	Combined	Verified	Lower Schuylkill River	19104		0.0	0.0
2015-7092-2945-01	Combined	Verified	Delaware Direct	19147	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	0.4	0.7
FY19-POPL-5344-01	Combined	Verified	Lower Schuylkill River	19131	Subsurface Detention Basin	0.7	0.7
2012-AHMA-1831-01	Combined	Verified	Delaware Direct	19133	Disconnected Impervious Area, Subsurface Infiltration Basin	1.7	2.1
FY16-SIMP-4337-01	Combined	Verified	Lower Schuylkill River	19131	Bioinfiltration, Disconnected Impervious Area, Subsurface Infiltration Basin	1.3	1.4
FY18-ENOR-4838-01	Combined	Verified	Delaware Direct	19125	Bioinfiltration, Porous Pavement	0.8	0.9
FY18-PHIL-5038-01	Combined	Verified	Delaware Direct	19107	Subsurface Detention Basin, WQ Treatment Device	1.6	1.6
2015-DLAT-2926-01	Combined	Verified	Delaware Direct	19120	Bioretention, Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Detention Basin	8.0	8.0
2013-THES-2392-01	Combined	Verified	Lower Schuylkill River	19104	Blue Roof, Green Roof	0.6	0.6
FY16-NATI-4211-01	Combined	Verified	Delaware Direct	19106	Subsurface Detention Basin	1.0	1.6
FY18-PARK-4896-01	Combined	Verified	Lower Schuylkill River	19131	Disconnected Impervious Area	0.0	0.1
FY17-WALM-4419-01	Combined	Verified	Tacony-Frankford Creek	19114	Subsurface Detention Basin, WQ Treatment Device	13.4	15.7
FY16-LUCI-4053-01	Combined	Verified	Lower Schuylkill River	19139	Disconnected Impervious Area	0.3	0.3
FY16-EAST-4179-01	Combined	Verified	Delaware Direct	19134	Bioinfiltration, Disconnected Impervious Area	0.4	0.5
FY17-LEED-4633-01	Combined	Verified	Tacony-Frankford Creek	19150	Bioinfiltration	4.3	5.2
FY18-BART-5075-01	Combined	Verified	Lower Schuylkill River	19143	Subsurface Infiltration Basin	6.1	6.1
FY17-ROWE-4634-01	Combined	Verified	Tacony-Frankford Creek	19126	Bioinfiltration	1.2	1.2
FY17-HAMP-4618-01	Combined	Verified	Delaware Direct	19111	Bioinfiltration, Disconnected Impervious Area	1.1	2.5
FY18-RENO-4879-01	Combined	Verified	Cobbs Creek	19143	Bioinfiltration, Depave	2.1	2.6
2014-1601-2434-01	Combined	Verified	Lower Schuylkill River	19103	Bioretention, Porous Pavement, Subsurface Detention Basin	0.3	0.3
2015-40TH-2780-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Subsurface Infiltration Basin	0.7	1.2
2013-1323-2310-01	Combined	Verified	Delaware Direct	19122	Porous Pavement, Subsurface Infiltration Basin	0.6	0.8
2011-822N-1632-01	Combined	Verified	Delaware Direct	19123	Green Roof, Porous Pavement	0.3	0.3
FY19-AUTO-5287-01	Combined	Verified	Lower Schuylkill River	19145	Subsurface Detention Basin, WQ Treatment Device	0.5	0.6
2015-SOUT-2956-01	Combined	Verified	Lower Schuylkill River	19145	Bioretention, Subsurface Detention Basin, Surface Detention Basin	5.0	5.1
2015-GROC-2925-01	Combined	Verified	Delaware Direct	19137	Bioretention, Subsurface Detention Basin	2.6	2.6
2015-TULI-2824-01	Combined	Verified	Delaware Direct	19122	Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Infiltration Basin	3.1	3.3
FY17-VIEW-4457-01	Combined	Verified	Delaware Direct	19122	Bioinfiltration, Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Infiltration Basin	4.1	4.1
FY17-ALDI-4565-01	Combined	Verified	Tacony-Frankford Creek	19124	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin, WQ Treatment Device	3.1	2.7
FY18-HSTX-5076-01	Combined	Verified	Delaware Direct	19134	Subsurface Detention Basin, WQ Treatment Device	1.3	1.3
2015-3675-2955-01	Combined	Verified	Lower Schuylkill River	19104	Green Roof, Porous Pavement, Subsurface Detention Basin	0.5	0.7
2015-PHIL-2982-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.2	0.2
FY17-AUTO-4659-01	Combined	Verified	Delaware Direct	19148	Subsurface Detention Basin, WQ Treatment Device	1.0	1.2
FY17-EAST-4640-01	Combined	Verified	Cobbs Creek	19139	Bioinfiltration, Blue Roof, Disconnected Impervious Area, Green Roof, Subsurface Detention Basin, WQ Treatment Device	2.0	2.3
FY16-THCH-4142-01	Combined	Verified	Lower Schuylkill River	19102	Blue Roof, Green Roof, Subsurface Detention Basin, WQ Treatment Device	1.1	1.3
2012-600N-1963-01	Combined	Verified	Delaware Direct	19123	Green Roof, Porous Pavement	0.4	0.4
2015-8385-2856-01	Combined	Verified	Delaware Direct	19123	Subsurface Infiltration Basin	0.9	1.8
FY17-BROA-4539-01	Combined	Verified	Lower Schuylkill River	19130	Disconnected Impervious Area, Subsurface Detention Basin	1.0	1.0
2011-PENN-1681-01	Combined	Verified	Lower Schuylkill River	19104	Green Roof	0.4	0.4
FY18-PARK-4775-01	Combined	Verified	Lower Schuylkill River	19131	Subsurface Detention Basin, WQ Treatment Device	1.6	1.6
2012-LAWR-1945-01	Combined	Verified	Delaware Direct	19123	Green Roof, Porous Pavement	0.4	0.4
FY17-WIDE-4636-01	Combined	Verified	Tacony-Frankford Creek	19141	Bioinfiltration	4.0	4.5
FY17-LUCI-4480-01	Combined	Verified	Lower Schuylkill River	19139	Disconnected Impervious Area, Porous Pavement, Subsurface Detention Basin, Surface Detention Basin, WQ Treatment Device	1.0	1.0
FY16-USCI-4261-01	Combined	Verified	Lower Schuylkill River	19143	Bioinfiltration, Bioretention, Porous Pavement	1.4	1.4
FY16-LOVE-4088-01	Combined	Verified	Tacony-Frankford Creek	19119	Bioinfiltration, Disconnected Impervious Area, Green Roof	0.2	0.3
2011-NEWB-1672-01	Combined	Verified	Lower Schuylkill River	19145	Green Roof, Porous Pavement	0.4	0.4
FY18-PHAS-4886-01	Combined	Verified	Delaware Direct	19148	Bioretention, Disconnected Impervious Area	2.0	2.5
FY17-WYNN-4704-01	Combined	Verified	Lower Schuylkill River	19131	Disconnected Impervious Area, Subsurface Infiltration Basin	0.8	0.8
2015-ROBE-2975-01	Combined	Verified	Tacony-Frankford Creek	19140	Bioretention, Subsurface Detention Basin	0.5	0.5
2015-2517-2803-01	Combined	Verified	Delaware Direct	19134	Green Roof, Porous Pavement, Subsurface Detention Basin	0.3	0.4
2012-SR00-2026-01	Combined	Verified	Delaware Direct	19125	Bioinfiltration, Bioretention	7.5	2.9
FY16-JACK-4123-01	Combined	Verified	Delaware Direct	19124	Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Infiltration Basin	2.1	2.2
2013-UPEN-2280-01	Combined	Verified	Lower Schuylkill River	19104	Subsurface Infiltration Basin	0.8	1.1
2014-1515-2746-01	Combined	Verified	Delaware Direct	19106	Porous Pavement, Subsurface Infiltration Basin	0.5	0.8
2014-8365-2530-01	Combined	Verified	Delaware Direct	19123	Subsurface Infiltration Basin	1.5	1.5
FY16-NFRO-4270-01	Combined	Verified	Delaware Direct	19122	Subsurface Infiltration Basin	1.0	1.2
FY17-MALB-4466-01	Combined	Verified	Delaware Direct	19125	Porous Pavement, Subsurface Infiltration Basin	0.7	0.7
2012-PRES-1785-01	Combined	Verified	Lower Schuylkill River	19131-3348	Green Roof, Porous Pavement	0.5	0.5
2014-WISS-2641-01	Combined	Verified	Delaware Direct	19135	Disconnected Impervious Area, Porous Pavement	0.4	0.4
2013-PARK-2357-01	Combined	Verified	Lower Schuylkill River	19130	Bioinfiltration, Disconnected Impervious Area	1.0	1.0
2013-1900-2151-01	Combined	Verified	Lower Schuylkill River	19132	Bioretention, Subsurface Detention Basin, Surface Detention Basin	2.0	2.0
2015-3201-2786-01	Combined	Verified	Lower Schuylkill River	19104	Bioretention, Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.3	0.3
FY16-LINC-4309-01	Combined	Verified	Delaware Direct	19146	Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Infiltration Basin	3.4	4.1

Tracking Number	Sewer Type	Category	Watershed Type	Zip	SMP Types	Reported Year 10 Greened Acre Value (acre-inches)	Revised Greened Acre Value (acre-inches)
FY18-DEST-4909-01	Combined	Verified	Delaware Direct	19123	Subsurface Infiltration Basin	5.1	5.9
2015-2338-2915-01	Combined	Verified	Delaware Direct	19125	Subsurface Infiltration Basin	0.5	0.8
FY18-MERC-4857-01	Combined	Verified	Cobbs Creek	19143	Disconnected Impervious Area, Subsurface Detention Basin, WQ Treatment Device	0.4	0.5
2007-BENC-482-01	Combined	Verified	Tacony-Frankford Creek	19124	Porous Pavement, Subsurface Detention Basin	1.0	1.2
FY17-EAST-4468-01	Combined	Verified	Lower Schuylkill River	19121	Subsurface Detention Basin	0.8	1.1
2014-2201-2677-01	Combined	Verified	Lower Schuylkill River	19145	Subsurface Infiltration Basin, WQ Treatment Device	1.2	1.7
2013-TALL-2349-01	Combined	Verified	Delaware Direct	19133	Bioinfiltration, Subsurface Infiltration Basin	2.9	2.9
2012-CARP-1765-01	Combined	Verified	Delaware Direct	19146	Bioretention, Green Roof, Porous Pavement	0.4	0.4
2014-PHAM-2476-01	Combined	Verified	Lower Schuylkill River	19121	Bio-infiltration/Bio-retention, Bioretention, Subsurface Detention Basin	1.3	1.6
2006-MOOR-320-01	Combined	Verified	Delaware Direct	19148	Subsurface Detention Basin, Subsurface Infiltration Basin	0.3	0.5
2014-4525-2505-01	Combined	Verified	Lower Schuylkill River	19139	Green Roof	0.3	0.3
2012-SPAR-1850-01	Combined	Verified	Delaware Direct	19148	Bioinfiltration, Disconnected Impervious Area, Porous Pavement	0.7	0.7
2011-THEB-1594-01	Combined	Verified	Tacony-Frankford Creek	19124	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin, Subsurface Infiltration Basin	0.8	1.6
FY17-WEND-4527-01	Combined	Verified	Cobbs Creek	19139	Subsurface Infiltration Basin	1.3	1.3
2015-ROYA-2911-01	Combined	Verified	Tacony-Frankford Creek	19124	Disconnected Impervious Area, Subsurface Infiltration Basin, Surface Detention Basin, Surface Infiltration Basin	4.2	4.4
FY17-PESS-4511-01	Combined	Verified	Lower Schuylkill River	19145	Surface Detention Basin	9.3	9.6
2015-WYNN-2986-01	Combined	Verified	Lower Schuylkill River	19131	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	0.7	0.7
2014-63RD-2502-01	Combined	Verified	Cobbs Creek	19139	Subsurface Infiltration Basin	1.9	1.9
2012-1919-1929-01	Combined	Verified	Lower Schuylkill River	19103	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	1.2	1.2
2013-TAJD-2286-01	Combined	Verified	Delaware Direct	19122	Bioretention, Disconnected Impervious Area, Green Roof, Subsurface Detention Basin, Subsurface Infiltration Basin	1.3	1.3
2014-DOLL-2453-01	Combined	Verified	Delaware Direct	19135-4408	Bioretention, Subsurface Detention Basin	1.5	1.5
FY17-SENI-4411-01	Combined	Verified	Lower Schuylkill River	19145	Disconnected Impervious Area, Porous Pavement, Subsurface Detention Basin, WQ Treatment Device	1.0	1.0
2014-HUNT-2525-01	Combined	Verified	Lower Schuylkill River	19140	Bioretention, Subsurface Detention Basin	0.9	0.9
2015-LASA-2848-01	Combined	Verified	Tacony-Frankford Creek	19144	Bioinfiltration, Porous Pavement	1.1	1.1
2014-ALLE-2522-01	Combined	Verified	Delaware Direct	19133	Subsurface Infiltration Basin	0.7	0.8
2013-708N-2316-01	Combined	Verified	Delaware Direct	19123	Bioinfiltration, Subsurface Infiltration Basin	0.3	0.6
2013-2413-2183-01	Combined	Verified	Delaware Direct	19132	Green Roof, Subsurface Infiltration Basin	0.8	0.8
FY16-BARI-4074-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Subsurface Infiltration Basin	0.4	0.8
FY16-FAIR-4011-01	Combined	Verified	Delaware Direct	19123	Subsurface Infiltration Basin	1.2	1.4
2014-1350-2658-01	Combined	Verified	Delaware Direct	19122	Bioretention, Subsurface Infiltration Basin	0.9	1.1
2015-LANI-2871-01	Combined	Verified	Lower Schuylkill River	19145	Disconnected Impervious Area, Porous Pavement	0.3	0.3
2012-THEM-1892-01	Combined	Verified	Delaware Direct	19106	Cistern, Disconnected Impervious Area, Green Roof, WQ Treatment Device	0.7	0.8
2014-SEPT-2614-01	Combined	Verified	Delaware Direct	19124	Disconnected Impervious Area, Green Roof	0.3	0.3
2015-JFKP-2951-01	Combined	Verified	Lower Schuylkill River	19102	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	1.0	1.1
2013-ONER-2304-01	Combined	Verified	Lower Schuylkill River	19103	Bioretention, Green Roof, Subsurface Detention Basin	0.3	0.3
2014-BLUM-2711-01	Combined	Verified	Lower Schuylkill River	19121	Porous Pavement, Subsurface Infiltration Basin	1.8	2.5
FY18-PEAB-4939-01	Combined	Verified	Delaware Direct	19122	Porous Pavement	0.2	0.1
2015-TEMP-2964-01	Combined	Verified	Delaware Direct	19122	Porous Pavement, Subsurface Infiltration Basin	6.2	12.3
2013-NEWC-2114-01	Combined	Verified	Lower Schuylkill River	19104	Bioinfiltration, Disconnected Impervious Area, Green Roof, Porous Pavement	1.3	1.4
FY16-SMIT-4151-01	Combined	Verified	Lower Schuylkill River	19146	Disconnected Impervious Area, Porous Pavement	4.3	4.3
2014-TRUE-2595-01	Combined	Verified	Delaware Direct	19123	Subsurface Infiltration Basin	0.9	1.5
2013-MUSE-2346-01	Combined	Verified	Lower Schuylkill River	19130	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	3.6	4.5
FY16-TEMP-4178-01	Combined	Verified	Delaware Direct	19121	Bioretention, Porous Pavement, Subsurface Detention Basin	4.2	4.2
2014-LASA-2425-01	Combined	Verified	Tacony-Frankford Creek	19144	Bioinfiltration, Porous Pavement, Subsurface Infiltration Basin	2.2	2.2
FY16-HELP-4027-01	Combined	Verified	Delaware Direct	19123	Disconnected Impervious Area, Subsurface Infiltration Basin	0.2	0.3
2014-5454-2552-01	Combined	Verified	Tacony-Frankford Creek	19144	Bioretention, Porous Pavement, Subsurface Detention Basin	0.9	0.9
2014-420F-2574-01	Combined	Verified	Delaware Direct	19123	Disconnected Impervious Area, Subsurface Infiltration Basin	0.7	1.0
2008-2552-873-01	Combined	Verified	Delaware Direct	19134	Subsurface Infiltration Basin	0.7	0.7
2010-THEF-1254-01	Combined	Verified	Lower Schuylkill River	19103	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	0.4	0.4
2012-1213-1925-01	Combined	Verified	Delaware Direct	19107	Cistern, Green Roof, Subsurface Detention Basin	0.3	0.3
2013-NEUR-2140-01	Combined	Verified	Lower Schuylkill River	19104	Bioinfiltration, Bioretention, Disconnected Impervious Area, Green Roof, Porous Pavement	0.4	0.4
2015-GAUD-2962-01	Combined	Verified	Lower Schuylkill River	19140	Bioretention, Porous Pavement, Subsurface Detention Basin	0.6	0.6
FY16-DREX-4244-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Porous Pavement	1.0	1.0
FY16-HANO-4040-01	Combined	Verified	Lower Schuylkill River	19107	Subsurface Detention Basin	2.1	2.7
FY16-ADAM-4220-01	Combined	Verified	Tacony-Frankford Creek	19120	Bioinfiltration	1.0	1.1
2013-4783-2339-01	Combined	Verified	Pennypack Creek	19136	Disconnected Impervious Area, Porous Pavement, Subsurface Detention Basin	1.8	1.8
2014-2013-2751-01	Combined	Verified	Delaware Direct	19125	Porous Pavement, Subsurface Infiltration Basin	0.4	0.5
2010-WIST-1397-01	Combined	Verified	Lower Schuylkill River	19104	Green Roof, Subsurface Detention Basin	0.4	0.4
2012-GARY-1938-01	Combined	Verified	Lower Schuylkill River	19146	Bioinfiltration, Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	1.3	1.4
FY17-CAMP-4378-01	Combined	Verified	Lower Schuylkill River	19140	Disconnected Impervious Area, Subsurface Infiltration Basin	0.7	0.9
2013-CIRA-2405-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.6	0.6
FY17-THAN-4446-01	Combined	Verified	Lower Schuylkill River	19146	Subsurface Detention Basin, WQ Treatment Device	0.8	1.0
2009-WEST-1222-01	Combined	Verified	Lower Schuylkill River	19139	Disconnected Impervious Area, Green Roof, Porous Pavement	1.4	1.4
2012-3601-2053-01	Combined	Verified	Lower Schuylkill River	19104	Bioretention, Subsurface Detention Basin	0.4	0.4
2014-ALLE-2455-01	Combined	Verified	Delaware Direct	19125	Disconnected Impervious Area, Green Roof, Porous Pavement	0.4	0.4
2014-WEST-2612-01	Combined	Verified	Lower Schuylkill River	19121	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	1.9	1.9
FY17-STPI-4413-01	Combined	Verified	Cobbs Creek	19143	Bioinfiltration, Disconnected Impervious Area	0.2	0.5
FY17-WGOD-4567-01	Combined	Verified	Tacony-Frankford Creek	19141	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	1.1	1.1
2006-VILL-194-01	Combined	Verified	Lower Schuylkill River		Disconnected Impervious Area, Subsurface Infiltration Basin, Surface Detention Basin, Surface Infiltration Basin	21.8	26.8
2015-UCHS-2939-01	Combined	Verified	Lower Schuylkill River	19104	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin, Subsurface Infiltration Basin	2.2	3.2
2012-2549-1840-01	Combined	Verified	Delaware Direct	19125	Porous Pavement	1.0	1.0
2012-TOLL-1898-01	Combined	Verified	Delaware Direct	19147	Disconnected Impervious Area, Green Roof	1.2	1.2
2015-4050-2828-01	Combined	Verified	Lower Schuylkill River	19104	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	0.4	0.7
FY16-FIVE-4029-01	Combined	Verified	Tacony-Frankford Creek	19124	Bioinfiltration, Bioretention, Subsurface Infiltration Basin	1.1	1.0
2013-2300-2240-01	Combined	Verified	Lower Schuylkill River	19146	Bioretention, Subsurface Detention Basin	0.9	0.9
FY16-KENS-4216-01	Combined	Verified	Delaware Direct	19125	Bioinfiltration, Porous Pavement	0.7	0.8
2015-CAMD-2769-01	Combined	Verified	Delaware Direct	19134	Surface Infiltration Basin	3.4	3.4
2011-NORT-1700-01	Combined	Verified	Tacony-Frankford Creek	19124	Porous Pavement, Subsurface Detention Basin	0.9	0.9
2013-900S-2174-01	Combined	Verified	Delaware Direct	19147	Bioinfiltration, Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	1.2	1.4
2012-SCHU-2065-01	Combined	Verified	Lower Schuylkill River	19146	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	4.1	3.3
2011-I95S-1699-01	Combined	Verified	Delaware Direct	19125	Bioinfiltration, Bioretention, Surface Detention Basin	4.7	8.0
2010-MOYE-1306-01	Combined	Verified	Delaware Direct	19125	Green Roof, Porous Pavement	0.6	0.6
2013-RESI-2173-01	Combined	Verified	Cobbs Creek	19143	Disconnected Impervious Area, Green Roof	0.1	0.1
2013-2012-2072-01	Combined	Verified	Lower Schuylkill River	19121	Green Roof, Porous Pavement	0.2	0.2
2009-NEWP-1166-01	Combined	Verified	Delaware Direct	19140	Disconnected Impervious Area, Subsurface Infiltration Basin	0.7	1.3
2014-5800-2463-01	Combined	Verified	Lower Schuylkill River	19131	Disconnected Impervious Area, Surface Infiltration Basin	1.0	1.2
2013-FIRS-2202-01	Combined	Verified	Delaware Direct	19124	Bioinfiltration, Disconnected Impervious Area	4.9	6.2
2012-INGL-1949-01	Combined	Verified	Lower Schuylkill River	19131	Bioretention, Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	2.6	3.9
2014-NORT-2603-01	Combined	Verified	Delaware Direct	19123	Bioretention, Subsurface Detention Basin	0.5	0.4
2012-STFR-1986-01	Combined	Verified	Delaware Direct	19125	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	0.3	0.3
2012-810A-1974-01	Combined	Verified	Delaware Direct	19107	Bioretention, Subsurface Detention Basin	0.2	0.2
2014-PERE-2472-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Subsurface Detention Basin	0.6	0.6
2015-TEMP-2829-01	Combined	Verified	Delaware Direct	19122	Porous Pavement, Subsurface Infiltration Basin	0.2	0.3
FY16-TEMP-4277-01	Combined	Verified	Delaware Direct	19122	Porous Pavement	0.4	0.4
FY16-FRAN-4076-01	Combined	Verified	Tacony-Frankford Creek	19124	Disconnected Impervious Area	0.0	0.0
2014-2322-2715-01	Combined	Verified	Lower Schuylkill River	19130	Porous Pavement, Subsurface Infiltration Basin	0.4	0.9
2012-ESPE-1947-01	Combined	Verified	Tacony-Frankford Creek	19140	Disconnected Impervious Area, Porous Pavement, Subsurface Detention Basin	3.7	3.7
2011-HAGE-1562-01	Combined	Verified	Delaware Direct	19125	Porous Pavement, Subsurface Infiltration Basin	1.5	2.1
2014-PHAO-2459-01	Combined	Verified	Lower Schuylkill River	19132	Bioretention, Porous Pavement, Subsurface Detention Basin	0.4	0.4
2012-1220-1913-01	Combined	Verified	Delaware Direct	19123	Green Roof, Porous Pavement	0.4	0.4
2010-PSPH-1353-01	Combined	Verified	Lower Schuylkill River	19131	Green Roof, Subsurface Infiltration Basin	8.4	8.4
2013-1118-2248-01	Combined	Verified	Delaware Direct	19107	Green Roof, Porous Pavement, Subsurface Detention Basin	0.8	0.8

Tracking Number	Sewer Type	Category	Watershed Type	Zip	SMP Types	Reported Year 10 Greened Acre Value (acre-inches)	Revised Greened Acre Value (acre-inches)
2013-3541-2376-01	Combined	Verified	Delaware Direct	19134	Disconnected Impervious Area, Subsurface Infiltration Basin	0.6	1.0
2012-EPIS-1888-01	Combined	Verified	Lower Schuylkill River	19104	Green Roof, Subsurface Detention Basin	0.2	0.2
2014-PHAG-2547-01	Combined	Verified	Lower Schuylkill River	19132	Bioretention, Subsurface Detention Basin	0.3	0.3
2014-PAND-2762-01	Combined	Verified	Delaware Direct	19134	Subsurface Infiltration Basin	0.3	0.5
2012-TDBA-2047-01	Combined	Verified	Delaware Direct	19149	Bioinfiltration, Disconnected Impervious Area, Subsurface Infiltration Basin	0.8	1.1
FY16-LASA-4354-01	Combined	Verified	Tacony-Frankford Creek	19141	Disconnected Impervious Area, Porous Pavement	0.2	0.2
2011-8318-1655-01	Combined	Verified	Lower Schuylkill River	19121	Green Roof, Porous Pavement	0.2	0.2
2013-TEMP-2178-01	Combined	Verified	Delaware Direct	19140	Bioretention, Subsurface Detention Basin	1.1	1.1
2015-WAYN-2771-01	Combined	Verified	Tacony-Frankford Creek	19144	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	1.2	1.2
2013-STCH-2103-01	Combined	Verified	Delaware Direct	19134	Bioinfiltration, Bioretention, Disconnected Impervious Area	4.6	4.6
2013-STCH-2149-01	Combined	Verified	Delaware Direct	19134	Bioretention, Disconnected Impervious Area	3.8	3.8
2013-CHOP-2288-01	Combined	Verified	Delaware Direct	19145	Bioretention, Porous Pavement, Subsurface Detention Basin	1.2	1.2
2014-CHIC-2755-01	Combined	Verified	Tacony-Frankford Creek	19124	Subsurface Infiltration Basin	0.5	0.8
2010-4FRA-1464-01	Combined	Verified	Lower Schuylkill River	19103	Green Roof, Subsurface Detention Basin	0.9	0.9
2007-PASH-524-01	Combined	Verified	Cobbs Creek	19142	Subsurface Infiltration Basin	0.8	0.8
2010-GRAN-1432-01	Combined	Verified	Lower Schuylkill River	19130	Green Roof, Subsurface Detention Basin	0.6	0.6
2014-UNIV-2747-01	Combined	Verified	Lower Schuylkill River	19104	Porous Pavement	0.5	0.5
2014-1325-2469-01	Combined	Verified	Delaware Direct	19121	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	0.8	0.8
2013-SETT-2085-01	Combined	Verified	Tacony-Frankford Creek	19144	Bioretention, Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Detention Basin	1.9	2.4
2013-ALDI-2287-01	Combined	Verified	Darby Creek	19151	Bioretention	0.3	0.3
2012-CIRA-1937-01	Combined	Verified	Lower Schuylkill River	19104	Green Roof, Subsurface Detention Basin	2.0	2.0
2012-PENN-1774-01	Combined	Verified	Lower Schuylkill River	19104	Bioinfiltration, Subsurface Detention Basin	1.0	1.1
2006-TEMP-245-01	Combined	Verified	Delaware Direct	19122	Subsurface Infiltration Basin	1.1	1.3
2012-CANC-1770-01	Combined	Verified	Tacony-Frankford Creek	19124	Bioinfiltration, Green Roof	0.6	0.6
2011-CANC-1485-01	Combined	Verified	Tacony-Frankford Creek	19124	Green Roof	0.2	0.3
2009-CANC-1145-01	Combined	Verified	Tacony-Frankford Creek	19124	Bioretention, Disconnected Impervious Area, Surface Detention Basin	6.2	6.2
2006-NATI-441-01	Combined	Verified	Delaware Direct	19106	Subsurface Detention Basin	0.5	0.5
2014-ENVI-2646-01	Combined	Verified	Delaware Direct	19148-5607	Bioretention, Subsurface Detention Basin, Surface Infiltration Basin	2.0	2.0
2013-DREX-2081-01	Combined	Verified	Lower Schuylkill River	19104	Subsurface Detention Basin, Surface Detention Basin	1.3	1.3
2014-GSTR-2443-01	Combined	Verified	Tacony-Frankford Creek	19124	Bioinfiltration, Subsurface Infiltration Basin	1.1	1.4
2013-THES-2177-01	Combined	Verified	Delaware Direct	19123	Subsurface Infiltration Basin	1.2	1.2
2012-1426-1805-01	Combined	Verified	Lower Schuylkill River	19102	Blue Roof, Green Roof	0.3	0.3
2010-CHOP-1367-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Green Roof, Surface Detention Basin	2.6	2.6
2013-CECI-2157-01	Combined	Verified	Lower Schuylkill River	19121	Disconnected Impervious Area, Green Roof, Subsurface Infiltration Basin	0.9	1.6
2010-1940-1435-01	Combined	Verified	Delaware Direct	19140	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	0.6	1.1
2013-MAST-2259-01	Combined	Verified	Lower Schuylkill River	19121	Disconnected Impervious Area	0.6	0.6
2013-1601-2261-01	Combined	Verified	Delaware Direct	19148	Disconnected Impervious Area, Subsurface Infiltration Basin	0.9	1.5
2013-1901-2109-01	Combined	Verified	Lower Schuylkill River	19146	Green Roof, Porous Pavement, Subsurface Infiltration Basin	0.6	0.6
2013-8268-2116-01	Combined	Verified	Delaware Direct	19123	Subsurface Infiltration Basin	0.4	0.8
2009-DORA-1041-01	Combined	Verified	Lower Schuylkill River	19131	Porous Pavement, Subsurface Infiltration Basin	0.4	0.7
2005-0052-01	Combined	Verified	Lower Schuylkill River	19139	Subsurface Infiltration Basin	2.5	3.6
2012-WISS-1891-01	Combined	Verified	Tacony-Frankford Creek	19138	Bioretention, Disconnected Impervious Area	1.3	1.3
2009-RODI-1176-01	Combined	Verified	Lower Schuylkill River	19130	Subsurface Infiltration Basin	0.2	0.3
2008-THEC-806-01	Combined	Verified	Delaware Direct	19103	Green Roof, Subsurface Detention Basin	0.2	0.2
2007-WEST-684-01	Combined	Verified	Cobbs Creek	19139	Disconnected Impervious Area, Subsurface Detention Basin	0.0	0.0
2008-SCHM-902-01	Combined	Verified	Delaware Direct	19123	Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Infiltration Basin	4.4	5.9
2010-NORT-1449-01	Combined	Verified	Tacony-Frankford Creek	19124-3024	Subsurface Infiltration Basin	0.9	1.4
2013-COBB-2080-01	Combined	Verified	Cobbs Creek	19143	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	0.8	0.8
2010-BRID-1233-01	Combined	Verified	Delaware Direct	19137	Porous Pavement, Subsurface Infiltration Basin	1.1	1.6
2011-GREE-1706-01	Combined	Verified	Tacony-Frankford Creek	19138	Porous Pavement, Subsurface Detention Basin, Surface Infiltration Basin	1.9	2.0
2012-INGE-1798-01	Combined	Verified	Delaware Direct	19121	Disconnected Impervious Area, Subsurface Infiltration Basin	0.9	0.9
2013-HALP-2134-01	Combined	Verified	Lower Schuylkill River	19121	Disconnected Impervious Area, Subsurface Infiltration Basin	1.6	1.6
2011-TEMP-1739-01	Combined	Verified	Delaware Direct	19122	Bioretention, Cistern, Porous Pavement, Subsurface Detention Basin, Subsurface Infiltration Basin	2.1	2.4
2010-HUNT-1351-01	Combined	Verified	Tacony-Frankford Creek	19140-2107	Disconnected Impervious Area	0.1	0.1
2014-TEMP-2699-01	Combined	Verified	Delaware Direct	19121	Disconnected Impervious Area	0.4	0.4
2012-BUIL-1807-01	Combined	Verified	Tacony-Frankford Creek	19111	Disconnected Impervious Area	0.1	0.1
2007-MCDO-560-01	Combined	Verified	Delaware Direct	19135	Subsurface Detention Basin	0.1	0.1
2010-CREA-1427-01	Combined	Verified	Delaware Direct	19125	Disconnected Impervious Area, Green Roof, Porous Pavement	0.3	0.3
2012-HUNT-1764-01	Combined	Verified	Tacony-Frankford Creek	19140-2107	Disconnected Impervious Area, Porous Pavement	1.8	1.8
2014-VERN-2690-01	Combined	Verified	Tacony-Frankford Creek	19144	Disconnected Impervious Area, Porous Pavement	0.6	0.5
2011-33RD-1697-01	Combined	Verified	Lower Schuylkill River	19132	Bioretention, Disconnected Impervious Area, Green Roof	0.1	0.1
2006-EDWI-215-01	Combined	Verified	Delaware Direct	19136	Disconnected Impervious Area, Subsurface Detention Basin, Subsurface Infiltration Basin	0.8	0.8
2006-TACO-337-01	Combined	Verified	Delaware Direct	19149	Subsurface Infiltration Basin	0.2	0.3
2013-TACO-2197-01	Combined	Verified	Delaware Direct	19135	Bioinfiltration, Disconnected Impervious Area, Subsurface Detention Basin	2.1	2.1
2011-PHIL-1596-01	Combined	Verified	Lower Schuylkill River	19104	Bioretention, Disconnected Impervious Area, Porous Pavement, Surface Detention Basin	3.2	3.5
2006-CINT-431-01	Combined	Verified	Lower Schuylkill River	19131	Surface Detention Basin	9.5	9.5
2012-RODE-1835-01	Combined	Verified	Delaware Direct	19130	Subsurface Infiltration Basin	0.7	1.3
2010-DICK-1410-01	Combined	Verified	Delaware Direct	19148	Disconnected Impervious Area, Porous Pavement	0.7	0.7
2011-SAMU-1569-01	Combined	Verified	Delaware Direct	19111	Porous Pavement	0.4	0.4
2013-23RD-2272-01	Combined	Verified	Lower Schuylkill River	19140	Disconnected Impervious Area, Subsurface Infiltration Basin	0.4	0.6
2012-SOUT-1782-01	Combined	Verified	Delaware Direct	19102	Green Roof, Subsurface Detention Basin	0.8	0.8
2011-TOLL-1586-01	Combined	Verified	Lower Schuylkill River	19146	Disconnected Impervious Area, Green Roof, Subsurface Infiltration Basin	2.4	3.9
2006-GENE-192-01	Combined	Verified	Delaware Direct	19123	Disconnected Impervious Area, Subsurface Detention Basin	0.3	0.3
2009-SCHU-1140-01	Combined	Verified	Lower Schuylkill River	19103	Disconnected Impervious Area	0.7	0.7
2009-THEC-1174-01	Combined	Verified	Delaware Direct	19135	Bioretention, Disconnected Impervious Area, Green Roof	0.6	0.6
2008-NAVA-893-01	Combined	Verified	Lower Schuylkill River	19146	Subsurface Infiltration Basin	5.7	9.7
2011-HOME-1571-01	Combined	Verified	Delaware Direct	19107	Bioretention, Green Roof, Subsurface Detention Basin	0.2	0.2
2010-DILW-1442-01	Combined	Verified	Lower Schuylkill River	19107	Disconnected Impervious Area, Subsurface Detention Basin, Surface Detention Basin	0.7	0.7
2010-PROP-1376-01	Combined	Verified	Delaware Direct	19141	Bioinfiltration, Bioretention, Subsurface Infiltration Basin	2.4	2.9
2009-STRA-1055-01	Combined	Verified	Lower Schuylkill River	19121	Subsurface Infiltration Basin	0.3	0.3
2007-UNIV-633-01	Combined	Verified	Lower Schuylkill River	19104	Bioinfiltration, Disconnected Impervious Area, Subsurface Infiltration Basin	0.4	0.4
2009-SIST-1131-01	Combined	Verified	Lower Schuylkill River	19103	Disconnected Impervious Area, Green Roof, Subsurface Infiltration Basin	0.4	0.4
2009-SIST-1062-01	Combined	Verified	Lower Schuylkill River	19103	Disconnected Impervious Area	0.2	0.1
2006-9349-349-01	Combined	Verified	Delaware Direct	19123	Subsurface Detention Basin	0.1	0.1
2008-COMM-763-01	Combined	Verified	Lower Schuylkill River	19130	Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Infiltration Basin	2.4	2.6
2008-NEWL-839-01	Combined	Verified	Delaware Direct	19140	Subsurface Infiltration Basin	0.5	0.5
2011-JWSD-1674-01	Combined	Verified	Delaware Direct	19122	Disconnected Impervious Area, Subsurface Infiltration Basin	1.8	3.7
2009-STRA-1050-01	Combined	Verified	Lower Schuylkill River	19121	Subsurface Infiltration Basin	0.2	0.2
2007-HOWI-498-01	Combined	Verified	Delaware Direct	19123	Disconnected Impervious Area, Subsurface Detention Basin	0.3	0.3
2010-5526-1348-01	Combined	Verified	Darby Creek	19139	Porous Pavement, Subsurface Infiltration Basin	0.5	0.5
2012-701W-2002-01	Combined	Verified	Delaware Direct	19133	Disconnected Impervious Area, Porous Pavement, Subsurface Detention Basin, Subsurface Infiltration Basin	4.7	4.7
2014-DREX-2457-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Porous Pavement	2.6	2.5
2013-PROP-2163-01	Combined	Verified	Tacony-Frankford Creek	19141	Subsurface Infiltration Basin	0.9	1.2
2010-3737-1331-01	Combined	Verified	Lower Schuylkill River	19104	Green Roof, Subsurface Detention Basin	0.3	0.3
2013-HELP-2241-01	Combined	Verified	Lower Schuylkill River	19153	Disconnected Impervious Area, Surface Infiltration Basin	1.8	2.0
2009-NEWH-1079-01	Combined	Verified	Lower Schuylkill River	19139	Disconnected Impervious Area, Subsurface Infiltration Basin	0.3	0.7
2014-STJO-2424-01	Combined	Verified	Delaware Direct	19122	Disconnected Impervious Area, Subsurface Infiltration Basin	5.6	6.9
2008-BARN-986-01	Combined	Verified	Lower Schuylkill River	19130	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin, Subsurface Infiltration Basin	3.5	4.4
2008-STRA-802-01	Combined	Verified	Lower Schuylkill River	19121	Porous Pavement, Subsurface Infiltration Basin	0.3	0.3
2008-STRA-799-01	Combined	Verified	Lower Schuylkill River	19121	Porous Pavement, Subsurface Infiltration Basin	0.4	0.4
2010-TEMP-1302-01	Combined	Verified	Delaware Direct	19122	Cistern, Disconnected Impervious Area, Subsurface Infiltration Basin	2.9	3.5
2012-412N-1844-01	Combined	Verified	Delaware Direct	19123	Green Roof, Porous Pavement, Subsurface Infiltration Basin	1.2	1.1

Tracking Number	Sewer Type	Category	Watershed Type	Zip	SMP Types	Reported Year 10 Greened Acre Value (acre-inches)	Revised Greened Acre Value (acre-inches)
2008-ROLA-813-01	Combined	Verified	Tacony-Frankford Creek	19141	Green Roof, Subsurface Infiltration Basin	0.2	0.3
2006-0057-01	Combined	Verified	Delaware Direct	19123	Subsurface Detention Basin	0.0	0.0
2012-915N-1854-01	Combined	Verified	Delaware Direct	19123	Porous Pavement, Subsurface Infiltration Basin	0.8	1.4
2013-9THS-2075-01	Combined	Verified	Delaware Direct	19123	Subsurface Infiltration Basin	4.6	4.6
2007-AROU-626-01	Combined	Verified	Tacony-Frankford Creek	19144	Subsurface Infiltration Basin	0.5	0.6
2008-1600-898-01	Combined	Verified	Delaware Direct	19122	Bioretention	0.5	0.5
2011-TEMP-1622-01	Combined	Verified	Delaware Direct	19122	Blue Roof, Green Roof, Porous Pavement, Subsurface Infiltration Basin	1.9	2.2
2007-SOUT-557-01	Combined	Verified	Delaware Direct	19148	Subsurface Detention Basin	0.1	0.1
2008-WALG-838-01	Combined	Verified	Delaware Direct	19146	Bioretention, Subsurface Infiltration Basin	0.5	0.5
2010-1800-1260-01	Combined	Verified	Lower Schuylkill River	19146	Disconnected Impervious Area, Subsurface Infiltration Basin	0.8	0.8
2011-FAIR-1488-01	Combined	Verified	Delaware Direct	19130	Green Roof, Subsurface Detention Basin	0.4	0.4
2009-JANN-1141-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Green Roof, Porous Pavement	0.3	0.3
2006-30TH-236-01	Combined	Verified	Lower Schuylkill River	19104	Surface Infiltration Basin	0.6	0.6
2009-THEP-1173-01	Combined	Verified	Lower Schuylkill River	19140	Green Roof	0.1	0.1
2007-GAMB-624-01	Combined	Verified	Tacony-Frankford Creek	19124	Porous Pavement	0.1	0.1
2009-HAWT-1102-01	Combined	Verified	Delaware Direct	19147	Disconnected Impervious Area, Porous Pavement	0.3	0.3
2012-1900-1754-01	Combined	Verified	Lower Schuylkill River	19145	Green Roof, Porous Pavement	0.6	0.6
2007-POWE-679-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area	0.4	0.4
2006-MICH-419-01	Combined	Verified	Delaware Direct	19125	Porous Pavement, Subsurface Infiltration Basin	0.4	0.7
2012-CENT-1791-01	Combined	Verified	Delaware Direct	19122	Porous Pavement	1.3	1.3
2012-SYSC-1931-01	Combined	Verified	Delaware Direct	19148	Bioretention	3.9	3.9
2006-BRID-200-01	Combined	Verified	Delaware Direct	19137	Disconnected Impervious Area, Subsurface Infiltration Basin	0.7	0.7
2009-HELP-1138-01	Combined	Verified	Lower Schuylkill River	19153	Subsurface Infiltration Basin	3.7	3.7
2009-PHIL-1205-01	Combined	Verified	Delaware Direct	19148	Porous Pavement	14.6	14.6
2013-EDBE-2293-01	Combined	Verified	Delaware Direct	19122	Subsurface Infiltration Basin	4.2	6.1
2008-MART-980-01	Combined	Verified	Delaware Direct	19147	Subsurface Infiltration Basin	0.6	0.6
2007-MTTA-480-01	Combined	Verified	Delaware Direct	19123	Green Roof, Porous Pavement	0.3	0.3
2006-PILG-444-01	Combined	Verified	Delaware Direct	19111	Subsurface Infiltration Basin	1.1	1.4
2011-STMA-1508-01	Combined	Verified	Delaware Direct	19147	Green Roof, Porous Pavement, Subsurface Detention Basin, Subsurface Infiltration Basin	0.5	0.5
2008-ROTE-960-01	Combined	Verified	Delaware Direct	19148	Bioretention, Porous Pavement, Subsurface Detention Basin	1.3	1.1
2008-4014-979-01	Combined	Verified	Delaware Direct	19123	Disconnected Impervious Area, Subsurface Infiltration Basin	0.5	0.8
2010-PLEA-1444-01	Combined	Verified	Tacony-Frankford Creek	19119	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.2	0.2
2012-UNIV-1848-01	Combined	Verified	Lower Schuylkill River	19104	Bioinfiltration, Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Detention Basin	1.6	1.6
2010-DREX-1399-01	Combined	Verified	Lower Schuylkill River	19104	Green Roof, Subsurface Detention Basin	1.5	1.5
2011-NICE-1730-01	Combined	Verified	Tacony-Frankford Creek	19140	Porous Pavement, Subsurface Infiltration Basin	1.1	1.3
2011-NICE-1729-01	Combined	Verified	Tacony-Frankford Creek	19140	Porous Pavement, Subsurface Detention Basin	0.5	0.5
2011-NICE-1728-01	Combined	Verified	Tacony-Frankford Creek	19140	Porous Pavement, Subsurface Infiltration Basin	0.3	0.4
2008-WOOD-864-01	Combined	Verified	Lower Schuylkill River	19104	Porous Pavement	0.5	0.5
2011-DREX-1638-01	Combined	Verified	Lower Schuylkill River	19104	Bioretention, Disconnected Impervious Area, Green Roof	0.8	0.8
2010-PHIL-1469-01	Combined	Verified	Delaware Direct	19148	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin, Surface Detention Basin	3.4	3.4
2012-SPRU-1813-01	Combined	Verified	Delaware Direct	19107	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.1	0.1
2011-HAMI-1518-01	Combined	Verified	Lower Schuylkill River	19104	Cistern, Disconnected Impervious Area, Green Roof, Subsurface Infiltration Basin	1.9	2.1
2008-DREX-950-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.2	0.2
2006-FEDE-409-01	Combined	Verified	Delaware Direct	19106	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.3	0.3
2011-MONT-1516-01	Combined	Verified	Delaware Direct	19122	Subsurface Infiltration Basin	2.8	3.6
2012-SENI-1900-01	Combined	Verified	Lower Schuylkill River	19145	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	0.4	0.4
2010-NORR-1475-01	Combined	Verified	Delaware Direct	19122	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	2.1	2.9
2010-UNIV-1312-01	Combined	Verified	Lower Schuylkill River	19104	Green Roof, Subsurface Detention Basin	0.7	0.7
2007-MCDO-558-01	Combined	Verified	Delaware Direct	19133	Subsurface Detention Basin	0.5	0.5
2008-FRAN-921-01	Combined	Verified	Lower Schuylkill River	19104	Porous Pavement	0.3	0.3
2007-THEM-495-01	Combined	Verified	Lower Schuylkill River	19131	Subsurface Detention Basin, Surface Detention Basin	6.4	6.4
2007-4839-625-01	Combined	Verified	Lower Schuylkill River	19131	Subsurface Detention Basin	1.0	0.9
2008-FRAN-994-01	Combined	Verified	Delaware Direct	19130	Porous Pavement, Subsurface Infiltration Basin	0.7	1.6
2009-PRIN-1147-01	Combined	Verified	Lower Schuylkill River	19121	Green Roof, Subsurface Infiltration Basin	0.5	1.1
2008-CAST-875-01	Combined	Verified	Delaware Direct	19149	Subsurface Detention Basin	0.0	0.0
2006-HUNT-445-01	Combined	Verified	Delaware Direct	19133	Porous Pavement, Subsurface Infiltration Basin	1.4	2.0
2006-TEMP-210-01	Combined	Verified	Delaware Direct	19122	Porous Pavement, Subsurface Detention Basin	0.6	0.6
2009-IATS-1023-01	Combined	Verified	Delaware Direct	19148	Green Roof, Subsurface Detention Basin	0.8	0.8
2007-WILL-699-01	Combined	Verified	Delaware Direct	19134	Bioretention, Subsurface Detention Basin	5.0	5.0
2006-COMM-328-01	Combined	Verified	Cobbs Creek	19139	Cistern, Porous Pavement, Subsurface Detention Basin	0.9	0.9
2009-GLOB-1016-01	Combined	Verified	Lower Schuylkill River	19131	Bioretention, Subsurface Detention Basin	1.8	1.8
2007-DREX-669-01	Combined	Verified	Lower Schuylkill River	19104	Cistern, Disconnected Impervious Area, Porous Pavement	0.8	0.8
2007-LASA-593-01	Combined	Verified	Tacony-Frankford Creek	19144	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	10.6	12.2
2008-PROP-824-01	Combined	Verified	Lower Schuylkill River	19139	Disconnected Impervious Area, Porous Pavement, Subsurface Detention Basin, Subsurface Infiltration Basin	5.4	6.2
2006-0110-01	Combined	Verified	Delaware Direct	19140	Subsurface Detention Basin, Subsurface Infiltration Basin	0.7	1.0
2009-LAWR-1044-01	Combined	Verified	Delaware Direct	19140	Porous Pavement, Subsurface Infiltration Basin	3.0	2.9
2007-WARN-651-01	Combined	Verified	Delaware Direct	19133	Subsurface Infiltration Basin	2.7	2.7
2006-94-01	Combined	Verified	Delaware Direct	19148	Subsurface Detention Basin	2.2	2.2
2007-GUIO-721-01	Combined	Verified	Lower Schuylkill River	19131	Disconnected Impervious Area, Porous Pavement, Subsurface Detention Basin	1.4	1.4
2008-NEWK-958-01	Combined	Verified	Delaware Direct	19122	Bioinfiltration, Green Roof, Porous Pavement, Subsurface Detention Basin	5.2	5.2
2012-PROP-1883-01	Combined	Verified	Tacony-Frankford Creek	19138	Subsurface Infiltration Basin	1.0	2.3
2006-0063-01	Combined	Verified	Delaware Direct	19122	Subsurface Infiltration Basin	1.9	3.3
2012-RIVE-2027-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Porous Pavement	3.3	3.3
2007-CECI-556-01	Combined	Verified	Delaware Direct	19121	Subsurface Detention Basin	1.1	1.1
2009-MANT-1033-01	Combined	Verified	Lower Schuylkill River	19104	Subsurface Infiltration Basin	3.6	4.6
2009-PECO-1133-01	Combined	Verified	Lower Schuylkill River	19146	Subsurface Infiltration Basin	2.8	4.0
2009-TEMP-1096-01	Combined	Verified	Delaware Direct	19122	Subsurface Detention Basin	2.7	2.6
2006-SOLI-300-01	Combined	Verified	Delaware Direct	19149	Bioretention, Subsurface Infiltration Basin	2.0	2.7
2006-LAWT-291-01	Combined	Verified	Delaware Direct	19135	Subsurface Detention Basin	1.2	1.2
2008-CLAS-765-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	0.3	0.5
2012-LINC-2012-01	Combined	Verified	Delaware Direct	19148	Bioinfiltration, Porous Pavement	1.8	1.8
2009-PENN-1144-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Detention Basin	0.4	0.4
2011-CONV-1491-01	Combined	Verified	Lower Schuylkill River	19107	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.3	0.3
2009-TDBA-1072-01	Combined	Verified	Delaware Direct	19149	Bioinfiltration, Disconnected Impervious Area, Subsurface Infiltration Basin	1.1	1.5
2008-2116-992-01	Combined	Verified	Lower Schuylkill River	19103	Bioretention, Disconnected Impervious Area, Green Roof, Surface Detention Basin	0.5	0.5
2011-PENN-1664-01	Combined	Verified	Lower Schuylkill River	19104	Porous Pavement	0.2	0.2
2011-KARA-1505-01	Combined	Verified	Lower Schuylkill River	19139	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	4.0	4.0
2010-4109-1277-01	Combined	Verified	Lower Schuylkill River	19104	Green Roof, Porous Pavement	0.2	0.2
2010-411W-1300-01	Combined	Verified	Delaware Direct	19122	Bioretention, Subsurface Detention Basin	0.2	0.1
2010-GEST-1346-01	Combined	Verified	Lower Schuylkill River	19131	Subsurface Detention Basin, Subsurface Infiltration Basin	1.1	1.1
2009-WOLC-1169-01	Combined	Verified	Tacony-Frankford Creek	19138	Bioinfiltration, Disconnected Impervious Area, Subsurface Detention Basin	1.7	1.7
2011-NEWN-1620-01	Combined	Verified	Delaware Direct	19123	Green Roof, Porous Pavement, Subsurface Infiltration Basin	0.9	0.9
2009-PARK-1197-01	Combined	Verified	Lower Schuylkill River	19104	Bioinfiltration, Disconnected Impervious Area	0.1	1.5
2005-0099-01	Combined	Verified	Lower Schuylkill River	19131	Surface Infiltration Basin	37.4	38.0
2011-CCTD-1535-01	Combined	Verified	Lower Schuylkill River	19139	Subsurface Infiltration Basin	1.0	1.8
2011-PROP-1483-01	Combined	Verified	Tacony-Frankford Creek	19144	Porous Pavement, Surface Infiltration Basin	1.5	1.6
2010-UNIV-1385-01	Combined	Verified	Lower Schuylkill River	19104	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	1.5	1.5
2010-STJO-1239-01	Combined	Verified	Lower Schuylkill River	19131	Bioinfiltration, Green Roof, Subsurface Infiltration Basin	1.0	1.3
2010-AGIL-1461-01	Combined	Verified	Delaware Direct	19121	Disconnected Impervious Area, Subsurface Infiltration Basin	1.4	2.3
2011-DIAM-1617-01	Combined	Verified	Delaware Direct	19140	Green Roof, Subsurface Detention Basin	0.4	0.4
2011-4240-1543-01	Combined	Verified	Lower Schuylkill River	19104	Subsurface Infiltration Basin	0.7	1.1
2011-DOLL-1636-01	Combined	Verified	Tacony-Frankford Creek	19144	Subsurface Infiltration Basin	0.3	1.1

Tracking Number	Sewer Type	Category	Watershed Type	Zip	SMP Types	Reported Year 10 Greened Acre Value (acre-inches)	Revised Greened Acre Value (acre-inches)
2011-PROP-1662-01	Combined	Verified	Lower Schuylkill River	19130	Subsurface Infiltration Basin, Surface Infiltration Basin	3.7	3.7
2011-BOTT-1646-01	Combined	Verified	Tacony-Frankford Creek	19124	Bioretention, Subsurface Detention Basin	2.7	2.7
2010-PNKW-1360-01	Combined	Verified	Tacony-Frankford Creek	19140	Porous Pavement, Subsurface Infiltration Basin	2.3	4.2
2011-CHRI-1545-01	Combined	Verified	Delaware Direct	19147	Green Roof, Porous Pavement, Subsurface Infiltration Basin	1.0	1.0
2009-PRES-1037-01	Combined	Verified	Tacony-Frankford Creek	19150	Bioretention, Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	1.9	1.9
2009-PENN-1019-01	Combined	Verified	Lower Schuylkill River	19104	Bioretention, Subsurface Detention Basin	3.9	3.9
2009-TEMP-1077-01	Combined	Verified	Delaware Direct	19122	Bioretention, Porous Pavement, Subsurface Detention Basin	0.9	0.9
2009-CONG-1210-01	Combined	Verified	Delaware Direct	19133	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	2.8	2.8
2008-SHER-926-01	Combined	Verified	Delaware Direct	19122	Green Roof, Porous Pavement	0.2	0.2
2008-NORT-1012-01	Combined	Verified	Lower Schuylkill River	19104	Disconnected Impervious Area, Subsurface Infiltration Basin	0.4	0.5
2011-3343-1653-01	Combined	Verified	Tacony-Frankford Creek	19144	Porous Pavement, Subsurface Infiltration Basin	0.7	0.8
2007-GAMB-701-01	Combined	Verified	Tacony-Frankford Creek	19124	Bioinfiltration, Disconnected Impervious Area, Porous Pavement	1.6	1.7
2010-EARL-1460-01	Combined	Verified	Lower Schuylkill River	19146	Disconnected Impervious Area, Subsurface Infiltration Basin	0.5	0.7
2007-SIMO-496-01	Combined	Verified	Tacony-Frankford Creek	19138	Bioinfiltration, Porous Pavement	0.5	0.9
2007-HERR-690-01	Combined	Verified	Delaware Direct	19147	Disconnected Impervious Area, Porous Pavement	0.6	0.6
2010-8828-1321-01	Combined	Verified	Pennypack Creek	19136	Subsurface Infiltration Basin	1.2	2.0
2009-WALM-1045-01	MS4*	Verified	Delaware Direct	19148	Bioretention, WQ Treatment Device	8.0	8.0
2006-LE22-460-01	Combined	Verified	Delaware Direct	19123	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	0.7	1.0
2010-PSDC-1234-01	Combined	Verified	Delaware Direct	19147	Subsurface Infiltration Basin	1.1	1.4
2009-7149-1186-01	Combined	Verified	Delaware Direct	19135	Disconnected Impervious Area, Subsurface Infiltration Basin	0.4	0.8
2010-PHIL-1362-01	Combined	Verified	Delaware Direct	19148	Bioretention, Surface Detention Basin	0.9	0.9
2010-PASC-1238-01	Combined	Verified	Cobbs Creek	19142	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	2.0	2.2
2010-ESPE-1288-01	Combined	Verified	Tacony-Frankford Creek	19140	Subsurface Infiltration Basin	1.0	1.7
2009-PASC-1226-01	Combined	Verified	Cobbs Creek	19142	Porous Pavement, Subsurface Infiltration Basin	3.2	4.7
2006-PROG-400-01	Combined	Verified	Delaware Direct	19122	Subsurface Infiltration Basin	3.7	5.5
2008-DREX-788-01	Combined	Verified	Lower Schuylkill River	19104	Bioinfiltration, Porous Pavement, Subsurface Infiltration Basin	1.5	2.5
2009-2007-1090-01	Combined	Verified	Delaware Direct	19148	Subsurface Detention Basin	17.7	28.8
2010-ARCH-1393-01	Combined	Verified	Delaware Direct	19122	Disconnected Impervious Area, Green Roof	0.2	0.2
2010-BROA-1347-01	Combined	Verified	Tacony-Frankford Creek	19141	Subsurface Infiltration Basin	0.9	1.5
2009-NICE-1136-01	Combined	Verified	Tacony-Frankford Creek	19140	Bioretention, Subsurface Detention Basin	0.4	0.4
2009-FRAN-1130-01	Combined	Verified	Delaware Direct	19137	Disconnected Impervious Area, Subsurface Infiltration Basin	0.3	0.5
2009-THEM-1167-01	Combined	Verified	Delaware Direct	19121	Disconnected Impervious Area, Green Roof, Porous Pavement	0.4	0.4

*Combined Sewer Disconnection

Table 3: Public Projects Reported in the Year 10 EAP with Revised GA Value

Work Number	Project ID	Project Name	System Number	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Reported Year 10 Greened Acre Value (acre-inches)	Revised Greened Acre Value (acre-inches)	SMP Type	Program	Green Construction Cost	Watershed	Funding Source
20391	1056	Ashville/Ditman/Rhawn etal	1056-1	04-May-20	Combined	2462	11	0.3	0.7	0.7	Tree Trench	Streets	$568,375	Delaware, Pennypack	PWD Capital
			1056-2	04-May-20	Combined	4438		0.8	1.2	1.6	Tree Trench	Streets		Delaware, Pennypack	
			1056-3	04-May-20	Combined	2774		0.4	0.8	0.8	Infiltration/Storage Trench	Streets		Delaware, Pennypack	
20400	306	Ontario, "A" - Glenwood / Glenwood	306-1	24-Mar-17	Combined	820	9	0.1	0.2	0.3	Tree Trench	Streets	$438,850	Delaware	PWD Capital
			306-2	24-Mar-17	Combined	574		0.1	0.2	0.2	Tree Trench	Streets		Delaware	
			306-3	24-Mar-17	Combined	1287		0.2	0.4	0.4	Tree Trench	Streets		Delaware	
			306-4	24-Mar-17	Combined	1763		0.3	0.5	0.6	Tree Trench	Streets		Delaware	
			306-5	24-Mar-17	Combined	1000		0.2	0.3	0.3	Tree Trench	Streets		Delaware	
20422	517	Woodland / 56th	517-1	06-May-16	Combined	1684	5	0.2	0.3	0.3	Tree Trench	Streets	$157,075	Schuylkill	PWD Capital
			517-2	06-May-16	Combined	2394		0.3	0.7	0.7	Tree Trench	Streets		Schuylkill	
20439	584	Ellsworth / 20th etal	584-5	07-Nov-18	Combined	1527	10	0.3	0.4	0.5	Tree Trench	Streets	$565,810	Delaware, Schuylkill	PWD Capital
			584-3	07-Nov-18	Combined	1150		0.2	0.3	0.3	Tree Trench	Streets		Delaware, Schuylkill	
			584-2	07-Nov-18	Combined	1748		0.2	0.5	0.5	Tree Trench	Streets		Delaware, Schuylkill	
			584-1	07-Nov-18	Combined	1683		0.3	0.5	0.5	Tree Trench	Streets		Delaware, Schuylkill	
20443	411	Juniata : Cayuga/Claridge/Lawndale etal Ferko Playground	411-1	08-Dec-17	Combined	40348	0	7.2	11.1	12.7	Infiltration/Storage Trench	Open Space	$2,986,660	TTF	PWD Capital
20444	563	Corinthian / Fairmount	563-1	26-Mar-19	Combined	3779	5	0.9	1.0	1.3	Tree Trench	Streets	$750,420	Delaware, Schuylkill	PWD Capital
			563-2	26-Mar-19	Combined	3935		0.6	1.1	1.2	Tree Trench	Streets		Delaware, Schuylkill	
			563-3	26-Mar-19	Combined	2442		0.4	0.7	0.7	Infiltration/Storage Trench	Streets		Delaware, Schuylkill	
			563-4	26-Mar-19	Combined	1382		0.2	0.4	0.4	Infiltration/Storage Trench	Streets		Delaware, Schuylkill	
20456	994	Tulpehocken / Mansfield / Lowber / Duval / Johnson	994-3	14-Dec-17	Combined	1302	0	0.4	0.4	0.5	Infiltration/Storage Trench	Streets	$541,420	TTF	PWD Capital
			994-4	14-Dec-17	Combined	814		0.1	0.2	0.3	Infiltration/Storage Trench	Streets		TTF	
			994-2	14-Dec-17	Combined	1131		0.3	0.3	0.4	Infiltration/Storage Trench	Streets		TTF	
			994-1	14-Dec-17	Combined	3103		0.5	0.9	0.9	Infiltration/Storage Trench	Streets		TTF	
20458	1006	Bridge/Creston/Darrah/Penn	1006-1	23-Apr-18	Combined	1886	7	0.3	0.5	0.6	Tree Trench	Streets	$1,198,900	Delaware	PWD Capital
			1006-2	23-Apr-18	Combined	4702		0.6	1.3	1.3	Infiltration/Storage Trench	Streets		Delaware	
			1006-3	23-Apr-18	Combined	2459		0.3	0.6	0.6	Tree Trench	Streets		Delaware	
			1006-4	23-Apr-18	Combined	2122		0.3	0.6	0.6	Tree Trench	Streets		Delaware	
			1006-5	23-Apr-18	Combined	2299		0.4	0.6	0.8	Infiltration/Storage Trench	Streets		Delaware	
			1006-6	23-Apr-18	Combined	2855		0.7	0.8	1.0	Infiltration/Storage Trench	Streets		Delaware	
20461	1066	Frankford / Pacific / Wheatsheaf	1066-4	22-Aug-16	Combined	1093	0	0.2	0.3	0.4	Infiltration/Storage Trench	Streets	$542,435	Delaware, TTF	PWD Capital
			1066-3	22-Aug-16	Combined	1480		0.3	0.4	0.5	Infiltration/Storage Trench	Streets		Delaware, TTF	
			1066-6	22-Aug-16	Combined	1084		0.2	0.3	0.4	Infiltration/Storage Trench	Streets		Delaware, TTF	
			1066-1	22-Aug-16	Combined	588		0.1	0.2	0.2	Infiltration/Storage Trench	Streets		Delaware, TTF	
			1066-2	22-Aug-16	Combined	1112		0.2	0.3	0.3	Infiltration/Storage Trench	Streets		Delaware, TTF	
			1066-5	22-Aug-16	Combined	2400		0.5	0.7	0.8	Infiltration/Storage Trench	Streets		Delaware, TTF	
20475	1042	31st / 34th / 35th / Wharton	1042-2	09-Jul-21	Combined	844	9	0.2	0.2	0.3	Tree Trench	Streets	$389,120	Schuylkill	PWD Capital
			1042-1	06-Aug-21	Combined	1683		0.3	0.5	0.5	Tree Trench	Streets		Schuylkill	
20480	1266	Somerset / 7th	1266-1	05-Jun-20	Combined	3343	4	0.5	0.9	1.0	Tree Trench	Streets	$213,925	Delaware	PWD Capital
20489	1136	Angora / Cedar / Yewdall / 57th	1136-3	26-Feb-19	Combined	938	0	0.2	0.3	0.3	Infiltration/Storage Trench	Streets	$403,050	Cobbs-Darby	PWD Capital
			1136-1	26-Feb-19	Combined	2381		0.4	0.7	0.8	Infiltration/Storage Trench	Streets		Cobbs-Darby	
			1136-2	26-Feb-19	Combined	928		0.2	0.3	0.3	Infiltration/Storage Trench	Streets		Cobbs-Darby	
20490	1206	Wishart/Clementine/Elkhart/Helen/Jasper	1206-1	18-Jan-19	Combined	850	0	0.2	0.2	0.3	Infiltration/Storage Trench	Streets	$309,780	Delaware	PWD Capital
			1206-2	18-Jan-19	Combined	1194		0.1	0.3	0.3	Infiltration/Storage Trench	Streets		Delaware	
			1206-3	18-Jan-19	Combined	1172		0.3	0.3	0.4	Infiltration/Storage Trench	Streets		Delaware	
20497	1215	44th / Larchwood / Osage / Pine	1215-1	22-Nov-19	Combined	1437	4	0.2	0.4	0.4	Tree Trench	Streets	$121,685	Schuylkill	PWD Capital
20499	1248	Crease / Frankford / Mascher / Thompson / Girard	1248-1	26-May-21	Combined	1175	0	0.3	0.3	0.4	Infiltration/Storage Trench	Streets	$258,235	Delaware	PWD Capital
40224	240	PERCY STREET / WEBSTER STREET	240-1	18-Jul-11	Combined	657	0	0.1	0.2	0.2	Pervious Paving	Streets	$48,283	Delaware	PWD Capital

Work Number	Project ID	Project Name	System Number	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Reported Year 10 Greened Acre Value (acre-inches)	Revised Greened Acre Value (acre-inches)	SMP Type	Program	Green Construction Cost	Watershed	Funding Source
40330	289	Coral, Sergeant-Huntingdon / Sepviva, Susquehanna - Dauphin	289-18	27-Jan-10	Combined	38	17	0.0	0.0	0.0	Stormwater Tree	Streets	$209,000	Delaware	Pennvest
			289-12	27-Jan-10	Combined	38		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			289-13	27-Jan-10	Combined	38		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			289-14	27-Jan-10	Combined	38		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			289-15	27-Jan-10	Combined	38		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			289-11	27-Jan-10	Combined	38		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			289-17	27-Jan-10	Combined	38		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			289-6	27-Jan-10	Combined	38		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			289-16	27-Jan-10	Combined	38		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			289-10	27-Jan-10	Combined	38		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			289-9	27-Jan-10	Combined	38		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			289-7	27-Jan-10	Combined	38		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			289-5	27-Jan-10	Combined	38		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			289-4	27-Jan-10	Combined	38		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			289-3	27-Jan-10	Combined	38		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			289-2	27-Jan-10	Combined	38		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			289-1	27-Jan-10	Combined	962		0.6	0.3	0.3	Infiltration/Storage Trench	Streets		Delaware	
			289-8	27-Jan-10	Combined	38		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
40368	234	Franklin, Berks - Norris / Norris - Diamond /16th Street / Dauphin Street	234-1	24-Oct-13	Combined	601	32	0.2	0.2	0.2	Tree Trench	Streets	$184,925	Delaware	PWD Capital
			234-2	24-Oct-13	Combined	1128		0.3	0.3	0.4	Tree Trench	Streets		Delaware	
			234-3	24-Oct-13	Combined	525		0.2	0.1	0.2	Tree Trench	Streets		Delaware	
			234-4	24-Oct-13	Combined	2343		0.4	0.6	0.8	Tree Trench	Streets		Delaware	
			234-5	24-Oct-13	Combined	2618		0.4	0.7	0.8	Tree Trench	Streets		Delaware	
40577	441	Wagner St.,12th - Broad; Rockland St., 11th - Broad	441-43	08-Apr-11	Combined	38	26	0.0	0.0	0.0	Stormwater Tree	Streets	$924,000	TTF	Pennvest
			441-22	08-Apr-11	Combined	38		0.0	0.0	0.0	Stormwater Tree	Streets		TTF	
			441-25	08-Apr-11	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		TTF	
			441-26	08-Apr-11	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		TTF	
			441-27	08-Apr-11	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		TTF	
			441-31	08-Apr-11	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		TTF	
			441-38	08-Apr-11	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		TTF	
			441-39	08-Apr-11	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		TTF	
			441-21	08-Apr-11	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		TTF	
			441-42	08-Apr-11	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		TTF	
			441-28	08-Apr-11	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		TTF	
			441-44	08-Apr-11	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		TTF	
			441-45	08-Apr-11	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		TTF	
			441-41	08-Apr-11	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		TTF	
			441-5	08-Apr-11	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		TTF	
			441-32	08-Apr-11	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		TTF	
			441-17	08-Apr-11	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		TTF	
			441-1	08-Apr-11	Combined	24-Apr-01		0.4	0.1	0.2	Infiltration/Storage Trench	Streets		TTF	
			441-3	08-Apr-11	Combined	16-Mar-05		1.7	0.5	0.6	Infiltration/Storage Trench	Streets		TTF	
			441-7	08-Apr-11	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		TTF	
			441-8	08-Apr-11	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		TTF	
			441-10	08-Apr-11	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		TTF	
			441-15	08-Apr-11	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		TTF	
			441-12	08-Apr-11	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		TTF	
			441-13	08-Apr-11	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		TTF	
			441-14	08-Apr-11	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		TTF	
			441-11	08-Apr-11	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		TTF	
			441-2	08-Apr-11	Combined	25-Aug-08		2.0	0.9	1.0	Infiltration/Storage Trench	Streets		TTF	
			441-16	08-Apr-11	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		TTF	

Work Number	Project ID	Project Name	System Number	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Reported Year 10 Greened Acre Value (acre-inches)	Revised Greened Acre Value (acre-inches)	SMP Type	Program	Green Construction Cost	Watershed	Funding Source
40599	233	Belgrade / Crease / Marlborough	233-1	20-Dec-12	Combined	26-Apr-02	1	0.2	0.2	0.3	Infiltration/Storage Trench	Streets	$26,835	Delaware	PWD Capital
			233-2	20-Dec-12	Combined	19-Feb-01		0.1	0.1	0.1	Infiltration/Storage Trench	Streets		Delaware	
40607	235	Northern Liberties Flood Relief	235-4	15-Jul-16	Combined	01-Mar-02	13	0.1	0.2	0.3	Tree Trench	Streets	$226,849	Delaware	PWD Capital
			235-2	15-Jul-16	Combined	13-Jun-01		0.2	0.1	0.2	Tree Trench	Streets		Delaware	
40659	207	Waterview Rec Center Stormwater Management Improvements	207-1	01-Jul-08	Combined	16-Oct-04	8	0.3	0.5	0.6	Pervious Paving, Tree Trench	Streets	$50,000	TTF	PWD Operating
			207-2	01-Jul-08	Combined	11-Feb-00		0.0	0.0	0.0	Planter	Streets		TTF	
			207-3	01-Jul-08	Combined	11-Feb-00		0.0	0.0	0.0	Planter	Streets		TTF	
40662	218	Green Streets Pilot Project - Passyunk Avenue Locations	218-3	05-Mar-13	Combined	23-Jan-14	0	0.7	1.3	1.3	Bumpout	Streets	$0	Schuylkill	Streets Department
40669	331	Hope St. / 2nd St. / Hancock St.	331-1	08-Feb-16	Combined	27-Jun-03	0	0.2	0.4	0.5	Pervious Paving	Streets	$228,735	Delaware	PWD Capital
40713	288	Mole. Webster, Rodman	288-1	15-Aug-18	Combined	13-Dec-02	6	0.2	0.3	0.4	Pervious Paving	Streets	$145,625	Delaware	PWD Capital
40750	304	Adams / Church / Penn	304-1	09-Mar-20	Combined	10-Dec-01	1	0.2	0.2	0.3	Tree Trench	Streets	$309,294	TTF	PWD Capital
			304-2	09-Mar-20	Combined	29-Mar-03		0.2	0.3	0.4	Infiltration/Storage Trench	Streets		TTF	
40755	305	Ellsworth / Federal / Wharton	305-1	25-Sep-19	Combined	12-May-04	2	0.3	0.4	0.5	Tree Trench	Streets	$226,750	Delaware	PWD Capital
			305-2	25-Sep-19	Combined	04-Jun-03		0.2	0.3	0.4	Infiltration/Storage Trench	Streets		Delaware	
40771	301	Dauphin / Sepviva etal	301-1	26-Aug-15	Combined	06-May-04	10	0.3	0.4	0.5	Pervious Paving	Streets	$133,192	Delaware	PWD Capital
			301-2	26-Aug-15	Combined	14-Dec-03		0.2	0.4	0.4	Tree Trench	Streets		Delaware	
			301-3	26-Aug-15	Combined	16-May-04		0.2	0.4	0.4	Pervious Paving	Streets		Delaware	
40773	469	Galloway/Roseberry etal	469-1	13-Jun-18	Combined	03-Aug-03	5	0.2	0.4	0.4	Tree Trench	Streets	$107,500	Delaware	PWD Capital
40784	406	Conestoga / Thompson	406-1	25-Nov-19	Combined	20-Jun-02	0	0.2	0.2	0.3	Infiltration/Storage Trench	Streets	$169,388	Schuylkill	PWD Capital
			406-2	25-Nov-19	Combined	02-Dec-02		0.2	0.3	0.4	Infiltration/Storage Trench	Streets		Schuylkill	
40795	443	Cobbs Creek GSI	443-12	10-Jul-19	Combined	11-Sep-08	58	0.4	0.8	0.8	Bumpout, Infiltration/Storage Trench	Streets	$3,500,000	Cobbs-Darby	PWD Capital
			443-13	10-Jul-19	Combined	20-May-09		0.6	0.9	1.1	Bumpout, Infiltration/Storage Trench	Streets		Cobbs-Darby	
			443-14	11-Jun-20	Combined	20-Dec-22		1.4	2.3	2.7	Basin, Infiltration/Storage Trench, Rain Garden	Open Space		Cobbs-Darby	
			443-15	11-Jun-20	Combined	16-Mar-05		0.3	0.5	0.6	Infiltration/Storage Trench, Rain Garden	Open Space		Cobbs-Darby	
			443-17	11-Jun-20	Combined	26-Jul-01		0.1	0.2	0.2	Infiltration/Storage Trench	Streets		Cobbs-Darby	
			443-11	10-Jul-19	Combined	08-Jul-05		0.3	0.6	0.6	Infiltration/Storage Trench	Streets		Cobbs-Darby	
			443-3	11-Jun-20	Combined	10-Mar-05		0.3	0.5	0.5	Infiltration/Storage Trench	Streets		Cobbs-Darby	
			443-18	11-Jun-20	Combined	06-Jan-04		0.3	0.4	0.5	Infiltration/Storage Trench	Streets		Cobbs-Darby	
			443-16	11-Jun-20	Combined	04-Nov-05		0.4	0.6	0.7	Rain Garden	Open Space		Cobbs-Darby	
			443-10	10-Jul-19	Combined	20-Dec-12		0.7	1.3	1.3	Tree Trench	Streets		Cobbs-Darby	
			443-9	10-Jul-19	Combined	26-Jun-11		0.6	1.2	1.2	Tree Trench	Streets		Cobbs-Darby	
			443-8	10-Jul-19	Combined	16-Jul-06		0.3	0.7	0.7	Tree Trench	Streets		Cobbs-Darby	
			443-7	10-Jul-19	Combined	04-Oct-02		0.2	0.3	0.3	Rain Garden	Open Space		Cobbs-Darby	
			443-6	11-Jun-20	Combined	21-Sep-10		0.4	0.9	0.9	Infiltration/Storage Trench, Rain Garden	Open Space		Cobbs-Darby	
			443-4	11-Jun-20	Combined	04-Feb-05		0.3	0.5	0.5	Infiltration/Storage Trench	Streets		Cobbs-Darby	
			443-1	11-Jun-20	Combined	10-Feb-06		0.5	0.6	1.1	Rain Garden	Open Space		Cobbs-Darby	
			443-5	11-Jun-20	Combined	29-May-12		0.7	1.2	1.3	Infiltration/Storage Trench, Rain Garden	Open Space		Cobbs-Darby	

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40796	1086	Sepviva Street	1086-15	27-Dec-12	Combined	06-Feb-00	35	0.0	0.0	0.0	Stormwater Tree	Streets	$149,827	Delaware	PWD Capital
			1086-25	27-Dec-12	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			1086-24	27-Dec-12	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			1086-23	27-Dec-12	Combined	28-Jan-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			1086-22	27-Dec-12	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			1086-21	27-Dec-12	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			1086-7	27-Dec-12	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			1086-20	27-Dec-12	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			1086-27	27-Dec-12	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			1086-19	27-Dec-12	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			1086-18	27-Dec-12	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			1086-17	27-Dec-12	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			1086-16	27-Dec-12	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			1086-26	27-Dec-12	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			1086-5	27-Dec-12	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			1086-1	27-Dec-12	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			1086-2	27-Dec-12	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			1086-9	27-Dec-12	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			1086-4	27-Dec-12	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			1086-14	27-Dec-12	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			1086-6	27-Dec-12	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			1086-8	27-Dec-12	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			1086-10	27-Dec-12	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			1086-11	27-Dec-12	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			1086-12	27-Dec-12	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			1086-13	27-Dec-12	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			1086-3	27-Dec-12	Combined	06-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
40798	518	Ludlow / Hirst / Robinson	518-1	16-Jul-20	Combined	14-Apr-02	28	0.2	0.2	0.3	Infiltration/Storage Trench	Streets	$620,215	Cobbs-Darby	PWD Capital
			518-2	16-Jul-20	Combined	20-Jul-02		0.2	0.3	0.3	Infiltration/Storage Trench	Streets		Cobbs-Darby	
			518-3	16-Jul-20	Combined	22-Oct-01		0.2	0.2	0.2	Infiltration/Storage Trench	Streets		Cobbs-Darby	
			518-4	16-Jul-20	Combined	11-Jul-02		0.3	0.3	0.3	Infiltration/Storage Trench	Streets		Cobbs-Darby	
40799	556	Cleveland/Gratz/Greene/Roberts	556-1	01-Nov-18	Combined	22-Nov-07	0	0.4	0.8	0.8	Infiltration/Storage Trench	Streets	$143,646	TTF	PWD Capital
			556-2	01-Nov-18	Combined	03-Dec-03		0.4	0.4	0.5	Infiltration/Storage Trench	Streets		TTF	
40816	554	Weikel / Witte / Gaul	554-5	07-Jan-19	Combined	29-Sep-01	5	0.1	0.2	0.2	Infiltration/Storage Trench	Streets	$638,040	Delaware	PWD Capital
			554-1	07-Jan-19	Combined	22-May-10		0.4	0.7	0.7	Tree Trench	Streets		Delaware	
			554-7	07-Jan-19	Combined	25-Feb-02		0.2	0.2	0.3	Infiltration/Storage Trench	Streets		Delaware	
			554-6	07-Jan-19	Combined	23-Nov-02		0.2	0.3	0.4	Infiltration/Storage Trench	Streets		Delaware	
			554-3	07-Jan-19	Combined	09-Sep-04		0.3	0.5	0.6	Infiltration/Storage Trench	Streets		Delaware	
			554-2	07-Jan-19	Combined	07-Jun-06		0.3	0.6	0.7	Stormwater Tree, Tree Trench	Streets		Delaware	
			554-4	07-Jan-19	Combined	14-Oct-01		0.1	0.2	0.2	Tree Trench	Streets		Delaware	
40817	1293	C/F/Mayfield/Rosehill/Hartville	1293-3	29-Jan-18	Combined	20-Mar-06	0	0.6	0.6	0.7	Infiltration/Storage Trench	Streets	$272,190	Delaware	PWD Capital
			1293-1	29-Jan-18	Combined	18-Jul-01		0.1	0.2	0.2	Infiltration/Storage Trench	Streets		Delaware	
			1293-2	29-Jan-18	Combined	13-Jun-03		0.3	0.3	0.4	Infiltration/Storage Trench	Streets		Delaware	
40821	504	9th / Mifflin / Pierce	504-2	19-Dec-18	Combined	08-Apr-03	2	0.2	0.3	0.3	Tree Trench	Streets	$782,150	Delaware	PWD Capital
40828	657	Brandywine / Green / Melon / North	657-1	07-Jun-17	Combined	01-May-03	2	0.3	0.3	0.4	Tree Trench	Streets	$112,670	Delaware	PWD Capital
40829	990	Galloway / Orianna / Leithgow	990-1	27-Sep-19	Combined	08-Jun-03	0	0.2	0.3	0.4	Infiltration/Storage Trench	Streets	$249,338	Delaware	PWD Capital
			990-2	27-Sep-19	Combined	26-Sep-01		0.2	0.2	0.2	Infiltration/Storage Trench	Streets		Delaware	
40844	989	Master / Wanamaker / Hobart	989-1	03-Jul-19	Combined	22-Apr-07	0	0.6	0.7	1.2	Infiltration/Storage Trench	Streets	$206,840	Schuylkill	PWD Capital
			989-2	15-Oct-20	Combined	01-Apr-05		0.5	0.5	0.7	Infiltration/Storage Trench	Streets		Schuylkill	

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40862	1064	8th / 12th / Lemon / North	1064-1	27-May-20	Combined	28-Aug-05	6	0.3	0.6	0.6	Tree Trench	Streets	$262,513	Delaware	PWD Capital
			1064-2	27-May-20	Combined	01-May-04		0.2	0.4	0.5	Infiltration/Storage Trench	Streets		Delaware	
40863	1010	Bouvier / Monument / Willington / 17th	1010-4	03-Jun-19	Combined	13-Jun-01	3	0.1	0.1	0.2	Infiltration/Storage Trench	Streets	$477,220	Delaware	PWD Capital
			1010-3	03-Jun-19	Combined	25-Aug-03		0.2	0.4	0.4	Infiltration/Storage Trench	Streets		Delaware	
			1010-2	03-Jun-19	Combined	13-Jan-03		0.2	0.3	0.4	Infiltration/Storage Trench	Streets		Delaware	
			1010-1	03-Jun-19	Combined	22-Nov-04		0.3	0.5	0.6	Infiltration/Storage Trench	Streets		Delaware	
			1010-5	03-Jun-19	Combined	26-Jul-05		0.2	0.5	0.5	Tree Trench	Streets		Delaware	
40865	1057	Crowson / Stokes / Woodlawn	1057-3	30-Aug-18	Combined	01-Apr-02	0	0.2	0.2	0.3	Infiltration/Storage Trench	Streets	$526,525	TTF	PWD Capital
			1057-6	30-Aug-18	Combined	17-May-01		0.1	0.1	0.2	Infiltration/Storage Trench	Streets		TTF	
			1057-4	30-Aug-18	Combined	08-Apr-02		0.3	0.2	0.3	Infiltration/Storage Trench	Streets		TTF	
			1057-2	30-Aug-18	Combined	05-Nov-01		0.2	0.2	0.2	Infiltration/Storage Trench	Streets		TTF	
			1057-1	30-Aug-18	Combined	30-Oct-02		0.2	0.3	0.3	Infiltration/Storage Trench	Streets		TTF	
			1057-5	30-Aug-18	Combined	19-Apr-04		0.4	0.4	0.5	Infiltration/Storage Trench	Streets		TTF	
40866	1065	Creighton / Spring / Vogdes / Race	1065-1	17-Sep-21	Combined	01-Jan-04	0	0.3	0.4	0.5	Infiltration/Storage Trench	Streets	$124,545	Cobbs-Darby	PWD Capital
40891	1062	Wynnefield, Monument - 170' W. of 50th	1062-6	25-May-17	Combined	18-Mar-02	13	0.2	0.2	0.2	Tree Trench	Streets	$651,725	Schuylkill	PWD Capital
			1062-2	25-May-17	Combined	01-Feb-05		0.3	0.5	0.6	Tree Trench	Streets		Schuylkill	
			1062-7	25-May-17	Combined	09-Dec-14		0.8	1.5	1.6	Tree Trench	Streets		Schuylkill	
			1062-5	25-May-17	Combined	19-Dec-08		0.4	0.9	0.9	Tree Trench	Streets		Schuylkill	
			1062-4	25-May-17	Combined	04-Jan-08		0.6	0.8	0.9	Tree Trench	Streets		Schuylkill	
			1062-3	25-May-17	Combined	22-Dec-05		0.6	0.6	0.8	Infiltration/Storage Trench	Streets		Schuylkill	
40900	1058	Medary Avenue from 13th Street to Broad Street	1058-1	31-May-16	Combined	22-May-04	0	0.3	0.4	0.6	Infiltration/Storage Trench	Streets	$160,831	TTF	PWD Capital
			1058-2	31-May-16	Combined	17-May-02		0.2	0.2	0.3	Infiltration/Storage Trench	Streets		TTF	
40903	656	Market / 43rd / Ludlow / 45th	656-1	07-Sep-16	Combined	24-Jun-01	3	0.1	0.1	0.2	Tree Trench	Streets	$71,290	Schuylkill	PWD Capital
40906	1246	Church / Orchard / Ruan / Salem	1246-1	12-Mar-20	Combined	15-May-02	0	0.1	0.2	0.3	Infiltration/Storage Trench	Streets	$118,200	TTF	PWD Capital
40918	1149	Loudon / Carlisle	1149-1	28-Sep-17	Combined	10-Oct-03	0	0.4	0.4	0.5	Infiltration/Storage Trench	Streets	$131,760	TTF	PWD Capital
			1149-2	28-Sep-17	Combined	25-Jul-01		0.1	0.2	0.2	Infiltration/Storage Trench	Streets		TTF	
40928	1275	SR1026 Section H04	1275-1	06-Sep-19	Combined	21-Aug-09	28	0.5	0.9	0.9	Tree Trench	Streets	Unknown	TTF	PWD Capital
			1275-6	06-Sep-19	Combined	21-Jan-07		0.3	0.6	0.6	Tree Trench	Streets		TTF	
			1275-5	06-Sep-19	Combined	18-Dec-02		0.1	0.3	0.3	Tree Trench	Streets		TTF	
			1275-4	06-Sep-19	Combined	24-Nov-06		0.5	0.7	0.8	Tree Trench	Streets		TTF	
			1275-2	06-Sep-19	Combined	14-Sep-14		0.7	1.4	1.4	Tree Trench	Streets		TTF	
			1275-3	06-Sep-19	Combined	26-Sep-04		0.2	0.4	0.4	Tree Trench	Streets		TTF	
40938	1423	I-95 Section AF1	1423-1	04-Aug-20	Combined	02-Nov-05	0	0.6	0.6	1.3	Infiltration/Storage Trench	Streets	Unknown	Delaware	PWD Capital
			1423-2	04-Aug-20	Combined	11-Mar-05		0.4	0.5	0.7	Infiltration/Storage Trench	Streets		Delaware	
50001	14	Passyunk Square Model Neighborhood	14-1	17-Sep-13	Combined	29-May-05	0	0.5	0.5	0.6	Infiltration/Storage Trench, Rain Garden	Streets	$873,261	Delaware	Pennvest
	15		15-2	17-Sep-13	Combined	14-Mar-04	4	0.3	0.4	0.5	Tree Trench	Streets		Delaware	
	16		16-1	17-Sep-13	Combined	15-Jan-03	5	0.2	0.3	0.3	Tree Trench	Streets		Delaware	
	162		162-1	17-Sep-13	Combined	26-Aug-01	13	0.1	0.2	0.2	Bumpout, Tree Trench	Streets		Delaware, Schuylkill	
			162-2	17-Sep-13	Combined	20-May-03		0.3	0.3	0.4	Bumpout, Tree Trench	Streets		Delaware, Schuylkill	
			162-3	17-Sep-13	Combined	01-Aug-05		0.4	0.6	0.7	Tree Trench	Streets		Delaware, Schuylkill	
			162-4	17-Sep-13	Combined	08-Aug-03		0.2	0.4	0.3	Tree Trench	Streets		Delaware, Schuylkill	
	313		313-1	17-Sep-13	Combined	22-Dec-03	0	0.3	0.4	0.4	Infiltration/Storage Trench	Streets		Delaware	
50002	8	New Kensington Model Neighborhood	8-2	04-Nov-11	Combined	07-Aug-04	3	0.5	0.5	1.0	Rain Garden	Streets	$173,494	Delaware	Pennvest
			8-1	04-Nov-11	Combined	30-Aug-04		0.6	0.5	0.5	Tree Trench	Streets		Delaware	
50003	12	Northern Liberties Model Neighborhood	12-1	08-Feb-13	Combined	11-Jun-00	7	0.1	0.0	0.1	Infiltration/Storage Trench, Planter	Streets	$454,930	Delaware	Pennvest
			12-2	08-Feb-13	Combined	10-Jan-00		0.1	0.0	0.0	Planter	Streets		Delaware	
			12-3	08-Feb-13	Combined	30-Nov-00		0.1	0.1	0.1	Tree Trench	Streets		Delaware	
			12-4	08-Feb-13	Combined	22-Apr-01		0.1	0.1	0.1	Tree Trench	Streets		Delaware	
	91		91-1	08-Feb-13	Combined	02-Jan-04	7	0.4	0.4	0.4	Bumpout, Tree Trench	Streets		Delaware	
50005	1	Green Street Project in 16th Street	1-2	10-Nov-10	Combined	03-Jul-03	6	0.3	0.4	0.4	Tree Trench	Streets	$402,396	Delaware	Pennvest
			1-3	10-Nov-10	Combined	22-Aug-01		0.2	0.2	0.2	Tree Trench	Streets		Delaware	
			1-1	10-Nov-10	Combined	02-Aug-04		0.5	0.5	0.7	Tree Trench	Streets		Delaware	
	9		9-1	10-Nov-10	Combined	08-May-01	5	0.1	0.1	0.1	Tree Trench	Streets		Delaware	
			9-2	10-Nov-10	Combined	16-Feb-02		0.1	0.2	0.3	Tree Trench	Streets		Delaware	
	18		18-1	10-Nov-10	Combined	31-Aug-01	8	0.3	0.2	0.2	Tree Trench	Streets		Schuylkill	
50006	187	Columbus Square Park Infrastructure Demonstration Project	187-2	26-May-10	Combined	20-Jan-00	0	0.0	0.0	0.0	Planter	Streets	$65,506	Delaware	Other Public Agency
			187-3	26-May-10	Combined	31-May-02		0.2	0.2	0.3	Infiltration/Storage Trench, Planter	Streets		Delaware	
			187-1	26-May-10	Combined	20-Jan-00		0.0	0.0	0.0	Planter	Streets		Delaware	
50007	21	Blue Bell Inn Triangle Stormwater Improvements	21-1	31-Oct-13	Combined	27-Aug-05	12	0.6	0.6	1.2	Swale	Streets	$278,349	Cobbs-Darby	Pennvest

Work Number	Project ID	Project Name	System Number	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Reported Year 10 Greened Acre Value (acre-inches)	Revised Greened Acre Value (acre-inches)	SMP Type	Program	Green Construction Cost	Watershed	Funding Source
50009	20	Queen Lane Bumpouts	20-10	14-May-11	Combined	18-Sep-03	13	0.3	0.4	0.6	Tree Trench	Streets	Unknown	TTF	Pennvest
50010	19	Barry Playground - Tree Trenches	19-1	14-Oct-13	Combined	07-Aug-07	36	0.7	0.8	0.9	Tree Trench	Streets	$975,008	Schuylkill	Pennvest
			19-2	14-Oct-13	Combined	22-Nov-10		0.6	1.1	1.2	Tree Trench	Streets		Schuylkill	
			19-3	14-Oct-13	Combined	19-Dec-05		0.4	0.6	0.7	Tree Trench	Streets		Schuylkill	
			19-4	14-Oct-13	Combined	20-Mar-12		0.5	1.1	1.1	Tree Trench	Streets		Schuylkill	
			19-5	14-Oct-13	Combined	07-Jul-07		0.3	0.6	0.6	Tree Trench	Streets		Schuylkill	
50011	194	N. 3rd St and Wildey St	194-1	01-Jun-09	Combined	28-Apr-02	24	0.2	0.2	0.4	Rain Garden	Open Space	$22,236	Delaware	PWD Operating
50012	186	Cliveden Park Extended Detention	186-1	01-Oct-07	Combined	25-May-02	0	0.6	0.2	0.3	Rain Garden	Open Space	$175,000	TTF	PWD Operating
			186-2	01-Oct-07	Combined	03-Feb-10		0.6	1.0	1.2	Rain Garden	Open Space		TTF	
50013	208	West Mill Creek Stormwater Tree Trench	208-1	01-Jul-06	Combined	06-Nov-00	4	0.2	0.1	0.1	Tree Trench	Streets	$66,050	Schuylkill	Private Development
			208-2	01-Jul-06	Combined	31-Mar-01		0.1	0.1	0.2	Tree Trench	Streets		Schuylkill	
			208-3	01-Jul-06	Combined	03-Mar-00		0.0	0.0	0.0	Pervious Paving	Streets		Schuylkill	
50014	181	47th and Grays Ferry Rain Garden	181-1	01-Apr-07	Combined	13-Jun-03	7	0.4	0.3	0.7	Rain Garden	Vacant Land	$16,000	Schuylkill	Private Development
50015	185	Clark Park Stormwater Bed	185-1	01-Nov-07	Combined	06-Jun-08	0	0.7	0.8	0.9	Infiltration/Storage Trench	Open Space		Schuylkill	Private Development
50016	196	Mill Creek Farm	196-1	01-May-06	Combined	25-Dec-00	4	0.3	0.1	0.5	Rain Garden, Swale	Streets	$57,850	Schuylkill	PWD Operating
50019	17	Anna B. Day School, Epiphany of Our Lord, Francis Scott, Dickinson Sq	17-1	25-Nov-14	Combined	19-Mar-07	5	0.4	0.7	0.9	Bumpout, Infiltration/Storage Trench	Streets	$948,139	Delaware	Pennvest
			17-2	25-Nov-14	Combined	11-Oct-02		0.2	0.3	0.4	Tree Trench	Streets		Delaware	
	79		79-1	25-Nov-14	Combined	10-Sep-01	1	0.1	0.2	0.2	Infiltration/Storage Trench	Streets		Delaware	
	81		81-2	25-Nov-14	Combined	05-Oct-03	2	0.2	0.4	0.5	Infiltration/Storage Trench	Streets		Delaware	
			81-1	25-Nov-14	Combined	24-May-04		0.3	0.4	0.5	Tree Trench	Streets		Delaware	
	154		154-1	25-Nov-14	Combined	26-Jan-05	15	0.4	0.5	0.7	Tree Trench	Streets		TTF	
			154-2	25-Nov-14	Combined	16-Jul-07		0.4	0.8	0.9	Tree Trench	Streets		TTF	
			154-3	25-Nov-14	Combined	06-Jun-06		0.5	0.6	1.0	Tree Trench	Streets		TTF	
			154-4	25-Nov-14	Combined	03-Jan-08		0.4	0.8	0.8	Tree Trench	Streets		TTF	
50020	2	Welsh and Wakisha School	2-1	23-Apr-13	Combined	15-Sep-02	7	0.3	0.3	0.3	Infiltration/Storage Trench, Rain Garden	Streets	$679,023	Delaware	Pennvest
			2-2	23-Apr-13	Combined	06-Apr-02		0.2	0.2	0.3	Tree Trench	Streets		Delaware	
	157		157-1	23-Apr-13	Combined	17-Jun-02	19	0.2	0.2	0.3	Tree Trench	Streets		Delaware	
			157-2	23-Apr-13	Combined	18-May-03		0.3	0.3	0.4	Tree Trench	Streets		Delaware	
			157-3	23-Apr-13	Combined	31-Jul-02		0.2	0.3	0.3	Tree Trench	Streets		Delaware	
	245		245-1	23-Apr-13	Combined	30-Aug-02	7	0.2	0.3	0.3	Tree Trench	Streets		Delaware	
	296		296-1	23-Apr-13	Combined	30-Oct-02	4	0.2	0.3	0.3	Tree Trench	Streets		Delaware	
	312		312-1	23-Apr-13	Combined	27-Mar-03	7	0.3	0.3	0.4	Tree Trench	Streets		Delaware	
			312-2	23-Apr-13	Combined	03-Feb-03		0.3	0.3	0.4	Tree Trench	Streets		Delaware	
50022	13	Madison Park	13-1	16-Dec-11	Combined	05-Feb-01	13	0.2	0.1	0.2	Infiltration/Storage Trench	Open Space	$99,412	Delaware	Other Public Agency
50023	192	Herron Playground porous basketball court	192-2	02-Oct-12	Combined	19-Nov-05	12	0.2	0.4	0.4	Pervious Paving	Open Space	$190,959	Delaware	Other Public Agency
			192-1	02-Oct-12	Combined	22-Jun-01		0.1	0.1	0.3	Infiltration/Storage Trench, Rain Garden	Open Space		Delaware	
50024	170	Work in Shissler Playground Blair and Hewson Street	170-2	10-Oct-10	Combined	07-Feb-04	4	0.2	0.4	0.4	Tree Trench	Open Space	$50,000	Delaware	PWD Capital
			170-1	10-Oct-10	Combined	12-Mar-04		0.2	0.4	0.4	Infiltration/Storage Trench	Open Space		Delaware	

Work Number	Project ID	Project Name	System Number	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Reported Year 10 Greened Acre Value (acre-inches)	Revised Greened Acre Value (acre-inches)	SMP Type	Program	Green Construction Cost	Watershed	Funding Source
50025	223	A.S. Jenks School, Sacks Playground, Smith Elementary, St. Thomas Aquinas	223-1	22-Oct-13	Combined	10-Aug-04	18	0.3	0.5	0.5	Tree Trench	Streets	$1,149,933	Delaware	Pennvest
			223-2	22-Oct-13	Combined	16-Aug-04		0.3	0.5	0.5	Tree Trench	Streets		Delaware	
	224		224-1	22-Oct-13	Combined	13-Sep-07	12	0.4	0.8	0.8	Tree Trench	Streets		Delaware	
			224-2	22-Oct-13	Combined	12-Jun-04		0.3	0.4	0.5	Tree Trench	Streets		Delaware	
			224-3	22-Oct-13	Combined	30-Oct-05		0.4	0.6	0.8	Tree Trench	Streets		Delaware	
	227		227-3	22-Oct-13	Combined	06-May-04	18	0.3	0.4	0.7	Tree Trench	Streets		Schuylkill	
			227-1	22-Oct-13	Combined	16-Jan-05		0.3	0.5	0.7	Tree Trench	Streets		Schuylkill	
			227-2	22-Oct-13	Combined	14-Jul-03		0.3	0.4	0.6	Tree Trench	Streets		Schuylkill	
50026	210	Daroff School, Shepard Rec Center, Sayre School, Andrew Hamilton School	210-2	13-Dec-12	Combined	12-May-09	42	0.5	0.9	1.1	Tree Trench	Streets	$1,658,770	Cobbs-Darby	Pennvest
			210-3	13-Dec-12	Combined	28-Sep-07		0.5	0.8	0.9	Tree Trench	Streets		Cobbs-Darby	
			210-1	13-Dec-12	Combined	09-Aug-05		0.4	0.6	0.7	Infiltration/Storage Trench	Streets		Cobbs-Darby	
	211		211-2	13-Dec-12	Combined	14-Jun-10	27	0.4	0.8	0.8	Planter, Tree Trench	Streets		Schuylkill	
			211-3	13-Dec-12	Combined	30-Aug-07		0.4	0.8	0.9	Tree Trench	Streets		Schuylkill	
			211-1	13-Dec-12	Combined	27-Jul-07		0.6	0.8	0.9	Bumpout, Tree Trench	Streets		Schuylkill	
	216		216-1	13-Dec-12	Combined	16-Jun-12	14	1.0	1.3	2.0	Tree Trench	Streets		Cobbs-Darby	
	231		231-2	13-Dec-12	Combined	15-May-13	39	0.7	1.3	1.5	Bumpout, Planter, Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			231-3	13-Dec-12	Combined	24-Dec-07		0.6	0.8	1.0	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			231-1	13-Dec-12	Combined	15-Nov-06		0.5	0.7	0.8	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
50027	59	Samuel Huey School, Bryant School, Christy Rec Center,	59-1	23-Nov-12	Combined	24-Nov-08	5	0.5	0.9	1.0	Tree Trench	Streets	$951,600	Cobbs-Darby	Pennvest
	212		212-1	23-Nov-12	Combined	17-Aug-07	15	0.4	0.8	0.9	Tree Trench	Streets		Cobbs-Darby	
			212-2	23-Nov-12	Combined	15-Feb-04		0.2	0.4	0.4	Tree Trench	Streets		Cobbs-Darby	
			212-3	23-Nov-12	Combined	04-Jun-02		0.1	0.2	0.3	Tree Trench	Streets		Cobbs-Darby	
	213		213-1	23-Nov-12	Combined	06-Jan-03	19	0.2	0.3	0.3	Tree Trench	Streets		Cobbs-Darby	
			213-2	23-Nov-12	Combined	05-Nov-04		0.3	0.5	0.6	Tree Trench	Streets		Cobbs-Darby	
			213-3	23-Nov-12	Combined	25-Jan-07		0.5	0.7	1.1	Tree Trench	Streets		Cobbs-Darby	
	214		214-1	23-Nov-12	Combined	21-Jan-02	11	0.1	0.2	0.2	Tree Trench	Streets		Cobbs-Darby	
			214-2	23-Nov-12	Combined	12-Aug-05		0.3	0.6	0.7	Tree Trench	Streets		Cobbs-Darby	
	215		215-2	23-Nov-12	Combined	21-Aug-10	16	0.6	1.1	1.2	Tree Trench	Streets		Cobbs-Darby	
			215-1	23-Nov-12	Combined	08-Dec-06		0.4	0.7	0.8	Tree Trench	Streets		Cobbs-Darby	
50028	175	Phila. Military Academy/MLK Rec Center/FD Elementary /Towey Rec Center	175-1	24-Dec-12	Combined	29-Oct-13	20	0.7	1.4	1.5	Tree Trench	Streets	$605,624	Delaware	Pennvest
	176		176-1	24-Dec-12	Combined	28-Jul-06	14	0.5	0.7	0.9	Tree Trench	Streets		Delaware	
	177		177-1	24-Dec-12	Combined	27-May-10	10	0.4	0.7	0.7	Tree Trench	Streets		Delaware	
			177-2	24-Dec-12	Combined	11-Apr-09		0.6	0.9	1.1	Tree Trench	Streets		Delaware	
	178		178-1	24-Dec-12	Combined	13-Dec-07	6	0.3	0.7	0.7	Tree Trench	Streets		Delaware	
			178-2	24-Dec-12	Combined	09-Sep-03		0.1	0.3	0.3	Tree Trench	Streets		Delaware	
50029	147	Morris Leeds School, Pleasant Playground, Simons Rec. Center	147-1	10-May-13	Combined	09-Dec-01	32	0.3	0.2	0.3	Infiltration/Storage Trench	Streets	$1,151,670	TTF	Pennvest
	179		179-7	10-May-13	Combined	25-Feb-04	80	0.2	0.4	0.4	Tree Trench	Streets		TTF	
			179-14	10-May-13	Combined	27-May-05		0.3	0.5	0.6	Tree Trench	Streets		TTF	
			179-13	10-May-13	Combined	14-Jul-06		0.4	0.7	0.8	Tree Trench	Streets		TTF	
			179-12	10-May-13	Combined	13-Dec-03		0.5	0.4	0.5	Tree Trench	Streets		TTF	
			179-11	10-May-13	Combined	02-Nov-06		0.4	0.7	0.8	Tree Trench	Streets		TTF	
			179-10	10-May-13	Combined	29-Aug-03		0.2	0.4	0.5	Tree Trench	Streets		TTF	
			179-8	10-May-13	Combined	26-Aug-04		0.2	0.5	0.5	Tree Trench	Streets		TTF	
			179-6	10-May-13	Combined	31-May-10		0.6	1.0	1.3	Tree Trench	Streets		TTF	
			179-5	10-May-13	Combined	19-Jun-11		0.6	1.2	1.2	Tree Trench	Streets		TTF	
			179-4	10-May-13	Combined	09-Aug-07		0.5	0.8	1.0	Tree Trench	Streets		TTF	
			179-3	10-May-13	Combined	28-Jan-07		0.5	0.7	0.8	Tree Trench	Streets		TTF	
			179-2	10-May-13	Combined	03-May-05		0.3	0.5	0.6	Tree Trench	Streets		TTF	
			179-1	10-May-13	Combined	11-Jan-04		0.3	0.4	0.6	Tree Trench	Streets		TTF	
			179-9	10-May-13	Combined	11-Mar-04		0.2	0.4	0.4	Tree Trench	Streets		TTF	
50030	171	KendertonField, Cecil B.Moore, Congeso de Latinos, HM Stanton School	171-1	27-Sep-18	Combined	07-Mar-04	11	0.2	0.4	0.5	Tree Trench	Streets	$1,428,730	Delaware	PWD Capital
			171-2	27-Sep-18	Combined	22-May-03		0.3	0.3	0.4	Tree Trench	Streets		Delaware	
			171-3	27-Sep-18	Combined	13-Jun-06		0.4	0.6	0.7	Tree Trench	Streets		Delaware	
	172		172-1	27-Sep-18	Combined	25-Sep-10	14	0.5	0.9	1.0	Bumpout, Tree Trench	Streets		Delaware	
			172-2	27-Sep-18	Combined	12-Oct-09		0.3	0.7	0.7	Bumpout, Tree Trench	Streets		Delaware	
			172-3	27-Sep-18	Combined	16-Sep-04		0.4	0.5	0.5	Bumpout, Tree Trench	Streets		Delaware	
			172-4	27-Sep-18	Combined	13-Mar-04		0.2	0.4	0.4	Tree Trench	Streets		Delaware	
			172-5	27-Sep-18	Combined	26-Apr-05		0.4	0.5	0.6	Infiltration/Storage Trench	Streets		Delaware	
	173		173-2	27-Sep-18	Combined	29-Jun-03	5	0.2	0.4	0.4	Tree Trench	Streets		Delaware	
			173-1	27-Sep-18	Combined	25-Feb-03		0.2	0.3	0.4	Tree Trench	Streets		Delaware	

Work Number	Project ID	Project Name	System Number	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Reported Year 10 Greened Acre Value (acre-inches)	Revised Greened Acre Value (acre-inches)	SMP Type	Program	Green Construction Cost	Watershed	Funding Source
50031	123	58th St. Connector -Greenway Ave.	123-1	15-Jan-13	Combined	31-Aug-04	7	0.4	0.5	0.6	Rain Garden	Streets	$368,321	Cobbs-Darby, Schuylkill	PWD Capital
			123-2	15-Jan-13	Combined	29-Jul-04		0.4	0.5	0.5	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			123-3	15-Jan-13	Combined	13-Mar-04		0.3	0.4	0.6	Infiltration/Storage Trench	Streets		Cobbs-Darby, Schuylkill	
50032	180	PHS Tree Trenches	180-1	05-Nov-11	Combined	07-Oct-01	4	0.1	0.2	0.2	Tree Trench	Streets	$0	Delaware	Other Public Agency
	324		324-1	05-Nov-11	Combined	06-Feb-02	3	0.2	0.2	0.3	Tree Trench	Streets		Delaware	
	325		325-1	05-Nov-11	Combined	23-Dec-02	4	0.2	0.3	0.3	Tree Trench	Streets		Delaware	
	326		326-1	05-Nov-11	Combined	12-Nov-02	6	0.4	0.3	0.3	Tree Trench	Streets		Delaware	
	327		327-1	05-Nov-11	Combined	25-Oct-02	4	0.2	0.3	0.3	Tree Trench	Streets		Delaware	
	342		342-1	05-Nov-11	Combined	15-Jul-03	4	0.3	0.4	0.6	Tree Trench	Streets		Delaware	
50033	46	Lancaster Ave 59th to 62nd Tree Trenches	46-1	01-Nov-10	Combined	05-Sep-05	17	0.6	0.6	0.6	Tree Trench	Streets		Schuylkill	Other Public Agency
			46-2	01-Nov-10	Combined	20-Feb-02		0.1	0.2	0.2	Bumpout	Streets		Schuylkill	
			46-3	01-Nov-10	Combined	09-Jan-04		0.5	0.4	0.5	Rain Garden, Swale	Streets		Schuylkill	
			46-4	01-Nov-10	Combined	27-Oct-10		0.5	0.9	0.9	Swale	Streets		Schuylkill	
50034	10	Trenton and Norris, Thompson and Columbia	10-1	20-Sep-13	Combined	20-May-09	4	0.7	0.9	1.4	Bumpout, Tree Trench	Streets	$580,829	Delaware	Pennvest
			10-2	20-Sep-13	Combined	06-May-01		0.1	0.1	0.0	Tree Trench	Streets		Delaware	
	88		88-1	20-Sep-13	Combined	29-Jun-07	1	0.4	0.8	0.8	Infiltration/Storage Trench, Rain Garden	Streets		Delaware	
			88-2	20-Sep-13	Combined	01-Feb-03		0.3	0.3	0.0	Tree Trench	Streets		Delaware	
50035	45	Ben Franklin Parkway Tree Trenches	45-1	01-Jun-11	Combined	07-Oct-02	0	0.2	0.3	0.4	Infiltration/Storage Trench	Streets	$215,600	Schuylkill	Other Public Agency
			45-2	01-Jun-11	Combined	01-May-02		0.2	0.2	0.3	Infiltration/Storage Trench	Streets		Schuylkill	
			45-3	01-Jun-11	Combined	24-Aug-04		0.2	0.5	0.5	Infiltration/Storage Trench	Streets		Schuylkill	
50036	50	29th / Cambria / William Cramp / Barton / Hunting Park	50-1	25-Apr-14	Combined	06-Mar-09	0	0.6	0.9	1.1	Bumpout, Infiltration/Storage Trench	Streets	$622,989	Delaware, Schuylkill	Pennvest
	228		228-1	25-Apr-14	Combined	03-Apr-03	2	0.2	0.3	0.4	Tree Trench	Streets		Delaware	
	277		277-1	25-Apr-14	Combined	02-Apr-09	11	0.6	0.9	1.1	Tree Trench	Streets		Delaware	
			277-2	25-Apr-14	Combined	08-Feb-04		0.3	0.4	0.6	Tree Trench	Streets		Delaware	
	278		278-1	25-Apr-14	Combined	15-May-13	5	0.9	1.3	1.6	Tree Trench	Streets		TTF	
50037	250	Cassidy/Overbrook/Shoemaker/Cathedral/Durham/sister Clara/James Rhoads/Belmont	250-3	09-Sep-13	Combined	09-Apr-04	29	0.2	0.4	0.5	Tree Trench	Streets	$1,547,000	Schuylkill	Pennvest
			250-1	09-Sep-13	Combined	10-Mar-06		0.4	0.6	0.8	Tree Trench	Streets		Schuylkill	
			250-2	09-Sep-13	Combined	28-Apr-07		0.4	0.7	0.8	Tree Trench	Streets		Schuylkill	
	251		251-1	09-Sep-13	Combined	22-Nov-09	13	0.6	1.0	1.1	Tree Trench	Streets		Schuylkill	
	252		252-1	09-Sep-13	Combined	06-Jan-04	15	0.3	0.4	0.5	Tree Trench	Streets		Schuylkill	
			252-2	09-Sep-13	Combined	05-Jan-04		0.3	0.4	0.5	Tree Trench	Streets		Schuylkill	
	253		253-1	09-Sep-13	Combined	07-Mar-08	39	0.6	0.8	1.0	Tree Trench	Streets		Schuylkill	
			253-2	09-Sep-13	Combined	11-Jul-03		0.2	0.3	0.3	Tree Trench	Streets		Schuylkill	
			253-3	09-Sep-13	Combined	18-Sep-07		0.6	0.8	1.0	Tree Trench	Streets		Schuylkill	
	254		254-1	09-Sep-13	Combined	27-Jan-04	4	0.2	0.4	0.5	Tree Trench	Streets		Schuylkill	
			254-2	09-Sep-13	Combined	13-Dec-04		0.3	0.5	0.6	Tree Trench	Streets		Schuylkill	
	255		255-1	09-Sep-13	Combined	24-Aug-08	9	0.6	0.9	1.1	Tree Trench	Streets		Cobbs-Darby	
			255-2	09-Sep-13	Combined	01-Mar-07		0.4	0.7	0.8	Tree Trench	Streets		Cobbs-Darby	
	256		256-1	09-Sep-13	Combined	23-Sep-08	3	0.6	0.9	1.1	Tree Trench	Streets		Schuylkill	
	257		257-1	09-Sep-13	Combined	30-Dec-07	12	0.6	0.8	0.9	Tree Trench	Streets		Schuylkill	

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50038	247	Donald/Wilson/Vare/StephenGirard/Southwark/Markward/Cherry/JulianAbele	247-1	16-May-13	Combined	04-Oct-09	7	0.5	1.0	1.0	Tree Trench	Streets	$1,335,859	Schuylkill	Pennvest
	258		258-1	16-May-13	Combined	16-Mar-10	23	0.7	1.0	1.2	Tree Trench	Streets		Schuylkill	
	259		259-1	16-May-13	Combined	06-Nov-16	18	0.8	1.7	1.7	Tree Trench	Streets		Schuylkill	
			259-2	16-May-13	Combined	08-Aug-07		0.4	0.8	0.9	Tree Trench	Streets		Schuylkill	
	260		260-1	16-May-13	Combined	09-Mar-08	20	0.5	0.8	0.9	Tree Trench	Streets		Schuylkill	
			260-2	16-May-13	Combined	19-Jan-04		0.3	0.4	0.6	Tree Trench	Streets		Schuylkill	
	261		261-1	16-May-13	Combined	22-May-04	6	0.2	0.4	0.4	Tree Trench	Streets		Schuylkill	
	262		262-1	16-May-13	Combined	21-Jul-05	4	0.4	0.6	0.7	Tree Trench	Streets		Delaware	
50039	268	Temple / William Gray / Dick Elementary / Parking Lot 12th and Diamond	268-2	01-Aug-14	Combined	03-Feb-04	9	0.2	0.4	0.5	Infiltration/Storage Trench	Streets	$888,878	Delaware	Pennvest
			268-3	01-Aug-14	Combined	11-Oct-02		0.2	0.3	0.3	Tree Trench	Streets		Delaware	
			268-1	01-Aug-14	Combined	09-Sep-04		0.4	0.5	0.6	Tree Trench	Streets		Delaware	
	269		269-1	01-Aug-14	Combined	18-May-04	21	0.3	0.4	0.5	Tree Trench	Streets		Delaware	
			269-2	01-Aug-14	Combined	10-Nov-04		0.3	0.5	0.6	Tree Trench	Streets		Delaware	
			269-3	01-Aug-14	Combined	26-Jul-03		0.2	0.4	0.4	Tree Trench	Streets		Delaware	
			269-4	01-Aug-14	Combined	02-Nov-03		0.2	0.4	0.4	Tree Trench	Streets		Delaware	
			269-5	01-Aug-14	Combined	23-May-04		0.2	0.4	0.4	Tree Trench	Streets		Delaware	
	270		270-1	01-Aug-14	Combined	07-Oct-10	11	0.3	0.7	0.7	Tree Trench	Streets		Delaware	
			270-2	01-Aug-14	Combined	31-May-07		0.3	0.6	0.6	Tree Trench	Streets		Delaware	
	283		283-1	01-Aug-14	Combined	07-Jun-05	1	0.3	0.5	0.6	Tree Trench	Streets		Delaware	
50040	153	Yorktown Green Streets	153-4	07-Nov-18	Combined	23-Sep-02	15	0.2	0.3	0.4	Infiltration/Storage Trench, Planter	Streets	$1,399,315	Delaware	PWD Capital, Public Grant
			153-5	16-Oct-18	Combined	09-Jun-02		0.2	0.2	0.4	Infiltration/Storage Trench, Planter	Streets		Delaware	
			153-3	11-Dec-18	Combined	30-Sep-02		0.2	0.3	0.4	Infiltration/Storage Trench, Planter	Streets		Delaware	
			153-2	14-Mar-19	Combined	30-Apr-07		0.5	0.7	1.0	Infiltration/Storage Trench, Planter	Streets		Delaware	
			153-1	20-Feb-19	Combined	23-Jul-04		0.5	0.5	0.9	Infiltration/Storage Trench, Planter	Streets		Delaware	
			153-6	13-Sep-18	Combined	19-Aug-03		0.3	0.4	0.5	Infiltration/Storage Trench, Planter	Streets		Delaware	
50041	167	Longstretch, Little Sisters of Poor, McCresh Plground, Cobbs Crk Pkwy. Island	167-2	13-Jan-14	Combined	25-Jun-07	33	0.5	0.8	1.0	Tree Trench	Streets	$1,232,000	Schuylkill	Pennvest
			167-3	13-Jan-14	Combined	02-Dec-11		0.8	1.2	1.6	Tree Trench	Streets		Schuylkill	
			167-1	13-Jan-14	Combined	29-Aug-07		0.4	0.8	0.8	Tree Trench	Streets		Schuylkill	
	264		264-1	13-Jan-14	Combined	14-Apr-12	13	0.8	1.2	1.6	Planter, Tree Trench	Streets		Cobbs-Darby	
	265		265-5	13-Jan-14	Combined	26-Apr-03	12	0.2	0.3	0.4	Tree Trench	Streets		Cobbs-Darby	
			265-1	13-Jan-14	Combined	19-Oct-04		0.3	0.5	0.5	Tree Trench	Streets		Cobbs-Darby	
			265-2	13-Jan-14	Combined	16-Dec-03		0.2	0.4	0.4	Infiltration/Storage Trench	Streets		Cobbs-Darby	
			265-3	13-Jan-14	Combined	30-Jan-07		0.5	0.7	0.9	Infiltration/Storage Trench	Streets		Cobbs-Darby	
			265-4	13-Jan-14	Combined	20-Jan-04		0.3	0.4	0.5	Infiltration/Storage Trench	Streets		Cobbs-Darby	
	266		266-1	13-Jan-14	Combined	24-Jan-09	6	0.8	1.5	1.4	Infiltration/Storage Trench, Rain Garden	Streets		Cobbs-Darby	

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50042	271	Bridesburg Sch., Dorsey Plygrnd, Roosevelt Plygrnd, Magnolia Cem.,Carmell	271-3	30-Sep-13	Combined	14-Oct-12	3	0.6	1.1	1.1	Tree Trench	Streets	$1,765,000	Delaware	Pennvest
			271-2	30-Sep-13	Combined	12-Jan-03		0.2	0.3	0.5	Infiltration/Storage Trench	Streets		Delaware	
			271-1	30-Sep-13	Combined	12-Apr-05		0.4	0.5	0.8	Infiltration/Storage Trench, Rain Garden	Streets		Delaware	
	272		272-2	30-Sep-13	Combined	08-Dec-03	16	0.3	0.4	0.5	Tree Trench	Streets		Delaware, TTF	
			272-3	30-Sep-13	Combined	11-Aug-04		0.3	0.5	0.6	Tree Trench	Streets		Delaware, TTF	
			272-4	30-Sep-13	Combined	30-Jul-04		0.3	0.5	0.5	Tree Trench	Streets		Delaware, TTF	
			272-5	30-Sep-13	Combined	01-May-04		0.3	0.4	0.5	Tree Trench	Streets		Delaware, TTF	
			272-6	30-Sep-13	Combined	11-Sep-06		0.3	0.7	0.7	Tree Trench	Streets		Delaware, TTF	
			272-7	30-Sep-13	Combined	22-Jul-07		0.4	0.7	0.7	Tree Trench	Streets		Delaware, TTF	
			272-1	30-Sep-13	Combined	31-Jan-03		0.2	0.3	0.3	Tree Trench	Streets		Delaware, TTF	
	273		273-1	30-Sep-13	Combined	21-Jan-06	35	0.3	0.6	0.6	Tree Trench	Streets		Delaware	
			273-2	30-Sep-13	Combined	18-Dec-04		0.3	0.5	0.5	Tree Trench	Streets		Delaware	
			273-3	30-Sep-13	Combined	20-Sep-04		0.3	0.5	0.5	Tree Trench	Streets		Delaware	
	274		274-2	30-Sep-13	Combined	21-Sep-05	6	0.3	0.5	0.5	Tree Trench	Streets		Delaware	
			274-3	30-Sep-13	Combined	26-Jan-03		0.1	0.2	0.2	Tree Trench	Streets		Delaware	
			274-1	30-Sep-13	Combined	28-Sep-09		0.6	1.0	1.1	Tree Trench	Streets		Delaware	
			274-4	30-Sep-13	Combined	24-Jul-04		0.3	0.5	0.5	Infiltration/Storage Trench, Planter	Streets		Delaware	
	275		275-1	30-Sep-13	Combined	21-May-05	2	0.3	0.5	0.5	Tree Trench	Streets		Delaware	
50043	279	Harpers Hollow, Wakefield Park	279-1	04-Dec-12	Combined	14-Mar-08	0	0.6	0.8	1.1	Basin	Open Space	$474,000	TTF	Pennvest
	281		281-1	04-Dec-12	Combined	02-Dec-04	0	0.4	0.5	0.8	Rain Garden	Open Space		TTF	
			281-2	04-Dec-12	Combined	31-Jul-07		0.5	0.8	1.0	Rain Garden	Open Space		TTF	
50044	280	Wister Woods, Kemble Park	280-1	21-Jan-15	Combined	11-Feb-59	69	3.1	5.9	6.1	Rain Garden, Swale	Open Space	$2,360,400	TTF	PWD Capital
			280-2	21-Jan-15	Combined	30-Oct-13		0.7	1.4	1.4	Infiltration/Storage Trench	Open Space		TTF	
			280-3	21-Jan-15	Combined	21-Nov-21		1.2	2.2	2.4	Infiltration/Storage Trench	Open Space		TTF	
			280-4	21-Jan-15	Combined	30-Jun-05		0.3	0.6	0.6	Infiltration/Storage Trench	Open Space		TTF	
	282		282-1	21-Jan-15	Combined	26-Jan-25	7	0.9	1.8	1.8	Rain Garden	Open Space		TTF	
			282-2	21-Jan-15	Combined	27-Sep-30		1.3	2.6	2.6	Rain Garden	Open Space		TTF	
			282-3	21-Jan-15	Combined	13-Nov-30		1.3	2.6	2.6	Rain Garden	Open Space		TTF	
			282-4	21-Jan-15	Combined	07-Jan-26		1.3	2.6	2.6	Rain Garden	Open Space		TTF	
50045	292	Ben Franklin Parkway 16-19th St.	292-1	16-Mar-17	Combined	19-Feb-09	0	0.5	0.9	1.1	Infiltration/Storage Trench	Streets	Unknown	Schuylkill	PWD Capital
			292-2	16-Mar-17	Combined	03-Apr-05		0.3	0.5	0.5	Infiltration/Storage Trench	Streets		Schuylkill	
			292-3	16-Mar-17	Combined	06-Aug-04		0.2	0.5	0.5	Infiltration/Storage Trench	Streets		Schuylkill	
			292-4	16-Mar-17	Combined	14-Aug-03		0.2	0.3	0.3	Infiltration/Storage Trench	Streets		Schuylkill	
			292-5	16-Mar-17	Combined	20-Aug-06		0.3	0.6	0.6	Infiltration/Storage Trench	Streets		Schuylkill	
			292-6	16-Mar-17	Combined	10-Aug-06		0.5	0.7	0.8	Infiltration/Storage Trench	Streets		Schuylkill	
50046	243	Womrath Park	243-1	27-Sep-12	Combined	08-Sep-09	7	1.1	1.0	1.2	Infiltration/Storage Trench, Rain Garden, Swale	Open Space	$540,071	TTF	Pennvest
50047	366	Philadelphia Zoo Green Streets Project	366-6	29-May-13	Combined	07-Mar-02	5	0.1	0.2	0.3	Rain Garden	Streets	$357,687	Schuylkill	Other City Agency
			366-5	29-May-13	Combined	04-Aug-01		0.1	0.2	0.2	Rain Garden	Streets		Schuylkill	
			366-10	29-May-13	Combined	26-Mar-02		0.1	0.2	0.2	Infiltration/Storage Trench, Planter	Streets		Schuylkill	
			366-8	29-May-13	Combined	10-Oct-01		0.1	0.2	0.2	Infiltration/Storage Trench	Streets		Schuylkill	
			366-9	29-May-13	Combined	27-Nov-01		0.1	0.2	0.2	Infiltration/Storage Trench	Streets		Schuylkill	
			366-3	29-May-13	Combined	19-Jan-01		0.1	0.1	0.1	Rain Garden	Streets		Schuylkill	
			366-2	29-May-13	Combined	12-Jun-02		0.2	0.2	0.4	Infiltration/Storage Trench, Rain Garden	Streets		Schuylkill	
			366-1	29-May-13	Combined	23-May-02		0.2	0.2	0.3	Rain Garden	Streets		Schuylkill	
			366-4	29-May-13	Combined	23-Mar-02		0.2	0.2	0.4	Rain Garden	Streets		Schuylkill	

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50048	375	Kinsey Sch./National Cem./Rowen Sch./Wagner Sch.	375-1	26-Oct-17	Combined	10-Dec-10	10	0.7	1.1	1.3	Tree Trench	Streets	$1,107,798	TTF	PWD Capital
			375-2	26-Oct-17	Combined	30-Aug-05		0.3	0.5	0.5	Tree Trench	Streets		TTF	
	377		377-1	26-Oct-17	Combined	13-Aug-01	0	0.1	0.2	0.2	Infiltration/Storage Trench, Rain Garden, Swale	Streets		TTF	
			377-2	26-Oct-17	Combined	20-Dec-01		0.2	0.2	0.4	Infiltration/Storage Trench, Rain Garden, Swale	Streets		TTF	
			377-3	26-Oct-17	Combined	09-Aug-01		0.2	0.2	0.3	Infiltration/Storage Trench, Rain Garden, Swale	Streets		TTF	
	378		378-1	26-Oct-17	Combined	03-Dec-08	9	0.6	0.9	1.2	Tree Trench	Streets		TTF	
	379		379-1	26-Oct-17	Combined	18-Jun-09	11	0.6	1.0	1.2	Tree Trench	Streets		TTF	
			379-2	26-Oct-17	Combined	27-Mar-05		0.4	0.5	0.6	Tree Trench	Streets		TTF	
50049	291	Sharswood & Our Lady of Carmel Schs./ St. Monica/ Taggart Sch.	291-1	27-Sep-17	Combined	10-Apr-08	3	0.4	0.8	0.8	Tree Trench	Streets	$1,191,880	Delaware	PWD Capital
			291-2	27-Sep-17	Combined	23-May-02		0.2	0.2	0.3	Tree Trench	Streets		Delaware	
			291-3	27-Sep-17	Combined	23-Aug-05		0.3	0.6	0.6	Infiltration/Storage Trench	Streets		Delaware	
	388		388-1	27-Sep-17	Combined	28-Jun-05	5	0.3	0.6	0.6	Infiltration/Storage Trench	Streets		Delaware	
			388-2	27-Sep-17	Combined	01-Feb-04		0.4	0.4	0.5	Tree Trench	Streets		Delaware	
			388-3	27-Sep-17	Combined	10-Sep-02		0.2	0.3	0.3	Tree Trench	Streets		Delaware	
			388-4	27-Sep-17	Combined	17-Jan-04		0.3	0.4	0.5	Infiltration/Storage Trench	Streets		Delaware	
	389		389-2	27-Sep-17	Combined	29-Jul-03	3	0.2	0.4	0.5	Tree Trench	Streets		Delaware	
			389-1	27-Sep-17	Combined	15-Dec-05		0.5	0.6	0.7	Infiltration/Storage Trench	Streets		Delaware	
50051	392	73rd/Elmwood Pk./Patterson Sch./Connell Pk./Mother Mary Sch./St. James Ch.	392-1	03-Feb-15	Combined	02-May-13	8	0.8	1.3	1.6	Tree Trench	Streets	$2,526,302	Cobbs-Darby, Schuylkill	PWD Capital
			392-2	03-Feb-15	Combined	06-Oct-12		0.9	1.3	1.5	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
	393		393-1	03-Feb-15	Combined	01-Jun-13	9	0.9	1.4	1.8	Infiltration/Storage Trench, Rain Garden	Streets		Schuylkill	
			393-2	03-Feb-15	Combined	16-Mar-06		0.4	0.6	0.7	Tree Trench	Streets		Schuylkill	
			393-3	03-Feb-15	Combined	21-Jul-10		0.8	1.1	1.2	Rain Garden, Tree Trench	Streets		Schuylkill	
			393-4	03-Feb-15	Combined	16-Dec-02		0.1	0.3	0.3	Infiltration/Storage Trench	Streets		Schuylkill	
			393-5	03-Feb-15	Combined	03-Sep-13		0.9	1.4	1.6	Tree Trench	Streets		Schuylkill	
	394		394-1	03-Feb-15	Combined	25-Nov-03	6	0.2	0.4	0.4	Tree Trench	Streets		Schuylkill	
			394-2	03-Feb-15	Combined	18-Sep-08		0.6	0.9	1.0	Tree Trench	Streets		Schuylkill	
			394-3	03-Feb-15	Combined	30-May-02		0.1	0.2	0.3	Infiltration/Storage Trench	Streets		Schuylkill	
	396		396-1	03-Feb-15	Combined	09-Nov-11	17	0.7	1.2	1.4	Tree Trench	Streets		Schuylkill	
			396-2	03-Feb-15	Combined	13-Nov-03		0.4	0.4	0.7	Tree Trench	Streets		Schuylkill	
			396-3	03-Feb-15	Combined	02-Nov-08		0.5	0.9	1.0	Tree Trench	Streets		Schuylkill	
	397		397-1	03-Feb-15	Combined	12-Jul-10	8	0.7	1.1	1.2	Tree Trench	Streets		Schuylkill	
			397-2	03-Feb-15	Combined	04-Jan-05		0.4	0.5	0.7	Tree Trench	Streets		Schuylkill	
	398		398-1	03-Feb-15	Combined	27-Apr-34	18	2.2	3.5	3.9	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			398-2	03-Feb-15	Combined	05-Oct-10		0.4	0.8	0.8	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
50052	335	Chelten Hills Cem./Finley Pg./Ivy Hills Cem./Pennypacker Sch./ Sedgwick Sta.	335-1	12-Mar-18	Combined	24-Aug-16	2	1.0	1.7	1.8	Bumpout, Infiltration/Storage Trench	Streets	$2,300,055	TTF	PWD Capital
	380		380-12	12-Mar-18	Combined	09-Aug-05	0	0.3	0.6	0.6	Infiltration/Storage Trench, Swale	Streets		TTF	
			380-1	12-Mar-18	Combined	14-Jan-15		1.1	1.5	1.7	Infiltration/Storage Trench	Streets		TTF	
			380-2	12-Mar-18	Combined	27-Feb-07		0.4	0.7	0.7	Bumpout, Infiltration/Storage Trench	Streets		TTF	
			380-3	12-Mar-18	Combined	01-Jun-07		0.4	0.7	0.8	Bumpout, Infiltration/Storage Trench	Streets		TTF	
			380-4	12-Mar-18	Combined	31-Dec-07		0.4	0.7	0.7	Bumpout, Infiltration/Storage Trench	Streets		TTF	
			380-5	12-Mar-18	Combined	23-Mar-04		0.2	0.4	0.4	Infiltration/Storage Trench	Streets		TTF	
			380-6	12-Mar-18	Combined	27-Dec-08		0.4	0.8	0.8	Bumpout, Infiltration/Storage Trench	Streets		TTF	
			380-9	12-Mar-18	Combined	19-Sep-08		0.5	0.9	1.0	Infiltration/Storage Trench, Swale	Streets		TTF	
			380-10	12-Mar-18	Combined	08-Apr-04		0.3	0.4	0.5	Infiltration/Storage Trench	Streets		TTF	
			380-11	12-Mar-18	Combined	13-Mar-04		0.2	0.4	0.4	Infiltration/Storage Trench	Streets		TTF	
	383		383-2	12-Mar-18	Combined	30-Jan-08	0	0.6	0.8	0.9	Infiltration/Storage Trench	Streets		TTF	
			383-1	12-Mar-18	Combined	30-Nov-09		0.6	1.0	1.2	Infiltration/Storage Trench	Streets		TTF	

Work Number	Project ID	Project Name	System Number	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Reported Year 10 Greened Acre Value (acre-inches)	Revised Greened Acre Value (acre-inches)	SMP Type	Program	Green Construction Cost	Watershed	Funding Source
50053	314	Logan Sch./Wayne/Windrim/Richmond Lib./Stokley/Vacant Lot/Skev. Pk./Westmoreland	314-1	28-Mar-18	Combined	04-Jan-04	16	0.3	0.4	0.5	Tree Trench	Streets	$1,834,625	TTF	PWD Capital
			314-2	28-Mar-18	Combined	11-Oct-04		0.4	0.5	0.6	Tree Trench	Streets		TTF	
			314-3	28-Mar-18	Combined	10-Jan-08		0.8	0.8	1.0	Tree Trench	Streets		TTF	
	384		384-1	28-Mar-18	Combined	01-Jun-11	9	0.7	1.1	1.3	Tree Trench	Streets		Delaware	
	385		385-1	28-Mar-18	Combined	15-Aug-05	7	0.4	0.6	0.7	Tree Trench	Streets		Delaware	
			385-2	28-Mar-18	Combined	23-Jun-02		0.1	0.2	0.3	Tree Trench	Streets		Delaware	
	386		386-2	28-Mar-18	Combined	27-Nov-04	5	0.2	0.4	0.4	Tree Trench	Streets		Delaware	
			386-3	28-Mar-18	Combined	26-Jan-05		0.3	0.5	0.6	Tree Trench	Streets		Delaware	
	413		413-1	28-Mar-18	Combined	26-Sep-03	0	0.2	0.4	0.4	Bumpout, Infiltration/Storage Trench	Streets		TTF	
			413-2	28-Mar-18	Combined	28-Dec-02		0.2	0.3	0.3	Bumpout, Infiltration/Storage Trench	Streets		TTF	
	439		439-1	28-Mar-18	Combined	01-Aug-07	3	0.4	0.8	0.8	Tree Trench	Streets		Delaware	
50055	246	40th St./Drexel COMAD/Malcom X Pk./42nd St.Vacant Lot/Beeber Sch./Upland Way	246-1	20-Mar-19	Combined	23-Sep-06	13	0.4	0.7	0.7	Tree Trench	Streets	$1,936,198	Schuylkill	PWD Capital
			246-2	20-Mar-19	Combined	25-Aug-07		0.4	0.8	0.8	Tree Trench	Streets		Schuylkill	
	344		344-1	20-Mar-19	Combined	10-Nov-06	3	0.3	0.6	0.6	Tree Trench	Streets		Schuylkill	
	399		399-1	20-Mar-19	Combined	29-Nov-06	29	0.3	0.6	0.6	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			399-2	20-Mar-19	Combined	16-Apr-10		0.7	1.0	1.2	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			399-3	20-Mar-19	Combined	23-May-04		0.3	0.4	0.5	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			399-4	20-Mar-19	Combined	04-Apr-09		0.5	0.9	1.0	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
	400		400-1	20-Mar-19	Combined	22-Dec-08	0	0.5	0.9	1.0	Bumpout, Infiltration/Storage Trench, Swale	Streets		Schuylkill	
			400-2	20-Mar-19	Combined	21-Oct-04		0.2	0.4	0.4	Bumpout, Infiltration/Storage Trench, Swale	Streets		Schuylkill	
			400-3	20-Mar-19	Combined	30-Aug-04		0.2	0.4	0.4	Bumpout, Infiltration/Storage Trench, Swale	Streets		Schuylkill	
			400-4	20-Mar-19	Combined	29-Nov-13		0.8	1.4	1.6	Infiltration/Storage Trench, Swale	Streets		Schuylkill	
50057	417	Stenton Ave. & E. Washington Ln.	417-1	08-Jul-14	Combined	14-May-06	0	0.3	0.6	0.6	Rain Garden	Streets	$34,123	TTF	PWD Capital
50059	410	Harrowgate Park	410-1	01-Sep-16	Combined	15-Jan-05	0	0.3	0.5	0.5	Infiltration/Storage Trench, Rain Garden	Open Space	$772,155	Delaware	PWD Capital
			410-2	01-Sep-16	Combined	24-Nov-07		0.4	0.8	0.8	Infiltration/Storage Trench, Rain Garden	Open Space		Delaware	
			410-3	01-Sep-16	Combined	30-Jan-11		0.4	0.8	0.8	Infiltration/Storage Trench, Rain Garden	Open Space		Delaware	
			410-4	01-Sep-16	Combined	06-Nov-15		0.8	1.5	1.5	Infiltration/Storage Trench, Rain Garden	Open Space		Delaware	
50060	416	Hunting Park	416-10	05-Jun-19	Combined	18-Jul-27	29	1.4	2.8	2.8	Infiltration/Storage Trench, Rain Garden	Open Space	$1,774,108	Delaware, TTF	PWD Capital
50061	471	Bustleton Avenue South, TIGER 3 Project (w/PWD Green Streets Funding)	471-1	08-Feb-16	Combined	03-Apr-07	0	0.5	0.7	0.9	Infiltration/Storage Trench	Streets	$174,320	Delaware	PWD Capital
50062	470	TIGER III: Woodland Ave. Corrdor (For PWD Green Streets Program)	470-1	14-Dec-15	Combined	24-Dec-04	15	0.4	0.5	0.7	Tree Trench	Streets	$438,171	Cobbs-Darby, Schuylkill	PWD Capital
			470-2	14-Dec-15	Combined	08-Feb-02		0.2	0.2	0.3	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			470-3	14-Dec-15	Combined	14-Jul-08		0.6	0.9	1.0	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			470-4	14-Dec-15	Combined	20-Oct-02		0.2	0.3	0.3	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
50063	310	Eadom St. Parking Lot - 5312-50 Eadom	310-4	02-May-12	Combined	10-Aug-00	20	0.0	0.0	0.0	Rain Garden	Parking	$0	Delaware	Other City Agency
			310-5	02-May-12	Combined	12-May-07		0.6	0.7	0.8	Rain Garden	Parking		Delaware	
			310-2	02-May-12	Combined	02-May-05		0.3	0.5	0.6	Rain Garden	Parking		Delaware	
			310-1	02-May-12	Combined	16-Nov-10		0.8	1.1	1.2	Rain Garden	Parking		Delaware	
			310-6	02-May-12	Combined	12-Jul-03		0.1	0.3	0.3	Rain Garden	Parking		Delaware	
			310-3	02-May-12	Combined	05-Nov-01		0.1	0.2	0.2	Rain Garden	Parking		Delaware	

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50065	367	Panati Playground	367-1	14-May-15	Combined	27-Apr-10	8	0.9	1.0	1.3	Infiltration/Storage Trench, Rain Garden	Open Space	$227,394	Delaware	PWD Capital
50067	276	29th and Cambria PWD Facility Parking Lot	276-1	31-Oct-16	Combined	06-Nov-10	58	0.8	1.1	1.3	Swale, Tree Trench	Streets	$937,258	Delaware	PWD Capital
			276-2	31-Oct-16	Combined	10-Oct-11		0.9	1.2	1.4	Swale, Tree Trench	Streets		Delaware	
50068	244	Ingersoll Commons	244-1	08-Nov-16	Combined	30-Jul-16	17	0.7	1.4	1.4	Infiltration/Storage Trench, Rain Garden, Swale	Open Space	$730,041	Delaware	PWD Capital
50069	511	Callowhill St. from 2nd St. to 7th St.	511-6	05-Feb-16	Combined	27-Jan-00	10	0.0	0.0	0.0	Stormwater Tree	Streets	$0	Delaware	PWD Capital
			511-9	05-Feb-16	Combined	27-Jan-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			511-10	05-Feb-16	Combined	27-Jan-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			511-7	05-Feb-16	Combined	27-Jan-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			511-4	05-Feb-16	Combined	27-Jan-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			511-3	05-Feb-16	Combined	27-Jan-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			511-2	05-Feb-16	Combined	27-Jan-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			511-1	05-Feb-16	Combined	27-Jan-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			511-8	05-Feb-16	Combined	27-Jan-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
			511-5	05-Feb-16	Combined	27-Jan-00		0.0	0.0	0.0	Stormwater Tree	Streets		Delaware	
50070	524	Benson Park	524-1	13-Nov-15	Combined		0	0.0	0.2	0.0	Pervious Paving	Open Space	$5,715	Delaware	PWD Capital
			524-2	13-Nov-15	Combined	30-Nov-01		0.2	0.2	0.3	Infiltration/Storage Trench	Open Space		Delaware	
50071	475	Green2015 - Phase I - Collazo (2.37 GA)	475-1	23-Jun-17	Combined	06-Aug-15	16	1.2	1.6	1.9	Infiltration/Storage Trench, Rain Garden	Open Space	$352,915	Delaware	Private Development
50075	479	Green2015 - Phase I - William Dick Elementary	479-1	13-Jun-14	Combined	03-Dec-23	0	1.5	2.4	2.9	Rain Garden	Schools	$207,000	Delaware	PWD Operating
50077	322	Baker, Heston, Haverford Triangle	322-2	16-Sep-16	Combined	13-May-08	10	0.6	0.8	0.9	Rain Garden	Vacant Land	$692,423	Schuylkill	PWD Capital
			322-3	16-Sep-16	Combined	22-Apr-04		0.3	0.4	0.7	Infiltration/Storage Trench, Rain Garden, Swale	Vacant Land		Schuylkill	
			322-1	16-Sep-16	Combined	01-Aug-02		0.2	0.3	0.3	Infiltration/Storage Trench	Vacant Land		Schuylkill	
	530		530-1	16-Sep-16	Combined	17-Nov-03	0	0.3	0.4	0.5	Infiltration/Storage Trench, Rain Garden	Open Space		Schuylkill	
	558		558-1	16-Sep-16	Combined	16-Dec-09	4	0.7	1.0	1.3	Infiltration/Storage Trench, Rain Garden	Vacant Land		Schuylkill	
50078	303	Clearview Community Park & Morris Estate Park	303-1	07-Oct-16	Combined	31-Aug-09	0	0.7	1.0	1.5	Infiltration/Storage Trench, Rain Garden	Vacant Land	$866,242	TTF	PWD Capital
	642		642-2	07-Oct-16	Combined	02-Nov-02	13	0.3	0.3	0.6	Tree Trench	Open Space		TTF	
			642-3	07-Oct-16	Combined	13-Oct-12		0.8	1.3	1.5	Infiltration/Storage Trench, Rain Garden	Open Space		TTF	
			642-6	07-Oct-16	Combined	31-May-05		0.4	0.5	0.7	Tree Trench	Open Space		TTF	
50079	401	Guerin Recreation Center	401-3	23-Jul-18	Combined		1	0.0	0.1	0.0	Depaving	Open Space	$1,019,045	Schuylkill	PWD Capital
			401-1	23-Jul-18	Combined	11-Jun-15		0.7	1.5	1.5	Infiltration/Storage Trench	Open Space		Schuylkill	
			401-2	23-Jul-18	Combined	07-Mar-26		1.3	2.6	2.6	Infiltration/Storage Trench	Open Space		Schuylkill	
50080	588	Penn Street Trail	588-3	13-Jun-13	Combined	22-Mar-01	25	0.2	0.1	0.3	Rain Garden	Streets	$0	Delaware	Other Public Agency
			588-2	13-Jun-13	Combined	13-Jun-03		0.6	0.3	0.6	Rain Garden	Streets		Delaware	
50082	597	33rd and Dauphin St. Sept Bus Loop Green Streets Project	597-1	31-Jul-13	Combined	25-Apr-01	0	0.1	0.1	0.1	Infiltration/Storage Trench	Streets	$0	Schuylkill	Other Public Agency
50083	151	Weccacoe Playground	151-4	09-Dec-16	Combined		9	0.0	0.1	0.0	Depaving	Open Space	$118,707	Delaware	PWD Capital
			151-5	09-Dec-16	Combined			0.0	0.0	0.0	Depaving	Open Space		Delaware	
			151-6	09-Dec-16	Combined			0.0	0.0	0.0	Depaving	Open Space		Delaware	
			151-2	09-Dec-16	Combined			0.0	0.0	0.0	Depaving	Open Space		Delaware	
			151-1	09-Dec-16	Combined	26-Mar-03		0.3	0.3	0.4	Infiltration/Storage Trench, Rain Garden	Open Space		Delaware	
			151-3	09-Dec-16	Combined			0.0	0.0	0.0	Depaving	Open Space		Delaware	
50084	487	Moss Playground/Carmella Playground	487-1	13-Jan-20	Combined	31-Aug-16	15	1.0	1.7	2.0	Tree Trench	Open Space	$1,480,870	Delaware	PWD Capital
			487-2	13-Jan-20	Combined	04-Jun-31		1.7	3.2	3.5	Infiltration/Storage Trench, Rain Garden	Open Space		Delaware	
	580		580-1	13-Jan-20	Combined	11-Aug-11	0	0.7	1.2	1.4	Infiltration/Storage Trench, Rain Garden	Open Space		Delaware, TTF	
			580-2	13-Jan-20	Combined	12-May-15		0.8	1.5	1.6	Rain Garden	Open Space		Delaware, TTF	
			580-3	13-Jan-20	Combined	09-Nov-04		0.2	0.5	0.5	Infiltration/Storage Trench, Rain Garden	Open Space		Delaware, TTF	
			580-4	13-Jan-20	Combined	03-Sep-12		0.8	1.3	1.6	Rain Garden	Open Space		Delaware, TTF	
			580-5	13-Jan-20	Combined	26-Apr-05		0.3	0.5	0.5	Infiltration/Storage Trench, Rain Garden	Open Space		Delaware, TTF	
			580-6	13-Jan-20	Combined	24-May-02		0.1	0.2	0.3	Infiltration/Storage Trench	Open Space		Delaware, TTF	

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50085	574	Ralph Brooks Park	574-1	08-Oct-15	Combined	27-May-04	5	0.3	0.4	0.5	Infiltration/Storage Trench, Rain Garden	Open Space	$152,300	Schuylkill	PWD Capital

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50088	546	Rowland and Crispin	546-1	11-Sep-20	Combined	01-Jul-05	16	0.3	0.6	0.6	Bumpout, Infiltration/Storage Trench	Streets	$5,058,205	Delaware	PWD Capital
			546-2	30-Sep-21	Combined	05-Oct-02		0.2	0.3	0.4	Tree Trench	Streets		Delaware	
			546-3	30-Sep-21	Combined	20-Oct-05		0.3	0.6	0.6	Infiltration/Storage Trench, Planter	Streets		Delaware	
			546-4	30-Sep-21	Combined	08-Jul-08		0.6	0.9	1.0	Infiltration/Storage Trench, Planter	Streets		Delaware	
			546-5	11-Sep-20	Combined	07-Jul-06		0.4	0.7	0.8	Bumpout, Infiltration/Storage Trench	Streets		Delaware	
			546-6	18-Nov-20	Combined	14-Jan-04		0.2	0.4	0.5	Tree Trench	Streets		Delaware	
			546-7	11-Sep-20	Combined	19-Jun-11		0.8	1.2	1.3	Infiltration/Storage Trench, Planter, Swale	Streets		Delaware	
			546-8	18-Nov-20	Combined	24-Nov-09		0.6	1.0	1.2	Infiltration/Storage Trench, Swale	Streets		Delaware	
	595		595-12	09-Sep-20	Combined	14-Apr-08	16	0.5	0.8	1.0	Bumpout, Infiltration/Storage Trench	Streets		Delaware, Pennypack	
			595-11	09-Sep-20	Combined	12-May-10		0.7	1.0	1.2	Bumpout, Infiltration/Storage Trench	Streets		Delaware, Pennypack	
			595-10	30-Nov-21	Combined	25-May-02		0.1	0.2	0.3	Infiltration/Storage Trench	Streets		Delaware, Pennypack	
			595-9	09-Sep-20	Combined	21-Jul-17		1.1	1.8	2.1	Bumpout, Infiltration/Storage Trench	Streets		Delaware, Pennypack	
			595-6	01-Dec-21	Combined	05-Nov-02		0.2	0.3	0.3	Tree Trench	Streets		Delaware, Pennypack	
	596		596-1	27-May-20	Combined	07-Sep-10	6	0.6	1.1	1.3	Bumpout, Infiltration/Storage Trench	Streets		Pennypack	
			596-2	27-May-20	Combined	14-Aug-11		0.7	1.2	1.4	Bumpout, Infiltration/Storage Trench	Streets		Pennypack	
			596-3	26-May-20	Combined	13-Mar-05		0.3	0.5	0.6	Bumpout, Infiltration/Storage Trench	Streets		Pennypack	
			596-4	26-May-20	Combined	22-Sep-03		0.2	0.4	0.4	Bumpout, Infiltration/Storage Trench	Streets		Pennypack	
50089	455	Erie, Francis Hopkins, and Mariana Bracetti	455-1	29-Oct-19	Combined	25-Mar-05	0	0.3	0.5	0.5	Bumpout, Infiltration/Storage Trench	Streets	$1,819,217	TTF	PWD Capital
			455-2	29-Oct-19	Combined	23-Dec-17		0.9	1.8	1.8	Infiltration/Storage Trench, Planter	Streets		TTF	
	459		459-1	29-Oct-19	Combined	12-Mar-25	4	1.8	2.5	3.0	Planter, Tree Trench	Streets		TTF	
			459-2	23-Oct-19	Combined	11-May-04		0.4	0.4	0.5	Infiltration/Storage Trench, Planter	Streets		TTF	
	586		586-2	25-Oct-19	Combined	26-Nov-07	7	0.4	0.7	0.7	Infiltration/Storage Trench, Planter	Streets		TTF	
			586-3	22-Oct-19	Combined	28-Apr-04		0.3	0.4	0.5	Tree Trench	Streets		TTF	
			586-1	25-Oct-19	Combined	31-Aug-07		1.1	0.8	1.1	Planter, Tree Trench	Streets		TTF	
50091	589	Stinger Square	589-1	06-Jul-16	Combined	14-Jan-04	15	0.2	0.4	0.5	Infiltration/Storage Trench	Open Space	$231,585	Schuylkill	Other Public Agency
			589-2	06-Jul-16	Combined	06-Apr-04		0.4	0.4	0.5	Infiltration/Storage Trench, Rain Garden	Open Space		Schuylkill	
50097	483	Black Coyle McBride Playground	483-1	10-Jul-19	Combined	03-Jun-07	4	0.5	0.7	1.0	Infiltration/Storage Trench	Open Space	$1,194,310	Delaware	PWD Capital
	634	Black Coyle McBride Playground	634-1	30-Mar-18	Combined	09-Aug-04	3	0.3	0.5	0.5	Tree Trench	Streets		Delaware	
	637	Black Coyle McBride Playground	637-1	05-Nov-18	Combined	02-Oct-03	11	0.2	0.3	0.3	Tree Trench	Streets		Delaware	
		Black Coyle McBride Playground	637-2	16-Aug-18	Combined	03-Feb-09		0.6	0.9	1.0	Tree Trench	Streets		Delaware	
	638	Black Coyle McBride Playground	638-1	16-Aug-18	Combined	22-May-08	13	0.5	0.8	0.0	Tree Trench	Streets		Delaware	
		Black Coyle McBride Playground	638-2	09-Jan-18	Combined	24-Feb-02		0.1	0.2	0.2	Tree Trench	Streets		Delaware	
		Black Coyle McBride Playground	638-3	02-Feb-18	Combined	15-Aug-02		0.1	0.2	0.2	Tree Trench	Streets		Delaware	
	993	Black Coyle McBride Playground	993-1	06-Aug-18	Combined	10-Jan-04	2	0.2	0.4	0.4	Tree Trench	Streets		Delaware	
50098	1007	Neighborhood Parks - Wissinoming Park	1007-1	15-Feb-18	Combined	02-Feb-06	25	0.6	0.6	0.7	Infiltration/Storage Trench, Rain Garden	Open Space	$500,000	Delaware	PWD Capital
			1007-2	15-Feb-18	Combined	07-Mar-13		1.0	1.3	1.5	Infiltration/Storage Trench, Rain Garden	Open Space		Delaware	

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50101	608	Kingsessing Recreation Center and Street Locations	608-1	15-Jan-19	Combined	16-Oct-25	17	1.6	2.6	3.0	Infiltration/Storage Trench, Rain Garden	Open Space	$1,765,200	Schuylkill	PWD Capital
			608-2	04-Jun-19	Combined	21-Nov-44		2.2	4.4	4.4	Infiltration/Storage Trench, Rain Garden	Open Space		Schuylkill	
			608-3	31-Oct-18	Combined	23-Oct-14		0.7	1.4	1.4	Infiltration/Storage Trench, Rain Garden	Open Space		Schuylkill	
			608-4	19-Feb-19	Combined	08-Jan-10		0.6	1.0	1.1	Infiltration/Storage Trench	Open Space		Schuylkill	
	1049		1049-1	06-Mar-19	Combined	03-Mar-02	12	0.1	0.2	0.3	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			1049-2	19-Mar-19	Combined	10-Sep-03		0.2	0.4	0.4	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			1049-3	08-Jan-19	Combined	05-Nov-03		0.2	0.4	0.4	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			1049-4	18-Dec-18	Combined	04-Aug-03		0.2	0.4	0.4	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			1049-5	26-Mar-19	Combined	08-Apr-03		0.2	0.3	0.4	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
50102	1012	Gray's Ferry Neighborhood Disconnection SMP Lanier Park	1012-1	06-Oct-16	Combined	07-Jul-14	0	0.0	0.0	0.0	Infiltration/Storage Trench	Open Space	$3,691,857	Schuylkill	PWD Capital
50103	1024	Drainage Well	1024-1	07-Sep-18	Combined	14-Jul-01	0	0.2	0.3	0.2	Drainage Well	Streets	$582,900	Cobbs-Darby	PWD Capital
	1025		1025-1	07-Sep-18	Combined	14-Sep-00	0	0.2	0.2	0.3	Drainage Well	Streets		Delaware	
	1029		1029-1	07-Sep-18	Combined	02-Apr-01	0	0.4	0.3	0.3	Drainage Well	Streets		Delaware	
50104	578	Stenton Park and Streets Locations	578-5	19-Oct-18	Combined	05-Jan-04	20	0.2	0.4	0.5	Tree Trench	Open Space	$2,252,260	TTF	PWD Capital
			578-4	07-Dec-18	Combined	06-Jun-07		0.3	0.6	0.6	Rain Garden	Open Space		TTF	
			578-3	18-Oct-18	Combined	25-Jul-17		0.8	1.7	1.7	Infiltration/Storage Trench, Rain Garden	Open Space		TTF	
			578-1	04-Jun-18	Combined	12-May-21		1.1	2.1	2.1	Infiltration/Storage Trench	Open Space		TTF	
			578-2	18-Oct-18	Combined	14-Mar-17		0.8	1.6	1.6	Infiltration/Storage Trench, Rain Garden	Open Space		TTF	
	1050		1050-4	15-Oct-18	Combined	04-Nov-04	34	0.3	0.5	0.6	Tree Trench	Streets		TTF	
			1050-9	14-May-18	Combined	26-Jun-03		0.2	0.4	0.4	Tree Trench	Streets		TTF	
			1050-8	29-Aug-18	Combined	29-Nov-06		0.5	0.7	0.9	Tree Trench	Streets		TTF	
			1050-7	29-Aug-18	Combined	07-Jun-04		0.3	0.4	0.5	Tree Trench	Streets		TTF	
			1050-3	14-Jun-18	Combined	15-Jul-03		0.2	0.4	0.5	Tree Trench	Streets		TTF	
			1050-2	24-May-18	Combined	29-Dec-09		0.5	1.0	1.0	Tree Trench	Streets		TTF	
			1050-1	06-Apr-18	Combined	08-Sep-05		0.3	0.6	0.6	Tree Trench	Streets		TTF	
			1050-5	17-May-18	Combined	16-May-07		0.4	0.7	0.9	Infiltration/Storage Trench	Streets		TTF	
			1050-6	30-Nov-18	Combined	04-Sep-04		0.3	0.5	0.6	Tree Trench	Streets		TTF	

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50105	1051	Francis Myers Recreation Center and Streets Locations	1051-21	02-Jun-21	Combined	05-Dec-06	70	0.4	0.7	0.8	Tree Trench	Streets	$4,087,210	Cobbs-Darby, Schuylkill	PWD Capital
			1051-14	22-Apr-21	Combined	16-Jun-06		0.4	0.7	0.7	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			1051-15	28-Apr-21	Combined	22-Sep-08		0.4	0.9	0.9	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			1051-16	10-Jun-21	Combined	27-Apr-07		0.4	0.7	0.8	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			1051-17	22-Apr-21	Combined	19-Jun-02		0.1	0.2	0.3	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			1051-18	21-May-21	Combined	19-Jul-11		0.6	1.2	1.2	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			1051-20	02-Jun-21	Combined	14-Oct-01		0.1	0.2	0.2	Infiltration/Storage Trench	Streets		Cobbs-Darby, Schuylkill	
			1051-22	02-Jun-21	Combined	25-Dec-08		0.6	0.9	1.0	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			1051-3	25-Jan-21	Combined	22-Sep-05		0.5	0.6	0.6	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			1051-13	15-Jul-21	Combined	16-Mar-12		0.9	1.2	1.5	Bumpout, Infiltration/Storage Trench	Streets		Cobbs-Darby, Schuylkill	
			1051-19	15-Jul-21	Combined	17-Aug-03		0.2	0.4	0.4	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			1051-4	25-Jan-21	Combined	08-Feb-03		0.2	0.3	0.4	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			1051-12	16-Apr-21	Combined	15-May-08		0.4	0.8	0.8	Bumpout, Infiltration/Storage Trench	Streets		Cobbs-Darby, Schuylkill	
			1051-5	25-Jan-21	Combined	15-Apr-04		0.3	0.4	0.5	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			1051-2	17-Nov-20	Combined	08-Nov-11		0.6	1.2	1.2	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			1051-1	17-Nov-20	Combined	09-Jan-23		1.8	2.3	3.5	Green Gutter, Infiltration/Storage Trench	Streets		Cobbs-Darby, Schuylkill	
			1051-6	25-Jan-21	Combined	27-Mar-04		0.3	0.4	0.5	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			1051-7	25-Jan-21	Combined	03-Dec-07		0.4	0.8	0.8	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			1051-8	22-Apr-21	Combined	12-Mar-05		0.3	0.5	0.6	Bumpout, Infiltration/Storage Trench	Streets		Cobbs-Darby, Schuylkill	
			1051-9	16-Apr-21	Combined	10-Nov-06		0.4	0.7	0.8	Infiltration/Storage Trench	Streets		Cobbs-Darby, Schuylkill	
			1051-10	16-Apr-21	Combined	16-Mar-05		0.3	0.5	0.6	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			1051-11	16-Apr-21	Combined	02-Aug-04		0.4	0.5	0.9	Bumpout, Infiltration/Storage Trench	Streets		Cobbs-Darby, Schuylkill	
50108	1053	Fotterall Square Streets	1053-9	20-Sep-21	Combined	08-Apr-04	24	0.3	0.4	0.5	Tree Trench	Streets	$1,757,417	Delaware	PWD Capital
			1053-1	12-May-21	Combined	27-Jun-03		0.2	0.4	0.4	Bumpout, Infiltration/Storage Trench	Streets		Delaware	
			1053-4	13-May-21	Combined	21-Jun-04		0.2	0.5	0.5	Tree Trench	Streets		Delaware	
			1053-10	12-May-21	Combined	15-Jan-05		0.4	0.5	0.6	Tree Trench	Streets		Delaware	
			1053-5	13-May-21	Combined	13-Jan-05		0.3	0.5	0.6	Tree Trench	Streets		Delaware	
			1053-6	17-Sep-21	Combined	08-Jan-04		0.2	0.4	0.5	Bumpout, Infiltration/Storage Trench	Streets		Delaware	
			1053-2	13-May-21	Combined	04-Feb-02		0.1	0.2	0.3	Bumpout, Tree Trench	Streets		Delaware	
			1053-3	17-Sep-21	Combined	26-Oct-09		0.5	1.0	1.0	Tree Trench	Streets		Delaware	

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50109	1023	Osage Ave from 42nd to 43rd	1023-7	28-Mar-19	Combined	09-Feb-00	11	0.0	0.0	0.0	Stormwater Tree	Streets	$189,048	Schuylkill	PWD Capital
			1023-11	28-Mar-19	Combined	09-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Schuylkill	
			1023-10	28-Mar-19	Combined	09-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Schuylkill	
			1023-1	28-Mar-19	Combined	09-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Schuylkill	
			1023-8	28-Mar-19	Combined	09-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Schuylkill	
			1023-6	28-Mar-19	Combined	09-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Schuylkill	
			1023-5	28-Mar-19	Combined	09-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Schuylkill	
			1023-4	28-Mar-19	Combined	09-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Schuylkill	
			1023-3	28-Mar-19	Combined	09-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Schuylkill	
			1023-2	28-Mar-19	Combined	09-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Schuylkill	
			1023-9	28-Mar-19	Combined	09-Feb-00		0.0	0.0	0.0	Stormwater Tree	Streets		Schuylkill	
50110	242	North Morris Park	242-1	03-Jul-21	Combined	09-May-22	68	2.3	4.6	2.8	Infiltration/Storage Trench, Rain Garden	Streets	$2,356,772	Cobbs-Darby	PWD Capital
50111	376	Mt. Airy Church	376-1	29-Oct-18	Combined	04-Mar-13	15	0.7	1.3	1.3	Bumpout, Infiltration/Storage Trench	Streets	$941,372	TTF	PWD Capital
			376-2	29-Oct-18	Combined	05-Mar-05		0.3	0.5	0.5	Bumpout, Infiltration/Storage Trench	Streets		TTF	
			376-3	29-Oct-18	Combined	07-Jul-03		0.2	0.4	0.4	Bumpout, Infiltration/Storage Trench	Streets		TTF	
			376-4	29-Oct-18	Combined	05-Nov-04		0.2	0.5	0.5	Tree Trench	Streets		TTF	
			376-5	29-Oct-18	Combined	08-May-04		0.2	0.4	0.4	Tree Trench	Streets		TTF	
			376-6	29-Oct-18	Combined	19-Dec-06		0.4	0.7	0.8	Tree Trench	Streets		TTF	
50112	1055	Botanic Ave	1055-1	09-Feb-18	Combined	23-Sep-15	50	0.4	0.7	0.7	Rain Garden	Streets	$500,000	Schuylkill	PWD Capital
			1055-2	09-Feb-18	Combined	05-Mar-04		0.7	0.4	0.5	Rain Garden	Streets		Schuylkill	
			1055-3	09-Feb-18	Combined	12-Feb-26		1.5	2.6	2.9	Infiltration/Storage Trench, Rain Garden	Streets		Schuylkill	
50113	600	37th and Mount Vernon Playground	600-1	16-Dec-16	Combined	28-Jun-05	5	0.3	0.5	0.5	Infiltration/Storage Trench, Rain Garden	Open Space	$72,439	Schuylkill	PWD Capital
50118	1059	Street Crossings - Aramingo, Cedar, Cambria, Almond	1059-1	14-Dec-20	Combined	17-Feb-07	5	0.4	0.7	0.9	Infiltration/Storage Trench, Rain Garden	Streets	$1,174,447	Delaware	PWD Capital
			1059-2	03-Dec-20	Combined	21-Dec-09		0.9	1.0	1.2	Infiltration/Storage Trench	Streets		Delaware	
			1059-3	30-Jul-20	Combined	14-Jun-03		0.3	0.3	0.4	Tree Trench	Streets		Delaware	
			1059-4	26-Aug-20	Combined	05-Jun-04		0.3	0.4	0.5	Tree Trench	Streets		Delaware	
			1059-5	25-Nov-20	Combined	10-Jun-06		0.4	0.6	0.8	Bumpout, Tree Trench	Streets		Delaware	

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50119	1067	Cement Park (Northern Liberties Rec Center)	1067-1	08-May-19	Combined	30-Apr-11	0	0.8	1.1	1.1	Infiltration/Storage Trench	Streets	$1,155,558	Delaware	PWD Capital
			1067-2	08-May-19	Combined	16-Dec-02		0.1	0.3	0.3	Infiltration/Storage Trench, Rain Garden	Parking		Delaware	
			1067-3	08-May-19	Combined	29-Apr-05		0.3	0.5	0.5	Infiltration/Storage Trench, Planter	Streets		Delaware	
			1067-4	08-May-19	Combined	18-May-07		0.5	0.7	1.0	Infiltration/Storage Trench, Rain Garden	Streets		Delaware	
	1068		1068-1	08-May-19	Combined	05-May-04	0	0.3	0.4	0.5	Infiltration/Storage Trench, Planter	Streets		Delaware	
50120	1070	McPherson Streets	1070-10	24-Mar-21	Combined	07-Dec-03	56	0.3	0.4	0.6	Tree Trench	Streets	$1,900,719	Delaware	PWD Capital
			1070-1	24-Mar-21	Combined	06-Apr-08		0.6	0.8	1.2	Tree Trench	Streets		Delaware	
			1070-16	24-Mar-21	Combined	19-Sep-06		0.6	0.7	1.0	Tree Trench	Streets		Delaware	
			1070-15	24-Mar-21	Combined	03-Aug-04		0.3	0.5	0.5	Tree Trench	Streets		Delaware	
			1070-14	24-Mar-21	Combined	18-Sep-05		0.3	0.6	0.6	Tree Trench	Streets		Delaware	
			1070-13	24-Mar-21	Combined	14-Aug-04		0.3	0.5	0.6	Infiltration/Storage Trench	Streets		Delaware	
			1070-11	24-Mar-21	Combined	15-Oct-02		0.2	0.3	0.3	Tree Trench	Streets		Delaware	
			1070-8	24-Mar-21	Combined	04-Jul-05		0.4	0.6	0.6	Tree Trench	Streets		Delaware	
			1070-7	24-Mar-21	Combined	15-Aug-04		0.3	0.5	0.5	Tree Trench	Streets		Delaware	
			1070-6	24-Mar-21	Combined	09-Jul-07		0.5	0.8	1.0	Infiltration/Storage Trench, Tree Trench	Streets		Delaware	
			1070-5	24-Mar-21	Combined	17-Jan-04		0.2	0.4	0.5	Tree Trench	Streets		Delaware	
			1070-4	24-Mar-21	Combined	08-Sep-05		0.4	0.6	0.7	Tree Trench	Streets		Delaware	
			1070-3	24-Mar-21	Combined	01-Aug-08		0.6	0.9	1.0	Tree Trench	Streets		Delaware	
			1070-12	24-Mar-21	Combined	20-Jan-03		0.3	0.3	0.6	Infiltration/Storage Trench	Streets		Delaware	
50122	1077	Mount Sinai	1077-1	07-Jun-19	Combined	29-Jul-13	2	0.9	1.4	1.8	Infiltration/Storage Trench	Open Space	$3,377,000	Delaware, TTF	PWD Capital
			1077-2	30-Aug-19	Combined	30-Mar-07		0.5	0.7	1.0	Tree Trench	Vacant Land		Delaware, TTF	
	1083		1083-9	20-Dec-18	Combined	19-Jan-03	59	0.2	0.3	0.4	Tree Trench	Streets		Delaware, TTF	
			1083-10	06-May-19	Combined	04-Jun-10		0.7	1.0	1.3	Bumpout, Tree Trench	Streets		Delaware, TTF	
			1083-11	01-May-19	Combined	25-Jan-05		0.3	0.5	0.6	Tree Trench	Streets		Delaware, TTF	
			1083-12	03-May-19	Combined	12-Mar-06		0.4	0.6	0.7	Bumpout, Infiltration/Storage Trench	Streets		Delaware, TTF	
			1083-8	20-Dec-18	Combined	28-Jul-07		0.5	0.8	0.9	Tree Trench	Streets		Delaware, TTF	
			1083-14	17-Jul-19	Combined	25-Mar-10		0.7	1.0	1.2	Planter, Tree Trench	Streets		Delaware, TTF	
			1083-13	29-Jul-19	Combined	14-Sep-03		0.3	0.4	0.5	Infiltration/Storage Trench, Planter	Streets		Delaware, TTF	
			1083-6	01-Apr-19	Combined	30-Dec-19		1.3	2.0	2.3	Infiltration/Storage Trench, Swale	Streets		Delaware, TTF	
			1083-5	04-Jan-19	Combined	22-Feb-08		0.6	0.8	1.1	Bumpout, Infiltration/Storage Trench	Streets		Delaware, TTF	
			1083-4	03-Apr-19	Combined	11-Apr-19		1.0	1.9	2.0	Bumpout, Tree Trench	Streets		Delaware, TTF	
			1083-3	03-Apr-19	Combined	13-Dec-06		0.4	0.7	0.9	Bumpout, Infiltration/Storage Trench	Streets		Delaware, TTF	
			1083-1	20-Jun-19	Combined	16-Apr-02		0.2	0.2	0.3	Infiltration/Storage Trench	Streets		Delaware, TTF	
			1083-2	03-Apr-19	Combined	12-May-07		0.4	0.7	0.8	Bumpout, Infiltration/Storage Trench	Streets		Delaware, TTF	
			1083-7	01-Apr-19	Combined	11-May-14		1.0	1.4	1.9	Infiltration/Storage Trench, Swale	Streets		Delaware, TTF	

Work Number	Project ID	Project Name	System Number	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Reported Year 10 Greened Acre Value (acre-inches)	Revised Greened Acre Value (acre-inches)	SMP Type	Program	Green Construction Cost	Watershed	Funding Source
50123	1084	Allegheny Ave Safety Corridor Improvement Project (MPMS 85417)	1084-8	10-Jan-19	Combined	10-Jan-03	0	0.1	0.3	0.3	Infiltration/Storage Trench	Streets	Unknown	Delaware	PennDot
			1084-1	10-Jan-19	Combined	19-Nov-03		0.2	0.4	0.4	Infiltration/Storage Trench	Streets		Delaware	
			1084-2	10-Jan-19	Combined	24-Jan-04		0.2	0.4	0.4	Infiltration/Storage Trench	Streets		Delaware	
			1084-3	10-Jan-19	Combined	23-Oct-02		0.2	0.3	0.3	Infiltration/Storage Trench	Streets		Delaware	
			1084-4	10-Jan-19	Combined	16-Jul-03		0.2	0.3	0.3	Infiltration/Storage Trench, Rain Garden	Streets		Delaware	
			1084-5	10-Jan-19	Combined	30-Apr-04		0.2	0.4	0.4	Infiltration/Storage Trench	Streets		Delaware	
			1084-6	10-Jan-19	Combined	16-Sep-05		0.3	0.5	0.5	Infiltration/Storage Trench	Streets		Delaware	
			1084-7	10-Jan-19	Combined	16-May-04		0.2	0.4	0.4	Infiltration/Storage Trench	Streets		Delaware	
50124	1085	Trenton and Auburn Playground	1085-1	05-Feb-20	Combined	15-Jul-51	0	7.7	15.2	15.4	Infiltration/Storage Trench	Open Space	$3,065,250	Delaware	PWD Capital
50125	1087	Lawncrest Streets Southeast	1087-4	08-Sep-21	Combined	07-Aug-15	9	1.0	1.6	2.1	Bumpout, Infiltration/Storage Trench	Streets	$2,559,684	Delaware, TTF	PWD Capital
			1087-2	08-Sep-21	Combined	17-May-16		1.1	1.6	2.2	Bumpout, Infiltration/Storage Trench	Streets		Delaware, TTF	
			1087-1	07-Sep-21	Combined	01-Aug-10		0.7	1.1	1.5	Bumpout, Infiltration/Storage Trench	Streets		Delaware, TTF	
			1087-5	02-Sep-21	Combined	12-Apr-14		1.0	1.4	1.7	Bumpout, Infiltration/Storage Trench	Streets		Delaware, TTF	
			1087-3	08-Sep-21	Combined	26-May-18		1.2	1.9	2.4	Bumpout, Infiltration/Storage Trench	Streets		Delaware, TTF	
			1087-6	02-Sep-21	Combined	06-Feb-16		1.0	1.6	2.0	Bumpout, Infiltration/Storage Trench	Streets		Delaware, TTF	
			1087-7	06-Sep-21	Combined	09-Oct-13		1.0	1.4	2.0	Bumpout, Infiltration/Storage Trench	Streets		Delaware, TTF	
			1087-8	03-Sep-21	Combined	20-Apr-12		0.7	1.2	1.5	Bumpout, Infiltration/Storage Trench	Streets		Delaware, TTF	
			1087-9	03-Sep-21	Combined	11-Mar-07		0.5	0.7	0.9	Bumpout, Infiltration/Storage Trench	Streets		Delaware, TTF	
50129	1127	Girard Park and Warriner Post Park	1127-1	29-Jun-20	Combined	03-May-15	11	0.8	1.5	1.7	Rain Garden, Tree Trench	Vacant Land	$2,364,471	Schuylkill	PWD Capital
	1128		1128-2	29-Jun-20	Combined	12-Jan-12	8	0.6	1.1	1.1	Bumpout, Tree Trench	Streets		Schuylkill	
			1128-3	29-Jun-20	Combined	11-Nov-13		0.9	1.4	1.7	Bumpout, Tree Trench	Streets		Schuylkill	
			1128-1	29-Jun-20	Combined	25-Jun-13		0.8	1.4	1.6	Bumpout, Tree Trench	Streets		Schuylkill	
	1129		1129-5	13-Jan-20	Combined	11-Dec-02	22	0.2	0.3	0.3	Tree Trench	Streets		Schuylkill	
			1129-1	21-Feb-20	Combined	03-Jul-02		0.1	0.3	0.3	Tree Trench	Streets		Schuylkill	
			1129-6	17-Jan-20	Combined	26-May-12		0.7	1.2	1.4	Tree Trench	Streets		Schuylkill	
			1129-7	17-Jan-20	Combined	01-Aug-08		0.6	0.9	0.9	Infiltration/Storage Trench	Streets		Schuylkill	
			1129-4	10-Jan-20	Combined	25-Apr-09		0.6	0.9	1.1	Tree Trench	Streets		Schuylkill	
			1129-2	21-Feb-20	Combined	20-Nov-01		0.1	0.2	0.2	Tree Trench	Streets		Schuylkill	
			1129-3	10-Jan-20	Combined	04-May-02		0.1	0.2	0.3	Bumpout, Infiltration/Storage Trench	Streets		Schuylkill	
50132	1137	Max Myers	1137-1	19-May-21	Combined	08-Jan-34	17	1.8	3.4	3.7	Infiltration/Storage Trench, Rain Garden, Swale	Open Space	$3,038,180	Delaware	PWD Capital
			1137-2	25-Nov-19	Combined	27-Apr-56		3.2	5.7	6.4	Infiltration/Storage Trench, Planter	Streets		Delaware	
			1137-3	25-Nov-19	Combined	02-Dec-07		0.7	0.8	1.3	Infiltration/Storage Trench	Streets		Delaware	
			1137-4	25-Nov-19	Combined	10-Nov-08		0.5	0.9	1.0	Infiltration/Storage Trench	Streets		Delaware	
			1137-5	25-Nov-19	Combined	15-Jun-03		0.2	0.3	0.4	Bumpout, Infiltration/Storage Trench	Streets		Delaware	
			1137-6	25-Nov-19	Combined	28-Feb-02		0.1	0.2	0.2	Infiltration/Storage Trench	Streets		Delaware	
			1137-7	25-Nov-19	Combined	07-Jan-16		0.8	1.6	1.6	Tree Trench	Streets		Delaware	
	1138		1138-8	25-Nov-19	Combined	10-Apr-04	11	0.2	0.4	0.4	Infiltration/Storage Trench	Streets		Delaware	
			1138-6	25-Nov-19	Combined	08-Jan-08		0.4	0.8	0.9	Bumpout, Tree Trench	Streets		Delaware	
			1138-5	25-Nov-19	Combined	28-Mar-02		0.1	0.2	0.2	Bumpout, Infiltration/Storage Trench	Streets		Delaware	
			1138-3	25-Nov-19	Combined	09-Dec-01		0.1	0.2	0.2	Bumpout, Infiltration/Storage Trench	Streets		Delaware	
			1138-2	25-Nov-19	Combined	06-Mar-02		0.1	0.2	0.2	Bumpout, Infiltration/Storage Trench	Streets		Delaware	
			1138-1	25-Nov-19	Combined	22-Apr-03		0.2	0.3	0.3	Tree Trench	Streets		Delaware	
			1138-4	25-Nov-19	Combined	02-Oct-10		0.7	1.1	1.2	Infiltration/Storage Trench	Streets		Delaware	
50134	1140	Wharton Square Greening Improvements	1140-2	08-Feb-19	Combined	02-Jul-03	11	0.3	0.4	0.5	Rain Garden	Open Space	$1,086,717	Schuylkill	PWD Capital
			1140-3	13-Feb-19	Combined	17-Feb-26		2.0	2.6	3.1	Rain Garden, Tree Trench	Open Space		Schuylkill	

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50138	1145	Buist Avenue Green Streets and Buist Park Improvements	1145-7	19-Nov-19	Combined	26-Dec-04	21	0.4	0.5	0.6	Bumpout, Tree Trench	Streets	$2,481,046	Schuylkill	PWD Capital
			1145-13	19-Nov-19	Combined	31-May-08		0.5	0.8	0.9	Bumpout, Tree Trench	Streets		Schuylkill	
			1145-12	19-Nov-19	Combined	28-Jun-07		0.4	0.8	0.8	Bumpout, Infiltration/Storage Trench	Streets		Schuylkill	
			1145-11	19-Nov-19	Combined	01-Jun-07		0.5	0.7	0.9	Bumpout, Tree Trench	Streets		Schuylkill	
			1145-10	19-Nov-19	Combined	07-Feb-02		0.1	0.2	0.3	Bumpout, Infiltration/Storage Trench	Streets		Schuylkill	
			1145-8	19-Nov-19	Combined	18-Aug-02		0.1	0.3	0.3	Bumpout, Infiltration/Storage Trench	Streets		Schuylkill	
			1145-6	19-Nov-19	Combined	10-Jun-02		0.1	0.2	0.3	Bumpout, Infiltration/Storage Trench	Streets		Schuylkill	
			1145-5	19-Nov-19	Combined	05-Dec-03		0.3	0.4	0.5	Bumpout, Infiltration/Storage Trench	Streets		Schuylkill	
			1145-4	19-Nov-19	Combined	11-Jan-03		0.1	0.3	0.3	Infiltration/Storage Trench	Streets		Schuylkill	
			1145-3	19-Nov-19	Combined	03-Jul-05		0.4	0.6	0.7	Bumpout, Infiltration/Storage Trench	Streets		Schuylkill	
			1145-2	19-Nov-19	Combined	14-Aug-02		0.2	0.3	0.3	Infiltration/Storage Trench	Streets		Schuylkill	
			1145-1	19-Nov-19	Combined	03-Feb-06		0.3	0.6	0.6	Bumpout, Tree Trench	Streets		Schuylkill	
			1145-9	19-Nov-19	Combined	19-May-04		0.3	0.4	0.5	Bumpout, Tree Trench	Streets		Schuylkill	
	1146		1146-1	19-Nov-19	Combined	09-Jul-21	3	1.3	2.2	2.6	Bumpout, Infiltration/Storage Trench, Rain Garden	Open Space		Schuylkill	
50143	1195	Parkside Edge - Green Streets Buyback	1195-1	19-Jan-18	Combined	29-Aug-32	0	0.8	1.6	1.6	Infiltration/Storage Trench, Rain Garden	Open Space	$1,163,250	Schuylkill	PWD Capital
			1195-2	19-Jan-18	Combined	19-Nov-11		0.6	1.2	1.2	Rain Garden	Open Space		Schuylkill	
			1195-3	19-Jan-18	Combined	22-Sep-25		1.2	2.4	2.4	Rain Garden	Open Space		Schuylkill	
50145	1163	Nelson Playground and Hissey Playground Green Improvement	1163-1	07-Feb-20	Combined	03-Feb-05	6	0.3	0.5	0.6	Infiltration/Storage Trench, Rain Garden	Open Space	$636,339	Delaware	PWD Capital
			1163-2	07-Feb-20	Combined	04-Nov-22		1.4	2.3	2.6	Infiltration/Storage Trench, Rain Garden	Open Space		Delaware	
50146	1197	Point Breeze Vacant Lots	1197-1	21-May-19	Combined	14-Oct-04	3	0.3	0.5	0.6	Infiltration/Storage Trench, Rain Garden	Vacant Land	$2,135,753	Schuylkill	PWD Capital
	1198		1198-1	19-Nov-18	Combined	22-May-02	43	0.1	0.2	0.3	Infiltration/Storage Trench	Streets		Schuylkill	
			1198-8	28-Jan-19	Combined	15-Jan-09		0.5	0.9	1.0	Tree Trench	Streets		Schuylkill	
			1198-7	03-May-19	Combined	25-Aug-11		0.5	0.9	0.9	Infiltration/Storage Trench, Rain Garden	Streets		Schuylkill	
			1198-6	14-Mar-19	Combined	05-Sep-02		0.2	0.3	0.3	Bumpout, Infiltration/Storage Trench	Streets		Schuylkill	
			1198-4	09-Nov-18	Combined	04-Feb-03		0.2	0.3	0.3	Tree Trench	Streets		Schuylkill	
			1198-2	25-Oct-18	Combined	06-Aug-03		0.3	0.4	0.4	Tree Trench	Streets		Schuylkill	
			1198-3	29-Oct-18	Combined	19-Feb-24		1.7	2.4	3.3	Tree Trench	Streets		Schuylkill	
50148	1200	Elmwood Medians Package	1200-1	08-Oct-20	Combined	12-Aug-19	21	1.1	2.0	2.2	Infiltration/Storage Trench, Rain Garden	Streets	$937,200	Cobbs-Darby, Schuylkill	PWD Capital
			1200-5	08-Oct-20	Combined	06-Jul-03		0.2	0.4	0.4	Infiltration/Storage Trench	Streets		Cobbs-Darby, Schuylkill	
			1200-4	08-Oct-20	Combined	27-Jun-10		0.6	1.1	1.2	Infiltration/Storage Trench, Rain Garden	Streets		Cobbs-Darby, Schuylkill	
			1200-3	08-Oct-20	Combined	21-Jan-07		0.4	0.7	0.8	Infiltration/Storage Trench, Rain Garden	Streets		Cobbs-Darby, Schuylkill	
			1200-2	08-Oct-20	Combined	21-Dec-08		0.5	0.9	1.0	Infiltration/Storage Trench, Rain Garden	Streets		Cobbs-Darby, Schuylkill	

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50149	1202	Erie and Rising Sun Street Improvements	1202-10	30-Jul-19	Combined	26-Jul-03	30	0.2	0.4	0.5	Tree Trench	Streets	$1,614,000	Delaware	PWD Capital
			1202-11	30-Jul-19	Combined	26-Dec-03		0.3	0.4	0.5	Tree Trench	Streets		Delaware	
			1202-9	30-Jul-19	Combined	12-Dec-02		0.3	0.3	0.4	Tree Trench	Streets		Delaware	
			1202-8	30-Jul-19	Combined	20-May-11		0.9	1.1	1.4	Tree Trench	Streets		Delaware	
			1202-7	30-Jul-19	Combined	14-May-03		0.3	0.3	0.4	Tree Trench	Streets		Delaware	
			1202-5	30-Jul-19	Combined	27-Jun-03		0.3	0.4	0.4	Infiltration/Storage Trench, Planter	Streets		Delaware	
			1202-4	30-Jul-19	Combined	04-Sep-05		0.3	0.6	0.6	Tree Trench	Streets		Delaware	
			1202-3	30-Jul-19	Combined	09-Jul-02		0.2	0.3	0.3	Infiltration/Storage Trench	Streets		Delaware	
			1202-12	30-Jul-19	Combined	16-Jul-04		0.4	0.5	0.6	Infiltration/Storage Trench	Streets		Delaware	
			1202-2	30-Jul-19	Combined	08-Aug-03		0.3	0.4	0.4	Tree Trench	Streets		Delaware	
			1202-1	30-Jul-19	Combined	23-May-03		0.3	0.3	0.4	Tree Trench	Streets		Delaware	
			1202-6	30-Jul-19	Combined	27-Oct-02		0.3	0.3	0.4	Tree Trench	Streets		Delaware	
	1379		1379-1	30-Jul-19	Combined	28-Nov-15	3	0.8	1.6	1.6	Infiltration/Storage Trench, Rain Garden	Open Space		Delaware	
50150	1015	Hagert Playground	1015-1	10-Feb-17	Combined	24-Apr-05	1	0.4	0.5	0.7	Infiltration/Storage Trench, Rain Garden	Open Space	$250,632	Delaware	PWD Capital
			1015-2	10-Feb-17	Combined	01-Apr-06		0.4	0.6	0.7	Infiltration/Storage Trench, Rain Garden	Open Space		Delaware	
50151	1204	Reading Viaduct	1204-1	13-Jun-18	Combined	26-Dec-02	0	0.1	0.3	0.3	Bumpout, Infiltration/Storage Trench	Streets	Unknown	Delaware	Private Development
50152	1209	Athletic Square	1209-1	29-Jan-20	Combined	02-Jan-02	9	0.1	0.2	0.3	Tree Trench	Streets	$812,547	Schuylkill	PWD Capital
			1209-2	29-Jan-20	Combined	16-Jul-04		0.3	0.5	0.6	Tree Trench	Streets		Schuylkill	
			1209-3	29-Jan-20	Combined	04-Feb-05		0.3	0.5	0.6	Infiltration/Storage Trench, Planter	Streets		Schuylkill	
			1209-4	29-Jan-20	Combined	27-May-03		0.2	0.3	0.3	Infiltration/Storage Trench	Streets		Schuylkill	
			1209-5	29-Jan-20	Combined	23-Jun-05		0.3	0.6	0.6	Infiltration/Storage Trench	Streets		Schuylkill	
			1209-6	29-Jan-20	Combined	02-Jan-03		0.2	0.3	0.3	Infiltration/Storage Trench	Streets		Schuylkill	
50155	488	Smith Playground Green Improvements	488-1	22-May-18	Combined	27-Aug-02	8	0.2	0.3	0.3	Infiltration/Storage Trench	Open Space	$678,000	Schuylkill	Other Public Agency
			488-2	22-May-18	Combined	27-Aug-11		0.8	1.2	1.5	Rain Garden, Tree Trench	Open Space		Schuylkill	
			488-3	22-May-18	Combined	26-Feb-06		0.4	0.6	0.8	Infiltration/Storage Trench	Open Space		Schuylkill	
			488-4	22-May-18	Combined	07-Dec-05		0.4	0.6	0.8	Infiltration/Storage Trench	Open Space		Schuylkill	
			488-5	22-May-18	Combined	16-Dec-02		0.2	0.3	0.3	Infiltration/Storage Trench	Open Space		Schuylkill	
50157	1240	Kensington Green Street Improvements	1240-8	19-Mar-20	Combined	01-Sep-03	18	0.4	0.4	0.5	Tree Trench	Streets	$978,650	Delaware	PWD Capital
			1240-9	13-Mar-20	Combined	09-Apr-02		0.2	0.2	0.3	Tree Trench	Streets		Delaware	
			1240-7	20-Mar-20	Combined	04-Apr-12		0.7	1.2	1.3	Tree Trench	Streets		Delaware	
			1240-6	20-Mar-20	Combined	03-Oct-01		0.2	0.2	0.2	Infiltration/Storage Trench	Streets		Delaware	
			1240-4	20-Mar-20	Combined	20-Jan-04		0.3	0.4	0.5	Tree Trench	Streets		Delaware	
			1240-3	20-Mar-20	Combined	05-Apr-02		0.2	0.2	0.3	Tree Trench	Streets		Delaware	
			1240-2	20-Mar-20	Combined	04-May-01		0.1	0.1	0.2	Tree Trench	Streets		Delaware	
			1240-1	17-Mar-20	Combined	19-Jan-03		0.2	0.3	0.4	Tree Trench	Streets		Delaware	
			1240-5	20-Mar-20	Combined	20-Jul-02		0.2	0.3	0.3	Tree Trench	Streets		Delaware	

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50158	1221	53rd and Baltimore	1221-1	27-Aug-21	Combined	25-Jun-08	0	0.5	0.9	1.0	Infiltration/Storage Trench, Rain Garden	Streets	$264,208	Cobbs-Darby	PWD Capital
			1221-2	11-May-21	Combined	23-Jan-17		0.8	1.6	1.6	Infiltration/Storage Trench, Rain Garden	Streets		Cobbs-Darby	
50160	1242	Kensington Neighborhood Greening Phase 2	1242-9	08-Apr-21	Combined	03-Jul-02	17	0.2	0.3	0.3	Infiltration/Storage Trench	Streets	$1,317,377	Delaware	PWD Capital
			1242-8	08-Apr-21	Combined	29-Mar-03		0.2	0.3	0.4	Tree Trench	Streets		Delaware	
			1242-4	08-Apr-21	Combined	26-Oct-02		0.2	0.3	0.3	Tree Trench	Streets		Delaware	
			1242-2	08-Apr-21	Combined	14-Aug-06		0.5	0.7	0.7	Tree Trench	Streets		Delaware	
			1242-3	08-Apr-21	Combined	15-Nov-06		0.4	0.7	0.8	Infiltration/Storage Trench	Streets		Delaware	
			1242-1	08-Apr-21	Combined	15-Jun-05		0.3	0.5	0.6	Infiltration/Storage Trench	Streets		Delaware	
			1242-10	08-Apr-21	Combined	31-Mar-07		0.5	0.7	0.8	Infiltration/Storage Trench	Streets		Delaware	
			1242-7	08-Apr-21	Combined	21-Jun-03		0.2	0.3	0.4	Tree Trench	Streets		Delaware	
			1242-11	08-Apr-21	Combined	01-Nov-06		0.5	0.7	0.8	Tree Trench	Streets		Delaware	
50162	1265	Cedar Park Neighborhood Streets Package 1	1265-11	08-Jun-20	Combined	25-Dec-04	16	0.3	0.5	0.6	Tree Trench	Streets	$2,057,000	Cobbs-Darby, Schuylkill	PWD Capital
			1265-1	17-Feb-20	Combined	09-Jan-03		0.2	0.3	0.3	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			1265-15	31-Aug-20	Combined	04-Dec-01		0.2	0.2	0.3	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			1265-9	20-May-20	Combined	27-Jan-03		0.2	0.3	0.3	Bumpout, Infiltration/Storage Trench	Streets		Cobbs-Darby, Schuylkill	
			1265-7	06-May-20	Combined	06-Jun-03		0.2	0.3	0.4	Infiltration/Storage Trench	Streets		Cobbs-Darby, Schuylkill	
			1265-12	06-Jul-20	Combined	22-Jan-04		0.3	0.4	0.5	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			1265-13	20-Jul-20	Combined	14-Jul-02		0.2	0.3	0.3	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			1265-6	11-Mar-20	Combined	18-Dec-03		0.2	0.4	0.5	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			1265-5	18-Sep-20	Combined	14-Jun-03		0.2	0.3	0.4	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			1265-2	20-May-20	Combined	03-Aug-05		0.3	0.6	0.6	Bumpout, Infiltration/Storage Trench	Streets		Cobbs-Darby, Schuylkill	
			1265-10	02-Jul-20	Combined	10-Mar-08		0.5	0.8	1.0	Bumpout, Infiltration/Storage Trench	Streets		Cobbs-Darby, Schuylkill	
			1265-4	11-Mar-20	Combined	28-Apr-03		0.3	0.3	0.4	Tree Trench	Streets		Cobbs-Darby, Schuylkill	
			1265-3	20-May-20	Combined	11-Apr-04		0.3	0.4	0.5	Bumpout, Infiltration/Storage Trench	Streets		Cobbs-Darby, Schuylkill	
			1265-14	29-Jul-20	Combined	09-Dec-03		0.2	0.4	0.4	Bumpout, Infiltration/Storage Trench	Streets		Cobbs-Darby, Schuylkill	
50167	1267	Wissinoming	1267-104	05-Nov-21	Combined	06-Dec-15	77	0.8	1.6	0.0	Wetland	Open Space	$8,245,667	Delaware	PWD Capital
			1267-3	05-Nov-21	Combined	03-Jul-83		6.4	8.4	12.8	Infiltration/Storage Trench	Open Space		Delaware	
			1267-105	05-Nov-21	Combined	16-Jun-15		0.0	0.0	0.0	Wetland	Open Space		Delaware	
			1267-103	05-Nov-21	Combined	05-Feb-09		0.0	0.0	0.0	Wetland	Open Space		Delaware	
			1267-102	05-Nov-21	Combined	10-Sep-41		2.9	4.2	0.0	Wetland	Open Space		Delaware	
			1267-101	05-Nov-21	Combined	21-Oct-00		7.6	10.1	0.0	Rain Garden	Open Space		Delaware	
			1267-2	05-Nov-21	Combined	29-Dec-40		3.1	4.1	6.2	Infiltration/Storage Trench	Open Space		Delaware	

Work Number	Project ID	Project Name	System Number	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Reported Year 10 Greened Acre Value (acre-inches)	Revised Greened Acre Value (acre-inches)	SMP Type	Program	Green Construction Cost	Watershed	Funding Source
50170	1272	East Park Greenways	1272-9	14-Dec-20	Combined	11-Jul-07	6	0.5	0.8	0.9	Bumpout, Tree Trench	Streets	$1,626,975	Schuylkill	PWD Capital
			1272-10	14-Dec-20	Combined	14-Dec-03		0.2	0.4	0.5	Bumpout, Tree Trench	Streets		Schuylkill	
	1273		1273-2	14-Dec-20	Combined	09-Jan-04	15	0.3	0.4	0.5	Infiltration/Storage Trench, Rain Garden	Streets		Schuylkill	
			1273-3	14-Dec-20	Combined	13-Jan-05		0.4	0.5	0.6	Infiltration/Storage Trench	Streets		Schuylkill	
			1273-4	14-Dec-20	Combined	01-Oct-03		0.3	0.4	0.4	Infiltration/Storage Trench	Streets		Schuylkill	
			1273-5	14-Dec-20	Combined	18-Dec-05		0.5	0.6	0.7	Infiltration/Storage Trench, Rain Garden	Streets		Schuylkill	
			1273-6	14-Dec-20	Combined	10-Feb-12		0.9	1.2	1.4	Infiltration/Storage Trench, Rain Garden	Streets		Schuylkill	
			1273-7	14-Dec-20	Combined	28-Oct-06		0.5	0.7	0.8	Infiltration/Storage Trench, Rain Garden	Streets		Schuylkill	
			1273-8	14-Dec-20	Combined	03-Apr-17		1.1	1.7	2.0	Tree Trench	Streets		Schuylkill	
			1273-1	14-Dec-20	Combined	23-Dec-04		0.3	0.5	0.6	Infiltration/Storage Trench, Rain Garden	Streets		Schuylkill	
50171	1274	South Street Headhouse Square	1274-1	12-May-21	Combined	25-Aug-33	0	2.2	3.4	4.4	Infiltration/Storage Trench	Streets	$725,110	Delaware	PWD Capital
50174	1279	Tioga Green Streets Phase I & II	1279-8	07-Oct-20	Combined	28-Jul-07	29	0.6	0.8	1.0	Infiltration/Storage Trench, Tree Trench	Streets	$1,670,000	Delaware	PWD Capital
			1279-13	27-Oct-20	Combined	11-Jan-05		0.3	0.5	0.6	Infiltration/Storage Trench	Streets		Delaware	
			1279-12	05-Oct-20	Combined	22-Aug-02		0.2	0.3	0.3	Tree Trench	Streets		Delaware	
			1279-9	07-Oct-20	Combined	05-Jul-03		0.2	0.4	0.4	Tree Trench	Streets		Delaware	
			1279-10	06-Oct-20	Combined	03-Oct-05		0.4	0.6	0.7	Tree Trench	Streets		Delaware	
			1279-14	06-Oct-20	Combined	19-Jan-03		0.2	0.3	0.4	Tree Trench	Streets		Delaware	
			1279-6	08-Jun-20	Combined	09-Jun-05		0.3	0.5	0.6	Tree Trench	Streets		Delaware	
			1279-5	07-Aug-20	Combined	27-Sep-04		0.2	0.5	0.5	Tree Trench	Streets		Delaware	
			1279-4	08-Oct-20	Combined	17-Nov-02		0.2	0.3	0.4	Infiltration/Storage Trench	Streets		Delaware	
			1279-3	05-Aug-20	Combined	01-Dec-03		0.4	0.4	0.6	Tree Trench	Streets		Delaware	
			1279-2	05-Aug-20	Combined	01-Jun-02		0.1	0.2	0.3	Tree Trench	Streets		Delaware	
			1279-1	05-Aug-20	Combined	31-Jan-03		0.2	0.3	0.5	Tree Trench	Streets		Delaware	
			1279-11	05-Oct-20	Combined	21-Nov-03		0.3	0.4	0.5	Tree Trench	Streets		Delaware	
			1279-7	05-Aug-20	Combined	26-Jul-05		0.3	0.6	0.6	Infiltration/Storage Trench	Streets		Delaware	

Work Number	Project ID	Project Name	System Number	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Reported Year 10 Greened Acre Value (acre-inches)	Revised Greened Acre Value (acre-inches)	SMP Type	Program	Green Construction Cost	Watershed	Funding Source
			1281-28	11-Dec-20	Combined	04-Nov-08		0.4	0.8	0.8	Infiltration/Storage Trench	Streets		Delaware	
			1281-29	11-Dec-20	Combined	06-May-11		0.4	0.8	0.8	Swale	Streets		Delaware	
			1281-42	20-Apr-21	Combined	08-Jan-10		0.5	1.0	1.0	Infiltration/Storage Trench	Streets		Delaware	
			1281-27	11-Dec-20	Combined	27-Sep-13		0.7	1.4	1.4	Infiltration/Storage Trench	Streets		Delaware	
			1281-26	21-May-21	Combined	09-Nov-08		0.5	0.9	0.9	Infiltration/Storage Trench	Streets		Delaware	
			1281-31	11-Dec-20	Combined	07-Apr-22		0.9	1.8	1.8	Infiltration/Storage Trench, Swale	Streets		Delaware	
			1281-24	01-Dec-20	Combined	20-Sep-09		0.5	0.9	0.9	Infiltration/Storage Trench	Streets		Delaware	
			1281-37	25-May-21	Combined	23-Apr-21		1.0	2.1	2.1	Bumpout, Tree Trench	Streets		Delaware	
			1281-23	01-Dec-20	Combined	05-Feb-11		0.6	1.1	1.1	Infiltration/Storage Trench	Streets		Delaware	
			1281-25	11-Dec-20	Combined	18-Jun-18		0.7	1.3	1.3	Infiltration/Storage Trench	Streets		Delaware	
			1281-32	11-Dec-20	Combined	14-Aug-10		0.5	1.1	1.1	Infiltration/Storage Trench, Swale	Streets		Delaware	
			1281-33	20-Apr-21	Combined	02-Jul-06		0.3	0.7	0.7	Tree Trench	Streets		Delaware	
			1281-34	20-Apr-21	Combined	17-Jul-17		0.9	1.7	1.7	Tree Trench	Streets		Delaware	
			1281-36	12-Dec-20	Combined	25-Feb-16		0.8	1.6	1.6	Bumpout, Tree Trench	Streets		Delaware	
			1281-38	12-Dec-20	Combined	23-Mar-12		0.7	1.2	1.4	Infiltration/Storage Trench	Streets		Delaware	
			1281-39	25-May-21	Combined	03-Oct-21		1.0	2.1	2.1	Infiltration/Storage Trench, Rain Garden	Streets		Delaware	
			1281-40	01-Dec-20	Combined	25-Sep-08		0.4	0.9	0.9	Infiltration/Storage Trench	Streets		Delaware	
			1281-41	20-Apr-21	Combined	17-Jan-11		0.5	1.1	1.1	Tree Trench	Streets		Delaware	
			1281-22	01-Dec-20	Combined	08-Feb-11		0.5	1.1	1.1	Infiltration/Storage Trench	Streets		Delaware	
			1281-35	12-Dec-20	Combined	19-Mar-09		0.4	0.9	0.9	Tree Trench	Streets		Delaware	
50175	1281	American Street Corridor Improvements	1281-5	12-Sep-18	Combined	09-Dec-04	269	0.2	0.5	0.5	Infiltration/Storage Trench, Rain Garden	Streets	$5,430,545	Delaware	PWD Capital
			1281-30	11-Dec-20	Combined	18-Nov-16		0.8	1.7	1.7	Swale	Streets		Delaware	
			1281-21	01-Dec-20	Combined	15-Mar-12		0.6	1.2	1.3	Infiltration/Storage Trench	Streets		Delaware	
			1281-1	30-Aug-18	Combined	31-Oct-08		0.5	0.9	0.9	Infiltration/Storage Trench, Rain Garden	Streets		Delaware	
			1281-2	02-Apr-19	Combined	26-Nov-01		0.1	0.2	0.2	Tree Trench	Streets		Delaware	
			1281-4	05-Apr-21	Combined	10-Aug-08		0.5	0.9	0.9	Infiltration/Storage Trench	Streets		Delaware	
			1281-6	05-Sep-18	Combined	12-Nov-04		0.2	0.5	0.5	Infiltration/Storage Trench, Rain Garden	Streets		Delaware	
			1281-7	28-Jun-19	Combined	22-Sep-13		0.6	1.3	1.3	Tree Trench	Streets		Delaware	
			1281-9	21-Apr-21	Combined	26-Sep-17		0.9	1.8	1.8	Tree Trench	Streets		Delaware	
			1281-10	21-Apr-21	Combined	10-Oct-19		0.8	1.7	1.7	Tree Trench	Streets		Delaware	
			1281-19	01-Dec-20	Combined	01-Apr-15		0.7	1.5	1.5	Swale	Streets		Delaware	
			1281-12	21-Apr-21	Combined	21-Mar-06		0.3	0.6	0.6	Infiltration/Storage Trench	Streets		Delaware	
			1281-13	21-Apr-21	Combined	19-Dec-16		0.8	1.7	1.7	Swale	Streets		Delaware	
			1281-14	21-Apr-21	Combined	23-Mar-14		0.5	0.9	0.9	Swale	Streets		Delaware	
			1281-15	19-Nov-20	Combined	27-Jan-32		1.6	3.2	3.2	Infiltration/Storage Trench	Streets		Delaware	
			1281-20	01-Dec-20	Combined	30-Dec-19		1.0	2.0	2.0	Infiltration/Storage Trench, Swale	Streets		Delaware	
			1281-16	19-Nov-20	Combined	13-Nov-14		0.7	1.4	1.4	Infiltration/Storage Trench	Streets		Delaware	
			1281-17	19-Nov-20	Combined	15-Jul-18		0.9	1.8	1.8	Swale	Streets		Delaware	
			1281-18	19-Nov-20	Combined	31-Jul-16		0.8	1.6	1.6	Swale	Streets		Delaware	
			1281-11	21-Apr-21	Combined	20-Mar-11		0.5	1.0	1.0	Tree Trench	Streets		Delaware	
			1281-3	28-Nov-18	Combined	18-Jun-03		0.3	0.3	0.4	Tree Trench	Streets		Delaware	
			1287-8	05-Nov-20	Combined	13-Aug-04		0.5	0.5	0.5	Infiltration/Storage Trench	Streets		Schuylkill, TTF	
			1287-12	10-Jun-20	Combined	19-Dec-02		0.2	0.3	0.3	Tree Trench	Streets		Schuylkill, TTF	
			1287-11	03-Dec-20	Combined	07-Jun-05		0.3	0.5	0.6	Infiltration/Storage Trench	Streets		Schuylkill, TTF	
			1287-7	05-Nov-20	Combined	25-Mar-05		0.5	0.5	0.6	Infiltration/Storage Trench	Streets		Schuylkill, TTF	
			1287-9	10-Jun-20	Combined	17-May-02		0.2	0.2	0.3	Infiltration/Storage Trench	Streets		Schuylkill, TTF	
			1287-13	03-Dec-20	Combined	24-Jul-03		0.2	0.4	0.4	Tree Trench	Streets		Schuylkill, TTF	
50177	1287	Wayne and Manheim Streets	1287-5	10-Jun-20	Combined	19-Aug-05	21	0.3	0.6	0.6	Tree Trench	Streets	$1,700,000	Schuylkill, TTF	PWD Capital
			1287-4	10-Jun-20	Combined	20-Jun-05		0.3	0.6	0.6	Tree Trench	Streets		Schuylkill, TTF	
			1287-3	05-Nov-20	Combined	03-Apr-04		0.2	0.4	0.5	Tree Trench	Streets		Schuylkill, TTF	
			1287-2	05-Nov-20	Combined	21-Oct-06		0.3	0.7	0.7	Tree Trench	Streets		Schuylkill, TTF	
			1287-1	05-Nov-20	Combined	21-May-04		0.2	0.4	0.4	Tree Trench	Streets		Schuylkill, TTF	
			1287-6	10-Jun-20	Combined	04-Mar-04		0.2	0.4	0.5	Tree Trench	Streets		Schuylkill, TTF	
			1287-10	05-Nov-20	Combined	01-Feb-03		0.2	0.3	0.3	Infiltration/Storage Trench	Streets		Schuylkill, TTF	

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50179	1288	Berks & Sedgley Greening	1288-9	25-Oct-18	Combined	14-Nov-02	17	0.2	0.3	0.4	Infiltration/Storage Trench	Streets	$1,794,995	Schuylkill	PWD Capital
			1288-10	09-Nov-18	Combined	09-Oct-05		0.3	0.6	0.6	Infiltration/Storage Trench	Streets		Schuylkill	
			1288-8	25-Oct-18	Combined	08-Jul-05		0.4	0.6	0.6	Infiltration/Storage Trench	Streets		Schuylkill	
			1288-7	30-Oct-18	Combined	13-Jun-03		0.2	0.3	0.5	Tree Trench	Streets		Schuylkill	
			1288-6	28-Feb-19	Combined	16-May-06		0.7	0.6	0.8	Infiltration/Storage Trench	Streets		Schuylkill	
			1288-4	05-Dec-18	Combined	08-Sep-03		0.3	0.4	0.5	Infiltration/Storage Trench, Planter	Streets		Schuylkill	
			1288-3	20-Dec-18	Combined	11-May-02		0.2	0.2	0.3	Tree Trench	Streets		Schuylkill	
			1288-2	05-Dec-18	Combined	17-Mar-02		0.1	0.2	0.2	Infiltration/Storage Trench	Streets		Schuylkill	
			1288-1	05-Dec-18	Combined	15-Apr-03		0.2	0.3	0.4	Infiltration/Storage Trench, Planter	Streets		Schuylkill	
			1288-5	14-Feb-19	Combined	20-Jul-15		1.2	1.6	1.9	Infiltration/Storage Trench, Rain Garden	Streets		Schuylkill	
			1288-11	29-Oct-18	Combined	22-Jan-04		0.3	0.4	0.6	Tree Trench	Streets		Schuylkill	
50184	1299	Port Richmond Green Streets Improvements	1299-7	07-Oct-20	Combined	26-Dec-05	35	0.3	0.6	0.6	Infiltration/Storage Trench	Streets	$1,607,560	Delaware, TTF	PWD Capital
			1299-12	07-Oct-20	Combined	15-May-04		0.2	0.4	0.4	Tree Trench	Streets		Delaware, TTF	
			1299-9	07-Oct-20	Combined	20-Nov-03		0.3	0.4	0.4	Tree Trench	Streets		Delaware, TTF	
			1299-10	07-Oct-20	Combined	03-Dec-04		0.3	0.5	0.5	Tree Trench	Streets		Delaware, TTF	
			1299-8	07-Oct-20	Combined	09-May-06		0.3	0.6	0.6	Tree Trench	Streets		Delaware, TTF	
			1299-5	07-Oct-20	Combined	24-Sep-06		0.4	0.7	0.8	Infiltration/Storage Trench	Streets		Delaware, TTF	
			1299-4	07-Oct-20	Combined	15-Jun-03		0.2	0.3	0.4	Tree Trench	Streets		Delaware, TTF	
			1299-11	07-Oct-20	Combined	02-Feb-08		0.5	0.8	0.9	Tree Trench	Streets		Delaware, TTF	
			1299-3	07-Oct-20	Combined	30-Oct-02		0.2	0.3	0.3	Infiltration/Storage Trench	Streets		Delaware, TTF	
			1299-2	07-Oct-20	Combined	09-Nov-04		0.3	0.5	0.5	Infiltration/Storage Trench	Streets		Delaware, TTF	
			1299-1	07-Oct-20	Combined	19-Sep-04		0.3	0.5	0.5	Tree Trench	Streets		Delaware, TTF	
			1299-6	07-Oct-20	Combined	07-Sep-05		0.4	0.6	0.6	Tree Trench	Streets		Delaware, TTF	
50187	1302	Palmer Park	1302-1	22-Jan-21	Combined	24-Jan-07	2	0.5	0.7	0.9	Infiltration/Storage Trench	Streets	$532,843	Delaware	PWD Capital
	1303		1303-1	22-Jan-21	Combined	16-Sep-04	3	0.3	0.5	0.6	Infiltration/Storage Trench, Planter	Streets		Delaware	
			1303-2	22-Jan-21	Combined	20-Sep-01		0.2	0.2	0.2	Tree Trench	Streets		Delaware	
50189	1307	Newbold Green Street Improvements	1307-6	18-Aug-20	Combined	01-Mar-03	17	0.3	0.4	0.4	Tree Trench	Streets	$935,715	Schuylkill	PWD Capital
			1307-3	16-Jun-20	Combined	12-Sep-03		0.2	0.4	0.4	Tree Trench	Streets		Schuylkill	
			1307-8	08-Sep-20	Combined	12-May-04		0.3	0.4	0.5	Tree Trench	Streets		Schuylkill	
			1307-7	25-Aug-20	Combined	03-Jan-06		0.3	0.6	0.7	Tree Trench	Streets		Schuylkill	
			1307-4	02-Jul-20	Combined	15-Oct-03		0.3	0.5	0.5	Tree Trench	Streets		Schuylkill	
			1307-2	04-Jun-20	Combined	05-Sep-07		0.4	0.8	0.8	Tree Trench	Streets		Schuylkill	
			1307-5	31-Jul-20	Combined	01-Mar-03		0.2	0.3	0.3	Tree Trench	Streets		Schuylkill	
50190	1308	Clayborn & Lewis Streets GSI	1308-1	12-Oct-20	Combined	02-Jul-16	4	1.1	1.7	2.3	Tree Trench	Streets	$1,195,300	Schuylkill	PWD Capital
50195	290	Windrim Avenue Green Street	290-1	06-Apr-19	Combined	26-Jun-10	0	0.6	1.1	1.2	Bumpout, Infiltration/Storage Trench	Streets	$925,640	TTF	PWD Capital, Public Grant
			290-3	06-Apr-19	Combined	02-Feb-13		0.6	1.2	1.2	Bumpout, Infiltration/Storage Trench	Streets		TTF	
			290-2	06-Apr-19	Combined	12-Jan-05		0.3	0.5	0.6	Bumpout, Infiltration/Storage Trench	Streets		TTF	
50211	1347	Mifflin Square	1347-4	26-Aug-21	Combined	22-Nov-07	13	0.4	0.8	0.8	Tree Trench	Open Space	$1,319,675	Delaware	PWD Capital
50212	1348	Fairmount Ave Greening Improvements	1348-9	07-Aug-20	Combined	24-Apr-04	16	0.3	0.4	0.5	Tree Trench	Streets	$1,127,000	Delaware, Schuylkill	PWD Capital
			1348-5	17-Jun-20	Combined	01-Dec-06		0.4	0.7	0.7	Tree Trench	Streets		Delaware, Schuylkill	
			1348-2	04-Jun-20	Combined	03-Apr-05		0.3	0.5	0.6	Tree Trench	Streets		Delaware, Schuylkill	
			1348-7	31-Oct-20	Combined	18-Sep-15		0.9	1.6	1.8	Infiltration/Storage Trench	Streets		Delaware, Schuylkill	
			1348-3	25-Jun-20	Combined	07-Jun-03		0.2	0.3	0.4	Tree Trench	Streets		Delaware, Schuylkill	
			1348-6	31-Oct-20	Combined	10-Oct-06		0.3	0.6	0.6	Tree Trench	Streets		Delaware, Schuylkill	
			1348-1	19-May-20	Combined	18-Dec-05		0.5	0.6	0.7	Infiltration/Storage Trench	Streets		Delaware, Schuylkill	
			1348-4	31-Oct-20	Combined	19-Nov-02		0.3	0.3	0.4	Infiltration/Storage Trench	Streets		Delaware, Schuylkill	
			1348-8	07-Aug-20	Combined	13-Jan-04		0.2	0.4	0.4	Tree Trench	Streets		Delaware, Schuylkill	

Work Number	Project ID	Project Name	System Number	Construction Completion Date	Sewer Type	Storage Volume (cf)	New Trees	Drainage Area (acres)	Reported Year 10 Greened Acre Value (acre-inches)	Revised Greened Acre Value (acre-inches)	SMP Type	Program	Green Construction Cost	Watershed	Funding Source
50217	1359	Lawncrest Streets North	1359-6	19-Apr-21	Combined	03-Jul-02	10	0.2	0.3	0.3	Infiltration/Storage Trench	Streets	$1,688,235	Delaware, TTF	PWD Capital
			1359-10	27-Jan-21	Combined	06-Aug-01		0.1	0.2	0.2	Bumpout, Infiltration/Storage Trench	Streets		Delaware, TTF	
			1359-14	19-Apr-21	Combined	29-Sep-03		0.4	0.4	0.4	Infiltration/Storage Trench	Streets		Delaware, TTF	
			1359-13	19-Apr-21	Combined	08-Oct-04		0.4	0.5	0.5	Infiltration/Storage Trench	Streets		Delaware, TTF	
			1359-12	19-Apr-21	Combined	12-Feb-04		0.3	0.4	0.5	Tree Trench	Streets		Delaware, TTF	
			1359-11	19-Apr-21	Combined	21-Nov-03		0.3	0.4	0.5	Tree Trench	Streets		Delaware, TTF	
			1359-9	07-Jan-21	Combined	09-Jul-04		0.3	0.5	0.5	Bumpout, Infiltration/Storage Trench	Streets		Delaware, TTF	
			1359-7	19-Apr-21	Combined	26-Apr-07		0.7	0.7	0.8	Bumpout, Infiltration/Storage Trench	Streets		Delaware, TTF	
			1359-5	19-Apr-21	Combined	29-Mar-03		0.3	0.3	0.4	Infiltration/Storage Trench	Streets		Delaware, TTF	
			1359-4	19-Apr-21	Combined	27-Sep-04		0.5	0.5	0.6	Infiltration/Storage Trench	Streets		Delaware, TTF	
			1359-3	19-Apr-21	Combined	18-Nov-02		0.2	0.3	0.3	Infiltration/Storage Trench	Streets		Delaware, TTF	
			1359-2	19-Apr-21	Combined	27-Nov-02		0.2	0.3	0.4	Infiltration/Storage Trench	Streets		Delaware, TTF	
			1359-1	19-Apr-21	Combined	28-Jan-05		0.5	0.5	0.6	Tree Trench	Streets		Delaware, TTF	
			1359-8	07-Jan-21	Combined	12-Apr-02		0.1	0.2	0.2	Bumpout, Infiltration/Storage Trench	Streets		Delaware, TTF	
50229	1383	Columbia Field	1383-1	11-Dec-20	Combined	21-Jul-27	12	1.4	2.8	2.8	Infiltration/Storage Trench, Rain Garden	Open Space	$557,100	Delaware	PWD Capital
50235	1392	Heitzman Playground Streets	1392-5	22-Oct-20	Combined	26-Aug-03	7	0.3	0.4	0.4	Tree Trench	Streets	$1,063,122	Delaware, TTF	PWD Capital
			1392-6	22-Oct-20	Combined	02-Jun-08		0.6	0.8	1.1	Infiltration/Storage Trench	Streets		Delaware, TTF	
			1392-7	22-Oct-20	Combined	04-Sep-04		0.4	0.5	0.5	Infiltration/Storage Trench	Streets		Delaware, TTF	
			1392-3	22-Oct-20	Combined	16-Dec-04		0.4	0.5	0.6	Infiltration/Storage Trench	Streets		Delaware, TTF	
			1392-4	22-Oct-20	Combined	27-Jun-05		0.5	0.6	0.7	Infiltration/Storage Trench	Streets		Delaware, TTF	
			1392-2	22-Oct-20	Combined	21-Jun-09		0.7	1.0	1.1	Tree Trench	Streets		Delaware, TTF	
			1392-1	22-Oct-20	Combined	01-Jun-04		0.3	0.4	0.5	Tree Trench	Streets		Delaware, TTF	
50237	1394	Frankford and Belgrade	1394-1	30-Sep-21	Combined	06-Sep-02	0	0.3	0.3	0.4	Infiltration/Storage Trench	Streets	$129,229	Delaware	PWD Capital, Other Public Agency
64056	564	Two (2) 30 Million Gallon Storage Capacity Tanks at East Park - GC	564-1	25-Feb-20	Combined	24-Jun-04	0	0.5	0.5	0.6	Rain Garden	Open Space	Unknown	Schuylkill	PWD Capital
90055	1539	Hydrant Relocation and Green Streets Buyback: 2035 E Lehigh Ave. & Frankford Ave.	1539-1	23-Jul-21	Combined	16-Dec-08	8	0.6	0.9	1.0	Tree Trench	Streets	$220,500	Delaware	Private Development

Table 4: Incentivized Retrofit Projects Reported in the Year 10 EAP with Revised GA Value

Tracking Number	Sewer Type	Category	Watershed Type	Zip	SMP Types	Reported Year 10 Value (acre-inches)	Revised Greened Acre Value (acre-inches)
FY19-HOLM-5609-01	Combined	Verified	Pennypack Creek	19136	Depave, Subsurface Detention Basin	1.3	2.0
FY20-PARK-5828-01	Combined	Verified	Lower Schuylkill River	19130	Green Roof	0.2	0.2
FY19-PATT-5479-01	Combined	Verified	Delaware Direct	19148	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	70.8	61.2
FY18-PRES-4972-01	Combined	Verified	Delaware Direct	19124	Subsurface Detention Basin	8.3	10.1
FY19-STRA-5600-01	Combined	Verified	Lower Schuylkill River	19132	Subsurface Detention Basin	10.8	13.1
FY19-PEER-5346-01	Combined	Verified	Lower Schuylkill River	19151	Bioinfiltration, Subsurface Infiltration Basin	2.3	3.3
FY18-STOR-5156-01	Combined	Verified	Delaware Direct	19148	Subsurface Detention Basin	55.6	67.4
FY19-ARDL-5323-01	Combined	Verified	Tacony-Frankford Creek	19138	Bioinfiltration	2.6	3.4
FY19-WLEH-5466-01	Combined	Verified	Lower Schuylkill River	19132	Subsurface Detention Basin, Subsurface Infiltration Basin	7.9	6.2
FY17-FRAN-4728-01	Combined	Verified	Delaware Direct	19125	Green Roof	0.2	0.1
FY16-RICH-4302-01	Combined	Verified	Delaware Direct	19137	Disconnected Impervious Area	12.9	12.2
FY18-BALA-5159-01	Combined	Verified	Lower Schuylkill River	19131	Surface Detention Basin	24.4	24.4
FY19-WLEH-5378-01	Combined	Verified	Lower Schuylkill River	19132	Bioretention, Subsurface Detention Basin	7.4	8.7
FY17-NDAN-4582-01	Combined	Verified	Tacony-Frankford Creek	19140	Subsurface Detention Basin	26.0	31.8
FY19-PEER-5261-01	Combined	Verified	Lower Schuylkill River	19145	Subsurface Detention Basin	2.6	3.2
FY19-WGLE-5241-01	Combined	Verified	Delaware Direct	19132	Subsurface Detention Basin	2.7	3.2
FY19-WGLE-5243-01	Combined	Verified	Lower Schuylkill River	19132	Subsurface Infiltration Basin	6.3	7.8
FY18-ADAM-5070-01	Combined	Verified	Tacony-Frankford Creek	19124	Subsurface Infiltration Basin	3.7	4.8
FY18-ORTH-5057-01	Combined	Verified	Tacony-Frankford Creek	19124	Subsurface Detention Basin, Subsurface Infiltration Basin	6.5	7.8
FY18-OREG-5175-01	Combined	Verified	Delaware Direct	19148	Subsurface Detention Basin	6.2	7.0
FY18-TALM-4995-01	Combined	Verified	Lower Schuylkill River	19131	Subsurface Infiltration Basin	1.4	1.7
FY18-WHIT-5066-01	Combined	Verified	Tacony-Frankford Creek	19124	Subsurface Detention Basin, Subsurface Infiltration Basin	7.2	8.0
FY18-GRAY-4905-01	Combined	Verified	Lower Schuylkill River	19143	Subsurface Detention Basin	2.0	2.3
FY18-DEPA-4944-01	Combined	Verified	Tacony-Frankford Creek	19422	Subsurface Detention Basin	10.3	11.9
FY18-LASA-4980-01	Combined	Verified	Tacony-Frankford Creek	19144	Subsurface Infiltration Basin	2.7	3.3
FY18-NORT-4846-01	Combined	Verified	Lower Schuylkill River	19140	Subsurface Infiltration Basin	3.7	4.1
FY18-PINN-4913-01	Combined	Verified	Lower Schuylkill River	19131	Subsurface Infiltration Basin	2.5	2.9
FY18-COML-4942-01	Combined	Verified	Delaware Direct	19135	Subsurface Detention Basin	1.4	1.4
FY18-PAUL-4979-01	Combined	Verified	Tacony-Frankford Creek	19124	Subsurface Infiltration Basin	1.7	2.1
FY18-EERI-4992-01	Combined	Verified	Delaware Direct	19124	Subsurface Infiltration Basin	9.1	11.6
FY18-ACAD-4999-01	Combined	Verified	Pennypack Creek	19114	Subsurface Infiltration Basin	3.5	5.2
FY18-TALM-4904-01	Combined	Verified	Lower Schuylkill River	19131	Subsurface Detention Basin	0.9	1.2
FY17-ECHE-4668-01	Combined	Verified	Tacony-Frankford Creek	19144	Bioinfiltration, Subsurface Infiltration Basin	3.4	4.4
FY18-WBUL-4819-01	Combined	Verified	Delaware Direct	19140	Subsurface Detention Basin	6.0	7.1
FY18-WHUN-4834-01	Combined	Verified	Lower Schuylkill River	19140	Subsurface Infiltration Basin	2.1	2.6
FY17-BAKE-4685-01	Combined	Verified	Delaware Direct	19134	Subsurface Infiltration Basin	2.7	3.4
FY17-EADO-4760-01	Combined	Verified	Delaware Direct	19137	Subsurface Infiltration Basin	5.3	5.9
FY17-NTHS-4620-01	Combined	Verified	Delaware Direct	19140	Subsurface Detention Basin	13.3	15.9
FY17-ECHE-4667-01	Combined	Verified	Tacony-Frankford Creek	19144	Bioinfiltration, Subsurface Infiltration Basin	3.4	4.2
FY17-BSTR-4742-01	Combined	Verified	Delaware Direct	19134	Subsurface Infiltration Basin	8.9	10.2
FY17-ESSI-4624-01	Combined	Verified	Lower Schuylkill River	19153	Subsurface Detention Basin	12.0	13.1
FY17-CAST-4743-01	Combined	Verified	Delaware Direct	19134	Subsurface Detention Basin	7.1	7.9
FY17-ESSI-4628-01	Combined	Verified	Lower Schuylkill River	19153	Porous Pavement, Subsurface Detention Basin, WQ Treatment Device	7.7	9.1
FY17-STMA-4406-01	Combined	Verified	Delaware Direct	19122	Bio-infiltration/Bio-retention	2.0	2.2
FY17-PASC-4472-01	Combined	Verified	Lower Schuylkill River	19143	Subsurface Detention Basin, Subsurface Infiltration Basin	7.2	9.2
FY17-WHEA-4544-01	Combined	Verified	Tacony-Frankford Creek	19124	Disconnected Impervious Area, Subsurface Infiltration Basin	14.0	14.0
FY17-POSE-4687-01	Combined	Verified	Pennypack Creek	19136	Subsurface Detention Basin	5.2	5.7
FY17-EDMU-4680-01	Combined	Verified	Pennypack Creek	19136	Subsurface Infiltration Basin	4.3	5.0
FY17-OVER-4682-01	Combined	Verified	Lower Schuylkill River	19151	Bioinfiltration, Subsurface Infiltration Basin	2.1	2.4
FY16-SITE-4025-01	Combined	Verified	Pennypack Creek	19136	Subsurface Detention Basin	13.7	13.4
FY17-HIST-4671-01	Combined	Verified	Tacony-Frankford Creek	19144	Bioretention, Depave, Subsurface Detention Basin	0.6	0.7
FY16-JMPA-4286-01	Combined	Verified	Lower Schuylkill River	19142	Bioinfiltration, Depave	0.8	0.8
FY17-STHS-4442-01	Combined	Verified	Lower Schuylkill River	19145	Subsurface Detention Basin	14.7	15.9
2015-3560-2776-01	Combined	Verified	Delaware Direct	19134	Subsurface Infiltration Basin	0.6	1.3
FY17-TACO-4444-01	Combined	Verified	Delaware Direct	19137	Subsurface Infiltration Basin	7.4	12.6
FY17-GRAY-4520-01	Combined	Verified	Lower Schuylkill River	19143	Subsurface Detention Basin	13.5	16.3
FY17-STEN-4469-01	Combined	Verified	Tacony-Frankford Creek	19144	Subsurface Detention Basin	3.9	4.5
FY17-ELUZ-4412-01	Combined	Verified	Tacony-Frankford Creek	19124	Subsurface Infiltration Basin	8.1	10.4
FY17-EERI-4396-01	Combined	Verified	Tacony-Frankford Creek	19124	Subsurface Infiltration Basin	3.6	4.6
FY16-LIND-4086-01	Combined	Verified	Tacony-Frankford Creek	19141	Bioinfiltration	0.9	1.4
FY16-ESSI-4357-01	Combined	Verified	Lower Schuylkill River	19153	Subsurface Infiltration Basin	8.0	10.2
FY16-NAME-4323-01	Combined	Verified	Tacony-Frankford Creek	19140	Subsurface Detention Basin	7.5	8.8
FY16-ISTR-4292-01	Combined	Verified	Delaware Direct	19134	Blue Roof	1.3	1.1
FY16-GAUL-4273-01	Combined	Verified	Delaware Direct	19134	Subsurface Infiltration Basin	1.2	1.5
FY16-LASA-4274-01	Combined	Verified	Tacony-Frankford Creek	19144	Subsurface Infiltration Basin, Surface Infiltration Basin	9.5	14.6
FY16-WAKE-4282-01	Combined	Verified	Delaware Direct	19137	Subsurface Detention Basin	8.1	8.7
FY16-CHES-4233-01	Combined	Verified	Lower Schuylkill River	19146	Depave, Porous Pavement, Subsurface Infiltration Basin, Surface Infiltration Basin	1.0	1.3
FY16-STHS-4226-01	Combined	Verified	Lower Schuylkill River	19145	Bioretention, Subsurface Detention Basin	4.5	5.2
FY16-JOMA-4143-01	Combined	Verified	Tacony-Frankford Creek	19124	Surface Detention Basin	1.3	1.6
FY16-ADAI-4164-01	Combined	Verified	Delaware Direct	19125	Bioinfiltration, Depave	2.3	2.6
FY16-SITE-4189-01	Combined	Verified	Tacony-Frankford Creek	19120	Subsurface Detention Basin, Surface Detention Basin	12.9	15.8
FY16-SITE-4104-01	Combined	Verified	Tacony-Frankford Creek	19120	Subsurface Infiltration Basin	9.5	12.8
2015-TAGG-2931-01	Combined	Verified	Delaware Direct	19148	Bioinfiltration, Depave, Subsurface Detention Basin	0.9	1.0
FY16-ADAM-4101-01	Combined	Verified	Tacony-Frankford Creek	19124	Disconnected Impervious Area, Surface Detention Basin	1.8	2.4
2014-WILL-2541-01	Combined	Verified	Delaware Direct	19140	Depave	0.2	0.2
FY16-PHIL-4134-01	Combined	Verified	Lower Schuylkill River	19130	Green Roof	0.1	0.1
FY16-SITE-4039-01	Combined	Verified	Delaware Direct	19148	Subsurface Detention Basin, Surface Detention Basin	5.7	6.9
FY16-SITE-4016-01	Combined	Verified	Lower Schuylkill River	19145	Subsurface Detention Basin	6.4	7.6
FY16-SITE-4020-01	Combined	Verified	Delaware Direct	19136	Subsurface Infiltration Basin	1.5	3.0
2015-MART-2832-01	Combined	Verified	Tacony-Frankford Creek	19138	Bioinfiltration, Subsurface Infiltration Basin	3.8	5.2
2015-NORT-2977-01	Combined	Verified	Tacony-Frankford Creek	19124	Subsurface Detention Basin, Subsurface Infiltration Basin, WQ Treatment Device	17.6	22.2
2015-LASA-2865-01	Combined	Verified	Tacony-Frankford Creek	19141	Surface Detention Basin	7.4	9.3

Tracking Number	Sewer Type	Category	Watershed Type	Zip	SMP Types	Reported Year 10 Greened Acre Value (acre-inches)	Revised Greened Acre Value (acre-inches)
2015-FRAN-2954-01	Combined	Verified	Delaware Direct	19130	Bioretention	0.6	0.7
2015-MAYF-2796-01	Combined	Verified	Delaware Direct	19149	Bioretention	4.8	4.7
2014-WARR-2757-01	Combined	Verified	Tacony-Frankford Creek	19124	Bioretention	3.1	3.0
2015-LEAE-2888-01	Combined	Verified	Lower Schuylkill River	19036	Bioinfiltration, Bio-infiltration/Bio-retention, Porous Pavement, Subsurface Infiltration Basin	2.0	2.5
2015-STJA-2895-01	Combined	Verified	Tacony-Frankford Creek	19120	Subsurface Detention Basin, Surface Detention Basin, Surface Infiltration Basin	0.5	0.6
2015-LIGH-2907-01	Combined	Verified	Delaware Direct	19140	Surface Detention Basin	0.7	0.9
2015-MINK-2844-01	Combined	Verified	Lower Schuylkill River	19145	Basin, Surface Infiltration Basin	0.7	1.0
2015-SITE-2809-01	Combined	Verified	Tacony-Frankford Creek	19120	Subsurface Infiltration Basin	21.9	23.0
2015-SITE-2812-01	Combined	Verified	Pennypack Creek	19136	Subsurface Infiltration Basin	10.8	13.3
2015-SITE-2810-01	Combined	Verified	Lower Schuylkill River	19153	Subsurface Infiltration Basin	9.9	17.6
2014-SITE-2665-01	Combined	Verified	Lower Schuylkill River	19145	Subsurface Detention Basin, Subsurface Infiltration Basin	8.9	15.9
2014-SITE-2666-01	Combined	Verified	Lower Schuylkill River	19153	Subsurface Infiltration Basin	2.7	4.9
2014-SITE-2682-01	Combined	Verified	Lower Schuylkill River	19131	Subsurface Detention Basin, Surface Infiltration Basin	7.4	9.4
2014-SITE-2592-01	Combined	Verified	Lower Schuylkill River	19153	Subsurface Infiltration Basin	9.1	9.0
2014-SITE-2549-01	Combined	Verified	Lower Schuylkill River	19145	Subsurface Infiltration Basin	3.3	6.0
2013-CARD-2220-01	Combined	Verified	Tacony-Frankford Creek	19124	Surface Detention Basin	15.4	18.6
2014-SITE-2550-01	Combined	Verified	Delaware Direct	19135	Subsurface Infiltration Basin	1.7	2.6
2014-SITE-2501-01	Combined	Verified	Lower Schuylkill River	19131	Bioinfiltration	35.5	44.8
2014-GLOB-2467-01	Combined	Verified	Tacony-Frankford Creek	19124	Subsurface Detention Basin, Surface Detention Basin	0.6	0.8
2013-SITE-2387-01	Combined	Verified	Lower Schuylkill River	19131	Subsurface Infiltration Basin	5.2	7.2
2013-SITE-2401-01	Combined	Verified	Lower Schuylkill River	19131	Subsurface Infiltration Basin	3.4	5.8
2013-1148-2105-01	Combined	Verified	Delaware Direct	19147	Green Roof, Subsurface Infiltration Basin, Surface Infiltration Basin	0.7	1.0
2012-WOLF-1792-01	Combined	Verified	Delaware Direct	19137		11.7	11.7
2012-GSFS-2028-01	Combined	Verified	Tacony-Frankford Creek	19144	Bioretention, Depave	1.0	1.1
2013-CARD-2076-01	Combined	Verified	Delaware Direct	19124	Subsurface Detention Basin, Surface Detention Basin	53.0	60.6
2012-5818-1784-01	Combined	Verified	Tacony-Frankford Creek	19144	Bioinfiltration	0.1	0.2

Appendix 5

Green Stormwater Infrastructure Monitoring Status Report

1.0 Introduction

In FY22, the City's *Green City, Clean Waters* program addressed stormwater runoff reductions in urbanized areas using a combination of traditional infrastructure and green stormwater infrastructure (GSI). GSI systems vary in size, complexity, and interconnectedness to the existing drainage system, but the objective is to infiltrate, evapotranspire, reuse, and/or detain stormwater rather than to convey it directly to the sewer system. Monitoring and testing GSI systems is therefore essential to determine the effectiveness of various SMP types in managing stormwater and reducing combined sewer overflows.

The focus of the *Green City, Clean Waters* monitoring program has been post-construction performance monitoring and testing of public GSI systems but has expanded to test public GSI systems during construction beginning in FY19. Specifically, a liner testing pilot began in 2019 and has been successful in providing feedback to construction and design groups to improve performance of fully lined systems. In addition, post-construction private GSI monitoring, and testing has been conducted since FY18. The primary goal of GSI monitoring and testing is to measure the performance of GSI systems for reducing stormwater runoff volume. Secondary goals include providing information for improvements to GSI design, construction and maintenance and develop appropriate monitoring methods for the variety of GSI projects installed city-wide.

Project characteristics such as contributing drainage area, storage volume, inlet capture efficiency, and slow-release discharge parameters can be observed, allowing for a more complete view of a system's functionality. The comprehensive understanding of GSI through monitoring and testing allows PWD to make informed decisions for current and future projects regarding the GSI design standards, type and frequency of maintenance activities, and program optimization.

2.0 Data Tracking

The data tracking mechanism for *Green City, Clean Waters* GSI monitoring data has evolved significantly since the inception of the program. Raw data are stored on an SMP-by-SMP basis in a filesystem directory tree. Derived data from quality assurance calculations are stored in spreadsheets and relational databases, to be used for various data analyses. In FY22, PWD developed additional R-based Shiny web apps and performed maintenance and upgrades on the apps designed in FY21. The PWD GSI Monitoring relational database underwent continued development, including laying some groundwork for a migration of that database to a newer and more feature-complete version of PostgreSQL. New data structures were incorporated to store GIS parcels and building footprints in PWD relational database.

3.0 Comprehensive Monitoring Plan Implementation Status

Proposed methods for performance monitoring and testing were outlined in both the draft Comprehensive Monitoring Plan submitted December 1, 2012 and in a response sent to PADEP and the EPA on July 31, 2013. A revised CMP was submitted on January 10th, 2014 and approved by PADEP on May 28, 2014. Since then, standard operating procedures (SOPs) continue to be refined for these methods. The latest monitoring and testing SOPs are available in the Appendices to the FY19 annual report.

Continuous water level (CWL) monitoring of GSI systems is the primary method PWD uses to evaluate performance. CWL monitoring is conducted at the stormwater management practice (SMP) level, where one or more SMPs make up a single GSI system. Multiple SMPs may be monitored, therefore, to assess the overall performance of a single GSI system. In addition to CWL monitoring, PWD conducts testing of GSI, including: capture efficiency testing (CETs) of inlets, simulated runoff testing (SRT) of GSI systems, infiltration testing of porous pavement and permeable pavers, and groundwater monitoring (pre-construction and post-construction of GSI).

The following sections summarize the FY22 (July 1, 2021 through June 30, 2022) monitoring and testing activities for public GSI (both post-construction and construction phases) and private GSI (post-construction only) and ancillary monitoring efforts as described in the CMP.

3.1 Post-Construction Public GSI Monitoring and Testing

3.1.1 Continuous Water Level (CWL) Monitoring

During FY22, PWD completed sensor deployments (HOBO pressure transducers, Onset Computer Corp, Bourne, MA) which were utilized for CWL monitoring of 48 public GSI systems, of which 4 systems were newly monitored this fiscal year (see **Table 3-1**). To-date (through FY22), sensor deployments have been completed for CWL monitoring of 400 public GSI systems. All public SMPs with post-construction CWL monitoring are shown in **Figure 3-1**. In addition, **Figure 3-1** shows the barometric pressure sensor and rain gauge locations that are utilized in the CWL monitoring process.

In selecting water level monitoring locations, PWD has attempted to roughly allocate monitoring effort according to the types of SMPs constructed for the *Green City, Clean Waters* program. **Table 3-2** is a breakdown by SMP type showing the number of public SMPs with CWL monitoring. To date, approximately 35% of constructed public SMPs have monitoring data.

Table 3-1: Summary of Post-Construction CWL Monitoring of Public Systems

	FY22	To-Date
Sensor Deployments	372	3577
Systems	48	400
Systems Newly Monitored	4	

Note: A single GSI system may consist of one or more SMPs; therefore, the number of SMPs tested may be larger than the number of GSI systems tested

Table 3-2: Post-Construction CWL Monitoring of Public SMPs Listed by Type

SMP Type	Monitored SMPs To-Date
Tree Trench	235
Stormwater Tree	0
Planter	27
Bumpout	12
Rain Garden	58
Infiltration/Storage Trench	119
Permeable Pavement	2
Swale	3
Basin	1
Drainage Well	4
Green Roof	0
Total	**461**

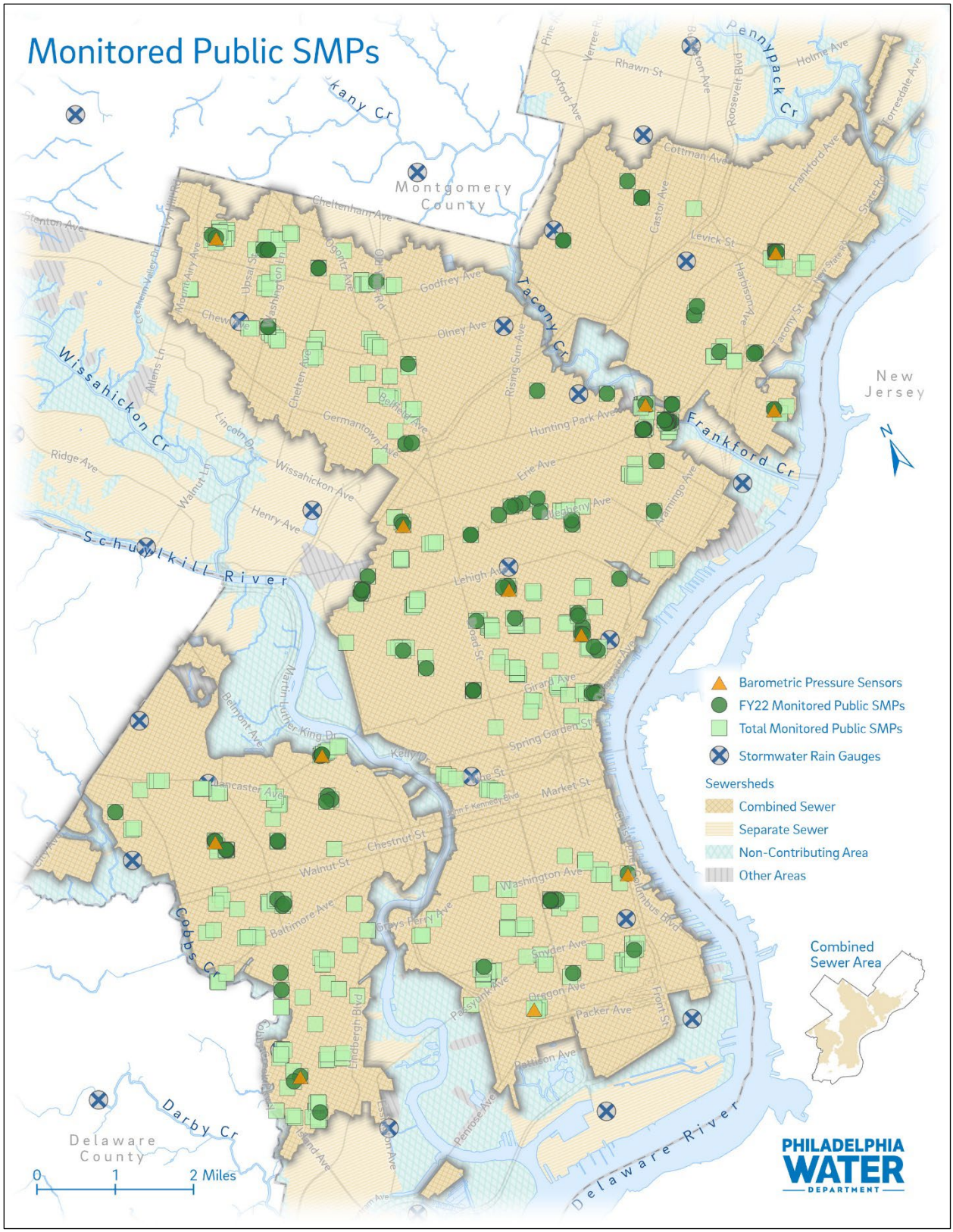


Figure 3-1: Location of Public SMPs with Post-Construction CWL Monitoring

3.1.2 Simulated Runoff Testing (SRT)

Systems that show abnormal water level response typically undergo simulated runoff testing (SRT) using water hydrant flow, dye testing and/or CCTV to determine if there are performance issues. As described in **Table 3-3**, 29 pre-inspection SRTs were performed on public GSI systems in FY 22. Through FY22, a total of 241 post-construction SRTs have been performed on public GSI systems. The breakdown of SRTs per SMP type is shown in **Table 3-4**. FY22 SRT locations are shown **Figure 3-2**.

Table 3-3: Post-Construction SRTs performed on Public Systems

SRT Type	FY22	Cumulative
Pre-Inspection Dye Test	29	107
CCTV Dye Test	10	48
Performance SRT	0	86
Total	39	241

Table 3-4: Public Systems with Post-Construction SRTs Performed

System Type	FY22	Cumulative
Bumpout	2	10
Drainage Well	2	3
Permeable Pavement	0	2
Planter	2	14
Rain Garden	4	17
Stormwater Tree	0	10
Swale	1	3
Tree Trench	15	74
Trench	13	36
Total	39	169

Note: A single GSI system may consist of one or more SMPs; therefore, the number of SMPs tested may be larger than the number of GSI systems tested.

3.1.3 Capture Efficiency Testing (CET)

Capture efficiency testing (CET) is performed on a GSI inlet to assess how well the SMP is receiving flow. Typically, all inlets at an GSI system are tested to assess a GSI system's overall capture efficiency which aids in understanding the system's overall performance. In FY22, 91 public GSI systems had capture efficiency testing (see **Table 3-5**). To-date (through FY22), 437 public GSI systems have had capture efficiency testing.

Table 3-5: Public Systems with CETs Administered

	FY22	Cumulative
No. of Systems with CETs Administered	91	437

3.1.4 Porous Pavement and Permeable Paver Surface Infiltration Rate Testing

PWD uses ASTM Standards (ASTM Committee D18, ASTM C1701/C1701M-09 Standard Test method for Infiltration Rate of In Place Pervious Concrete, 2009) (ASTM Committee C15, 2013), with minor modifications for porous pavement and permeable paver infiltration testing. Development of these procedures was completed in FY13 and refinement of the methods is ongoing. Sections of schedule 60 PVC pipe are used as infiltration rings to perform multiple tests at a time. As described in **Table 3-6**, infiltration testing was performed on 7 public GSI systems in FY22 and 22 systems to-date (through FY22). **Figure 3-2** shows the public GSI systems where infiltration testing has been performed.

Table 3-6: Public Systems with Infiltration Testing Administered

	FY22	Cumulative
No. of Systems with Infiltration Testing Administered	7	22

3.2 Public GSI Monitoring Testing During Construction

3.2.1 Simulated Runoff Testing (SRT)

SRTs are performed during construction to assess system performance and identify any performance issues before PWD accepts ownership. As described in **Table 3-7**, 12 performance SRTs were performed on public GSI systems in FY 22. To-date (through FY22), a total of 45 construction-phase SRTs have been performed on public GSI systems. The breakdown of SRTs per SMP type is shown in **Table 3-8**. FY22 SRT locations are shown **Figure 3-2**.

Table 3-7: Construction-Phase SRTs Performed on Public Systems

SRT Type	FY22	Cumulative
Pre-Inspection Dye Test	0	4
CCTV Dye Test	0	2
Performance SRT	12	39
Total SRTs Performed	12	45

Table 3-8: Public Systems with Construction-Phase SRTs Performed

System Type	FY22	Cumulative)
Bumpout	1	2
Rain Garden	3	7
Tree Trench	3	14
Trench	5	11
Total	12	34

Note: A single GSI system may consist of one or more SMPs; therefore, the number of SMPs tested may be larger than the number of GSI systems tested.

3.3 Groundwater Level Monitoring for Public GSI

PWD installs sensors within groundwater monitoring wells near proposed SMP locations to characterize seasonal groundwater fluctuations and determine the feasibility of the site for GSI. As shown in **Table 3-9**, 2 sites were monitored in FY22 to assess the feasibility of the site prior to GSI implementation. PWD also installs sensors within groundwater monitoring wells near active SMPs to assess the effect of infiltrating SMPs on the water table. A total of 12 GSI systems had post-construction groundwater monitoring to date.

Table 3-9: Groundwater Monitoring for Public GSI

Monitoring Phase	FY22	Cumulative
Prior to Construction of GSI (Systems)	2	8
Post-Construction (Active GSI)	0	12

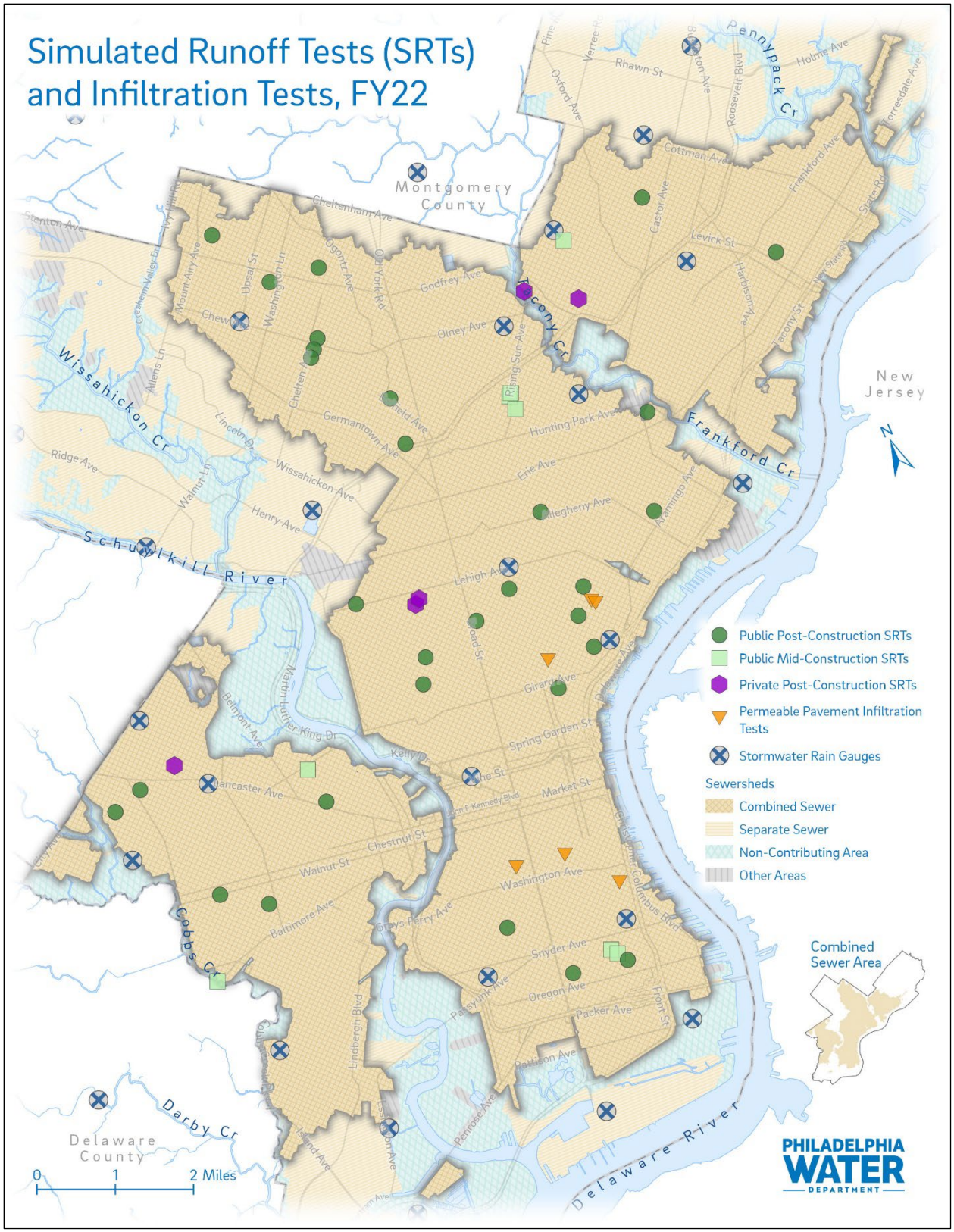


Figure 3-2: Simulated Runoff Tests and Porous Pavement Tests

3.4 Post-Construction Private GSI Monitoring and Testing

3.4.1 Continuous Water Level (CWL) Monitoring

During FY22, PWD completed 29 sensor deployments which were utilized for CWL monitoring of private GSI systems with no newly monitored systems this fiscal year (see **Table 3-10**). To-date (through FY22), 429 sensor deployments have been completed for CWL monitoring of 26 private GSI systems. All private SMPs with post-construction CWL monitoring are shown in **Figure 3-3**. In addition, **Figure 3-3** shows the barometric pressure sensor and rain gauge locations that are utilized in the CWL monitoring process. **Table 3-11** is a breakdown by SMP type showing the number of private SMPs with CWL monitoring.

Table 3-10: Summary of Post-Construction CWL Monitoring of Private Systems

	FY22	To Date
Sensor Deployments	29	429
Systems	7	26
Systems Newly Monitored	0	

Table 3-11: Post-Construction CWL-Monitoring of Private Systems Listed by Type

System Type	Monitored SMPs through FY22
Basin	14
Bioinfiltration/Bioretention	12
Total	**26**

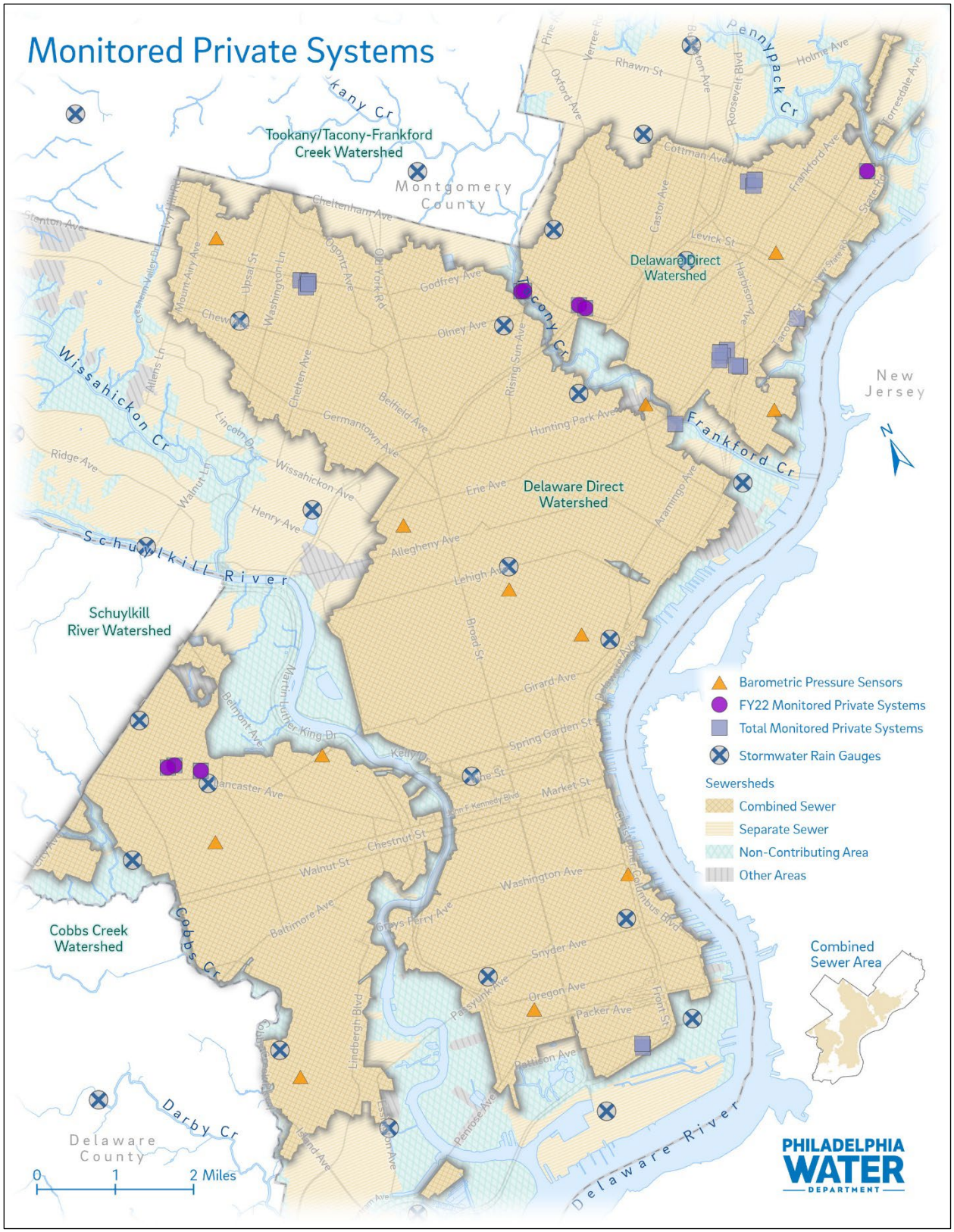


Figure 3-3: Location of Private SMPs with Post-Construction CWL Monitoring

3.4.2 Simulated Runoff Testing (SRT)

Systems that show abnormal water level response typically undergo simulated runoff testing (SRT) using water hydrant flow, dye testing and/or CCTV to determine if there are performance issues. As described in **Table 3-12**, 3 pre-inspection SRT and 3 performance SRTs were performed on private GSI systems in FY 22. To-date (through FY22), a total of 27 post-construction SRTs have been performed on private GSI systems. The breakdown of SRTs per SMP type is shown in **Table 3-13**. FY22 SRT locations are shown **Figure 3-2**.

Table 3-12: Post-Construction SRTs performed on Private Systems

SRT Type	FY22	Cumulative
Pre-Inspection Dye Test	3	8
CCTV Dye Test	0	1
Performance SRT	3	18
Total SRTs	6	27

Table 3-13: Private SMPs with Post-Construction SRTs Performed

System Type	FY22	Cumulative
Bioinfiltration/Bioretention	0	1
Basin	5	15
Total	5	16

Note: A single GSI system may consist of one or more SMPs; therefore, the number of SMPs tested may be larger than the number of GSI systems tested.

3.4.3 Capture Efficiency Testing (CET)

Capture efficiency testing (CET) is performed on a GSI inlet to assess how well the SMP is receiving flow. Typically, all inlets at an GSI system are tested to assess a GSI system's overall capture efficiency which aids in understanding the system's overall performance. In FY22, 4 private GSI systems had capture efficiency testing (see **Table 3-14**). To-date (through FY22), 17 private GSI systems have had capture efficiency testing.

Table 3-14: Private Systems with CETs Administered

	FY22	Cumulative
No. of Systems with CETs Administered	4	17

3.5 Sewer System Monitoring

PWD continues to perform sewer system monitoring per the methods outlined in the CMP. More information is available in **Appendix B**.

3.6 Meteorological Monitoring

PWD continues to perform meteorological monitoring, including operation and maintenance of a rain gauge network, as described in the CMP. More information is available in **Appendix B.**

4.0 CMP Implementation Successes and Challenges Encountered

The GSI monitoring program has been successful in meeting monitoring and testing demands this fiscal year despite some challenges. The COVID pandemic continues to be a consideration which the data collection team takes seriously when carrying out routine field activities. A COVID safety protocol for field activities was developed in 2020 for the monitoring team and has proven effective at keeping staff safe while performing their duties.

The program has seen a growing demand for performing SRTs on fully lined GSI systems during construction. Due to the time-sensitive nature of construction, there is a quick turnaround time required for performing these SRTs and relaying findings to construction staff. The monitoring team has adapted their methods accordingly to deliver testing in an effective and timely fashion.

A pilot program has been underway to test restorative maintenance techniques on right-of-way porous pavement sites. This requires infiltration testing before and shortly after restorative maintenance events. The monitoring team has met the demands of this pilot program and performed all the infiltration testing required to-date.

As requested, the GSI monitoring team continues providing monitoring assistance to PWD groups to collect data from systems where challenges have been observed and to interpret cause(s) and verify remediation measures.

Appendix B – Flow Monitoring

APPENDIX B – FLOW MONITORING

Table 1 - Summary of All Monitors

	# of Permanent Monitors	# of Temporary Monitors
Combined/Separate Sewer Monitors	469	40
Outlying Community Monitors	63	-
Pumping Stations	82	-
Rain Gages	37	1
Total	651	41

Table 2 - Listing of Monitored Outlying Community Connections

Site ID	Connection Type	Township	Measurement Name	Measurement Type
MA_1	STD	Abington	TEMPORARY	FLOW
MA_2	MTR	Abington	METERING CHAMBER FLOW	FLOW
MA_3	STD	Abington	TEMPORARY	FLOW
MA_4	STD	Abington	TEMPORARY	FLOW
MAx1	STD	Abington	TEMPORARY	FLOW
MB_1	MTR	Bucks Co.	METERING CHAMBER FLOW	FLOW
MBE_01	MTR	Bensalem	METERING CHAMBER FLOW	FLOW
MBE_02	MTR	Bensalem	METERING CHAMBER FLOW	FLOW
MBE_03	MTR	Bensalem	METERING CHAMBER FLOW	FLOW
MBE_04	MTR	Bensalem	METERING CHAMBER FLOW	FLOW
MBE_05	MTR	Bensalem	METERING CHAMBER FLOW	FLOW
MBE_06	MTR	Bensalem	METERING CHAMBER FLOW	FLOW
MBE_07	MTR	Bensalem	METERING CHAMBER FLOW	FLOW
MBE_08	MTR	Bensalem	METERING CHAMBER FLOW	FLOW
MBE_09	MTR	Bensalem	METERING CHAMBER FLOW	FLOW
MBE_10	MTR	Bensalem	METERING CHAMBER FLOW	FLOW
MBE_11	MTR	Bensalem	METERING CHAMBER FLOW	FLOW
MBE_12	MTR	Bensalem	METERING CHAMBER FLOW	FLOW
MBE_13	MTR	Bensalem	METERING CHAMBER FLOW	FLOW
MBE_14	MTR	Bensalem	METERING CHAMBER FLOW	FLOW
MBE_15		Bensalem	UNMONITORED	
MBE_16	MTR	Bensalem	METERING CHAMBER FLOW	FLOW
MBE_17	MTR	Bensalem	METERING CHAMBER FLOW	FLOW
MC_1	MTR	Cheltenham	METERING CHAMBER FLOW	FLOW
MC_2	MTR	Cheltenham	METERING CHAMBER FLOW	FLOW
MC_3	MTR	Abington	METERING CHAMBER FLOW	FLOW
MCx_1	MTR	Cheltenham	METERING CHAMBER FLOW	FLOW
MCx_2	MTR	Cheltenham	METERING CHAMBER FLOW	FLOW
MCx_3	MTR	Cheltenham	METERING CHAMBER FLOW	FLOW
MCx_4	MTR	Cheltenham	METERING CHAMBER FLOW	FLOW
MCx_5	MTR	Cheltenham	METERING CHAMBER FLOW	FLOW
MCx_6	MTR	Cheltenham	METERING CHAMBER FLOW	FLOW
MCx_7	MTR	Cheltenham	METERING CHAMBER FLOW	FLOW
MD_1	MTR	Delaware Co.	METERING CHAMBER FLOW	FLOW
ML_1	MTR	Lower Merion	METERING CHAMBER FLOW	FLOW
ML_2	STD	Lower Merion	TEMPORARY	FLOW
ML_3	MTR	Lower Merion	METERING CHAMBER FLOW	FLOW
ML_4	MTR	Lower Merion	METERING CHAMBER FLOW	FLOW

Site ID	Connection Type	Township	Measurement Name	Measurement Type
ML_5	MTR	Lower Merion	METERING CHAMBER FLOW	FLOW
ML_6	MTR	Lower Merion	METERING CHAMBER FLOW	FLOW
ML_7	MTR	Lower Merion	METERING CHAMBER FLOW	FLOW
MLM_1	MTR	Lower Moreland	METERING CHAMBER FLOW	FLOW
MLM_2	MTR	Lower Moreland	METERING CHAMBER FLOW	FLOW
MLM_3	STD	Lower Moreland	TEMPORARY	FLOW
MLM_4	STD	Lower Moreland	TEMPORARY	FLOW
MLM_5	STD	Lower Moreland	TEMPORARY	FLOW
MLM_6	STD	Lower Moreland	TEMPORARY	UNKNOWN
MLM_7	STD	Lower Moreland	TEMPORARY	UNKNOWN
MS_1	STD	Springfield	TEMPORARY	FLOW
MS_2	MTR	Springfield	METERING CHAMBER FLOW	FLOW
MS_3	MTR	Springfield	METERING CHAMBER FLOW	FLOW
MS_4	STD	Springfield	TEMPORARY	FLOW
MS_5	STD	Springfield	TEMPORARY	FLOW
MS_6	MTR	Springfield	METERING CHAMBER FLOW	FLOW
MS_7	STD	Springfield	TEMPORARY	UNKNOWN
MS_8	STD	Springfield	TEMPORARY	FLOW
MSH_1	MTR	Southampton	METERING CHAMBER FLOW	FLOW
MSH_2	STD	Southampton	TEMPORARY	FLOW
MSHX_1	STD	Southampton	TEMPORARY	FLOW
MSHX_2	STD	Southampton	TEMPORARY	FLOW
MUD_1N	MTR	Upper Darby	METERING CHAMBER FLOW	FLOW
MUD_1S	MTR	Upper Darby	METERING CHAMBER FLOW	FLOW
MUD_1O	MTR	Upper Darby	METERING CHAMBER FLOW	FLOW

*STD – temporary flow monitor

**MTR – Permanent monitor

Table 3 - Listing of Combined/Separate Sewer Monitors

Site Name	Interceptor	Waterbody	Measurement Name	Measurement Type
C_01	Cobbs Creek High Level	Cobbs Creek	SWO LEVEL	LEVEL
C_01	Cobbs Creek High Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_02	Cobbs Creek High Level	Cobbs Creek	SWO LEVEL	LEVEL
C_02	Cobbs Creek High Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_04	Cobbs Creek High Level	Cobbs Creek	SWO LEVEL	LEVEL
C_04	Cobbs Creek High Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_05	Cobbs Creek High Level	Cobbs Creek	SWO LEVEL	LEVEL
C_05	Cobbs Creek High Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_06	Cobbs Creek High Level	Cobbs Creek	SWO LEVEL	LEVEL
C_06	Cobbs Creek High Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_07	Cobbs Creek High Level	Cobbs Creek	SWO LEVEL	LEVEL
C_07	Cobbs Creek High Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_09	Cobbs Creek High Level	Cobbs Creek	SWO LEVEL	LEVEL
C_09	Cobbs Creek High Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_10	Cobbs Creek High Level	Cobbs Creek	SWO LEVEL	LEVEL
C_10	Cobbs Creek High Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_11	Cobbs Creek High Level	Cobbs Creek	SWO LEVEL	LEVEL
C_11	Cobbs Creek High Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_12	Cobbs Creek High Level	Cobbs Creek	SWO LEVEL	LEVEL
C_12	Cobbs Creek High Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_14	Cobbs Creek High Level	Cobbs Creek	SWO LEVEL	LEVEL
C_14	Cobbs Creek High Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_15	Cobbs Creek High Level	Cobbs Creek	SWO LEVEL	LEVEL
C_15	Cobbs Creek High Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_17	Cobbs Creek High Level	Cobbs Creek	SWO LEVEL	LEVEL
C_17	Cobbs Creek High Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_18	Cobbs Creek High Level	Cobbs Creek	SWO LEVEL	LEVEL
C_18	Cobbs Creek High Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_19	Cobbs Creek Low Level	Cobbs Creek	SWO LEVEL	LEVEL
C_19	Cobbs Creek Low Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_20	Cobbs Creek Low Level	Cobbs Creek	SWO LEVEL	LEVEL
C_20	Cobbs Creek Low Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_21	Cobbs Creek Low Level	Cobbs Creek	SWO LEVEL	LEVEL
C_21	Cobbs Creek Low Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_22	Cobbs Creek Low Level	Cobbs Creek	SWO LEVEL	LEVEL
C_22	Cobbs Creek Low Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_23	Cobbs Creek Low Level	Cobbs Creek	SWO LEVEL	LEVEL
C_23	Cobbs Creek Low Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_24	Cobbs Creek Low Level	Cobbs Creek	SWO LEVEL	LEVEL
C_24	Cobbs Creek Low Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_26	Cobbs Creek Low Level	Cobbs Creek	SWO LEVEL	LEVEL
C_26	Cobbs Creek Low Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_28A	Cobbs Creek Low Level	Cobbs Creek	SWO LEVEL	LEVEL

Site Name	Interceptor	Waterbody	Measurement Name	Measurement Type
C_28A	Cobbs Creek Low Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_29	Cobbs Creek Low Level	Cobbs Creek	SWO LEVEL	LEVEL
C_29	Cobbs Creek Low Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_30	Cobbs Creek Low Level	Cobbs Creek	SWO LEVEL	LEVEL
C_30	Cobbs Creek Low Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_31	Cobbs Creek High Level	Cobbs Creek	SWO LEVEL	LEVEL
C_31	Cobbs Creek High Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_32	Cobbs Creek High Level	Cobbs Creek	SWO LEVEL	LEVEL
C_32	Cobbs Creek High Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_33	Cobbs Creek High Level	Cobbs Creek	SWO LEVEL	LEVEL
C_33	Cobbs Creek High Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_34	Cobbs Creek High Level	Cobbs Creek	SWO LEVEL	LEVEL
C_34	Cobbs Creek High Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_35	Cobbs Creek High Level	Cobbs Creek	SWO LEVEL	LEVEL
C_35	Cobbs Creek High Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_36	Cobbs Creek High Level	Cobbs Creek	SWO LEVEL	LEVEL
C_36	Cobbs Creek High Level	Cobbs Creek	TRUNK LEVEL	LEVEL
C_37	Cobbs Creek High Level	Cobbs Creek	SWO LEVEL	LEVEL
C_37	Cobbs Creek High Level	Cobbs Creek	TRUNK LEVEL	LEVEL
CSPS	Central Schuylkill	Schuylkill River	INTERCEPTOR LEVEL N	LEVEL
CSPS	Central Schuylkill	Schuylkill River	INTERCEPTOR LEVEL S	LEVEL
D_02	Upper Delaware Low Level	Delaware River	DWO GATE POSITION	POSITION
D_02	Upper Delaware Low Level	Delaware River	DWO LEVEL	LEVEL
D_02	Upper Delaware Low Level	Delaware River	SWO GATE POSITION	POSITION
D_02	Upper Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_02	Upper Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_03	Upper Delaware Low Level	Delaware River	DWO GATE POSITION	POSITION
D_03	Upper Delaware Low Level	Delaware River	DWO LEVEL	LEVEL
D_03	Upper Delaware Low Level	Delaware River	SWO GATE POSITION	POSITION
D_03	Upper Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_03	Upper Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_04	Upper Delaware Low Level	Delaware River	DWO GATE POSITION	POSITION
D_04	Upper Delaware Low Level	Delaware River	DWO LEVEL	LEVEL
D_04	Upper Delaware Low Level	Delaware River	SWO GATE POSITION	POSITION
D_04	Upper Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_04	Upper Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_05	Upper Delaware Low Level	Delaware River	DWO GATE POSITION	POSITION
D_05	Upper Delaware Low Level	Delaware River	DWO LEVEL	LEVEL
D_05	Upper Delaware Low Level	Delaware River	SWO GATE POSITION	POSITION
D_05	Upper Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_05	Upper Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_06	Upper Delaware Low Level	Delaware River	DWO LEVEL	LEVEL
D_06	Upper Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_06	Upper Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL

Site Name	Interceptor	Waterbody	Measurement Name	Measurement Type
D_07	Upper Delaware Low Level	Delaware River	DWO GATE POSITION	POSITION
D_07	Upper Delaware Low Level	Delaware River	DWO LEVEL	LEVEL
D_07	Upper Delaware Low Level	Delaware River	SWO GATE POSITION 1	POSITION
D_07	Upper Delaware Low Level	Delaware River	SWO GATE POSITION 2	POSITION
D_07	Upper Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_07	Upper Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_08	Upper Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_08	Upper Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_09	Upper Delaware Low Level	Delaware River	DWO GATE POSITION	POSITION
D_09	Upper Delaware Low Level	Delaware River	DWO LEVEL	LEVEL
D_09	Upper Delaware Low Level	Delaware River	SWO GATE POSITION	POSITION
D_09	Upper Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_09	Upper Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_11	Upper Delaware Low Level	Delaware River	DWO GATE POSITION	POSITION
D_11	Upper Delaware Low Level	Delaware River	DWO LEVEL	LEVEL
D_11	Upper Delaware Low Level	Delaware River	SWO GATE POSITION	POSITION
D_11	Upper Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_11	Upper Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_12	Upper Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_12	Upper Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_13	Upper Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_13	Upper Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_15	Upper Delaware Low Level	Delaware River	DWO GATE POSITION	POSITION
D_15	Upper Delaware Low Level	Delaware River	DWO LEVEL	LEVEL
D_15	Upper Delaware Low Level	Delaware River	SWO GATE POSITION	POSITION
D_15	Upper Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_15	Upper Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_17	Somerset	Delaware River	SWO LEVEL	LEVEL
D_17	Somerset	Delaware River	TRUNK LEVEL	LEVEL
D_18	Somerset	Delaware River	SWO LEVEL	LEVEL
D_18	Somerset	Delaware River	TRUNK LEVEL	LEVEL
D_19	Somerset	Delaware River	SWO LEVEL	LEVEL
D_19	Somerset	Delaware River	TRUNK LEVEL	LEVEL
D_20	Somerset	Delaware River	SWO LEVEL	LEVEL
D_20	Somerset	Delaware River	TRUNK LEVEL	LEVEL
D_21	Somerset	Delaware River	SWO LEVEL	LEVEL
D_21	Somerset	Delaware River	TRUNK LEVEL	LEVEL
D_22	Somerset	Delaware River	SWO LEVEL	LEVEL
D_22	Somerset	Delaware River	TRUNK LEVEL	LEVEL
D_23	Somerset	Delaware River	SWO LEVEL	LEVEL
D_23	Somerset	Delaware River	TRUNK LEVEL	LEVEL
D_24	Somerset	Delaware River	SWO LEVEL	LEVEL
D_24	Somerset	Delaware River	TRUNK LEVEL	LEVEL
D_25	Somerset	Delaware River	SWO LEVEL	LEVEL

Site Name	Interceptor	Waterbody	Measurement Name	Measurement Type
D_25	Somerset	Delaware River	TRUNK LEVEL	LEVEL
D_37	Lower Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_37	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_38	Lower Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_38	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_39	Lower Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_39	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_40	Lower Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_40	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_41	Lower Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_41	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_42	Lower Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_42	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_43	Lower Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_43	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_47	Lower Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_47	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_48	Lower Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_48	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_49	Lower Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_49	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_50	Lower Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_50	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_51	Lower Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_51	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_51A	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_52	Lower Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_52	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_53	Lower Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_53	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_54	Lower Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_54	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_58	Lower Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_58	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_61	Lower Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_61	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_63	Lower Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_63	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_64	Lower Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_64	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_65	Lower Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_65	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_66	Lower Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_66	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL

Site Name	Interceptor	Waterbody	Measurement Name	Measurement Type
D_67	Lower Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_67	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_68	Lower Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_68	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_69	Lower Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_69	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_70	Lower Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_70	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_72	Lower Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_72	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
D_73	Lower Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
D_73	Lower Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
F_03	Lower Frankford Low Level	Frankford Creek	SWO LEVEL	LEVEL
F_03	Lower Frankford Low Level	Frankford Creek	TRUNK LEVEL	LEVEL
F_04	Lower Frankford Low Level	Frankford Creek	SWO LEVEL	LEVEL
F_04	Lower Frankford Low Level	Frankford Creek	TRUNK LEVEL	LEVEL
F_05	Lower Frankford Low Level	Frankford Creek	SWO LEVEL	LEVEL
F_05	Lower Frankford Low Level	Frankford Creek	TRUNK LEVEL	LEVEL
F_06	Lower Frankford Low Level	Frankford Creek	SWO LEVEL	LEVEL
F_06	Lower Frankford Low Level	Frankford Creek	TRUNK LEVEL	LEVEL
F_07	Lower Frankford Low Level	Frankford Creek	SWO LEVEL	LEVEL
F_07	Lower Frankford Low Level	Frankford Creek	TRUNK LEVEL	LEVEL
F_08	Lower Frankford Low Level	Frankford Creek	SWO LEVEL	LEVEL
F_08	Lower Frankford Low Level	Frankford Creek	TRUNK LEVEL	LEVEL
F_09	Lower Frankford Low Level	Frankford Creek	SWO LEVEL	LEVEL
F_09	Lower Frankford Low Level	Frankford Creek	TRUNK LEVEL	LEVEL
F_10	Lower Frankford Low Level	Frankford Creek	SWO LEVEL	LEVEL
F_10	Lower Frankford Low Level	Frankford Creek	TRUNK LEVEL	LEVEL
F_11	Lower Frankford Low Level	Frankford Creek	SWO LEVEL	LEVEL
F_11	Lower Frankford Low Level	Frankford Creek	TRUNK LEVEL	LEVEL
F_12	Lower Frankford Low Level	Frankford Creek	SWO LEVEL	LEVEL
F_12	Lower Frankford Low Level	Frankford Creek	TRUNK LEVEL	LEVEL
F_13	Lower Frankford Creek	Frankford Creek	DWO LEVEL	LEVEL
F_13	Lower Frankford Creek	Frankford Creek	SWO LEVEL	LEVEL
F_13	Lower Frankford Creek	Frankford Creek	TRUNK LEVEL	LEVEL
F_14	Lower Frankford Creek	Frankford Creek	SWO LEVEL	LEVEL
F_14	Lower Frankford Creek	Frankford Creek	TRUNK LEVEL	LEVEL
F_23	Lower Frankford Creek	Frankford Creek	SWO LEVEL	LEVEL
F_23	Lower Frankford Creek	Frankford Creek	TRUNK LEVEL	LEVEL
F_24	Lower Frankford Creek	Frankford Creek	SWO LEVEL	LEVEL
F_24	Lower Frankford Creek	Frankford Creek	TRUNK LEVEL	LEVEL
F_25	Lower Frankford Creek	Frankford Creek	DWO GATE POSITION	POSITION
F_25	Lower Frankford Creek	Frankford Creek	SWO GATE POSITION 1	POSITION
F_25	Lower Frankford Creek	Frankford Creek	SWO GATE POSITION 2	POSITION

Site Name	Interceptor	Waterbody	Measurement Name	Measurement Type
F_25	Lower Frankford Creek	Frankford Creek	SWO LEVEL	LEVEL
F_25	Lower Frankford Creek	Frankford Creek	TRUNK LEVEL	LEVEL
H_29		Schuylkill River	DWO LEVEL	LEVEL
H_29		Schuylkill River	SWO LEVEL	LEVEL
H_29		Schuylkill River	TRUNK LEVEL	LEVEL
H_35		Schuylkill River	BLOWER 1 RUN	EVENT
H_35		Schuylkill River	BLOWER 2 RUN	EVENT
H_35		Schuylkill River	DAM AIR PRESSURE	PSI
H_35		Schuylkill River	DWO GATE POSITION	POSITION
H_35		Schuylkill River	INTERCEPTOR LEVEL	LEVEL
H_35		Schuylkill River	SWO GATE POSITION	POSITION
H_35		Schuylkill River	SWO LEVEL	LEVEL
H_35		Schuylkill River	TRUNK LEVEL	LEVEL
I_BYH09		Byberry Creek	INTERCEPTOR LEVEL	LEVEL
I_CCHLC07	Cobbs Creek High Level	Cobbs Creek	INTERCEPTOR LEVEL	LEVEL
I_CCHLC12	Cobbs Creek High Level	Cobbs Creek	INTERCEPTOR LEVEL	LEVEL
I_CCHLC13	Cobbs Creek High Level	Cobbs Creek	INTERCEPTOR LEVEL	LEVEL
I_CCHLC14	Cobbs Creek High Level	Cobbs Creek	INTERCEPTOR LEVEL	LEVEL
I_CCHLC17	Cobbs Creek High Level	Cobbs Creek	INTERCEPTOR LEVEL	LEVEL
I_CCHLC18	Cobbs Creek High Level	Cobbs Creek	INTERCEPTOR LEVEL	LEVEL
I_CCHLC34	Cobbs Creek High Level	Cobbs Creek	INTERCEPTOR LEVEL	LEVEL
I_CCHLH18	Cobbs Creek High Level	Cobbs Creek	INTERCEPTOR LEVEL	LEVEL
I_CCLLC19	Cobbs Creek Low Level	Cobbs Creek	INTERCEPTOR LEVEL	LEVEL
I_CCLLC20	Cobbs Creek Low Level	Cobbs Creek	INTERCEPTOR LEVEL	LEVEL
I_CCLLC22	Cobbs Creek Low Level	Cobbs Creek	INTERCEPTOR LEVEL	LEVEL
I_CCLLC24	Cobbs Creek Low Level	Cobbs Creek	INTERCEPTOR LEVEL	LEVEL
I_CCLLC26	Cobbs Creek Low Level	Cobbs Creek	INTERCEPTOR LEVEL	LEVEL
I_CCLLH01	Cobbs Creek Low Level	Cobbs Creek	INTERCEPTOR LEVEL	LEVEL
I_COHOH16		Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_CSESH11	Central Schuylkill East Side	Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_CSESH15	Central Schuylkill East Side	Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_CSESS09	Central Schuylkill East Side	Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_CSESS14	Central Schuylkill East Side	Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_CSESS17	Central Schuylkill East Side	Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_CSESS26	Central Schuylkill East Side	Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_CSSSH15	Central Schuylkill	Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_CVBH08		Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_FHLH03	Frankford High Level	Frankford Creek	INTERCEPTOR LEVEL	LEVEL
I_FHLTT08	Frankford High Level	Frankford Creek	INTERCEPTOR LEVEL	LEVEL
I_FHLTT15	Frankford High Level	Frankford Creek	INTERCEPTOR LEVEL	LEVEL
I_FLLH03	Frankford Low Level	Frankford Creek	INTERCEPTOR LEVEL	LEVEL
I_LDLLD43	Lower Delaware Low Level	Delaware River	INTERCEPTOR LEVEL	LEVEL
I_LDLLD45	Lower Delaware Low Level	Delaware River	INTERCEPTOR LEVEL	LEVEL
I_LDLLD47	Lower Delaware Low Level	Delaware River	INTERCEPTOR LEVEL	LEVEL

Site Name	Interceptor	Waterbody	Measurement Name	Measurement Type
I_LDLLD53	Lower Delaware Low Level	Delaware River	INTERCEPTOR LEVEL	LEVEL
I_LDLLD62	Lower Delaware Low Level	Delaware River	INTERCEPTOR LEVEL	LEVEL
I_LDLLD69	Lower Delaware Low Level	Delaware River	INTERCEPTOR LEVEL	LEVEL
I_LDLLD70	Lower Delaware Low Level	Delaware River	INTERCEPTOR LEVEL	LEVEL
I_LFCH07	Lower Frankford Creek	Frankford Creek	INTERCEPTOR LEVEL	LEVEL
I_LFCH19	Lower Frankford Creek	Frankford Creek	INTERCEPTOR LEVEL	LEVEL
I_LFLLF08	Lower Frankford Low Level	Frankford Creek	INTERCEPTOR LEVEL	LEVEL
I_LFLLF10	Lower Frankford Low Level	Frankford Creek	INTERCEPTOR LEVEL	LEVEL
I_LSESH15	Lower Schuylkill East Side	Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_LSESS36	Lower Schuylkill East Side	Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_LSWSH01	Lower Schuylkill West Side	Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_LSWSS33	Lower Schuylkill West Side	Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_LSWSS38	Lower Schuylkill West Side	Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_LSWSS45	Lower Schuylkill West Side	Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_MRH21	Main Relief Sewer	Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_OH12		Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_PASYH13		Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_PDRLH01		Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_PDRLH02		Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_PENRH02		Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_PH04	Pennypack	Pennypack Creek	INTERCEPTOR LEVEL	LEVEL
I_PH05	Pennypack	Pennypack Creek	INTERCEPTOR LEVEL	LEVEL
I_PH06	Pennypack	Pennypack Creek	INTERCEPTOR LEVEL	LEVEL
I_PH10	Pennypack	Pennypack Creek	INTERCEPTOR LEVEL	LEVEL
I_PMPFH03		Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_PP02	Pennypack	Pennypack Creek	INTERCEPTOR LEVEL	LEVEL
I_PP04	Pennypack	Pennypack Creek	INTERCEPTOR LEVEL	LEVEL
I_PP05	Pennypack	Pennypack Creek	INTERCEPTOR LEVEL	LEVEL
I_PQH09	Poquessing	Poquessing Creek	INTERCEPTOR LEVEL	LEVEL
I_PRH10		Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_SD19	Somerset	Delaware River	INTERCEPTOR LEVEL	LEVEL
I_SD21	Somerset	Delaware River	INTERCEPTOR LEVEL	LEVEL
I_SD25	Somerset	Delaware River	INTERCEPTOR LEVEL	LEVEL
I_SH03	Somerset	Delaware River	INTERCEPTOR LEVEL	LEVEL
I_SRH05		Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_SWMGCHLH01	Southwest Main Gravity	Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_SWMGEHLH01	Southwest Main Gravity	Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_SWMGH17	Southwest Main Gravity	Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_SWMGH20	Southwest Main Gravity	Schuylkill River	C GATE POSITION	POSITION

Site Name	Interceptor	Waterbody	Measurement Name	Measurement Type
I_SWMGH20	Southwest Main Gravity	Schuylkill River	E GATE POSITION	POSITION
I_SWMGH20	Southwest Main Gravity	Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_SWMGH20	Southwest Main Gravity	Schuylkill River	W GATE POSITION	POSITION
I_SWMGS28	Southwest Main Gravity	Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_SWMGS34	Southwest Main Gravity	Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_SWMGS43	Southwest Main Gravity	Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_SWMGS47	Southwest Main Gravity	Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_SWMGS50	Southwest Main Gravity	Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_SWMGWHLH01	Southwest Main Gravity	Schuylkill River	INTERCEPTOR LEVEL	LEVEL
I_UDLLD04	Upper Delaware Low Level	Delaware River	INTERCEPTOR LEVEL	LEVEL
I_UDLLD08	Upper Delaware Low Level	Delaware River	INTERCEPTOR LEVEL	LEVEL
I_UDLLH03	Upper Delaware Low Level	Delaware River	INTERCEPTOR LEVEL	LEVEL
I_UDLLH04	Upper Delaware Low Level	Delaware River	INTERCEPTOR LEVEL	LEVEL
I_UDLLH07	Upper Delaware Low Level	Delaware River	INTERCEPTOR LEVEL	LEVEL
I_UDLLH14	Upper Delaware Low Level	Delaware River	INTERCEPTOR LEVEL	LEVEL
I_WBH06		Wissahickon Creek	INTERCEPTOR LEVEL	LEVEL
I_WHLH08	Wissahickon High Level	Wissahickon Creek	INTERCEPTOR LEVEL	LEVEL
I_WLLH11	Wissahickon Low Level	Wissahickon Creek	INTERCEPTOR LEVEL	LEVEL
P_01	Pennypack	Pennypack Creek	SWO LEVEL	LEVEL
P_01	Pennypack	Pennypack Creek	TRUNK LEVEL	LEVEL
P_02	Pennypack	Pennypack Creek	SWO LEVEL	LEVEL
P_02	Pennypack	Pennypack Creek	TRUNK LEVEL	LEVEL
P_03	Pennypack	Pennypack Creek	SWO LEVEL	LEVEL
P_03	Pennypack	Pennypack Creek	TRUNK LEVEL	LEVEL
P_04	Pennypack	Pennypack Creek	SWO LEVEL	LEVEL
P_04	Pennypack	Pennypack Creek	TRUNK LEVEL	LEVEL
P_05	Pennypack	Pennypack Creek	SWO LEVEL	LEVEL
P_05	Pennypack	Pennypack Creek	TRUNK LEVEL	LEVEL
R_06	Cobbs Creek High Level	Cobbs Creek	SWO LEVEL	LEVEL
R_06	Cobbs Creek High Level	Cobbs Creek	TRUNK LEVEL	LEVEL
R_07	Main Relief Sewer	Schuylkill River	SWO LEVEL	LEVEL
R_07	Main Relief Sewer	Schuylkill River	TRUNK LEVEL	LEVEL
R_12	Central Schuylkill East Side	Schuylkill River	SWO LEVEL	LEVEL
R_12	Central Schuylkill East Side	Schuylkill River	TRUNK LEVEL	LEVEL
R_13	Upper Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
R_13	Upper Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL
R_14	Upper Delaware Low Level	Delaware River	SWO LEVEL	LEVEL
R_14	Upper Delaware Low Level	Delaware River	TRUNK LEVEL	LEVEL

Site Name	Interceptor	Waterbody	Measurement Name	Measurement Type
R_15	Frankford High Level	Tacony Creek	SWO LEVEL	LEVEL
R_15	Frankford High Level	Tacony Creek	TRUNK LEVEL	LEVEL
R_18	Frankford High Level	Tacony Creek	INTERCEPTOR LEVEL	LEVEL
R_18	Frankford High Level	Tacony Creek	SWO LEVEL	LEVEL
R_20	Central Schuylkill East Side	Schuylkill River	INTERCEPTOR LEVEL	LEVEL
R_20	Central Schuylkill East Side	Schuylkill River	STORMWATER LEVEL	LEVEL
R_24	Cobbs Creek High Level	Cobbs Creek	SWO LEVEL	LEVEL
R_24	Cobbs Creek High Level	Cobbs Creek	TRUNK LEVEL	LEVEL
S_01	Central Schuylkill West Side	Schuylkill River	SWO LEVEL	LEVEL
S_01	Central Schuylkill West Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_03	Central Schuylkill West Side	Schuylkill River	SWO LEVEL	LEVEL
S_03	Central Schuylkill West Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_04	Central Schuylkill West Side	Schuylkill River	SWO LEVEL	LEVEL
S_04	Central Schuylkill West Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_05	Central Schuylkill East Side	Schuylkill River	SWO LEVEL	LEVEL
S_05	Central Schuylkill East Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_06	Central Schuylkill East Side	Schuylkill River	SWO LEVEL	LEVEL
S_06	Central Schuylkill East Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_07	Central Schuylkill East Side	Schuylkill River	SWO LEVEL	LEVEL
S_07	Central Schuylkill East Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_08	Central Schuylkill East Side	Schuylkill River	SWO LEVEL	LEVEL
S_08	Central Schuylkill East Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_09	Central Schuylkill East Side	Schuylkill River	SWO LEVEL	LEVEL
S_09	Central Schuylkill East Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_10	Central Schuylkill East Side	Schuylkill River	SWO LEVEL	LEVEL
S_10	Central Schuylkill East Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_11	Central Schuylkill West Side	Schuylkill River	SWO LEVEL	LEVEL
S_11	Central Schuylkill West Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_12	Central Schuylkill West Side	Schuylkill River	SWO LEVEL	LEVEL
S_12	Central Schuylkill West Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_12A	Central Schuylkill East Side	Schuylkill River	SWO LEVEL	LEVEL
S_12A	Central Schuylkill East Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_13	Central Schuylkill East Side	Schuylkill River	SWO LEVEL	LEVEL
S_13	Central Schuylkill East Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_15	Central Schuylkill East Side	Schuylkill River	SWO LEVEL	LEVEL
S_15	Central Schuylkill East Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_17	Central Schuylkill East Side	Schuylkill River	SWO LEVEL	LEVEL
S_17	Central Schuylkill East Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_18	Central Schuylkill East Side	Schuylkill River	SWO LEVEL	LEVEL
S_18	Central Schuylkill East Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_19	Central Schuylkill East Side	Schuylkill River	SWO LEVEL	LEVEL
S_19	Central Schuylkill East Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_22	Central Schuylkill West Side	Schuylkill River	SWO LEVEL	LEVEL
S_22	Central Schuylkill West Side	Schuylkill River	TRUNK LEVEL	LEVEL

Site Name	Interceptor	Waterbody	Measurement Name	Measurement Type
S_23	Central Schuylkill East Side	Schuylkill River	SWO LEVEL	LEVEL
S_23	Central Schuylkill East Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_25	Central Schuylkill East Side	Schuylkill River	SWO LEVEL	LEVEL
S_25	Central Schuylkill East Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_26	Central Schuylkill East Side	Schuylkill River	SWO LEVEL	LEVEL
S_26	Central Schuylkill East Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_27	Central Schuylkill East Side	Schuylkill River	DWO LEVEL	LEVEL
S_27	Central Schuylkill East Side	Schuylkill River	SWO LEVEL	LEVEL
S_27	Central Schuylkill East Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_28	Central Schuylkill East Side	Schuylkill River	SWO LEVEL	LEVEL
S_28	Central Schuylkill East Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_30	Southwest Main Gravity	Schuylkill River	SWO LEVEL	LEVEL
S_30	Southwest Main Gravity	Schuylkill River	TRUNK LEVEL	LEVEL
S_31	Lower Schuylkill East Side	Schuylkill River	SWO LEVEL	LEVEL
S_31	Lower Schuylkill East Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_32	Lower Schuylkill West Side	Schuylkill River	SWO LEVEL	LEVEL
S_32	Lower Schuylkill West Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_33	Lower Schuylkill West Side	Schuylkill River	SWO LEVEL	LEVEL
S_33	Lower Schuylkill West Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_34	Lower Schuylkill West Side	Schuylkill River	SWO LEVEL	LEVEL
S_34	Lower Schuylkill West Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_35	Lower Schuylkill West Side	Schuylkill River	SWO LEVEL	LEVEL
S_35	Lower Schuylkill West Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_36	Lower Schuylkill West Side	Schuylkill River	SWO LEVEL	LEVEL
S_36	Lower Schuylkill West Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_36A	Lower Schuylkill East Side	Schuylkill River	SWO LEVEL	LEVEL
S_36A	Lower Schuylkill East Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_37	Lower Schuylkill East Side	Schuylkill River	SWO LEVEL	LEVEL
S_37	Lower Schuylkill East Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_38	Lower Schuylkill West Side	Schuylkill River	SWO LEVEL	LEVEL
S_38	Lower Schuylkill West Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_39	Lower Schuylkill West Side	Schuylkill River	SWO LEVEL	LEVEL
S_39	Lower Schuylkill West Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_40	Lower Schuylkill West Side	Schuylkill River	SWO LEVEL	LEVEL
S_40	Lower Schuylkill West Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_42	Lower Schuylkill East Side	Schuylkill River	SWO LEVEL	LEVEL
S_42	Lower Schuylkill East Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_42A	Lower Schuylkill East Side	Schuylkill River	SWO LEVEL	LEVEL
S_42A	Lower Schuylkill East Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_43	Lower Schuylkill East Side	Schuylkill River	SWO LEVEL	LEVEL
S_43	Lower Schuylkill East Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_44	Lower Schuylkill East Side	Schuylkill River	SWO LEVEL	LEVEL
S_44	Lower Schuylkill East Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_45	Lower Schuylkill West Side	Schuylkill River	DWO LEVEL	LEVEL

Site Name	Interceptor	Waterbody	Measurement Name	Measurement Type
S_45	Lower Schuylkill West Side	Schuylkill River	SWO LEVEL	LEVEL
S_45	Lower Schuylkill West Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_46	Lower Schuylkill East Side	Schuylkill River	SWO LEVEL	LEVEL
S_46	Lower Schuylkill East Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_47	Lower Schuylkill East Side	Schuylkill River	SWO LEVEL	LEVEL
S_47	Lower Schuylkill East Side	Schuylkill River	TRUNK LEVEL	LEVEL
S_50	Southwest Main Gravity	Schuylkill River	SWO LEVEL	LEVEL
S_50	Southwest Main Gravity	Schuylkill River	TRUNK LEVEL	LEVEL
S_51	Southwest Main Gravity	Schuylkill River	SWO LEVEL	LEVEL
S_51	Southwest Main Gravity	Schuylkill River	TRUNK LEVEL	LEVEL
T_01	Frankford High Level	Tacony Creek	SWO LEVEL	LEVEL
T_01	Frankford High Level	Tacony Creek	TRUNK LEVEL	LEVEL
T_03	Frankford High Level	Tacony Creek	SWO LEVEL	LEVEL
T_03	Frankford High Level	Tacony Creek	TRUNK LEVEL	LEVEL
T_04	Frankford High Level	Tacony Creek	SWO LEVEL	LEVEL
T_04	Frankford High Level	Tacony Creek	TRUNK LEVEL	LEVEL
T_05	Frankford High Level	Tacony Creek	SWO LEVEL	LEVEL
T_05	Frankford High Level	Tacony Creek	TRUNK LEVEL	LEVEL
T_06	Frankford High Level	Tacony Creek	SWO LEVEL	LEVEL
T_06	Frankford High Level	Tacony Creek	TRUNK LEVEL	LEVEL
T_07	Frankford High Level	Tacony Creek	SWO LEVEL	LEVEL
T_07	Frankford High Level	Tacony Creek	TRUNK LEVEL	LEVEL
T_08	Frankford High Level	Tacony Creek	SWO LEVEL	LEVEL
T_08	Frankford High Level	Tacony Creek	TRUNK LEVEL	LEVEL
T_09	Frankford High Level	Tacony Creek	SWO LEVEL	LEVEL
T_09	Frankford High Level	Tacony Creek	TRUNK LEVEL	LEVEL
T_10	Frankford High Level	Tacony Creek	SWO LEVEL	LEVEL
T_10	Frankford High Level	Tacony Creek	TRUNK LEVEL	LEVEL
T_11	Frankford High Level	Tacony Creek	SWO LEVEL	LEVEL
T_11	Frankford High Level	Tacony Creek	TRUNK LEVEL	LEVEL
T_12	Frankford High Level	Tacony Creek	SWO LEVEL	LEVEL
T_12	Frankford High Level	Tacony Creek	TRUNK LEVEL	LEVEL
T_13	Frankford High Level	Tacony Creek	SWO LEVEL	LEVEL
T_13	Frankford High Level	Tacony Creek	TRUNK LEVEL	LEVEL
T_14	Frankford High Level	Tacony Creek	DWO GATE 1	POSITION
T_14	Frankford High Level	Tacony Creek	DWO GATE 2	POSITION
T_14	Frankford High Level	Tacony Creek	SWO CREST GATE	POSITION
T_14	Frankford High Level	Tacony Creek	SWO LEVEL	LEVEL
T_14	Frankford High Level	Tacony Creek	TRUNK LEVEL	LEVEL
T_15	Frankford High Level	Tacony Creek	SWO LEVEL	LEVEL
T_15	Frankford High Level	Tacony Creek	TRUNK LEVEL	LEVEL

Table 4 - Listing of all Rain Gages (7/1/2021 - 6/30/2022)

Rain Gage	Location	Percent Working
RG_1	70th and Essington Ave	29.16%
RG_2	66th and Regent St	99.48%
RG_3	Fox Chase Rd. and Castor Ave	100.00%
RG_4	State Rd and Pennypack St	65.19%
RG_5	3rd and Mifflin St	32.99%
RG_6	Cardinal Ave and City Line Ave	48.07%
RG_7	G St. and E Annsbury St	88.94%
RG_8	N Water St. and E Clarkson Ave	48.92%
RG_9	54th and Lancaster Ave	96.20%
RG_10	Pine Rd and Susquehanna Rd	63.42%
RG_11	Rising Sun Ave and Lardner St	97.99%
RG_12	Pattison Ave and Columbus Blvd	96.20%
RG_13	Glendale Ave and Algon Ave	99.35%
RG_14	Delaware Ave and Lewis St	89.06%
RG_15	E Montgomery Ave and Thompson St	92.19%
RG_16	19th and Wood St	28.35%
RG_17	Saul St. and Benner St	99.50%
RG_18	Fox St. and Roosevelt Blvd	99.12%
RG_19	Chew Ave and Sharpnack St	65.03%
RG_20	Woodhaven Rd and Knights Rd	56.30%
RG_21	Shawmont Ave and Eva St	95.11%
RG_22	N 67th and Callowhill St	99.29%
RG_23	Penrose Ave and Mingo Ave	99.50%
RG_24	Lockart Rd and Lockart Ln	87.25%
RG_25	24th and Wolf St	37.76%
RG_26	621 Lehigh Ave	79.26%
RG_27	Grant Ave and Ashford Rd	85.15%
RG_28	1350 Southampton Rd	97.97%
RG_29	Springfield Way and PaperMill Rd	86.39%
RG_30	7609 Montgomery Ave	0.00%
RG_31	Valley Rd and Old Valley Rd	98.34%
RG_32	Rozel Ave and Crushmore Rd	68.28%
RG_33	Jackson St and E Broadway Ave	95.33%
RG_34	Lawrence Rd and Chester Ave	0.00%
RG_35	Hagysford Rd and Tower Lane	71.99%
RG_36	Schuylkill Canal and Lock St	67.88%
RG_37	S 13 St and Normandy Pl	76.72%

Table 5 - Listing of All Pumping Station Monitors

Monitor ID	Type of Pumping Station	Measurement Name	Measurement Type	Address
PS_26VA	Storm Water	PUMP 1 RUN	EVENT	26th and Vare Ave
PS_26VA	Storm Water	PUMP 2 RUN	EVENT	27th and Vare Ave
PS_26VA	Storm Water	WET WELL LEVEL	LEVEL	28th and Vare Ave
PS_42ST	Waste Water	PUMP 1 RUN	EVENT	761 S 43rd St
PS_42ST	Waste Water	PUMP 2 RUN	EVENT	762 S 43rd St
PS_42ST	Waste Water	PUMP 3 RUN	EVENT	763 S 43rd St
PS_42ST	Waste Water	WET WELL LEVEL	LEVEL	764 S 43rd St
PS_BANK	Waste Water	PUMP 1 RUN	EVENT	15 S Bank St (Bank & Elbow Ln)
PS_BANK	Waste Water	PUMP 2 RUN	EVENT	16 S Bank St (Bank & Elbow Ln)
PS_BANK	Waste Water	WET WELL LEVEL	LEVEL	17 S Bank St (Bank & Elbow Ln)
PS_BELD	Waste Water	PUMP 1 RUN	EVENT	751 S Manatawna St (Belfry & Steeple)
PS_BELD	Waste Water	PUMP 2 RUN	EVENT	752 S Manatawna St (Belfry & Steeple)
PS_BELD	Waste Water	WET WELL LEVEL	LEVEL	753 S Manatawna St (Belfry & Steeple)
PS_BLVD	Storm Water	PUMP 1 RUN	EVENT	4251 N Broad St (Broad & Roosevelt Blvd)
PS_BLVD	Storm Water	PUMP 2 RUN	EVENT	4252 N Broad St (Broad & Roosevelt Blvd)
PS_BLVD	Storm Water	PUMP 3 RUN	EVENT	4253 N Broad St (Broad & Roosevelt Blvd)
PS_BLVD	Storm Water	PUMP 4 RUN	EVENT	4254 N Broad St (Broad & Roosevelt Blvd)
PS_BLVD	Storm Water	WET WELL LEVEL	LEVEL	4255 N Broad St (Broad & Roosevelt Blvd)
PS_CSPS	Waste Water	N GATE POSITION	POSITION	600 University Ave (34th St Bridge & University)
PS_CSPS	Waste Water	N SIPHON LEVEL	LEVEL	601 University Ave (34th St Bridge & University)

Monitor ID	Type of Pumping Station	Measurement Name	Measurement Type	Address
PS_CSPS	Waste Water	N SIPHON LEVEL	LEVEL	602 University Ave (34th St Bridge & University)
PS_CSPS	Waste Water	N WET WELL LEVEL	LEVEL	603 University Ave (34th St Bridge & University)
PS_CSPS	Waste Water	PUMP 1 RUN	EVENT	604 University Ave (34th St Bridge & University)
PS_CSPS	Waste Water	PUMP 2 RUN	EVENT	605 University Ave (34th St Bridge & University)
PS_CSPS	Waste Water	PUMP 3 RUN	EVENT	606 University Ave (34th St Bridge & University)
PS_CSPS	Waste Water	PUMP 4 RUN	EVENT	607 University Ave (34th St Bridge & University)
PS_CSPS	Waste Water	PUMP 5 RUN	EVENT	608 University Ave (34th St Bridge & University)
PS_CSPS	Waste Water	PUMP 6 RUN	EVENT	609 University Ave (34th St Bridge & University)
PS_CSPS	Waste Water	S GATE POSITION	POSITION	610 University Ave (34th St Bridge & University)
PS_CSPS	Waste Water	S WET WELL LEVEL	LEVEL	611 University Ave (34th St Bridge & University)
PS_FORD	Waste Water	PUMP 1 RUN	EVENT	3800 Ford Rd (Across from West Park Hospital)
PS_FORD	Waste Water	PUMP 2 RUN	EVENT	3801 Ford Rd (Across from West Park Hospital)
PS_FORD	Waste Water	WET WELL LEVEL	LEVEL	3802 Ford Rd (Across from West Park Hospital)
PS_HOGI	Waste Water	PUMP 1 RUN	EVENT	3 Hog Island Rd (east of Airport control tower)
PS_HOGI	Waste Water	PUMP 2 RUN	EVENT	4 Hog Island Rd (east of Airport control tower)
PS_HOGI	Waste Water	WET WELL LEVEL	LEVEL	5 Hog Island Rd (east of Airport control tower)
PS_LIND	Waste Water	PUMP 1 RUN	EVENT	5200 Linden Ave (Linden & Milnor)
PS_LIND	Waste Water	PUMP 2 RUN	EVENT	5201 Linden Ave (Linden & Milnor)
PS_LIND	Waste Water	WET WELL LEVEL	LEVEL	5202 Linden Ave (Linden & Milnor)
PS_LOCK	Waste Water	PUMP 1 RUN	EVENT	10778 Lockart Rd (Lockart St & Locart Ln)
PS_LOCK	Waste Water	PUMP 2 RUN	EVENT	10779 Lockart Rd (Lockart St & Locart Ln)

Monitor ID	Type of Pumping Station	Measurement Name	Measurement Type	Address
PS_LOCK	Waste Water	WET WELL LEVEL	LEVEL	10780 Lockart Rd (Lockart St & Locart Ln)
PS_MILN	Waste Water	PUMP 1 RUN	EVENT	9647 Milnor St (between Grant Ave & Eden St)
PS_MILN	Waste Water	PUMP 2 RUN	EVENT	9648 Milnor St (between Grant Ave & Eden St)
PS_MILN	Waste Water	PUMP 3 RUN	EVENT	9649 Milnor St (between Grant Ave & Eden St)
PS_MILN	Waste Water	WET WELL LEVEL	LEVEL	9650 Milnor St (between Grant Ave & Eden St)
PS_MING	Storm Water	BASIN LEVEL	LEVEL	7000 Penrose Ave (Schuylkill River under Platt Bridge)
PS_MING	Storm Water	PUMP 1 RUN	EVENT	7001 Penrose Ave (Schuylkill River under Platt Bridge)
PS_MING	Storm Water	PUMP 2 RUN	EVENT	7002 Penrose Ave (Schuylkill River under Platt Bridge)
PS_MING	Storm Water	PUMP 3 RUN	EVENT	7003 Penrose Ave (Schuylkill River under Platt Bridge)
PS_MING	Storm Water	PUMP 4 RUN	EVENT	7004 Penrose Ave (Schuylkill River under Platt Bridge)
PS_MING	Storm Water	PUMP 5 RUN	EVENT	7005 Penrose Ave (Schuylkill River under Platt Bridge)
PS_MING	Storm Water	PUMP 6 RUN	EVENT	7006 Penrose Ave (Schuylkill River under Platt Bridge)
PS_NEIL	Waste Water	PUMP 1 RUN	EVENT	4000 Neill Dr (Neill Dr & Falls Rd)
PS_NEIL	Waste Water	PUMP 1 RUN	EVENT	4001 Neill Dr (Neill Dr & Falls Rd)
PS_NEIL	Waste Water	PUMP 3 RUN	EVENT	4002 Neill Dr (Neill Dr & Falls Rd)
PS_NEIL	Waste Water	WET WELL LEVEL	LEVEL	4003 Neill Dr (Neill Dr & Falls Rd)
PS_P603	Waste Water	PUMP 1 RUN	EVENT	2000 Langley Ave (PNBC)
PS_P603	Waste Water	PUMP 2 RUN	EVENT	2001 Langley Ave (PNBC)
PS_P603	Waste Water	WET WELL LEVEL	LEVEL	2002 Langley Ave (PNBC)
PS_P648	Waste Water	PUMP 1 RUN	EVENT	PNBC
PS_P648	Waste Water	PUMP 2 RUN	EVENT	PNBC
PS_P648	Waste Water	WET WELL LEVEL	LEVEL	PNBC
PS_P796	Waste Water	PUMP 1 RUN	EVENT	4801 S 13th St (PNBC)

Monitor ID	Type of Pumping Station	Measurement Name	Measurement Type	Address
PS_P796	Waste Water	PUMP 2 RUN	EVENT	4802 S 13th St (PNBC)
PS_P796	Waste Water	PUMP 3 RUN	EVENT	4803 S 13th St (PNBC)
PS_P796	Waste Water	WET WELL LEVEL	LEVEL	4804 S 13th St (PNBC)
PS_POLI	Waste Water	PUMP 1 RUN	EVENT	
PS_POLI	Waste Water	PUMP 2 RUN	EVENT	
PS_POLI	Waste Water	WET WELL LEVEL	LEVEL	
PS_RENN	Waste Water	PUMP 1 RUN	EVENT	11064 Rennard St (Philmont Shopping Center)
PS_RENN	Waste Water	PUMP 2 RUN	EVENT	11065 Rennard St (Philmont Shopping Center)
PS_RENN	Waste Water	WET WELL LEVEL	LEVEL	11066 Rennard St (Philmont Shopping Center)
PS_SPLA	Waste Water	PUMP 1 RUN	EVENT	9021 Buttonwood Pl (Spring Lane Meadows)
PS_SPLA	Waste Water	PUMP 2 RUN	EVENT	9022 Buttonwood Pl (Spring Lane Meadows)
PS_SPLA	Waste Water	WET WELL LEVEL	LEVEL	9023 Buttonwood Pl (Spring Lane Meadows)

Table 6 - Listing of all Temporary Flow Monitors Deployed by Projects

Site Name	Start	End	Project
CV-0130	08/28/19	Present	I&I SSO Support
CV-0145	06/24/16	Present	I&I Long-term; SSO Support
P108-11-0045	04/06/21	Present	Stormwater
P108-11-0030	04/09/21	Present	Stormwater
S051-05-S0015	05/05/16	6/9/2022	I&I Long-term; SSO Support
S05-000012	03/30/11	Present	CSO
S45-001110	10/13/11	Present	CSO Long-term
D63-000035	10/14/11	Present	CSO Long-term
BC-0055	11/30/11	Present	I&I Long-term
IALL-B0355	12/12/11	Present	I&I Long-term
C17-003360	12/13/11	Present	CSO Long-term
T14-013875	01/30/12	Present	CSO Long-term; SFR Support
M005-09-0140	09/27/12	Present	Stormwater Long-term; SFR Support
PC-0040	01/21/14	Present	I&I Long-term; SSO Support
D45-000015	05/08/14	Present	CSO Long-term
UDLL-0045	05/29/14	Present	CSO Long-term
USE-0365	05/29/14	Present	I&I Long-term; SSO Support
SWMG-B0265	06/24/14	Present	CSO Long-term
UDLL-0085	06/25/14	Present	CSO Long-term
UDLL-0275	09/19/14	Present	CSO Long-term
WLL-0675	03/13/15	Present	I&I Long-term
THL-0085	04/14/15	Present	CSO Long-term
UDLL-0120	07/29/15	Present	I/I
S051-08-S0015	04/28/16	Present	I&I Long-term; SSO Support
S051-08-S0180	04/29/16	Present	I&I Long-term; SSO Support
S059-04-S0027	05/04/16	Present	I&I Long-term; SSO Support
GSI DST-010-03	05/24/17	Present	GSI Long-term
GSI DD RG	06/23/17	Present	GSI Long-term

Site Name	Start	End	Project
CV-0130	08/28/19	Present	I&I SSO Support
S50-011230	08/29/17	Present	CSO Long-term
DD DST-010-01	11/07/17	Present	GSI Long-term
THL-0045	11/23/17	Present	CSO Long-term
CF-DST-4	04/27/18	Present	GSI Long-term
T14-000252	12/06/18	Present	CSO
T14-000140	01/10/19	Present	CSO
T14-000115	01/10/19	Present	CSO Long-term
CV-0162	08/28/19	Present	I&I SSO Support
CV-B0250	10/24/19	Present	I&I SSO Support
C17-000865	03/08/22	Present	CSO
C17-000895	03/08/22	Present	CSO
C17-000905	03/08/22	Present	CSO
PC-1065 (MSHX-02)	06/30/22	Present	I&I SSO Support

Table 7 - Listing of Outlying Community Contract Limits

Metered	Contract Limits					
Standardized	Instantaneous		Daily Max	Township Total		
Site ID	CFS	MGD	MGD	Inst. CFS	Inst. MGD	Daily Max MGD
MA1						
MA2						
MA3						
MA4						
MAx1						
Abington Total				9.542	6.168	4.453
MB1				74.26	47.996	33
Bucks Total						
MBE1						
MBE2						
MBE3						
MBE4						
MBE5						
MBE6						
MBE7						
MBE8						
MBE9						
MBE10						
MBE11						
MBE12						
MBE13						
MBE14						
MBE15						
MBE16						
Bensalem Total				11.74	7.588	6.133
MC1	2.75	1.777				
MC2	18	11.634				
MC3	0.480	0.31				
MCx1	8	5.171	Combined total for all the MCx#			
MCx2						
MCx3						
MCx4						
MCx5						
MCx6						
MCx7						

Metered	Contract Limits					
Standardized	Instantaneous		Daily Max	Township Total		
Site ID	CFS	MGD	MGD	Inst. CFS	Inst. MGD	Daily Max MGD
Cheltenham Total				20.75	13.411	13.380
MD1	155	100.179	50	155	100	50
DELCORA Total				155	100	50
ML1			5.474			
ML2			1.48			
ML3						
ML4			10.264			
ML5			1.848			
ML6			0.252			
ML7			0.84			
Lower Merion Total				31.57	20.404	14.5
MLM1						
MLM2	3.71	2.4	1.8			
MLM3						
MLM4						
MLM5						
MLM6						
MLM7						
Lower Moreland Total				5.88	3.80	2.85
MS1						
MS2						
MS3						
MS4						
MS5						
MS6						
MS7						
MS8						
Springfield Total				8.58	5.55	4.2
MSH1						
MSH2						
MSHX_1						
MSHX_2						
Southampton Total				15.79	10.205	7.14
MUD-N						
MUD-S						
MUD-O						

Metered	Contract Limits					
Standardized	Instantaneous		Daily Max	Township Total		
Site ID	CFS	MGD	MGD	Inst. CFS	Inst. MGD	Daily Max MGD
MUD-1						
Upper Darby Total				35	22.621	17

Appendix C – FY22 CSO Program Maintenance Annual Report

FLOW CONTROL UNIT

FY2022 ANNUAL REPORT

Submitted By:
Michael D. Hengstler
Water Conveyance System Superintendent
PWD-Flow Control

FLOW CONTROL UNIT- FY22
OPERATION and MAINTENANCE

The Collector System Flow Control Unit's primary responsibilities are divided into four groups: Combined Sewer Overflow (CSO) Regulator Maintenance, Pumping Station Operation & Maintenance, Collector System Instrumentation and CCTV Technical Inspections. The Wastewater Pumping Group main office is located at 5202 Pennypack Street in the Torresdale Raw Water Pumping Station. The WWP Group assembles at this facility, which also has a maintenance machine shop, storage garage, and workshop to handle maintenance assignments. The other three groups have maintenance shops and assemble at the Fox Street Headquarters Facility. Brief descriptions of each group's responsibilities and their FY22 annual year highlights follow.

FLOW CONTROL MISSION STATEMENT

The mission of the Flow Control Unit is to ensure environmental stewardship and public wellbeing in accordance with Federal and State laws, administrative rules, and operating permits by means of state-of-the-art technologies to monitor, inspect, operate, and maintain the Collector System's CSO Regulating System, Wastewater and Storm Water Pumping Stations, Wastewater Metering Sites and Storage Facilities, and the Sewer Assessment Program through CCTV inspections.

CSO REGULATOR MAINTENANCE GROUP

Inspecting and servicing the combined sewer overflow regulating and diversion chambers are completed by 19 Interceptor maintenance personnel. This group is responsible for the operations, maintenance, inspections, and cleaning of 175 combined sewer-regulating chambers, 89 tide gate chambers, 26 storm relief chambers, 12 sanitary flow diversions, several siphons and other related wastewater control devices throughout the collection system.

Currently the Philadelphia Water Department Flow Control Unit maintains ten types of CSO regulators and storage systems:

- Brown & Brown (B&B) mechanical
- Computer Controlled Sluice Gates
- Computer Controlled B&B Shutter Gates
- Static Dams
- Slot type regulators
- Mechanical Sluice Gates
- Side Overflow Weirs
- Inflatable Rubber Dam
- Water Hydraulic Sluice Gates
- Computer Controlled Crest Gates

Mechanical or operational malfunctions of regulators and tide gates can cause dry weather discharges and stream and river inflow. These types of events can have a major impact on the Wastewater and Fresh Water Treatment Plant's performance and the quality of stream water. They can also affect the recreational use of our local waterways. Thus, the combined sewer regulator systems are closely monitored for potential blockages and when identified the problems are corrected quickly. CSO chamber Inspections and clearing of any regulator blockages prior to causing a dry weather discharge are the primary responsibilities of this group and are key areas in assessing the group's overall performance.

By continually tracking and analyzing Dry Weather Discharges it can be determined if new or modified maintenance procedures would help to prevent them from occurring. Although our established procedures have greatly reduced the number and duration of these discharges, the combined system picks up all manner of trash and debris that is unpredictable in its pattern of

causing flow disruptions. Despite incorporating best management practices such as having all inlets trapped and cleaned, preventative maintenance schedules for sewer flushing and cleaning of the regulators, CCTV inspection of DWO pipes, etc., it is virtually impossible to eliminate all blockages before they occur.

The PWD Flow Control Unit continues to aggressively control and minimize these dry weather overflows by utilizing the latest technology-based controls including our Collector System Remote Monitoring Network that currently includes over 320 sites with over 720 individual level and/or flow measurements. Training the CSO maintenance personnel in the use of the system's computer programs for analyzing the trend data has developed a comprehensive understanding of individual CSO sites and their distinctive flow patterns. This familiarity helps them recognize abnormal conditions quickly at a location so that they can respond before the conditions develop into a dry weather CSO blockage or discharge.

The CSO Maintenance Group performed 4070 inspections of the regulating chambers and 529 inspections of the sanitary diversion valves in FY22. The work includes frequent visual inspections of the equipment and flow patterns to make sure everything is operating properly. The more comprehensive work such as the cleaning and lubricating of the mechanical equipment is scheduled during lower flow periods between rain events.

In FY22, the crews cleared 228 regulator blockages and 45 sanitary diversion valve blockages before they developed into a CSO dry weather discharge. There were 5 CSO dry weather discharges for this fiscal year.

Many discharges are a result of debris such as rags, sticks, stones, and other debris that become lodged in the CSO regulator diversion or the dry weather outlet pipe during dry weather periods. These types of blockages are virtually unpredictable so frequent inspections and closely observing the monitoring trend data is essential to our prevention program. Following moderate to heavy rain events the CSO regulators can have grit, sticks, rags and other debris caught at various places in and around the regulator that could eventually result in a discharge. The CSO maintenance crews perform quick topside inspections of the CSO sites

throughout the City of Philadelphia for several days following these events to remove or clear away any of this storm debris. The work schedule will then revert to the more comprehensive maintenance such as cleaning, lubricating, adjusting equipment and performing minor repairs to the mechanical regulators.

CSO Regulator Group with the help of Sewer maintenance and Mobile Dredging Vactoring Services, cleaned and removed debris and grit from the D-25 regulating chamber, totaling 6.13 tons and from the D-45 regulating chamber, totaling 22.51 tons.

The CSO Regulator Group maintained the inspection schedule even though it was severely shorthanded due to vacancies and unfortunate absences of key employees.

WASTEWATER PUMPING STATION MAINTENANCE GROUP

The Wastewater Pumping Station Maintenance Group consisting of 35 maintenance personnel are located at the 5202 Pennypack St. Maintenance Shop. They are responsible for the operations and maintenance of 18 wastewater-pumping stations, 3 stormwater pumping stations, 2 sodium hypochlorite dosing stations, 11 computer-controlled CSO storage regulators and several in-line and offline wastewater-storage facilities among other duties.

Many of the pumping stations provide for only one running pump and one reserve pump. This arrangement means that pump breakdowns are responded to immediately and that overhauls need to be completed in a minimum amount of time. The main pump availability statistic is a good indicator of the Maintenance Group's performance in this area. The main pumping units were in service 96.7% of the time in FY22. The WWP Group completed seven main wastewater pump overhauls at the stations. These overhauls consist of repair and replacement of the worn pump and motor components to bring the equipment's performance up to new operating condition.

The Wastewater Pumping Station Maintenance Group had no main pumps out of service during annual year FY22 because of failures or breakdowns. The reason for this is that

during pump maintenance and overhauls the in-service pump was rotated out of activity and replaced by the spare pump for the station. This accomplishes two things; one the station always has its full complement of pumps available and the spare pump for the station gets used.

In addition to the pumping station maintenance, the group maintains a variety of other equipment throughout the Collector System. They are responsible for the operations and maintenance of the two sodium hypochlorite dosing stations. The stations are located next to the Queen Lane Raw Water pumping station, which injects hypo into the Upper Schuylkill East Interceptor, and at the Totem Rd. pumping station, which injects hypo into the Bucks County force main. The group is responsible for maintaining adequate supply of the chemical, over 740,646 gallons in FY22, for monitoring the downstream hydrogen sulfide levels and adjusting the dosage levels in addition to the maintenance and repair of the equipment.

The group also fabricates and repairs bar screens, debris grills and other equipment for the Collector System and performs major maintenance of the CSO mechanical regulators such as installation of tide gates, overflow gates and servicing of the Brown & Brown regulators.

COLLECTOR SYSTEM INSTRUMENTATION MAINTENANCE GROUP

The fourteen Instrument and Electronic Technicians located at the Fox Street facility are primarily responsible for installing, calibrating, and maintaining the electronic and instrumentation equipment in the Collector System monitoring and control network. They also repair, calibrate, and certify the hazardous gas detection meters for the Department as well as install temporary flow and level monitors for various units in the Water Department.

One of the primary responsibilities of the CS Instrumentation Group is to maintain the network of level sensors, flow meters, and rain gauges and keep them up and running with a minimum of downtime while maintaining accurate and reliable data. The network currently

consists of 258 level and flow monitoring locations in the NE, SE, and SW Drainage Districts, 35 gauges in the citywide rain gauge network, 56 Township flow-metering stations, and a number of additional monitors at various control sites. It is crucial that the remote site equipment is communicating and downloading data to the server so that the information is available for trend chart viewing and analysis for the users. The CSO maintenance group relies heavily on these charts to monitor the performance of all the CSO regulators while paying special attention to the sites that have had recent or a history of discharges. The monitoring data is used for a wide variety of other purposes such as calibrating the Collector System's hydraulic model, generating township sewage flows for billing and for various Planning and Engineering studies.

The CS Instrumentation Maintenance group performed a total of 1911 assignments which included preventive maintenance inspections, repairs, trouble shooting, and installations at CSO sites in FY22. The data collections used by Flow Control are TELOG units.

CCTV TECHNICAL INSPECTIONS GROUP

The CCTV Technical Inspections group consists of one Supervisor, two group leaders, and sixteen technicians who operate and maintain the seven closed circuit TV camera trucks and Green Storm Infrastructure inspection cameras. The seven CCTV trucks, CCTV Contractor, and GSI CCTV Group completed 2575 inspections with a total length of 55.04 miles of inspections in FY22. All inspections are NASSCO coded and archived.

The CCTV group has several primary functions which include inspections of sewers turned in for sewer complaints, special inspection requests from the Water/ Sewer Design group and the post construction inspection program which involves videoing the sewer at the completion of all sewer construction work. Another function of the group is to work with the Defective Connection Program group to identify the defective lateral connections.

CCTV INSPECTION BREAKDOWN BY MONTH FY22

Completed CCTV Inspections

Sewer Type/Month	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Total by Type
Green	64	18	12	61	72	60	89	57	87	127	143	129	919
Storm	19	11	23	13	17	25	11	11	24	11	15	25	205
Waste	63	60	60	101	77	122	90	124	204	136	168	246	1451
Grand Total	**146**	**89**	**95**	**175**	**166**	**207**	**190**	**192**	**315**	**274**	**326**	**400**	**2575**

Surveyed Distance in feet and miles

Sewer Type/Month	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Footage by type Total	Miles by Type Total
Green	11,795.50	3181.10	607.60	2,310.23	2,916.00	2,892.10	4,820.00	2,774.90	5,508.10	6,567.10	7,165.30	5,723.10	56,261.03	10.66
Storm	6,136.00	3,240.90	2,795.50	1,816.20	2,705.30	3,366.30	1,805.60	2,000.20	3,467.30	1,968.10	2,011.10	3,283.91	34,596.41	6.55
Waste	17,148.70	11,951.96	7,158.30	13,252.90	9,696.70	15,960.95	15,134.24	17,456.41	24,245.60	18,054.00	18,744.00	30,973.57	199,777.33	37.84
Total Footage	**35,080.20**	**18,373.96**	**10,561.40**	**17,379.32**	**15,318.00**	**22,219.35**	**21,759.84**	**22,231.51**	**33,221.00**	**26,589.20**	**27,920.40**	**39,980.58**	**290,634.77**	
Total Miles	**6.64**	**3.48**	**2.00**	**3.29**	**2.90**	**4.21**	**4.12**	**4.21**	**6.29**	**5.04**	**5.29**	**7.57**	**55.04**	

SERVICE LEVEL GOALS

The goal of the Flow Control Unit is to maintain and exceed the service level goals. One area that directly affects the service level of the Flow Control Unit is personnel vacancies.

MONTH	CSO Discharges per 100 Inspections	% Metering Chambers Operational	% CSO Level Meters Operational	CCTV Inspections	Main Pump Availability
Goal -->	0	95% or Higher	90% or Higher	2.8 Miles	95% or Higher
Jul-21	0.87	93.0%	97.0%	6.64	96.0%
Aug-21	0.00	90.0%	94.7%	3.48	96.0%
Sep-21	0.30	95.0%	96.8%	2.00	96.0%
Oct-21	0.00	97.0%	97.9%	3.29	96.0%
Nov-21	0.00	97.0%	97.9%	2.90	96.0%
Dec-21	0.00	99.0%	97.5%	4.21	96.0%
Jan-22	0.00	98.0%	96.9%	4.12	96.0%
Feb-22	0.00	98.0%	96.4%	4.21	100.0%
Mar-22	0.30	95.0%	96.2%	6.29	100.0%
Apr-22	0.00	97.0%	97.0%	5.04	100.0%
May-22	0.30	93.0%	98.7%	5.29	100.0%
Jun-22	0.00	95.0%	97.4%	7.57	100.0%

FLOW CONTROL PERSONNEL SUMMARY

The Flow Control Unit makes every effort to fill all 97 approved positions in order to maintain the service level goals.

97 Flow Control Positions	Active	Vacant	Total
WCSS 7B07	1	0	1
WCSAS 7B06	2	0	2
Clerk 3 1A04	1	0	1
DSS Clerk 1D41	1	0	1
Office Clerk 1 1A03	1	1	2
Electronic Equip. Supv. 7K67	2	0	2
Elec. Tech GL 7K68	4	0	4
Electronic Tech 2 7K64	15	0	15
Electronic Tech 1 7K63	7	11	18
Electronic Tech Trn 7K81	4	0	4
Ind. Elect. Grp. Ldr. 7K18	1	0	1
Industrial Electrician 2 7K17	1	0	1
Electrician 2 7K02	2	0	2
Electrician 1 7K01	3	0	3
Interceptor Serv. Supv. 7B43	2	0	2
Int. Srv. Wkr. 2 7B41	5	1	6
Int. Srv. Wkr. 1 7B40	5	4	9
Ind. Proc. Mech. Grp.Ldr. 7J35	2	0	2
Ind. Proc. Mach. Mech. 7J34	11	0	11
Mach. Equip. Mech. 2 7J15	1	0	1
Mach. Equip. Mech. 1 7J14	1	2	3
Sewer Maint. Inspector	1	0	1
Trades Helper (Mechanical)	2	0	2
Public Wks. Maint. Trn 7H02	1	0	1
WORHelper 7B01	2	0	2
TOTALS	**78**	**19**	**97**

PART 1 DRY WEATHER STATUS REPORT	PHILADELPHIA WATER DEPARTMENT WASTE AND STORM WATER COLLECTION FLOW CONTROL UNIT											Section 1 July 2021 - June 2022	
COLLECTOR	**Jul-21**	**Aug-21**	**Sep-21**	**Oct-21**	**Nov-21**	**Dec-21**	**Jan-22**	**Feb-22**	**Mar-22**	**Apr-22**	**May-22**	**Jun-22**	**Totals**
UPPER PENNYPACK - 5 UNITS													
INSPECTIONS	7	6	9	6	12	13	8	5	10	8	5	6	95
DISCHARGES													
BLOCKS CLEARED						1							1
UPPER DELAWARE LOW LEVEL - 12 UNITS													
INSPECTIONS	14	20	19	15	13	34	15	18	26	17	20	14	225
DISCHARGES													
BLOCKS CLEARED	1		3	2	1	3		2	2	3	2	2	21
LOWER FRANKFORD CREEK - 6 UNITS													
INSPECTIONS	7	15	17	7	6	16	6	9	5	15	10	6	119
DISCHARGES													
BLOCKS CLEARED	2	2	3	3		3	2			1		2	18
LOWER FRANKFORD LOW LEVEL - 10 UNITS													
INSPECTIONS	24	18	25	24	13	21	10	24	17	26	21	11	234
DISCHARGES													
BLOCKS CLEARED			3	2		1	1			1		1	9
FRANKFORD HIGH LEVEL - 14 UNITS													
INSPECTIONS	26	35	35	33	45	30	30	24	26	25	17	24	350
DISCHARGES													
BLOCKS CLEARED	2	1	2	1	1	1				1		4	13
SOMERSET - 9 UNITS													
INSPECTIONS	14	17	16	13	23	17	21	14	18	11	20	10	194
DISCHARGES													
BLOCKS CLEARED						2					1		3
LOWER DELAWARE LOW LEVEL - 33 UNITS													
INSPECTIONS	49	46	21	56	67	55	75	86	66	94	70	85	770
DISCHARGES													
BLOCKS CLEARED	1	2	2	3	2	6		2		2	1	1	22
CENTRAL SCHUYLKILL EAST - 18 UNITS													
INSPECTIONS	20	41	33	33	37	43	40	28	27	23	28	38	391
DISCHARGES													
BLOCKS CLEARED		2	3		3		2		2	1		1	14
LOWER SCHUYLKILL EAST - 9 UNITS													
INSPECTIONS	25	14	11	10	11	13	12	13	30	14	10	12	175
DISCHARGES	1												1
BLOCKS CLEARED	5					2	2		8				17
CENTRAL SCHUYLKILL WEST - 9 UNITS													
INSPECTIONS	24	30	19	15	17	15	16	27	12	20	23	20	238
DISCHARGES									1		1		2
BLOCKS CLEARED								1	1	2	1	1	6
SOUTHWEST MAIN GRAVITY - 10 UNITS													
INSPECTIONS	17	25	20	18	26	40	19	29	31	38	28	25	316
DISCHARGES													
BLOCKS CLEARED	2	5			2	9	6	9	9	6	8	1	57
LOWER SCHUYLKILL WEST - 4 UNITS													
INSPECTIONS	5	6	6	1	7	4	5	5	6	10	7	2	64
DISCHARGES													
BLOCKS CLEARED		4	2		1	2	1	1		1			12
COBBS CREEK HIGH LEVEL - 24 UNITS													
INSPECTIONS	35	46	33	36	52	37	48	29	35	39	33	40	463
DISCHARGES	1		1										2
BLOCKS CLEARED	4	3	2	3	5	1			3	1		2	24
COBBS CREEK LOW LEVEL - 13 UNITS													
INSPECTIONS	14	22	15	14	14	13	13	11	14	13	16	12	171
DISCHARGES													
BLOCKS CLEARED		1	1	3			1		4				10
RELIEF SEWERS - 26 UNITS													
INSPECTIONS	16	31	8	21	36	28	23	16	17	21	28	20	265
DISCHARGES													
BLOCKS CLEARED			1										1
TOTALS / MONTH for 201 REGULATOR UNITS													**Totals**
TOTAL INSPECTIONS	297	372	287	302	379	379	341	338	340	374	336	325	4070
TOTAL DISCHARGES	2		1						1		1		5
TOTAL BLOCKS CLEARED	17	20	22	17	15	31	15	15	29	19	13	15	228
AVER. # of INSP. / BC	17.5	18.6	13.0	17.8	25.3	12.2	22.7	22.5	11.7	19.7	25.8	21.7	19.0
DISC / 100 INSPECTIONS	0.7	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3	0.0	0.1

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for Knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

PART 1
DRY WEATHER STATUS REPORT

PRECIPITATION FOR THE PERIOD: July 2021 - June 2022

Section 2

Date	Rain Inches	Date	Rain Inches	Date	Rain Inches	Date	Rain Inches	Date	Rain Inches	Date	Rain Inches	Date	Rain Inches	Date	Rain Inches	Date	Rain Inches	Date	Rain Inches	Date	Rain Inches	Date	Rain Inches
07-01	**1.21**	08-01	**0.17**	09-01	**3.21**	10-01		11-01		12-01		01-01	**0.7**	02-01		03-01		04-01	**0.26**	05-01	**0.01**	06-01	
07-02	**1.10**	08-02		09-02	**0.01**	10-02		11-02	**0.02**	12-02	**0.02**	01-02	**0.1**	02-02		03-02		04-02		05-02	**0.2**	06-02	**0.38**
07-03	**0.26**	08-03		09-03		10-03		11-03		12-03		01-03		02-03	**0.33**	03-03		04-03	**0.1**	05-03		06-03	**0.01**
07-04	**0.15**	08-04		09-04		10-04	**0.01**	11-04		12-04		01-04		02-04	**0.77**	03-04		04-04		05-04	**0.18**	06-04	
07-05		08-05		09-05	**0.07**	10-05	**1.00**	11-05		12-05		01-05		02-05		03-05		04-05	**0.14**	05-05		06-05	
07-06	**0.10**	08-06		09-06	**0.01**	10-06		11-06		12-06	**0.12**	01-06		02-06		03-06	**0.08**	04-06	**0.92**	05-06	**0.7**	06-06	
07-07		08-07	**0.04**	09-07		10-07		11-07		12-07		01-07	**0.01**	02-07	**0.08**	03-07	**0.04**	04-07	**1.69**	05-07	**1.19**	06-07	**0.1**
07-08	**0.26**	08-08	**0.54**	09-08		10-08		11-08		12-08		01-08	**0.01**	02-08		03-08		04-08	**0.04**	05-08	**0.11**	06-08	**0.93**
07-09	**0.71**	08-09	**0.46**	09-09	**0.30**	10-09	**0.01**	11-09		12-09		01-09	**0.21**	02-09		03-09	**0.38**	04-09	**0.25**	05-09		06-09	**0.9**
07-10		08-10	**0.87**	09-10		10-10	**0.11**	11-10		12-10	**0.01**	01-10		02-10		03-10		04-10		05-10		06-10	
07-11		08-11	**0.04**	09-11		10-11		11-11		12-11	**0.27**	01-11		02-11		03-11		04-11		05-11		06-11	**0.01**
07-12	**2.54**	08-12		09-12		10-12		11-12	**0.22**	12-12		01-12		02-12		03-12	**0.55**	04-12	**0.01**	05-12		06-12	**1.52**
07-13		08-13		09-13		10-13		11-13	**0.01**	12-13		01-13		02-13	**0.29**	03-13	**0.01**	04-13		05-13	**0.12**	06-13	
07-14		08-14		09-14		10-14		11-14	**0.02**	12-14		01-14		02-14		03-14		04-14	**0.14**	05-14	**0.21**	06-14	**0.11**
07-15		08-15		09-15	**0.60**	10-15		11-15	**0.03**	12-15		01-15		02-15		03-15		04-15		05-15		06-15	
07-16		08-16		09-16		10-16	**0.34**	11-16		12-16		01-16	**0.47**	02-16		03-16		04-16	**0.2**	05-16	**0.12**	06-16	**0.38**
07-17	**1.41**	08-17	**0.12**	09-17	**0.01**	10-17		11-17		12-17		01-17	**0.78**	02-17	**0.09**	03-17	**0.18**	04-17		05-17		06-17	
07-18	**0.06**	08-18	**0.05**	09-18		10-18		11-18	**0.08**	12-18	**0.14**	01-18		02-18	**0.17**	03-18		04-18	**1.25**	05-18	**0.04**	06-18	
07-19		08-19	**1.58**	09-19		10-19		11-19		12-19	**0.01**	01-19		02-19		03-19	**0.14**	04-19	**0.1**	05-19	**0.76**	06-19	
07-20		08-20	**0.17**	09-20		10-20		11-20		12-20		01-20	**0.33**	02-20		03-20		04-20		05-20	**0.15**	06-20	
07-21	**0.77**	08-21	**0.16**	09-21		10-21		11-21		12-21	**0.01**	01-21		02-21		03-21		04-21		05-21		06-21	**0.02**
07-22		08-22	**1.07**	09-22		10-22		11-22	**0.06**	12-22	**0.13**	01-22		02-22	**0.15**	03-22		04-22		05-22	**0.08**	06-22	**0.01**
07-23		08-23	**0.62**	09-23	**1.63**	10-23	**0.01**	11-23		12-23		01-23		02-23		03-23	**0.24**	04-23		05-23		06-23	**0.43**
07-24		08-24		09-24		10-24	**0.01**	11-24		12-24		01-24		02-24	**0.04**	03-24	**0.51**	04-24		05-24		06-24	
07-25	**0.27**	08-25		09-25		10-25	**1.09**	11-25		12-25	**0.15**	01-25		02-25	**0.91**	03-25		04-25		05-25		06-25	
07-26		08-26		09-26		10-26	**0.70**	11-26	**0.20**	12-26		01-26		02-26		03-26		04-26	**0.03**	05-26	**0.01**	06-26	
07-27		08-27	**0.26**	09-27		10-27	**0.02**	11-27		12-27	**0.11**	01-27		02-27		03-27		04-27		05-27	**1.11**	06-27	**0.72**
07-28		08-28	**0.96**	09-28	**0.13**	10-28		11-28		12-28	**0.02**	01-28	**0.04**	02-28		03-28		04-28		05-28	**0.01**	06-28	
07-29	**0.01**	08-29		09-29		10-29	**0.86**	11-29		12-29		01-29				03-29		04-29		05-29		06-29	
07-30		08-30		09-30		10-30	**0.35**	11-30		12-30	**0.21**	01-30				03-30		04-30		05-30		06-30	
07-31		08-31				10-31	**0.01**			12-31	**0.01**	01-31	**0.02**			03-31	**0.10**			05-31			

Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22
Total Rain	Total Rain	Total Rain	Total Rain	Total Rain	Total Rain	Total Rain	Total Rain	Total Rain	Total Rain	Total Rain	Total Rain
8.85	7.11	5.97	4.52	0.64	1.21	2.67	2.83	2.23	5.13	5.00	5.52

Note: Rain Gauge RG-17 & RG-18 are being used for the Precipitation Report.

PART 1
DRY WEATHER STATUS REPORT

DRY WEATHER DISCHARGES FOR THE PERIOD: July 2021 - June 2022

Section 3

Discharge Observed		Discharge Stopped		Last Inspection						
Date	Time	Date	Time	Date	Time	Site ID	Collector	Type Unit	Location	Comment
08-Oct-21	11:05:00 AM	08-Oct-21	11:45:00 AM	23-Sep-21	9:15:00 AM	F-24	LFC	WH-S	Bridge St. SE of Creek Basin	Debris,sticks and mophead in regulator inlet.
16-Sep-21	12:40:00 PM	16-Sep-21	1:25:00 PM	02-Sep-21	11:40:00 AM	C-09	CCHL	SLOT	64th St. & Cobbs Creek	Large MopHead and Metal Clamp in Slot.
02-Jul-21	11:00:00 AM	02-Jul-21	11:34:00 AM	28-Jun-21	11:45:00 AM	C-09	CCHL	SLOT	64th St. & Cobbs Creek	debis and grit in slot.
21-Mar-22	10:30:00AM	21-Mar-22	11:15:00 AM	15-Feb-22	10:45:00 AM	S-02	CSW	B&B	Haverford Ave. & West River Dr.	Shutter Gate Blocked with debris.
17-May-22	11:00:00 AM	17-May-22	12:00:00 PM	12-May-22	9:10:00 AM	S-02	CSW	B&B	Haverford Ave. & West River Dr.	Concrete Block in regulator inlet.

RELIEF SEWER MONTHLY INSPECTION

SITE	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
THOMAS RUN RELIEF SEWER													
R01	1	2	1	2	2	1	1	1	1	1	2	1	16
R02	1	2	1	1	2	1	1	1	1	1	2	1	15
R03	1	2	1	1	2	1	1	1	1	1	2	1	15
R04	1	2	1	1	2	1	1	1	1	1	2	1	15
R05	1	2	1	1	2	1	1	1	1	1	2	1	15
R06	1	2	1	1	1	1	0	1	1	1	2	1	13
MAIN RELIEF SEWER													
R07	1	1	0	1	1	2	1	1	1	1	1	1	12
R08	1	0	0	1	1	2	1	1	1	1	1	1	11
R09	1	1	0	1	1	2	1	1	1	1	1	1	12
R10	1	2	0	1	1	2	1	0	2	1	1	1	13
R11	1	1	0	1	1	1	1	0	1	1	1	1	10
R11A	1	1	0	1	1	1	0	0	1	1	1	1	9
R12	1	0	0	1	1	1	0	0	1	1	0	0	6
WAKLING RELIEF SEWER													
R13	0	1	0	1	2	1	2	1	0	1	1	1	11
R14	0	1	0	1	2	1	2	1	0	1	1	0	10
ROCK RUN STORM FLOOD RELIEF SEWER													
R15	1	3	0	1	3	1	1	1	0	1	1	1	14
OREGON AVE RELIEF SEWER													
R16	0	0	1	0	0	0	0	0	0	0	0	0	1
R17	0	0	0	0	0	1	0	0	0	0	0	0	1
FRANKFORD HIGH LEVEL RELIEF SEWER													
R18	0	2	0	1	2	1	0	1	0	0	1	1	9
32ND ST RELIEF SEWER													
R19	0	0	0	0	2	1	1	0	0	1	0	1	6
MAIN STREET RELIEF SEWER													
R20	0	1	0	0	2	1	3	1	0	1	1	1	11
SOMERSET SYSTEM DIVERSION CHAMBER													
R21													0
TEMPORARY REGULATOR CHAMBER													
R22													0
R23	0	1	0	0	1	0	1	0	0	0	0	1	4
ARCH ST RELIEF SEWER													
R24	1	3	1	1	2	2	1	1	1	2	2	1	18
16TH & SNYDER													
R25	0	1	0	1	1	1	1	1	2	1	3	1	13
GRANT & STATE RD. RELIEF													
R26	1	0	0	1	1	1	1	0	0	0	0	0	5
TOTAL	16	31	8	21	36	28	23	16	17	21	28	20	265
AVER	0.6	1.1	0.3	0.8	1.3	1.0	0.9	0.6	0.6	0.8	1.0	0.7	0.8

RELIEF SEWER MONTHLY DISCHARGE

SITE	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
THOMAS RUN RELIEF SEWER													
R01													0
R02													0
R03													0
R04													0
R05													0
R06													0
MAIN RELIEF SEWER													
R07													0
R08													0
R09													0
R10													0
R11													0
R11A													0
R12													0
WAKLING RELIEF SEWER													
R13													0
R14													0
ROCK RUN STORM FLOOD RELIEF SEWER													
R15													0
OREGON AVE RELIEF SEWER													
R16													0
R17													0
FRANKFORD HIGH LEVEL RELIEF SEWER													
R18													0
32ND ST RELIEF SEWER													
R19													0
MAIN STREET RELIEF SEWER													
R20													0
SOMERSET SYSTEM DIVERSION CHAMBER													
R21													0
TEMPORARY REGULATOR CHAMBER													
R22													0
R23													0
ARCH ST RELIEF SEWER													
R24													0
16TH & SNYDER													
R25													0
GRANT & STATE RD. RELIEF													
R26													0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0
UNITS	0	0	0	0	0	0	0	0	0	0	0	0	

RELIEF SEWER MONTHLY BLOCKS CLEARED

SITE	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
THOMAS RUN RELIEF SEWER													
R01													0
R02													0
R03													0
R04													0
R05													0
R06													0
MAIN RELIEF SEWER													
R07													0
R08													0
R09													0
R10													0
R11													0
R11A													0
R12													0
WAKLING RELIEF SEWER													
R13													0
R14													0
ROCK RUN STORM FLOOD RELIEF SEWER													
R15													0
OREGON AVE RELIEF SEWER													
R16			1										1
R17													0
FRANKFORD HIGH LEVEL RELIEF SEWER													
R18													0
32ND ST RELIEF SEWER													
R19													0
MAIN STREET RELIEF SEWER													
R20													0
SOMERSET SYSTEM DIVERSION CHAMBER													
R21													0
TEMPORARY REGULATOR CHAMBER													
R22													0
R23													0
ARCH ST RELIEF SEWER													
R24													0
16TH & SNYDER													
R25													0
GRANT & STATE RD. RELIEF													
R26													0
TOTAL	0	0	1	0	0	0	0	0	0	0	0	0	1
AVER	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

SITE	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL	AVER	DTR
UPPER PENNYPACK 5 NEWPC UNITS															
P01	1	1	1	1	2	3	2	1	2	1	1	1	17	1.4	21.5
P02	1	2	3	1	2	3	2	1	2	1	1	1	20	1.7	18.2
P03	2	1	2	2	3	2	1	1	2	2	1	2	21	1.8	17.4
P04	2	1	2	1	3	3	2	1	3	3	1	1	23	1.9	15.9
P05	1	1	1	1	2	2	1	1	1	1	1	1	14	1.2	26.1
UPPER DELAWARE LOW LEVEL 12 NEWPC UNITS															
D02	3	1	2	1	2	3	2	2	1	2	1	1	21	1.8	17.4
D03	2	3	3	2	1	4	2	2	2	2	2	1	26	2.2	14.0
D04	0	2	2	1	1	5	3	2	2	2	2	1	23	1.9	15.9
D05	1	2	1	1	1	3	1	2	2	1	1	1	17	1.4	21.5
D06	0	2	1	1	1	7	1	2	2	1	1	2	21	1.8	17.4
D07	1	2	3	1	1	3	1	2	2	3	1	1	21	1.8	17.4
D08	2	2	1	2	1	2	1	1	2	1	2	1	18	1.5	20.3
D09	1	2	1	1	1	2	1	1	3	1	2	1	17	1.4	21.5
D11	1	1	1	2	1	1	0	1	1	1	2	1	13	1.1	28.1
D12	2	1	1	1	1	2	1	1	3	1	2	1	17	1.4	21.5
D13	1	1	1	1	1	1	1	1	3	1	2	1	15	1.3	24.3
D15	0	1	2	1	1	1	1	1	3	1	2	2	16	1.3	22.8
LOWER FRANKFORD CREEK 6 NEWPC UNITS															
F13	2	4	3	2	2	3	2	2	1	4	2	1	28	2.3	13.0
F14	2	3	5	2	2	3	2	2	1	4	2	1	29	2.4	12.6
F21	0	2	1	1	0	2	0	0	1	0	1	1	9	0.8	40.5
F23	1	2	5	0	1	3	1	3	0	2	2	1	21	1.8	17.4
F24	2	2	3	1	1	3	1	2	1	4	2	1	23	1.9	15.9
F25	0	2	0	1	0	2	0	0	1	1	1	1	9	0.8	40.5
LOWER FRANKFORD LOW LEVEL 10 NEWPC UNITS															
F03	2	1	2	2	2	3	1	2	1	1	3	1	21	1.8	17.4
F04	3	2	2	2	2	2	1	2	1	1	3	1	22	1.8	16.6
F05	2	1	2	1	2	2	1	2	1	2	3	1	20	1.7	18.2
F06	2	2	2	1	1	2	1	2	2	3	3	1	22	1.8	16.6
F07	2	2	1	1	1	1	1	2	2	2	2	1	18	1.5	20.3
F08	2	1	1	1	1	1	1	2	2	1	2	1	16	1.3	22.8
F09	2	2	2	10	1	5	1	2	3	3	1	1	33	2.8	11.1
F10	3	2	2	1	1	1	1	5	1	3	1	2	23	1.9	15.9
F11	4	3	7	3	1	2	1	3	2	5	2	1	34	2.8	10.7
F12	2	2	4	2	1	2	1	2	2	5	1	1	25	2.1	14.6
FRANKFORD HIGH LEVEL 14 NEWPC UNITS															
T01	0	1	1	2	2	2	1	2	2	1	1	1	16	1.3	22.8
T03	3	3	2	3	5	2	2	2	4	2	2	1	31	2.6	11.8
T04	1	5	2	1	4	1	2	2	2	1	2	1	24	2.0	15.2
T05	1	3	2	1	4	2	2	2	2	1	1	1	22	1.8	16.6
T06	1	5	2	1	2	2	1	2	2	1	1	1	21	1.8	17.4
T07	1	2	2	1	1	2	2	2	1	1	1	1	17	1.4	21.5
T08	2	2	3	2	2	2	0	1	1	1	1	1	18	1.5	20.3
T09	2	1	2	2	2	3	2	1	1	2	1	1	20	1.7	18.2
T10	4	1	2	5	6	4	3	1	2	2	2	8	40	3.3	9.1
T11	2	2	4	4	4	2	3	1	2	3	1	2	30	2.5	12.2
T12	3	4	3	3	4	3	3	2	2	3	1	2	33	2.8	11.1
T13	2	3	5	4	5	3	3	2	2	4	1	2	36	3.0	10.1
T14	2	1	2	2	3	1	3	2	2	2	1	1	22	1.8	16.6
T15	2	2	3	2	1	1	3	2	1	1	1	1	20	1.7	18.2

1	TOTAL DISCHARGES FOR NE & SE DISTRICTS	DTR	= DAYS TO RETURN TO SITE
0.1	AVERAGE DISCHARGES PER MONTH	I/D/C	= INSPECTIONS PER DAY PER CREW
18.5	AVER. DAYS BEFORE RETURNING TO SITE	I/D	= INSPECTIONS PER DISCHARGE
0.8	AVER. INSPECTIONS PER DAY PER CREW		

SITE	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL	AVER	DTR
SOMERSET LOW LEVEL 9 NEWPC UNITS															
D17	2	2	2	2	3	2	2	2	2	1	3	2	25	2.1	14.6
D18	2	2	2	1	3	2	3	2	2	1	2	1	23	1.9	15.9
D19	2	2	1	1	3	1	3	2	2	1	2	1	21	1.8	17.4
D20	2	2	2	1	3	1	3	2	2	1	2	1	22	1.8	16.6
D21	2	2	3	2	3	2	3	2	2	1	3	1	26	2.2	14.0
D22	1	2	1	1	3	3	2	2	3	2	2	1	23	1.9	15.9
D23	1	2	1	1	2	1	2	1	2	1	2	1	17	1.4	21.5
D24	1	2	1	3	1	3	2	1	1	3	2	1	21	1.8	17.4
D25	1	1	3	1	2	2	1	0	2	0	2	1	16	1.3	22.8
LOWER DELAWARE LOW LEVEL 33 SEWPC UNITS															
D37	2	2	1	4	2	2	6	3	8	8	2	1	41	3.4	8.9
D38	1	2	1	3	3	3	3	3	2	7	3	1	32	2.7	11.4
D39	1	2	2	3	3	2	4	7	4	10	3	5	46	3.8	7.9
D40	1	2	1	1	2	2	2	3	4	2	2	3	25	2.1	14.6
D41	1	1	2	1	2	2	2	2	2	2	2	2	21	1.8	17.4
D42	0	2	1	1	1	2	1	2	2	2	2	1	17	1.4	21.5
D43	0	1	1	1	1	2	1	2	2	3	2	1	17	1.4	21.5
D44	0	1	1	1	1	1	1	2	2	3	3	1	17	1.4	21.5
D45	5	1	1	4	8	4	1	1	2	1	4	2	34	2.8	10.7
D46	3	1	1	1	2	1	1	1	1	1	2	2	17	1.4	21.5
D47	0	1	0	1	2	1	1	1	1	1	2	1	12	1.0	30.4
D48	0	1	0	1	2	2	2	1	1	1	1	2	14	1.2	26.1
D49	0	1	0	1	2	1	1	2	1	1	1	1	12	1.0	30.4
D50	3	1	0	0	2	2	1	2	1	1	5	6	24	2.0	15.2
D51	3	1	1	0	2	3	2	2	1	1	2	2	20	1.7	18.2
D52	0	1	0	0	1	2	1	1	1	2	3	1	13	1.1	28.1
D53	0	1	1	1	1	1	1	1	2	2	2	5	18	1.5	20.3
D54	0	2	1	0	1	1	2	1	2	2	3	4	19	1.6	19.2
D58	4	3	3	2	1	1	2	2	2	2	2	2	26	2.2	14.0
D61	1	2	1	0	1	1	1	1	1	1	1	2	13	1.1	28.1
D62	1	1	1	0	1	1	2	1	1	1	1	1	12	1.0	30.4
D63	1	1	0	1	1	1	2	1	1	1	1	4	15	1.3	24.3
D64	1	1	0	2	1	1	1	1	1	1	1	3	14	1.2	26.1
D65	1	1	0	1	1	1	1	1	1	1	1	3	13	1.1	28.1
D66	0	1	0	0	1	1	0	2	1	1	1	3	11	0.9	33.2
D67	2	1	1	5	3	2	2	5	3	3	2	4	33	2.8	11.1
D68	3	2	0	6	6	3	8	11	3	6	4	8	60	5.0	6.1
D69	2	2	0	4	3	2	3	6	4	6	4	3	39	3.3	9.4
D70	5	2	0	5	2	2	6	7	3	7	2	3	44	3.7	8.3
D71	5	1	0	5	2	2	6	7	2	6	2	4	42	3.5	8.7
D72	2	2	0	1	3	1	3	2	1	5	1	2	23	1.9	15.9
D73	1	1	0	0	1	1	3	1	1	2	1	1	13	1.1	28.1
D75	0	1	0	0	2	1	2	1	2	1	2	1	13	1.1	28.1
TOTAL	167	197	187	192	182	216	90	94	102	102	93	71	1693		
I /D/C	2.7	3.2	3.1	3.2	3.0	3.6	1.5	1.5	1.7	1.7	1.5	1.2			
UP	7	6	9	6	12	13	8	5	10	8	5	6	95	1.6	19.8
UDLL	14	20	19	15	13	34	15	18	26	17	20	14	225	1.6	20.2
LFC	7	15	17	7	6	16	6	9	5	15	10	6	119	1.7	23.3
LFLL	24	18	25	24	13	21	10	24	17	26	21	11	234	2.0	16.4
FHL	26	35	35	33	45	30	30	24	26	25	17	24	350	2.1	15.8
SLL	14	17	16	13	23	17	21	14	18	11	20	10	194	1.8	17.3
LDLL	75	86	66	94	70	85	0	0	0	0	0	0	770	2.0	19.5

SITE	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
UPPER PENNYPACK 5 NEWPC UNITS													
P01													0
P02													0
P03													0
P04													0
P05													0
UPPER DELAWARE LOW LEVEL 12 NEWPC UNITS													
D02													0
D03													0
D04													0
D05													0
D06													0
D07													0
D08													0
D09													0
D11													0
D12													0
D13													0
D15													0
LOWER FRANKFORD CREEK 6 NEWPC UNITS													
F13													0
F14													0
F21													0
F23													0
F24													0
F25													0
LOWER FRANKFORD LOW LEVEL 10 NEWPC UNITS													
F03													0
F04													0
F05													0
F06													0
F07													0
F08													0
F09													0
F10													0
F11													0
F12													0
FRANKFORD HIGH LEVEL 14 NEWPC UNITS													
T01													0
T03													0
T04													0
T05													0
T06													0
T07													0
T08													0
T09													0
T10													0
T11	1												1
T12													0
T13													0
T14													0
T15													0

	NO OF DISCHARGES IN DISTRICT												TOTAL
UP	0	0	0	0	0	0	0	0	0	0	0	0	0
UDLL	0	0	0	0	0	0	0	0	0	0	0	0	0
LFC	0	0	0	0	0	0	0	0	0	0	0	0	0
LFLL	0	0	0	0	0	0	0	0	0	0	0	0	0
FHL	1	0	0	0	0	0	0	0	0	0	0	0	1
SLL	0	0	0	0	0	0	0	0	0	0	0	0	0
LDLL	0	0	0	0	0	0	0	0	0	0	0	0	0

SITE	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
SOMERSET LOW LEVEL 9 NEWPC UNITS													
D17													0
D18													0
D19													0
D20													0
D21													0
D22													0
D23													0
D24													0
D25													0
LOWER DELAWARE LOW LEVEL 33 SEWPC UNITS													
D37													0
D38													0
D39													0
D40													0
D41													0
D42													0
D43													0
D44													0
D45													0
D46													0
D47													0
D48													0
D49													0
D50													0
D51													0
D52													0
D53													0
D54													0
D58													0
D61													0
D62													0
D63													0
D64													0
D65													0
D66													0
D67													0
D68													0
D69													0
D70													0
D71													0
D72													0
D73													0
D75													0

													TOTAL DISC
	1	0	0	0	0	0	0	0	0	0	0	0	1

	NO OF UNITS IN DISTRICT BLOCKED												TOTAL
UP	0	0	0	0	0	1	0	0	0	0	0	0	1
UDLL	1	0	3	2	1	3	0	2	2	3	2	2	21
LFC	2	2	3	3	0	3	2	0	0	1	0	2	18
LFLL	0	0	3	2	0	1	1	0	0	1	0	1	9
FHL	2	1	2	1	1	1	0	0	0	1	0	4	13
SLL	0	0	0	0	0	2	0	0	0	0	1	0	3
LDLL	1	2	2	3	2	6	0	2	0	2	1	1	22

SITE	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
UPPER PENNYPACK 5 NEWPC UNITS													
P01													0
P02													0
P03						1							1
P04													0
P05													0
UPPER DELAWARE LOW LEVEL 12 NEWPC UNITS													
D02													0
D03			1										1
D04													0
D05													0
D06			1	1	1	3						1	7
D07										1			1
D08	1			1				1		1	1		5
D09													0
D11													0
D12								1					1
D13													0
D15			1						2	1	1	1	6
LOWER FRANKFORD CREEK 6 NEWPC UNITS													
F13		1	1			1							3
F14	2	1	2	2		1	1					1	10
F21													0
F23						1				1		1	3
F24				1			1						2
F25													0
LOWER FRANKFORD LOW LEVEL 10 NEWPC UNITS													
F03													0
F04													0
F05													0
F06													0
F07				1			1						2
F08													0
F09				1		1							2
F10			2							1			3
F11													0
F12			1									1	2
FRANKFORD HIGH LEVEL 14 NEWPC UNITS													
T01													0
T03													0
T04		1								1			2
T05						1							1
T06													0
T07													0
T08													0
T09													0
T10					1							3	4
T11	1		2										3
T12				1									1
T13	1											1	2
T14													0
T15													0

7.3 AVERAGE BLOCKAGES PER MONTH

SITE	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
SOMERSET LOW LEVEL 9 NEWPC UNITS													
D17													0
D18													0
D19													0
D20													0
D21						1							1
D22						1							1
D23											1		1
D24													0
D25													0
LOWER DELAWARE LOW LEVEL 33 SEWPC UNITS													
D37				1						1			2
D38		1											1
D39													0
D40		1		1		2		1			1		6
D41												1	1
D42													0
D43													0
D44													0
D45													0
D46			1										1
D47													0
D48													0
D49													0
D50								1					1
D51			1		2	1							4
D52													0
D53													0
D54													0
D58													0
D61													0
D62						1							1
D63													0
D64													0
D65													0
D66													0
D67	1			1		1				1			4
D68													0
D69													0
D70													0
D71						1							1
D72													0
D73													0
D75													0
													TOTAL
	6	5	13	11	4	17	3	4	2	8	4	10	87

UP	0	0	0	0	0	1	0	0	0	0	0	0	1
UDLL	1	0	3	2	1	3	0	2	2	3	2	2	21
LFC	2	2	3	3	0	3	2	0	0	1	0	2	18
LFLL	0	0	3	2	0	1	1	0	0	1	0	1	9
FHL	2	1	2	1	1	1	0	0	0	1	0	4	13
SLL	0	0	0	0	0	2	0	0	0	0	1	0	3
LDLL	1	2	2	3	2	6	0	2	0	2	1	1	22

SITE	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL	AVER	DTR
CENTRAL SCHUYLKILL EAST SIDE 18 SWWPC UNITS															
S05	1	2	1	2	1	2	4	2	2	1	2	3	23	1.9	15.9
S06	1	2	1	2	1	2	4	2	2	1	2	3	23	1.9	15.9
S07	1	2	1	2	3	2	4	2	2	1	2	3	25	2.1	14.6
S08	1	2	2	2	3	2	4	2	1	2	2	2	25	2.1	14.6
S09	1	3	1	1	2	2	4	1	1	1	2	2	21	1.8	17.4
S10	0	2	1	2	1	2	3	1	1	1	2	2	18	1.5	20.3
S12	1	2	2	3	6	4	4	2	1	1	2	3	31	2.6	11.8
S12A	1	3	2	1	2	1	1	1	1	1	0	3	17	1.4	21.5
S13	2	2	2	2	2	4	1	2	1	2	2	2	24	2.0	15.2
S15	0	2	2	4	2	4	1	1	1	3	2	2	24	2.0	15.2
S16	1	2	2	1	1	3	2	1	1	1	1	1	17	1.4	21.5
S17	1	2	3	1	1	3	1	1	1	1	1	2	18	1.5	20.3
S18	1	2	3	2	1	3	1	1	2	1	2	2	21	1.8	17.4
S19	2	2	2	2	1	4	1	1	2	2	2	2	23	1.9	15.9
S21	2	3	2	2	3	2	2	2	2	1	1	2	24	2.0	15.2
S23	2	3	2	1	3	1	1	3	2	1	1	2	22	1.8	16.6
S25	1	3	3	1	2	1	1	2	2	1	1	1	19	1.6	19.2
S26	1	2	1	2	2	1	1	1	2	1	1	1	16	1.3	22.8
LOWER SCHUYLKILL EAST SIDE 9 SWWPC UNITS															
S31	1	2	1	1	1	1	2	2	1	1	1	1	15	1.3	24.3
S35	1	2	1	1	1	2	2	2	1	1	1	0	15	1.3	24.3
S36	2	0	0	0	0	0	0	0	0	0	0	0	2	0.2	182.4
S36A	1	1	1	1	1	3	3	2	1	1	2	2	19	1.6	19.2
S37	4	0	0	0	0	0	0	0	0	0	0	0	4	0.3	91.2
S42	11	5	4	3	2	5	2	3	10	5	2	4	56	4.7	6.5
S42A	3	3	2	2	3	1	2	2	16	4	3	3	44	3.7	8.3
S44	1	0	0	0	0	0	0	0	0	0	0	0	1	0.1	364.8
S46	1	1	2	2	3	1	1	2	1	2	1	2	19	1.6	19.2
CENTRAL SCHUYLKILL WEST 9 SWWPC UNITS															
S01	6	7	2	3	2	2	3	2	2	4	3	2	38	3.2	9.6
S02	2	5	2	1	2	1	2	2	2	4	5	2	30	2.5	12.2
S03	2	2	2	1	2	1	2	2	1	2	3	2	22	1.8	16.6
S04	6	7	4	2	1	1	1	3	1	2	2	2	32	2.7	11.4
S11	2	2	2	1	2	2	2	3	1	1	2	1	21	1.8	17.4
S14	2	1	1	1	2	2	2	2	1	1	2	5	22	1.8	16.6
S20	2	2	2	2	2	1	2	6	2	2	2	3	28	2.3	13.0
S22	1	2	3	2	2	3	1	4	1	2	2	2	25	2.1	14.6
S24	1	2	1	2	2	2	1	3	1	2	2	1	20	1.7	18.2
SOUTHWEST MAIN GRAVITY 10 SWWPC UNITS															
S27	1	2	2	2	2	2	1	2	1	3	2	1	21	1.8	17.4
S28	1	2	2	2	2	2	1	2	1	2	3	1	21	1.8	17.4
S30	0	3	3	4	2	2	2	2	1	6	1	1	27	2.3	13.5
S34	1	2	3	1	2	2	1	2	3	7	1	3	28	2.3	13.0
S39	1	1	1	3	1	2	1	2	2	2	2	1	19	1.6	19.2
S40	0	1	1	1	1	1	1	1	2	2	1	1	13	1.1	28.1
S43	0	1	1	0	1	1	1	2	3	1	1	2	14	1.2	26.1
S47	1	1	1	0	1	1	2	2	1	2	1	2	15	1.3	24.3
S50	11	9	5	3	12	22	7	12	12	9	11	9	122	10.2	3.0
S51	1	3	1	2	2	5	2	2	5	4	5	4	36	3.0	10.1
LOWER SCHUYLKILL WEST SIDE 4 SWWPC UNITS															
S32	2	2	2	0	2	1	1	1	2	4	2	0	19	1.6	19.2
S33	1	0	1	0	1	1	1	2	1	3	1	0	12	1.0	30.4
S38	0	2	2	0	1	1	1	1	1	1	2	1	13	1.1	28.1
S45	2	2	1	1	3	1	2	1	2	2	2	1	20	1.7	18.2

5	TOTAL DISCHARGES IN SW DISTRICT	DTR	= DAYS TO RETURN TO SITE
0.8	AVERAGE DISCHARGES PER MONTH	I/D/C	= INSPECTIONS PER DAY PER CREW
28.8	AVER. DAYS BEFORE RETURNING TO SITE	I/D	= INSPECTIONS PER DISCHARGE
1.6	AVER. INSPECTIONS PER DAY PER CREW		

SITE	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL	AVER	DTR
COBBS CREEK HIGH LEVEL 24 SWWPC UNITS															
C01	1	2	1	1	2	2	1	1	2	1	2	2	18	1.5	20.3
C02	1	2	1	1	2	2	1	1	2	1	2	2	18	1.5	20.3
C04	1	2	1	3	2	1	1	1	2	1	2	1	18	1.5	20.3
C04A	1	2	1	2	2	1	1	1	2	1	2	1	17	1.4	21.5
C05	1	2	1	2	2	1	1	1	2	1	2	1	17	1.4	21.5
C06	2	2	1	2	2	2	4	1	2	3	3	2	26	2.2	14.0
C07	2	2	1	3	2	4	3	1	3	4	2	2	29	2.4	12.6
C09	4	2	2	3	2	2	3	1	2	3	2	2	28	2.3	13.0
C10	3	2	1	2	2	2	3	1	1	2	1	2	22	1.8	16.6
C11	3	2	1	4	4	4	3	1	2	3	2	2	31	2.6	11.8
C12	1	2	1	1	2	2	3	1	0	2	1	1	17	1.4	21.5
C13	0	2	1	0	3	2	1	0	0	1	1	1	12	1.0	30.4
C14	1	2	1	1	2	1	2	0	2	1	1	1	15	1.3	24.3
C15	1	2	1	1	2	1	2	0	1	1	1	1	14	1.2	26.1
C16	1	2	1	1	1	1	2	0	1	2	1	1	14	1.2	26.1
C17	1	2	1	1	1	1	2	3	1	2	1	1	17	1.4	21.5
C18	1	2	1	1	1	1	2	3	1	1	1	1	16	1.3	22.8
C31	1	2	2	1	3	1	3	1	2	2	1	2	21	1.8	17.4
C32	3	2	3	1	3	1	1	2	1	1	0	2	20	1.7	18.2
C33	1	2	2	1	3	1	2	2	2	1	1	2	20	1.7	18.2
C34	2	2	2	1	3	1	2	2	1	2	1	2	21	1.8	17.4
C35	1	2	2	1	3	1	2	2	1	1	1	3	20	1.7	18.2
C36	2	1	2	1	2	1	2	2	1	1	1	3	19	1.6	19.2
C37	0	1	2	1	1	1	1	1	1	1	1	2	13	1.1	28.1
COBBS CREEK LOW LEVEL 12 SWWPC UNITS															
C19	1	2	1	2	1	1	2	3	1	1	1	1	17	1.4	21.5
C20	1	2	1	1	1	1	1	1	1	1	1	1	13	1.1	28.1
C21	1	2	1	1	1	2	1	1	1	1	1	1	14	1.2	26.1
C22	1	2	1	1	1	1	1	1	1	1	1	1	13	1.1	28.1
C23	1	2	2	2	1	1	1	1	1	1	1	1	15	1.3	24.3
C24	1	2	1	1	1	1	1	1	1	1	1	1	13	1.1	28.1
C25	3	2	2	1	2	1	1	2	2	2	2	1	21	1.8	17.4
C26	1	2	1	1	2	1	1	1	1	1	2	1	15	1.3	24.3
C27	1	2	1	2	1	1	1	0	2	1	2	1	15	1.3	24.3
C28A	1	1	2	1	1	1	1	0	1	1	2	1	13	1.1	28.1
C29	1	2	1	1	1	1	1	0	1	1	1	1	12	1.0	30.4
C30	1	1	1	0	1	1	1	0	1	1	1	1	10	0.8	36.5
TOTAL	140	184	137	127	164	165	153	142	155	157	145	149	1818		
I /D/C	1.5	2.0	1.5	1.4	1.8	1.8	1.7	1.6	1.7	1.7	1.6	1.6			
CSES	20	41	33	33	37	43	40	28	27	23	28	38	391	1.8	17.3
LSES	25	14	11	10	11	13	12	13	30	14	10	12	175	1.6	82.2
CSW	24	30	19	15	17	15	16	27	12	20	23	20	238	2.2	14.4
SWMG	17	25	20	18	26	40	19	29	31	38	28	25	316	2.6	17.2
LSW	5	6	6	1	7	4	5	5	6	10	7	2	64	1.3	24.0
CCHL	35	46	33	36	52	37	48	29	35	39	33	40	463	1.6	20.0
CCLL	14	22	15	14	14	13	13	11	14	13	16	12	171	1.2	26.4

SITE	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
CENTRAL SCHUYLKILL EAST SIDE 18 SWWPC UNITS													
S05													0
S06													0
S07													0
S08													0
S09													0
S10													0
S12													0
S12A													0
S13													0
S15													0
S16													0
S17													0
S18													0
S19													0
S21													0
S23													0
S25													0
S26													0
LOWER SCHUYLKILL EAST SIDE 9 SWWPC UNITS													
S31													0
S35													0
S36													0
S36A													0
S37	1												1
S42													0
S42A													0
S44													0
S46													0
CENTRAL SCHUYLKILL WEST 9 SWWPC UNITS													
S01													0
S02									1		1		2
S03													0
S04													0
S11													0
S14													0
S20													0
S22													0
S24													0
SOUTHWEST MAIN GRAVITY 10 SWWPC UNITS													
S27													0
S28													0
S30													0
S34													0
S39													0
S40													0
S43													0
S47													0
S50													0
S51													0
LOWER SCHUYLKILL WEST SIDE 4 SWWPC UNITS													
S32													0
S33													0
S38													0
S45													0

SITE	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
COBBS CREEK HIGH LEVEL 24 SWWPC UNITS													
C01													0
C02													0
C04													0
C04A													0
C05													0
C06													0
C07													0
C09	1		1										2
C10													0
C11													0
C12													0
C13													0
C14													0
C15													0
C16													0
C17													0
C18													0
C31													0
C32													0
C33													0
C34													0
C35													0
C36													0
C37													0
COBBS CREEK LOW LEVEL 12 SWWPC UNITS													
C19													0
C20													0
C21													0
C22													0
C23													0
C24													0
C25													0
C26													0
C27													0
C28A													0
C29													0
C30													0
													TOTAL DISC
	2	0	1	0	0	0	0	0	1	0	1	0	5

	NO OF UNITS IN DISTRICT BLOCKED												TOTAL
CSE	0	2	3	0	3	0	2	0	2	1	0	1	14
LSE	5	0	0	0	0	2	2	0	8	0	0	0	17
CSW	0	0	0	0	0	0	0	1	1	2	1	1	6
SWG	2	5	0	0	2	9	6	9	9	6	8	1	57
LSW	0	4	2	0	1	2	1	1	0	1	0	0	12
CCHL	4	3	2	3	5	1	0	0	3	1	0	2	24
CCLL	0	1	1	3	0	0	1	0	4	0	0	0	10

	NO OF DISCHARGES IN DISTRICT												TOTAL
CSE	0	0	0	0	0	0	0	0	0	0	0	0	0
LSE	1	0	0	0	0	0	0	0	0	0	0	0	1
CSW	0	0	0	0	0	0	0	0	1	0	1	0	2
SWG	0	0	0	0	0	0	0	0	0	0	0	0	0
LSW	0	0	0	0	0	0	0	0	0	0	0	0	0
CCHL	1	0	1	0	0	0	0	0	0	0	0	0	2
CCLL	0	0	0	0	0	0	0	0	0	0	0	0	0

SITE	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
CENTRAL SCHUYLKILL EAST SIDE 18 SWWPC UNITS													
S05													0
S06										1			1
S07													0
S08		1	1										2
S09													0
S10													0
S12					2		2						4
S12A					1								1
S13													0
S15													0
S16									1				1
S17												1	1
S18									1				1
S19													0
S21													0
S23													0
S25		1	1										2
S26			1										1
LOWER SCHUYLKILL EAST SIDE 9 SWWPC UNITS													
S31													0
S35													0
S36													0
S36A													0
S37	2												2
S42	3					2	2						7
S42A									8				8
S44													0
S46													0
CENTRAL SCHUYLKILL WEST 9 SWWPC UNITS													
S01										1			1
S02									1	1	1		3
S03													0
S04													0
S11													0
S14												1	1
S20								1					1
S22													0
S24													0
SOUTHWEST MAIN GRAVITY 10 SWWPC UNITS													
S27													0
S28													0
S30							1			1			2
S34		1											1
S39													0
S40									1				1
S43		1											1
S47							1						1
S50	2	3			2	9	4	9	8	5	8	1	51
S51													0
LOWER SCHUYLKILL WEST SIDE 4 SWWPC UNITS													
S32		1	1										2
S33						1		1		1			3
S38		2	1		1	1	1						6
S45		1											1

11.7 AVERAGE BLOCKAGES PER MONTH

SITE	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
COBBS CREEK HIGH LEVEL 24 SWWPC UNITS													
C01												1	1
C02				1									1
C04													0
C04A													0
C05													0
C06													0
C07						1							1
C09	2	1	1	1									5
C10													0
C11													0
C12												1	1
C13													0
C14	1				1				2	1			5
C15													0
C16		1			1								2
C17									1				1
C18													0
C31													0
C32													0
C33			1		1								2
C34				1	1								2
C35													0
C36	1												1
C37		1			1								2
COBBS CREEK LOW LEVEL 12 SWWPC UNITS													
C19				1			1						2
C20		1											1
C21													0
C22									1				1
C23													0
C24				1					1				2
C25			1										1
C26				1					1				2
C27													0
C28A													0
C29									1				1
C30													0
													TOTAL
	11	15	8	6	11	14	12	11	27	11	9	5	140

CSE	0	2	3	0	3	0	2	0	2	1	0	1	14
LSE	5	0	0	0	0	2	2	0	8	0	0	0	17
CSW	0	0	0	0	0	0	0	1	1	2	1	1	6
SWG	2	5	0	0	2	9	6	9	9	6	8	1	57
LSW	0	4	2	0	1	2	1	1	0	1	0	0	12
CCHL	4	3	2	3	5	1	0	0	3	1	0	2	24
CCLL	0	1	1	3	0	0	1	0	4	0	0	0	10

MISCELLANEOUS SITE INSPECTIONS

SITE	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
P-090-02-PFD-01 SANDY RUN CREEK DIVERSION REGULATOR													
	7	6	6	7	5	14	5	7	7	7	8	7	86
T-088-01-CFD-01 PLYMOUTH ST. WEST OF PITTVILLE													
	3	3	2	3	2	4	5	3	4	3	4	3	39
T-088-01-CFD-02 PITTVILLE ST. SOUTH OF PLYMOUTH ST.													
	2	3	2	2	2	4	4	4	4	2	4	3	36
T-088-01-CFD-03 ELSTON ST. E. OF BOUVIER ST.													
	1	3	2	3	2	3	4	4	4	2	4	1	33
T-088-01-CFD-04 ASHLEY ST. W. OF BOUVIER ST.													
	1	2	1	1	2	4	5	2	3	2	1	1	25
T-088-01-CFD-05 CHELTENHAM AVE. E. OF 19TH ST.													
		1	1		2	3	3	2	1	2	1	1	17
T-088-01-CFD-06 VERBENA ST. S. OF CHELTENHAM AVE.													
			1	1	1	1		1	4	1	1	2	13
W-060-01-MFD-01 JANNETTE ST. WEST OF MONASTERY AVE.													
	6	5	5	6	5	13	5	7	7	7	7	6	79
W-060-01-MFD-02 GREEN LANE NORTH OF LAWNTON ST.													
	6	5	5	6	5	13	4	7	7	5	6	5	74
T-089-04-CFD-01 FRANKLIN & HASBROOK													
	6	6	5	7	4	15	5	8	8	7	8	7	86
T-088-01-CFD-07 CHELTENHAM E. OF 7 TH ST.													
	2	2	2	2	2	2	1	2	3	1	1	1	21
T-088-01-CFD-08 7 TH ST. S. OF CHELTENHAM													
	2	2	2	2	2	2	1	2	3	1		1	20
Totals	36	38	34	40	34	78	42	49	55	40	45	38	529

MISCELLANEOUS SITE DISCHARGES

SITE	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
P-090-02-PFD-01 SANDY RUN CREEK DIVERSION REGULATOR													
													0
T-088-01-CFD-01 PLYMOUTH ST. WEST OF PITTVILLE													
													0
T-088-01-CFD-02 PITTVILLE ST. SOUTH OF PLYMOUTH ST.													
													0
T-088-01-CFD-03 ELSTON ST. E. OF BOUVIER ST.													
													0
T-088-01-CFD-04 ASHLEY ST. W. OF BOUVIER ST.													
													0
T-088-01-CFD-05 CHELTENHAM AVE. E. OF 19TH ST.													
													0
T-088-01-CFD-06 VERBENA ST. S. OF CHELTENHAM AVE.													
													0
W-060-01-MFD-01 JANNETTE ST. WEST OF MONASTERY AVE.													
													0
W-060-01-MFD-02 GREEN LANE NORTH OF LAWNTON ST.													
													0
T-089-04-CFD-01 FRANKLIN & HASBROOK													
								1	1				2
T-088-01-CFD-07 CHELTENHAM E. OF 7 TH ST.													
													0
T-088-01-CFD-08 7 TH ST. S. OF CHELTENHAM													
													0
Totals	0	0	0	0	0	0	0	1	1	0	0	0	2

MISCELLANEOUS SITE BLOCKAGES CLEARED

SITE	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
P-090-02-PFD-01 SANDY RUN CREEK DIVERSION REGULATOR													
	2		1		2	2			1	1			9
T-088-01-CFD-01 PLYMOUTH ST. WEST OF PITTVILLE													
													0
T-088-01-CFD-02 PITTVILLE ST. SOUTH OF PLYMOUTH ST.													
	1						1					1	3
T-088-01-CFD-03 ELSTON ST. E. OF BOUVIER ST.													
													0
T-088-01-CFD-04 ASHLEY ST. W. OF BOUVIER ST.													
													0
T-088-01-CFD-05 CHELTENHAM AVE. E. OF 19TH ST.													
													0
T-088-01-CFD-06 VERBENA ST. S. OF CHELTENHAM AVE.													
													0
W-060-01-MFD-01 JANNETTE ST. WEST OF MONASTERY AVE.													
													0
W-060-01-MFD-02 GREEN LANE NORTH OF LAWNTON ST.													
													0
T-089-04-CFD-01 FRANKLIN & HASBROOK													
				2	1		1	1	1	3	1	2	12
T-088-01-CFD-07 CHELTENHAM E. OF 7 TH ST.													
	3	2	1	2	1	3	1			3		2	18
T-088-01-CFD-08 7 TH ST. S. OF CHELTENHAM													
						1	1			1			3
Totals	6	2	2	4	4	6	4	1	2	8	1	5	45

Annual Maintenance Fiscal Year End Report- July 2021 through June 2022

SOMERSET GRIT D-25 CHAMBER, D-45 CHAMBER, & DWO CLEANINGS

DATE	TONS	SITE
9/25/2021	6.13	D-25
11/20/2021	7.51	D-45
11/27/2021	7.79	D-45
12/4/2021	7.21	D-45

CSPS SIPHON GRIT POCKET CLEANINGS

DATE	CU. YARDS
GRIT REMOVAL WAS NOT DONE DUE TO EQUIPMENT AVAILABILITY	

CSO B&B REGULATOR MAINTENANCE

DATE	SITE	DATE	SITE
8/12/2021	D-70	2/5/2022	D-49
8/12/2021	D-72	2/5/2022	D-51
11/5/2021	S-50	2/5/2022	S-18
11/19/2021	S-50	2/5/2022	S-23
11/20/2021	S-50	2/5/2022	S-25
11/23/2021	S-50	2/26/2022	S-22
12/1/2021	S-50	2/26/2022	S-24
12/2/2021	S-04	2/26/2022	S-26
12/8/2021	S-50	3/5/2022	S-50
12/10/2021	S-50	3/9/2022	S-50
12/16/2021	S-50	3/22/2022	S-25
12/21/2021	S-50	3/30/2022	S-07
12/22/2021	S-50	5/4/2022	S-27
1/8/2022	D-04	6/2/2022	S-50
1/8/2022	D-18	6/10/2022	S-50
1/8/2022	F-14	6/11/2022	S-18
1/8/2022	S-05	6/11/2022	S-34
1/8/2022	S-06	6/11/2022	S-36A
1/8/2022	S-07	6/11/2022	S-38
1/15/2022	D-19	6/11/2022	S-50
1/15/2022	D-20	6/25/2022	D-63
1/15/2022	D-37	6/25/2022	S-42
1/15/2022	S-08	6/25/2022	S-43
1/15/2022	S-09	6/25/2022	S-47
1/15/2022	S-16		
1/22/2022	D-38		
1/22/2022	D-39		
1/22/2022	D-48		
1/22/2022	S-45		

CSO TIDE GATE MAINTENANCE

DATE	SITE	DATE	SITE	DATE	SITE
7/10/2021	D-9	11/15/2021	D-11	3/7/2022	D-5
7/12/2021	T-14	11/15/2021	D-9	3/7/2022	D-7
7/14/2021	F-25	11/15/2021	D-15	3/7/2022	D-11
7/14/2021	D-2	11/19/2021	Rock Run	3/10/2022	Fish Ladder
7/19/2021	D-7	11/19/2021	T-14	3/14/2022	S-50
7/22/2021	D-2	11/19/2021	D-7	3/15/2022	S-50
7/22/2021	D-7	11/20/2021	S-50	3/19/2022	D-9
7/22/2021	D-3	11/23/2021	S-50	3/21/2022	D-5
7/21/2021	D-11	12/1/2021	S-50	3/21/2022	D-9
7/23/2021	D-5	12/3/2021	D-2	4/11/2022	F-25
7/23/2021	D-9	12/3/2021	D-3	4/14/2022	F-25
7/26/2021	D-3	12/3/2021	D-7	4/14/2022	D-15
7/26/2021	D-2	12/9/2021	D-9	4/14/2022	D-2
7/28/2021	D-15	12/9/2021	D-5	4/14/2022	D-3
7/28/2021	D-3	12/13/2021	D-11	4/18/2022	D-7
7/28/2021	D-7	12/13/2021	D-15	4/22/2022	Rock Run
7/28/2021	Rock Run	12/13/2021	D-9	4/22/2022	D-9
7/29/2021	D-2	12/16/2021	F-25	4/25/2022	D-5
8/2/2021	D-11	12/23/2021	D-7	4/25/2022	D-11
8/5/2021	T-14	1/5/2022	S-50	4/28/2022	Venice
8/9/2021	D-3	1/6/2022	S-50	4/28/2022	T-14
8/9/2021	D-5	1/6/2022	F-25	4/29/2022	Fish Ladder
8/9/2021	F-25	1/25/2022	S-50	5/13/2022	D-2
8/13/2021	Rock Run	1/26/2022	S-50	5/13/2022	D-3
8/26/2021	D-11	1/27/2022	S-50	5/16/2022	Rock Run
8/26/2021	D-2	2/1/2022	S-50	5/16/2022	T-14
8/27/2021	D-7	2/2/2022	S-50	5/20/2022	F-25
8/27/2021	D-9	2/8/2022	Fish Ladder	5/20/2022	D-15
8/30/2021	D-15	2/10/2022	S-50	5/23/2022	Fish Ladder
10/15/2021	T-14	2/15/2022	S-50	5/25/2022	D-5
10/20/2021	D-7	2/16/2022	Fish Ladder	5/25/2022	D-7
10/20/2021	Rock Run	2/17/2022	Fish Ladder	5/26/2022	D-9
10/22/2021	D-9	2/18/2022	Fish Ladder	5/26/2022	D-11
10/22/2021	D-5	2/22/2022	D-2	6/2/2022	S-50
10/20/2021	D-7	2/22/2022	D-3	6/10/2022	S-50
10/20/2021	Rock Run	2/22/2022	D-7	6/9/2022	D-2
10/22/2021	D-9	2/24/2022	D-11	6/9/2022	D-7
10/22/2021	D-5	2/25/2022	Rock Run	6/9/2022	F-25
10/25/2021	D-11	2/25/2022	T-14	6/13/2022	D-5
10/25/2021	D-15	2/28/2022	D-15	6/13/2022	D-3
10/27/2021	D-2	2/28/2022	Fish Ladder	6/16/2022	D-11
10/27/2021	D-3	3/3/2022	D-15	6/22/2022	Rock Run
11/5/2021	S-50	3/4/2022	D-2	6/24/2022	D-9
11/12/2021	Rock Run	3/4/2022	D-3	6/24/2022	D-11
11/12/2021	T-14	3/4/2022	Rock Run	6/27/2022	Fish Ladder
		3/4/2022	T-14	6/29/2022	T-14

COMPUTER CONTROL CHAMBER PREVENTATIVE MAINTENANCE

DATE	SITE	DATE	SITE	DATE	SITE
7/10/2021	D-9	11/22/2021	State Road	3/7/2022	D-5
7/12/2021	T-14	12/2/2021	Rock Run	3/10/2022	Fish Ladder
7/14/2021	F-25	12/2/2021	T-14	3/14/2022	State Road
7/21/2021	D-11	12/3/2021	D-2	3/17/2022	Venice
7/23/2021	D-5	12/3/2021	D-3	3/19/2022	D-9
7/23/2021	D-9	12/3/2021	D-7	3/21/2022	D-5
7/28/2021	D-15	12/6/2021	State Road	3/21/2022	D-9
7/28/2021	D-3	12/9/2021	D-9	4/7/2022	State Road
7/28/2021	D-7	12/9/2021	D-5	4/14/2022	F-25
7/28/2021	Rock Run	12/13/2021	D-11	4/14/2022	D-15
7/28/2021	Venice	12/13/2021	D-15	4/14/2022	D-2
7/29/2021	D-2	12/16/2021	F-25	4/14/2022	D-3
7/29/2021	State Road	12/20/2021	Venice	4/18/2022	D-7
7/30/2021	Fish Ladder	1/6/2022	F-25	4/22/2022	Rock Run
8/5/2021	T-14	1/10/2022	D-5	4/22/2022	D-9
8/9/2021	D-3	1/12/2022	D-7	4/25/2022	D-5
8/9/2021	D-5	1/13/2022	D-2	4/25/2022	D-11
8/9/2021	F-25	1/14/2022	D-3	4/28/2022	Venice
8/12/2021	Venice	1/12/2022	Venice	4/28/2022	T-14
8/13/2021	Rock Run	1/19/2022	Rock Run	4/29/2022	Fish Ladder
8/26/2021	D-11	1/19/2022	D-15	5/13/2022	D-2
8/26/2021	D-2	1/20/2022	D-11	5/13/2022	D-3
8/27/2021	D-7	1/20/2022	D-9	5/16/2022	Rock Run
8/27/2021	D-9	1/21/2022	T-14	5/16/2022	T-14
8/27/2021	State Road	1/22/2022	State Road	5/20/2022	F-25
8/30/2021	D-15	2/22/2022	D-2	5/20/2022	D-15
8/31/2021	Fish Ladder	2/22/2022	D-3	5/23/2022	Fish Ladder
10/15/2021	T-14	2/22/2022	D-7	5/25/2022	D-5
10/20/2021	D-7	2/24/2022	D-9	5/25/2022	D-7
10/20/2021	Rock Run	2/24/2022	D-11	5/25/2022	State Road
10/22/2021	D-9	2/25/2022	Rock Run	5/26/2022	D-9
10/22/2021	D-5	2/25/2022	T-14	5/26/2022	D-11
10/23/2021	Venice	2/28/2022	State Road	5/26/2022	Venice
10/25/2021	State Road	2/28/2022	Venice	6/9/2022	D-2
10/25/2021	D-11	2/28/2022	D-15	6/9/2022	D-7
10/25/2021	D-15	2/28/2022	Fish Ladder	6/9/2022	F-25
10/27/2021	D-2	3/2/2022	F-25	6/13/2022	D-5
10/27/2021	D-3	3/3/2022	F-25	6/13/2022	D-3
10/28/2021	Fish Ladder	3/3/2022	D-15	6/16/2022	D-11
11/15/2021	D-11	3/4/2022	D-2	6/22/2022	Rock Run
11/15/2021	D-9	3/4/2022	D-3	6/24/2022	D-9
11/15/2021	D-15	3/4/2022	Rock Run	6/24/2022	D-11
11/19/2021	Venice	3/4/2022	T-14	6/27/2022	State Road
11/19/2021	Rock Run	3/7/2022	D-5	6/27/2022	Fish Ladder
11/19/2021	T-14	3/7/2022	D-7	6/27/2022	Venice
11/19/2021	D-7	3/7/2022	D-9	6/29/2022	T-14

CSO OUTFALL - DEBRIS GRILL MAINTENANCE

DATE	SITE	DATE	SITE
7/2/2021	S-46	2/24/2022	D-11
7/14/2021	F-25	2/24/2022	Rock Run
7/21/2021	D-11	2/24/2022	T-14
7/23/2021	D-9	2/25/2022	Rock Run
7/23/2021	D-5	2/25/2022	T-14
7/28/2021	D-15	2/28/2022	D-15
7/28/2021	D-3	3/2/2022	F-25
7/28/2021	D-7	3/3/2022	F-25
7/28/2021	Rock Run	3/3/2022	D-15
7/29/2021	D-2	3/4/2022	D-2
8/5/2021	T-14	3/4/2022	D-3
8/9/2021	D-3	3/4/2022	Rock Run
8/9/2021	D-5	3/4/2022	T-14
8/9/2021	F-25	3/7/2022	D-5
8/26/2021	D-11	3/7/2022	D-7
8/26/2021	D-5	3/7/2022	D-9
8/27/2021	D-11	3/7/2022	D-11
8/27/2021	D-9	3/23/2022	C-4
8/30/2021	D-15	3/23/2022	D-2
10/25/2021	D-11	3/23/2022	D-3
10/25/2021	D-15	3/23/2022	D-5
10/27/2021	D-2	3/23/2022	D-7
10/27/2021	D-3	3/23/2022	D-9
11/5/2021	T-14	3/23/2022	D-11
11/5/2021	D-2	3/23/2022	F-25
11/5/2021	D-3	3/23/2022	D-15
11/5/2021	D-5	4/14/2022	F-25
11/5/2021	D-11	4/14/2022	D-15
11/12/2021	Rock Run	4/14/2022	D-2
11/12/2021	T-14	4/14/2022	D-3
11/15/2021	D-11	4/18/2022	D-7
11/15/2021	D-9	4/22/2022	Rock Run
11/15/2021	D-15	4/22/2022	D-9
11/19/2021	Rock Run	4/25/2022	D-5
11/19/2021	D-7	4/28/2022	Venice
12/3/2021	D-2	4/28/2022	T-14
12/3/2021	D-3	4/29/2022	Fish Ladder
12/3/2021	D-7	5/13/2022	D-2
12/9/2021	D-9	5/13/2022	D-3
12/9/2021	D-5	5/16/2022	Rock Run
12/13/2021	D-11	5/16/2022	T-14
12/13/2021	D-15	5/20/2022	F-25
12/16/2021	F-25	5/20/2022	D-15
1/6/2022	F-25	5/21/2022	D-15
1/10/2022	D-5	5/25/2022	D-5
1/12/2022	D-7	5/25/2022	D-7
1/13/2022	D-2	5/26/2022	D-9

Appendix D – NPDES Annual CSO Report Status FY22

APPENDIX D –
NPDES ANNUAL CSO STATUS REPORT FY 2022

Page

Table 1 - Listing of all CSO permitted outfalls

Point Source #	Outfall Latitude	Outfall Longitude	Regulator Location	Discharges to:	Interceptor	Outfall Name
NPDES Permit #0026689 - Northeast						
2	39d 58m 50s	75d 4m 58s	Castor Ave. and Balfour St.	Delaware River	Somerset	D_17
3	39d 58m 45s	75d 5m 6s	Venango St. NW of Casper St.	Delaware River	Somerset	D_18
4	39d 58m 41s	75d 5m 15s	Tioga St. NW of Casper St.	Delaware River	Somerset	D_19
5	39d 58m 43s	75d 5m 28s	Ontario St. NW of Casper St.	Delaware River	Somerset	D_20
6	39d 58m 44s	75d 5m 41s	Westmoreland St. NW of Balfour St.	Delaware River	Somerset	D_21
7	39d 58m 42s	75d 5m 53s	Allegheny Ave. SE of Bath St.	Delaware River	Somerset	D_22
8	39d 58m 38s	75d 6m 12s	Indiana Ave. SE of Allen St.	Delaware River	Somerset	D_23
10	39d 58m 38s	75d 6m 28s	Cambria St. E of Melvale St.	Delaware River	Somerset	D_25
11	40d 1m 18s	75d 1m 44s	Cottman St. SE of Milnor St.	Delaware River	Upper Delaware Low Level	D_02
12	40d 1m 14s	75d 2m 0s	Princeton Ave SE of Milnor St.	Delaware River	Upper Delaware Low Level	D_03
13	40d 1m 8s	75d 2m 13s	Disston St. SE of Wissinoming St.	Delaware River	Upper Delaware Low Level	D_04
14	40d 0m 58s	75d 2m 34s	Magee St. SE of Milnor St.	Delaware River	Upper Delaware Low Level	D_05
15	40d 0m 53s	75d 2m 46s	Levick St. SE of Milnor St.	Delaware River	Upper Delaware Low Level	D_06
16	40d 0m 44s	75d 3m 5s	Lardner St. SE of Milnor St.	Delaware River	Upper Delaware Low Level	D_07
17	40d 0m 38s	75d 3m 13s	Comly St. SE of Milnor St.	Delaware River	Upper Delaware Low Level	D_08
18	40d 0m 34s	75d 3m 18s	Dark Run La and Milnor St.	Delaware River	Upper Delaware Low Level	D_09
19	40d 0m 21s	75d 3m 28s	Sanger St. SE of Milnor St.	Delaware River	Upper Delaware Low Level	D_11
20	40d 0m 2s	75d 3m 43s	Bridge St. Se of Garden St.	Delaware River	Upper Delaware Low Level	D_12

Point Source #	Outfall Latitude	Outfall Longitude	Regulator Location	Discharges to:	Interceptor	Outfall Name
21	39d 59m 53s	75d 3m 47s	Kirkbride St. and Delaware Ave.	Delaware River	Upper Delaware Low Level	D_13
22	39d 59m 24s	75d 4m 4s	Orthodox St. and Delaware Ave.	Delaware River	Upper Delaware Low Level	D_15
23	40d 2m 36s	75d 1m 15s	Frankford Avenue & Ashburner Street	Pennypack Creek	Pennypack	P_01
24	40d 2m 36s	75d 1m 16s	Frankford Avenue & Holmesburg St.	Pennypack Creek	Pennypack	P_02
25	40d 2m 13s	75d 1m 19s	Torresdale Ave. NW of Pennypack Ck.	Pennypack Creek	Pennypack	P_03
26	40d 2m 23s	75d 1m 21s	Cottage Avenue & Holmesburg Avenue	Pennypack Creek	Pennypack	P_04
27	40d 2m 2s	75d 1m 21s	Holmesburg Ave SE of Hegerman St	Pennypack Creek	Pennypack	P_05
28	40d 4m 34s	75d 9m 44s	Williams Avenue SE of Sedgewick	Tacony Creek	Frankford High Level	T_01
29	40d 2m 28s	75d 6m 56s	Complost Ave West of Tacony Creek	Tacony Creek	Frankford High Level	T_03
30	40d 2m 11s	75d 6m 48s	Rising Sun Ave East of Tacony Creek	Tacony Creek	Frankford High Level	T_04
31	40d 2m 9s	75d 6m 48s	Rising Sun Ave West of Tacony Creek	Tacony Creek	Frankford High Level	T_05
32	40d 2m 3s	75d 6m 41s	Bingham Street East of Tacony Creek	Tacony Creek	Frankford High Level	T_06
33	40d 1m 51s	75d 6m 43s	Tabor Road West of Tacony Creek	Tacony Creek	Frankford High Level	T_07
34	40d 1m 42s	75d 6m 47s	Ashdale Street West of Tacony Creek	Tacony Creek	Frankford High Level	T_08
35	40d 1m 37s	75d 6m 48s	Roosevelt Blvd. West of Tacony Creek	Tacony Creek	Frankford High Level	T_09
36	40d 1m 37s	75d 6m 47s	Roosevelt Blvd. East of Tacony Creek	Tacony Creek	Frankford High Level	T_10
37	40d 1m 29s	75d 6m 43s	Ruscomb Street East of Tacony Creek	Tacony Creek	Frankford High Level	T_11

Point Source #	Outfall Latitude	Outfall Longitude	Regulator Location	Discharges to:	Interceptor	Outfall Name
38	40d 1m 23s	75d 6m 41s	Whitaker Avenue East of Tacony Creek	Tacony Creek	Frankford High Level	T_12
39	40d 1m 22s	75d 6m 42s	Whitaker Avenue West of Tacony Ck	Tacony Creek	Frankford High Level	T_13
40	40d 0m 59s	75d 6m 28s	I Street & Ramona Ave.	Tacony Creek	Frankford High Level	T_14
41	40d 0m 57s	75d 6m 20s	J Street & Juniata Park	Tacony Creek	Frankford High Level	T_15
42	40d 0m 57s	75d 5m 51s	Castor Avenue at Unity Street Circle	Frankford Creek	Upper Frankford Low Level	F_03
43	40d 0m 52s	75d 5m 42s	Wingohocking St East of Adams Ave	Frankford Creek	Upper Frankford Low Level	F_04
44	40d 0m 41s	75d 5m 41s	Bristol Street West of Adams Avenue	Frankford Creek	Upper Frankford Low Level	F_05
45	40d 0m 25s	75d 5m 33s	Worrel Street East of Frankford Creek	Frankford Creek	Upper Frankford Low Level	F_06
46	40d 0m 26s	75d 5m 34s	Worrel Street West of Frankford Creek	Frankford Creek	Upper Frankford Low Level	F_07
47	40d 0m 21s	75d 5m 36s	Torresdale Ave & Hunting Park Ave	Frankford Creek	Upper Frankford Low Level	F_08
48	40d 0m 19s	75d 5m 34s	Frankford Ave North of Frankford Ck	Frankford Creek	Upper Frankford Low Level	F_09
49	40d 0m 19s	75d 5m 35s	Frankford Ave South of Frankford Ck	Frankford Creek	Upper Frankford Low Level	F_10
50	40d 0m 15s	75d 5m 26s	Orchard Street South of Vandyke Creek	Frankford Creek	Upper Frankford Low Level	F_11
51	39d 59m 56s	75d 5m 14s	Sepviva Street North of Butler Street	Frankford Creek	Upper Frankford Low Level	F_12
52	39d 59m 49s	75d 5m 3s	Duncan Street Under Delaware Exp.	Frankford Creek	Lower Frankford Low Level	F_13
54	40d 0m 16s	75d 4m 15s	Wakeling Street NW of Creek Basin	Frankford Creek	Lower Frankford Low Level	F_21
55	40d 0m 19s	75d 4m 5s	Bridge Street NW of Creek Basin	Frankford Creek	Lower Frankford Low Level	F_23

Point Source #	Outfall Latitude	Outfall Longitude	Regulator Location	Discharges to:	Interceptor	Outfall Name
56	40d 0m 18s	75d 4m 5s	Bridge Street SE of Creek Basin	Frankford Creek	Lower Frankford Low Level	F_24
57	40d 0m 15s	75d 4m 15s	Ash Street West of Creek Basin	Frankford Creek	Lower Frankford Low Level	F_25
58	40d 0m 30s	75d 3m 20s	Levick St. & Everett Ave.	Delaware River	Wakling Relief Sewer	D_FRW
59	40d 2m 16s	75d 6m 53s	Nedro Ave & 7th St.	Tacony Creek	Rock Run Flood Relief Sewer	T_FRRR
60	40d 0m 36s	75d 5m 44s	Castor Ave. & East Hunting Park Ave.	Frankford Creek	Frankford High Level Relief Sewer	F_FRFG
NPDES Permit # 0026662 – Southeast						
2	39d 58m 9s	75d 7m 19s	Dyott Street & Delaware Ave.	Delaware River	Lower Delaware Low Level	D_38
3	39d 58m 7s	75d 7m 23s	Susquehanna Ave. East of Beach Street	Delaware River	Lower Delaware Low Level	D_39
4	39d 58m 5s	75d 7m 26s	Berks Street East of Beach Street	Delaware River	Lower Delaware Low Level	D_40
5	39d 58m 3s	75d 7m 37s	Palmer Street East of Beach Street	Delaware River	Lower Delaware Low Level	D_41
6	39d 57m 54s	75d 7m 42s	Columbia Avenue East of Beach Street	Delaware River	Lower Delaware Low Level	D_42
7	39d 57m 56s	75d 7m 48s	Marlborough Street & Delaware Ave	Delaware River	Lower Delaware Low Level	D_43
8	39d 57m 53s	75d 7m 54s	Shackamaxon St East of Delaware Ave	Delaware River	Lower Delaware Low Level	D_44
9	39d 57m 48s	75d 8m 0s	Laurel Street & Delaware Avenue	Delaware River	Lower Delaware Low Level	D_45
10	39d 57m 41s	75d 8m 11s	Penn Street & Delaware Avenue	Delaware River	Lower Delaware Low Level	D_46
11	39d 57m 37s	75d 8m 9s	Fairmont Ave West of Delaware Ave	Delaware River	Lower Delaware Low Level	D_47
12	39d 57m 28s	75d 8m 13s	Willow Street West of Delaware Ave	Delaware River	Lower Delaware Low Level	D_48

Point Source #	Outfall Latitude	Outfall Longitude	Regulator Location	Discharges to:	Interceptor	Outfall Name
13	39d 57m 24s	75d 8m 20s	Callowhill Street & Delaware Avenue	Delaware River	Lower Delaware Low Level	D_49
14	39d 57m 21s	75d 8m 13s	Delaware Avenue North of Vine Street	Delaware River	Lower Delaware Low Level	D_50
15	39d 57m 11s	75d 8m 17s	Race Street West of Delaware Avenue	Delaware River	Lower Delaware Low Level	D_51
16	39d 57m 7s	75d 8m 25s	Delaware Avenue & Arch Street	Delaware River	Lower Delaware Low Level	D_52
17	39d 56m 57s	75d 8m 23s	Market Street & Front Street	Delaware River	Lower Delaware Low Level	D_53
20	39d 56m 50s	75d 8m 24s	Front Street South of Chestnut Street	Delaware River	Lower Delaware Low Level	D_54
21	39d 56m 26s	75d 8m 32s	South Street & Delaware Avenue	Delaware River	Lower Delaware Low Level	D_58
22	39d 56m 12s	75d 8m 33s	Catharine Street East of Swanson Street	Delaware River	Lower Delaware Low Level	D_61
23	39d 56m 10s	75d 8m 32s	Queen Street East of Swanson Street	Delaware River	Lower Delaware Low Level	D_62
24	39d 56m 5s	75d 8m 33s	Christian St West of Delaware Avenue	Delaware River	Lower Delaware Low Level	D_63
25	39d 55m 59s	75d 8m 35s	Washington Ave East of Delaware Ave	Delaware River	Lower Delaware Low Level	D_64
26	39d 55m 45s	75d 8m 29s	Reed Street East of Delaware Avenue	Delaware River	Lower Delaware Low Level	D_65
27	39d 55m 37s	75d 8m 28s	Tasker Street East of Delaware Avenue	Delaware River	Lower Delaware Low Level	D_66
28	39d 55m 26s	75d 8m 21s	Moore Street East of Delaware Avenue	Delaware River	Lower Delaware Low Level	D_67
33	39d 54m 6s	75d 8m 12s	Pattison Avenue & Swanson Street	Delaware River	Lower Delaware Low Level	D_73
36	39d 58m 21s	75d 6m 58s	Cumberland St East of Richmond St	Delaware River	Lower Delaware Low Level	D_37

Point Source #	Outfall Latitude	Outfall Longitude	Regulator Location	Discharges to:	Interceptor	Outfall Name
37	39d 57m 12s	75d 8m 24s	Race Street West of Delaware Avenue, North of D-51	Delaware River	Lower Delaware Low Level	D_51A
29	39d 55m 13s	75d 8m 20s	Snyder Avenue & Delaware Avenue	Delaware River	Oregon	D_68
30	39d 54m 60s	75d 8m 13s	Delaware Ave North of Porter Street	Delaware River	Oregon	D_69
31	39d 54m 44s	75d 8m 15s	Oregon Avenue & Delaware Avenue	Delaware River	Oregon	D_70
32	39d 54m 33s	75d 7m 59s	Bigler Street & Delaware Avenue	Delaware River	Oregon	D_71
34	39d 54m 24s	75d 8m 8s	Packer Avenue East of Delaware Ave	Delaware River	Oregon	D_72
NPDES Permit # 0026671 - Southwest						
2	39d 56m 17s	75d 12m 17s	Reed Street & Schuylkill Avenue	Schuylkill River	Lower Schuylkill East Side	S_31
3	39d 55m 54s	75d 12m 28s	35th St. and Mifflin St.	Schuylkill River	Lower Schuylkill East Side	S_36A
4	39d 55m 41s	75d 12m 38s	Vare Avenue & 29th Street	Schuylkill River	Lower Schuylkill East Side	S_37
5	39d 55m 12s	75d 12m 5s	Passyunk Avenue & 29th Street	Schuylkill River	Lower Schuylkill East Side	S_42
6	39d 55m 12s	75d 12m 5s	Passyunk Avenue & 28th Street	Schuylkill River	Lower Schuylkill East Side	S_42A
7	39d 54m 57s	75d 12m 16s	26th Street 700′ North of Hartranft St	Schuylkill River	Lower Schuylkill East Side	S_44
8	39d 53m 53s	75d 12m 39s	Penrose Avenue & 26th Street	Schuylkill River	Lower Schuylkill East Side	S_46
9	39d 57m 38s	75d 10m 50s	24th Street 155′ South of Parktown Pl	Schuylkill River	Central Schuylkill East Side	S_05
10	39d 57m 39s	75d 10m 49s	24th Street 350′ South of Parktown Pl	Schuylkill River	Central Schuylkill East Side	S_06
11	39d 57m 39s	75d 10m 50s	24th Street East of Schuylkill River	Schuylkill River	Central Schuylkill East Side	S_07

Point Source #	Outfall Latitude	Outfall Longitude	Regulator Location	Discharges to:	Interceptor	Outfall Name
12	39d 57m 29s	75d 10m 43s	Race Street & Bonsall Street	Schuylkill River	Central Schuylkill East Side	S_08
13	39d 57m 30s	75d 10m 45s	Arch Street West of 23rd Street	Schuylkill River	Central Schuylkill East Side	S_09
14	39d 57m 16s	75d 10m 49s	Market Street 25' East of 24th Street	Schuylkill River	Central Schuylkill East Side	S_10
15	39d 57m 11s	75d 10m 51s	24th St. N of Chestnut St. Bridge	Schuylkill River	Central Schuylkill East Side	S_12A
16	39d 57m 7s	75d 10m 52s	Sansom Street West of 24th Street	Schuylkill River	Central Schuylkill East Side	S_13
17	39d 57m 5s	75d 10m 53s	Walnut Street West of 24th Street	Schuylkill River	Central Schuylkill East Side	S_15
18	39d 57m 1s	75d 10m 56s	Locust Street & 25th Street	Schuylkill River	Central Schuylkill East Side	S_16
19	39d 56m 57s	75d 11m 0s	Spruce Street & 25th Street	Schuylkill River	Central Schuylkill East Side	S_17
20	39d 56m 52s	75d 11m 5s	Pine Street West of Taney Street	Schuylkill River	Central Schuylkill East Side	S_18
21	39d 56m 49s	75d 11m 9s	Lombard Street West of 27th Street	Schuylkill River	Central Schuylkill East Side	S_19
22	39d 56m 47s	75d 11m 12s	South Street East of 27th Street	Schuylkill River	Central Schuylkill East Side	S_21
23	39d 56m 44s	75d 11m 18s	Schuylkill Avenue & Bainbridge Street	Schuylkill River	Central Schuylkill East Side	S_23
24	39d 56m 34s	75d 11m 28s	Schuylkill Avenue & Christian Street	Schuylkill River	Central Schuylkill East Side	S_25
25	39d 56m 29s	75d 11m 35s	Ellsworth St West of Schuylkill Avenue	Schuylkill River	Central Schuylkill East Side	S_26
26	39d 58m 1s	75d 11m 17s	Mantua Avenue & West River Drive	Schuylkill River	Central Schuylkill West Side	S_01
27	39d 57m 54s	75d 11m 7s	Haverford Avenue & West River Drive	Schuylkill River	Central Schuylkill West Side	S_02

Point Source #	Outfall Latitude	Outfall Longitude	Regulator Location	Discharges to:	Interceptor	Outfall Name
28	39d 57m 51s	75d 11m 4s	Spring Garden St W of Schuylkill Expy	Schuylkill River	Central Schuylkill West Side	S_03
29	39d 57m 53s	75d 11m 4s	Powelton Ave W of Schuylkill Expy	Schuylkill River	Central Schuylkill West Side	S_04
30	39d 57m 16s	75d 10m 53s	Market St West of Schuylkill Expy	Schuylkill River	Central Schuylkill West Side	S_11
31	39d 57m 5s	75d 10m 58s	Schuylkill Expressway & Walnut Street	Schuylkill River	Central Schuylkill West Side	S_14
32	39d 56m 51s	75d 11m 14s	440′ Northwest of South Street	Schuylkill River	Central Schuylkill West Side	S_20
33	39d 56m 46s	75d 11m 22s	660′ South of South St E of Pennfield	Schuylkill River	Central Schuylkill West Side	S_22
34	39d 56m 43s	75d 11m 26s	1060′ South of South St E of Pennfield	Schuylkill River	Central Schuylkill West Side	S_24
35	39d 56m 32s	75d 12m 27s	46th Street & Paschall Avenue	Schuylkill River	Southwest Main Gravity	S_30
36	39d 56m 36s	75d 12m 18s	43rd St. and Locust St.	Schuylkill River	Southwest Main Gravity	S_50
37	39d 56m 13s	75d 12m 23s	49th Street South of Botanic Street	Schuylkill River	Lower Schuylkill West Side	S_32
38	39d 56m 8s	75d 12m 24s	51st Street South of Botanic Street	Schuylkill River	Lower Schuylkill West Side	S_33
39	39d 55m 43s	75d 12m 45s	56th Street East of P&R Railroad	Schuylkill River	Lower Schuylkill West Side	S_38
40	39d 54m 39s	75d 12m 55s	64th St. and Buist Ave.	Schuylkill River	Lower Schuylkill West Side	S_45
41	39d 56m 10s	75d 14m 6s	60th Street & Cobbs Creek Parkway	Cobbs Creek	Cobbs Creek High Level	C_18
51	39d 58m 51s	75d 16m 4s	City Line Avenue & 73rd Street	Cobbs Creek	Cobbs Creek High Level	C_01
52	39d 58m 51s	75d 16m 1s	City Line Ave 100′ South Side of Creek	Cobbs Creek	Cobbs Creek High Level	C_02
54	39d 58m 30s	75d 15m 26s	Lebanon Ave Southwest of 73rd Street	Cobbs Creek	Cobbs Creek High Level	C_05

Point Source #	Outfall Latitude	Outfall Longitude	Regulator Location	Discharges to:	Interceptor	Outfall Name
55	39d 58m 31s	75d 15m 25s	Lebanon Avenue & 68th Street	Cobbs Creek	Cobbs Creek High Level	C_06
56	39d 58m 26s	75d 15m 26s	Lansdowne Avenue & 69th Street	Cobbs Creek	Cobbs Creek High Level	C_07
57	39d 57m 51s	75d 14m 56s	54th Street & Cobbs Creek	Cobbs Creek	Cobbs Creek High Level	C_09
58	39d 57m 50s	75d 14m 53s	Gross Street & Cobbs Creek	Cobbs Creek	Cobbs Creek High Level	C_10
59	39d 57m 43s	75d 14m 53s	Cobbs Creek Pky South of Market St	Cobbs Creek	Cobbs Creek High Level	C_11
60	39d 57m 27s	75d 14m 60s	Spruce Street & Cobbs Creek	Cobbs Creek	Cobbs Creek High Level	C_12
61	39d 56m 45s	75d 14m 58s	62nd Street & Cobbs Creek	Cobbs Creek	Cobbs Creek High Level	C_13
62	39d 56m 36s	75d 14m 50s	Baltimore Avenue & Cobbs Creek	Cobbs Creek	Cobbs Creek High Level	C_14
63	39d 56m 31s	75d 14m 26s	59th Street & Cobbs Creek Parkway	Cobbs Creek	Cobbs Creek High Level	C_15
64	39d 56m 26s	75d 14m 23s	Thomas Avenue & Cobbs Creek	Cobbs Creek	Cobbs Creek High Level	C_16
65	39d 56m 13s	75d 14m 6s	Beaumont Street & Cobbs Creek	Cobbs Creek	Cobbs Creek High Level	C_17
66	39d 58m 29s	75d 16m 48s	Cobbs Creek Pky S of City Line Ave	Cobbs Creek	Cobbs Creek High Level	C_31
67	39d 58m 12s	75d 15m 56s	Brockton Road & Farrington Road	Cobbs Creek	Cobbs Creek High Level	C_33
68	39d 58m 40s	75d 15m 44s	Woodcrest Avenue & Morris Park	Cobbs Creek	Cobbs Creek High Level	C_34
69	39d 58m 47s	75d 15m 54s	Morris Park West of 72nd Street & Sherwood Road	Cobbs Creek	Cobbs Creek High Level	C_35
70	39d 58m 49s	75d 15m 35s	Woodbine Ave South of Brentwood Rd	Cobbs Creek	Cobbs Creek High Level	C_36

Point Source #	Outfall Latitude	Outfall Longitude	Regulator Location	Discharges to:	Interceptor	Outfall Name
71	39d 57m 55s	75d 15m 15s	Cobbs Creek Parkway South of 67th & Callowhill Streets	Cobbs Creek	Cobbs Creek High Level	C_37
72	39d 58m 22s	75d 16m 11s	Cobbs Creek Parkway & 77th Street	Cobbs Creek	Cobbs Creek High Level	C_32
82	39d 58m 38s	75d 15m 28s	Malvern Ave. and 68th St.	Cobbs Creek	Cobbs Creek High Level	C_04A
42	39d 55m 57s	75d 14m 19s	Mount Moriah Cemetary & 62nd Street	Cobbs Creek	Cobbs Creek Low Level	C_19
43	39d 55m 46s	75d 14m 39s	65th Street & Cobbs Creek Parkway	Cobbs Creek	Cobbs Creek Low Level	C_20
44	39d 55m 37s	75d 14m 40s	68th Street & Cobbs Creek Parkway	Cobbs Creek	Cobbs Creek Low Level	C_21
45	39d 55m 27s	75d 14m 46s	70th Street & Cobbs Creek Parkway	Cobbs Creek	Cobbs Creek Low Level	C_22
46	39d 55m 15s	75d 14m 52s	Upland Street & Cobbs Creek Parkway	Cobbs Creek	Cobbs Creek Low Level	C_23
47	39d 55m 1s	75d 14m 49s	Woodland Avenue East of Island Ave.	Cobbs Creek	Cobbs Creek Low Level	C_25
49	39d 54m 44s	75d 14m 56s	Claymont Street & Grays Avenue	Cobbs Creek	Cobbs Creek Low Level	C_29
50	39d 54m 34s	75d 15m 1s	77th Street West of Elmwood Avenue	Cobbs Creek	Cobbs Creek Low Level	C_30
78	39d 54m 49s	75d 14m 50s	Island Ave. Southeast of Glenmore Ave	Cobbs Creek	Cobbs Creek Low Level	C_28A
75	39d 57m 59s	75d 11m 3s	16th St. & Clearfield St.	Schuylkill River	Main Relief Sewer	S_FRM
83	39d 56m 31s	75d 14m 25s	56th St. & Locust	Cobbs Creek	Thomas Run Relief Sewer	C_FRTR
84	39d 57m 49s	75d 14m 53s	Arch Street & Cobbs Creek	Cobbs Creek	Arch Street Relief Sewer	C_FRA

Table 2 - Overflow Summary for 7/1/2021 – 6/30/2022

District	Permitted Outfall	Frequency	Duration (hours)	Volume (ft^3)
Northeast	D_FRW	51	145.25	40,946,994
Northeast	D02	25	59.75	12,443,323
Northeast	D03	28	56.5	3,479,043
Northeast	D04	21	34	742,725
Northeast	D05	46	175.5	78,893,819
Northeast	D06	22	22.5	1,013,312
Northeast	D07	54	165.5	37,167,692
Northeast	D08	22	22.5	521,056
Northeast	D09	13	10.75	501,023
Northeast	D11	21	40.5	6,512,591
Northeast	D12	50	96	561,336
Northeast	D13	21	27.25	1,265,346
Northeast	D15	22	43.75	2,930,908
Northeast	D17	46	157.5	15,620,530
Northeast	D18	41	111	8,234,126
Northeast	D19	46	173.25	8,111,829
Northeast	D20	32	66.5	4,632,207
Northeast	D21	42	139.25	11,770,223
Northeast	D22	77	355.5	34,198,320
Northeast	D23	45	68	526,106
Northeast	D25	61	276.25	102,376,647
Northeast	F_FRFG	0	0	0
Northeast	F03	35	53.5	2,967,039
Northeast	F04	63	169.25	8,765,343
Northeast	F05	68	157	1,339,774
Northeast	F06	21	29.25	1,525,560
Northeast	F07	45	88.5	3,649,681
Northeast	F08	42	81.25	2,765,912
Northeast	F09	69	200.25	1,711,386
Northeast	F10	26	53.5	2,633,749
Northeast	F11	69	283.5	17,627,069
Northeast	F12	33	46.75	954,880
Northeast	F13	53	120.5	2,486,912
Northeast	F21	78	381.5	127,530,787
Northeast	F23	52	133.5	2,750,631

District	Permitted Outfall	Frequency	Duration (hours)	Volume (ft^3)
Northeast	F24	50	104	1,326,805
Northeast	F25	15	25.25	5,536,962
Northeast	P01	25	28	1,278,855
Northeast	P02	53	129.25	5,096,158
Northeast	P03	32	57.75	1,058,572
Northeast	P04	15	45.25	3,070,019
Northeast	P05	37	107	8,670,645
Northeast	T_FRRR	33	177.5	44,135,058
Northeast	T01	67	308.5	11,375,065
Northeast	T03	50	135.25	3,777,520
Northeast	T04	56	158.75	3,235,262
Northeast	T05	48	75.25	1,527,649
Northeast	T06	38	81	9,428,948
Northeast	T07	10	9	213,828
Northeast	T08	57	178.25	42,182,292
Northeast	T09	36	48	1,013,876
Northeast	T10	59	200	3,797,874
Northeast	T11	41	92.25	1,146,453
Northeast	T12	10	8.5	52,588
Northeast	T13	40	123.25	4,406,357
Northeast	T14	32	150.75	219,346,992
Northeast	T15	50	133.25	9,126,646
Southeast	D37	45	196	18,661,474
Southeast	D38	40	131	19,359,426
Southeast	D39	45	171	31,195,006
Southeast	D40	53	181	1,680,505
Southeast	D41	42	114.5	1,841,606
Southeast	D42	12	12.75	124,334
Southeast	D43	12	16.25	146,952
Southeast	D44	21	48.75	3,931,934
Southeast	D45	35	105	57,681,925
Southeast	D46	20	40	788,011
Southeast	D47	57	172.75	7,237,498
Southeast	D48	32	75	12,138,210
Southeast	D49	7	5.25	37,693
Southeast	D50	10	10	119,418
Southeast	D51	46	122	1,198,411

District	Permitted Outfall	Frequency	Duration (hours)	Volume (ft^3)
Southeast	D51A	42	98.75	1,197,016
Southeast	D52	28	33.5	448,734
Southeast	D53	12	15.25	2,236,174
Southeast	D54	21	35.5	11,748,135
Southeast	D58	21	31.5	1,201,967
Southeast	D61	40	65.75	965,081
Southeast	D62	28	34.75	362,530
Southeast	D63	31	50.5	12,285,247
Southeast	D64	38	65.75	622,313
Southeast	D65	38	79	13,966,552
Southeast	D66	50	148	16,063,881
Southeast	D67	36	140.5	7,448,568
Southeast	D68	38	143.5	29,733,579
Southeast	D69	27	62	10,210,544
Southeast	D70	21	45.75	14,097,328
Southeast	D71	25	49.75	7,829,895
Southeast	D72	16	34.25	6,738,431
Southeast	D73	55	194.75	35,383,427
Southwest	C_FRA	12	12.5	1,605,538
Southwest	C_FRTR	86	423.25	23,266,409
Southwest	C01	20	21.75	405,043
Southwest	C02	4	2	4,677
Southwest	C04A	24	31.75	831,354
Southwest	C05	5	4.25	62,295
Southwest	C06	54	104	3,604,537
Southwest	C07	31	35	745,071
Southwest	C09	39	75.75	1,815,287
Southwest	C10	32	79.25	538,004
Southwest	C11	46	126.5	14,601,869
Southwest	C12	37	106.75	1,777,087
Southwest	C13	31	67.75	1,101,685
Southwest	C14	30	75.25	2,232,992
Southwest	C15	9	6.5	64,423
Southwest	C16	2	1	4357.569335
Southwest	C17	48	140	21,465,889
Southwest	C18	30	45.25	2,091,108
Southwest	C19	17	16.25	682,975

District	Permitted Outfall	Frequency	Duration (hours)	Volume (ft^3)
Southwest	C20	17	17.25	347,104
Southwest	C21	9	8.25	224,335
Southwest	C22	35	65.25	1,527,203
Southwest	C23	12	19	142,450
Southwest	C25	19	59	2,025,619
Southwest	C28A	46	59.75	404,160
Southwest	C29	28	113.5	1,996,886
Southwest	C30	27	86	631,554
Southwest	C31	45	90.5	1,145,384
Southwest	C32	49	81.25	1,446,985
Southwest	C33	25	28	475,262
Southwest	C34	13	13	297,068
Southwest	C35	10	6.75	42,193
Southwest	C36	7	5.25	48,686
Southwest	C37	17	16.25	119,935
Southwest	S_FRM	26	66.5	14,708,557
Southwest	S01	42	126.25	11,402,244
Southwest	S01T	37	60.75	2,485,229
Southwest	S02	49	110.75	908,643
Southwest	S03	3	1.25	4,067
Southwest	S04	64	174.25	1,732,293
Southwest	S05	81	347.25	31,443,983
Southwest	S06	58	153.5	11,270,729
Southwest	S07	29	67	2,292,133
Southwest	S08	36	60	201,617
Southwest	S09	41	91.25	8,014,222
Southwest	S10	57	169.25	2,658,394
Southwest	S11	63	172.25	1,288,132
Southwest	S12A	50	96	1,071,909
Southwest	S13	16	19.5	300,626
Southwest	S14	69	217	2,216,238
Southwest	S15	27	36.5	280,687
Southwest	S16	58	125.25	960,956
Southwest	S17	27	38.25	624,121
Southwest	S18	49	134.5	6,435,399
Southwest	S19	33	38.25	327,763
Southwest	S20	74	281.25	16,586,276

District	Permitted Outfall	Frequency	Duration (hours)	Volume (ft^3)
Southwest	S21	34	45.25	221,958
Southwest	S22	48	97.5	2,620,498
Southwest	S23	67	177.75	1,865,912
Southwest	S24	38	58.75	469,373
Southwest	S25	43	96.25	2,212,711
Southwest	S26	70	230.25	15,259,031
Southwest	S30	13	9.25	101,307
Southwest	S31	45	97.5	3,344,469
Southwest	S32	19	21.25	320,938
Southwest	S33	70	297.5	16,542,636
Southwest	S36A	72	246.75	7,708,770
Southwest	S37	65	185.5	3,145,882
Southwest	S38	28	45	5,687,082
Southwest	S42	45	159	18,292,825
Southwest	S42A	71	341	18,504,959
Southwest	S44	42	128.5	10,879,263
Southwest	S45	33	63	24,391,903
Southwest	S46	40	94.5	3,577,238
Southwest	S50	73	346.5	143,671,897

Table 3 - Overflow Summary for Typical Year Precipitation (based on Year-5 EAP submission)

District	Permitted Outfall	Frequency	SWO Duration (hrs)	Overflow Volume (MG)
Northeast	D_FRW	44	117.75	96.0
Northeast	D02	26	0	45.3
Northeast	D03	26	61.75	13.3
Northeast	D04	10	21.75	1.7
Northeast	D05	49	251	360.7
Northeast	D06	9	11	1.3
Northeast	D07	54	204.75	135.9
Northeast	D08	40	92.5	3.3
Northeast	D09	5	3.5	0.5
Northeast	D11	21	56.75	24.6
Northeast	D12	46	114.5	1.6
Northeast	D13	9	12.25	1.3
Northeast	D15	15	30	8.0
Northeast	D17	45	169	64.8
Northeast	D18	52	180.25	53.6
Northeast	D19	53	223.75	48.0
Northeast	D20	36	114.5	28.7
Northeast	D21	45	184.75	65.9
Northeast	D22	71	512	251.7
Northeast	D23	42	72	1.6
Northeast	D25	66	422.75	963.3
Northeast	F_FRFG	5	2.5	0.3
Northeast	F03	33	55.75	18.8
Northeast	F04	63	239.25	63.5
Northeast	F05	69	272	8.1
Northeast	F06	20	36.75	5.5
Northeast	F07	40	94.75	20.4
Northeast	F08	39	76.25	11.0
Northeast	F09	59	231	9.2
Northeast	F10	63	322.25	26.5
Northeast	F11	71	431.75	133.7
Northeast	F12	31	53.25	5.8
Northeast	F13	46	130.25	14.0
Northeast	F21	67	385.5	800.2
Northeast	F23	44	113.75	11.6
Northeast	F24	47	99.75	5.1
Northeast	F25	15	32	28.5
Northeast	P01	15	16.25	3.2
Northeast	P02	49	115.75	14.9
Northeast	P03	20	26.25	2.0
Northeast	P04	9	30.25	11.5

District	Permitted Outfall	Frequency	SWO Duration (hrs)	Overflow Volume (MG)
Northeast	P05	27	56.75	22.3
Northeast	T_FRRR	37	274.5	281.9
Northeast	T01	64	262.5	45.1
Northeast	T03	61	158	22.8
Northeast	T04	59	154.25	15.9
Northeast	T05	42	64.25	7.6
Northeast	T06	39	72	55.3
Northeast	T07	9	8.5	1.0
Northeast	T08	62	234.75	257.0
Northeast	T09	44	68.25	5.7
Northeast	T10	63	258.5	22.3
Northeast	T11	59	165.75	10.1
Northeast	T12	8	7	0.2
Northeast	T13	63	191.75	31.4
Northeast	T14	37	356.5	1546.5
Northeast	T15	54	158	42.1
Southeast	D37	54	282	184.0
Southeast	D38	43	169.75	178.9
Southeast	D39	54	270.75	276.7
Southeast	D40	57	282	14.4
Southeast	D41	42	153.75	17.7
Southeast	D42	18	22	1.5
Southeast	D43	19	31.75	1.3
Southeast	D44	23	55	23.8
Southeast	D45	36	121	357.6
Southeast	D46	19	30.75	3.9
Southeast	D47	56	215	46.3
Southeast	D48	40	94.25	112.3
Southeast	D49	6	4.5	0.4
Southeast	D50	14	12.5	1.5
Southeast	D51	56	372	11.4
Southeast	D51A	49	174	12.5
Southeast	D52	22	31	2.7
Southeast	D53	7	7.5	9.6
Southeast	D54	19	30	48.3
Southeast	D58	18	26.5	5.1
Southeast	D61	46	94.75	6.2
Southeast	D62	20	23.25	1.8
Southeast	D63	31	65.25	73.9
Southeast	D64	27	41.75	1.5
Southeast	D65	29	66.25	52.4
Southeast	D66	37	105.75	58.8

District	Permitted Outfall	Frequency	SWO Duration (hrs)	Overflow Volume (MG)
Southeast	D67	31	80.75	28.0
Southeast	D68	41	183.75	156.0
Southeast	D69	24	70.75	47.2
Southeast	D70	20	45.5	48.3
Southeast	D71	24	63	45.5
Southeast	D72	18	34.75	29.2
Southeast	D73	51	236	159.2
Southwest	C_FRA	11	9.5	5.2
Southwest	C_FRTR	83	500.5	161.8
Southwest	C01	15	15.25	1.7
Southwest	C02	6	4.25	0.2
Southwest	C04A	19	28	12.6
Southwest	C05	2	2.75	0.4
Southwest	C06	61	195.75	40.1
Southwest	C07	19	39.25	10.2
Southwest	C09	33	65	13.6
Southwest	C10	16	36.5	1.6
Southwest	C11	42	122.75	97.1
Southwest	C12	39	100	16.7
Southwest	C13	30	68.25	11.0
Southwest	C14	30	80.5	22.1
Southwest	C15	18	40.75	2.7
Southwest	C16	5	4.75	0.2
Southwest	C17	55	266.5	294.4
Southwest	C18	29	64.75	21.0
Southwest	C19	18	21.75	4.6
Southwest	C20	14	22	2.5
Southwest	C21	15	26.25	3.5
Southwest	C22	37	78.75	14.5
Southwest	C23	12	25	1.7
Southwest	C25	22	61	19.5
Southwest	C28A	36	58.5	2.1
Southwest	C29	48	189.25	16.2
Southwest	C30	30	118.5	8.4
Southwest	C31	40	90.25	10.3
Southwest	C32	31	56.25	9.8
Southwest	C33	20	24.25	3.1
Southwest	C34	13	11.75	1.7
Southwest	C35	10	11.25	0.7
Southwest	C36	10	9.25	0.6
Southwest	C37	15	17.5	0.9
Southwest	S_FRM	8	10.75	41.9

District	Permitted Outfall	Frequency	SWO Duration (hrs)	Overflow Volume (MG)
Southwest	S01	41	122	86.4
Southwest	S02	49	142	7.4
Southwest	S03	11	8	0.6
Southwest	S04	72	385.5	19.8
Southwest	S05	71	338.25	236.5
Southwest	S06	65	281.5	98.6
Southwest	S07	16	22.75	9.1
Southwest	S08	36	64.25	1.3
Southwest	S09	39	78	42.8
Southwest	S10	56	185.25	18.9
Southwest	S11	53	153	4.9
Southwest	S12A	44	80.5	4.9
Southwest	S13	17	12.75	2.0
Southwest	S14	62	263.5	16.4
Southwest	S15	22	27.75	1.7
Southwest	S16	67	238.75	9.1
Southwest	S17	25	32.75	3.8
Southwest	S18	51	188.25	45.1
Southwest	S19	29	33.5	1.8
Southwest	S20	78	517.5	145.6
Southwest	S21	22	22	1.0
Southwest	S22	40	85	15.5
Southwest	S23	59	182.25	10.7
Southwest	S24	41	81.25	5.3
Southwest	S25	45	113.5	12.6
Southwest	S26	69	376.25	133.5
Southwest	S30	7	5.5	0.4
Southwest	S31	57	175	32.4
Southwest	S32	14	14	1.3
Southwest	S33	70	349.75	132.0
Southwest	S36A	66	323	59.8
Southwest	S37	60	239	24.1
Southwest	S38	28	48.75	30.1
Southwest	S42	50	185.25	97.9
Southwest	S42A	74	530.25	177.8
Southwest	S44	43	125	59.4
Southwest	S45	41	104.25	139.0
Southwest	S46	25	48	13.5
Southwest	S50	61	326.75	1067.6

Table 4 - July 2021 PWD Rain Gage Records

Date/RG	RG1	RG2	RG3	RG4	RG5	RG6	RG7	RG8	RG9	RG10	RG11	RG12	RG13	RG14	RG15	RG16	RG17	RG18
7/1/2021	1.896	1.59	0.99	1.14	1.74	1.26	1.26	0.98	1.22	1.55	1.061	1.75	0.97	1.46	0.86	1.34	1.19	1.296
7/2/2021	0.042	0.04	0.68	0.75	0.26	0.03	1.7	0.22	0.02	0.08	0.628	0.44	0.79	1.07	0.03	0.246	1.12	0.029
7/3/2021	0.239	0.12	0.38	0.43	0.76	0.68	0.14	0.171	0.44	0.29	0.235	0.62	0.21	0.21	0.42	0.521	0.26	0.23
7/4/2021	0.02	0	0	0	0.38	0.48	0.01	0.017	0.25	0	0.008	0.22	0	0	0.11	0.183	0.01	0.15
7/5/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/6/2021	0.01	0	0.38	0.29	0	0.32	0.01	0.039	0.49	0.69	0.03	0	0.22	0.14	0.15	0.141	0.1	0.01
7/7/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/8/2021	0.52	0.17	0.23	0.2	0.41	0.23	0.22	0.148	0.24	0.17	0.03	0.38	0.22	0.33	0.15	0.259	0.24	0.2
7/9/2021	0.27	0.19	1.09	1.5	0.39	0.1	0.56	0.367	0.12	0.6	0.05	0.46	0.79	0.79	0.26	0.303	0.73	0.12
7/10/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/11/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/12/2021	2.66	1.79	2.57	5.09	1.36	0	1.34	0.982	0.35	1.58	0.27	0.72	2.19	2.53	1.17	1.141	2.52	0.49
7/13/2021	0	0	0.02	0.01	0	0	0	0.001	0	0.01	0	0.01	0	0	0	0	0.02	0
7/14/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/15/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/16/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/17/2021	2.46	1.25	1.91	1.844	1.72	1.15	1.29	0.892	1.19	1.78	0.22	1.83	1.73	1.23	0.82	1.223	1.41	1.28
7/18/2021	0.02	0.01	0.11	0.01	0	0.01	0.07	0.047	0.01	0.01	0.02	0.01	0.11	0	0.01	0.009	0.06	0.01
7/19/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/20/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/21/2021	0.7	0.46	0.72	0.03	0.28	0	0.57	0.382	0	0.66	0.11	0.14	0.72	0.57	0.14	0.163	0.77	0
7/22/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/23/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/24/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/25/2021	0.04	0.03	0.2	0.16	0.02	0.01	0.05	0.062	0.02	0.08	0.05	0.02	0.3	0.04	0	0.016	0.27	0
7/26/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/27/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/28/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/29/2021	0.02	0.03	0.02	0.01	0.01	0.01	0	0.005	0.05	0.11	0.01	0.02	0.02	0.01	0.02	0.018	0.01	0
7/30/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/31/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 5 - July 2021 PWD Rain Gage Records

Date/RG	RG19	RG20	RG21	RG22	RG23	RG24	RG25	RG26	RG27	RG28	RG29	RG30	RG31	RG32	RG33	RG34	RG35	RG36	RG37
7/1/2021	1.21	0.83	1.52	1.27	1.97	0.87	1.693	1.56	0.84	0.83	1.57	1.155	1.22	0.957	1.53	1.377	1.49	1.27	1.757
7/2/2021	0.02	0.27	0.03	0.02	0.04	0.11	0.233	0.62	0.89	0.24	0.03	0.374	0.04	0.206	0.02	0.038	0.03	0.03	0.368
7/3/2021	0.09	0.36	0.27	0.48	0.26	0.24	0.59	0.68	0.37	0.4	0.13	0.248	0.38	0.303	0.11	0.393	0.57	0.41	0.593
7/4/2021	0.03	0	0.28	0.04	0.02	0	0.26	0.1	0.01	0.01	0.03	0.024	0	0.006	0.01	0.167	0.45	0.23	0.218
7/5/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/6/2021	0.05	1.71	0.07	0.07	0	1.67	0.018	0.22	0.8	1.7	0.53	0.205	1.2	1.403	0	0.12	0.05	0.03	0.004
7/7/2021	0	0	0	0	0	0.01	0	0	0	0	0	0	0	0.005	0	0	0	0	0
7/8/2021	0.17	0.09	0.36	0.23	0.37	0.129	0.39	0.24	0.17	0.11	0.28	0.115	0.12	0.132	0.33	0.267	0.3	0.27	0.388
7/9/2021	0.3	1.22	0.2	0.17	0.35	0.965	0.341	0.37	1.14	1.22	0.31	0.317	0.6	0.926	0.31	0.2	0.13	0.2	0.418
7/10/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/11/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/12/2021	0.3	5.92	0	0.09	1.79	0.22	1.564	1.46	4.04	2.29	0	0.851	0.9	1.268	0.25	0.317	0	0	1.048
7/13/2021	0	0.47	0	0	0	0	0.001	0	0.21	0.14	0	0.004	0	0.052	0	0	0	0	0.007
7/14/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/15/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/16/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/17/2021	1.29	2	0.91	1.22	1.51	0.02	1.779	1.05	2.04	1.69	0.96	0.869	1.68	0.878	1	1.141	0.85	1.12	1.815
7/18/2021	0.01	0.04	0.01	0.01	0.01	0	0.007	0.01	0.06	0.1	0.01	0.029	0.02	0.031	0	0.008	0.01	0.01	0.009
7/19/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/20/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/21/2021	0.12	0.36	0	0	0.14	0	0.346	0.05	0.47	0.23	0.45	0.291	0.27	0.179	0.26	0.1	0	0	0.205
7/22/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/23/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/24/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/25/2021	0.2	0.18	0.08	0	0.1	0	0.028	0.01	0.05	0.05	0	0.094	0.02	0.039	0.04	0.021	0.01	0	0.028
7/26/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/27/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/28/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/29/2021	0	0.55	0.02	0.05	0.07	0	0.02	0.01	0.28	0.36	0.03	0.024	0.08	0.114	0.05	0.034	0	0	0.022
7/30/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.001	0.01	0	0
7/31/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 6 – August 2021 PWD Rain Gage Records

Date/RG	RG1	RG2	RG3	RG4	RG5	RG6	RG7	RG8	RG9	RG10	RG11	RG12	RG13	RG14	RG15	RG16	RG17	RG18
8/1/2021	0.04	0.06	0.27	0.02	0.04	0.24	0.11	0.14	0.2	0.36	0.16	0.04	0.26	0.06	0.02	0.114	0.1	0.17
8/2/2021	0	0	0	0	0	0.01	0.01	0.009	0	0.01	0.01	0	0	0	0	0	0	0
8/3/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/4/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/5/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/6/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/7/2021	0.24	0.06	0.02	0.02	0.18	0	0.04	0.038	0.01	0.01	0.03	0.19	0.03	0.07	0.07	0.089	0.03	0.02
8/8/2021	1.4	0.58	0.61	0.73	0.88	0.43	0.66	0.639	0.55	0.53	0.58	0.66	0.59	0.64	0.39	0.594	0.55	0.53
8/9/2021	0	0	0.08	0	0	0	0.38	0.25	0	0.04	0.09	0	0.06	0.77	0.42	0.131	0.46	0
8/10/2021	1.41	1.06	0.45	0.13	0.52	0.72	0.44	0.317	0.79	1.2	0.11	0.26	0.28	0.13	0.19	0.494	0.25	0.87
8/11/2021	0.06	0.12	0.02	0.01	0.03	0	0.08	0.068	0.01	0.03	0.06	0.14	0.04	0.11	0	0.027	0.03	0.04
8/12/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/13/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/14/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/15/2021	0	0	0.03	0	0	0	0	0	0	0	0	0	0.01	0	0	0	0	0
8/16/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/17/2021	0.09	0.11	0.04	0.03	0.02	0.15	0.084	0.062	0.13	0.03	0.04	0.04	0.05	0.08	0.07	0.075	0.05	0.12
8/18/2021	0	0	0.03	0	0.02	0	0.024	0.017	0	0.01	0.011	0	0.01	0.02	0.017	0.01	0.05	0
8/19/2021	0	0.01	2.21	0.15	0	1.8	0.979	1.593	0.39	3.03	1.662	0	1.93	0.03	0.441	0.492	1.11	1.48
8/20/2021	0.24	0.12	0.12	0.12	0.2	0.17	0.108	0.104	0.12	0.1	0.1	0.25	0.15	0.1	0.133	0.172	0.11	0.17
8/21/2021	0.57	0.08	0.16	0.2	0.35	0.04	0.125	0.134	0.05	0.16	0.17	0.09	0.19	0.07	0.123	0.192	0.16	0.05
8/22/2021	1.81	0.99	1.24	1.2	1.17	1.13	1.106	1.119	1.08	1.22	1.123	1.03	1.14	1.13	1.121	1.121	1.07	0.96
8/23/2021	0.9	0.48	0.33	0.43	0.36	0.39	0.463	0.369	0.43	0.46	0.311	0.36	0.4	0.79	0.614	0.453	0.39	0.62
8/24/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/25/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/26/2021	0	0	0	0.41	0	0	0.002	0	0	0	0	0	0	0	0.003	0	0	0
8/27/2021	0.33	0.12	0	0.24	0.02	0.24	0.198	0.032	0.26	0	0	0	0	0.55	0.312	0.117	0.26	0.01
8/28/2021	2.98	2.26	0.4	0.44	0.78	0.87	0.545	0.38	1.35	0.44	0.242	0.38	0.39	0.45	0.626	1.071	0.96	0.37
8/29/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/30/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/31/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 7 - August 2021 PWD Rain Gage Records

Date/RG	RG19	RG20	RG21	RG22	RG23	RG24	RG25	RG26	RG27	RG28	RG29	RG30	RG31	RG32	RG33	RG34	RG35	RG36	RG37
8/1/2021	0.57	0.18	0.46	0.16	0.04	0.286	0.052	0.25	0.26	0.23	0.93	0.248	0.45	0.292	0.09	0.175	0.28	0.17	0.041
8/2/2021	0	0	0.01	0.01	0	0.001	0	0	0	0	0.01	0.006	0	0.001	0.01	0.007	0.01	0	0
8/3/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/4/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/5/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/6/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/7/2021	0	0.01	0	0.01	0.13	0.006	0.169	0.059	0.01	0	0	0.016	0	0.006	0.01	0.016	0	0	0.184
8/8/2021	0.47	0.61	0.29	0.49	0.67	0.585	0.893	0.462	0.66	0.62	0.28	0.534	0.48	0.575	0.5	0.485	0.29	0.35	0.739
8/9/2021	0	0	0	0	0	0.025	0.008	0	0	0	0	0.096	0.02	0.029	0.02	0.01	0	0	0.002
8/10/2021	1.05	1.23	0.57	0.64	0.43	0.969	0.722	0.296	1.07	1.42	1.4	0.418	0.52	0.44	0.47	0.658	0.63	0.69	0.409
8/11/2021	0.1	0.04	0.28	0.01	0.11	0.071	0.062	0	0.01	0.15	0.26	0.06	0.07	0	0.09	0.055	0.11	0.07	0.116
8/12/2021	0	0	0.01	0	0	0	0	0	0	0	0.01	0	0	0	0	0	0	0	0
8/13/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/14/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/15/2021	0	0	0	0	0	0.033	0	0	0	0.09	0	0.002	0	0	0	0	0	0	0
8/16/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/17/2021	0.04	0	0.21	0.14	0.06	0.019	0.055	0.08	0.01	0.02	0.02	0.042	0.01	0	0.15	0.134	0.14	0.08	0.045
8/18/2021	0.02	0	0.1	0	0	0.045	0.009	0.011	0.02	0.11	0.13	0.021	0.01	0	0	0.008	0.04	0.01	0.003
8/19/2021	2.88	1.44	2.91	0.39	0	2.087	0.053	1.185	1.32	2.07	2.81	2.353	2.54	1.69	0.19	0.967	2.96	2.6	0.011
8/20/2021	0.11	0.08	0.07	0.15	0.3	0.078	0.209	0.144	0.12	0.05	0.07	0.106	0.08	0.05	0.12	0.133	0.08	0.11	0.245
8/21/2021	0.06	0.1	0.06	0.02	0.04	0.138	0.302	0.086	0.17	0.12	0.1	0.135	0.17	0.08	0.01	0.051	0.1	0.17	0.154
8/22/2021	1.3	1.16	1.07	0.99	0.93	1.186	1.25	1.056	1.2	1.17	1.29	1.197	1.25	1.1	0.89	1.023	1.07	1.05	1.097
8/23/2021	0.56	0.68	0.41	0.55	0.33	0.545	0.491	0.575	0.51	0.69	0.37	0.413	0.49	0.45	0.48	0.484	0.46	0.42	0.403
8/24/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/25/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/26/2021	0	0.14	0	0	0	0.038	0	0.002	0.26	0	0	0.002	0	0	0	0	0	0	0
8/27/2021	0.04	0.01	0.41	0.17	0.04	0.035	0.105	0.156	0.28	0	0.02	0.023	0	0	0.13	0.177	0.19	0.09	0.035
8/28/2021	0.57	0.11	0.6	2.15	2.48	0.341	1.468	0.586	0.4	0.13	0.85	0.456	0.78	0.16	0.74	1.321	0.75	0.68	0.835
8/29/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/30/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/31/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 8 – September 2021 PWD Rain Gage Records

Date/RG	RG1	RG2	RG3	RG4	RG5	RG6	RG7	RG8	RG9	RG10	RG11	RG12	RG13	RG14	RG15	RG16	RG17	RG18
9/1/2021	4.49	2.7	3.72	2.56	2.74	2.93	3.258	3.465	3.5	4.29	3.463	2.41	3.54	3.08	3.098	3.061	3.21	3.07
9/2/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/3/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/4/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/5/2021	0.01	0.03	0.04	0.06	0.04	0.06	0.061	0.06	0.05	0.044	0.06	0.05	0.05	0.06	0.058	0.045	0.07	0.07
9/6/2021	0.02	0.03	0.01	0.01	0.03	0.01	0.007	0.001	0.01	0.006	0	0.03	0	0.02	0.017	0.018	0.01	0
9/7/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/8/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/9/2021	0.35	0.43	0.3	0.43	0.63	0.35	0.307	0.27	0.37	0.289	0.26	0.71	0.29	0.39	0.414	0.478	0.3	0.28
9/10/2021	0	0	0	0	0	0	0.019	0.002	0	0	0	0	0	0.1	0	0.002	0	0
9/11/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/12/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/13/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/14/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/15/2021	0.11	0.18	0.4	0.37	0.04	0.26	0.338	0.324	0.52	0.2	0.32	0.051	0.47	0.54	0.27	0.197	0.6	0.33
9/16/2021	0	0	0	0	0	0	0.001	0	0	0	0	0	0	0	0	0.003	0	0.01
9/17/2021	0	0.01	0.01	0.01	0.01	0.01	0.019	0.02	0.01	0.02	0.02	0.009	0.02	0.03	0	0.003	0.01	0
9/18/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/19/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/20/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/21/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/22/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/23/2021	1.67	1.84	1.35	0.89	1.82	1.68	1.519	1.71	2	1.63	1.58	1.72	1.4	1.25	0.95	1.249	1.39	1.63
9/24/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/25/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/26/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/27/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/28/2021	0.04	0.13	0.15	0	0.01	0.05	0	0.05	0.04	0.28	0.07	0.03	0.13	0.17	0.05	0.044	0.13	0.08
9/29/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/30/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 9 - September 2021 PWD Rain Gage Records

Date/RG	RG19	RG20	RG21	RG22	RG23	RG24	RG25	RG26	RG27	RG28	RG29	RG30	RG31	RG32	RG33	RG34	RG35	RG36	RG37
9/1/2021	4.06	3.24	5.06	3.09	2.3	3.825	3.074	3.228	3.1	3.85	5.69	3.938	4.35	3.795	2.86	3.341	4.98	3.75	2.614
9/2/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/3/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/4/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/5/2021	0.06	0.05	0.04	0.05	0.05	0.042	0.033	0.062	0.05	0.04	0.04	0.057	0.04	0.043	0.03	0.047	0.06	0.07	0.045
9/6/2021	0	0	0.01	0	0.03	0.007	0.027	0.006	0	0.01	0.01	0.001	0.01	0.007	0.01	0.006	0	0	0.028
9/7/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/8/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/9/2021	0.38	0.33	0.25	0.39	0.44	0.27	0.534	0.337	0.3	0.24	0.3	0.283	0.27	0.272	0.42	0.376	0.29	0.35	0.642
9/10/2021	0	0	0	0	0	0	0	0.005	0	0	0	0.001	0	0	0	0	0	0	0
9/11/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/12/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/13/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/14/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/15/2021	0.32	0.21	0.09	0.41	0.18	0.1	0.108	0.01	0.28	0.14	0.06	0.318	0.11	0.01	0.33	0.311	0.13	0.2	0.114
9/16/2021	0	0	0	0.01	0	0	0	0.01	0	0	0	0	0	0	0	0.003	0	0	0
9/17/2021	0.02	0	0.04	0	0	0	0.006	0	0.01	0	0.03	0.019	0.03	0.01	0.02	0.016	0.08	0.02	0.004
9/18/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/19/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/20/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/21/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/22/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/23/2021	1.86	1.5	1.92	1.65	1.61	1.1	1.749	0.05	1.27	1.49	1.95	1.604	1.76	1.35	1.68	1.758	2.1	2.13	1.81
9/24/2021	0	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/25/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/26/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/27/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/28/2021	0.27	0.1	0.22	0.05	0.1	0.26	0.046	0	0.11	0.2	0.07	0.11	0.26	0.21	0.2	0.118	0.27	0.14	0.08
9/29/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/30/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 10 - October 2021 PWD Rain Gage Records

Date/RG	RG1	RG2	RG3	RG4	RG5	RG6	RG7	RG8	RG9	RG10	RG11	RG12	RG13	RG14	RG15	RG16	RG17	RG18
10/1/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/2/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/3/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/4/2021	0	0	0	0	0.01	0.01	0	0.01	0.01	0.01	0.01	0	0.01	0	0	0.003	0.01	0
10/5/2021	0.83	0.79	0.56	0.48	1.04	1.28	0.674	0.59	2.07	0.46	0.62	1.31	0.68	1.3	0.97	1.178	0.84	1
10/6/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/7/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/8/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/9/2021	0	0	0	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/10/2021	0.036	0.06	0.12	0.2	0.06	0.1	0.116	0.12	0.09	0.16	0.11	0.03	0.13	0.09	0.05	0.06	0.12	0.08
10/11/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/12/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/13/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/14/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/15/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/16/2021	0.34	0.45	0.33	0.313	0.46	0.44	0.328	0.34	0.41	0.35	0.34	0.34	0.34	0.32	0.18	0.336	0.34	0.32
10/17/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/18/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/19/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/20/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/21/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/22/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/23/2021	0.013	0.07	0.01	0	0.04	0.02	0	0.01	0.03	0.03	0.02	0.01	0.02	0	0.02	0.026	0.01	0.01
10/24/2021	0	0	0	0	0	0	0	0	0	0.01	0	0	0	0	0	0	0	0.01
10/25/2021	0.858	0.91	0.77	0.31	1.17	0.798	1.06	1.022	0.78	0.6	1.01	1.17	0.86	0.99	0.72	0.902	1.04	0.74
10/26/2021	0.782	0.84	1.02	1.31	0.9	0.809	0.78	0.807	0.81	0.93	0.85	0.72	0.93	0.77	0.46	0.708	0.75	0.77
10/27/2021	0.028	0.02	0.01	0	0	0.041	0.02	0.019	0.04	0.02	0.02	0.01	0.01	0.01	0	0.011	0	0.02
10/28/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/29/2021	0.473	0.6	1.09	1.18	0.558	0.689	0.81	0.813	0.67	1.033	0.83	0.552	0.99	0.88	0.49	0.583	0.86	0.59
10/30/2021	0.154	0.26	0.5	0.35	0.169	0.266	0.6	0.553	0.23	0.525	0.54	0.135	0.5	0.23	0.18	0.244	0.35	0.31
10/31/2021	0.03	0.03	0.01	0	0.022	0.016	0.01	0.009	0.02	0.011	0.01	0.028	0.01	0.01	0.01	0.012	0	0.01

Table 11 - October 2021 PWD Rain Gage Records

Date/RG	RG19	RG20	RG21	RG22	RG23	RG24	RG25	RG26	RG27	RG28	RG29	RG30	RG31	RG32	RG33	RG34	RG35	RG36	RG37
10/1/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/2/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/3/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/4/2021	0	0	0	0	0	0	0.004	0.001	0	0	0.01	0.008	0.03	0.1	0	0.002	0	0	0
10/5/2021	0.93	0.46	1.451	2.03	1.31	0.38	1.189	0.983	0.59	0.51	1.04	0.66	0.77	0.24	1.33	1.565	1.59	1.4	1.81
10/6/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/7/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/8/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/9/2021	0	0	0	0	0	0	0	0	0.01	0	0	0	0	0	0	0	0	0	0
10/10/2021	0.09	0.12	0.087	0.06	0.03	0.14	0.051	0.062	0.11	0.2	0.17	0.116	0.18	0.24	0.05	0.069	0.09	0.08	0.04
10/11/2021	0	0	0.005	0	0	0	0	0	0	0	0	0	0	0	0	0.001	0.01	0	0
10/12/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/13/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/14/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/15/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/16/2021	0.4	0.27	0.42	0.41	0.38	0.26	0.399	0.221	0.31	0.32	0.44	0.347	0.334	0.34	0.37	0.406	0.46	0.39	0.36
10/17/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/18/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/19/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/20/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/21/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/22/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/23/2021	0.03	0	0.06	0.03	0	0.01	0.026	0.014	0	0.01	0.1	0.019	0.01	0	0.11	0.051	0.07	0.03	0
10/24/2021	0	0	0	0	0	0	0	0.001	0	0	0.01	0.001	0	0.01	0.01	0.002	0	0	0
10/25/2021	0.91	0.64	0.85	0.85	0.84	0.68	1.088	0.793	0.32	0.39	0.7	0.899	0.48	0.597	0.55	0.768	0.81	0.85	1.11
10/26/2021	0.92	1.37	0.7	0.84	0.77	0.96	0.833	0.569	1.61	1.38	0.9	0.868	0.88	1.065	0.75	0.797	0.79	0.78	0.8
10/27/2021	0.07	0.01	0.07	0.04	0.03	0.02	0.01	0.006	0	0.01	0.07	0.023	0.03	0.017	0.04	0.043	0.07	0.04	0.02
10/28/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/29/2021	0.89	0.987	0.84	0.69	0.44	0.91	0.562	0.579	1.07	0.9	0.85	0.866	1.11	0.94	0.6	0.688	0.83	0.81	0.56
10/30/2021	0.49	0.481	0.23	0.24	0.13	0.91	0.183	0.265	0.51	0.44	0.38	0.513	0.57	0.704	0.38	0.306	0.29	0.73	0.13
10/31/2021	0	0.028	0.01	0.02	0.03	0.02	0.027	0.009	0.01	0.05	0.01	0.009	0.01	0.023	0.03	0.02	0.01	0	0.03

Table 12 - November 2021 PWD Rain Gage Records

Date/RG	RG1	RG2	RG3	RG4	RG5	RG6	RG7	RG8	RG9	RG10	RG11	RG12	RG13	RG14	RG15	RG16	RG17	RG18
11/1/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/2/2021	0.048	0.04	0.02	0	0.014	0.018	0.01	0.014	0.02	0.022	0.02	0.049	0.02	0.03	0.01	0.011	0.02	0.01
11/3/2021	0.005	0	0	0	0.147	0	0	0	0	0	0	0.2	0	0	0	0.032	0	0
11/4/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/5/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/6/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/7/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/8/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/9/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/10/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/11/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/12/2021	0.148	0.19	0.2	0.1	0.125	0.264	0.15	0.154	0.26	0.26	0.16	0.13	0.19	0.15	0.08	0.136	0.15	0.22
11/13/2021	0.004	0.02	0.02	0.015	0	0.038	0.02	0.027	0.04	0.06	0.04	0	0.02	0.01	0.015	0.023	0.01	0.01
11/14/2021	0.01	0.01	0.02	0.019	0.011	0.02	0.01	0.011	0.02	0.01	0.01	0.01	0.02	0.01	0.01	0.015	0.02	0.01
11/15/2021	0.013	0.03	0.01	0.014	0.01	0.021	0.03	0.025	0.02	0.02	0.02	0.01	0.02	0.02	0.01	0.014	0.03	0.01
11/16/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/17/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/18/2021	0.106	0.09	0.07	0.065	0.073	0.058	0.08	0.076	0.06	0.07	0.07	0.07	0.07	0.08	0.04	0.053	0.08	0.03
11/19/2021	0	0	0.01	0.008	0	0	0	0	0	0.01	0	0	0	0	0	0	0	0
11/20/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/21/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/22/2021	0.072	0.08	0.06	0.061	0.05	0.07	0.06	0.061	0.07	0.08	0.06	0.05	0.06	0.06	0.03	0.049	0.06	0.06
11/23/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/24/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/25/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/26/2021	0.178	0.17	0.17	0.177	0.177	0.17	0.19	0.184	0.16	0.19	0.18	0.18	0.19	0.19	0.11	0.148	0.2	0.18
11/27/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/28/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/29/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/30/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 13 - November 2021 PWD Rain Gage Records

Date/RG	RG19	RG20	RG21	RG22	RG23	RG24	RG25	RG26	RG27	RG28	RG29	RG30	RG31	RG32	RG33	RG34	RG35	RG36	RG37
11/1/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/2/2021	0.01	0.018	0.03	0.02	0.05	0.02	0	0.01	0.02	0.02	0.03	0.018	0.03	0.019	0.03	0.024	0.02	0.02	0.06
11/3/2021	0	0	0	0	0	0	0.11	0	0	0	0.01	0	0	0	0	0.002	0.01	0.004	0
11/4/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/5/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/6/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/7/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/8/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/9/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/10/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/11/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/12/2021	0.274	0.206	0.43	0.29	0.14	0.26	0.11	0.111	0.19	0.23	0.4	0.186	0.31	0.249	0.2	0.245	0.4	0.303	0.13
11/13/2021	0.035	0.022	0.06	0.03	0	0.04	0.008	0.018	0.01	0.03	0.08	0.041	0.08	0.04	0.05	0.037	0.055	0.035	0
11/14/2021	0.015	0.019	0.02	0.02	0.01	0.01	0.015	0.01	0.02	0.02	0.02	0.012	0.01	0.013	0.02	0.019	0.02	0.015	0.02
11/15/2021	0.011	0.014	0.01	0.03	0.01	0.01	0.014	0.014	0.01	0.02	0.01	0.019	0.01	0.013	0.02	0.023	0.01	0.012	0.01
11/16/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/17/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/18/2021	0.046	0.059	0.05	0.05	0.11	0.04	0.087	0.047	0.06	0.06	0.06	0.068	0.05	0.05	0.05	0.054	0.049	0.043	0.1
11/19/2021	0	0.009	0	0	0	0	0	0	0.01	0.01	0	0.001	0	0.003	0	0	0	0	0
11/20/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/21/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/22/2021	0.069	0.065	0.08	0.07	0.07	0.07	0.064	0.041	0.06	0.07	0.1	0.063	0.09	0.07	0.07	0.068	0.078	0.068	0.07
11/23/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/24/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/25/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/26/2021	0.176	0.19	0.15	0.16	0.18	0.19	0.171	0.17	0.17	0.21	0.2	0.184	0.24	0.197	0.16	0.166	0.155	0.165	0.17
11/27/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/28/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/29/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/30/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 14 – December 2021 PWD Rain Gage Records

Date/RG	RG1	RG2	RG3	RG4	RG5	RG6	RG7	RG8	RG9	RG10	RG11	RG12	RG13	RG14	RG15	RG16	RG17	RG18
12/1/2021	0	0	0	0	0	0	0	0	0	0.01	0	0	0	0	0	0	0	0
12/2/2021	0.002	0.01	0.01	0.011	0.001	0.03	0.02	0.014	0.02	0.02	0.01	0	0.02	0.01	0	0.009	0.01	0.02
12/3/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/4/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/5/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/6/2021	0.089	0.08	0.15	0.148	0.098	0.12	0.12	0.128	0.1	0.32	0.14	0.1	0.15	0.111	0.04	0.084	0.12	0.1
12/7/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/8/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/9/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/10/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/11/2021	0.212	0.26	0.23	0.225	0.198	0.22	0.22	0.234	0.29	0.28	0.25	0.2	0.26	0.215	0.13	0.207	0.27	0.24
12/12/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/13/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/14/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/15/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/16/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/17/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/18/2021	0.144	0.16	0.13	0.145	0.132	0.18	0.13	0.137	0.15	0.13	0.15	0.13	0.18	0.126	0.09	0.135	0.13	0.14
12/19/2021	0.012	0.02	0.01	0.009	0.009	0.02	0.01	0.014	0.01	0.01	0.02	0.01	0.01	0.009	0.01	0.008	0.01	0
12/20/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/21/2021	0.018	0.01	0	0	0.001	0.01	0	0	0.01	0	0	0	0	0	0	0.004	0	0.01
12/22/2021	0.16	0.16	0.1	0.135	0.141	0.14	0.14	0.129	0.15	0.14	0.12	0.14	0.13	0.121	0.07	0.119	0.13	0.1
12/23/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/24/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/25/2021	0.379	0.22	0.08	0.091	0.259	0.18	0.13	0.12	0.18	0.11	0.11	0.26	0.1	0.13	0.12	0.165	0.13	0.15
12/26/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/27/2021	0.199	0.17	0.1	0.114	0.182	0.11	0.06	0.084	0.03	0.112	0.12	0.21	0.12	0.065	0.01	0.064	0.11	0.05
12/28/2021	0.046	0.03	0	0.008	0.033	0.02	0.02	0.019	0.02	0.007	0.02	0.04	0.01	0.013	0.01	0.015	0.01	0.03
12/29/2021	0.027	0.02	0	0.007	0.016	0.01	0.01	0.009	0.01	0.008	0.01	0.02	0.01	0.005	0	0.007	0	0
12/30/2021	0.208	0.2	0.21	0.202	0.191	0.22	0.21	0.211	0.2	0.211	0.21	0.19	0.22	0.189	0.12	0.175	0.21	0.21
12/31/2021	0.01	0.01	0	0.001	0.009	0.01	0	0.004	0.01	0.003	0.01	0.01	0.01	0.002	0	0.005	0	0.01

Table 15 - December 2021 PWD Rain Gage Records

Date/RG	RG19	RG20	RG21	RG22	RG23	RG24	RG25	RG26	RG27	RG28	RG29	RG30	RG31	RG32	RG33	RG34	RG35	RG36	RG37
12/1/2021	0.001	0.005	0	0	0	0.02	0	0	0	0.01	0.01	0.001	0.01	0.013	0	0	0	0	0
12/2/2021	0.029	0.014	0.05	0.03	0	0.02	0.007	0.01	0.01	0.02	0.06	0.014	0.04	0.021	0.03	0.028	0.042	0.032	0.01
12/3/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/4/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/5/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/6/2021	0.162	0.192	0.28	0.09	0.09	0.17	0.095	0.12	0.14	0.24	0.25	0.165	0.26	0.199	0.12	0.112	0.224	0.156	0.1
12/7/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/8/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/9/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/10/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/11/2021	0.226	0.26	0.22	0.28	0.2	0.28	0.213	0.27	0.21	0.31	0.16	0.248	0.23	0.273	0.33	0.276	0.223	0.233	0.2
12/12/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.003	0	0	0
12/13/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/14/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/15/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/16/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/17/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/18/2021	0.137	0.114	0.13	0.16	0.14	0.09	0.143	0.18	0.15	0.09	0.14	0.141	0.11	0.1	0.15	0.155	0.139	0.151	0.15
12/19/2021	0.007	0.014	0.01	0.01	0.01	0.02	0.011	0.01	0.01	0.02	0.01	0.015	0.02	0.02	0.02	0.016	0.011	0.01	0.01
12/20/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/21/2021	0.01	0	0.02	0.01	0.02	0	0.008	0	0	0	0.02	0	0	0	0.02	0.012	0.016	0.012	0.01
12/22/2021	0.128	0.142	0.16	0.16	0.16	0.11	0.156	0.15	0.15	0.14	0.17	0.124	0.15	0.17	0.15	0.152	0.153	0.135	0.17
12/23/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/24/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/25/2021	0.134	0.092	0.15	0.19	0.42	0.1	0.274	0.17	0.09	0.1	0.11	0.111	0.1	0.11	0.22	0.197	0.156	0.159	0.3
12/26/2021	0	0	0	0	0	0.01	0	0	0	0	0	0	0	0.01	0	0	0	0	0
12/27/2021	0.08	0.108	0.12	0.03	0.21	0.09	0.125	0.11	0.12	0.1	0.1	0.113	0.13	0.09	0.18	0.095	0.107	0.086	0.06
12/28/2021	0.02	0.004	0.02	0.02	0.05	0.01	0.021	0.01	0.01	0	0.01	0.016	0.01	0.02	0.04	0.026	0.019	0.023	0
12/29/2021	0.004	0.014	0	0.01	0.03	0.01	0.012	0.01	0.01	0.02	0.01	0.009	0.02	0.05	0.02	0.013	0.002	0.004	0
12/30/2021	0.202	0.208	0.2	0.2	0.21	0.21	0.197	0.21	0.2	0.21	0.19	0.209	0.21	0.2	0.2	0.203	0.205	0.209	0.192
12/31/2021	0.006	0	0	0.01	0.01	0	0.009	0.01	0	0	0.01	0.008	0	0.01	0.01	0.01	0.002	0.007	0.01

Table 16 - January 2022 PWD Rain Gage Records

Date/RG	RG1	RG2	RG3	RG4	RG5	RG6	RG7	RG8	RG9	RG10	RG11	RG12	RG13	RG14	RG15	RG16	RG17	RG18
1/1/2022	0.617	0.76	0.89	0.821	0.484	0.7	0.72	0.739	0.69	0.863	0.76	0.48	0.82	0.642	0.37	0.594	0.7	0.73
1/2/2022	0.09	0.09	0.09	0.084	0.082	0.08	0.09	0.094	0.08	0.092	0.1	0.09	0.09	0.081	0.05	0.068	0.1	0.08
1/3/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/4/2022	0	0	0	0	0.002	0	0	0	0	0	0	0	0	0	0	0	0	0
1/5/2022	0.002	0.01	0	0.001	0.008	0	0	0.004	0.01	0.006	0.01	0.01	0.01	0.001	0	0.004	0	0.01
1/6/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/7/2022	0.138	0.139	0.12	0.128	0.139	0.14	0.139	0.14	0.14	0.128	0.14	0.138	0.125	0.137	0.137	0.139	0.137	0.137
1/8/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/9/2022	0.228	0.22	0.2	0.201	0.189	0.16	0.17	0.185	0.23	0.146	0.21	0.19	0.1	0.167	0.11	0.169	0.21	0.18
1/10/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/11/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/12/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/13/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/14/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/15/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/16/2022	0.442	0.54	0.48	0.493	0.285	0.41	0.4	0.436	0.45	0.473	0.48	0.25	0.44	0.39	0.28	0.404	0.43	0.33
1/17/2022	0.635	0.69	0.93	0.932	0.521	0.76	0.74	0.772	0.75	0.946	0.81	0.5	0.99	0.82	0.4	0.614	0.82	0.5
1/18/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/19/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/20/2022	0.346	0.33	0.31	0.32	0.3	0.36	0.33	0.327	0.37	0.327	0.33	0.3	0.34	0.32	0.18	0.29	0.33	0.32
1/21/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/22/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/23/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/24/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/25/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/26/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/27/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/28/2022	0.08	0.08	0.08	0.08	0.085	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.075
1/29/2022	0.081	0.081	0.19	0.156	0.081	0.066	0.04	0.04	0.066	0.156	0.04	0.081	0.145	0.07	0.07	0.066	0.055	0.055
1/30/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/31/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 17 - January 2022 PWD Rain Gage Records

Date/RG	RG19	RG20	RG21	RG22	RG23	RG24	RG25	RG26	RG27	RG28	RG29	RG30	RG31	RG32	RG33	RG34	RG35	RG36	RG37
1/1/2022	0.773	0.824	0.85	0.72	0.59	0.9	0.564	0.78	0.82	0.83	0.88	0.774	0.93	0.91	0.78	0.732	0.801	0.75	0.49
1/2/2022	0.088	0.079	0.09	0.08	0.09	0.08	0.079	0.08	0.08	0.08	0.09	0.098	0.09	0.11	0.08	0.081	0.088	0.083	0.07
1/3/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/4/2022	0	0	0	0	0	0	0.008	0	0	0	0	0	0	0	0	0	0	0	0.02
1/5/2022	0.005	0.005	0	0	0	0.01	0.004	0.01	0	0.01	0	0.008	0.01	0.01	0	0.002	0	0.004	0
1/6/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/7/2022	0.137	0.156	0.14	0.139	0.138	0.18	0.139	0.138	0.132	0.174	0.143	0.139	0.159	0.175	0.138	0.143	0.14	0.14	0.138
1/8/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/9/2022	0.203	0.217	0.31	0.27	0.23	0.28	0.205	0.2	0.21	0.23	0.2	0.187	0.04	0.15	0.23	0.232	0.27	0.218	0.194
1/10/2022	0.001	0.005	0	0	0	0	0	0	0	0.01	0.01	0	0	0	0	0	0	0	0
1/11/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/12/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/13/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/14/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/15/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/16/2022	0.401	0.446	0.46	0.55	0.42	0.44	0.418	0.55	0.52	0.38	0.43	0.466	0.52	0.55	0.55	0.504	0.447	0.409	0.45
1/17/2022	0.669	0.915	0.75	0.78	0.62	0.89	0.612	0.81	0.96	0.88	0.81	0.833	1	1.06	0.65	0.725	0.745	0.679	0.61
1/18/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/19/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/20/2022	0.335	0.329	0.37	0.36	0.35	0.31	0.321	0.35	0.32	0.34	0.347	0.33	0.35	0.33	0.32	0.345	0.365	0.352	0.32
1/21/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/22/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/23/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/24/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/25/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/26/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/27/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/28/2022	0.075	0.08	0.08	0.08	0.08	0.08	0.085	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.085	0.08	0.08	0.08
1/29/2022	0.055	0.076	0.066	0.066	0.081	0.03	0.081	0.055	0.152	0.019	0.062	0.055	0.061	0.019	0.081	0.077	0.066	0.066	0.081
1/30/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/31/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 18 – February 2022 PWD Rain Gage Records

Date/RG	RG1	RG2	RG3	RG4	RG5	RG6	RG7	RG8	RG9	RG10	RG11	RG12	RG13	RG14	RG15	RG16	RG17	RG18
2/1/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/2/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/3/2022	0.263	0.28	0.29	0.295	0.221	0.324	0.85	0.577	0.32	0.32	0.29	0.22	0.32	0.23	0.12	0.365	0.27	0.33
2/4/2022	0.841	0.87	0.81	0.784	0.65	0.818	0.77	0.795	0.81	0.833	0.83	0.64	0.87	0.74	0.45	0.695	0.77	0.65
2/5/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/6/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/7/2022	0.05	0.05	0.05	0.075	0.066	0.046	0.07	0.063	0.05	0.071	0.05	0.07	0.11	0.08	0.03	0.048	0.08	0.05
2/8/2022	0	0	0	0	0	0	0	0.004	0	0.001	0.01	0	0	0	0	0	0	0
2/9/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/10/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/11/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/12/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/13/2022	0.324	0.22	0.33	0.172	0.192	0.229	0.27	0.284	0.23	0.266	0.32	0.19	0.18	0.22	0.18	0.247	0.24	0.29
2/14/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/15/2022	0	0	0	0.003	0.001	0.055	0.01	0	0.06	0.005	0	0	0.01	0	0	0.009	0	0
2/16/2022	0.004	0.02	0	0.002	0.001	0.008	0.01	0	0.01	0	0	0	0	0	0	0.001	0.01	0
2/17/2022	0.085	0.07	0.07	0.069	0.063	0.074	0.07	0.07	0.07	0.074	0.07	0.06	0.07	0.06	0.069	0.069	0.06	0.07
2/18/2022	0.381	0.37	0.29	0.282	0.413	0.294	0.17	0.2	0.3	0.284	0.32	0.39	0.33	0.37	0.322	0.369	0.2	0.13
2/19/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/20/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/21/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/22/2022	0.144	0.16	0.16	0.158	0.132	0.156	0.15	0.17	0.15	0.162	0.15	0.12	0.18	0.14	0.2	0.164	0.15	0.13
2/23/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/24/2022	0.057	0.08	0.05	0.041	0.038	0.057	0.03	0.04	0.068	0.046	0.07	0.03	0.04	0.07	0.04	0.057	0.02	0.03
2/25/2022	0.973	1.01	0.85	0.884	0.901	0.944	0.89	0.89	0.956	0.887	0.84	0.84	0.95	0.99	0.54	0.863	0.93	0.83
2/26/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/27/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/28/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 19 - February 2022 PWD Rain Gage Records

Date/RG	RG19	RG20	RG21	RG22	RG23	RG24	RG25	RG26	RG27	RG28	RG29	RG30	RG31	RG32	RG33	RG34	RG35	RG36	RG37
2/1/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/2/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/3/2022	0.379	0.323	0.37	0.34	0.26	0.36	0.25	0.8	0.28	0.36	0.372	0.333	0.36	0.43	0.32	0.323	0.362	0.348	0.23
2/4/2022	0.753	0.812	0.91	0.85	0.84	0.73	0.75	0.92	0.77	0.85	0.838	0.82	0.88	0.91	0.8	0.822	0.893	0.784	0.73
2/5/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/6/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/7/2022	0.052	0.087	0.04	0.03	0.05	0.06	0.06	0.07	0.08	0.1	0.054	0.058	0.07	0.09	0.02	0.031	0.04	0.044	0.07
2/8/2022	0.001	0	0	0	0	0	0	0	0	0	0.001	0.006	0	0	0	0	0	0	0
2/9/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/10/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/11/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/12/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/13/2022	0.241	0.214	0.07	0.24	0.35	0.29	0.23	0.36	0.104	0.22	0.185	0.288	0.24	0.22	0.33	0.255	0.097	0.192	0.22
2/14/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/15/2022	0.002	0.008	0.01	0.04	0	0	0.005	0.01	0.003	0.01	0.006	0.001	0.01	0.01	0	0.022	0.016	0.011	0.01
2/16/2022	0.023	0	0.12	0	0	0	0	0	0	0	0.046	0	0	0.01	0	0.004	0.099	0.048	0.01
2/17/2022	0.077	0.08	0.1	0.09	0.09	0.07	0.06	0.07	0.072	0.08	0.085	0.07	0.09	0.1	0.076	0.084	0.095	0.083	0.08
2/18/2022	0.186	0.295	0.17	0.28	0.38	0.24	0.51	0.33	0.287	0.3	0.218	0.273	0.23	0.43	0.345	0.287	0.184	0.177	0.33
2/19/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/20/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/21/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/22/2022	0.151	0.147	0.15	0.16	0.14	0.12	0.15	0.16	0.155	0.15	0.161	0.156	0.143	0.13	0.158	0.175	0.27	0.15	0.14
2/23/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/24/2022	0.033	0.014	0	0.06	0.05	0.04	0.07	0.07	0.04	0.01	0.027	0.054	0.04	0.01	0.2	0.088	0.01	0.05	0.01
2/25/2022	0.882	0.824	0.9	0.96	0.96	0.82	1.06	1.03	0.854	0.82	0.896	0.869	0.854	0.84	0.88	0.928	0.93	0.95	0.93
2/26/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/27/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2/28/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 20 – March 2022 PWD Rain Gage Records

Date/RG	RG1	RG2	RG3	RG4	RG5	RG6	RG7	RG8	RG9	RG10	RG11	RG12	RG13	RG14	RG15	RG16	RG17	RG18
3/1/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/2/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/3/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/4/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/5/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/6/2022	0.117	0.1	0.08	0.075	0.114	0.085	0.06	0.07	0.09	0.076	0.06	0.11	0.07	0.09	0.05	0.084	0.08	0.05
3/7/2022	0.004	0.01	0.07	0.056	0.013	0.042	0.02	0.06	0.04	0.07	0.06	0.01	0.07	0.02	0	0.019	0.02	0.04
3/8/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/9/2022	0.403	0.41	0.43	0.425	0.343	0.405	0.38	0.4	0.4	0.446	0.42	0.3	0.48	0.36	0.23	0.358	0.38	0.32
3/10/2022	0.002	0.01	0	0.003	0	0	0	0	0	0.003	0	0	0.01	0	0	0	0	0
3/11/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/12/2022	0.606	0.64	0.6	0.555	0.473	0.617	0.54	0.54	0.62	0.55	0.57	0.4	0.53	0.53	0.31	0.514	0.55	0.42
3/13/2022	0.006	0.03	0	0.006	0.002	0.055	0	0.01	0.06	0.005	0	0	0.01	0	0	0.013	0.01	0.01
3/14/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/15/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/16/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/17/2022	0.189	0.21	0.2	0.209	0.198	0.192	0.19	0.17	0.2	0.221	0.19	0.17	0.24	0.28	0.14	0.203	0.18	0.13
3/18/2022	0	0	0	0.003	0	0	0	0	0	0.003	0	0	0.01	0	0	0.002	0	0
3/19/2022	0.197	0.2	0.25	0.16	0.152	0.193	0.15	0.19	0.19	0.207	0.18	0.15	0.2	0.14	0.04	0.15	0.14	0.11
3/20/2022	0	0	0	0	0	0.001	0	0	0	0	0	0	0	0	0	0	0	0
3/21/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/22/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/23/2022	0.243	0.29	0.23	0.21	0.178	0.298	0.21	0.26	0.3	0.244	0.25	0.13	0.28	0.18	0.13	0.28	0.2	0.23
3/24/2022	0.531	0.54	0.59	0.62	0.453	0.509	0.54	0.53	0.49	0.584	0.53	0.36	0.63	0.53	0.32	0.57	0.55	0.39
3/25/2022	0	0	0	0	0	0.007	0	0	0.01	0.004	0.01	0	0.01	0	0	0	0	0
3/26/2022	0	0	0	0	0	0	0	0	0	0.005	0	0	0	0	0	0	0	0
3/27/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/28/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/29/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/30/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/31/2022	0.021	0.07	0.12	0.02	0.027	0.115	0.11	0.13	0.1	0.156	0.12	0.03	0.14	0.03	0.01	0.02	0.08	0.1

Table 21 - March 2022 PWD Rain Gage Records

Date/RG	RG19	RG20	RG21	RG22	RG23	RG24	RG25	RG26	RG27	RG28	RG29	RG30	RG31	RG32	RG33	RG34	RG35	RG36	RG37
3/1/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/2/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/3/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/4/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/5/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/6/2022	0.059	0.072	0.066	0.08	0.12	0.08	0.13	0.08	0.077	0.07	0.069	0.066	0.08	0.07	0.1	0.085	0.07	0.06	0.11
3/7/2022	0.05	0.068	0.067	0.04	0	0.05	0.02	0.02	0.066	0.07	0.06	0.057	0.09	0.12	0.03	0.038	0.07	0.07	0.02
3/8/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/9/2022	0.374	0.451	0.33	0.41	0.4	0.39	0.44	0.42	0.434	0.46	0.396	0.417	0.47	0.47	0.38	0.404	0.48	0.44	0.35
3/10/2022	0.001	0.008	0	0	0	0	0	0	0.003	0.01	0.01	0.001	0	0	0	0.001	0	0	0
3/11/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/12/2022	0.485	0.481	0.43	0.67	0.6	0.53	0.61	0.62	0.555	0.47	0.43	0.547	0.49	0.45	0.64	0.613	0.51	0.59	0.56
3/13/2022	0.015	0.009	0.05	0.08	0	0.01	0.01	0.01	0.004	0.01	0.04	0.003	0.01	0.06	0.01	0.043	0.05	0	0
3/14/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/15/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/16/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/17/2022	0.2	0.266	0.16	0.19	0.18	0.21	0.28	0.23	0.219	0.28	0.18	0.19	0.25	0.21	0.23	0.19	0.14	0.12	0.18
3/18/2022	0	0.008	0	0	0	0	0	0.01	0.003	0.01	0.01	0.001	0	0.01	0	0	0	0	0
3/19/2022	0.2	0.194	0.11	0.25	0.2	0.18	0.15	0.15	0.201	0.2	0.07	0.179	0.17	0.14	0.21	0.202	0.15	0.16	0.2
3/20/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0
3/21/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/22/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/23/2022	0.27	0.239	0.3	0.31	0.23	0.21	0.24	0.27	0.227	0.25	0.25	0.248	0.25	0.21	0.31	0.298	0.3	0.28	0.23
3/24/2022	0.51	0.62	0.58	0.55	0.53	0.5	0.62	0.64	0.598	0.64	0.63	0.535	0.56	0.71	0.46	0.516	0.5	0.67	0.52
3/25/2022	0	0.001	0	0	0	0.01	0	0	0.002	0	0	0.005	0	0	0	0.001	0	0	0
3/26/2022	0	0.001	0	0	0	0.02	0	0	0.002	0	0	0	0.02	0	0	0	0	0	0
3/27/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/28/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/29/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/30/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/31/2022	0.24	0.112	0.26	0.11	0.01	0.18	0.01	0.1	0.097	0.11	0.37	0.14	0.26	0.64	0.11	0.127	0.22	0.264	0.05

Table 22 - April 2022 PWD Rain Gage Records

Date/RG	RG1	RG2	RG3	RG4	RG5	RG6	RG7	RG8	RG9	RG10	RG11	RG12	RG13	RG14	RG15	RG16	RG17	RG18
4/1/2022	0.325	0.35	0.19	0.26	0.314	0.234	0.23	0.24	0.25	0.212	0.2	0.24	0.18	0.44	0.2	0.4	0.26	0.13
4/2/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/3/2022	0.166	0.15	0.17	0.19	0.151	0.116	0.09	0.12	0.12	0.201	0.17	0.16	0.29	0.11	0.04	0.08	0.1	0.09
4/4/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/5/2022	0.126	0.19	0.15	0.17	0.119	0.134	0.13	0.13	0.13	0.164	0.14	0.11	0.18	0.12	0.08	0.12	0.13	0.11
4/6/2022	0.874	1.06	0.99	1.04	0.833	1.092	0.91	0.96	1.09	1.011	0.97	0.7	1.01	0.94	0.61	1.13	0.93	0.79
4/7/2022	1.472	1.75	1.99	1.7	1.277	1.895	1.72	1.74	1.82	1.98	1.76	1.11	2.01	1.44	0.89	1.77	1.69	1.47
4/8/2022	0.034	0.06	0	0	0.008	0.052	0.01	0.01	0.05	0.01	0.01	0	0.02	0.01	0	0.02	0.02	0.03
4/9/2022	0.228	0.33	0.26	0.17	0.137	0.267	0.23	0.33	0.26	0.34	0.32	0.1	0.26	0.13	0.1	0.25	0.21	0.26
4/10/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/11/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/12/2022	0.01	0.01	0.01	0.01	0.01	0.016	0.01	0	0.02	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01
4/13/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/14/2022	0.19	0.4	0.07	0.06	0.106	0.272	0.15	0.16	0.3	0.06	0.12	0.06	0.06	0.09	0.03	0.28	0.11	0.14
4/15/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/16/2022	0.134	0.14	0.16	0.21	0.144	0.175	0.22	0.15	0.19	0.15	0.16	0.11	0.19	0.21	0.14	0.26	0.2	0.13
4/17/2022	0	0	0	0	0	0	0	0.01	0	0.01	0	0	0	0	0	0	0	0
4/18/2022	1.199	1.56	1.28	1.37	1.016	1.702	1.25	1.27	1.7	1.41	1.18	0.76	1.43	1.25	0.76	1.47	1.21	1.07
4/19/2022	0.087	0.11	0.21	0.19	0.062	0.165	0.12	0.16	0.17	0.23	0.17	0.03	0.17	0.09	0.05	0.14	0.14	0.04
4/20/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/21/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/22/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/23/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/24/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/25/2022	0	0	0.05	0.04	0	0	0	0	0	0	0	0	0.02	0	0	0	0	0
4/26/2022	0.034	0.05	0.03	0.02	0.024	0.033	0.03	0.04	0.03	0.05	0.04	0.02	0.03	0.02	0	0.04	0.03	0.03
4/27/2022	0	0	0	0	0	0	0	0.01	0	0	0	0	0	0	0	0	0	0
4/28/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/29/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/30/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 23 – April 2022 PWD Rain Gage Records

Date/RG	RG19	RG20	RG21	RG22	RG23	RG24	RG25	RG26	RG27	RG28	RG29	RG30	RG31	RG32	RG33	RG34	RG35	RG36	RG37
4/1/2022	0.28	0.2	0.17	0.19	0.31	0.18	0.53	0.26	0.217	0.19	0.12	0.219	0.29	0.31	0.28	0.229	0.13	0.2	0.2
4/2/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/3/2022	0.1	0.183	0.12	0.12	0.17	0.13	0.16	0.11	0.181	0.19	0.26	0.155	0.2	0.26	0.15	0.126	0.1	0.08	0.17
4/4/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/5/2022	0.14	0.153	0.13	0.16	0.11	0.15	0.13	0.2	0.158	0.15	0.14	0.141	0.2	0.17	0.11	0.136	0.12	0.13	0.17
4/6/2022	1.07	1.089	1.15	1.08	0.82	0.98	1.04	1.29	1.017	1.12	1.16	0.985	1.07	1.17	1	1.056	1.14	1.12	0.97
4/7/2022	1.97	1.62	2.56	2.05	1.41	2.16	1.52	1.8	1.77	2.1	2.25	1.821	2.07	2	1.71	1.936	2.34	2.2	1.3
4/8/2022	0.05	0	0.09	0.06	0.03	0.01	0.02	0.03	0	0	0.1	0.015	0.02	0.01	0.09	0.068	0.11	0.04	0.01
4/9/2022	0.29	0.18	0.38	0.25	0.21	0.23	0.2	0.23	0.22	0.19	0.43	0.305	0.3	0.32	0.21	0.262	0.34	0.34	0.1
4/10/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/11/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/12/2022	0.01	0	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.02	0.008	0.01	0.01	0.01	0.01	0	0	0.01
4/13/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/14/2022	0.09	0.03	0.05	0.27	0.15	0.05	0.16	0.17	0.07	0.03	0.06	0.114	0.11	0.19	0.34	0.245	0.06	0.12	0.1
4/15/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/16/2022	0.1	0.16	0.12	0.17	0.13	0.15	0.2	0.19	0.16	0.18	0.1	0.156	0.15	0.12	0.15	0.153	0.11	0.1	0.13
4/17/2022	0	0	0	0	0	0	0	0.01	0.01	0	0	0.003	0	0	0	0	0	0	0
4/18/2022	1.55	1.05	2.02	1.72	1.11	1.23	1.4	1.56	1.14	1.36	1.98	1.298	1.49	1.58	1.51	1.645	1.93	1.71	1.23
4/19/2022	0.21	0.14	0.26	0.15	0.08	0.19	0.11	0.2	0.2	0.21	0.22	0.175	0.22	0.23	0.11	0.151	0.26	0.14	0.08
4/20/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/21/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/22/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/23/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/24/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/25/2022	0	0	0	0	0	0	0	0	0	0	0	0.003	0	0	0	0	0	0	0
4/26/2022	0.05	0.01	0.09	0.03	0.03	0.03	0.03	0.04	0.02	0.02	0.07	0.04	0.06	0.08	0.04	0.044	0.1	0.04	0.03
4/27/2022	0	0	0	0	0	0	0	0	0	0.01	0	0.002	0	0	0	0	0	0	0
4/28/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/29/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/30/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 24 – May 2022 PWD Rain Gage Records

Date/RG	RG1	RG2	RG3	RG4	RG5	RG6	RG7	RG8	RG9	RG10	RG11	RG12	RG13	RG14	RG15	RG16	RG17	RG18
5/1/2022	0	0	0.01	0.01	0.007	0.001	0	0.01	0	0.01	0.01	0.01	0.01	0	0	0	0.01	0.01
5/2/2022	0.032	0.08	0.21	0.27	0.059	0.068	0.12	0.19	0.07	0.14	0.26	0.06	0.27	0.28	0.09	0.11	0.2	0.1
5/3/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5/4/2022	0.146	0.16	0.15	0.18	0.136	0.17	0.17	0.17	0.17	0.18	0.16	0.12	0.16	0.16	0.09	0.16	0.17	0.18
5/5/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5/6/2022	0.756	0.87	0.71	0.86	0.708	0.844	0.74	0.76	0.84	0.77	0.7	0.64	0.78	0.74	0.46	0.91	0.67	0.69
5/7/2022	0.826	1.29	1.44	1.7	0.633	1.512	1.13	1.28	1.48	1.61	1.29	0.3	1.63	0.95	0.59	1.32	1.19	0.97
5/8/2022	0.084	0.09	0.06	0.1	0.096	0.109	0.1	0.13	0.11	0.12	0.11	0.09	0.11	0.09	0.05	0.09	0.08	0.12
5/9/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5/10/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5/11/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5/12/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5/13/2022	0.113	0.06	0.2	0.53	0.045	0.05	0.03	0.03	0	0.219	0.1	0	0.18	0.02	0.02	0	0.12	0.11
5/14/2022	0.166	0.12	0.23	0.17	0.303	0.297	0.22	0.22	0.32	0.222	0.21	0.31	0.24	0.2	0.13	0.27	0.2	0.21
5/15/2022	0	0	0	0	0	0.007	0	0	0.01	0	0	0	0	0	0	0	0	0
5/16/2022	0.055	0.12	0.07	0.05	0.051	0.159	0.1	0.12	0.17	0.135	0.12	0.05	0.08	0.05	0.03	0.13	0.08	0.12
5/17/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5/18/2022	0.028	0.02	0.03	0.02	0.023	0.021	0.02	0.03	0.02	0.024	0.03	0.02	0.02	0.02	0.01	0.03	0.03	0.02
5/19/2022	0.498	0.52	0.67	0.94	0.506	0.629	0.72	0.7	0.63	0.677	0.65	0.47	0.71	0.62	0.35	0.65	0.76	0.76
5/20/2022	0.439	0.61	0.17	0.2	0.436	0.179	0.14	0.15	0.14	0.236	0.15	0.39	0.16	0.37	0.26	0.63	0.12	0.15
5/21/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5/22/2022	0.077	0.12	0	0	0.02	0.049	0.03	0	0.05	0.008	0	0.01	0	0.01	0	0.01	0.01	0.08
5/23/2022	0.001	0	0	0	0.002	0	0	0	0	0	0	0	0	0	0	0	0	0
5/24/2022	0	0	0	0	0.001	0.007	0	0	0.01	0.01	0	0	0	0	0	0	0	0
5/25/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5/26/2022	0	0	0	0	0	0.016	0	0.01	0.02	0.01	0	0	0	0	0	0	0	0.01
5/27/2022	1.242	1.07	1.14	1.11	1.165	1.252	0.98	1.07	1.22	1.169	1.13	1.14	1.35	1.22	0.62	1.15	1.11	1.11
5/28/2022	0.312	0.26	0.01	0	0.064	0.105	0	0.01	0.12	0.015	0	0.04	0.01	0.01	0	0.12	0	0.01
5/29/2022	0	0	0	0	0	0	0	0	0	0.01	0	0	0	0	0	0	0	0
5/30/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5/31/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 25 - May 2022 PWD Rain Gage Records

Date/RG	RG19	RG20	RG21	RG22	RG23	RG24	RG25	RG26	RG27	RG28	RG29	RG30	RG31	RG32	RG33	RG34	RG35	RG36	RG37
5/1/2022	0.01	0	0.02	0	0	0.01	0	0	0.01	0	0.01	0.009	0.01	0	0.01	0.005	0.01	0.01	0.01
5/2/2022	0.15	0.19	0.15	0.06	0.02	0.29	0.04	0.14	0.24	0.31	0.11	0.211	0.19	0.44	0.07	0.078	0.12	0.04	0.04
5/3/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5/4/2022	0.16	0.14	0.19	0.19	0.14	0.16	0.16	0.17	0.14	0.17	0.19	0.164	0.17	0.17	0.17	0.174	0.18	0.17	0.15
5/5/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5/6/2022	0.86	0.69	0.93	0.83	0.73	0.7	0.8	0.94	0.78	0.8	0.92	0.75	0.95	1.01	0.74	0.82	0.89	0.94	0.79
5/7/2022	1.42	1.39	1.75	1.61	0.7	1.36	1.07	1.39	1.55	1.77	1.64	1.353	1.63	1.73	1.22	1.465	1.89	1.57	0.94
5/8/2022	0.1	0.07	0.12	0.1	0.08	0.1	0.1	0.12	0.07	0.12	0.13	0.114	0.15	0.16	0.08	0.094	0.09	0.12	0.14
5/9/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5/10/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5/11/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5/12/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5/13/2022	0.13	0.58	0.14	0.03	0.12	0.48	0.01	0.04	0.51	0.82	0.1	0.105	0.26	1.02	0.32	0.139	0.07	0.66	0.49
5/14/2022	0.23	0.16	0.22	0.28	0.16	0.2	0.31	0.29	0.17	0.13	0.3	0.214	0.23	0.17	0.17	0.224	0.16	0.2	0.37
5/15/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0.001	0	0	0
5/16/2022	0.19	0.09	0.26	0.15	0.04	0.32	0.02	0.11	0.1	0.14	0.35	0.129	0.31	0.22	0.13	0.14	0.13	0.1	0.08
5/17/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5/18/2022	0.03	0	0.03	0.02	0.03	0.01	0.03	0.02	0.02	0	0.03	0.028	0.02	0	0.03	0.025	0.03	0.02	0.03
5/19/2022	0.62	0.68	0.72	0.58	0.49	0.63	0.57	0.69	0.72	0.62	0.63	0.671	0.65	0.63	0.46	0.576	0.67	0.69	0.48
5/20/2022	0.38	0.2	0.73	0.16	0.4	0.36	0.54	0.29	0.12	0.26	0.52	0.192	0.39	0.318	0.6	0.377	0.52	0.34	0.39
5/21/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5/22/2022	0	0	0	0.07	0.07	0	0.04	0	0	0	0.03	0.004	0.04	0.02	0.17	0.077	0	0.01	0.03
5/23/2022	0	0	0.01	0	0	0	0.01	0.01	0	0	0.01	0	0	0	0.01	0.003	0	0	0
5/24/2022	0	0	0	0	0	0	0	0	0.01	0	0	0.001	0	0	0.01	0.003	0	0	0.01
5/25/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5/26/2022	0	0	0.03	0.01	0	0	0	0	0	0	0.01	0.003	0	0	0.02	0.014	0.03	0.01	0
5/27/2022	1.03	0.97	1.2	1.48	1.28	1.32	1.25	1.16	0.89	0.94	0.83	1.113	1.09	1.16	1.12	1.245	1.11	1.27	1.22
5/28/2022	0.03	0.01	0.09	0.07	0.35	0.02	0.07	0	0	0.02	0.02	0.007	0.04	0.003	0.34	0.145	0.02	0.06	0.15
5/29/2022	0	0	0	0	0	0	0	0	0	0	0	0.001	0	0.01	0	0	0	0	0
5/30/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5/31/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 26 - June 2022 PWD Rain Gage Records

Date/RG	RG1	RG2	RG3	RG4	RG5	RG6	RG7	RG8	RG9	RG10	RG11	RG12	RG13	RG14	RG15	RG16	RG17	RG18
6/1/2022	0	0	0	0	0	0.016	0	0	0.02	0	0	0	0	0	0	0	0	0
6/2/2022	1.02	0.87	0.37	0.27	0.833	0.564	0.38	0.31	0.58	0.52	0.24	0.89	0.28	0.53	0.26	0.89	0.38	0.26
6/3/2022	0	0	0	0.01	0	0	0.01	0.01	0	0.01	0	0	0	0.03	0	0	0	0.01
6/4/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/5/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/6/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/7/2022	0.089	0.09	0.07	0.07	0.069	0.115	0.12	0.09	0.12	0.07	0.09	0.06	0.08	0.07	0.04	0.09	0.1	0.08
6/8/2022	0.596	0.74	0.49	0.5	0.656	0.501	0.6	0.51	0.55	0.68	0.67	0.65	1.05	0.63	0.42	0.61	0.9	0.41
6/9/2022	1.038	0.85	0.68	0.84	0.977	0.618	0.73	0.67	0.61	0.86	0.65	1.16	0.77	0.95	0.53	0.69	0.93	0.57
6/10/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/11/2022	0.002	0.01	0	0.01	0.001	0.016	0.01	0	0.02	0	0	0	0	0.01	0.01	0.01	0.01	0
6/12/2022	1.206	1.57	1.53	1.38	1.403	1.682	1.68	1.46	1.71	1.57	1.34	1.37	1.46	1.58	0.87	1.84	1.52	1.51
6/13/2022	0	0	0.18	0.12	0	0	0	0.01	0	0.27	0.02	0	0.14	0	0	0	0	0
6/14/2022	0.176	0.16	0.04	0.09	0.139	0.302	0.1	0.07	0.34	0.1	0.03	0.1	0.04	0.11	0.14	0.35	0.09	0.11
6/15/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/16/2022	0.436	0.63	0.48	0.64	0.643	0.71	0.33	0.26	0.79	0.36	0.26	0.66	0.39	0.36	0.23	0.49	0.28	0.38
6/17/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/18/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/19/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/20/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/21/2022	0.051	0.08	0	0	0.001	0.017	0	0	0.01	0	0	0	0	0	0	0	0	0.02
6/22/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01
6/23/2022	0.412	0.44	0.31	0.38	0.229	0.371	0.32	0.32	0.381	0.436	0.33	0.2	0.4	0.31	0.2	0.29	0.34	0.43
6/24/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/25/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/26/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/27/2022	0.427	0.11	0.39	0.41	0.591	0.254	0.83	0.61	0.157	0.24	0.52	0.64	0.44	0.28	0.25	0.26	0.72	0.52
6/28/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/29/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/30/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 27 - June 2022 PWD Rain Gage Records

Date/RG	RG19	RG20	RG21	RG22	RG23	RG24	RG25	RG26	RG27	RG28	RG29	RG30	RG31	RG32	RG33	RG34	RG35	RG36	RG37
6/1/2022	0	0.16	0.01	0	0	0.26	0	0	0.2	0.2	0	0.011	0.28	0	0	0.005	0.03	0	0
6/2/2022	0.33	1.08	0.54	0.49	1.08	0.52	0.6	0.5	0.58	0.58	0.33	0.326	0.68	0.562	1.1	0.694	0.63	0.49	1.25
6/3/2022	0	0.01	0	0	0	0.02	0	0.02	0.03	0.01	0	0.004	0.01	0.01	0	0	0	0	0
6/4/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/5/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/6/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/7/2022	0.05	0.07	0.08	0.12	0.09	0.04	0.08	0.1	0.06	0.05	0.1	0.083	0.07	0.053	0.13	0.106	0.06	0.08	0.07
6/8/2022	0.36	0.47	0.28	0.38	0.56	0.62	0.65	0.58	0.41	0.44	0.27	0.615	0.37	0.545	0.37	0.417	0.27	0.36	0.84
6/9/2022	0.75	0.66	0.66	0.55	1.11	1.03	0.58	0.72	0.89	0.94	0.6	0.705	0.8	0.929	0.7	0.663	0.72	0.77	1.23
6/10/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/11/2022	0	0	0	0.01	0	0	0	0.01	0	0	0	0.001	0	0.01	0.02	0.012	0.01	0	0
6/12/2022	1.48	1.27	1.23	1.69	1.11	1.2	1.49	1.55	1.27	1.34	0.86	1.413	1.11	1.262	0.79	1.408	1.57	1.58	1.17
6/13/2022	0	0.25	0	0	0	0	0	0	0.1	0	0.4	0.052	0.03	0.039	0	0.002	0	0	0
6/14/2022	0.02	0.07	0.05	0.29	0.18	0.04	0.16	0.16	0.05	0.06	0.07	0.055	0.07	0.054	0.198	0.215	0.08	0.11	0.18
6/15/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/16/2022	0.29	0.88	0.59	0.55	0.37	0.76	0.72	0.37	0.61	0.94	0.19	0.304	0.51	0.71	0.599	0.55	0.45	0.43	0.58
6/17/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/18/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/19/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/20/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/21/2022	0	0	0	0.05	0.05	0	0	0	0	0	0	0	0	0	0.061	0.034	0.03	0.018	0
6/22/2022	0	0	0.01	0	0	0	0	0	0	0	0.01	0	0	0	0	0.002	0.02	0.012	0
6/23/2022	0.43	0.45	0.48	0.37	0.41	0.31	0.326	0.35	0.34	0.44	0.49	0.354	0.43	0.365	0.44	0.396	0.37	0.409	0.36
6/24/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/25/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/26/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/27/2022	0.34	0.16	0.39	0.13	0.49	0.14	0.463	0.1	0.28	0.21	0.26	0.489	0.23	0.348	0.13	0.242	0.65	0.513	0.69
6/28/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/29/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/30/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 28 - Rain Gage records by year and month for FY22

Date/ RG	RG1	RG2	RG3	RG4	RG5	RG6	RG7	RG8	RG9	RG10	RG11	RG12	RG13	RG14	RG15	RG16	RG17	RG18	
Jul21	8.90	5.68	9.30	11.46	7.33	4.28	7.22	4.31	4.40	7.61	2.72	6.62	8.27	8.38	4.14	5.56	8.71	3.82	
Aug21	10.07	6.05	6.01	4.13	4.57	6.19	5.35	5.27	5.37	7.63	4.70	3.44	5.53	5.00	4.55	5.15	5.58	5.41	
Sep21	6.69	5.35	5.98	4.33	5.32	5.35	5.53	5.90	6.50	6.76	5.77	5.01	5.90	5.64	4.86	5.10	5.72	5.47	
Oct21	3.54	4.03	4.42	4.15	4.43	4.47	4.40	4.29	5.16	4.14	4.36	4.31	4.48	4.60	3.08	4.06	4.32	3.86	
Nov21	0.58	0.63	0.58	0.46	0.61	0.66	0.55	0.55	0.65	0.72	0.56	0.70	0.59	0.55	0.31	0.48	0.57	0.53	
Dec21	1.51	1.35	1.02	1.10	1.27	1.27	1.07	1.10	1.18	1.36	1.17	1.31	1.22	1.00	0.60	1.00	1.13	1.06	
Jan22	2.66	2.94	3.29	3.22	2.18	2.76	2.71	2.82	2.87	3.22	2.96	2.12	3.14	2.71	1.68	2.43	2.86	2.42	
Feb22	3.12	3.13	2.90	2.77	2.68	3.01	3.29	3.09	3.02	2.95	2.95	2.56	3.06	2.90	1.95	2.89	2.73	2.51	
Mar22	2.32	2.51	2.57	2.34	1.95	2.52	2.20	2.36	2.50	2.57	2.39	1.66	2.68	2.16	1.23	2.21	2.19	1.80	
Apr22	4.88	6.16	5.56	5.43	4.20	6.15	5.10	5.33	6.13	5.84	5.25	3.41	5.86	4.87	2.91	5.97	5.04	4.30	
May22	4.78	5.39	5.10	6.14	4.26	5.48	4.50	4.88	5.38	5.57	4.92	3.65	5.71	4.74	2.70	5.58	4.75	4.65	
Jun22	5.45	5.55	4.54	4.72	5.54	5.17	5.11	4.32	5.29	5.12	4.15	5.73	5.05	4.86	2.95	5.52	5.27	4.31	
Total	54.50	48.77	51.27	50.25	44.33	47.29	47.03	44.23	48.45	53.48	41.90	40.51	51.49	47.40	30.95	45.95	48.87	40.13	

Date/ RG	RG19	RG20	RG21	RG22	RG23	RG24	RG25	RG26	RG27	RG28	RG29	RG30	RG31	RG32	RG33	RG34	RG35	RG36	RG37
Jul21	3.79	14.00	3.75	3.65	6.63	4.23	7.27	6.38	11.37	9.37	4.33	4.60	6.53	6.50	3.91	4.18	3.90	3.57	6.88
Aug21	7.77	5.79	7.46	5.88	5.56	6.49	5.85	4.95	6.30	6.87	8.55	6.13	6.87	4.87	3.90	5.70	7.11	6.49	4.32
Sep21	6.97	5.44	7.63	5.65	4.71	5.60	5.58	3.71	5.12	5.97	8.15	6.33	6.83	5.70	5.55	5.98	7.91	6.66	5.34
Oct21	4.73	4.37	4.72	5.21	3.96	4.29	4.37	3.50	4.54	4.21	4.68	4.33	4.40	4.28	4.22	4.72	5.02	5.11	4.86
Nov21	0.64	0.60	0.83	0.67	0.57	0.64	0.58	0.42	0.55	0.67	0.91	0.59	0.82	0.65	0.60	0.64	0.80	0.67	0.56
Dec21	1.15	1.17	1.36	1.20	1.55	1.14	1.27	1.26	1.10	1.26	1.25	1.17	1.29	1.29	1.50	1.30	1.30	1.22	1.21
Jan22	2.74	3.13	3.12	3.05	2.60	3.20	2.52	3.05	3.27	3.03	3.05	2.97	3.24	3.39	2.91	2.93	3.00	2.78	2.45
Feb22	2.78	2.80	2.84	3.05	3.12	2.73	3.15	3.82	2.65	2.90	2.89	2.93	2.92	3.18	3.13	3.02	3.00	2.84	2.76
Mar22	2.40	2.53	2.35	2.69	2.27	2.37	2.51	2.55	2.49	2.58	2.52	2.39	2.65	3.09	2.48	2.52	2.49	2.66	2.22
Apr22	5.91	4.82	7.15	6.26	4.57	5.50	5.51	6.11	5.17	5.76	6.91	5.44	6.19	6.45	5.71	6.06	6.74	6.22	4.50
May22	5.34	5.17	6.59	5.64	4.61	5.96	5.02	5.37	5.33	6.10	5.83	5.07	6.13	7.07	5.67	5.61	5.92	6.21	5.32
Jun22	4.05	5.53	4.32	4.63	5.45	4.94	5.07	4.46	4.82	5.21	3.58	4.41	4.59	4.89	4.54	4.75	4.89	4.77	6.37
Total	48.27	55.35	52.12	47.58	45.60	47.10	48.69	45.58	52.71	53.93	52.65	46.36	52.46	51.36	44.12	47.39	52.07	49.20	46.79

Table 29 - SSO Statistics for Period July 1 2021 – June 30 2022

Main & Shurs					
Event No.	Start of Overflow Date Time	End of Overflow Date Time	Event Duration (hours:mins)	Flow Volume (ft^3)	Flow Volume (Millions of gallons)
0			0	0	0

PC-30					
Event No.	Start of Overflow Date	End of Overflow Date	Event Duration (hours:mins)	Flow Volume (ft^3)	Flow Volume (Millions of gallons)
1	7/12/21 17:32	7/12/21 21:10	3:37	174717	1.307
2	9/1/21 21:47	9/1/21 22:07	0:20	7145	0.053
3	9/1/21 23:27	9/2/21 0:30	1:02	17479	0.131

Appendix E – PCB PMP 15th Annual Report

PHILADELPHIA WATER DEPARTMENT

PCB

Pollutant Minimization Plan

Fifteenth Annual Report
Calendar Year 2021

Table of Contents

1 PMP Achievement Executive Summary

The Philadelphia Water Department (PWD) submitted its PCB Pollutant Minimization Plan (PCB PMP) on September 30, 2005 and was issued a Completeness Determination letter on January 12, 2006. PWD initiated the actions called for in its PCB PMP on March 4, 2006.

PWD's PCB PMP set out the following approaches to achieving PCB minimization:

- Sample three Water Pollution Control Plants' effluent every two years and analyze using Method 1668A.
- Visit and inspect three hundred ninety-nine (399) sites listed by either EPA or other agencies as housing PCB-containing devices and report the number of devices that have been removed from each site, both prior to our inspection and subsequent to it.
- Visit and inspect thirty-one (31) sites listed by the Philadelphia Department of Public Health as having previously undergone some type of PCB remediation activity and report the number of sites removed from the list as posing no threat of PCB discharge to PWD's sewer system.
- Report any reductions in PCB concentrations in the wastestreams from our three Water Treatment Plants by measuring PCBs in the ferric chloride used in the treatment process as well as reductions of PCBs in the source water (Delaware River or Schuylkill River).
- Continue the sewershed PCB trackdown sampling program for each of our three Water Pollution Control Plants.

Revisions to the original PMP have been made over the years. Refer to the First through the Fourteenth Annual Reports for specific information on PMP efforts during Years 1 - 14. No changes to the PMP were made in Year 15 (2021). Year 15 efforts are detailed in the attached report.

During the fifteenth year of PWD's PCB PMP, the following tasks were performed:

- Wet-weather PCB sampling and analysis of the three Water Pollution Control Plants' (WPCPs') effluent was performed as required by PWD's NPDES permits. See Section 7, "Tabular Summary", for data.

- PWD inspected one hundred twelve (112) of the three hundred thirty-seven (337) sites remaining on the list by EPA or other agencies as housing PCB-containing devices. This exceeds the goal of 70 site inspections per year. These inspections identified locations where a total of 14 transformers and 68 capacitors had been removed from their sites. Historical information for these sites will be retained, but they will be removed from the schedule for future inspection.

- PWD wet weather and dry weather WPCP effluent data have been entered into the DRBC PCB database.

- Significant reductions in WPCP effluent PCB loadings were seen over the course of the PMP (see "Tabular Summary"). However, there was an unusually high concentration found at NE WPCP in October 2021.

Additionally, the following initiatives were undertaken:

- PWD's PCB database was developed in 2017 and is now being populated. The database was utilized to track and report the 2021 inspections. Going forward, the database will allow PWD to track "active" sites (where Liquid Cooled Electrical Equipment (LCEE) devices are still located on site) versus "inactive" sites (where LCEE devices were previously located but have been removed). Each location has been given a unique ID and has been geocoded in PWD's GIS database.

- In 2021, PWD continued to monitor outlying township connection points for PCBs using EPA Method 680.

- PWD issued 19 new groundwater discharge permits in 2021. Every permit except one was compliant with PWD's regulatory PCB limit of "non-detectable by EPA Method 608". One of the permittees reported a detection of Aroclor 1254 during the initial sampling in January 2021. During the review, it was noted that there was an error in the location in the lab report. The lab submitted a report with a location outside the City of Philadelphia. The same permittee reported a detection for Aroclor 1268 during the month of April 2021. Sample collected in May 2021 for this site shows non-detectable results.

- PWD issued 3 new manhole pumpout permits in 2021. One of the existing permittees notified PWD that in October 2021, there was a PCB detection for Aroclor 1254 using EPA Method 608 in one of the utility manholes during a random sampling event. Additional sample collected from this site shows non-detectable results.

2 *Facility and Contact Information*

Facility Name and Address:	Philadelphia Water Department 1101 Market Street Philadelphia, PA 19107
Water Pollution Control Plants:	Northeast WPCP 3899 Richmond St. Philadelphia, PA 19137 Southeast WPCP 25 Pattison Ave. Philadelphia, PA 19148 Southwest WPCP 8200 Enterprise Ave. Philadelphia, PA 19153
Contact Person:	Jennifer L. Moore Manager Industrial Waste & Backflow Compliance 1101 Market St., 6th Floor Philadelphia, PA 19107 Phone: 215-685-6085 Fax: 215-685-6232 Email: jennifer.l.moore@phila.gov
Date of Submittal of PMP:	September 30, 2005
Date of Completeness Determination:	January 12, 2006
Date of Initiation of PMP:	March 4, 2006
Reporting Period:	Year 15 (Calendar Year 2021)

3 Revisions to PMP

During Year 15, no revisions were made to the PMP.

4 Material and Process Modifications

During Year 15 of the PMP, there were no material or process modifications made relevant to PCB minimization.

5 Measures to Address Known, Probable and Potential Sources

5.1 Known and Probable Sources

Two known sources of PCBs were identified in PWD's PCB PMP. These were the source water for PWD's Water Treatment Plants (Delaware and Schuylkill Rivers) and the ferric chloride supplied to PWD by DuPont and used in the water treatment process. A change of ferric chloride supplier in Year 5 resulted in a 95% reduction in PCB content of the product used by PWD in its water treatment process.

A probable source of PCBs identified in PWD's PCB PMP is sludge stored in lagoons at both NEWPCP and SWWPCP. Trackdown efforts conducted in the sewersheds of both NEWPCP and SWWPCP included sampling of the lagoons. The data are available in Attachment B of the Year 5 report.

5.2 Potential Sources

5.2.1 Historical Potential Sources:

Numerous potential sources of PCBs were identified in PWD's PCB PMP. These were identified from databases supplied by EPA, the Philadelphia Fire Department, the Philadelphia Department of Public Health and others. The thirty-one (31) potential sources supplied by the Philadelphia Department of Public Health were identified as sites at which some form of prior PCB remediation had taken place. All thirty-one (31) of these sites were inspected during Year 1 of the PMP.

The remaining potential sources of PCBs, taken from information supplied by EPA and others, were identified as sites on which PCB devices were believed to be present. These sites were separated into three groups by sewershed (NEWPCP, SEWPCP or SWWPCP). Approximately one hundred sixty-seven (167), seventy-three (73) and one hundred fifty-seven (157) sites were listed for NEWPCP, SEWPCP and SWWPCP, respectively. During 2021 (Year 15 of the PMP), PWD's Industrial Waste group inspected forty-eight (48) of the NEWPCP-related sites, twenty (20) of the SEWPCP-related sites and forty-two (42) of the

SWWPCP-related sites. Details of these inspections are summarized in the Tables, “Inspections of Potential Source Sites” in Attachment B of this report.

Inspections confirmed that 14 transformers and 68 capacitors have been removed from the sites. Historical information for these sites will be retained, but the sites will be removed from the schedule for future inspection.

5.2.2 New Construction and Groundwater Remediation Sites:

In an effort to minimize the amount of PCBs entering the City’s sewer system, PWD requires PCB monitoring in all Groundwater Discharge Permits. These permits are used to regulate specific pollutants of concern from groundwater discharges to the City’s sewer system. Generally, these permits are for remediation sites with groundwater contaminated with petroleum products, such as former gasoline stations. However, all temporary discharges from construction activities are permitted under the Groundwater Discharge Permit Program. The Groundwater Discharge Permits require all contractors and/or subcontractors to monitor their discharges monthly for PCBs via sampling and to report their activities and results. All Groundwater Discharge Permits include PWD’s regulatory PCB limit of “non-detectable by EPA Method 608” limitation. All PCB detections require additional monitoring by the contractor or subcontractor to show compliance with the permit limitation.

In 2021, 19 new groundwater permits were issued. All permittees except one reported non-detectable for PCBs One of the permittees reported a detection of Aroclor 1254 during the initial sampling in January 2021. During the review, it was noted that there was an error in the location in the lab report. The lab submitted a report with a location outside the City of Philadelphia. The same permittee reported a detection for Aroclor 1268 during the month of April 2021. Sample collected in May 2021 for this site shows non-detectable results. Construction activities at this site has ceased and there is no additional groundwater discharged to the City sewer system.

5.2.3 Township Connections

PWD has agreements with the surrounding townships to convey and treat township wastewater, which is ultimately discharged at NEWPCP, SEWPCP and SWWPCP. Part of the agreement includes sampling the respective township's wastewater at the connection to the City's sewer system (i.e. near Philadelphia border).

In 2021, PWD sampled one township connection: Grant Ave. in Bucks County. The township samples were analyzed using EPA Method 680 to determine if there are PCB loadings entering the City through the surrounding township connections. Results of these sampling events, presented in Attachment C, were all below the detection limits. PWD is preparing to monitor additional township connections in 2022.

5.2.4 Manholes

Utilities may obtain a manhole pumpout permit for permission to discharge wastewater from the underground infrastructure to the City's sanitary and combined sewers. The Manhole Permits require all utilities or subcontractors to monitor their discharges monthly for PCBs via sampling and to report their activities and results. All Manhole Permits include PWD's regulatory PCB limit of "non-detectable by EPA Method 608" limitation. All PCB detections require additional monitoring by the contractor or subcontractor to show compliance with the permit limitation.

In 2021, one of the existing permittees notified PWD that in October 2021, there was a PCB detection for Aroclor 1254 using EPA Method 608 in one of the utility manholes during a random sampling event. An additional sample collected from this site shows non-detectable results.

6 Incremental and Cumulative Changes from the Baseline Loading

6.1 Loading Baseline

PWD's PCB PMP provides the following baseline loadings (see Section 7, "Tabular Summary):

WPCP	Baseline Loading (mg/day)
NEWPCP	11,510
SEWPCP	7,559
SWWPCP	10,970

These loadings differ from those found in the TMDL. This is because the data are from different sampling events, the PMP baseline loadings are weighted by wet versus dry weather results, the analyses are for different numbers of congeners and there is a difference in analytical methods.

6.2 Baseline Loading Reduction – Direct Measurement

During Year 15, wet-weather effluent sampling for PCBs was performed at each of PWD's three Water Pollution Control Plants (WPCPs), as required by PWD's NPDES permits. See Section 7 ("Tabular Summary") for data. The numerical data sets are presented in Section 7, Tables 7.1 through 7.4. This data is presented in graphical form in Appendix A, Figures A1 through A3.

Loadings for the NEWPCP were not comparable to those calculated in previous years. Wet weather sample results in October 2021 at NEWPCP were unusually higher than any results previously reported. The October 2021 sample from NEWPCP showed very high hexa-, and hepta- homologs. Results of the March 2021 sampling for NEWPCP show reductions of 16% from the baseline PCB loading levels.

Loadings for the SEWPCP for 2021 were generally comparable to those calculated in Year 3 (2009), Year 8 (2014) and Year 1 (2016). The samples collected in March 2021 showed errors. Resampling was conducted in July 2021. Results of the 2021 sampling for SEWPCP show reductions of 52-76% from the baseline PCB loadings.

Loadings for the SWWPCP for 2021 were generally comparable to those calculated in Year 4 (2010), Year 9 (2015), Year 10 (2016), and Year 14 (2020). Results of the 2021 sampling for SWWPCP show reductions of 55-67% from the baseline PCB loading levels.

PWD explored the PCB homolog contribution for wet and dry weather samples and the wet weather homolog contribution from 2017-2021 for all three plants are presented in Figure A4 through A6. The average percent contribution by homolog for both dry and wet weather samples collected between 2017 and 2021 was compared to that in 2021 for each plant. These homolog percentages are presented in Attachment A, Figures A7 through A9. For 2021, For 2021 Northeast tends to have the very high contributions from hexa-, and hepta-, homologs. Southwest and Southeast tends to have increased contribution from the hexa-, and hepta- homologs. Northeast and Southwest also tend to have similar patterns in wet and dry weather, whereas at Southeast the data showed consistency between samples. PWD plans to continue to explore these types of patterns in the 2022 data to see if the trends continue or if others emerge.

6.3 Baseline Loading Reduction – Other Measures of Progress

See Attachment B (“Potential Sources and Inspection Findings”). A report with results from 2021 inspections is shown in this section. This report was developed from the new PCB database. PWD will continue to update and refine this report with the inspection maps associated with it in future reports.

One outlying township connection at Grant Ave. in Bucks County was sampled in 2021, using EPA Method 680 and most results were below the reporting limits. This township drains to the NEWPCP, and results have been provided in Table C1. In 2022, additional outlying township connections sampling is planned.

7 Tabular Summary

The subsequent pages provide a summary of the PCB loading calculations for NEWPCP, SEWPCP and SWWPCP, along with the total and penta-PCB concentration results for each of the treatment plant effluents in 2021.

Table 7.1
Summary of PCB Loadings
Northeast Water Pollution Control Plant
NPDES # PA0026689

Year 2005 Baseline Loading (mg/day): 11,510

Date	Calculated Loading (mg/day)	Estimated Reduction From Baseline (mg/day)	Cumulative Reduction From Baseline (%)
12/3/07	8,594	2,916	25.3
3/27/09	5,846	5,664	49.2
10/16/09	6,571	4,939	42.9
4/21/10	5,490	6,020	52.3
12/13/10	4,615	6,895	59.9
9/6/11	6,224	5,286	45.9
11/17/11	3,745	7,765	67.5
6/13/12	11,189	321	2.8
10/16/12	2,542	8,968	77.9
4/20/13	2,849	8,661	75.2
10/8/13	2,349	9,161	79.6
4/16/14	2,315	9,195	79.9
9/25/14	1,552	9,958	86.5
5/28/15	3,157	8,353	72.6
10/10/15	2,291	9,219	80.1
5/14/16	1,755	9,755	84.8
10/23/16	1,479	10,031	87.1
5/6/17	1,749	9,761	84.8
10/9/17	972	10,538	91.6
3/2/18	17,293	-5,783	-50.2
10/12/18	4,219	7,291	63.3
5/6/19	2,856	8,654	75.2
10/17/19	3,067	8,443	73.4
4/13/2020	3,114	8,396	72.9
10/30/2020	5,570	5,940	51.6
3/19/2021	9,636	1,874	16.3
10/26/2021	52,351	-40,841	-354.8

Measure	Date Initiated	Date Completed
NEWPCP Phase 1 Trackdown	November 3, 2010	November 4, 2010
NEWPCP Phase 2 Trackdown	January 26, 2012	January 27, 2012

Table 7.2
Summary of PCB Loadings
Southeast Water Pollution Control Plant
NPDES # PA0026662

Year 2005 Baseline Loading (mg/day): 7,559

Date	Calculated Loading (mg/day)	Estimated Reduction From Baseline (mg/day)	Cumulative Reduction From Baseline (%)
12/3/07	4,595	2,964	39.2
3/27/09	3,435	4,124	54.6
10/16/09	4,287	3,272	43.3
4/21/10	2,155	5,404	71.5
12/2/10	2,736	4,823	63.8
9/6/11	4,135	3,424	45.3
11/17/11	1,368	6,191	81.9
6/13/12	5,659	1,900	25.1
10/16/12	1,296	6,263	82.9
4/20/13	2,803	4,756	62.9
11/27/13	2,599	4,960	65.6
4/16/14	6,370	1,189	15.7
9/25/14	1,827	5,732	75.8
5/28/15	2,744	4,815	63.7
10/10/15	2,795	4,764	63.0
5/14/16	1,525	6,034	79.8
10/28/16	1,058	6,501	86.0
5/6/17	2,762	4,797	63.5
10/9/17	1,212	6,347	84.0
4/16/18	21,681	-14,122	-186.8
10/12/18	9,543	-1,984	-26.2
4/6/19	828	6,731	89.0
10/28/19	2,386	5,173	68.4
5/1/2020	2,728	4,831	63.9
11/12/2020	6,059	1,500	19.8
3/19/2021*	7,219	340	4.5
7/2/2021	3,611	3,948	52.2
10/26/2021	1,811	5,748	76.0

Measure	Date Initiated	Date Completed
SEWPCP Phase 2 Trackdown	October 17, 2006	October 20, 2006

*Error in sample collected on 3/19/2021. Resampled on 7/2/2021

Table 7.3
Summary of PCB Loadings
Southwest Water Pollution Control Plant
NPDES # PA0026671

Year 2005 Baseline Loading (mg/day): 10,970

Date	Calculated Loading (mg/day)	Estimated Reduction From Baseline (mg/day)	Cumulative Reduction From Baseline (%)
12/3/07	6,369	4,601	41.9
3/27/09	7,334	3,636	33.1
10/16/09	5,690	5,280	48.1
4/21/10	2,948	8,022	73.1
12/2/10	5,027	5,943	54.2
9/6/11	10,270	700	6.4
11/17/11	4,280	6,690	61.0
6/13/12	5,766	5,204	47.4
10/16/12	2,663	8,307	75.7
4/20/13	3,673	7,297	66.5
10/8/13	3,040	7,930	72.3
4/16/14	2,939	8,031	73.2
9/25/14	2,882	8,088	73.7
8/12/15	4,265	6,705	61.1
10/10/15	3,610	7,360	67.1
5/14/16	3,662	7,308	66.6
10/23/16	1,416	9,554	87.1
5/6/17	3,273	7,697	70.2
10/9/17	3,294	7,676	70.0
3/2/18	6,015	4,955	45.2
4/16/18	7,183	3,787	34.5
10/12/18	4,870	6,100	55.6
4/6/19	2,596	8,374	76.3
10/17/19	26,869	-15,899	-144.9
5/1/2020	2,975	7,995	72.9
10/30/2020	3,474	7,496	68.3
3/19/2021	4,950	6,020	54.9
10/26/2021	3,674	7,296	66.5

Measure	Date Initiated	Date Completed
SWWPCP Phase 1 Trackdown	October 12, 2011	October 13, 2011
SWWPCP Phase 2 Trackdown	February 23, 2012	February 24, 2012

Table 7.4
Summary of Water Pollution Control Plant Effluent PCB Concentration (pg/L)

NEWPCP			SEWPCP			SWWPCP		
Date	Total PCBs (pg/L)	Penta-PCBs (pg/L)	Date	Total PCBs (pg/L)	Penta-PCBs (pg/L)	Date	Total PCBs (pg/L)	Penta-PCBs (pg/L)
12/3/07	13,709	2340	12/3/07	13,580	2233	12/3/07	7,362	1,314
3/27/09	4,047	850	3/27/09	1,593	373	3/27/09	8,866	1,474
10/16/09	5,924	1,238	10/16/09	3,797	711	10/16/09	4,612	886
4/21/10	6,746	1,629	4/21/10	5,322	1,114	4/21/10	3,623	729
12/13/10	5,671	1,379	12/2/10	6,755	1,348	12/2/10	6,177	1,110
9/6/11	7,646	1,624	9/6/11	10,206	1,723	9/6/11	12,385	1,911
11/17/11	4,600	1,159	11/17/11	3,376	635	11/17/11	5,162	997
6/13/12	13,745	2,057	6/13/12	13,988	2,954	6/13/12	6,954	1,331
10/16/12	3,123	791	10/16/12	3,198	595	10/16/12	3,211	558
4/20/13	3,500	806	4/20/13	6,918	1,566	4/20/13	4,429	932
10/8/13	2,886	669	11/27/13	6,414	1,204	10/8/13	3,666	757
4/16/14	2,844	622	4/16/14	15,722	3,182	4/26/14	3,544	737
9/26/14	1,907	458	9/25/14	4,510	912	9/25/14	3,476	745
8/12/15	3,878	963	8/12/15	6,774	1,411	5/28/15	5,143	1,338
10/10/15	2,814	584	10/10/15	6,898	1,516	10/10/15	4,354	790
5/14/16	2,156	488	5/14/16	3,765	847	5/14/16	4,416	979
10/23/16	1,817	377	10/28/16	2,612	452	10/23/16	1,708	307
5/6/17	2,149	455	5/6/17	6,817	1,044	5/6/17	3,948	634
10/9/17	1,194	263	10/9/17	2,993	257	10/9/17	3,972	681
3/2/18	21,243	4,786	--	--	--	3/2/18	5,873	1,044
--	--	--	4/16/18	53,514	10,678	4/16/18	8,662	1,810
10/12/18	5,183	1,059	10/12/18	23,555	3,176	10/12/18	7,254	1,155
--	--	--	4/6/19	2,044	283	4/6/19	3,131	603
5/6/19	3508	857	--	--	--	--	--	--
10/17/19	3768	1113	--	--	--	10/17/19	32,404	7,997
--	--	--	10/28/19	5,889	1,146	--	--	--
4/13/20	3826	909	--	--	--	--	--	--
--	--	--	5/1/20	6,733	1,216	5/1/20	3,587	653
10/30/20	6,843	1,911	--	--	--	10/30/20	4189	714
--	--	--	11/12/20	14955	2927	--	--	--
3/19/21	11,837	2,936	3/19/2021*	17,818	3,842	3/19/21	5,970	1,134
--	--	--	7/2/21	8913	1586	--	--	--
10/26/21	64308	6048	10/26/21	4470	816	10/26/21	4431	664

*Error in sample collected on 3/19/2021. Resampled on 7/2/2021

Table 7.5
Range and Median PCB Concentration (pg/L)

Year	NE WPCP	SE WPCP	SW WPCP
2009	2,994-7,280 (4561)	1,364-9,375 (3667)	2,994-10,696 (7587)
2010	1,769-109,201 (6528)	1,399-6,755 (3474)	1,399-6,177 (4197)
2011	1,790-7,646 (3319)	1,493-10,206 (2672)	3,363-12,385 (4621)
2012	1,708-13,745 (2479)	1,493-13,988 (3369)	2,850-6,954 (3801)
2013	1,440-3,500 (2165)	2,229-6,918 (4741)	3,582-4,429 (3674)
2014	1,387-15,722 (1657)	1,392-4,510 (1752)	2,801-3,544 (3223)
2015	2,814-3,878 (2968)	2,103-6,898 (4472)	3,328-5,143 (4080)
2016	1,108-2,498 (1817)	1,390-3,765 (2103)	1,708-4,422 (3538)
2017	1,173-2,149 (1421)	1,065-6,817 (2414)	2,784-3,972 (3854)
2018	1,073-21,243 (5268)	3,836-53,514 (12934)	4,943-8,662 (5705)
2019	1,460-3,768 (2667)	2,044-6429 (4341)	3,131-32,404 (3191)
2020	1,469-3,760 (2615)	1,825-2,320 (2073)	2,100-2,438 (2269)
2021	807-48,630 (24718)	2,607-1,612 (2110)	2,992-5,727 (4359)

Note: Annual median is presented in parentheses.

Attachment A

Data Graphs

Figure A1
NEWPCP Total PCB Homolog Concentration (ng/L)
Dry Weather and Wet Weather Samples, 2010-2021

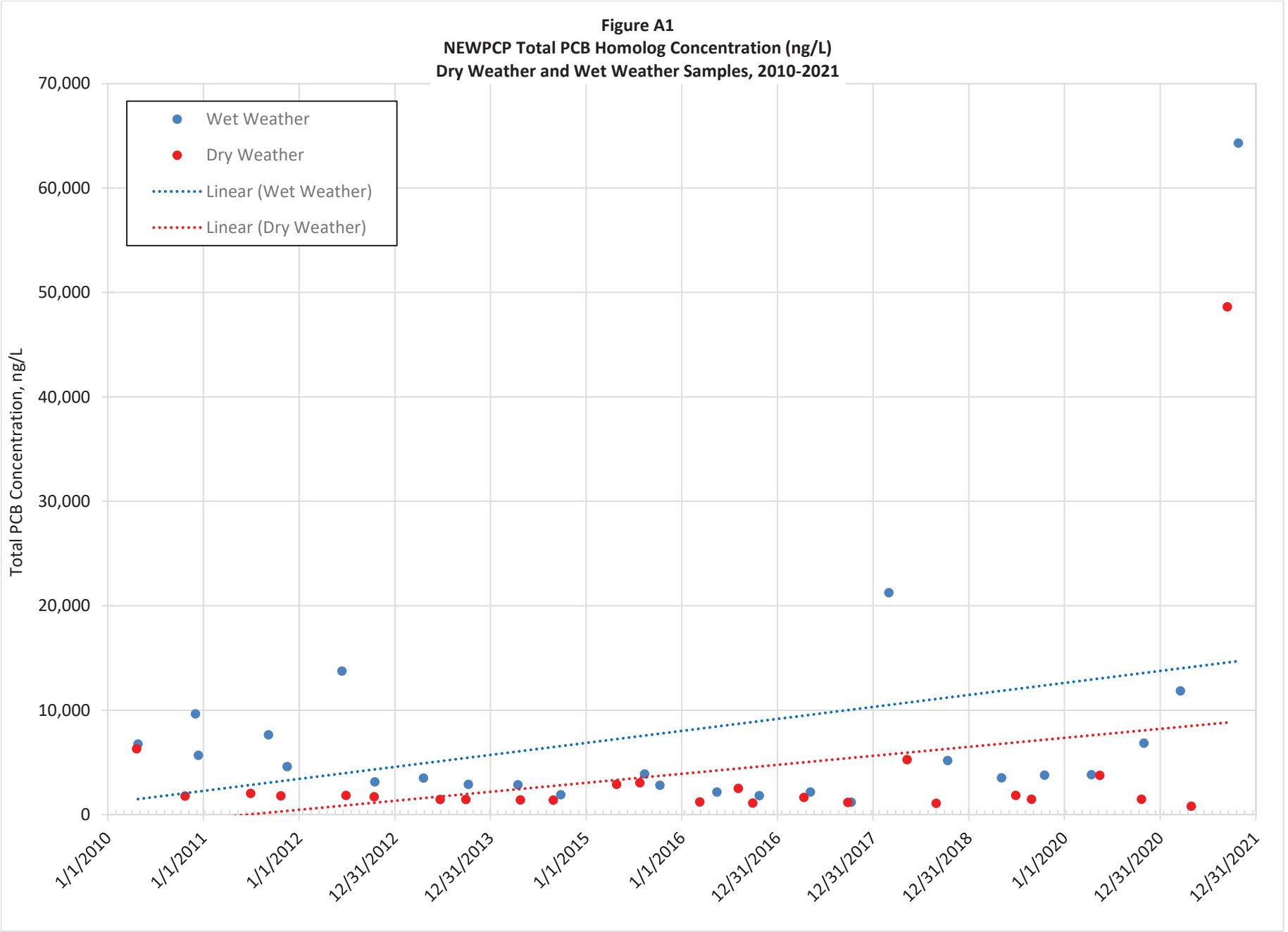


Figure A2
SEWPCP Total PCB Homolog Concentration (pg/L)
Dry Weather and Wet Weather Samples, 2010-2021

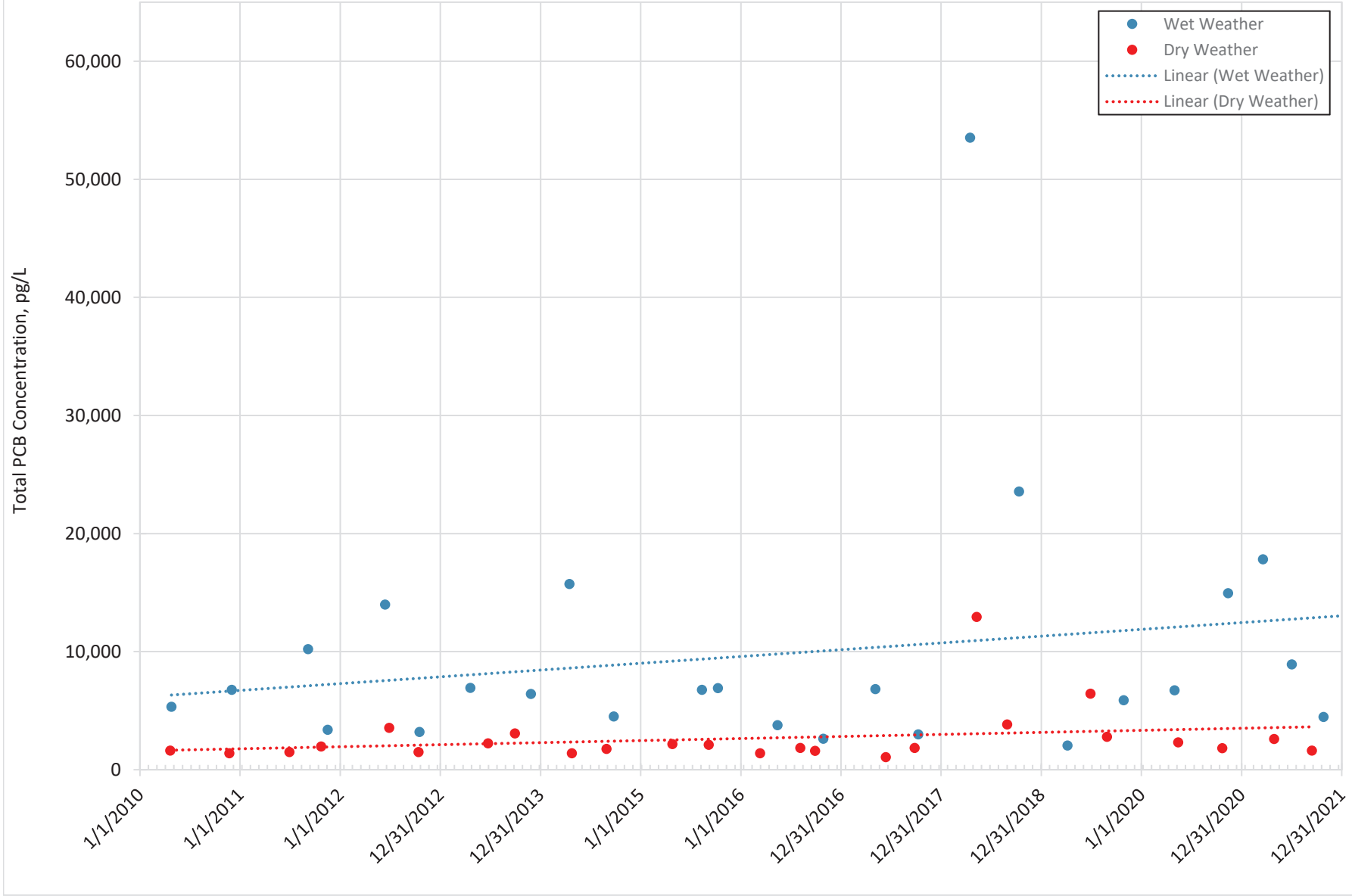


Figure A3
SWWPCP Total PCB Homolog Concentration (pg/L)
Dry Weather and Wet Weather Samples, 2010-2021

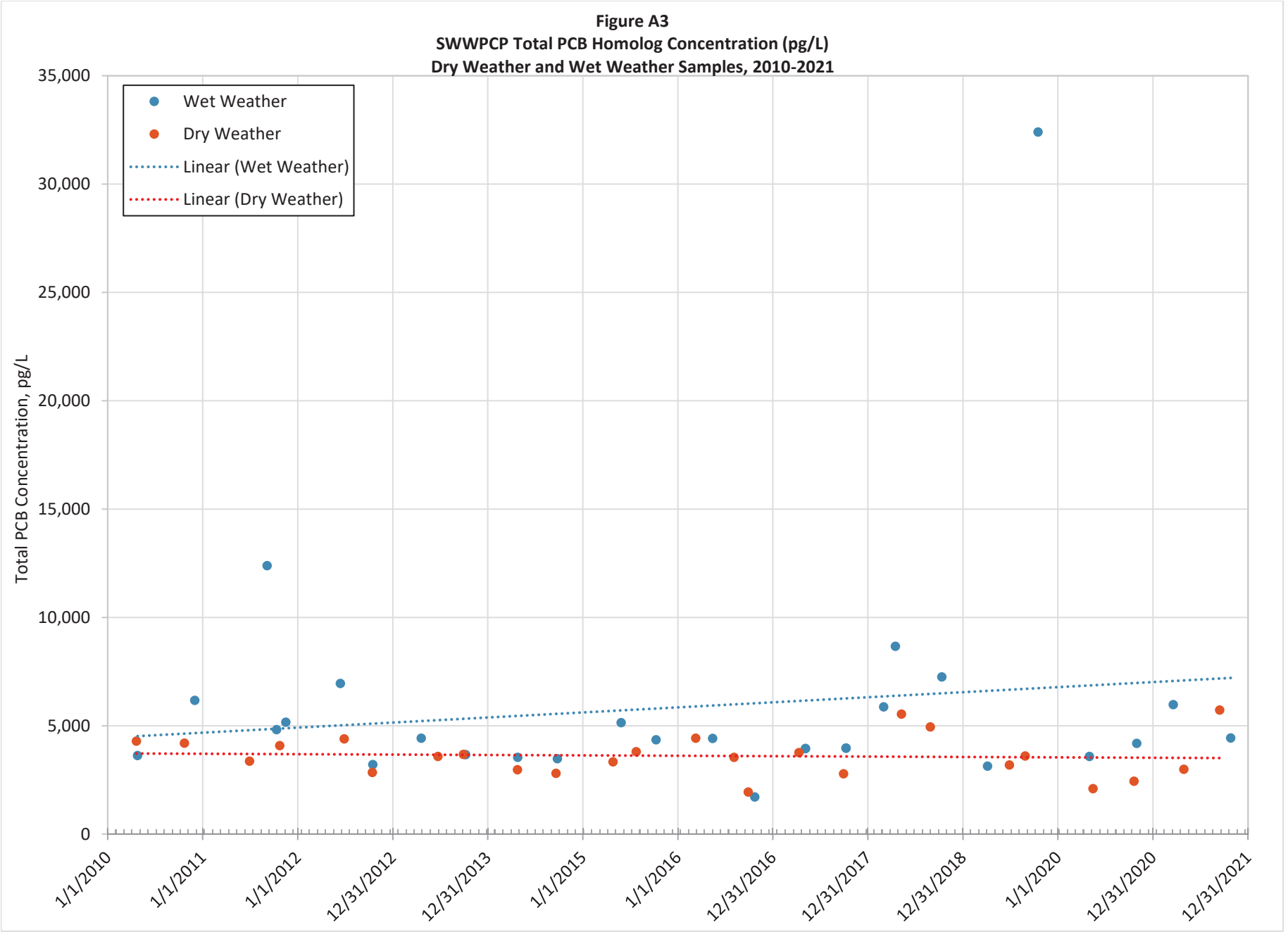


Figure A4
NEWPCP Total Wet Weather % Homolog Contribution, 2017-2021

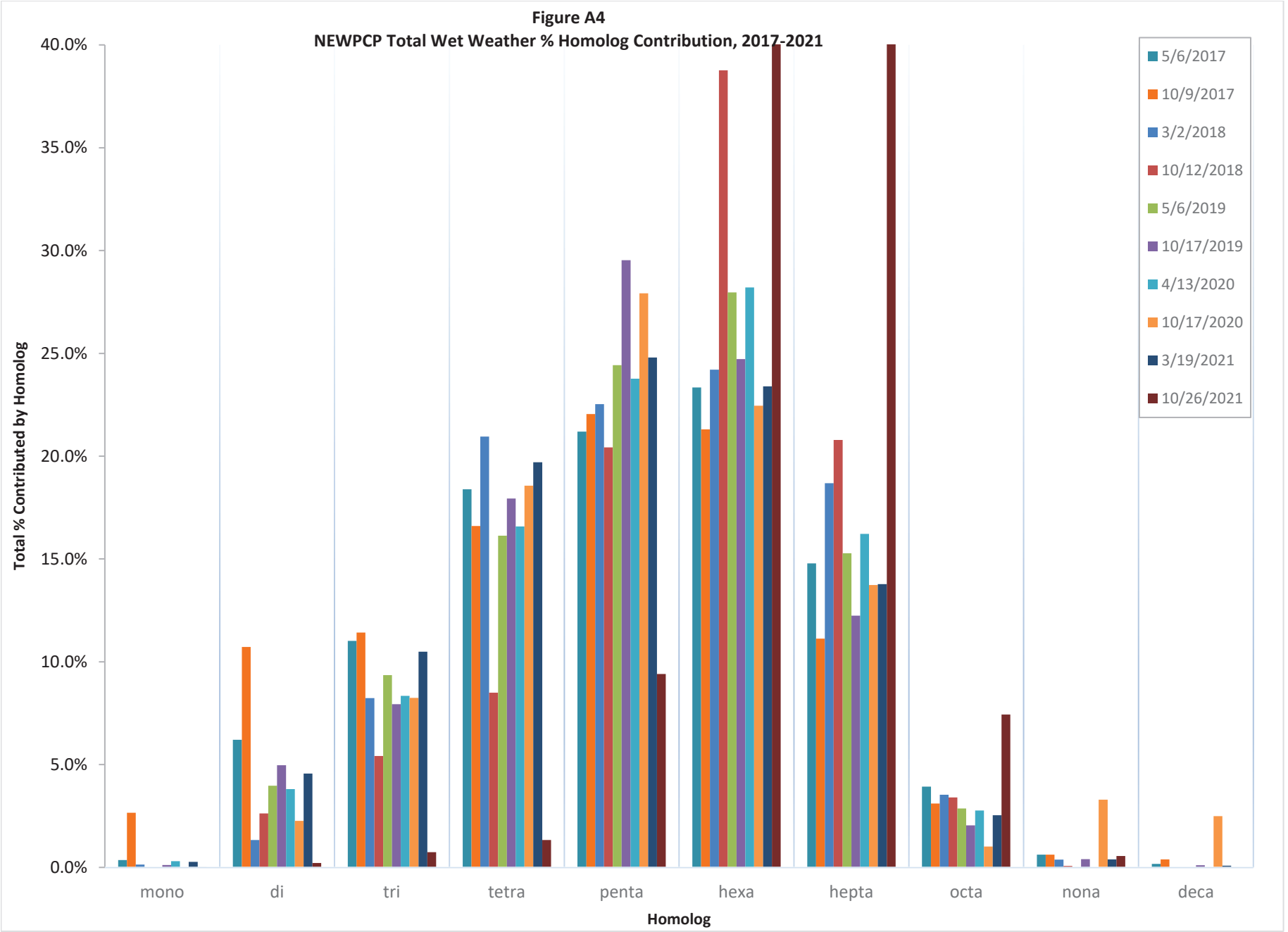


Figure A5
SEWPCP Total Wet Weather % Homolog Contribution, 2017-2021

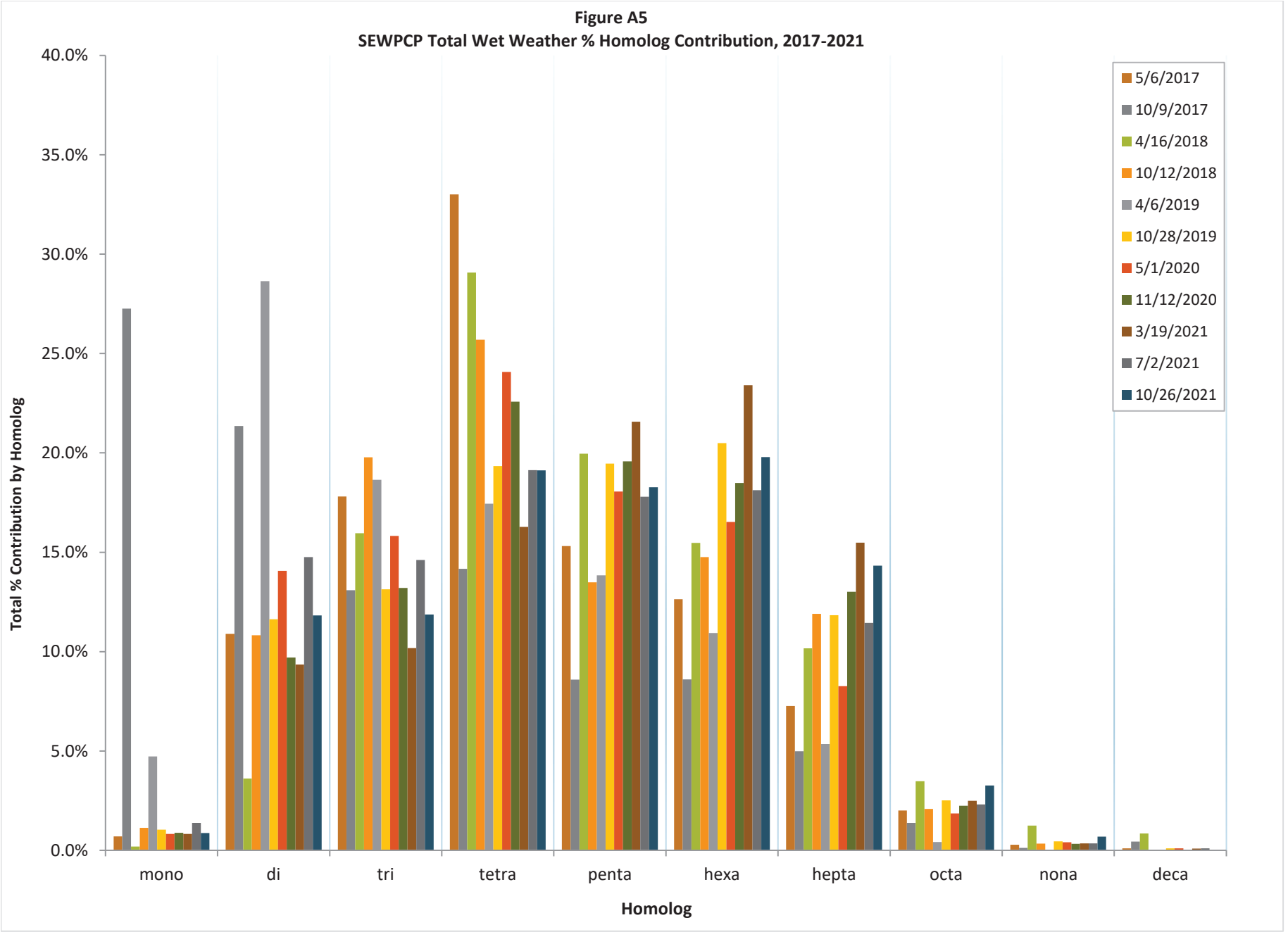


Figure A6
SWWPCP Total Wet Weather % Homolog Contribution, 2017-2021

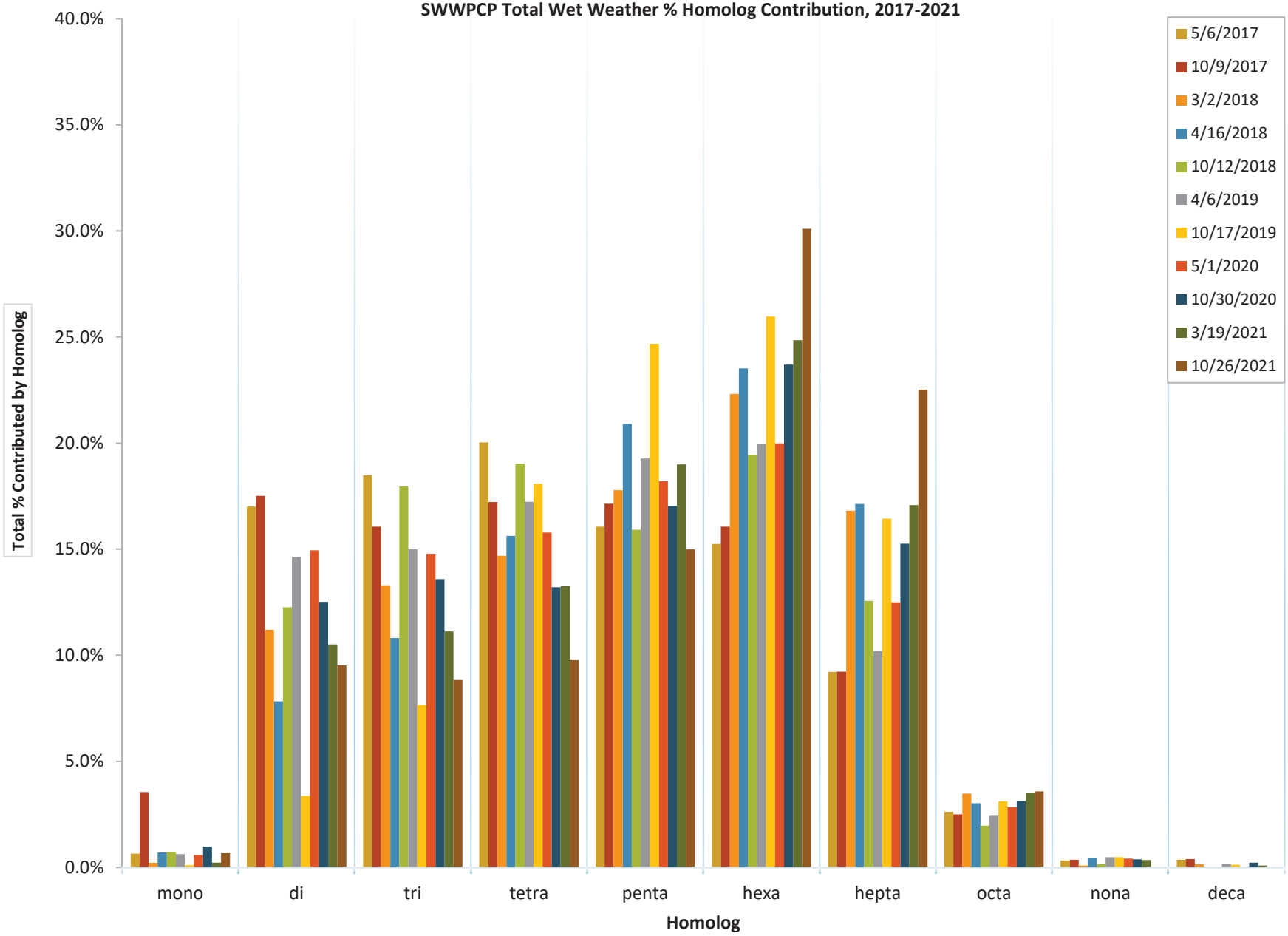


Figure A7
NEWPCP Median PCB Homolog % Contribution
Dry and Wet Weather Samples, 2010-2021

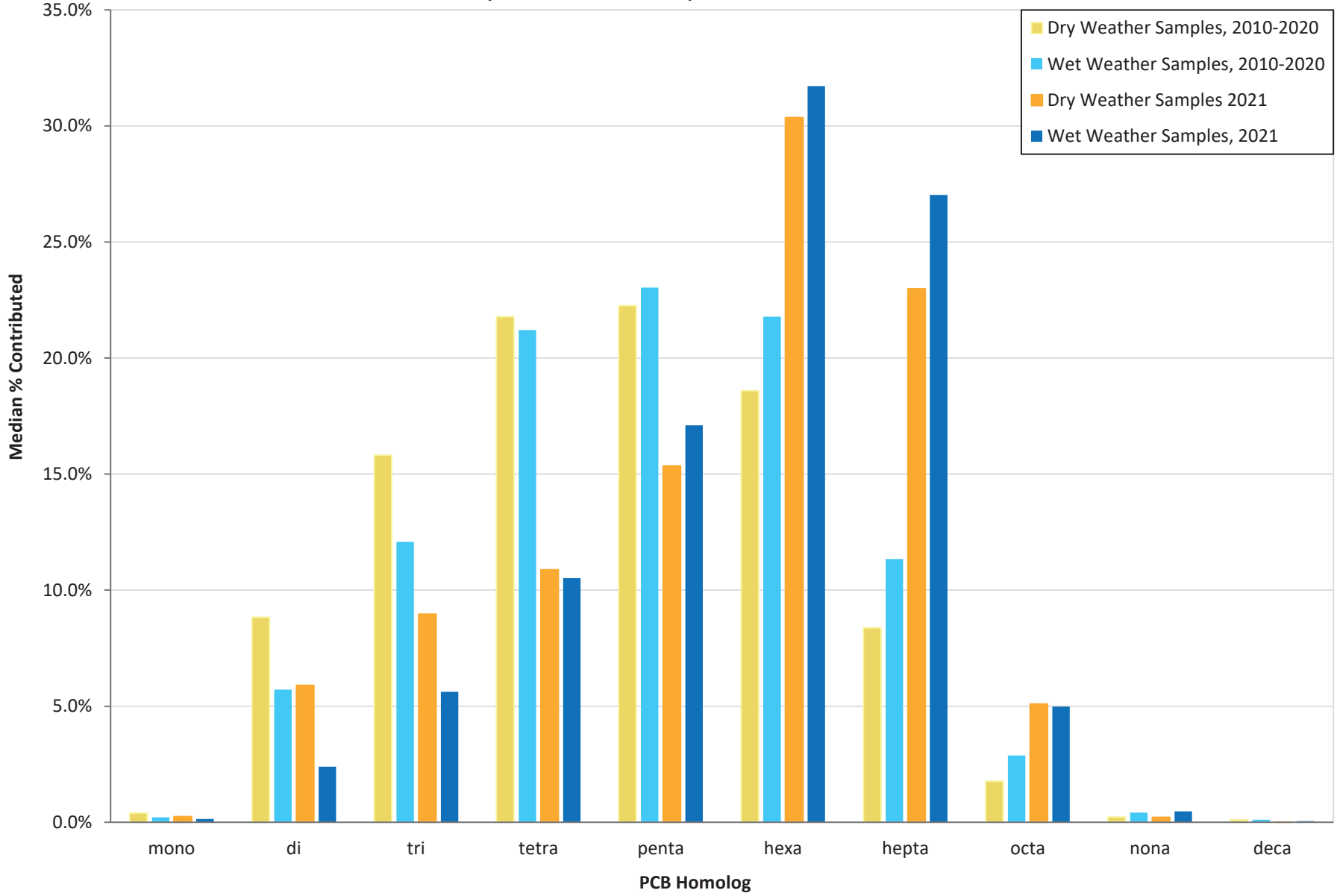


Figure A8
SEWPCP Median PCB Homolog % Contribution
Dry and Wet Weather Samples, 2010-2021

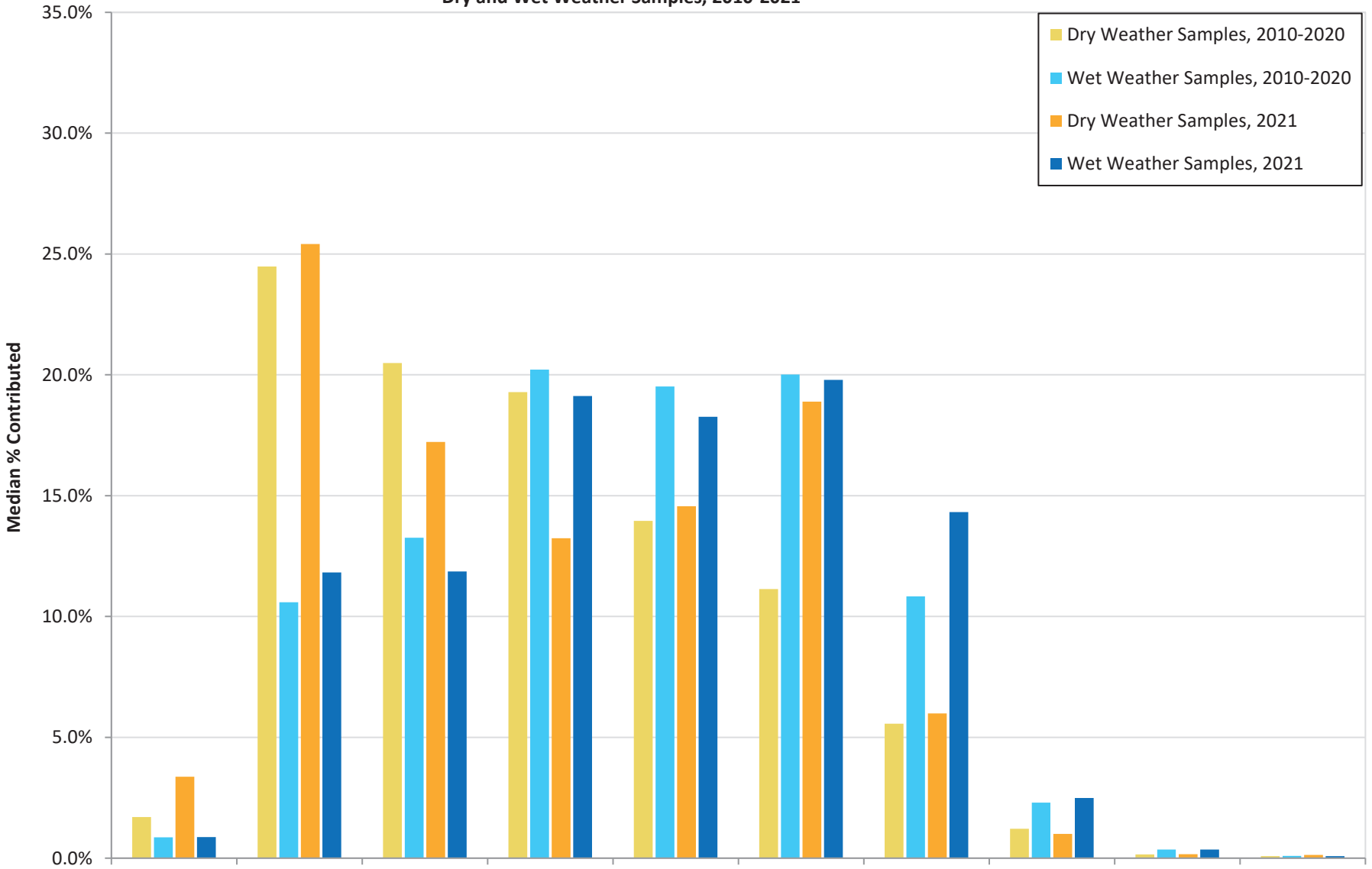
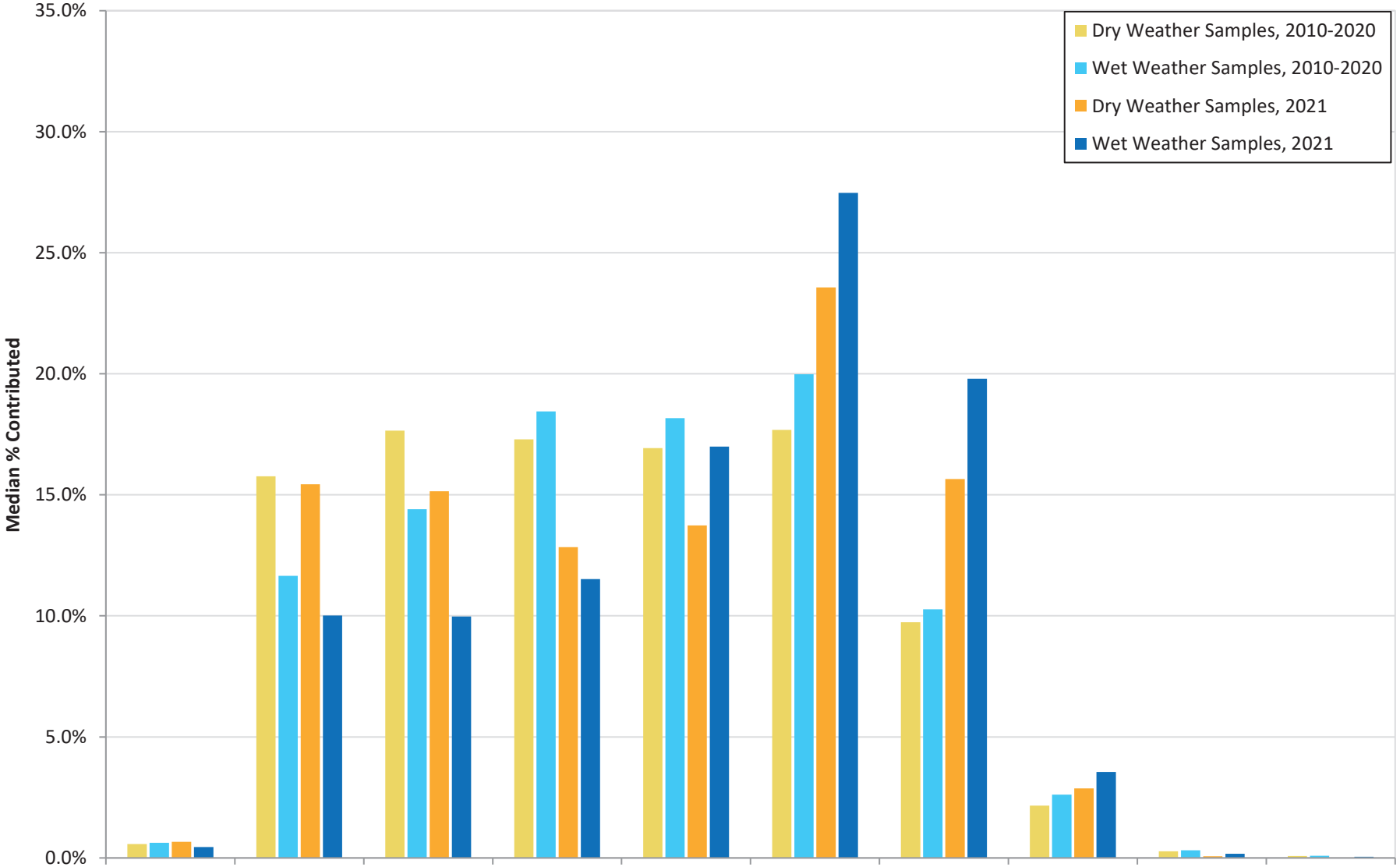


Figure A9
SWWPCP Median PCB Homolog % Contribution
Dry and Wet Weather Samples, 2010-2021



Attachment B

Potential Sources and Inspection Findings

Table B1 - Known, Probable and Potential Sources and Measures to Address Sources

Source	Source Type			Measure to Address Source
	Known	*Probable*	*Potential*	
Water Supply (Delaware and Schuylkill Rivers)	X			PCB PMP and action by others
Ferric Chloride used in Water Treatment	X			Switched ferric chloride suppliers
Sludge Lagoons (NEWPCP and SWWPCP)		X		Trackdown for each WPCP calls for sampling and analysis
PCB Device sites in sewershed of each WPCP (see Attachment B, "Inspections of Potential Source Sites")			X	Site inspections, evaluation and followup
Significant Industrial Users			X	Modify permits as warranted
Electric Company (PECO) customers			X	Undetermined. PECO will not share customer information.
Township Connections			X	Sample points of connections for PCBs
Groundwater Discharges			X	Require PCB monitoring
Utility Manhole Pumpouts			X	Require PCB monitoring

Table B2

Philadelphia Water Department

Inspections by Treatment Plant

01/1/2021 - 12/31/2021

LocID	NAME:	ADDRESS:	LOCATION	CONTACT	EQUIPMENT	NUMBER	CONC (PPM)	GALLONS	LEAKS?	INSP DATE	STATUS
Receiving Plant: NEWPCP											
PCB-NE000	AdvanSix Resins & Chemicals, LLC	2501 Margaret St 19137	Dispensary	Adrienne Yeager	Transformer	1	<50	N/A	No	11/16/21	In Use
PCB-NE010	AdvanSix Resins & Chemicals, LLC	2501 Margaret St 19137	Cooling tower 4	Adrienne Yeager	Transformer	2	<50	N/A	No	11/16/21	In Use
PCB-NE020	AdvanSix Resins & Chemicals, LLC	2501 Margaret St 19137	Cooling tower 3	Adrienne Yeager	Transformer	1	<50	N/A	No	11/16/21	Removed From Site
PCB-NE027	AdvanSix Resins & Chemicals, LLC	2501 Margaret St 19137	Cooling tower 5	Adrienne Yeager	Transformer	1	<50	N/A	No	11/16/21	In Use
PCB-NE065	Specialty Engine	5201 Unruh Ave 19135	Outside	Bill Cole	Transformer	4	>50	240	Yes	04/30/21	In Use
PCB-NE111	School District of Philadelphia	5400 N Broad St 19141	Widener Memorial School	Jeff Scott	Transformer	0	N/A	N/A	No	11/19/21	Removed From Site
PCB-NE138	Allegheny Scrap	2200 Adams Ave 19124	Office trans vault	Mike Walsh	Capacitor	4	N/A	6	No	05/26/21	Out of Use
PCB-NE203	Henshell Corp	2922 N 19th St 19132	Outside by Indiana St	Kevin Maloney	Transformer	1	N/A	175	No	12/31/21	In Use
PCB-NE215	Dickler Chemical Laboratories, Inc	4201 Torresdale Ave 19124	Building demolished	N/A	Transformer	0	N/A	N/A	No	11/22/21	Removed From Site
PCB-NE219	Henshell Corp	2922 N 19th St 19132	Trans rm near boiler	Kevin Maloney	Transformer	1	N/A	41	No	12/31/21	In Use
PCB-NE220	Henshell Corp	2922 N 19th St 19132	Trans rm near office	Kevin Maloney	Transformer	1	<2	41	No	12/31/21	In Use
PCB-NE221	Abbey Color Incorporated	400 E Tioga St 19134	Transformer vault	Brian Nielson	Transformer	2	<50	120	No	12/09/21	In Use
PCB-NE223	Dickler Chemical Laboratories, Inc	4201 Torresdale Ave 19124	Building demoloshed	N/A	Transformer	0	N/A	N/A	No	11/22/21	Removed From Site
PCB-NE230	Henshell Corp	2922 N 19th St 19132	Outside	Kevin Maloney	Transformer	1	<50	N/A	No	12/31/21	In Use
PCB-NE260a	Wayne Mills Corp	130 W Berkley St 19144	Basement	Doug Wiegand	Transformer	2	<50	N/A	No	07/13/21	In Use
PCB-NE264	Regal Leather	3795 Sepviva St 19137	Electric Vault	N/A	Transformer	0	>50	N/A	No	04/30/21	Removed From Site
PCB-NE290	Newman & Company, Inc	6101 Tacony St 19135	Between bld L & I	Christian Lopez	Transformer	2	<50	638	No	10/28/21	In Use
PCB-NE291	Newman & Company, Inc	6101 Tacony St 19135	Outside URSI	Christian Lopez	Transformer	1	<50	325	No	10/28/21	In Use
PCB-NE292	Newman & Company, Inc	6101 Tacony St 19135	Skid yard NE corner	Christian Lopez	Transformer	1	N/A	774	No	10/28/21	In Use

Receiving Plant: NEWPCP

Drainage Area: Combined **Total Number of Inspections completed: 19**

LocID	NAME:	ADDRESS:	LOCATION	CONTACT	EQUIPMENT	NUMBER	CONC (PPM)	GALLONS	LEAKS?	INSP DATE	STATUS
Receiving Plant: NEWPCP											
PCB-NE003	School District of Philadelphia	1601 Cottman Ave 19111	Northeast High School	Francine Lock	Transformer	0	0	N/A	No	03/01/21	Removed From Site
PCB-NE011	Posel Corp	9381 Krewstown Rd 19115	Fitness center	N/A	Transformer	1	>50	N/A	No	05/21/21	In Use
PCB-NE012	Posel Corp	9381 Krewstown Rd 19115	Behind store 28	N/A	Transformer	1	<50	180	No	05/21/21	In Use
PCB-NE013	School District of Philadelphia	10159 Busleton Ave 19116	George Washington High School	Francine Locke	Transformer	0	>500	350	No	03/09/21	Removed From Site
PCB-NE059	SD Richman	2435 Wheatsheaf Ave 19137	Metal bld	Otto Sanchez	Transformer	1	N/A	N/A	No	11/30/21	In Use
PCB-NE208	HP Hood, LLC	10975 Dutton Rd 19154	Outside cage	James Hawkinson	Transformer	1	N/A	185	No	04/29/21	In Use
PCB-NE211	Delavau, LLC	10101 Roosevelt Blvd 19154	Bld rear	Caitlyn Flynn	Transformer	1	<50	283	No	08/25/21	In Use
PCB-NE222	Monarch Brands	11350 Norcom Rd 19154	Electrical rm	Hal Kanefsky	Capacitor & Transformer	10	<1	303	No	12/01/21	In Use
PCB-NE259	Zentis North America, LLC	1741 Tomlinson Rd 19116	Bld by waste tank	Jennifer Fitzgerald	Transformer	1	<50	428	No	01/20/21	In Use
PCB-NE263	AAA Distributors	2501 Grant Ave 19114	Blue Grass Road side of bld	Vlad Prist	Transformer	5	0	118	No	11/24/21	In Use
PCB-NE267	Medical Products Laboratories	9990 Global Rd 19115	Electrical Rm	Shashi Raju	Transformer	1	N/A	N/A	No	06/14/21	In Use
PCB-NE268	Medical Products Laboratories	490 Red Lion Rd 19115	Large parking lot in cage	Shashi Raju	Capacitor	3	N/A	N/A	No	06/14/21	In Use
PCB-NE271	I. Rice	11500D Roosevelt Blvd 19116	E side of building	Ashly Marchese	Transformer	1	N/A	N/A	No	03/04/21	In Use
PCB-NE274	Stockwell Elastomerics, Inc	4749 Tolbut St 19136	Bld 749	Bob Walsh	Capacitor	7	N/A	3.4	No	04/19/21	In Use
PCB-NE275	Premier Medical	10090 Sandmeyer Ln 19116	Bld rear	Carlos Quintero	Transformer	1	N/A	N/A	No	07/27/21	In Use
PCB-NE279	Cintas Corporation	10080 Sandmeyer Ln 19116	By tempered water tank	Sean Gieveld	Transformer	2	<50	N/A	No	05/13/21	In Use
PCB-NE280	Agusta	3050-3076 Red Lion Rd 19114	IFO bld 3050	Laurence Smith	Transformer	1	<50	315	No	05/13/21	In Use
PCB-NE281	Agusta	3076 Red Lion Rd 19114	IFO bld 3076	Laurence Smith	Transformer	2	<50	375	No	05/13/21	In Use
PCB-NE283	Custom Powder Coating	8451 Hegerman St 19136	Behind administration bld	William O'Sullivan	Transformer	1	N/A	N/A	No	05/04/21	In Use
PCB-NE294	Agusta	3050-3076 Red Lion Rd 19114	Outside Training Bld	Laurence Smith	Transformer	1	<50	N/A	No	05/13/21	In Use
PCB-NE298	Lannett Company, Inc	9000 State Rd 19136	Outside	Kurt Josef	Transformer	1	N/A	N/A	No	12/14/21	In Use
PCB-NE299	Lannett Company, Inc	9001 Torresdale Ave 19136	Outside	Kurt Josef	Transformer	1	N/A	N/A	No	12/14/21	In Use

LocID	NAME:	ADDRESS:	LOCATION	CONTACT	EQUIPMENT	NUMBER	CONC (PPM)	GALLONS	LEAKS?	INSP DATE	STATUS
Receiving Plant: NEWPCP											
Receiving Plant: NEWPCP											
Drainage Area: MS4			**Total Number of Inspections completed: 22**								
PCB-NE205	SPS Technologies	301 Highland Ave 19046	By blue holding tank	Ashlynn Young	Transformer	3	1260	1370	No	09/23/21	In Use
PCB-NE209	C. Lever Colors, Inc	736 Dunks Ferry Rd 19020	Outside	Elle Amodei	Transformer	1	N/A	N/A	No	03/17/21	In Use
PCB-NE282	Gill	1384 Byberry Rd 19020	Telephone pole in parking lot	Kelli Gill	Transformer	1	<50	N/A	No	10/22/21	In Use
PCB-NE289	Qualawash	1000 Imperial Rd 19020	Outside bld rear	Dan Bright	Transformer	1	N/A	N/A	No	08/23/21	In Use
PCB-NE295	Sigma Pharm Laboratories, LLC	3375 Progress Dr 19020	Loading docks	Nimin Kurien	Transformer	1	<50	N/A	No	06/02/21	In Use
PCB-NE296	Sigma Pharm Laboratories, LLC	3375 Progress Dr 19020	Along Progress Drive	Nimin Kurien	Transformer	2	N/A	N/A	No	06/02/21	In Use
PCB-NE297	Sigma Pharm Laboratories, LLC	3399 Progress Dr 19020	Along Progress Drive	Nimin Kurien	Transformer	1	<50	N/A	No	06/02/21	In Use
Receiving Plant: NEWPCP											
Drainage Area: Township			**Total Number of Inspections completed: 7**								
Receiving Plant: NEWPCP			**Total Number of Inspections completed: 48**								

LocID	NAME:	ADDRESS:	LOCATION	CONTACT	EQUIPMENT	NUMBER	CONC (PPM)	GALLONS	LEAKS?	INSP DATE	STATUS
Receiving Plant: SEWPCP											
PCB-SE006	Southwark Plaza (PHA)	1024 S 4th St 19147	Pole mounted	N/A	Transformer	1	N/A	N/A	No	12/29/21	In Use
PCB-SE203	Simons Brothers Co.	2438 Sergeant St 19125	By front door	Nelson Kaiser	Capacitor	1	>499	N/A	No	09/21/21	In Use
PCB-SE203	Simons Brothers Co.	2438 Sergeant St 19125	By front door	Nelson Kaiser	Capacitor	1	>499	N/A	No	10/15/21	In Use
PCB-SE205	Ashland Chemical Company	2801 Christopher Columbus Blvd 19148	By Nitrogen	Eric Weisbrod	Transformer	1	<50	N/A	No	05/20/21	In Use
PCB-SE206	Ashland Chemical Company	2801 Christopher Columbus Blvd 19148	Front gate	Eric Weisbrod	Transformer	1	<50	N/A	No	05/20/21	In Use
PCB-SE207	Ashland Chemical Company	2801 Christopher Columbus Blvd 19148	Roof of bld 10	Eric Weisbrod	Transformer	1	N/A	N/A	No	05/20/21	In Use
PCB-SE243	National Chemical Laboratories, Inc	401 N 10th St 19123	Transformer rm	Harry Pollack	Transformer	4	<50	410	No	05/05/21	In Use

Receiving Plant: SEWPCP

Drainage Area: Combined **Total Number of Inspections completed: 7**

LocID	NAME:	ADDRESS:	LOCATION	CONTACT	EQUIPMENT	NUMBER	CONC (PPM)	GALLONS	LEAKS?	INSP DATE	STATUS
Receiving Plant: SEWPCP											
PCB-SE222	PSNY (SSES)	4747 S Broad St 19112	E Bld 77 (transfromer 16, 17)	Chris Harding	Transformer	2	<50	556	Staining	06/03/21	In Use
PCB-SE223	PSNY (SSES)	4747 S Broad St 19112	NW Bld 77 (transformer 18)	Chris Harding	Transformer	1	<2	2110	No	06/03/21	Out of Use
PCB-SE224	PSNY (SSES)	4747 S Broad St 19112	NW Bld 77 (transformer 19)	Chris Harding	Transformer	1	<2	7391	No	06/03/21	Out of Use
PCB-SE225	PSNY (SSES)	4747 S Broad St 19112	W Bld 80 (transformer 20,21,22)	Chris Harding	Transformer	3	<50	N/A	Staining	06/03/21	In Use
PCB-SE226	PSNY (PIDC)	4747 S Broad St 19112	N Bld 40 (transformer 13, 55)	Chris Harding	Transformer	2	<50	352	Staining	06/03/21	In Use
PCB-SE227	PSNY (CNRMA)	4747 S Broad St 19112	W Bld 662 (transformer 42, 43)	Chris Harding	Transformer	2	<50	538	No	06/03/21	Out of Use
PCB-SE228	PSNY (SSES)	4747 S Broad St 19112	E Bld 87ss (transformer 23, 24)	Chris Harding	Transformer	2	<1	1061	No	06/03/21	In Use
PCB-SE232	PSNY (CNRMA)	4747 S Broad St 19112	Wharf N 542 S (transformer 53)	Chris Harding	Transformer	1	<1	500	No	06/03/21	In Use
PCB-SE233	PSNY (CNRMA)	4747 S Broad St 19112	Wharf N 120 S (transformer 50)	Chris Harding	Transformer	1	<1	500	No	06/03/21	In Use
PCB-SE234	PSNY (CNRMA)	4747 S Broad St 19112	Wharf N 603 S (transformer 52)	Chris Harding	Transformer	1	<1	500	No	06/03/21	In Use
PCB-SE236	PSNY (PIDC)	4747 S Broad St 19112	N. Bld 605ss (transformer 35, 36, 37)	Chris Harding	Transformer	3	<500	N/A	Staining	06/03/21	In Use
PCB-SE238	PSNY	4747 S Broad St 19112	Bld 763	Chris Harding	Transformer	1	N/A	N/A	No	06/03/21	In Use
PCB-SE318	WuXi AppTec Incorporated	4751 League Island Blvd 19112	Loading dock	Charles Ehly	Transformer	2	0	N/A	No	12/09/21	In Use

Receiving Plant: SEWPCP
Drainage Area: MS4 **Total Number of Inspections completed: 13**

Receiving Plant: SEWPCP **Total Number of Inspections completed: 20**

LocID	NAME:	ADDRESS:	LOCATION	CONTACT	EQUIPMENT	NUMBER	CONC (PPM)	GALLONS	LEAKS?	INSP DATE	STATUS
Receiving Plant: SWWPCP											
PCB-SW002	School District of Philadelphia	1400 Green St 19130	Ben Franklin High School	Francine Locke (ema	Transformer	0	>50	N/A	No	03/09/21	Removed From Site
PCB-SW112	SPSP CORP	2301 Oregon Ave 19145	Shoprite basement	Mike Cipolone (store	Capacitor	0	>500	6	No	03/19/21	Removed From Site
PCB-SW127	School District of Philadelphia	1699 Spring Garden St 19130	Masterman	Jeff Scott (Contact)	Transformer	4	N/A	N/A	Staining	11/19/21	In Use
PCB-SW138	Surburban Station	1617 JFK Blvd 19103	Removed	Chris Dolt	Transformer	0	<50	N/A	No	01/08/21	Removed From Site
PCB-SW245	National Railroad Passenger Corp	30th & Race Sts Amtrak Race St./Penn Coach Yard 19104	Overhead substation	Michael Panhuise	Transformer	8	N/A	800	No	05/06/21	In Use
PCB-SW246	National Railroad Passenger Corp	30th & Race Sts Amtrak Race St./Penn Coach Yard 19104	Near generator with day tank	Michael Panhuise	Transformer	1	N/A	800	No	05/06/21	In Use
PCB-SW247	National Railroad Passenger Corp	30th & Race Sts Amtrak Race St./Penn Coach Yard 19104	Car repair shop	Michael Panhuise	Transformer	1	<50	800	No	05/06/21	In Use
PCB-SW248	National Railroad Passenger Corp	30th & Race Sts Amtrak Race St./Penn Coach Yard 19104	N of Oil Water separator	Michael Panhuise	Transformer	1	<50	280	No	05/06/21	In Use
PCB-SW249	National Railroad Passenger Corp	30th & Race Sts Amtrak Race St./Penn Coach Yard 19104	Further north of oil water separator	Michael Panhuise	Transformer	1	<50	280	No	05/06/21	In Use
PCB-SW250	National Railroad Passenger Corp	30th & Race Sts Amtrak Race St./Penn Coach Yard 19104	SE of Bld #42	Michael Panhuise	Transformer	1	N/A	280	No	05/06/21	In Use
PCB-SW251	National Railroad Passenger Corp	30th & Race Streets Amtrak Race St./Penn Coach Yard 19104	Engineering bld #43	Michael Panhuise	Transformer	1	N/A	260	No	05/06/21	In Use
PCB-SW254	Veolia Energy Philadelphia	2600 Christian St 19146	Schuylkill River side of plant	Jessica Hartley	Transformer	5	4	2125	No	09/22/21	In Use
PCB-SW255	Veolia Energy Philadelphia	2600 Christian St 19146	Middle of plant	Jessica Hartley	Transformer	2	25	2338	No	09/22/21	In Use
PCB-SW256	Veolia Energy Philadelphia	2600 Christian St 19107	Christian St entrance	Jessica Hartley	Transformer	4	1.6	15120	No	09/22/21	In Use

Receiving Plant: SWWPCP

Drainage Area: Combined **Total Number of Inspections completed: 14**

LocID	NAME:	ADDRESS:	LOCATION	CONTACT	EQUIPMENT	NUMBER	CONC (PPM)	GALLONS	LEAKS?	INSP DATE	STATUS
Receiving Plant: SWWPCP											
PCB-SW023	PWD	7000 Penrose Ave 19153	Mingo Creek pump station	Anthony Marichino	Capacitor	0	>50	1.5	No	03/19/21	Removed From Site
PCB-SW146	Philadelphia Airport Hilton	4509 Island Ave 19153	Outside	Tommy Blong	Transformer	2	<50	256	No	02/03/21	In Use
PCB-SW158	Sun Chemical	3301 Hunting Park Ave 19132	Bld 1 Boiler vault	Glenn Stankovics	Capacitor	5	>50	1.7	No	03/31/21	In Use
PCB-SW212	G.J. Littlewood & Son, Inc	4045 Main St 19127	Vault	Robert Littlewood	Transformer	5	<50	300	No	04/14/21	In Use
PCB-SW223	PaperWorks Industries, Inc	5000 Flat Rock Rd 19127	T2 604 pulper loft	Frank DelGrego	Transformer	1	>50	940	No	01/19/21	Out of Use
PCB-SW224	PaperWorks Industries, Inc	5000 Flat Rock Rd 19127	T3 Building 120 operating floor	Frank DelGrego	Transformer	0	<50	390	No	01/19/21	Removed From Site
PCB-SW225	PaperWorks Industries, Inc	5000 Flat Rock Rd 19127	T6 Building 132 operating floor	Frank Delgrego	Transformer	1	<50	289	No	01/19/21	Out of Use
PCB-SW226	PaperWorks Industries, Inc	5000 Flat Rock Rd 19127	T10 Building 119 roof	Frank DelGrego	Transformer	1	<50	635	No	01/19/21	Out of Use
PCB-SW227	PaperWorks Industries, Inc	5000 Flat Rock Rd 19127	T11 Building 15	Frank DelGrego	Transformer	3	<50	50	No	01/19/21	Out of Use
PCB-SW228	PaperWorks Industries, Inc	5000 Flat Rock Rd 19127	Building 118 roof	Frank DelGrego	Transformer	3	N/A	N/A	No	01/19/21	Out of Use
PCB-SW229	PaperWorks Industries, Inc	5000 Flat Rock Rd 19127	Building 115 capacitor rm	Frank DelGrego	Capacitor	0	N/A	0	No	01/19/21	Removed From Site
PCB-SW231	Penn Fishing Tackle Mfg Co	3028 W Hunting Park Ave 19132	Anodizing room	David Shanks	Capacitor	2	<50	1.23	No	10/13/21	In Use
PCB-SW232	Penn Fishing Tackle Mfg Co	3028 W Hunting Park Ave 19132	Waste treatment area	David Shanks	Capacitor	1	<50	1.3	No	10/13/21	In Use
PCB-SW233	Penn Fishing Tackle Mfg Co	3028 W Hunting Park Ave 19132	Receiving/mail room	David Shanks	Capacitor	1	<50	1.03	No	10/13/21	In Use
PCB-SW234	Penn Fishing Tackle Mfg Co	3028 W Hunting Park Ave 19132	Light machine area	David Shanks	Capacitor	1	<50	1.39	Yes	10/13/21	In Use
PCB-SW235	Penn Fishing Tackle Mfg Co	3028 W Hunting Park Ave 19132	Basement electrical	David Shanks	Capacitor & Transformer	5	<50	70	No	10/13/21	In Use
PCB-SW236	Penn Fishing Tackle Mfg Co	3028 W Hunting Park Ave 19132	Outside fenced area	David Shanks	Transformer	3	<50	530	No	10/13/21	In Use
PCB-SW237	Penn Fishing Tackle Mfg Co	3028 W Hunting Park Ave 19107	First floor transformer cage	David Shanks	Transformer	2	<50	64	No	10/13/21	In Use

Receiving Plant: SWWPCP
Drainage Area: MS4 **Total Number of Inspections completed: 18**

LocID	NAME:	ADDRESS:	LOCATION	CONTACT	EQUIPMENT	NUMBER	CONC (PPM)	GALLONS	LEAKS?	INSP DATE	STATUS
Receiving Plant: SWWPCP											
PCB-SW217	Philadelphia Zoo	3400 W Girard Ave 19104	W.S. Cumby -- Hamilton Family Children's Zoo	Vance Washington	Transformer	1	N/A	N/A	No	01/20/21	In Use
PCB-SW218	Philadelphia Zoo	3400 W Girard Ave 19104	Picnic grove	Vance Washington	Transformer	1	<50	N/A	No	01/20/21	In Use
PCB-SW219	Philadelphia Zoo	3400 W Girard Ave 19104	African Plains 2	Vance Washington	Transformer	1	N/A	N/A	No	01/20/21	In Use
PCB-SW220	Philadelphia Zoo	3400 W Girard Ave 19104	Reptile House	Vance Washington	Transformer	1	N/A	N/A	No	01/20/21	In Use
PCB-SW222	Philadelphia Zoo	3400 W Girard Ave 19104	Solitude	Vance Washington	Transformer	1	N/A	N/A	No	01/20/21	In Use
Receiving Plant: SWWPCP											
Drainage Area: Non-Contributing			**Total Number of Inspections completed: 5**								
PCB-SW021	Goebelwood Ind. Inc	100 Sycamore Ave 19033	Elec Shed	Dominic Pino	Transformer	3	0	0	No	11/29/21	Out of Use
PCB-SW213	Astra Foods, Inc	6430 Market St 19082	Boiler rm T1	Demitri Vasiliou	Transformer	1	N/A	N/A	No	11/09/21	In Use
PCB-SW214	Astra Foods, Inc	6430 Market St 19082	S bld T4	Demitri Poulmentous	Transformer	1	N/A	N/A	No	11/09/21	In Use
PCB-SW215	Astra Foods, Inc	6430 Market St 19082	E bld T5	Demitri Poulmentous	Transformer	1	N/A	N/A	No	11/09/21	In Use
PCB-SW216	Astra Foods, Inc	6430 Market St 19082	Centrifudge bld west of T4	Demitri Poulmentous	Transformer	1	N/A	N/A	No	11/09/21	In Use
Receiving Plant: SWWPCP											
Drainage Area: Township			**Total Number of Inspections completed: 5**								
Receiving Plant: SWWPCP			**Total Number of Inspections completed: 42**								

Total Inspections: 110

Attachment C

Township Connection PCB Summary

Table C1: 2021 Township PCB Summary
PCB Homolog Concentration (µg/L)

Township Location ID	Sample Date	Parameter	"< >"	Data Value	Units	Sample Type
GRANT	12/9/2021	Decachlorobiphenyls	<	0.62	µg/L	Composite 24h
GRANT	12/9/2021	Dichlorobiphenyls	<	0.12	µg/L	Composite 24h
GRANT	12/9/2021	Heptachlorobiphenyls	<	0.37	µg/L	Composite 24h
GRANT	12/9/2021	Hexachlorobiphenyls	<	0.25	µg/L	Composite 24h
GRANT	12/9/2021	Monochlorobiphenyls		0.38	µg/L	Composite 24h
GRANT	12/9/2021	Nonachlorobiphenyls	<	0.62	µg/L	Composite 24h
GRANT	12/9/2021	Octachlorobiphenyls	<	0.37	µg/L	Composite 24h
GRANT	12/9/2021	Pentachlorobiphenyls	<	0.25	µg/L	Composite 24h
GRANT	12/9/2021	Tetrachlorobiphenyls	<	0.25	µg/L	Composite 24h
GRANT	12/9/2021	Trichlorobiphenyls	<	0.12	µg/L	Composite 24h

Appendix F – PWD Quarterly Dry Weather Water Quality Monitoring Program

Background

In 2009, the Philadelphia Water Department (PWD) initiated a dry weather water quality sampling program designed to work in tandem with the continuous data collection efforts of the PWD/USGS Cooperative Continuous Water Quality Monitoring Program. Grab samples are collected from 10 sites covering all six of Philadelphia County's watersheds on a quarterly basis by the staff of PWD's Bureau of Laboratory Services (BLS). Data collected through this program are most pertinent to Target A (Dry Weather Water Quality & Aesthetics) of PWD's Integrated Watershed Management Plan (IWMP) Strategy, as outlined in the following section.

The IWMP Target Strategy

IWMPs are designed to meet the goals and objectives of numerous water resources-related regulations and programs. Each IWMP results in a series of implementation recommendations that utilize adaptive management approaches to achieve measurable, watershed-wide benefits. By working with stakeholder groups to prioritize goals and evaluate options, PWD has learned that stakeholder priorities can at times differ from those identified by the data-driven problem identification process. This can present challenges in development and approval of a management alternative for watershed implementation. PWD has developed an approach that addresses what often emerges as a set of high-priority stakeholder concerns while simultaneously addressing the scientifically defined priorities.

By defining three distinct targets to meet the overall plan objectives, priorities identified by stakeholders can be addressed simultaneously with those identified through scientific data. Two of the targets were defined so they could be fully met through implementation of a limited set of options, while the third target would be best addressed through an adaptive management approach. In addition to the three targets, a fourth category has been developed to capture the more programmatic implementation options related to planning, outreach, reporting and continuation of the Watershed Partnership.

Targets are defined here as groups of objectives that each focus on a different problem related to the urban stream system. They can be thought of as different parts of the ultimate goal of fishable and swimmable waters through improved water quality, more natural flow patterns and restored aquatic and riparian habitat. Targets are specifically designed to help focus plan implementation. By defining these targets and designing alternatives and an implementation plan to address the targets simultaneously, the plan will have a greater likelihood of success. It also achieves some of the objectives within a relatively short time frame, providing incentives to the communities and agencies involved in the restoration, as well as immediate benefits to the people living in the watershed. PWD's IWMP planning targets are defined below:

3 Targets of the IWMP

- Aesthetically appealing, accessible streams during dry weather
- Improved stream habitat for fish and macroinvertebrates
- Wet weather water quality that meets fishable and swimmable criteria

Program Support

A number of implementation options deemed appropriate for a given watershed are "programmatic" in nature. While these options may support achievement of Targets A, B, and/or C, implementation of these options alone would not result in achievement of a particular target. These "Program Support" associated options include items such as monitoring, reporting, feasibility studies, outreach/education, and continuation of the Watershed Partnership.

Target A: Dry Weather Water Quality and Aesthetics

Streams should be aesthetically appealing (look and smell good), accessible to the public, and an amenity to the community. Target A was defined with a focus on eliminating sources of sewage discharge and other pollution during dry weather, along with trash removal and litter prevention. Access and interaction with the stream during dry weather has the highest priority, because dry weather flows occur about 60-65% of the time during the course of a year. These are also times when the public is most likely to be near or in contact with the stream. In dry weather, stream water quality should be similar to background concentrations in groundwater, particularly with respect to bacteria.

Figure 1. Eroded stream bank at Poquessing Creek

Target B: Healthy Living Resources

Improvements to the number, health, and diversity of benthic macroinvertebrate and fish species need to focus on habitat improvement and the creation of refuges for organisms to avoid high velocities during storms. Fluvial geomorphological studies, wetland and streambank restoration/creation projects, and stream modeling should be combined with continued biological monitoring to ensure that correct procedures are implemented to increase habitat heterogeneity within the aquatic ecosystem.

Improving the ability of an urban stream to support viable habitat and fish populations focuses primarily on the elimination or remediation of the more obvious impacts of urbanization on the stream. These include loss of riparian habitat, eroding and undercut banks, scoured streambed or excessive sediment deposits, channelized and armored stream sections, trash buildup, and invasive species. Thus, the primary tool to accomplish Target B is stream restoration.

Target C: Wet Weather Water Quality and Quantity

The third target is to restore water quality to meet fishable and swimmable criteria during wet weather. Improving water quality and flow conditions during and after storms is the most difficult target to meet in the urban environment. During wet weather, extreme increases in streamflow are common, accompanied by short-term changes in water quality. Where water quality and quantity problems exist, options may be identified that address both. Any stormwater

management practice that increases infiltration or detains flow will help decrease the frequency of damaging floods; however, the size of such structures may need to be increased in areas where flooding is a major concern. (Reductions in the frequency of erosive flows and velocities will also help protect the investment in stream restoration made as part of Target B.)

Target C must be approached somewhat differently from Targets A and B. Full achievement of this target means meeting all water quality standards during wet weather, as well as elimination of flood-related issues. Meeting these goals will be difficult. It will be expensive and requires a long-term effort. A rational approach to achieve this target includes stepped implementation with interim goals for reducing wet weather pollutant loads and stormwater flows, along with monitoring for the efficacy of control measures.

Monitoring Locations

Water quality samples are taken at 10 USGS gage sites in the USGS/PWD Cooperative Monitoring Program (Figure 2). Site identification codes used by PWD's Bureau of Laboratory Services (BLS)

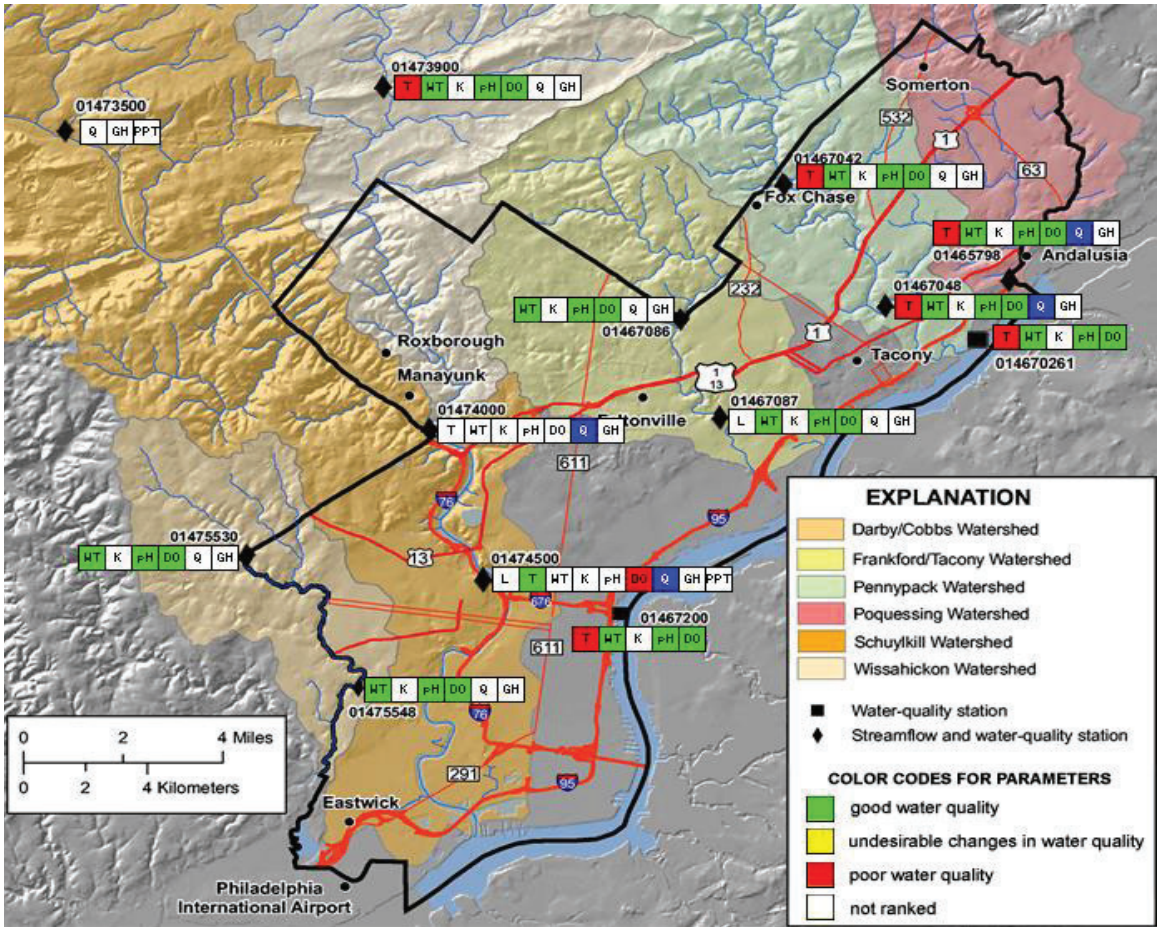


Figure 2. Philadelphia Water Quality Gage Stations as Viewed on Cooperative USGS-PWD Website (https://www.usgs.gov/centers/pa-water/science/philadelphia-water-resources-monitoring-program)

and rivermile-based site ID codes are presented alongside USGS gage station numbers in Table 1. USGS stream gaging stations are ideal monitoring points as they allow discrete sample data to be coupled with continuous discharge data being collected year-round at these sites for loading estimate purposes. Furthermore, grab sample results and field meter readings taken at the time of grab sampling may be invaluable when evaluating continuous water quality data from these USGS gages.

PWD is implementing a City-wide approach to dry weather water quality monitoring, rather than focusing on an individual watershed. Because a number of Green Stormwater Infrastructure (GSI) and other stormwater management projects are in the early stages of implementation, water quality benefits will only be observable over a period of several years.

Gauging the success of such projects on a more immediate scale is best accomplished solely by hydrological analysis. Therefore, the strategic value of the widespread sampling approach is that as more GSI projects are completed over the coming years, the water quality data should gradually begin to reflect their positive environmental impacts.

Table 1. Monitoring Locations in the PWD/USGS Cooperative Program with Location IDs used by PWD Bureau of Laboratory Services and River Mile-Based Site IDs

Description	USGS Gage #	BLS Location ID	Site ID
Cobbs Creek at US Rte. 1 (City Line Ave.)	01475530	COBB700	DCC770
Cobbs Creek at Mt. Moriah Cemetery	01475548	COBB355	DCC251
Schuylkill River at Fairmount Dam	01474500	SCHU154	SC825
Wissahickon Creek at Ft Washington (Rte. 73)	01473900	WISS500	WS1075
Wissahickon Creek at Ridge Ave.	01474000	WISS130	WS076
Tacony Creek at Castor Ave.	01467087	TACO250	TF280
Tacony Creek at Adams Ave.	01467086	TACO435	TF597
Pennypack Creek at Pine Rd.	01467042	PENN407	PP993
Pennypack Creek at Rhawn St.	01467048	PENN175	PP340
Poquessing Creek at Grant Ave.	01465798	POQU150	PQ050

Table 2. Quarterly Dry Weather Grab Sample Dates

Sample Date	Season	Recreational Use Season
30-Jun-09	summer	Swimming
02-Oct-09	fall	Non-Swimming
17-Dec-09	winter	Non-Swimming
11-Mar-10	spring	Non-Swimming
22-Jun-10	summer	Swimming
15-Sep-10	fall	Swimming
20-Dec-10	winter	Non-Swimming
29-Mar-11	spring	Non-Swimming
27-Jun-11	summer	Swimming
15-Sep-11	fall	Swimming
13-Dec-11	winter	Non-Swimming
20-Mar-12	spring	Non-Swimming
18-Jun-12	summer	Swimming
26-Sep-12	fall	Swimming
02-Jan-13	winter	Non-Swimming
04-Apr-13	spring	Non-Swimming
17-Jul-13	summer	Swimming
26-Sep-13	fall	Swimming
17-Jan-14	winter	Non-Swimming
26-Mar-14	spring	Non-Swimming
17-Jun-14	summer	Swimming
23-Sep-14	fall	Swimming
19-Dec-14	winter	Non-Swimming
18-Mar-15	spring	Non-Swimming
23-Jun-15	summer	Swimming
6-Oct-15	fall	Non-Swimming
6-Jan-16	winter	Non-Swimming
20-Apr-16	spring	Non-Swimming
12-Jul-16	summer	Swimming
22-Sep-16	fall	Swimming
10-Jan-17	winter	Non-Swimming
20-Apr-17	spring	Non-Swimming
11-Jul-17	summer	Swimming
13/22-Sep-17	fall	Swimming
28-Feb-18	winter	Non-Swimming
02-May-18	spring	Swimming
10-Jul-18	summer	Swimming
24-Oct-18	fall	Non-Swimming
17-Jan-19	winter	Non-Swimming
20-Mar-19	spring	Non-Swimming
31-Jul-19	summer	Swimming
2-Oct-19	fall	Non-Swimming
29-Jan-20	winter	Non-Swimming
17-Jun-20	summer	Swimming
5-Oct-20	fall	Non-Swimming
10-Dec-20	winter	Non-Swimming
29-Apr-21	spring	Non-Swimming
28-Jul-21	summer	Swimming
4-Nov-21	fall	Non-Swimming
16-Dec-21	winter	Non-Swimming
25-Apr-22	spring	Non-Swimming

Quarterly Dry Weather Monitoring July 2009 – June 2022

Sample Collection Dates

This report summarizes cumulative results from 51 sets of quarterly grab samples that were collected from June 2009 through June 2022. Samples were categorized by season (winter, spring, summer, fall) as well as according to PA DEP seasonal recreational use water quality criteria for interpretation of microbial sample results (Non-Swimming season or Swimming season) (Table 2).

Nutrient Analysis

The macronutrients phosphorus and nitrogen are essential to the growth and overall survival of all plants. However, when occurring in surplus they can be extremely detrimental to aquatic ecosystems, and in turn to the human population that utilizes these water bodies for drinking water and recreational activities such as fishing, boating, and swimming. Elevated nutrient concentrations in rivers and streams can most often be attributed to anthropogenic pollution sources. In these situations, the most common sources of both nutrients are runoff from fertilized lawns/farmland and wastewater discharge.

The most immediate result of excessive nutrient concentrations in any natural water body is excessive plant growth, seen in a variety of growth forms from suspended algae to aquatic macrophytes. As the first step in the process of eutrophication, this unnatural acceleration of aquatic plant growth can start a chain reaction

leading to highly adverse effects to that ecosystem. For example, in small shallow streams, unnaturally high densities of algal periphyton can cause pronounced fluctuations in dissolved oxygen and pH and also adversely affect aquatic habitat by forming thick mats of filamentous algae or algal scums on stream substrates. Moreover, alteration of the algal community structure can lead to the proliferation of nuisance taxa, taste and odor problems in the drinking water supply, increased water treatment costs and, in rare cases, production of toxins (*e.g.*, from cyanobacteria blooms). As a result of these direct and indirect responses, streams and rivers can suffer severe impacts to both aquatic biodiversity and human recreational use.

It should be noted that several phosphorus-containing compounds, known as polyphosphates, can be found in the region's waterways, but they are naturally occurring and are present due to the geologic composition of the area. Furthermore, these polyphosphates pose little ecological threat as they are not present in a biologically available form. Only over long periods of time can these compounds be broken down into orthophosphates, which plants and algae can absorb and utilize for growth. Therefore, aside from the relatively minor contributions of the region's geology, the most significant source of orthophosphates in rivers and streams is human-generated pollution. It is for this reason that orthophosphates, along with nitrates, are included as components of this water quality monitoring program. These forms of N and P are readily available to stream producers.

Ammonia, present in surface waters as un-ionized ammonia gas (NH_3) or as ammonium ion (NH_4^+), is produced by deamination of organic nitrogen-containing compounds such as proteins, and also by hydrolysis of urea. In the presence of oxygen, ammonia is converted to nitrate (NO_3^-) by a pair of bacteria-mediated reactions, together known as the process of nitrification. Nitrification occurs quickly in oxygenated waters with sufficient densities of nitrifying bacteria, effectively reducing ammonia concentration, although at the expense of increased NO_3^- concentration. Ammonia is a primary form of nitrogen produced from excretory waste products and other organic material in sewage. Thus, presence of ammonia can be an indicator of sewage pollution. As ammonia is converted to nitrate in oxygenated streams, ammonia is a non-conservative pollution indicator that tends to decrease in concentration with increasing distance from the source of pollution. PA DEP water quality criteria for NH_3 reflect the relationship between stream pH, temperature, and ammonia dissociation. Ammonia toxicity is inversely related to hydrogen ion [H^+] concentration (*e.g.*, an increase in pH from 7 to 8 increases NH_3 toxicity by approximately an order of magnitude). At pH 9.5 and above, even background concentrations of NH_3 may be considered potentially toxic.

Ammonia may be introduced to streams through fertilizers, breakdown of natural organic material, stables and livestock operations, stormwater runoff, and in some cases from more serious anthropogenic sources of untreated sewage such as defective laterals, crossed/illicit connections, and sanitary sewer overflows (SSOs). PWD has established intensive field infrastructure trackdown, infrared photography, sewer camera monitoring, and dye testing programs to identify and correct these problems where and when they occur.

Nutrient Results

Nutrient data collected thus far at each of the sites are generally consistent with the data collected for Comprehensive Characterization Reports (CCRs) prepared for each of the respective watersheds. Five of 10 sites are not affected by treated wastewater discharges and usually had orthophosphate concentration less than the reporting limit. The reporting limit for the majority of samples was 0.028 mg/L, but limits of 0.1 mg/L, 0.05 mg/L, and 0.09 mg/L were also in effect at various times during the quarterly grab sampling program (Table 3). Conversely, Pennypack and Wissahickon creeks had multiple instances of elevated orthophosphate concentration, which is likely attributable to point source discharge of treated wastewater. Dilution effects were seen between upstream and downstream gages, particularly in the cases of Pennypack and Wissahickon creeks.

Though the Schuylkill River sampling station is downstream from several discharges of treated wastewater, nutrient concentrations are generally smaller than those observed from the Pennypack and Wissahickon creeks, perhaps reflecting the Schuylkill station's much larger overall watershed size and dilution capacity.

Summary statistics for the orthophosphate samples, including results from the application of the PA DEP Chemistry Statistical Assessments protocol (PA DEP, 2007), are shown in Table 3. Exceedances were evaluated relative to the US EPA (2000) Subecoregion 64 guideline for orthophosphate of 0.02625 mg/L, *i.e.*, the median of the 25th percentile seasonal concentrations. Since the detection limit in past analyses has often been greater than the guideline, all non-detected samples were considered "possible exceedances." The nonparametric statistical assessment results show that the locations at Pennypack and Wissahickon creeks, and the Schuylkill River, failed to attain water quality consistent with this guideline. The other locations are classified as needing further evaluation due to the predominance of samples below the detection limit that are all possible exceedances. Figures 3-4 show the variability of orthophosphate results at each site.

Similar examples of wastewater discharge impacts and upstream/downstream dilution have also begun to emerge with regard to the nitrate data that have been collected. The data seem to

Table 3. Orthophosphate Summary Statistics and Assessments. (Concentrations in mg/L)

Gage	Mean	Median	Std. dev.	Min.	Max.	n	n, non-detects	Exceedances	Possible Exceedances	Assessment
01465798	0.055	0.05	0.03	0.013	0.164	51	37	8	37	Needs more evaluation
01467042	0.326	0.262	0.207	0.099	0.953	49	0	44	0	Non-attaining
01467048	0.229	0.176	0.158	0.053	0.852	51	0	47	0	Non-attaining
01467086	0.058	0.05	0.052	0.012	0.363	50	36	8	35	Needs more evaluation
01467087	0.06	0.05	0.036	0.011	0.201	51	32	12	32	Needs more evaluation
01473900	0.291	0.266	0.132	0.05	0.723	51	1	47	1	Non-attaining
01474000	0.17	0.158	0.071	0.05	0.457	51	3	44	3	Non-attaining
01474500	0.154	0.119	0.095	0.05	0.477	51	5	43	5	Non-attaining
01475530	0.054	0.05	0.031	0.013	0.165	51	38	6	37	Needs more evaluation
01475548	0.057	0.05	0.035	0.019	0.188	50	38	8	33	Needs more evaluation

indicate a trend toward decreased nitrate concentrations during warmer months, which would correspond to the increased uptake of nutrients by plant life during those growing seasons. The only exceptions are the Pennypack and Wissahickon Creek gage sites, which as previously stated are directly impacted by treated wastewater discharge. It should be noted, however, that these statements and observations are in no way conclusive given that the dataset is still relatively limited in size. As this dataset grows in subsequent years, further statistical analysis can be carried out and any apparent patterns or phenomena can be explored.

Summary statistics for the nitrate samples, including results from application of the PA DEP Chemistry Statistical Assessment protocol (PA DEP, 2007), are shown in Table 4 and Figures 5-6. Exceedances were evaluated relative to a) the PA DEP water quality standard for nitrite and nitrate of 10 mg/L, and b) the US EPA (2000) subecoregion 64 guideline for nitrite and nitrate of 0.995 mg/L, *i.e.*, the median of the 25th percentile seasonal concentrations. The nonparametric statistical assessment results show that with respect to the PA DEP standard, all locations were in attainment except the upstream Wissahickon gage. Two exceedances have been observed at that site, and more data is needed to make an evaluation. All sites failed to attain water quality consistent with the US EPA subecoregion-based guideline.

Quarterly dry-weather analysis of ammonia began in the fall of 2011. PWD laboratory reporting limits for ammonia fluctuated based on the performance of lab analytical equipment with spiked and blank samples. Ammonia concentration detection limits were 0.5 mg/L for the fall 2011 sample set, and the subsequent sample set results usually had detection limits of 0.1 mg/L or 0.167 mg/L. The downstream Tacony site (01467087) most often exceeded the detection limit, where a maximum concentration of 0.4 mg/L was observed in both fall 2014 and summer 2015. Results are shown in Table 5 and Figures 7-8.

There were no observed violations of ammonia water quality criteria at any site during this period of dry-weather monitoring. With a majority of the sample results characterized as non-detects due to laboratory reporting limits, ammonia criteria were calculated with corresponding temperature and pH values to determine if possible exceedances existed (i.e., the criteria fell below the detection limit). None of the non-detect samples had the potential to violate water quality criteria.

Table 4. Nitrate Summary Statistics and Assessments. Concentrations are in mg/L.

Gage	Mean	Median	Std. dev.	Min.	Max.	n	n, non-detects	Exceedances, PADEP	Exceedances, Subecoregion	PADEP Assessment	EPA Subecoregion Assessment
01465798	1.76	1.71	0.52	0.80	3.75	50	0	0	49	Attaining	Non-attaining
01467042	4.49	4.17	0.91	3.20	7.94	48	0	0	48	Attaining	Non-attaining
01467048	3.64	3.49	0.99	1.21	6.33	50	0	0	50	Attaining	Non-attaining
01467086	2.51	2.36	1.15	1.51	9.74	49	0	0	49	Attaining	Non-attaining
01467087	1.83	1.82	0.68	0.51	3.37	51	0	0	51	Attaining	Non-attaining
01473900	6.05	5.86	2.01	2.69	12.04	49	0	2	49	Needs more evaluation	Non-attaining
01474000	4.03	4.01	0.94	1.29	6.18	51	0	0	51	Attaining	Non-attaining
01474500	2.98	2.92	0.45	2.14	4.16	51	0	0	51	Attaining	Non-attaining
01475530	3.00	3.01	0.41	2.12	4.45	51	0	0	51	Attaining	Non-attaining
01475548	2.52	2.52	0.52	1.40	3.50	50	0	0	50	Attaining	Non-attaining

Table 5. Ammonia Summary Statistics and Assessments. Concentrations are in mg/L.

Gage	Mean	Median	Std. dev.	Min.	Max.	n	n, non-detects	Exceedances
01465798	0.125	0.1	0.093	0.025	0.5	42	31	0
01467042	0.128	0.1	0.097	0.022	0.5	42	34	0
01467048	0.127	0.1	0.097	0.022	0.5	42	33	0
01467086	0.122	0.1	0.092	0.02	0.5	42	35	0
01467087	0.168	0.125	0.113	0.028	0.5	42	22	0
01473900	0.126	0.1	0.097	0.023	0.5	42	35	0
01474000	0.121	0.1	0.092	0.024	0.5	42	36	0
01474500	0.134	0.1	0.091	0.026	0.5	42	30	0
01475530	0.121	0.1	0.093	0.023	0.5	42	36	0
01475548	0.12	0.1	0.094	0.022	0.5	41	32	0

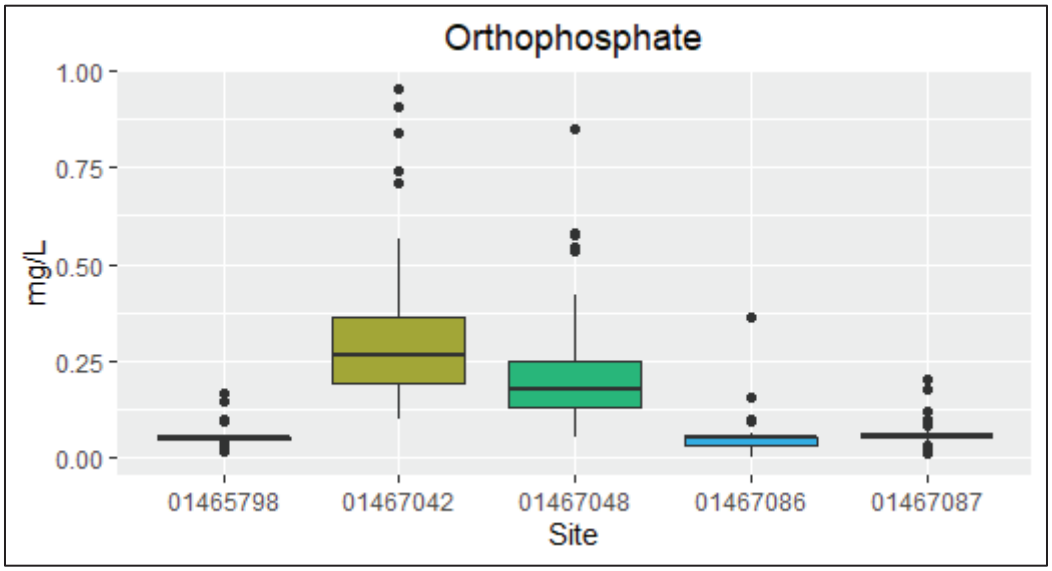


Figure 3. Orthophosphate concentration at 5 USGS gage stations, July 2009-June 2022

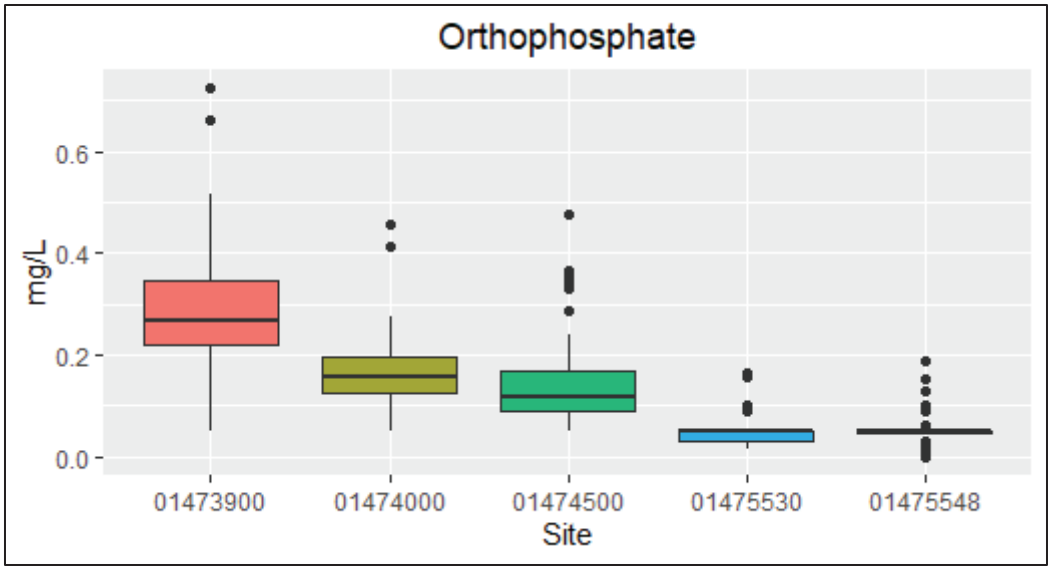


Figure 4. Orthophosphate concentration at 5 USGS gage stations, July 2009-June 2022

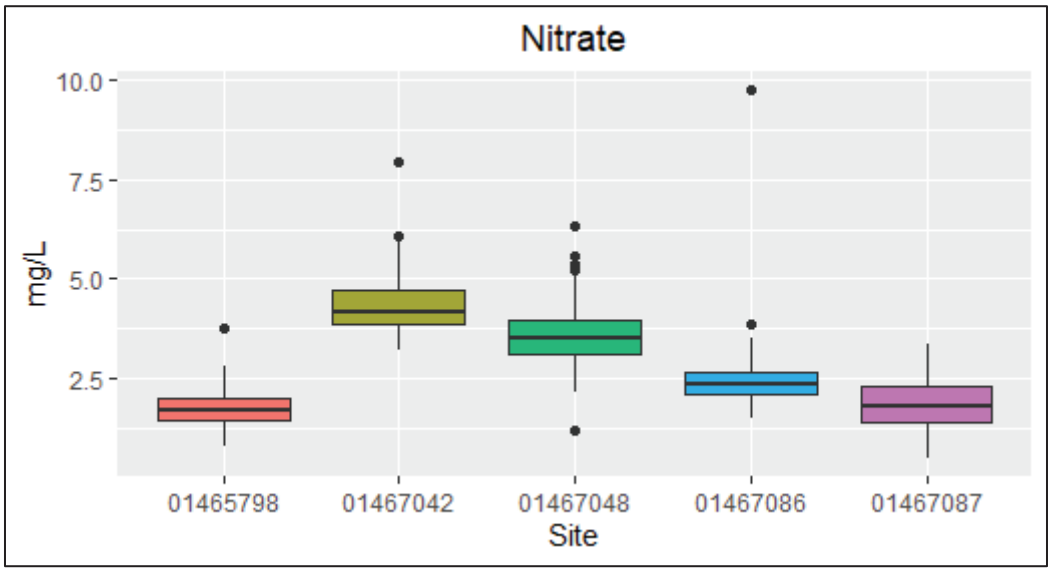


Figure 5. Nitrate concentration at 5 USGS gage stations, July 2009-June 2022

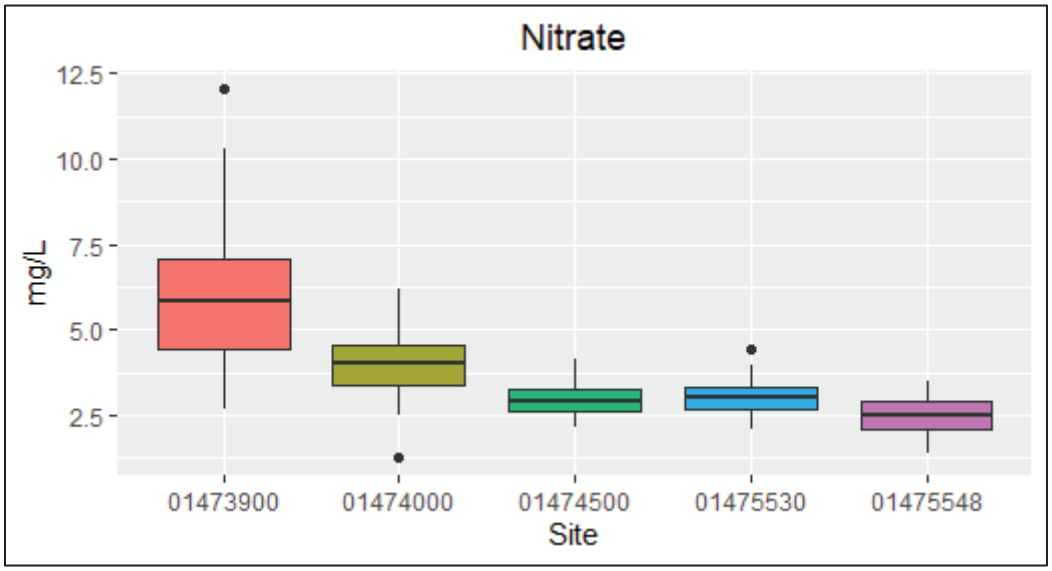


Figure 6. Nitrate concentration at 5 USGS gage stations, July 2009-June 2022

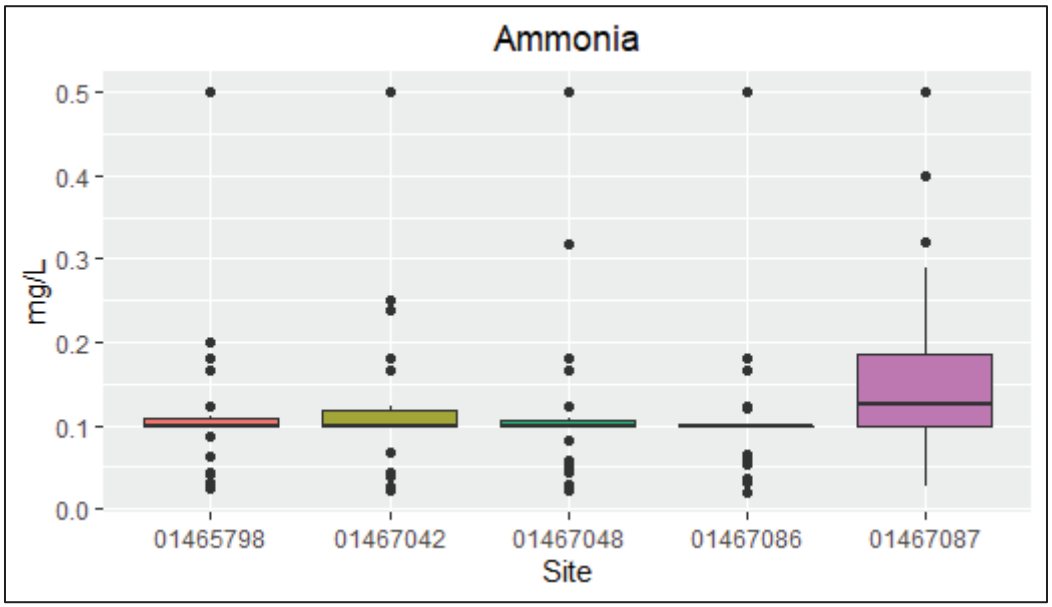


Figure 7. Ammonia concentration at 5 USGS gage stations, September 2011-June 2022

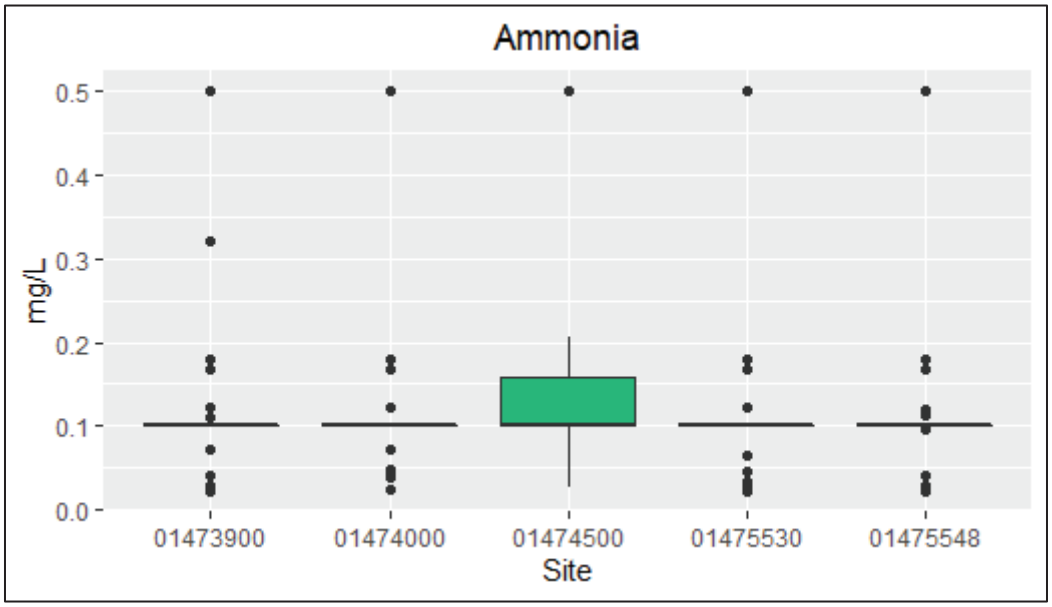


Figure 8. Ammonia concentration at 5 USGS gage stations, September 2011-June 2022

Microbial Analysis

Fecal indicator bacteria, found naturally in the gut of warm-blooded animals, can be used in the detection of human or animal waste contamination in a body of water. While these bacteria themselves are generally harmless to humans, they are considered to be very reliable indicators of the presence of other, more serious fecal-borne pathogens such as viruses, protozoa and other bacteria. The extent to which a water body is contaminated with fecal indicator bacteria can indicate the likelihood that the water has been contaminated by human or animal wastes. In urban environments, the most likely dry weather pollution sources are domestic animals, wildlife and untreated sewage from improperly connected or leaking sanitary sewers.

PWD performs fecal indicator bacteria tests for fecal coliform and *E. coli*. The fecal coliform test covers a relatively wide subgroup of fecal-specific bacteria; however, it does include some species that are not necessarily fecal in origin. *E. coli*, on the other hand, is a single coliform species that is noteworthy due to the fact that it occurs only in the fecal matter of humans and other warm-blooded animals. This qualifies *E. coli* as an excellent indicator of human waste.

Microbial Analysis Results

PA DEP has established seasonal bacteria water quality criteria that are more stringent in warmer months, or the "swimming season." For the period May 1 through September 30, water quality standards require that the geometric mean of a group of at least five samples collected on non-consecutive days over a 30-day period not exceed 126 *E. coli* CFU (colony forming unit) per 100mL. In addition, there should not be greater than a 10% excursion frequency of 410 CFU per 100 mL for the samples collected in the same 30-day interval. Although PWD does not typically collect five or more *E. coli* samples at USGS gage sites within a 30-day period, Table 6 calculates a geometric mean of quarterly grab samples for the swimming and non-swimming seasons. Results of microbial analyses from the swimming season samples generally indicate *E. coli* geometric means greater than 126 CFU/100mL (Table 6). The only exceptions were the downstream Wissahickon Creek and Schuylkill River gage sites, which each had *E. coli* geometric means less than 126 CFU/100mL. Figures 9-10 show the variability of *E. coli* results at each site.

During the non-swimming season, water quality criteria for fecal coliform apply. The maximum fecal coliform level during the non-swimming season is a geometric mean of 2,000 CFU per 100 mL. All sites achieved the less stringent standard for fecal coliform during the non-swimming season (Table 7). Figures 11-12 show the variability of fecal coliform results at each site.

Table 6. *E. coli* Geometric Mean Results and PA DEP Water Quality Recreational Use Criteria Achievement Status During Swimming Season

Gage	n	n, non-detects	Geometric mean (CFU/100 mL)	Season	Attaining Standard
01465798	30	1	201	non-swimming	NA
01465798	20	0	515	swimming	No
01467042	30	1	69	non-swimming	NA
01467042	20	0	339	swimming	No
01467048	30	0	376	non-swimming	NA
01467048	20	0	956	swimming	No
01467086	30	0	249	non-swimming	NA
01467086	20	0	747	swimming	No
01467087	29	0	398	non-swimming	NA
01467087	20	0	519	swimming	No
01473900	30	0	93	non-swimming	NA
01473900	20	0	319	swimming	No
01474000	30	1	53	non-swimming	NA
01474000	20	0	104	swimming	Yes
01474500	30	2	36	non-swimming	NA
01474500	20	2	47	swimming	Yes
01475530	30	1	84	non-swimming	NA
01475530	20	0	286	swimming	No
01475548	30	1	194	non-swimming	NA
01475548	19	0	626	swimming	No

Table 7. Fecal Coliform Geometric Mean Results and PA DEP Water Quality Recreational Use Criteria Achievement Status During Non-Swimming Season

Gage	n	n, non-detects	Geometric mean (CFU/100 mL)	Season	Attaining Standard
01465798	30	1	148	non-swimming	Yes
01465798	20	0	503	swimming	NA
01467042	30	1	60	non-swimming	Yes
01467042	20	0	332	swimming	NA
01467048	30	0	291	non-swimming	Yes
01467048	20	1	1034	swimming	NA
01467086	30	0	204	non-swimming	Yes
01467086	20	0	1047	swimming	NA
01467087	29	0	362	non-swimming	Yes
01467087	20	0	582	swimming	NA
01473900	30	0	78	non-swimming	Yes
01473900	20	0	285	swimming	NA
01474000	30	1	43	non-swimming	Yes
01474000	20	0	116	swimming	NA
01474500	30	1	29	non-swimming	Yes
01474500	20	2	47	swimming	NA
01475530	30	1	77	non-swimming	Yes
01475530	20	0	309	swimming	NA
01475548	30	0	163	non-swimming	Yes
01475548	19	0	821	swimming	NA

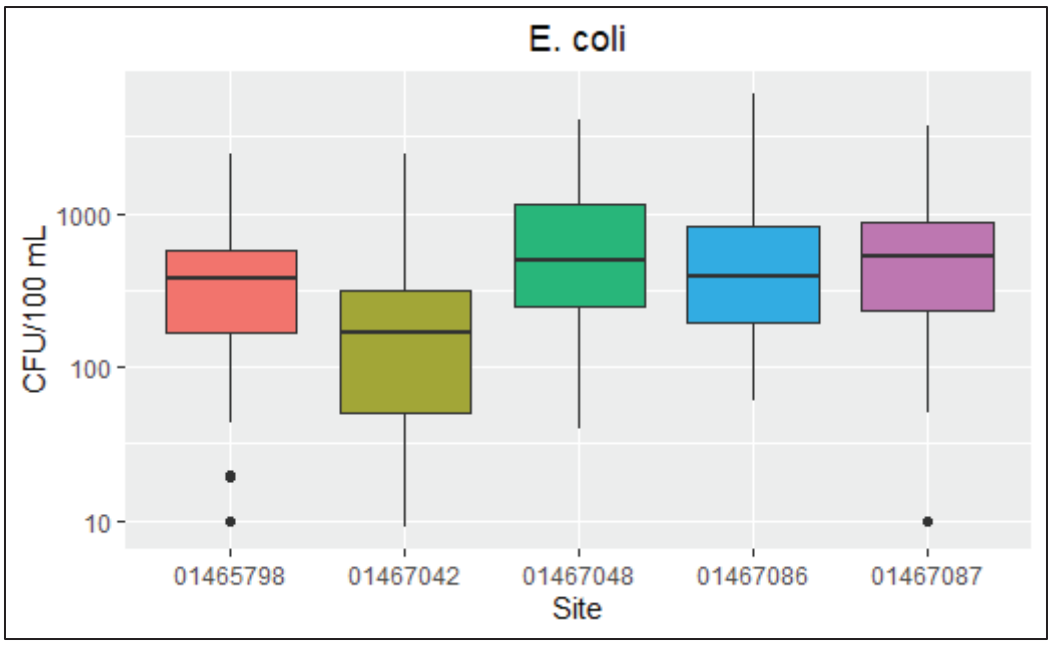


Figure 9. E. coli results at 5 USGS gage stations, July 2009-June 2022

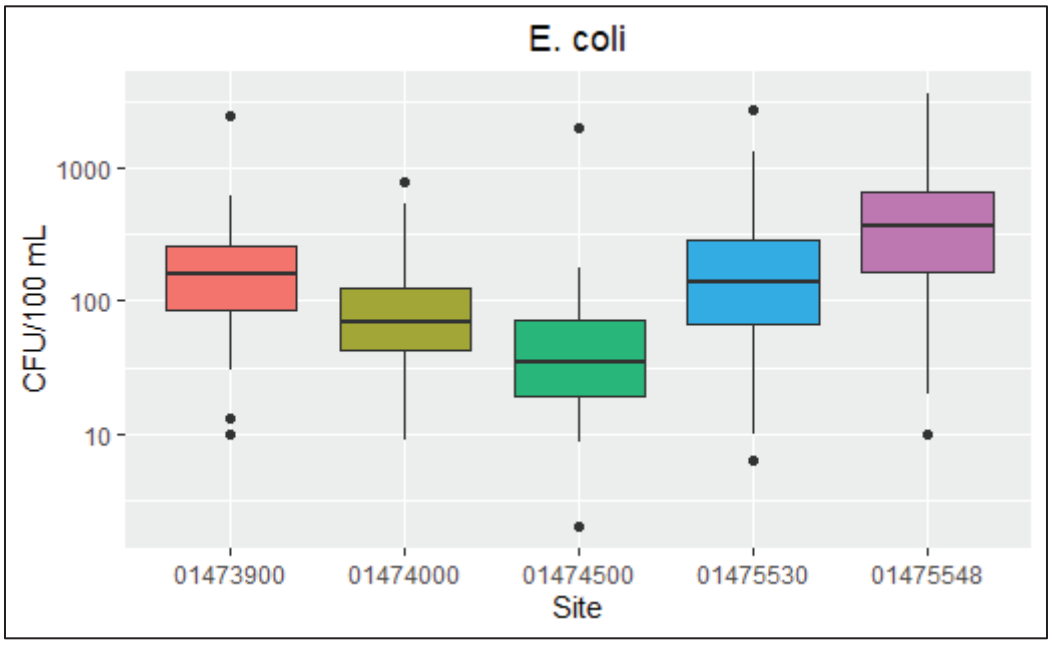


Figure 10. E. coli results at 5 USGS gage stations, July 2009-June 2022

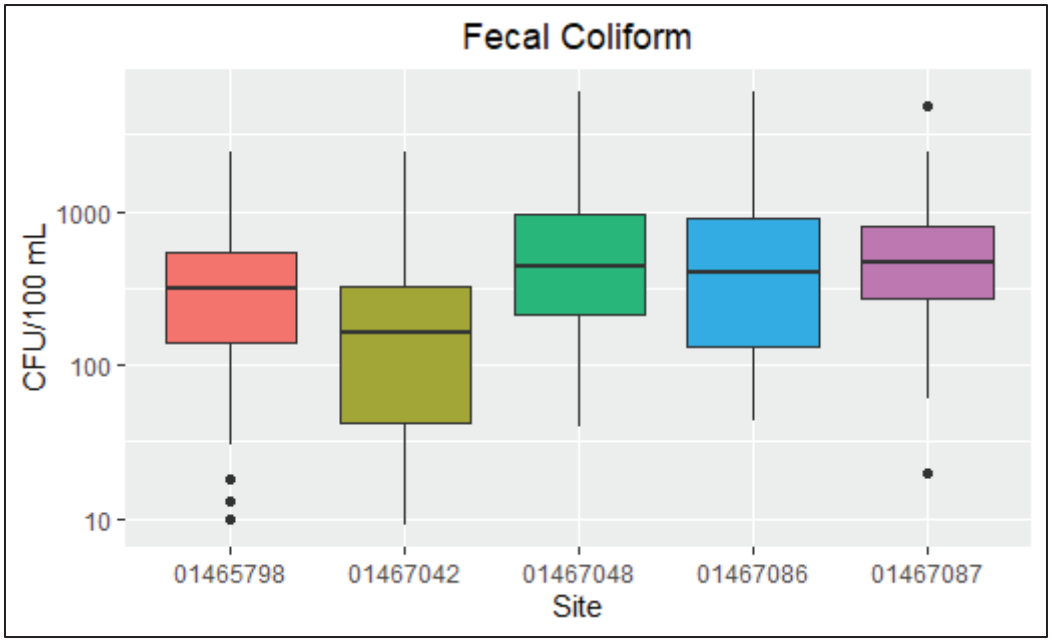


Figure 11. Fecal Coliform results at 5 USGS gage stations, July 2009-June 2022

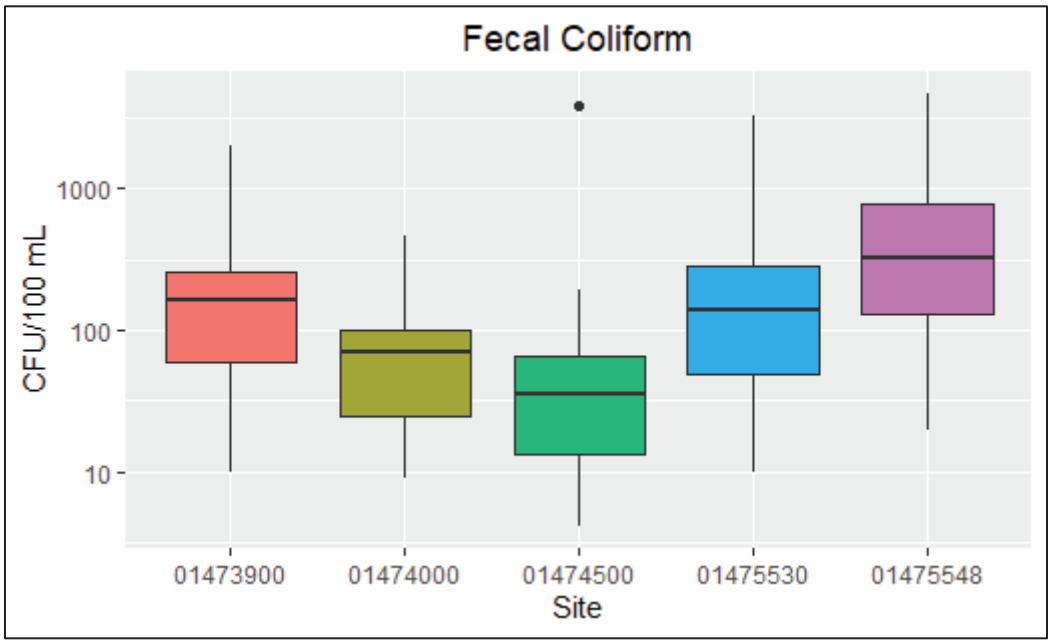


Figure 12. Fecal Coliform results at 5 USGS gage stations, July 2009-June 2022

Physicochemical Analysis

In addition to nutrient and microbial analyses, a basic set of physicochemical parameters were also monitored as part of the discrete quarterly sampling program. These parameters (dissolved oxygen, pH, temperature, and specific conductance) were specifically chosen to coincide with those being measured by the USGS continuous water quality monitoring gages. These data can then be utilized as valuable field checks when analyzing continuous water quality data from USGS gages. The physicochemical data are summarized by parameter in Figures 13-20.

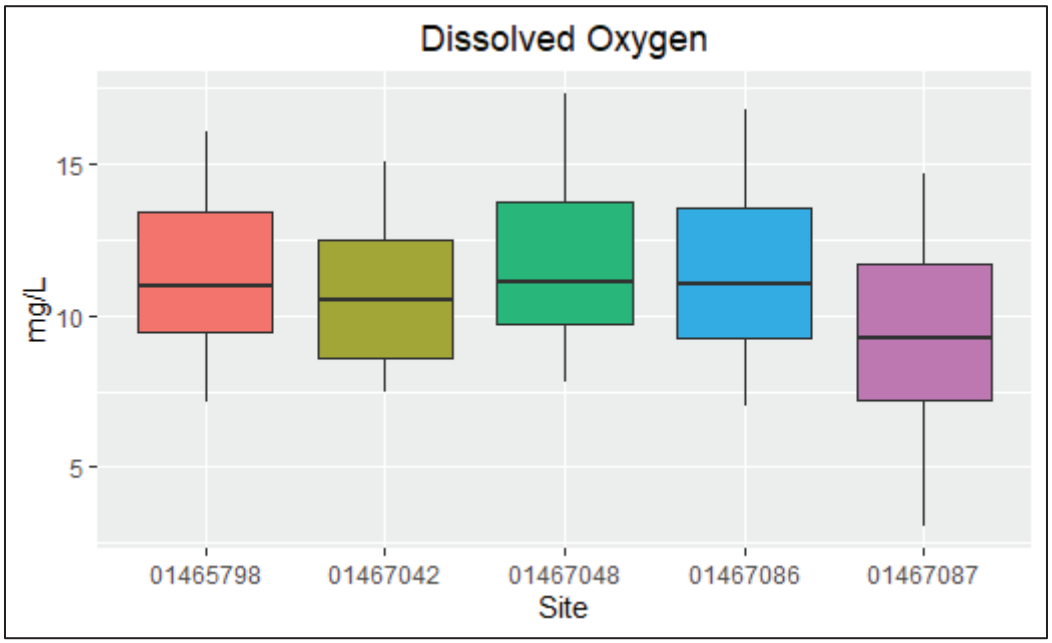


Figure 13. Dissolved oxygen results at 5 USGS gage stations, July 2009-June 2022

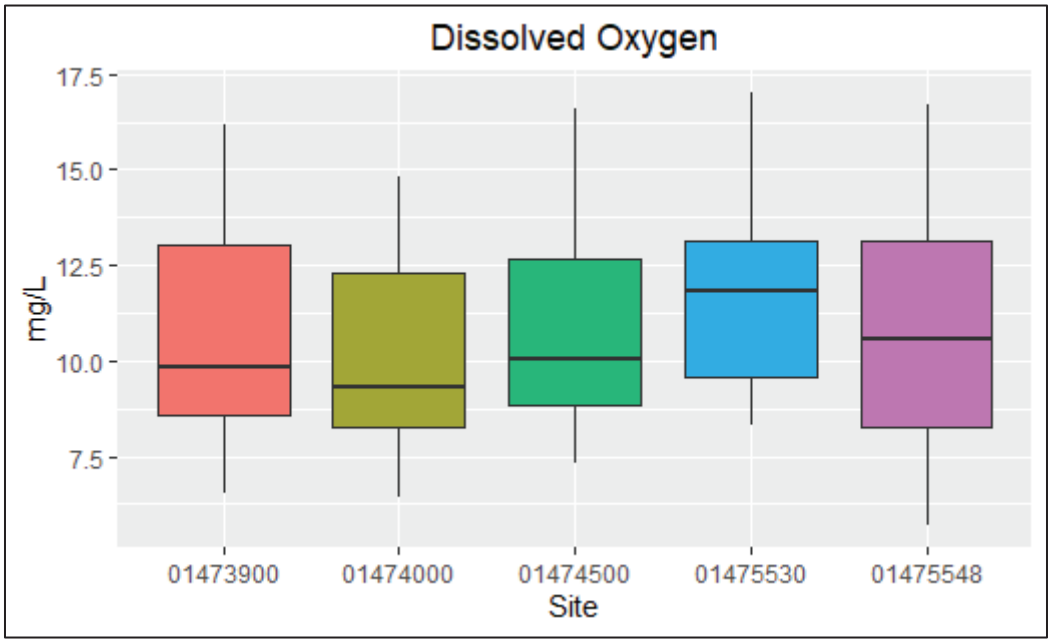


Figure 14. Dissolved oxygen results at 5 USGS gage stations, July 2009-June 2022

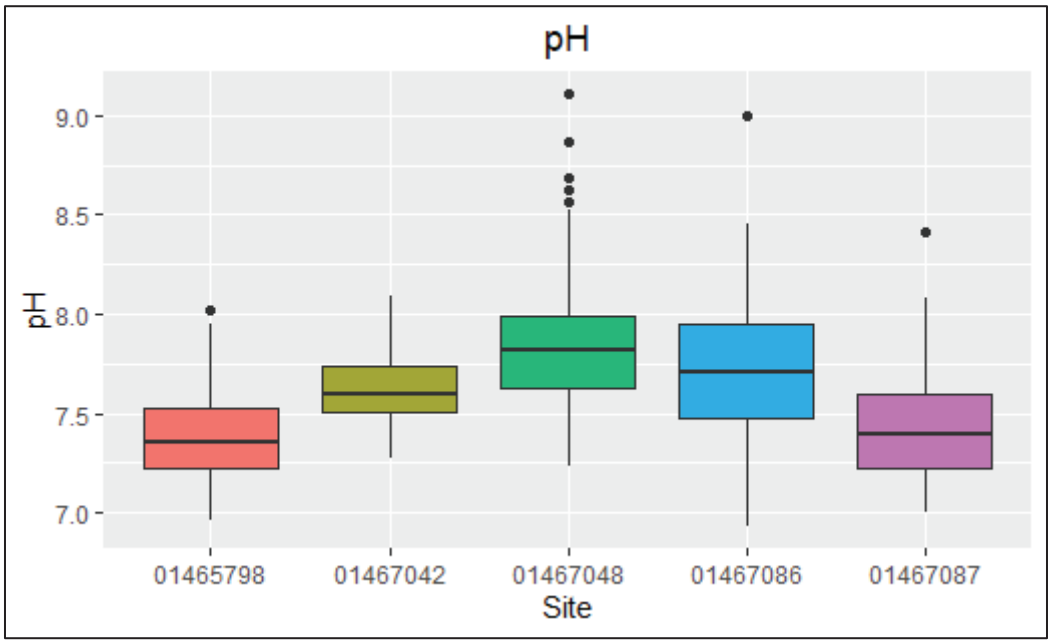


Figure 15. pH results at 5 USGS gage stations, July 2009-June 2022

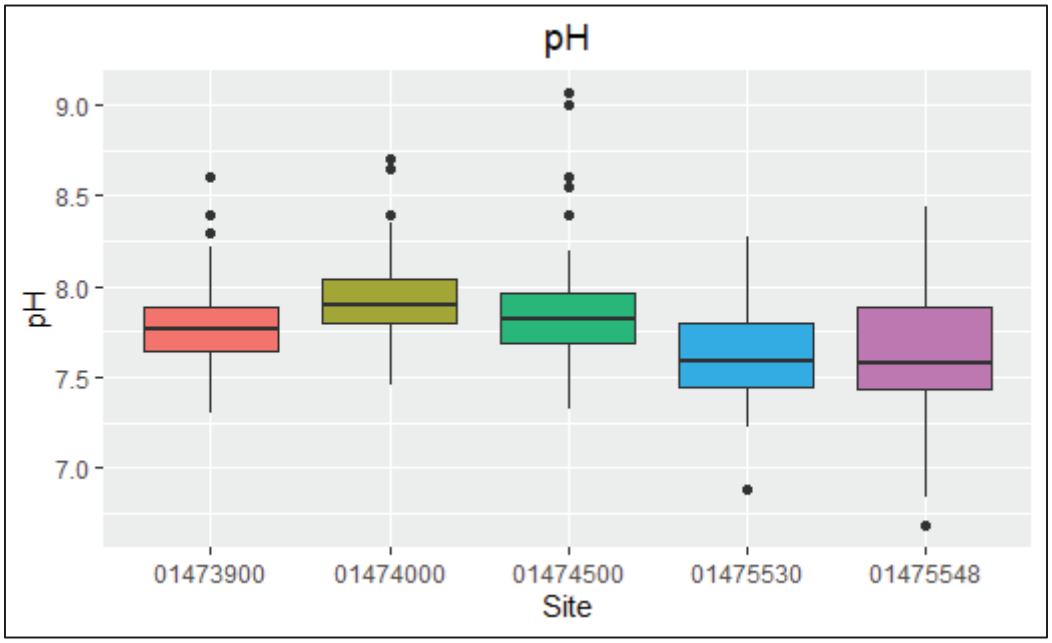


Figure 16. pH results at 5 USGS gage stations, July 2009-June 2022

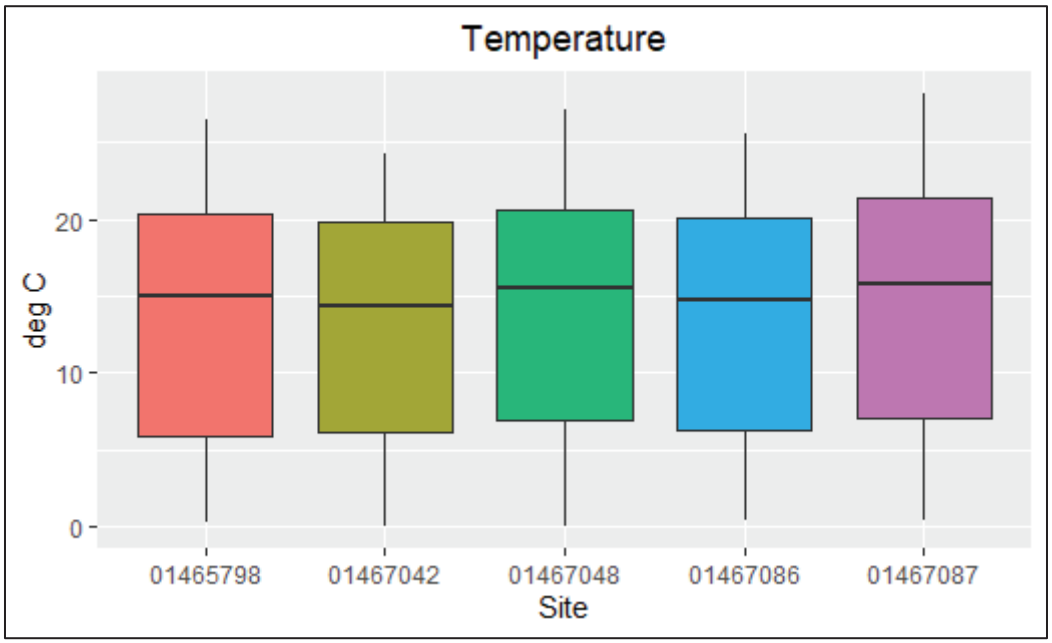


Figure 17. Temperature results at 5 USGS gage stations, July 2009-June 2022

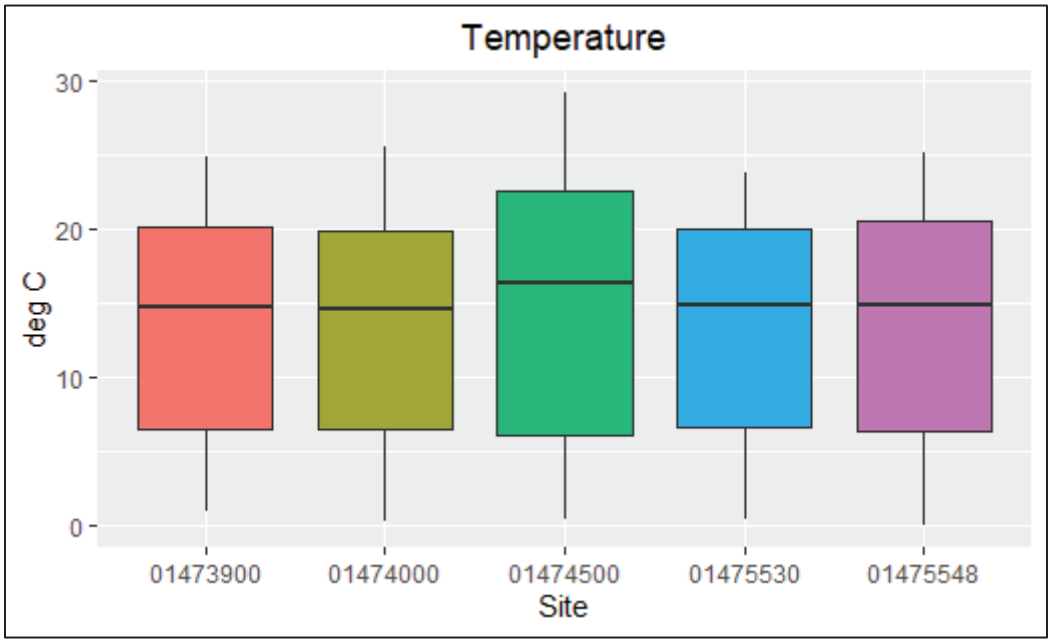


Figure 18. Temperature results at 5 USGS gage stations, July 2009-June 2022

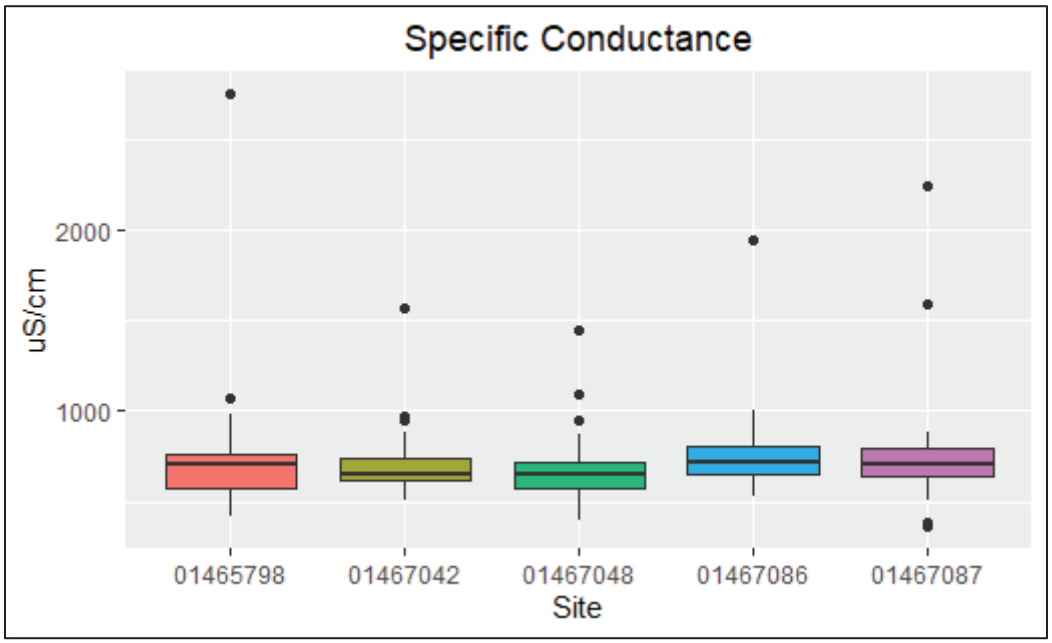


Figure 19. Specific conductance results at 5 USGS gage stations July 2009-June 2022

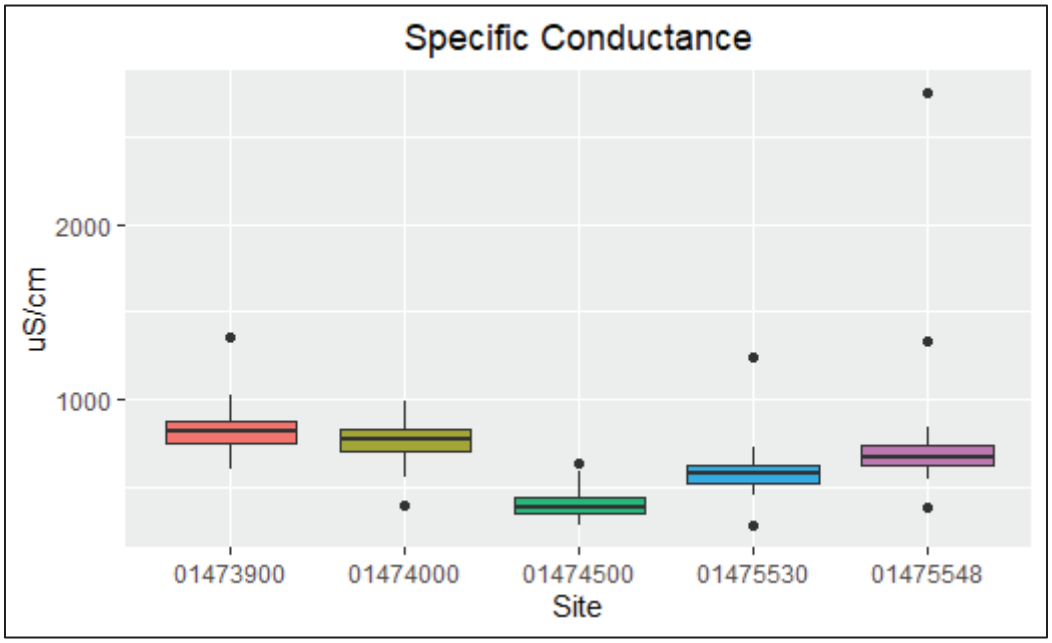


Figure 20. Specific conductance results at 5 USGS gage stations July 2009-June 2022

References

Pennsylvania Department of Environmental Protection (PA DEP). (2007). Chemistry Statistical Assessments. Harrisburg, PA. 17 p.

United States Environmental Protection Agency (US EPA). (1986). Quality Criteria for Water. EPA 440/5/86/001. Washington, D.C. 447 p.

United States Environmental Protection Agency (US EPA). (2000). Ambient Water Quality Criteria Recommendations: Rivers and Streams in Nutrient Ecoregion IX. EPA 822/B/00/019. Office of Water, U.S. Environmental Protection Agency, Washington D.C.

Appendix G – PWD-USGS Cooperative Water Quality Monitoring Program Annual Summary

Background

PWD and the United States Geological Survey (USGS) have constructed and/or refurbished gaging stations in 10 locations throughout Philadelphia's watersheds. USGS staff is responsible for construction and maintenance of the gage structure, stream stage monitoring instruments, data communications, maintaining and verifying stage-discharge rating curves and pumping apparatus. PWD staff is responsible for installation and maintenance of continuous water quality instrumentation. Data collected through the PWD/USGS cooperative water quality monitoring program are disseminated through the USGS National Water Information System (NWIS) Web Interface (https://pa.water.usgs.gov/apps/pwd/), as well as a website specifically dedicated to Philadelphia's watersheds (Figure 1).

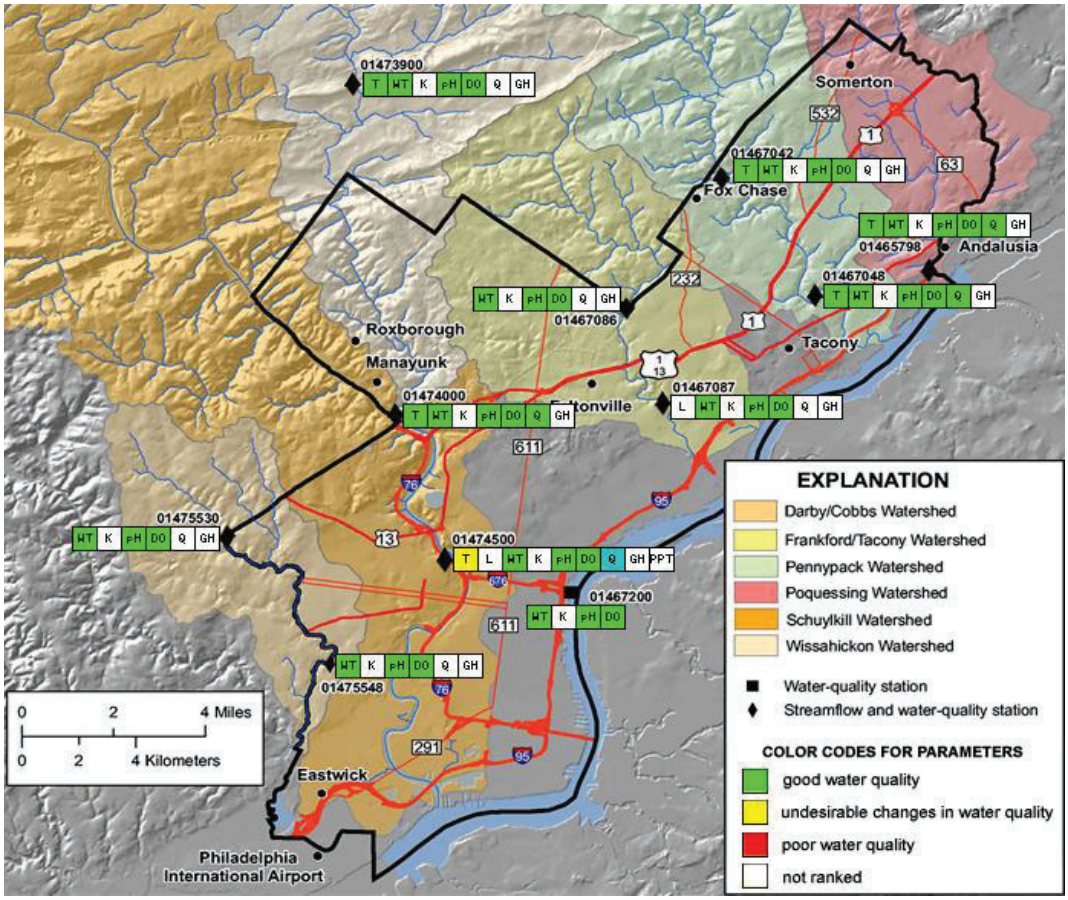


Figure 1. Philadelphia Water Quality Gauge Stations as Viewed on Cooperative USGS-PWD Website (https://usgs.gov/centers/pa-water/science/philadelphia-water-resources-monitoring-program).

Monitoring Locations

The PWD/USGS Cooperative Monitoring Program builds upon the widespread network of USGS gages that were formerly operated throughout Philadelphia. These gages are logically situated and/or have a continuous period of record, making them ideal for water quality monitoring purposes. Within a given watershed, downstream-most historic stations were chosen to represent water quality, as these streams flow through Philadelphia into the receiving waters (*i.e.*, the Schuylkill and Delaware rivers).

Regarding upstream stations, three gages (Pennypack Creek at Pine Rd, Tacony Creek at Adams Ave, and Cobbs Creek at US Rte. 1) are strategically located to monitor water quality of the streams as they enter Philadelphia (Figure 1). The upstream Wissahickon Creek monitoring station is located at Rte. 73 in Fort Washington, which is approximately 3.7 river miles upstream of the City. This location was chosen due to its extensive period of record (Table 1). Upstream water quality is not measured in the Poquessing-Byberry Creek Watershed. The Schuylkill River gage is in an ideal location to provide data related to the Schuylkill River Fairmount Dam Fish Ladder Renovation Project and was equipped with water quality monitoring instrumentation upon project completion in early 2009. In December 2020, the Delaware River gage at the Ben Franklin Bridge was relocated to a nearby downstream site at Penn's Landing.

This annual report summarizes water quality data from July 1, 2021 – June 30, 2022, excluding the period of December 2021 through February 2022, during which time monitoring probes were not deployed in order to protect the equipment from cold temperatures. Water quality data at the Delaware River gages 01467200 and 014670261 were collected year-round. Due to routine maintenance such as cleaning and calibration, gages are periodically taken offline, usually for no more than the span of two hours, and do not collect data. Significant gaps in data collection due to gage malfunction, repair, vandalism, etc. are noted in the Monthly Results section.

In order to summarize hydrologic conditions during the monitoring period, daily mean discharge was plotted along with the median of all daily flows for USGS gage 01474000 (Wissahickon Creek at Mouth.). The period of record for this gage is 56 years. The influence of severe storms such as Hurricane Ida in early September can be observed as peaks in streamflow in Figure 2.

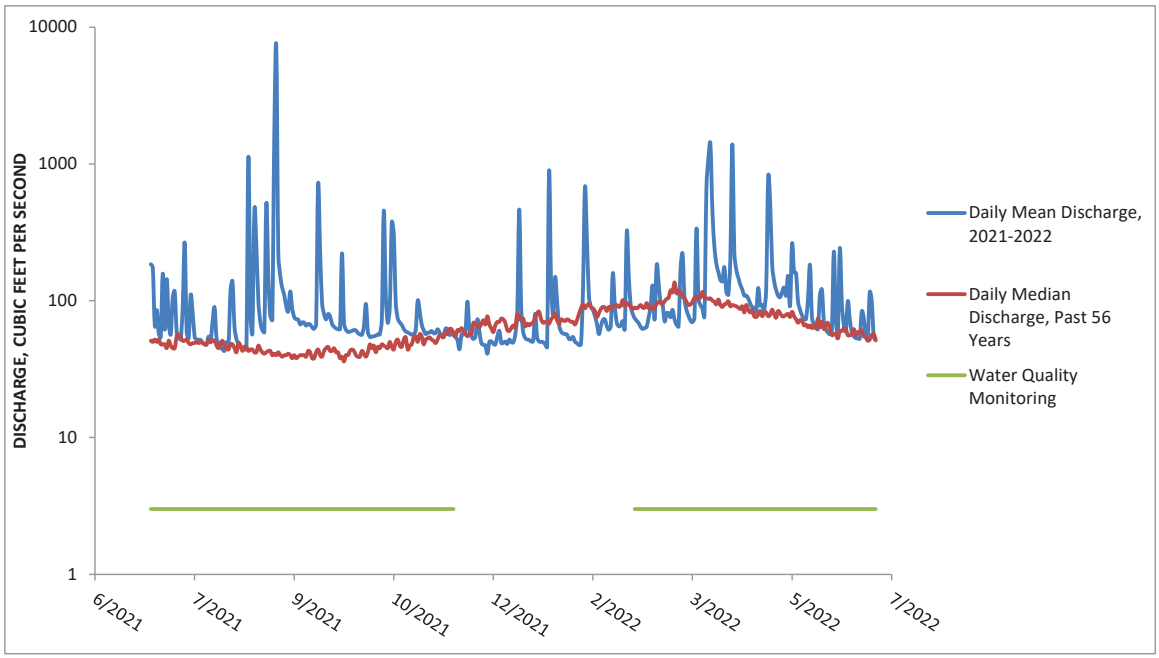


Figure 2. Daily mean flow July 1, 2021 – June 30, 2022 and daily median flow for 56 years of record at USGS gage 01474000 (Wissahickon Creek at Mouth.).

Table 1. PWD/USGS Cooperative Water Quality Monitoring Program Gages

Gage Number	Gage name	Flow Data Record
01465798	Poquessing Creek at Grant Avenue, Philadelphia, PA	July 1965 to Present
01467042	Pennypack Creek at Pine Road, Philadelphia, PA	August 1964 to September 1974; September 2007 to Present
01467048	Pennypack Creek at Lower Rhawn St Br., Philadelphia, PA	June 1965 to Present
01467086	Tacony Creek at County Line, Philadelphia, PA	October 1965 to September 1986; September 2005 to Present
01467087	Frankford Creek at Castor Ave, Philadelphia, PA	July 1982 to Present
014670261	Delaware River near Pennypack Woods, PA	February 2011 to Present
01467200*	Delaware River at Ben Franklin Bridge/Penn's Landing, Philadelphia, PA	August 1949 to Present
01473900**	Wissahickon Creek at Ft. Washington, PA	September 1961 to September 1968; June 2000 to Present
01474000	Wissahickon Creek at Mouth, Philadelphia, PA	June 1897 to September 1903; January 1905 to July 1906; October 1965 to Present
01474500	Schuylkill River at Philadelphia, PA	October 1931 to Present
01475530	Cobbs Creek at U.S. Highway No. 1, Philadelphia, PA	October 1964 to September 1981; September 2004 to Present
01475548	Cobbs Creek at Mt. Moriah Cemetery, Philadelphia, PA	October 2005 to Present

*Funding for the operation of this gage is provided by USGS and the Delaware River Basin Commission (DRBC)
**Funding for the operation of this gage is provided by DRBC

USGS Gage Data Processing & Analysis Procedures

With 10 USGS gages collecting data for multiple water quality parameters at half-hour or 15-minute intervals, a large amount of data are produced. PWD Office of Watersheds (OOW) staff have developed procedures for the processing and analysis of these data using Microsoft Excel and Access software, as well as R, a free software environment for statistical computing and graphics. Most aspects of the data processing and analysis have been automated with custom Visual Basic and R code.

OOW independently maintains databases of water quality and streamflow via automated regular retrievals of these data from USGS NWIS. On a monthly basis, the databases are queried and results for each gage are imported into MS Excel workbooks. If available, any field data collected during that period (*e.g.*, hand meter readings from field maintenance checks, water quality grab samples, etc.) are also imported. Once all required data have been entered, separate plots are produced for each parameter (dissolved oxygen, turbidity, pH, specific conductance, and temperature) to enable a subjective review of data quality.

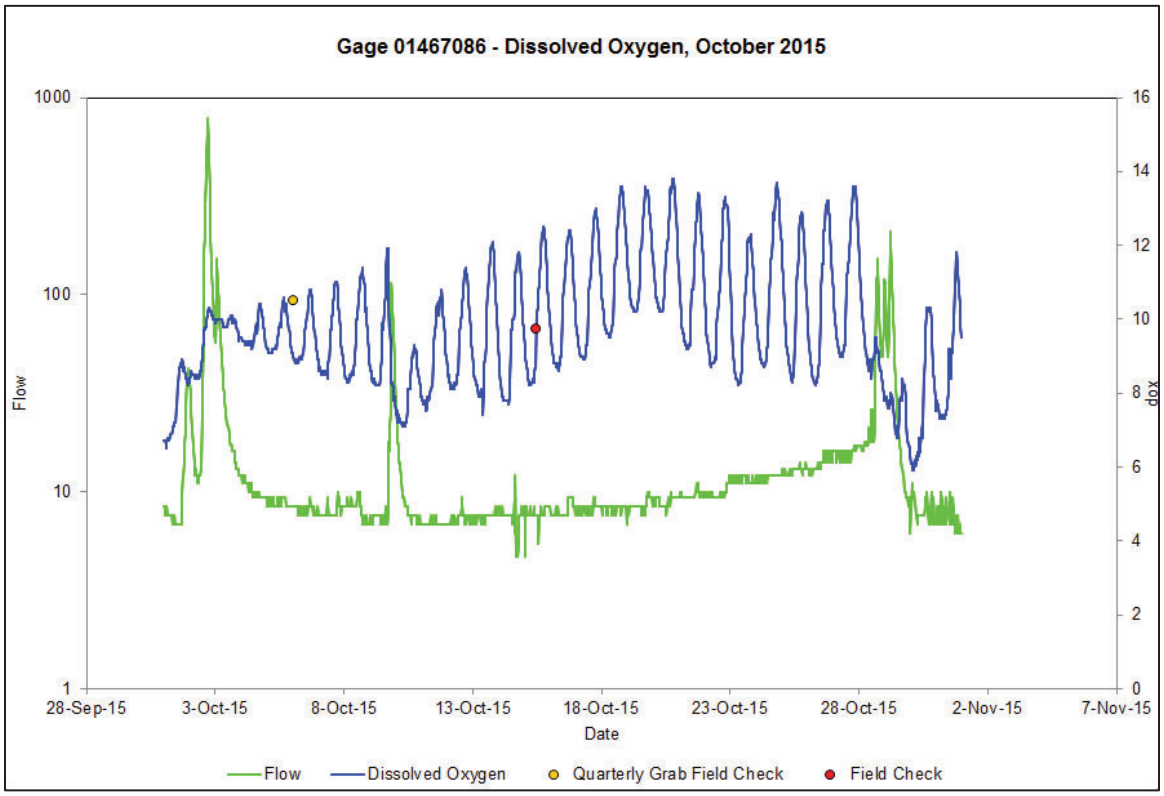


Figure 3. Example of an Excel-generated data processing/analysis plot; Gage 0146786, Dissolved Oxygen, October 2015.

These plots are examined and are the primary basis for the selection of good vs. questionable data for a given month. Intervals of questionable data are located and added

to a table of "flagged" data for that particular parameter, which is then used to update the water quality database. Logs of field meter readings taken by PWD staff inform the flagging process, along with email records containing field notes and observations whenever water quality instrumentation is cleaned, calibrated, or otherwise maintained.

The final step of the procedure utilizes R, a statistical programming language and software environment. The R software code developed by OOW staff analyzes all of the water quality data in a database, as well as the good and questionable flags, and generates statistical and graphic results in a variety of forms. These include monthly plots for all data parameters for each site, showing accepted and questionable data, water quality criteria, grab sample data, and streamflow (Figure 4); assorted statistics including accepted and questionable data comparisons, monthly attainment percentages, and comparisons of wet and dry weather periods; and additional plots, including average dissolved oxygen (DO), percent DO saturation, and pH/percent DO saturation.

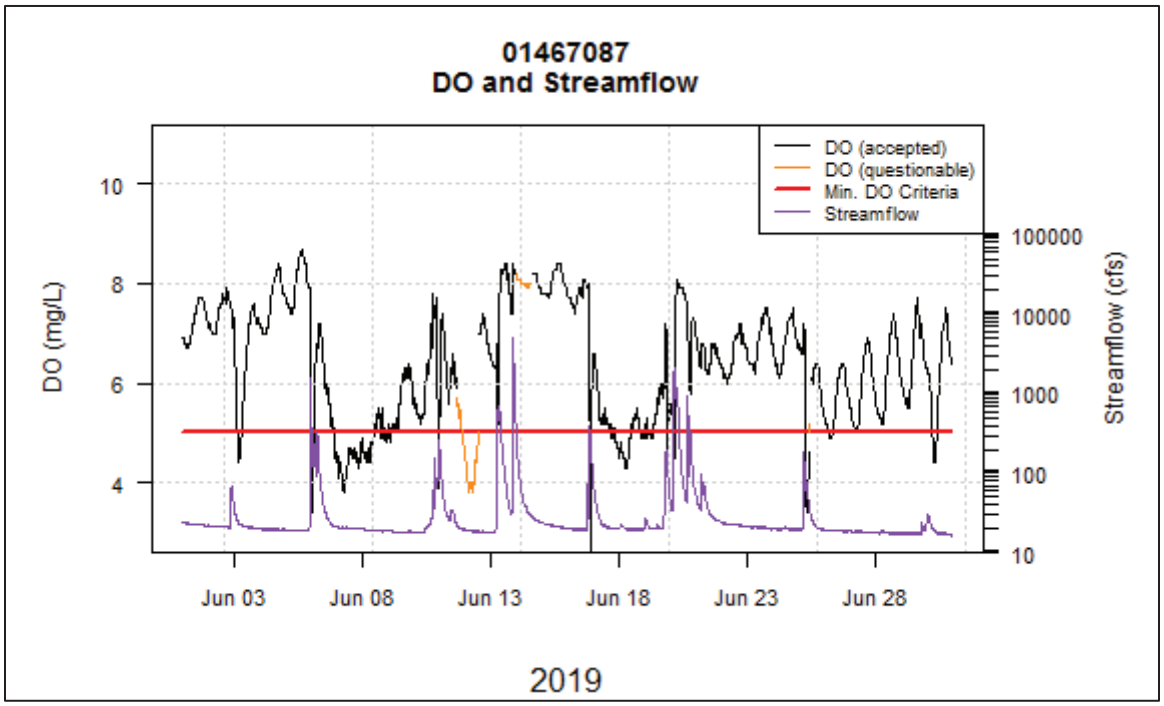


Figure 4. Example of an R-generated plot showing accepted and questionable data, and minimum water quality criteria; Gage 01467087, Dissolved Oxygen, June 2019.

Continuous Water Quality Monitoring Results Annual Summary, July 2021 - June 2022

Dissolved Oxygen

Background

Dissolved oxygen concentrations are a concern in several of Philadelphia's watersheds. Dissolved oxygen concentration is suppressed by high temperatures, respiratory activity of stream organisms, and nitrification and other oxidation reactions. Streams generally develop problems with dissolved oxygen due to water column BOD, sediment oxygen demand (SOD) and eutrophication due to increased nutrient concentration. These processes are inter-related, and physical conditions can also affect dissolved oxygen concentrations.

Designated Uses

Streams in the Philadelphia region are affected by ambient temperatures, which can be quite warm in the spring and summer months. For this reason, these streams cannot support natural self-sustaining populations of cold water fish. Different water quality criteria for dissolved oxygen and temperature are applied to different stream segments. Of the sites that were instrumented for water quality, the Wissahickon and Pennypack Creek gages (*i.e.*, 01473900, 01474000, 01467042, and 01467048) are each designated as a Trout Stocking Fishery (TSF) with conditions appropriate for maintenance of stocked trout over the period February 15 to July 31. Water quality criteria for dissolved oxygen are more stringent for these sites, with a daily instantaneous minimum criterion of 5 mg/L and a 7-day average of 6 mg/L from February 15 to July 31 and 5.5 mg/L the remainder of the year. Dissolved oxygen criteria for Warm Water Fisheries (WWF) are an instantaneous minimum of 5 mg/L and a 7-day average of 5.5 mg/L.

The 7-day average criteria were introduced in 2014 by PA DEP. Prior to 2014, DEP specified daily average criteria for dissolved oxygen (5.0 mg/L for WWF waters; 6.0 mg/L for TSF waters from February 15 to July 31, 5.0 mg/L the remainder of the year). It is also noted that the instantaneous minimum DO criterion for WWF waters became more stringent in 2014; it was previously 4.0 mg/L.

The Delaware River gage 01467200 dissolved oxygen criteria are defined by the Delaware River Basin Commission (DRBC) criteria for Zone 3 (DRBC, 2007) with a daily mean of 3.5 mg/L and a seasonal mean (April 1 to June 15, and September 16 to December 31) of 6.5 mg/L. The same seasonal criteria apply to Delaware River gage 014670261 (Zone 2), but there is a more stringent daily mean guideline of 5.0 mg/L (Table 2).

Table 2. PADEP Dissolved Oxygen Water Quality Criteria

Gage number	Designated Use	Minimum Criterion	7-Day Average Criterion	Daily Average Criterion
01465798	WWF	5.0 mg/L	5.5 mg/L	None
014670261	DRBC**	None	None	5.0 mg/L
01467042	TSF*	5.0 mg/L	6.0 mg/L	None
01467048	TSF*	5.0 mg/L	6.0 mg/L	None
01467086	WWF	5.0 mg/L	5.5 mg/L	None
01467087	WWF	5.0 mg/L	5.5 mg/L	None
01467200	DRBC**	None	None	3.5 mg/L
01473900	TSF*	5.0 mg/L	6.0 mg/L	None
01474000	TSF*	5.0 mg/L	6.0 mg/L	None
01474500	WWF	5.0 mg/L	5.5 mg/L	None
01475530	WWF	5.0 mg/L	5.5 mg/L	None
01475548	WWF	5.0 mg/L	5.5 mg/L	None

*TSF criteria for DO only apply from February 15 - July 31. WWF criteria are applicable from August 1 – January 31.
**A seasonal mean criterion of 6.5 mg/L also applies from April 1 - June 15 and September 16 - December 31.

Results

Results were processed as follows for Table 3. The "percent accepted data" are the total number of observations that were not flagged. The remainder of the table lists the percent of data that was flagged, and the percentages of accepted data that attained or failed to attain water quality standards were calculated.

Results were processed as follows for Tables 4 and 5. If more than 25% of the data in the 7-day window was flagged as questionable, the data point was considered questionable. The 7-day average was calculated as a two-sided moving average. During data processing and analysis, output files are split by calendar year; thus, statistics for 2021 and 2022 appear in separate tables.

Water quality at the downstream Tacony Creek site (gage 01467087) was most likely to exceed DO minimum and 7-day average criteria. A more in-depth discussion of potential causes of DO problems at gage 01467087 is presented in the Monthly Results section. A notable portion of flagged data at 01467087 and other sites is related to the fouling of sonde pipes due to sediment and debris that inhibit data collection. The DO probes are particularly susceptible to the effects of trapped sediment; when routine cleaning of the sonde pipes show that low DO readings were affected by fouling, the questionable data prior to cleaning is flagged.

Table 3. USGS Gage July 2021 - June 2022 Dissolved Oxygen Minimum Criterion Summary Results

Gage number	Designated Use	Observations, n	% accepted data	% flagged data	% non-attaining	% attaining
01465798	WWF	23042	99.7	0.3	1.1	98.9
014670261*	DRBC	34831	100	0	NA	NA
01467042	TSF	25787	98.4	1.6	0	100
01467048	TSF	25664	100	0	0	100
01467086	WWF	12637	100	0	0.7	99.3
01467087	WWF	33347	97	3	14.9	85.1
01467200*	DRBC	99931	100	0	NA	NA
01473900	TSF	18222	100	0	0.2	99.8
01474000	TSF	12750	100	0	0	100
01474500	WWF	17329	100	0	0	100
01475530	WWF	25759	100	0	0	100
01475548	WWF	25422	99.4	0.6	3	97

*No minimum DO criterion applies at gages 01467200 and 014670261

Table 4. USGS Gage July 2021 - November 2021 Dissolved Oxygen 7-Day Average Criterion Summary Results

Gage number	Designated Use	Total hours accepted data	% hours flagged data	% hours non-attaining	% hours attaining
01465798	WWF	2605.5	25.7	0	100
014670261	DRBC	NA	NA	NA	NA
01467042	TSF	3330.5	5.0	0	100
01467048	TSF	3504.5	0	0	100
01467086	WWF	3504.5	0	0	100
01467087	WWF	3228	7.9	24.7	75.3
01467200	DRBC	NA	NA	NA	NA
01473900	TSF	3504.5	0	0	100
01474000	TSF	3340.5	4.7	0	100
01474500	WWF	3504.5	0	0	100
01475530	WWF	3504.5	0	0	100
01475548	WWF	35.04.5	0	4.6	95.4

Table 5. USGS Gage March 2022 - June 2022 Dissolved Oxygen 7-Day Average Criterion Summary Results

Gage number	Designated Use	Total hours accepted data	% hours flagged data	% hours non-attaining	% hours attaining
01465798	WWF	2547	7.7	0	100
014670261	DRBC	NA	NA	NA	NA
01467042	TSF	2597.5	5.9	0	100
01467048	TSF	2596	6.0	0	100
01467086	WWF	2448.5	11.3	0	100
01467087	WWF	2626	4.9	30.9	69.1
01467200	DRBC	NA	NA	NA	NA
01473900	TSF	2593	6.1	0	100
01474000	TSF	2571.5	6.8	0	100
01474500	WWF	2760.5	0	0	100
01475530	WWF	2618	5.2	0	100
01475548	WWF	2454.5	11.1	0	100

Table 6. USGS Gage 01467200 and 014670261 Dissolved Oxygen Seasonal Mean Criterion Summary Result

Gage number	Designated Use	Days, n	Minimum Daily Average	Maximum Daily Average	Seasonal mean	Attaining Standard?
01467200	DRBC	182	6.4	12.1	9.3	Yes
014670261	DRBC	185	6.8	13.2	9.7	Yes

pH

Background

pH has been identified as a parameter of potential concern for some of Philadelphia's watersheds, primarily because of algal effects on the dissolved inorganic carbon (DIC) composition of stream water. Algae take up CO_2 during photosynthesis and shift the composition of DIC toward the alkaline carbonates, resulting in occasional failure to attain maximum pH criteria at some sites (Table 7). pH fluctuations are typically observed concomitant with pronounced dissolved oxygen fluctuations, as detailed in the Monthly Results section.

At gages 01467200 and 014670261, pH criteria (regulated by DRBC) are bounded by 6.5 and 8.5. At all other gages, pH criteria are bounded by daily minima and maxima of 6.0 and 9.0, respectively, as defined by PA DEP water quality standards.

Results

Results were processed as follows for Table 7. The "percent accepted data" are the percentage of observations that were not flagged. The remainder of the table lists the percentage of data that was flagged, the percentages of accepted observations that attained or failed to attain criteria, and the percentages of daily minima and maxima that attained or failed to attain criteria.

Minimum pH criteria were attained at all gages for the reporting time frame. Algal blooms may be responsible for daily maximum pH criterion exceedance at several sites during March and April.

Table 7. USGS Gage July 2021 - June 2022 pH Criteria Summary Results

Gage number	Observations, n	% accepted data	% flagged data	% min. non-attaining	% max. non-attaining	% min. attaining	% max. attaining	% attaining
01465798	23281	99.7	0.3	0.0	0.2	100.0	99.8	99.8
014670261	34837	100.0	0.0	0.0	0.0	100.0	100.0	100.0
01467042	25777	100.0	0.0	0.0	0.0	100.0	100.0	100.0
01467048	25652	100.0	0.0	0.0	0.0	100.0	100.0	100.0
01467086	12636	100.0	0.0	0.0	0.3	100.0	99.7	99.7
01467087	34011	99.8	0.2	0.0	0.0	100.0	100.0	100.0
01467200	99939	100.0	0.0	0.0	0.0	100.0	100.0	100.0
01473900	18247	100.0	0.0	0.0	0.1	100.0	99.9	99.9
01474000	12773	100.0	0.0	0.0	0.0	100.0	100.0	100.0
01474500	17328	100.0	0.0	0.0	0.5	100.0	99.5	99.5
01475530	25837	100.0	0.0	0.0	0.0	100.0	100.0	100.0
01475548	25419	100.0	0.0	0.0	0.3	100.0	99.7	99.7

Turbidity

Background

Turbidity in Philadelphia's streams increases with increased flow as inorganic sediment and additional constituents of stormwater runoff are introduced to the stream or scoured/eroded from the stream channel. There are no numeric PA DEP water quality criteria for turbidity, so PWD watershed management plans used a reference value for turbidity that was derived from EPA Guidance document EPA 822-B-00-023 (*i.e.*, 2.825 NTU). This value is surpassed more often in wet weather than in dry weather (Tables 71-72). Turbidity data has also been used to help investigate sediment loading and transport in the Wissahickon Creek Watershed for the Wissahickon Creek Sediment TMDL.

Results

Results were processed as follows for Table 8. The "percent accepted data" are the percentage of observations that were not flagged. The remainder of the table lists the percentage of observations that were flagged, and the percentages of accepted data that either surpassed or fell below the maximum guideline.

Among the tributary sites, the maximum guideline was most frequently surpassed at the Schuylkill gage, and least frequently surpassed at the Poquessing Creek gage.

Table 8. USGS Gage July 2021 - June 2022 Turbidity Summary Results

Gage number	Observations, n	% accepted data	% flagged data	% hrs. above max. guideline	% hrs. below max. guideline
01465798	23271	98.9	1.1	30.5	69.5
014670261	34833	100.0	0.0	98.9	1.1
01467042	25775	96.0	4.0	37.3	62.7
01467048	25678	99.0	1.0	48.4	51.6
01467086*	NA	NA	NA	NA	NA
01467087*	NA	NA	NA	NA	NA
01467200*	98534	100.0	0.0	99.5	0.5
01473900	18242	99.2	0.8	31.8	68.2
01474000	12748	100.0	0.0	30.9	69.1
01474500	17411	99.0	1.0	63.8	36.2
01475530*	NA	NA	NA	NA	NA
01475548*	NA	NA	NA	NA	NA

*Turbidity is not continuously monitored at these locations

Specific Conductance

Background

Specific conductance is a measure of the ability of water to conduct electricity over a given distance, expressed as microsiemens/cm (corrected to 25ºC). Conductivity in Philadelphia streams is extremely sensitive to changes in flow, as stormwater (diluent) usually contains smaller concentrations of dissolved ions than stream baseflow. Stormwater runoff typically lowers conductivity in streams; an exception sometimes occurs in winter and early spring, when road salt applied prior to snowstorms enters the stream in runoff or during snowmelt. Data collected in the report timeframe were generally consistent with earlier observations. When significant changes in conductivity are observed during dry weather, it can be an indicator of anthropogenic influence or pollution in the stream; stations receiving inputs of treated wastewater generally had greater conductivity.

Results

There is no water quality standard for specific conductance. Table 9 merely illustrates the number of observations that were not flagged and considered "accepted" and the percentage of observations that were flagged. More detailed results at each site are described in the Monthly Results section.

Table 9. USGS Gage July 2021 - June 2022 Specific Conductance Summary Results

Gage number	Observations, n	% accepted data	% flagged data
01465798	23275	99.7	0.3
014670261	34874	100.0	0.0
01467042	25771	100.0	0.0
01467048	25647	100.0	0.0
01467086	12632	100.0	0.0
01467087	33639	99.2	0.8
01467200	99927	100.0	0.0
01473900	18244	100.0	0.0
01474000	12789	100.0	0.0
01474500	17328	100.0	0.0
01475530	25762	100.0	0.0
01475548	25583	100.0	0.0

Temperature

Background

Streams in the Philadelphia region are designated Warm Water Fisheries (WWF) or Trout Stocking Fisheries (TSF), with separate corresponding temperature criteria (Table 10). These criteria are "stepped" (remaining constant for 15- or 30-day intervals), while streams tend to warm up and cool down more gradually due primarily to changes in ambient temperature. (Gages 01467200 and 014670261 are the exceptions and are subject to a DRBC criterion of 30°C maximum). Stream temperatures were observed to exceed these criteria, somewhat frequently in springtime. These exceedances are generally natural, as there are no major sources of heated wastes. It is possible that baseflow diminution is partially responsible for a lack of buffering against temperature increases.

Table 10. PA DEP Temperature Water Quality Criteria

Date range start	Date range end	WWF maximum (°C)	WWF maximum (°F)	TSF maximum (°C)	TSF maximum (°F)
1/1	1/31	4	40	4	40
2/1	2/29	4	40	4	40
3/1	3/31	8	46	8	46
4/1	4/15	11	52	11	52
4/16	4/30	14	58	14	58
5/1	5/15	18	64	18	64
5/16	5/31	22	72	20	68
6/1	6/15	27	80	21	70
6/16	6/30	29	84	22	72
7/1	7/31	31	87	23	74
8/1	8/15	31	87	27	80
8/16	8/30	31	87	31	87
9/1	9/15	29	84	29	84
9/16	9/30	26	78	26	78
10/1	10/15	22	72	22	72
10/16	10/31	19	66	19	66
11/1	11/15	14	58	14	58
11/16	11/30	10	50	10	50
12/1	12/31	6	42	6	42

Results

Results were processed in the same manner as the parameters described above. The highest exceedance rate occurred at the upstream Wissahickon Creek gage. The six gages designated as WWF have less stringent criteria.

Table 11. USGS Gage July 2021 - June 2022 Temperature Maximum Criteria Summary Results

Gage number	Designated Use	Observations, n	% accepted data	% flagged data	% exceedance	% attaining
01465798	WWF	23281	100.0	0.0	14.6	85.4
014670261	DRBC	34680	100.0	0.0	0.0	100.0
01467042	TSF	25788	100.0	0.0	12.9	87.1
01467048	TSF	25672	100.0	0.0	15.3	84.7
01467086	WWF	12638	100.0	0.0	13.0	87.0
01467087	WWF	34020	100.0	0.0	11.9	88.1
01467200	DRBC	99922	100.0	0.0	0.0	100.0
01473900	TSF	18134	100.0	0.0	17.3	82.7
01474000	TSF	12798	100.0	0.0	12.6	87.4
01474500	WWF	17321	100.0	0.0	8.5	91.5
01475530	WWF	25837	100.0	0.0	11.3	88.7
01475548	WWF	25748	100.0	0.0	14.1	85.9

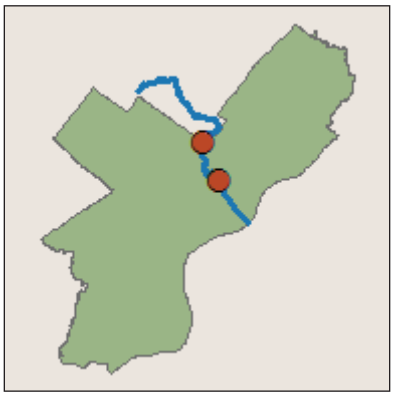
Monthly Results, July 2021 - June 2022

This section summarizes results at the monthly time scale. Results were processed in the same manner as in the previous section. Gages are grouped according to the type of sewer system that impacts water quality at the site.

Gages in Combined Sewer System Watersheds

The combined sewer system serves more than three-quarters of Philadelphia's residents and covers the oldest and densest parts of the city. Combined sewer outfalls affect the Tookany/Tacony-Frankford and Darby-Cobbs watersheds. (The Delaware and Schuylkill rivers also contain combined sewer outfalls but are detailed in a later section focused on large watersheds.) The gages in this section are subject to the deleterious effects of periodic combined sewer overflows during wet weather and snowmelt.

Tookany/Tacony-Frankford Creek (Gages 01467086 and 01467087)



Dissolved oxygen and pH

Dissolved oxygen concentrations were markedly worse between the upstream and downstream Tacony Creek gages. The monthly minima, percentage of observations the minimum criterion was not attained, and exceedance of the 7-day average guideline were typically much worse at the downstream gage (Tables 12-13, Figures 5-8). For example, DO was poor at the downstream Tacony Creek gage during May 2022 (Figure 9). However, the minimum criterion was almost always attained at gage 01467086 during that same month (Figure 10). This difference likely reflects the additional stormwater runoff and sewage overflows that entered the creek between the two gages.

The lowest DO concentrations are typically seen in the period after storm events, reflecting both the immediate and lingering, oxygen-depleting effects of stormwater runoff and biochemical oxygen demand (BOD) entering the stream. Diel DO fluctuations

are suppressed for a few days following a storm event because the event either scours away algae or temporarily inhibits their growth. As dry weather continues, the algae recover and diel DO and pH fluctuations typically increase, sometimes resulting in non-attainment of pH maximum criteria, as observed at the upstream gage in March 2022 (Figure 11). Percent DO saturation of more than 150% in daylight were also observed at gage 01467086 in March 2022, indicating high levels of algal activity (Figure 12; PAR is defined as photosynthetically active radiation). Diel DO fluctuations tended to increase with prolonged periods of sunlight, further indicating high levels of algal activity.

A lower monthly mean pH was usually observed at gage 01467087, along with generally less pronounced diel pH fluctuations, probably due to an increased buffering capacity at the downstream gage and a lesser degree of algal growth (Tables 14-15).

Table 12. Gage 01467086 Dissolved Oxygen Minimum Criterion Summary Results by Month

Month	Des. Use	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% non-attaining	% attaining
Jul-21	WWF	1484	4.3	13.3	7.2	100	0	1.9	98.1
Aug-21	WWF	1486	4.1	12.9	7.4	100	0	2	98
Sep-21	WWF	1411	6	14.4	8.8	100	0	0	100
Oct-21	WWF	1483	6.9	14.4	9.3	100	0	0	100
Nov-21	WWF	1439	7.7	16.3	11.3	100	0	0	100
Mar-22	WWF	1072	6.7	17.3	11.7	100	0	0	100
Apr-22	WWF	1438	7	15.8	10.6	100	0	0	100
May-22	WWF	1485	4.7	14.4	8.6	100	0	0.3	99.7
Jun-22	WWF	1312	2.9	12.4	7.4	100	0	2.1	97.9

Table 13. Gage 01467087 Dissolved Oxygen Minimum Criterion Summary Results by Month

Month	Des. Use	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% non-attaining	% attaining
Jul-21	WWF	2536	0.6	8.4	4.8	87.8	12.2	45.2	54.8
Aug-21	WWF	2626	0.2	8	5	94.3	5.7	41.2	58.8
Sep-21	WWF	2841	2	10.4	7.3	98.9	1.1	6.3	93.7
Oct-21	WWF	2810	3.3	10.1	7.7	99.9	0.1	2.6	97.4
Nov-21	WWF	2613	6.2	12.4	10.1	95.9	4.1	0	100
Mar-22	WWF	2615	3.3	13.8	10.2	93.7	6.3	1	99
Apr-22	WWF	2877	2.7	12.8	9.5	100	0	1.3	98.7
May-22	WWF	2922	0.5	11.6	6.4	98.4	1.6	20.6	79.4
Jun-22	WWF	2777	0.6	9	4.5	96.6	3.4	60.6	39.4

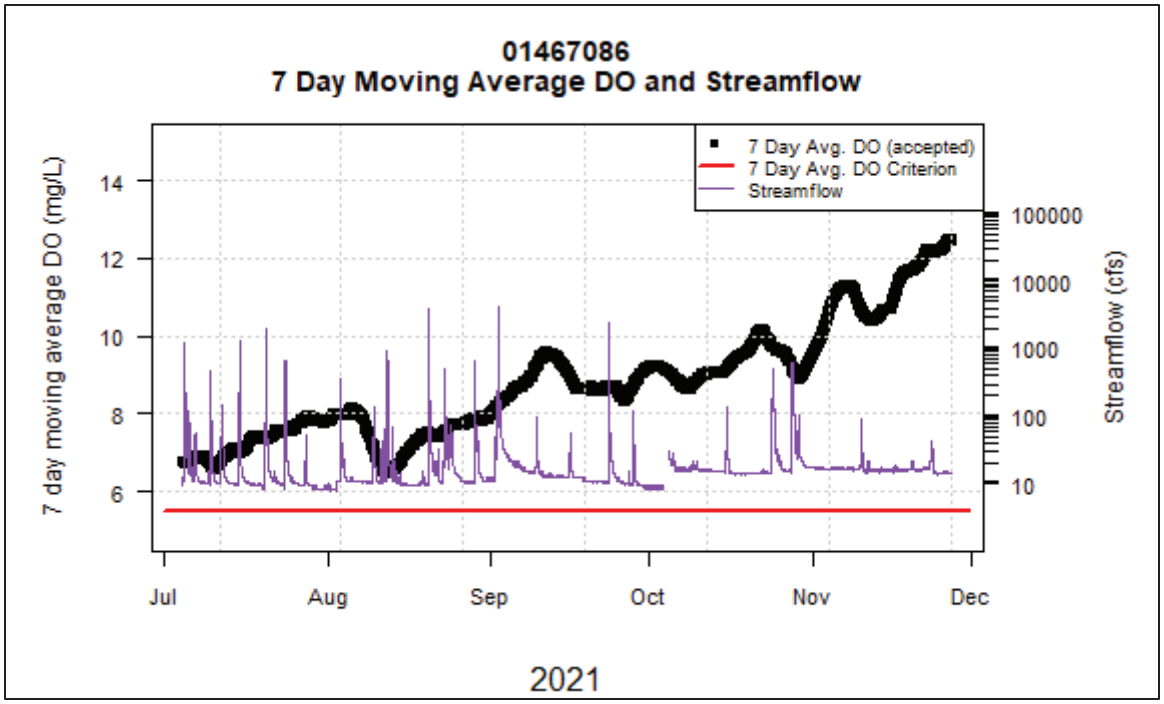


Figure 5. Gage 01467086, 7 Day Average Dissolved Oxygen and Streamflow, Jul-Nov 2021.

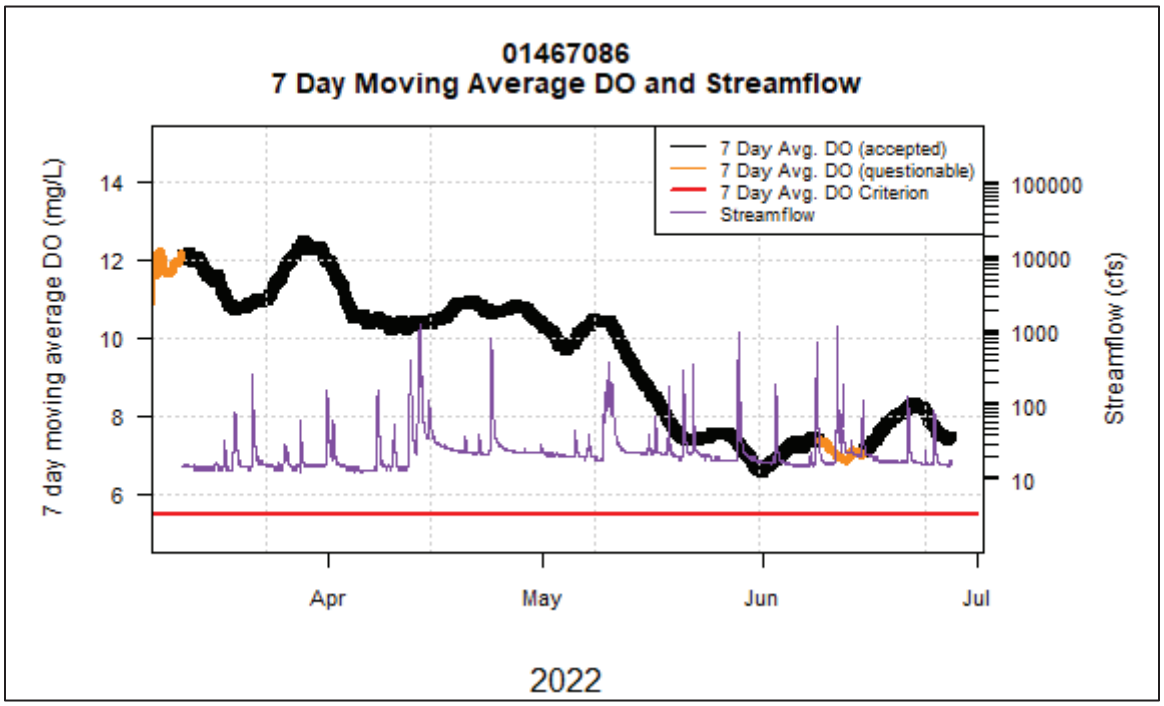


Figure 6. Gage 01467086, 7 Day Average Dissolved Oxygen and Streamflow, Mar-Jun 2022.

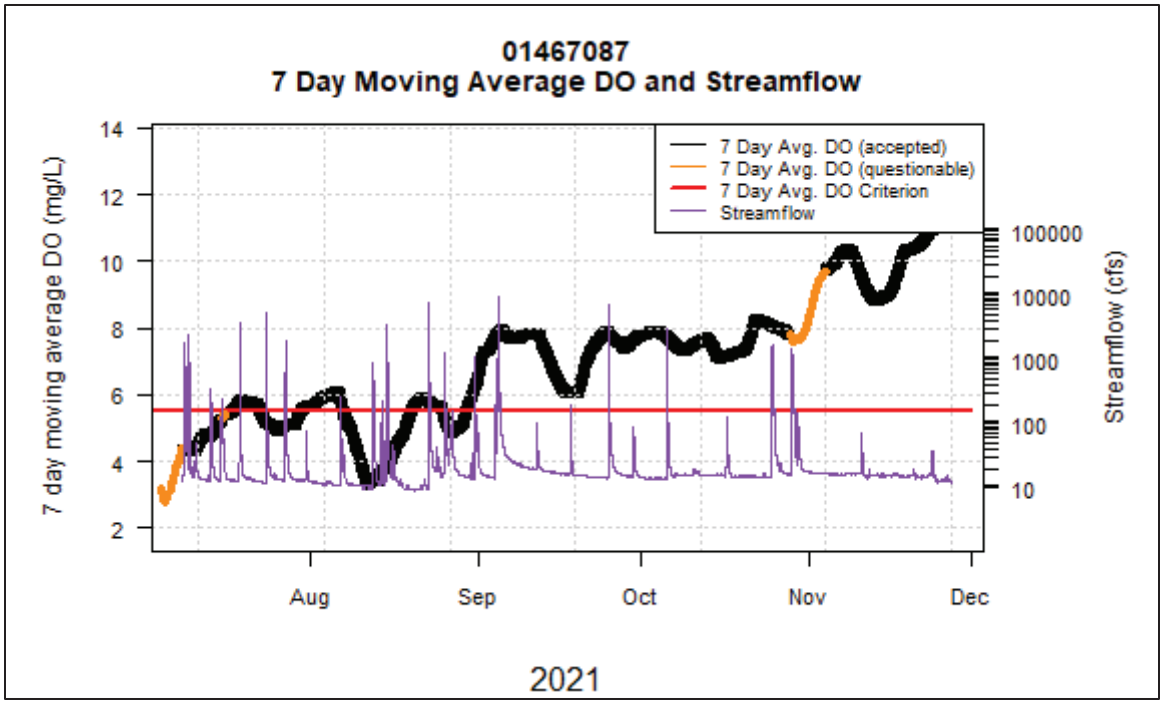


Figure 7. Gage 01467087, 7 Day Average Dissolved Oxygen and Streamflow, Jul-Nov 2021.

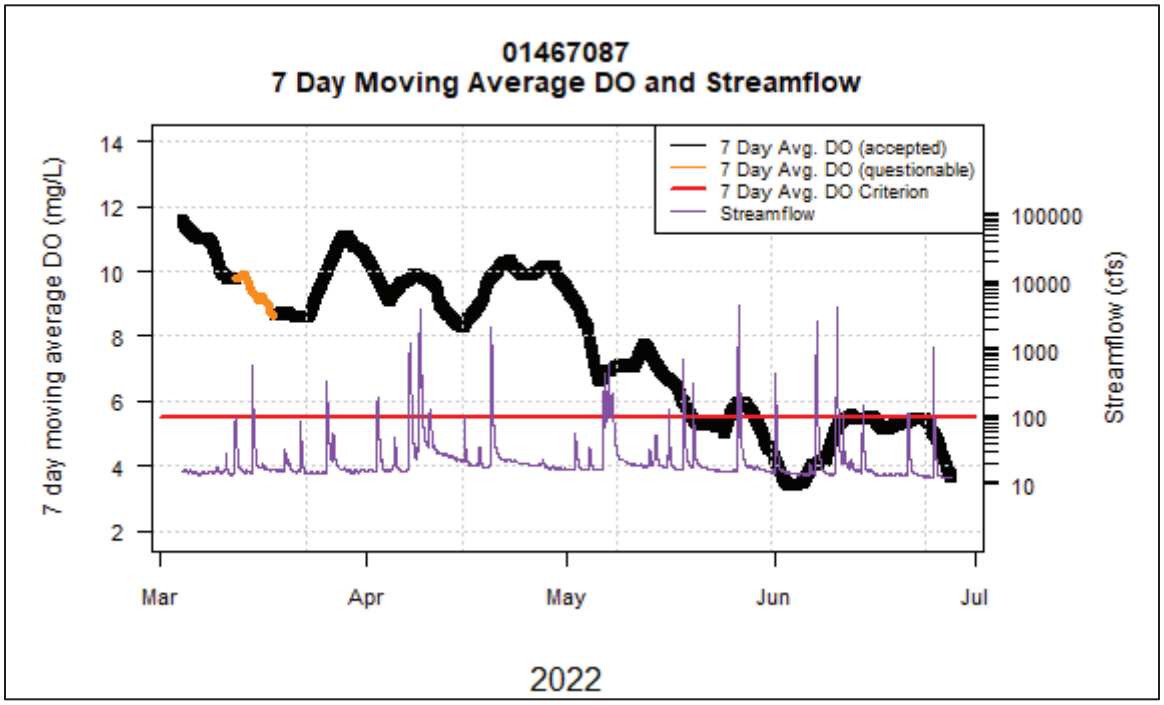


Figure 8. Gage 01467087, 7 Day Average Dissolved Oxygen and Streamflow, Mar-Jun 2022.

Table 14. Gage 01467086 pH Criteria Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% min non-attaining	% max non-attaining	% min attaining	% max attaining
Jul-21	1483	6.9	8.7	7.5	100	0	0	0	100	100
Aug-21	1485	6.7	8.6	7.5	99.9	0.1	0	0	100	100
Sep-21	1411	7	8.9	7.7	99.9	0.1	0	0	100	100
Oct-21	1481	7	8.5	7.6	99.9	0.1	0	0	100	100
Nov-21	1438	7.2	8.6	7.7	99.9	0.1	0	0	100	100
Mar-22	1071	7.3	9.3	8	100	0	0	2.7	100	97.3
Apr-22	1437	7.2	9.2	7.9	100	0	0	0.5	100	99.5
May-22	1485	7	8.9	7.5	100	0	0	0	100	100
Jun-22	1312	6.9	8.6	7.5	100	0	0	0	100	100

Table 15. Gage 01467087 pH Criteria Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% min non-attaining	% max non-attaining	% min attaining	% max attaining
Jul-21	2891	6.6	7.6	7.2	100	0	0	0	100	100
Aug-21	2922	6.6	7.5	7.1	99.9	0.1	0	0	100	100
Sep-21	2827	6.5	7.8	7.4	98.4	1.6	0	0	100	100
Oct-21	2968	6.8	7.7	7.3	99.9	0.1	0	0	100	100
Nov-21	2873	6.9	7.6	7.5	100	0	0	0	100	100
Mar-22	2791	7	7.8	7.4	100	0	0	0	100	100
Apr-22	2876	6.6	8	7.4	100	0	0	0	100	100
May-22	2962	6.5	7.9	7.2	99.9	0.1	0	0	100	100
Jun-22	2874	6.7	7.3	7.1	99.9	0.1	0	0	100	100

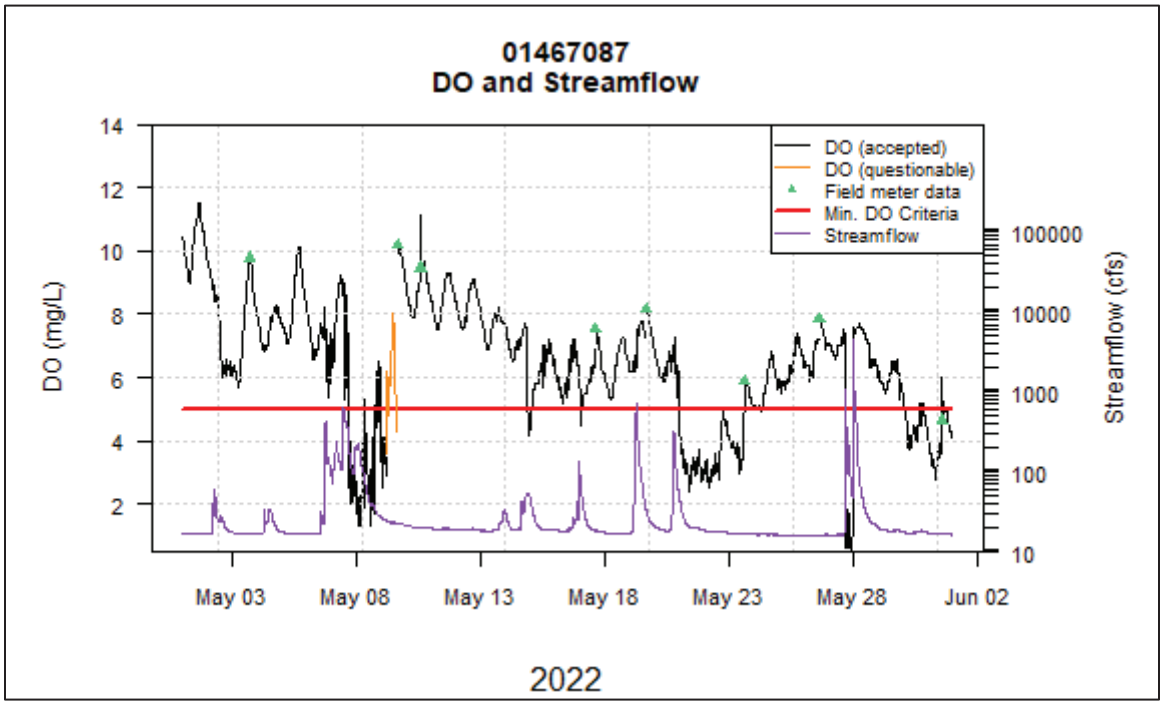


Figure 9. Gage 01467087, Dissolved Oxygen and Streamflow, May 2022.

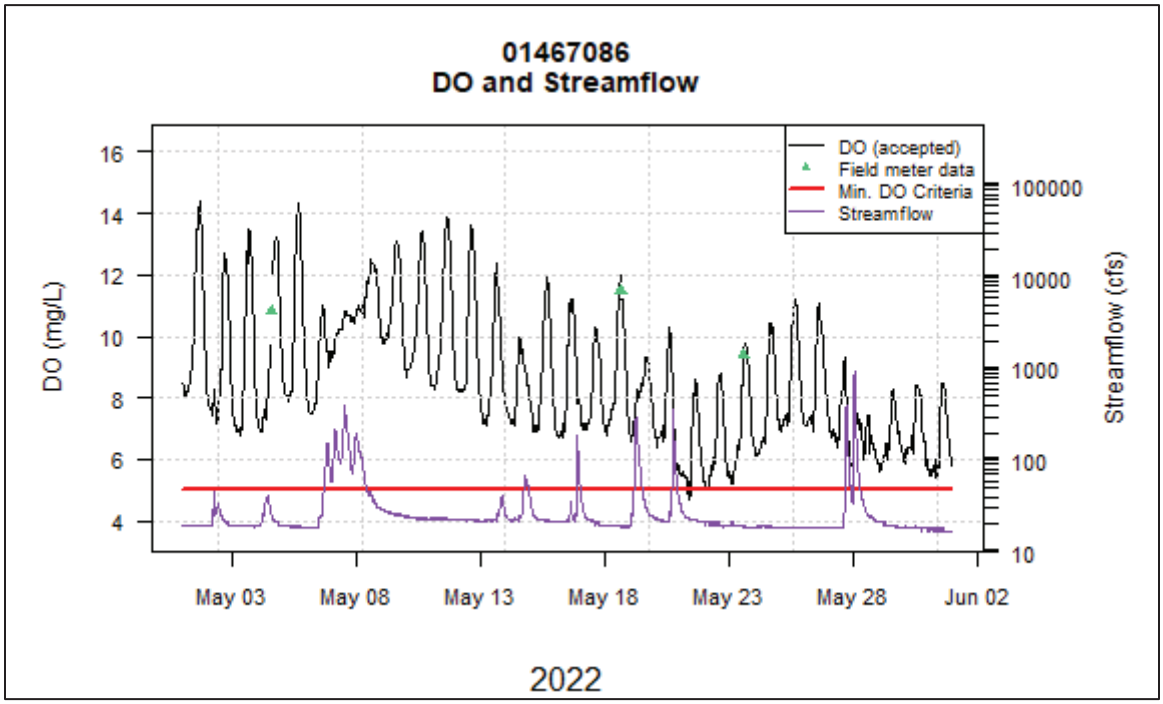


Figure 10. Gage 01467086, Dissolved Oxygen and Streamflow, May 2022.

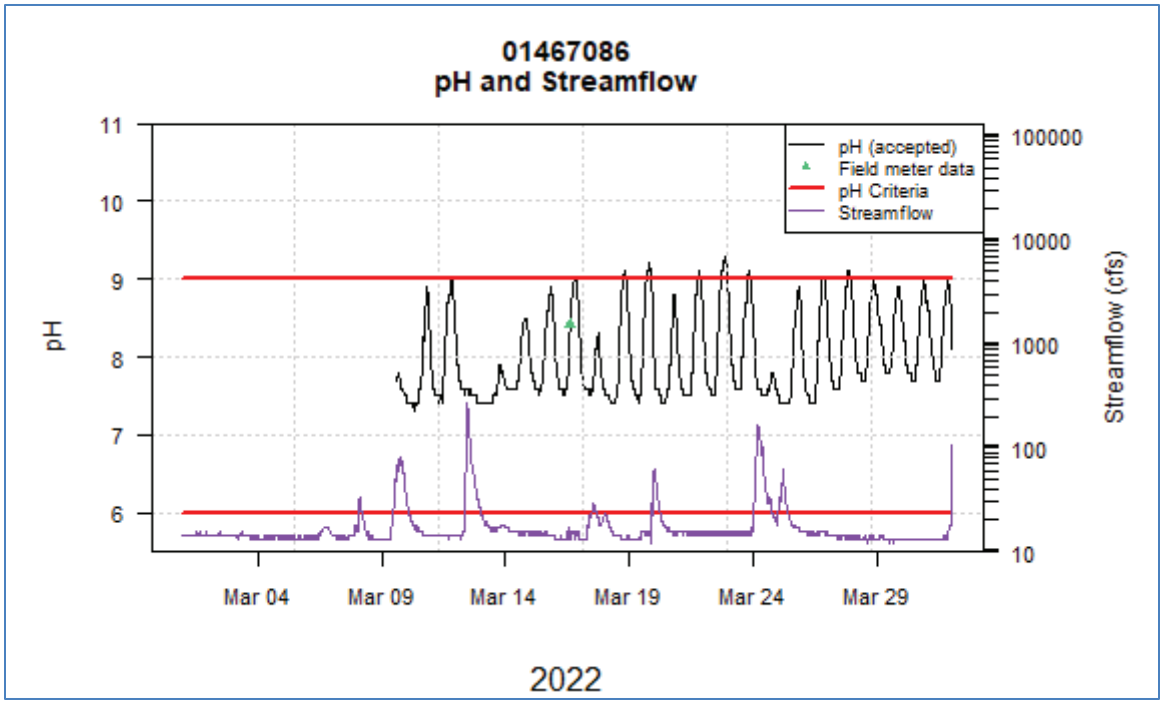


Figure 11. Gage 01467086, pH and Streamflow, March 2022.

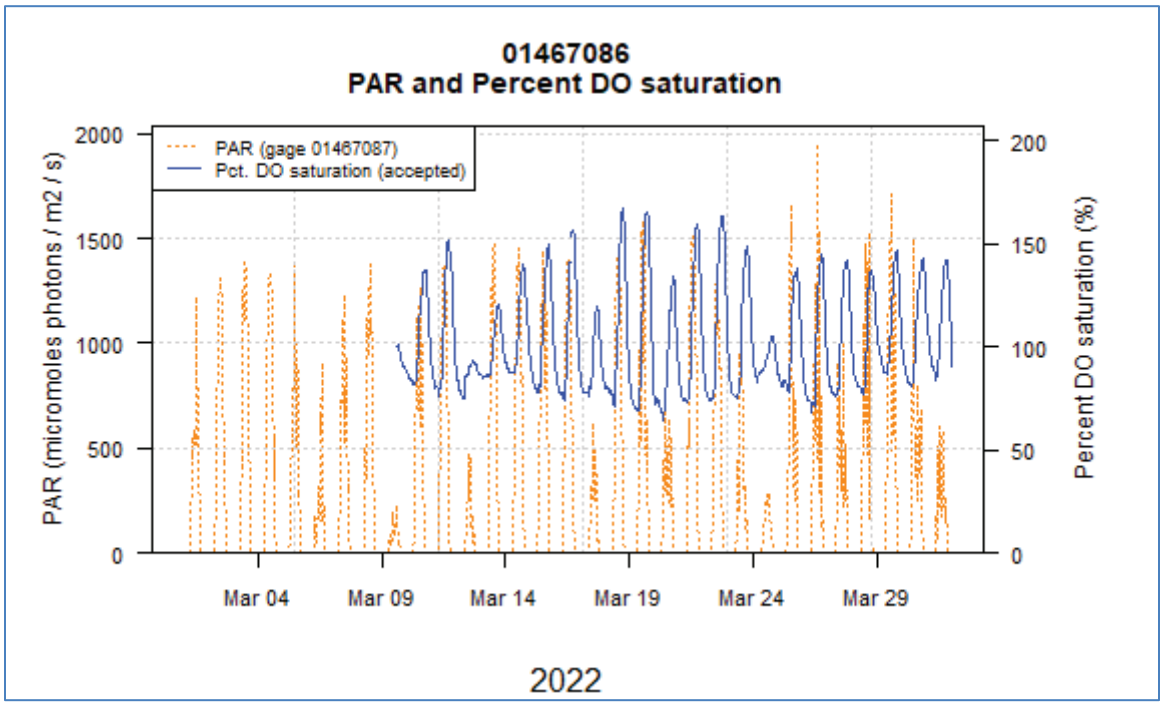


Figure 12. Gage 01467086, PAR and Percent Dissolved Oxygen Saturation, March 2022.

Figure 13. Gage 01467086, Tacony Creek at Adams Ave.

Figure 14. Gage 01467087, Frankford Creek at Castor Ave., looking downstream

Specific Conductance

Specific conductance observations were usually consistent between the two gage sites (Tables 16-17). Elevated levels of specific conductance observed in late fall and early spring months are likely due to the effects of road salt entering the stream.

Table 16. Gage 01467086 Specific Conductance Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data
Jul-21	1483	94	759	566.9	100	0
Aug-21	1482	57	775	554.6	100	0
Sep-21	1412	47	733	628	100	0
Oct-21	1483	103	740	609.3	100	0
Nov-21	1439	391	763	685.7	100	0
Mar-22	1071	373	2180	885.9	100	0
Apr-22	1438	94	773	604.6	100	0
May-22	1485	116	729	587.1	100	0
Jun-22	1312	125	738	617.8	100	0

Table 17. Gage 01467087 Specific Conductance Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data
Jul-21	2739	10	4970	557.1	100	0
Aug-21	2763	64	752	478.6	100	0
Sep-21	2792	10	733	594.8	98.6	1.4
Oct-21	2743	82	739	548.1	92.4	7.6
Nov-21	2873	349	739	676.5	100	0
Mar-22	2790	277	1670	796.7	100	0
Apr-22	2874	11	749	572.7	100	0
May-22	2962	89	729	546.9	100	0
Jun-22	2871	102	751	554.8	100	0

Temperature

Monthly mean temperatures observed at the downstream gage were usually higher than at the upstream gage. Consequently, a higher rate of temperature criteria exceedance was typically observed at the downstream gage (Tables 18-19).

Table 18. Gage 01467086 Temperature Summary Results by Maximum Criteria Period

Designated Use	Date range start	Date range end	% exceedance	% attaining	% flagged data	% accepted data	Min	Max	Mean
WWF	1-Jul	31-Jul	0	100	0	100	19	28.6	23.9
WWF	1-Aug	15-Aug	0	100	0	100	19.2	28.6	23.2
WWF	16-Aug	31-Aug	0	100	0	100	21.3	26.5	23.9
WWF	1-Sep	15-Sep	0	100	0	100	17.2	24.4	20.6
WWF	16-Sep	30-Sep	0	100	0	100	16	23.4	19.7
WWF	1-Oct	15-Oct	0	100	0	100	14.1	20.1	18.1
WWF	16-Oct	31-Oct	3.4	96.6	0	100	11.8	20.8	15.1
WWF	1-Nov	15-Nov	3.8	96.2	0	100	6.7	14.8	10.1
WWF	16-Nov	30-Nov	4	96	0	100	3.9	11.1	6.8
WWF	1-Mar	31-Mar	65.6	34.4	0	100	1.3	18.6	9.4
WWF	1-Apr	15-Apr	59.2	40.8	0	100	7.9	22.2	12.5
WWF	16-Apr	30-Apr	39.2	60.8	0	100	7.6	18.7	13.1
WWF	1-May	15-May	13.5	86.5	0	100	9.7	20.5	15.4
WWF	16-May	31-May	17.5	82.5	0	100	15.7	25.5	19.9
WWF	1-Jun	15-Jun	0	100	0	100	17.5	25	21.6
WWF	16-Jun	30-Jun	0	100	0	100	16.6	26	21.1

Table 19. Gage 01467087 Temperature Summary Results by Maximum Criteria Period

Designated Use	Date range start	Date range end	% exceedance	% attaining	% flagged data	% accepted data	Min	Max	Mean
WWF	1-Jul	31-Jul	0	100	0	100	20.8	29	24.8
WWF	1-Aug	15-Aug	0	100	0	100	20.2	29	24.2
WWF	16-Aug	31-Aug	0	100	0	100	22.5	26.9	24.7
WWF	1-Sep	15-Sep	0	100	0	100	16.4	24.5	21.3
WWF	16-Sep	30-Sep	0	100	0	100	14	23.6	20.3
WWF	1-Oct	15-Oct	0	100	0	100	15.8	20.2	18.5
WWF	16-Oct	31-Oct	5.5	94.5	0	100	13.3	20.2	15.5
WWF	1-Nov	15-Nov	5.4	94.6	0	100	7.5	15	10.3
WWF	16-Nov	30-Nov	0	100	0	100	4.7	9.1	6.7
WWF	1-Mar	31-Mar	55.9	44.1	0.1	99.9	3.5	16.8	9.1
WWF	1-Apr	15-Apr	68.9	31.1	0	100	7.1	20.5	12.8
WWF	16-Apr	30-Apr	53.6	46.4	0	100	5.2	17.6	13.7
WWF	1-May	15-May	18.5	81.5	0	100	10.5	19.6	15.8
WWF	16-May	31-May	29	71	0	100	16.2	26	20.8
WWF	1-Jun	15-Jun	0	100	0	100	18.4	25.5	22.4
WWF	16-Jun	30-Jun	0	100	0	100	18.9	26	22.2

Cobbs Creek (Gages 01475530 and 01475548)

Dissolved oxygen and pH

The upstream Cobbs Creek site (01475530) almost always met the minimum dissolved oxygen criterion and never exceeded the 7-day average guideline (Table 20, Figures 15, 16, 19). Dissolved oxygen at the downstream site (01475548) did not always attain the minimum, particularly during the warmer months. The downstream site mostly attained the 7-day average guideline.

The pattern of dissolved oxygen and pH values between the upstream and downstream Cobbs Creek gages is likely due to greater algal activity at the downstream gage. During the spring—key months for algal growth—pH exceeded the maximum guideline at the downstream gage site (Tables 22-23). Algae remove CO_2 during photosynthesis, raising pH by shifting the dissolved inorganic carbon (DIC) balance toward alkaline carbonates. The diel fluctuations in DO were pronounced at both gages during these months (Figures 19-20).

A third indicator of increased algal activity in Cobbs Creek is the supersaturation of oxygen caused by photosynthesis. During April, the downstream gage recorded peak DO saturation levels near 150% during the day in dry weather conditions (Figures 21-22).

Table 20. Gage 01475530 Dissolved Oxygen Minimum Criterion Summary Results by Month

Month	Des. Use	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% non-attaining	% attaining
Jul-21	WWF	2892	5.8	10.8	7.8	100	0	0	100
Aug-21	WWF	2966	5.5	10.6	7.7	100	0	0	100
Sep-21	WWF	2872	3.7	11.6	8.5	100	0	0.2	99.8
Oct-21	WWF	2971	7.8	11.8	9.2	100	0	0	100
Nov-21	WWF	2880	8.1	14.2	11	100	0	0	100
Mar-22	WWF	2234	7.9	14.4	11.1	100	0	0	100
Apr-22	WWF	2867	7.3	13.7	10.4	99.9	0.1	0	100
May-22	WWF	2953	6.4	13.4	8.8	100	0	0	100
Jun-22	WWF	2873	6.5	10.3	8	100	0	0	100

Table 21. Gage 01475548 Dissolved Oxygen Minimum Criterion Summary Results by Month

Month	Des. Use	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% non-attaining	% attaining
Jul-21	WWF	2880	2.1	11.4	6.5	97	3	17.5	82.5
Aug-21	WWF	2911	2.8	10.8	7.1	98	2	3.3	96.7
Sep-21	WWF	2872	3.7	12.1	8	100	0	1.8	98.2
Oct-21	WWF	2970	7.2	12.2	8.9	100	0	0	100
Nov-21	WWF	2872	7.4	14.2	10.9	100	0	0	100
Mar-22	WWF	2243	5.9	17.3	12	100	0	0	100
Apr-22	WWF	2870	4.9	15.6	10.1	100	0	0.1	99.9
May-22	WWF	2636	4	14.2	8.2	100	0	3.3	96.7
Jun-22	WWF	2867	3.6	10.3	7.4	100	0	0.5	99.5

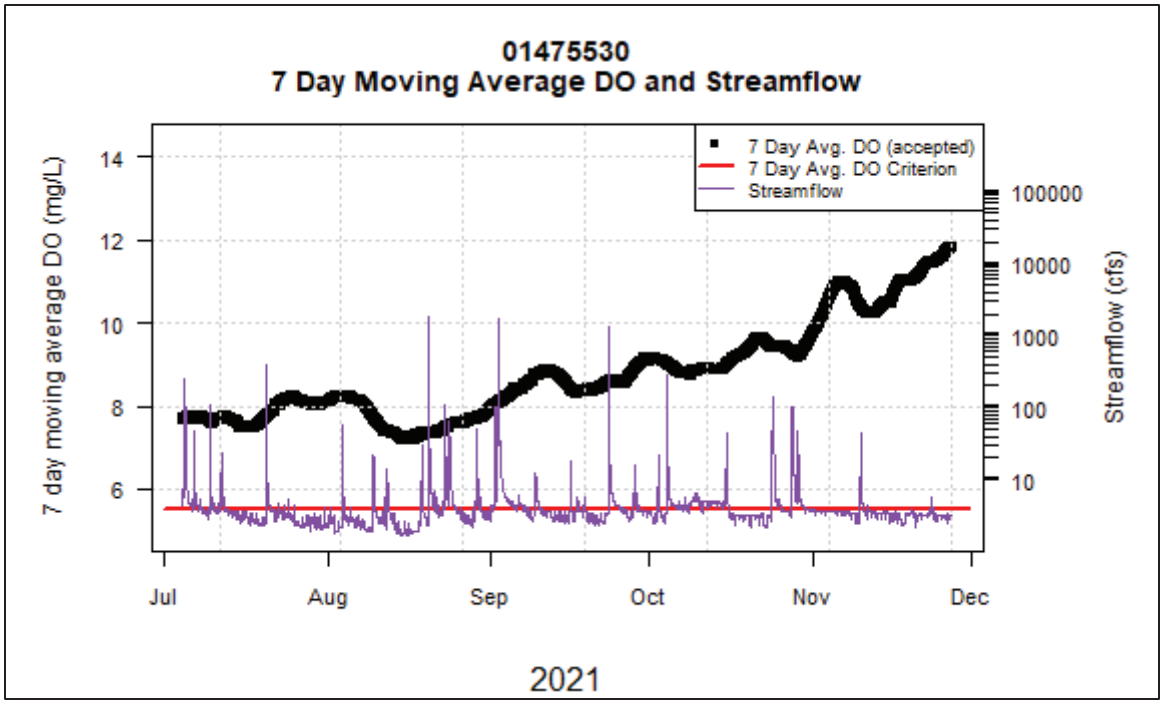


Figure 15. Gage 01475530, 7 Day Average Dissolved Oxygen and Streamflow, Jul-Nov 2021.

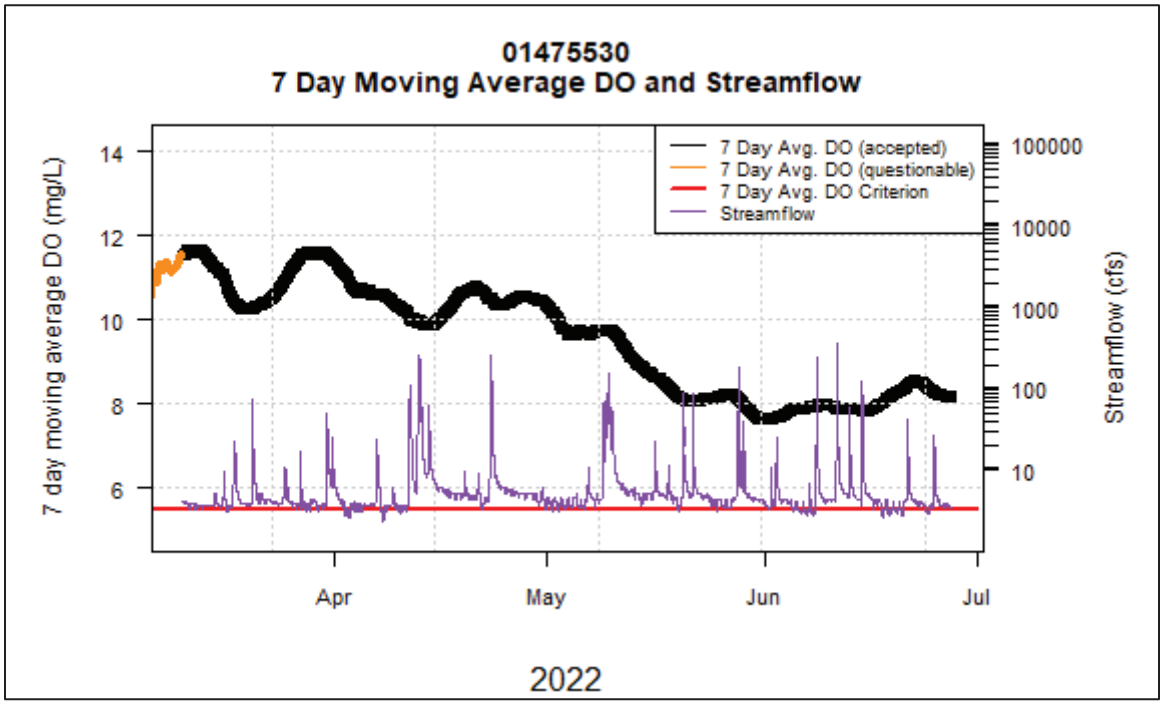


Figure 16. Gage 01475530, 7 Day Average Dissolved Oxygen and Streamflow, Mar-Jun 2022.

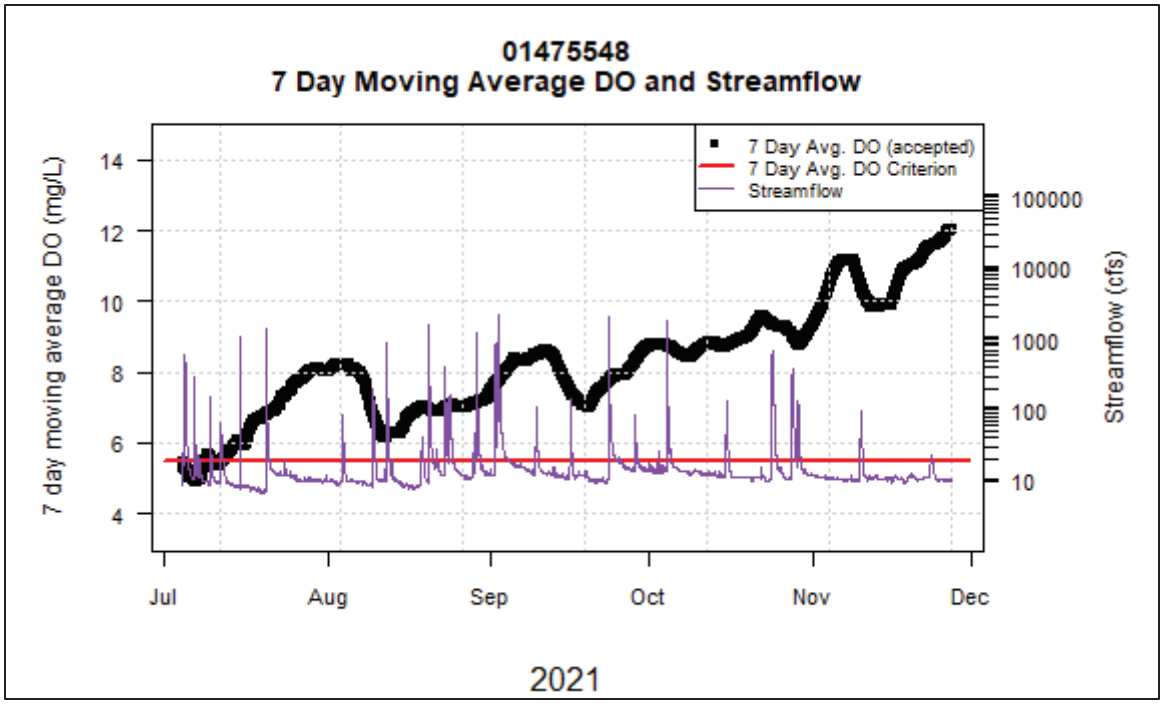


Figure 17. Gage 01475548, 7 Day Average Dissolved Oxygen and Streamflow, Jul-Nov 2021.

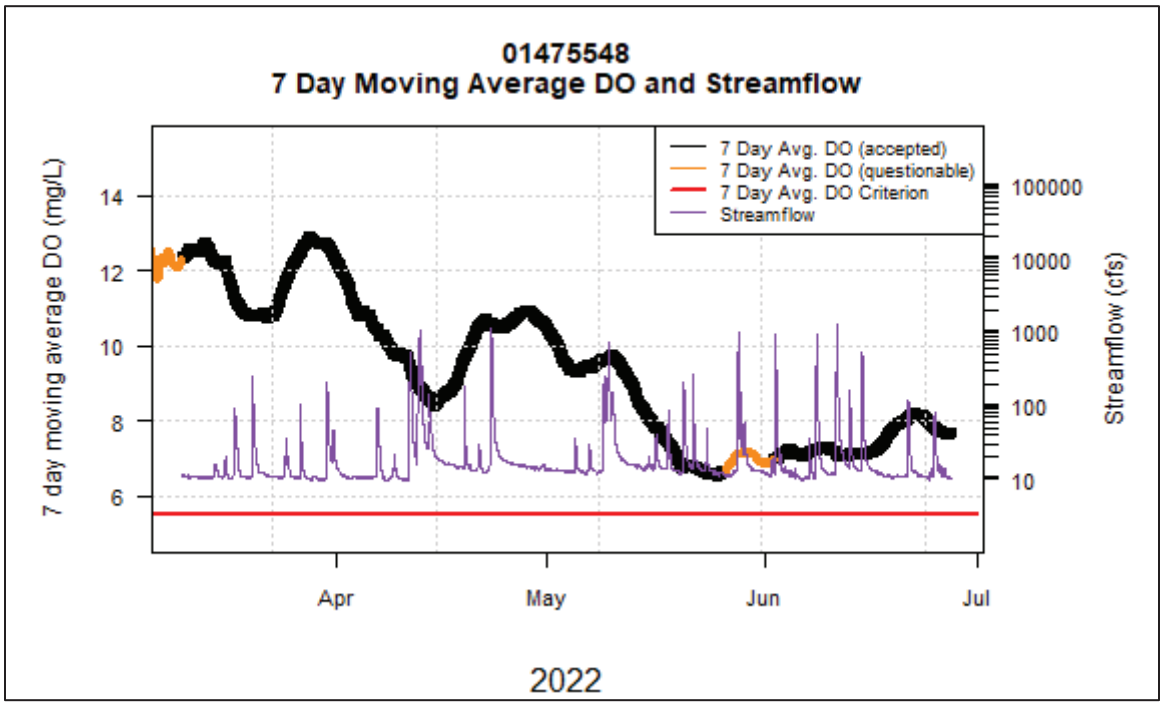


Figure 18. Gage 01475548, 7 Day Average Dissolved Oxygen and Streamflow, Mar-Jun 2022.

Table 22. Gage 01475530 pH Criteria Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% min non-attaining	% max non-attaining	% min attaining	% max attaining
Jul-21	2963	7	8.6	7.6	100	0	0	0	100	100
Aug-21	2973	7	8.3	7.6	100	0	0	0	100	100
Sep-21	2872	6.8	8.3	7.5	100	0	0	0	100	100
Oct-21	2971	6.9	7.9	7.4	100	0	0	0	100	100
Nov-21	2880	7.1	7.9	7.4	100	0	0	0	100	100
Mar-22	2234	7.1	8.4	7.5	100	0	0	0	100	100
Apr-22	2869	7	8.7	7.6	100	0	0	0	100	100
May-22	2953	7	8.7	7.4	100	0	0	0	100	100
Jun-22	2873	6.9	7.9	7.4	100	0	0	0	100	100

Table 23. Gage 01475548 pH Criteria Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% min non-attaining	% max non-attaining	% min attaining	% max attaining
Jul-21	2968	6.6	8.8	7.5	100	0	0	0	100	100
Aug-21	2969	6.8	8.6	7.5	100	0	0	0	100	100
Sep-21	2872	6.8	8.8	7.7	100	0	0	0	100	100
Oct-21	2970	6.9	8.6	7.6	100	0	0	0	100	100
Nov-21	2872	7.1	8.2	7.6	100	0	0	0	100	100
Mar-22	2245	7.2	9.2	8.1	100	0	0	3.6	100	96.4
Apr-22	2870	6.9	9	7.7	100	0	0	0	100	100
May-22	2630	6.9	8.8	7.5	100	0	0	0	100	100
Jun-22	2867	7.1	8.3	7.6	100	0	0	0	100	100

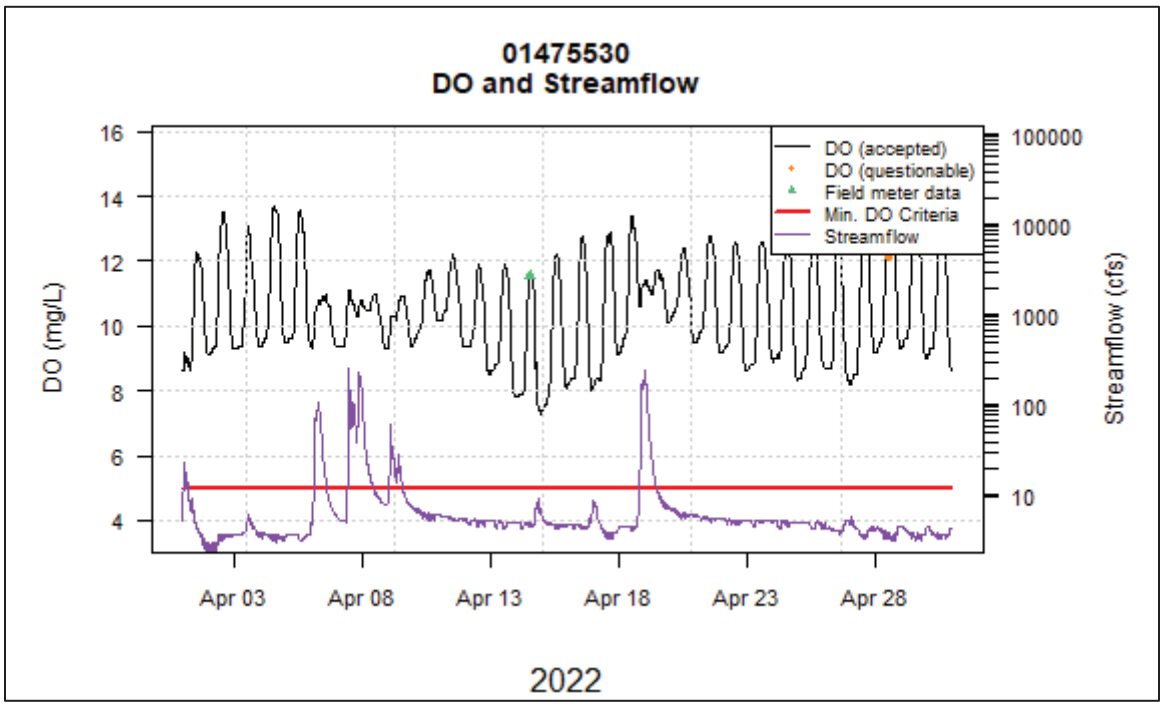


Figure 19. Gage 01475530, Dissolved Oxygen and Streamflow, April 2022.

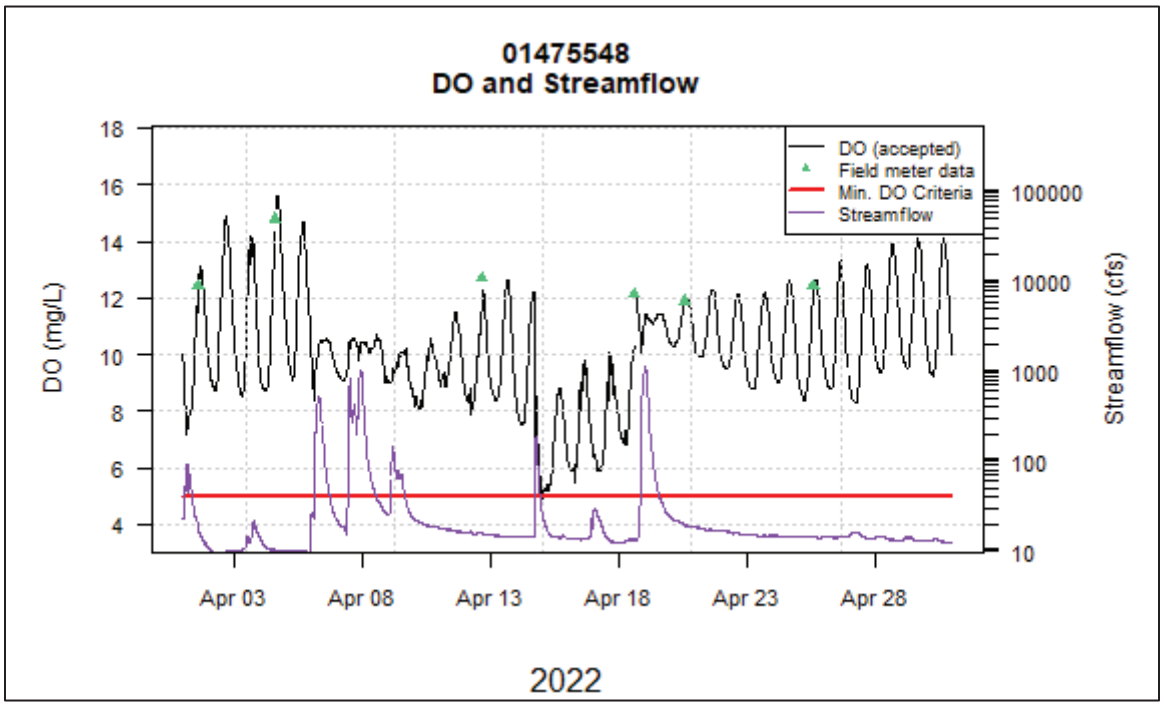


Figure 20. Gage 01475548, Dissolved Oxygen and Streamflow, April 2022.

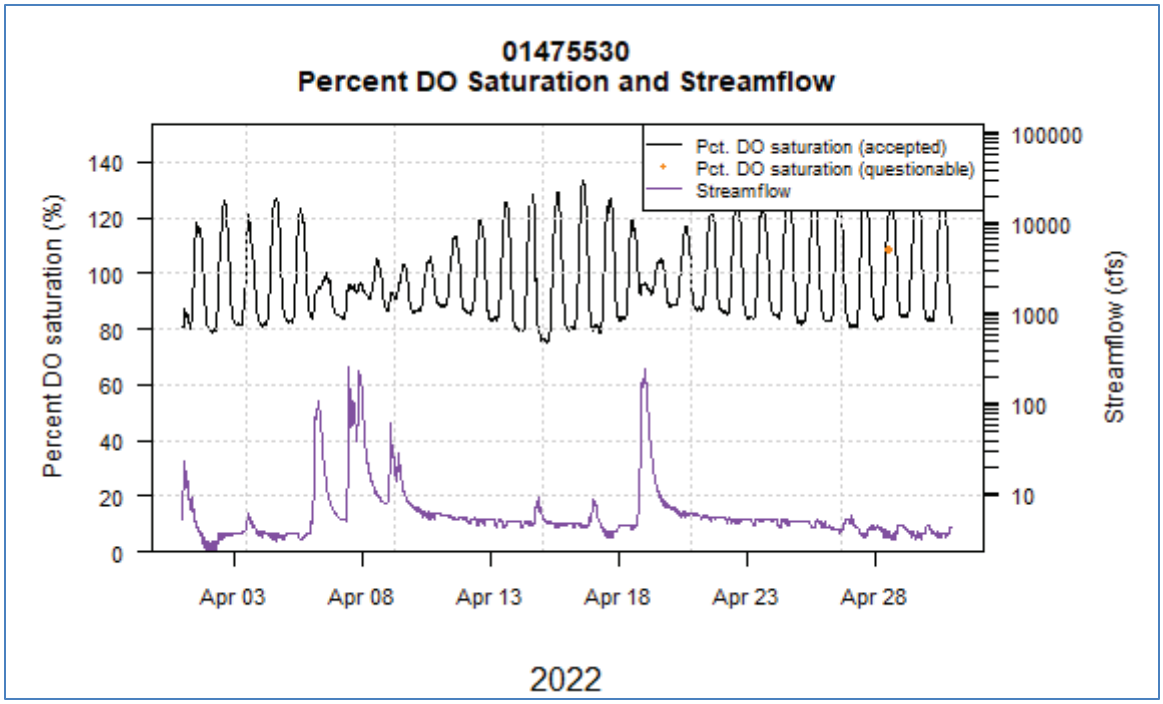


Figure 21. Gage 01475530, Percent DO Saturation and Streamflow, April 2022.

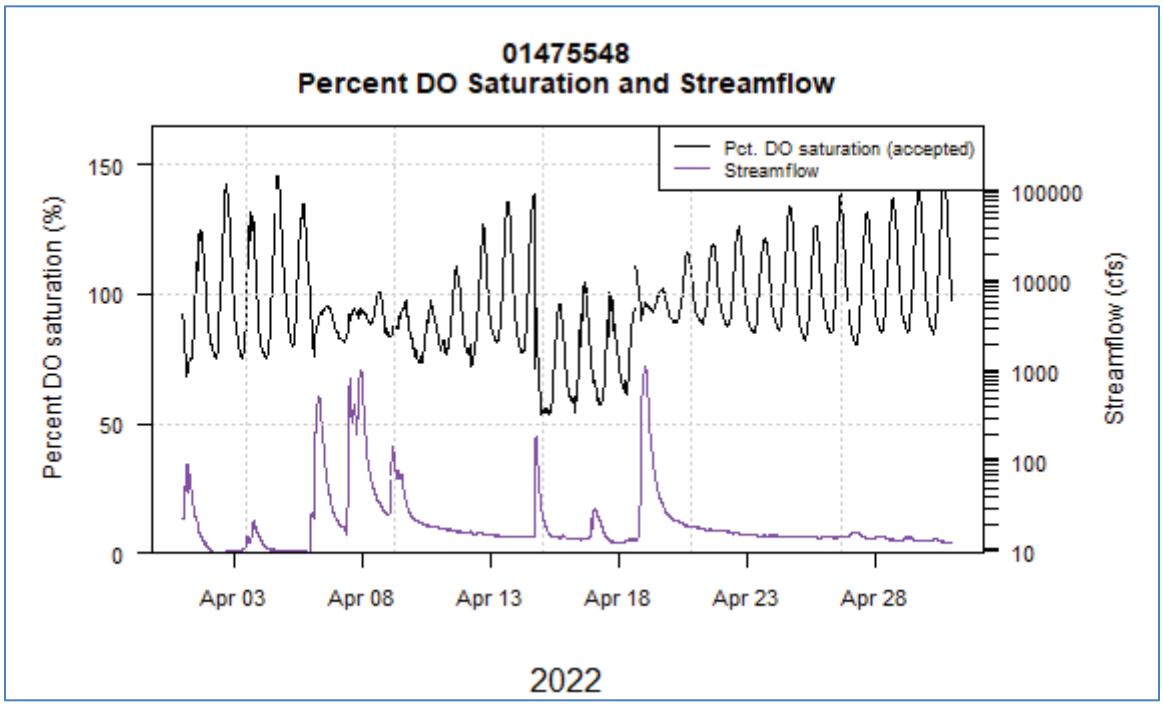


Figure 22. Gage 01475548, Percent DO Saturation and Streamflow, April 2022.

Figure 23. Gage 01475530, Cobbs Creek at Rte. 1, looking upstream

Figure 24. Gage 01475548, Cobbs Creek at Mt. Moriah Cemetery

Specific Conductance

Specific conductance observations were similar to those observed in Tacony Creek (Tables 24-25). During a typical winter, road salt may have some impact on conductance at both gages. However, the typical pattern of stormwater lowering conductance levels in the stream is well-observed during the storms that occurred in April (Figures 25-26).

Table 24. Gage 01475530 Specific Conductance Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data
Jul-21	2892	76	650	561.9	100	0
Aug-21	2973	100	675	544.5	100	0
Sep-21	2872	49	651	542.9	100	0
Oct-21	2971	84	641	551.1	100	0
Nov-21	2881	301	643	598.7	100	0
Mar-22	2233	241	3210	802.1	100	0
Apr-22	2867	99	664	558.8	99.9	0.1
May-22	2951	89	700	541.1	100	0
Jun-22	2871	68	639	532.7	99.9	0.1

Table 25. Gage 01475548 Specific Conductance Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data
Jul-21	2801	166	758	590	100	0
Aug-21	2969	97	748	527	100	0
Sep-21	2872	94	740	574.8	100	0
Oct-21	2970	91	729	581.1	100	0
Nov-21	2872	345	725	667.7	100	0
Mar-22	2244	301	2290	830.3	100	0
Apr-22	2870	116	745	590.6	100	0
May-22	2962	141	725	558.5	100	0
Jun-22	2868	99	715	533.8	100	0

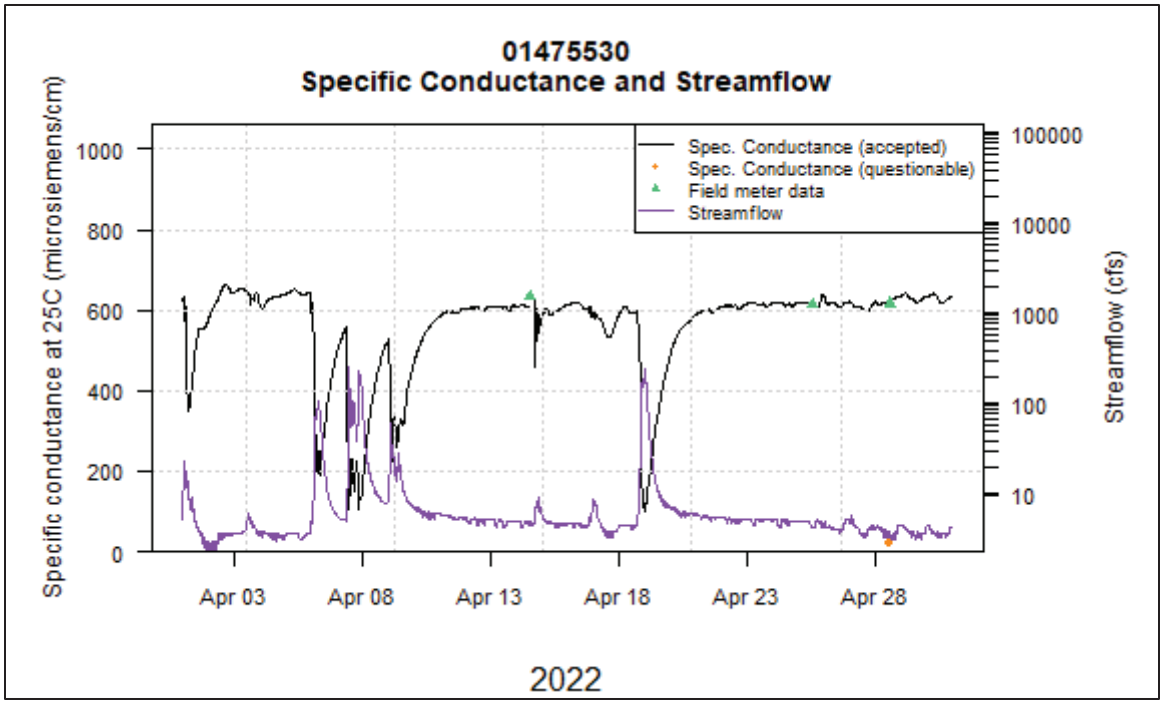


Figure 25. Gage 01475530, Specific Conductance and Streamflow, April 2022.

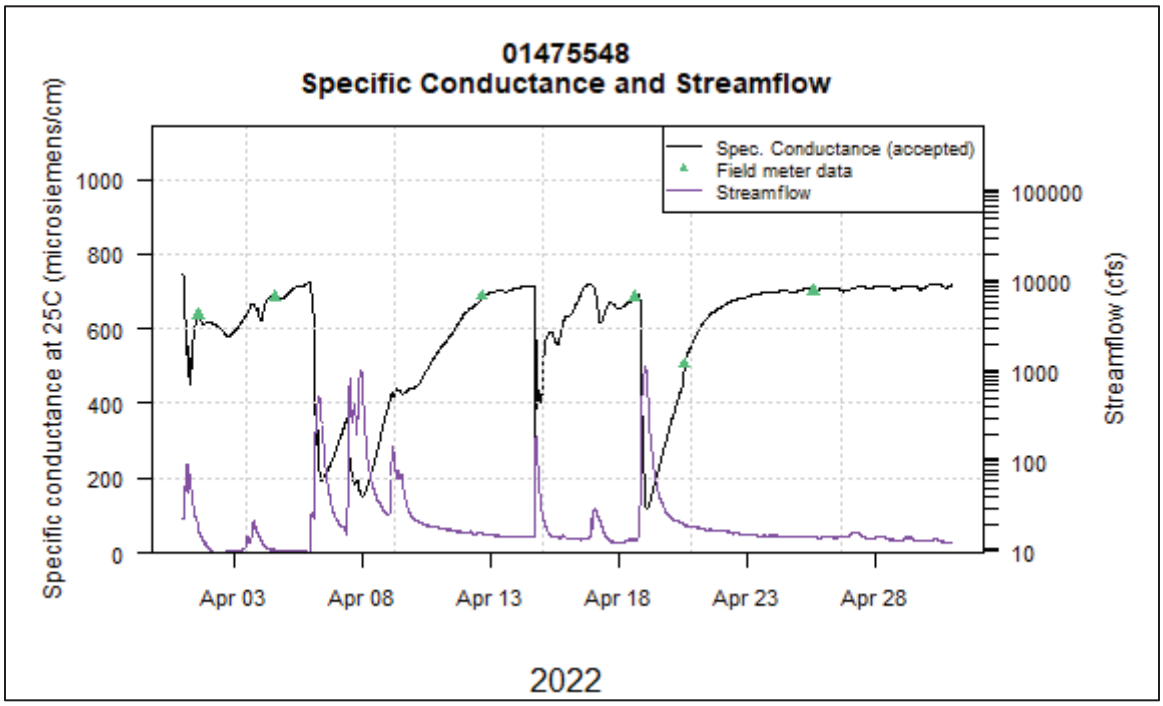


Figure 26. Gage 01475548, Specific Conductance and Streamflow, April 2022.

Temperature

Both Cobbs Creek gages showed exceedances of temperature maximum criteria during the fall and spring seasons, when temperature criteria are more stringent (Tables 26-27).

Table 26. Gage 01475530 Temperature Summary Results by Maximum Criteria Period

Designated Use	Date range start	Date range end	% exceedance	% attaining	% flagged data	% accepted data	Min	Max	Mean
WWF	1-Jul	31-Jul	0	100	0	100	18.8	27.7	23
WWF	1-Aug	15-Aug	0	100	0	100	18.6	27.5	22.2
WWF	16-Aug	31-Aug	0	100	0	100	21.1	26.1	23.4
WWF	1-Sep	15-Sep	0	100	0	100	17.1	23.9	20.4
WWF	16-Sep	30-Sep	0	100	0	100	15.9	23.4	19.4
WWF	1-Oct	15-Oct	0	100	0	100	14.2	20.4	17.9
WWF	16-Oct	31-Oct	2.2	97.8	0	100	12	20.3	14.9
WWF	1-Nov	15-Nov	2.8	97.2	0	100	7.4	15.2	10.4
WWF	16-Nov	30-Nov	5	95	0	100	4.5	11.6	7.4
WWF	1-Mar	31-Mar	65.6	34.4	0	100	1.5	17.9	9.3
WWF	1-Apr	15-Apr	53.6	46.4	0	100	7.6	21.7	12
WWF	16-Apr	30-Apr	30.8	69.2	0	100	7.7	18.4	12.8
WWF	1-May	15-May	6.1	93.9	0	100	9.8	19.3	14.9
WWF	16-May	31-May	9.6	90.4	0	100	14.9	24.8	19
WWF	1-Jun	15-Jun	0	100	0	100	16.8	24.4	20.4
WWF	16-Jun	30-Jun	0	100	0	100	15.8	25	20.1

Table 27. Gage 01475548 Temperature Summary Results by Maximum Criteria Period

Designated Use	Date range start	Date range end	% exceedance	% attaining	% flagged data	% accepted data	Min	Max	Mean
WWF	1-Jul	31-Jul	0	100	0	100	20.1	29.2	24.4
WWF	1-Aug	15-Aug	0	100	0	100	19.9	28.6	23.4
WWF	16-Aug	31-Aug	0	100	0	100	22	27.2	24.4
WWF	1-Sep	15-Sep	0	100	0	100	18.4	24.5	21.2
WWF	16-Sep	30-Sep	0	100	0	100	16.8	23.9	20.2
WWF	1-Oct	15-Oct	0	100	0	100	14.9	20.6	18.5
WWF	16-Oct	31-Oct	3.2	96.8	0	100	12.8	20.3	15.3
WWF	1-Nov	15-Nov	2.6	97.4	0	100	7.4	14.7	10.2
WWF	16-Nov	30-Nov	3.1	96.9	0	100	4.3	10.5	6.9
WWF	1-Mar	31-Mar	66.6	33.4	0	100	1.9	17.8	9.4
WWF	1-Apr	15-Apr	60.9	39.1	0	100	8.4	21.6	12.5
WWF	16-Apr	30-Apr	48	52	0	100	7.8	19	13.5
WWF	1-May	15-May	17.7	82.3	0	100	10.2	20.3	15.7
WWF	16-May	31-May	21.7	78.3	0	100	16.5	26	20.4
WWF	1-Jun	15-Jun	0	100	0	100	18.6	25.7	21.8
WWF	16-Jun	30-Jun	0	100	0	100	17.5	25.7	21.3

Gages in Separate Sewer System Watersheds

Gages in the Pennypack, Wissahickon and Poquessing watersheds are situated in the separate sewer system areas of Philadelphia. Although these sites are not affected by combined sewer overflows, discharge of untreated stormwater runoff from stormwater outfalls can negatively affect water quality.

Pennypack Creek (Gages 01467042 and 01467048)

Dissolved oxygen and pH

Both the upstream (01467042) and downstream (01467048) gages of Pennypack Creek showed pronounced diel fluctuations in dissolved oxygen and pH as a result of algal activity. These patterns are most evident during dry weather periods, when algal growth is able to excel because of abundant sunshine and a lack of storm events that might otherwise scour the algal population.

At both upstream and downstream Pennypack Creek gages, periods of dry weather in warm months are conducive to excessive algal growth. During these periods, algal populations seemed to flourish, with large daily DO amplitudes during April (Figures 31-32).

In April, daily pH fluctuations of more than 1 unit were observed during dry weather (Figures 33-34). Maximum pH criteria were attained at both gages in the spring. It would be reasonable to conclude that if not for periodic interruptions of algal activity due to rainfall, these fluctuations and chronic pH criteria exceedance would likely occur through the entire season.

Algal communities in the area of both gages recover quickly after storm events, as seen in Figures 33-34. Prior to a series of small storms occurring in April 2022, both DO and pH showed the typical pronounced fluctuations indicative of strong algal activity. This pattern diminished with the storms, when much of the algae was likely scoured away and overcast conditions likely inhibited further growth, as indicated by the PAR data at 01467048 for April 2022 (Figure 35). However, within 2-3 days of the conclusion of the rainfall and the return of sunny conditions, fluctuations of DO and pH resumed,

indicative of high algal density. This not only demonstrates the resilience of the algal population in this ecosystem, but also a likely abundance of nutrients that allows regrowth to occur so quickly.

Table 28. Gage 01467042 Dissolved Oxygen Minimum Criterion Summary Results by Month

Month	Des. Use	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% non-attaining	% attaining
Jul-21	TSF	2957	4.6	12.5	7.5	99.6	0.4	0.2	99.8
Aug-21	TSF	2972	5.5	11.3	7.6	100	0	0	100
Sep-21	TSF	2876	6.3	12.2	8.4	100	0	0	100
Oct-21	TSF	2866	6.8	10.8	8.7	96.4	3.6	0	100
Nov-21	TSF	2623	8.5	13.4	10.9	91.1	8.9	0	100
Mar-22	TSF	2153	7.6	15.3	11.4	100	0	0	100
Apr-22	TSF	2875	6	15	10.3	100	0	0	100
May-22	TSF	2967	5.6	15.3	8.5	100	0	0	100
Jun-22	TSF	2827	5.3	10.6	7.8	98.5	1.5	0	100

Table 29. Gage 01467048 Dissolved Oxygen Minimum Criterion Summary Results by Month

Month	Des. Use	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% non-attaining	% attaining
Jul-21	TSF	2971	5.7	12.6	7.9	100	0	0	100
Aug-21	TSF	2873	5.8	12	7.9	100	0	0	100
Sep-21	TSF	2867	6.4	14.7	8.9	100	0	0	100
Oct-21	TSF	2970	7.4	12.1	9.2	100	0	0	100
Nov-21	TSF	2876	9.2	15.2	11.4	100	0	0	100
Mar-22	TSF	2150	8.5	15.8	11.9	100	0	0	100
Apr-22	TSF	2870	8	14.7	10.7	100	0	0	100
May-22	TSF	2971	6.4	15.1	9	100	0	0	100
Jun-22	TSF	2867	6.2	11.5	8.1	100	0	0	100

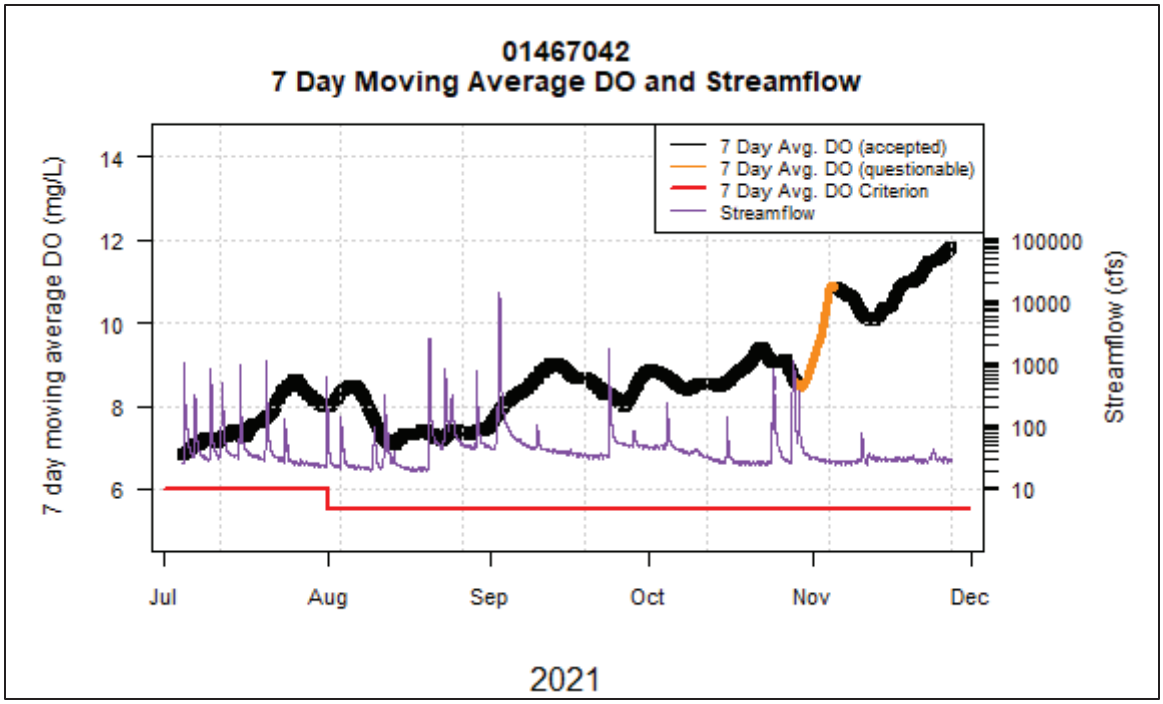


Figure 27. Gage 01467042, 7 Day Average Dissolved Oxygen and Streamflow, Jul-Nov 2021.

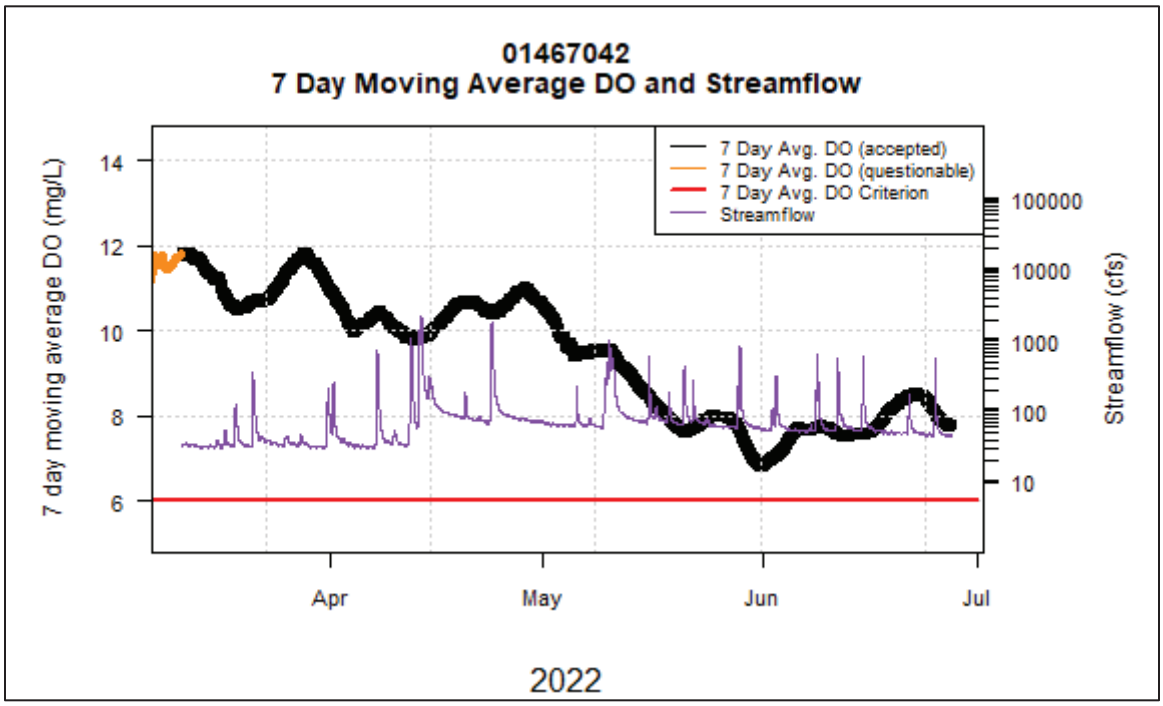


Figure 28. Gage 01467042, 7 Day Average Dissolved Oxygen and Streamflow, Mar-Jun 2022.

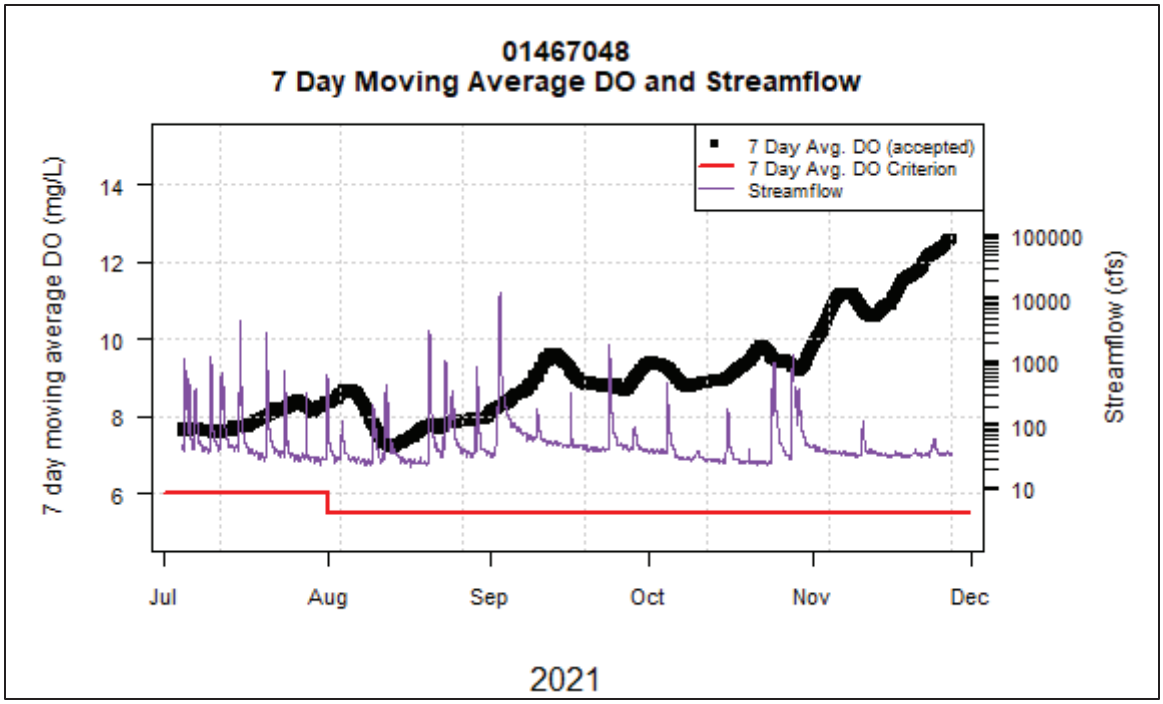


Figure 29. Gage 01467048, 7 Day Average Dissolved Oxygen and Streamflow, Jul-Nov 2021.

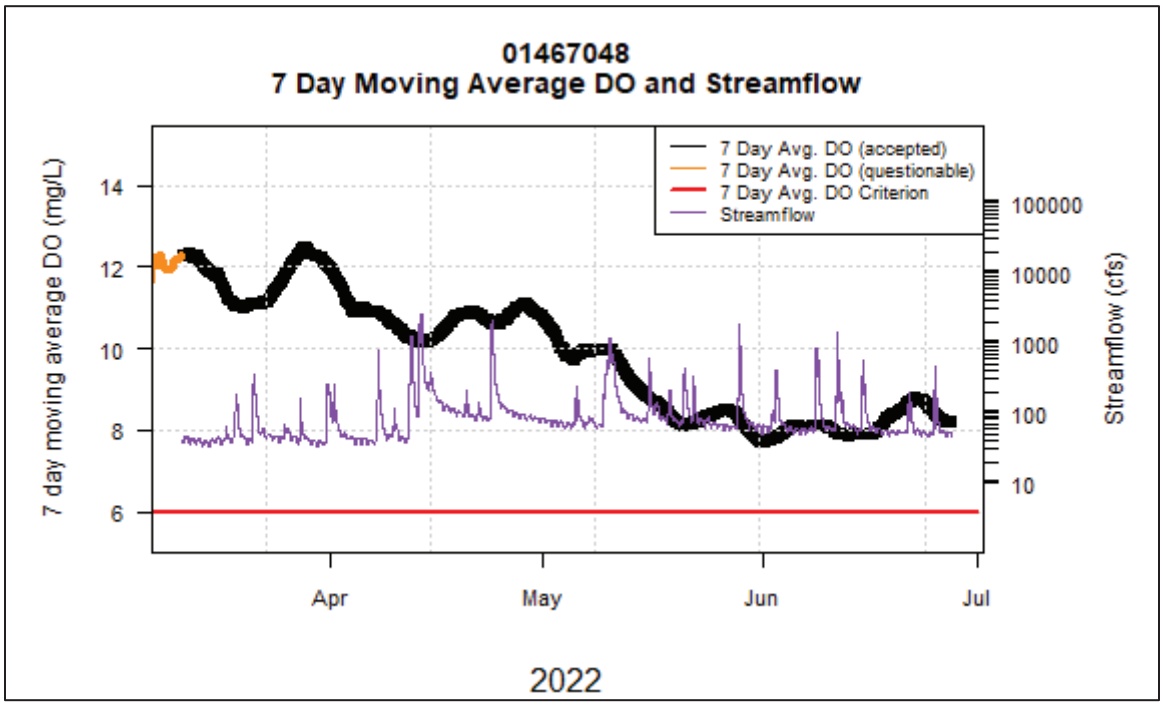


Figure 30. Gage 01467048, 7 Day Average Dissolved Oxygen and Streamflow, Mar-Jun 2022.

Table 30. Gage 01467042 pH Criteria Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% min non-attaining	% max non-attaining	% min attaining	% max attaining
Jul-21	2968	7	8.9	7.6	99.9	0.1	0	0	100	100
Aug-21	2972	6.8	8.4	7.5	100	0	0	0	100	100
Sep-21	2873	6.7	8.6	7.5	100	0	0	0	100	100
Oct-21	2972	7	7.6	7.4	100	0	0	0	100	100
Nov-21	2873	7.1	7.8	7.5	99.9	0.1	0	0	100	100
Mar-22	2153	7.4	8.6	7.7	100	0	0	0	100	100
Apr-22	2874	7.1	8.6	7.6	100	0	0	0	100	100
May-22	2965	7.1	8.7	7.4	100	0	0	0	100	100
Jun-22	2866	7	8.1	7.4	99.9	0.1	0	0	100	100

Table 31. Gage 01467048 pH Criteria Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% min non-attaining	% max non-attaining	% min attaining	% max attaining
Jul-21	2968	7	8.7	7.5	100	0	0	0	100	100
Aug-21	2873	6.9	8.6	7.5	100	0	0	0	100	100
Sep-21	2870	6.8	9	7.7	100	0	0	0	100	100
Oct-21	2964	7.2	8.4	7.6	100	0	0	0	100	100
Nov-21	2872	7.3	8.4	7.6	100	0	0	0	100	100
Mar-22	2150	7.4	8.9	8	100	0	0	0	100	100
Apr-22	2869	7.2	9	7.8	100	0	0	0	100	100
May-22	2972	7.2	9	7.7	100	0	0	0	100	100
Jun-22	2867	6.9	8.5	7.5	100	0	0	0	100	100

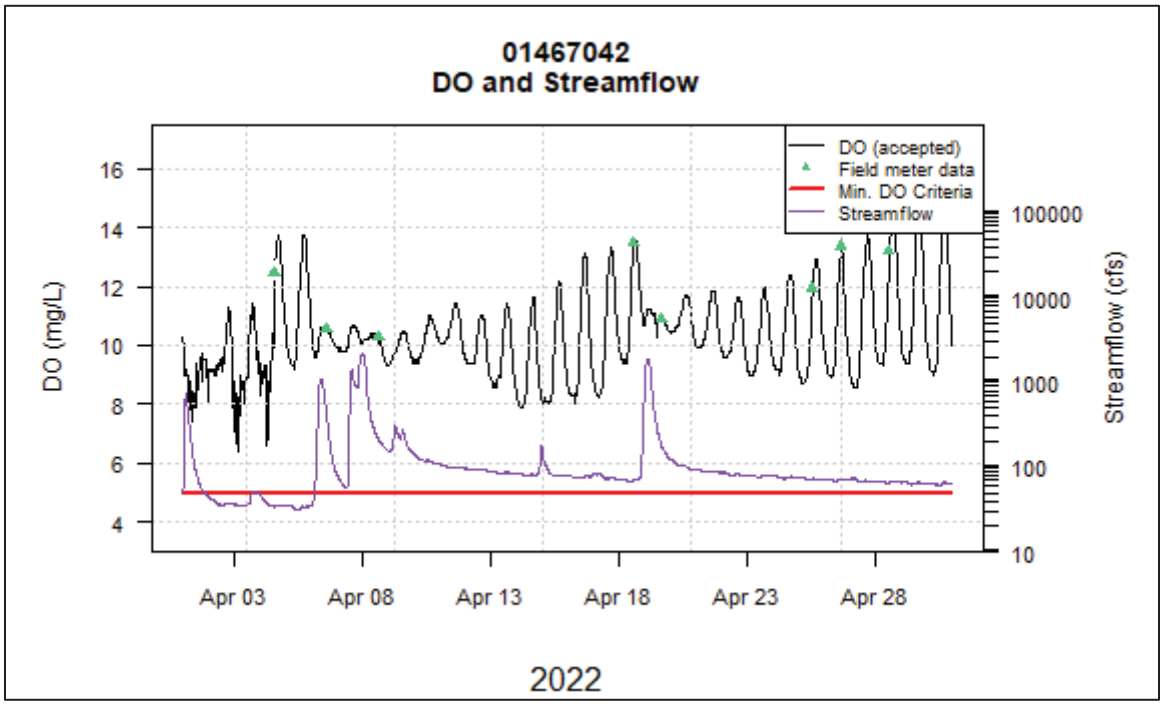


Figure 31. Gage 01467042, Dissolved Oxygen and Streamflow, April 2022.

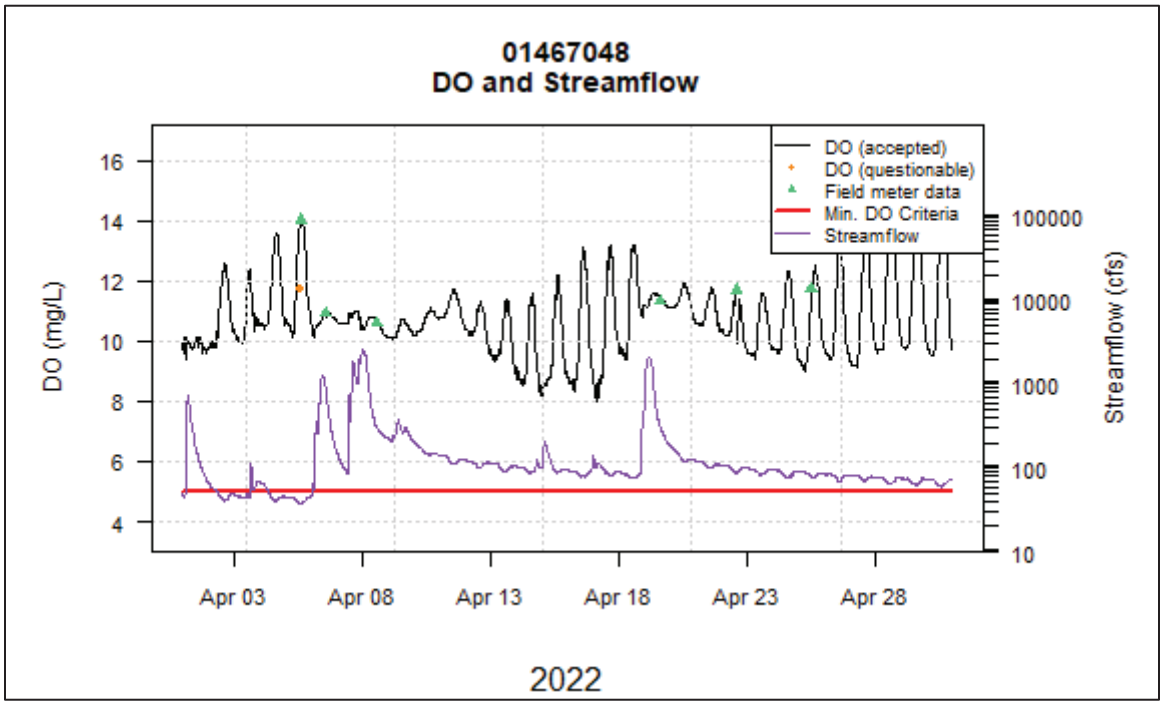


Figure 32. Gage 01467048, Dissolved Oxygen and Streamflow, April 2022.

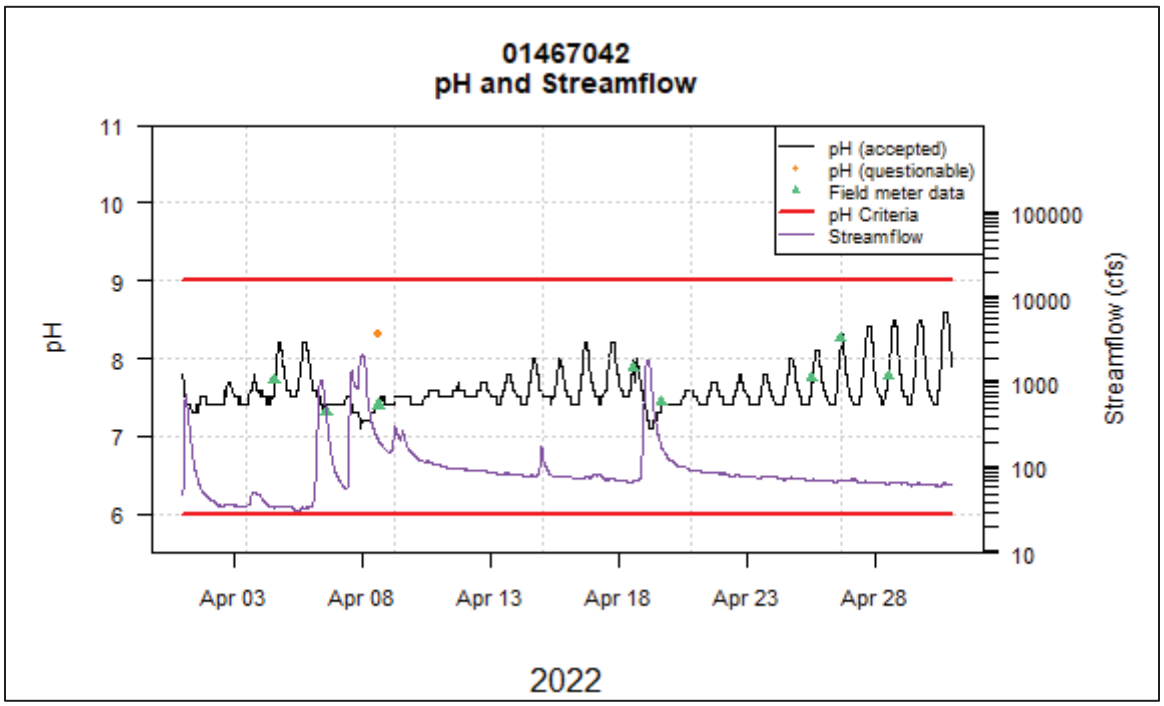


Figure 33. Gage 01467042, pH and Streamflow, April 2022.

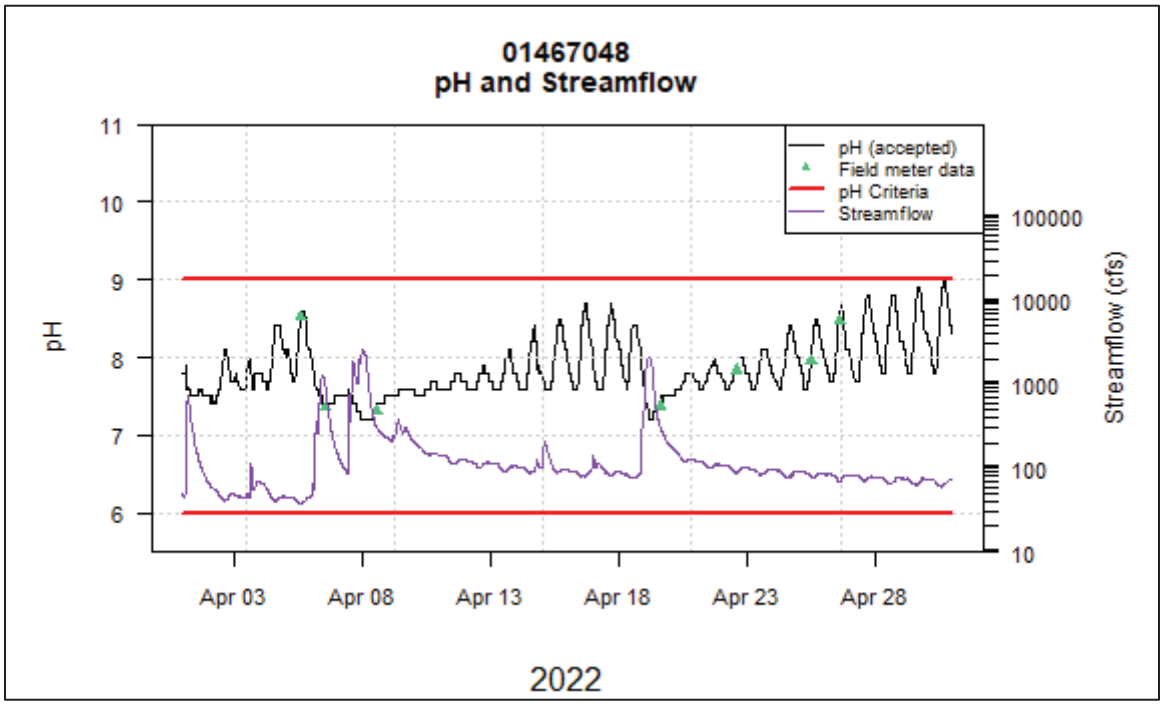


Figure 34. Gage 01467048, pH and Streamflow, April 2022.

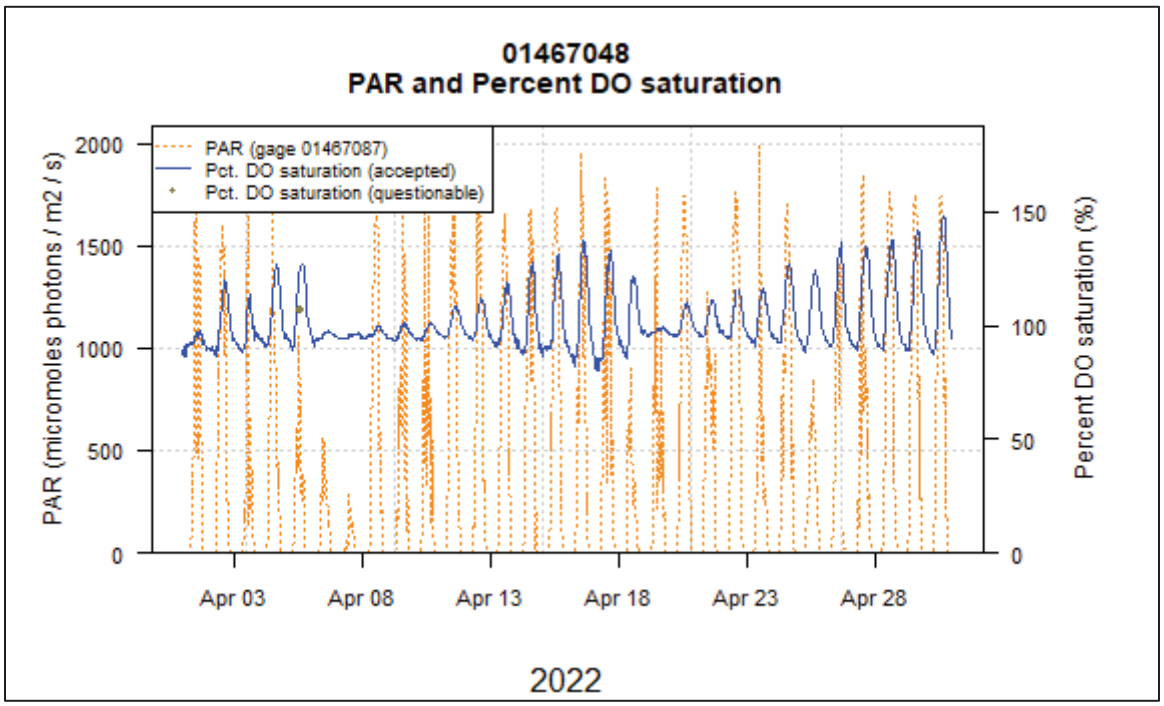


Figure 35. Gage 01467048, PAR and Percent Dissolved Oxygen Saturation, April 2022.

Figure 36. Gage 01467042, Pennypack Creek at Pine Rd., looking upstream

Figure 37. Gage 01467048, Pennypack Creek at Lower Rhawn St. Bridge, looking upstream

Turbidity

Turbidity data at the Pennypack Creek gages tend to reflect streamflow conditions. When there is high flow (*i.e.,* during and after storms), increases in turbidity are common and expected, as sediment in the creek bed is resuspended and particles present in runoff enter the stream (Figure 38). The downstream gage generally exhibited higher turbidity values throughout the year (Tables 32-33).

Flagged data are often due to periods during the month when sondes report high turbidity values that were corrected after the instrumentation was cleaned. After a storm, optical sensors such as those used to detect dissolved oxygen and turbidity can return inaccurate readings due to the sonde pipe becoming clogged with sediment and other debris. When turbidity readings come down after a cleaning, it is typical procedure to flag data back to the end of a storm, when the sonde pipe likely became clogged and did not reflect actual conditions in the stream.

Table 32. Gage 01467042, Turbidity Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% above max. guideline	% below max. guideline
Jul-21	2691	0.7	291	10.8	90.6	9.4	42.9	57.1
Aug-21	2972	0.5	358	6.4	100	0	28.2	71.8
Sep-21	2875	0.6	510	6.6	100	0	16.8	83.2
Oct-21	2862	0.9	110	3.6	96.3	3.7	16.4	83.6
Nov-21	2619	0.5	5.8	1.2	91.1	8.9	0.5	99.5
Mar-22	2152	0.9	24.5	3.5	100	0	57.5	42.5
Apr-22	2867	0.4	389	13.5	99.9	0.1	68.5	31.5
May-22	2922	0.3	207	7.8	98.5	1.5	52	48
Jun-22	2520	0.5	181	7	87.8	12.2	60.8	39.2

Table 33. Gage 01467048, Turbidity Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% above max. guideline	% below max. guideline
Jul-21	2710	0.3	354	16.6	91.2	8.8	56	44
Aug-21	2875	0.3	468	8.6	100	0	45.6	54.4
Sep-21	2878	0.3	418	10.3	100	0	26.8	73.2
Oct-21	2971	0.3	141	4.6	100	0	21.8	78.2
Nov-21	2878	0.4	8.4	1	100	0	5	95
Mar-22	2150	3	49.6	5.6	100	0	100	0
Apr-22	2871	1.6	478	15.1	100	0	57	43
May-22	2972	1.6	442	10	100	0	67.8	32.2
Jun-22	2866	1	980	8.5	100	0	73.3	26.7

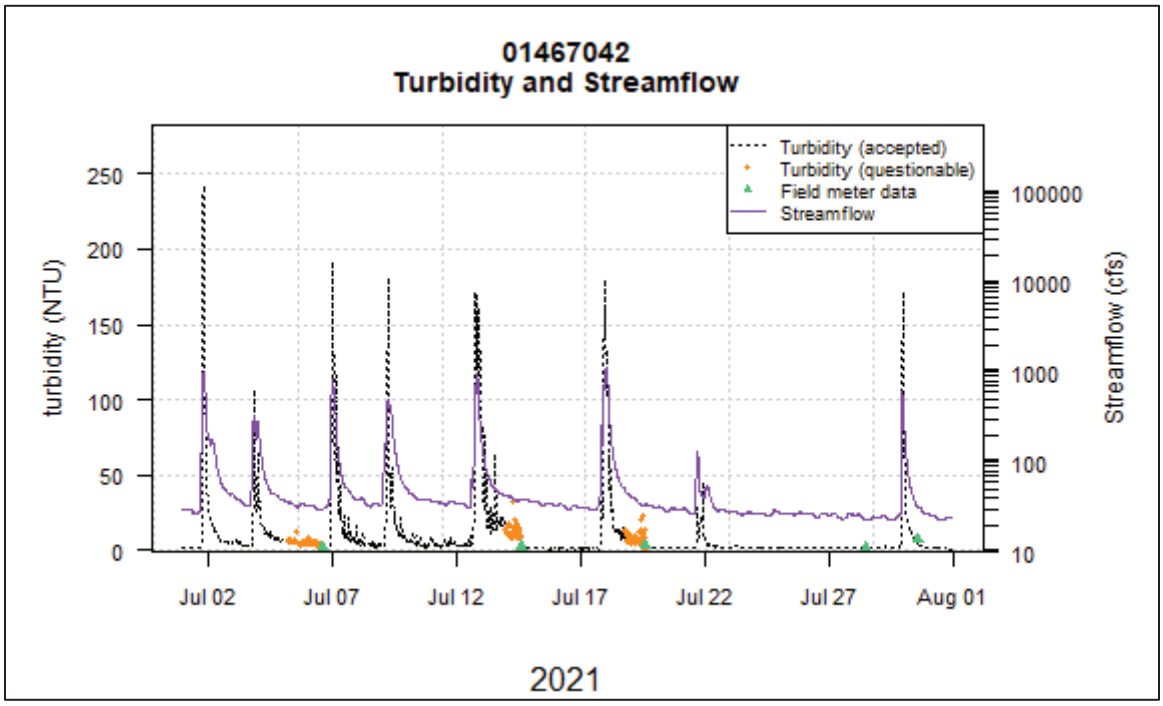


Figure 38. Gage 01467042, Turbidity and Streamflow, July 2021.

Specific Conductance

Specific conductance data were similar to other Philadelphia area streams. Elevated mean and maximum conductance values at both gages in March may be evidence of the effects of stormwater runoff and snowmelt containing road salt.

Table 34. Gage 01467042 Specific Conductance Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data
Jul-21	2967	172	755	510.1	100	0
Aug-21	2971	143	717	535.7	100	0
Sep-21	2870	76	694	586.2	100	0
Oct-21	2972	182	765	591.3	100	0
Nov-21	2879	319	701	643.3	100	0
Mar-22	2155	612	1780	885.2	100	0
Apr-22	2874	147	737	576	100	0
May-22	2965	199	693	539.3	100	0
Jun-22	2866	242	701	540.4	100	0

Table 35. Gage 01467048 Specific Conductance Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data
Jul-21	2970	83	708	447.4	100	0
Aug-21	2868	111	697	488.2	100	0
Sep-21	2870	72	700	568.7	100	0
Oct-21	2968	160	738	569.3	100	0
Nov-21	2874	297	711	630.5	100	0
Mar-22	2150	382	1640	850.1	100	0
Apr-22	2867	134	719	545.7	100	0
May-22	2972	172	677	507.6	100	0
Jun-22	2863	121	666	502.2	100	0

Temperature

Temperature data showed variable attainment of maximum temperature criteria (Tables 36-37). Spring and early summer months are always subject to major air temperature fluctuations, and reliably predicting average stream temperatures during these periods is difficult at best. Maximum criteria for the summer months, for example, do not take into account natural summer temperature peaks. Above normal air temperatures are the likely cause of stream temperature exceedance rates in Spring 2022 (Figures 39-40).

Table 36. Gage 01467042 Temperature Summary Results by Maximum Criteria Period

Designated Use	Date range start	Date range end	% exceedance	% attaining	% flagged data	% accepted data	Min	Max	Mean
TSF	1-Jul	31-Jul	67.2	32.8	0	100	19.8	27.4	23.6
TSF	1-Aug	15-Aug	1.5	98.5	0	100	19.3	27.4	22.9
TSF	16-Aug	31-Aug	0	100	0	100	21.5	25.7	23.7
TSF	1-Sep	15-Sep	0	100	0	100	17.7	23.6	20.7
TSF	16-Sep	30-Sep	0	100	0	100	16.4	23	19.7
TSF	1-Oct	15-Oct	0	100	0	100	14.7	19.9	18.2
TSF	16-Oct	31-Oct	4.4	95.6	0	100	12.6	19.9	15.2
TSF	1-Nov	15-Nov	3	97	0	100	7.6	14.9	10.4
TSF	16-Nov	30-Nov	4	96	0	100	4.7	10.8	7.2
TSF	1-Mar	31-Mar	66.1	33.9	0	100	2.3	16.7	9.3
TSF	1-Apr	15-Apr	56.5	43.5	0	100	8.7	20.2	12.2
TSF	16-Apr	30-Apr	32.8	67.2	0	100	7.6	17.1	12.9
TSF	1-May	15-May	10.3	89.7	0	100	10	19.5	15.2
TSF	16-May	31-May	31.1	68.9	0	100	15.9	24.6	19.3
TSF	1-Jun	15-Jun	46.9	53.1	0	100	17.6	24	20.8
TSF	16-Jun	30-Jun	29.1	70.9	0	100	16.7	25	20.8

Table 37. Gage 01467048, Temperature Summary Results by Maximum Criteria Period

Designated Use	Date range start	Date range end	% exceedance	% attaining	% flagged data	% accepted data	Min	Max	Mean
TSF	1-Jul	31-Jul	84.3	15.7	0	100	20.3	29.2	24.5
TSF	1-Aug	15-Aug	9	91	0	100	19.7	29	23.7
TSF	16-Aug	31-Aug	0	100	0	100	22.1	26.8	24.4
TSF	1-Sep	15-Sep	0	100	0	100	18.6	24.7	21.2
TSF	16-Sep	30-Sep	0	100	0	100	16.7	24.1	20.3
TSF	1-Oct	15-Oct	0	100	0	100	15.1	20.5	18.5
TSF	16-Oct	31-Oct	3.5	96.5	0	100	13.1	20.8	15.5
TSF	1-Nov	15-Nov	4.2	95.8	0	100	7.2	15	10.2
TSF	16-Nov	30-Nov	0	100	0	100	4.2	9.9	6.6
TSF	1-Mar	31-Mar	64.7	35.3	0	100	3	17	9.3
TSF	1-Apr	15-Apr	59.9	40.1	0	100	8.9	20.4	12.5
TSF	16-Apr	30-Apr	48.7	51.3	0	100	7.7	17.8	13.4
TSF	1-May	15-May	18.5	81.5	0	100	10.3	19.8	15.6
TSF	16-May	31-May	46.6	53.4	0	100	16.5	25.8	20.3
TSF	1-Jun	15-Jun	70.4	29.6	0	100	18.4	25.7	21.8
TSF	16-Jun	30-Jun	43.9	56.1	0	100	18.2	26.2	21.8

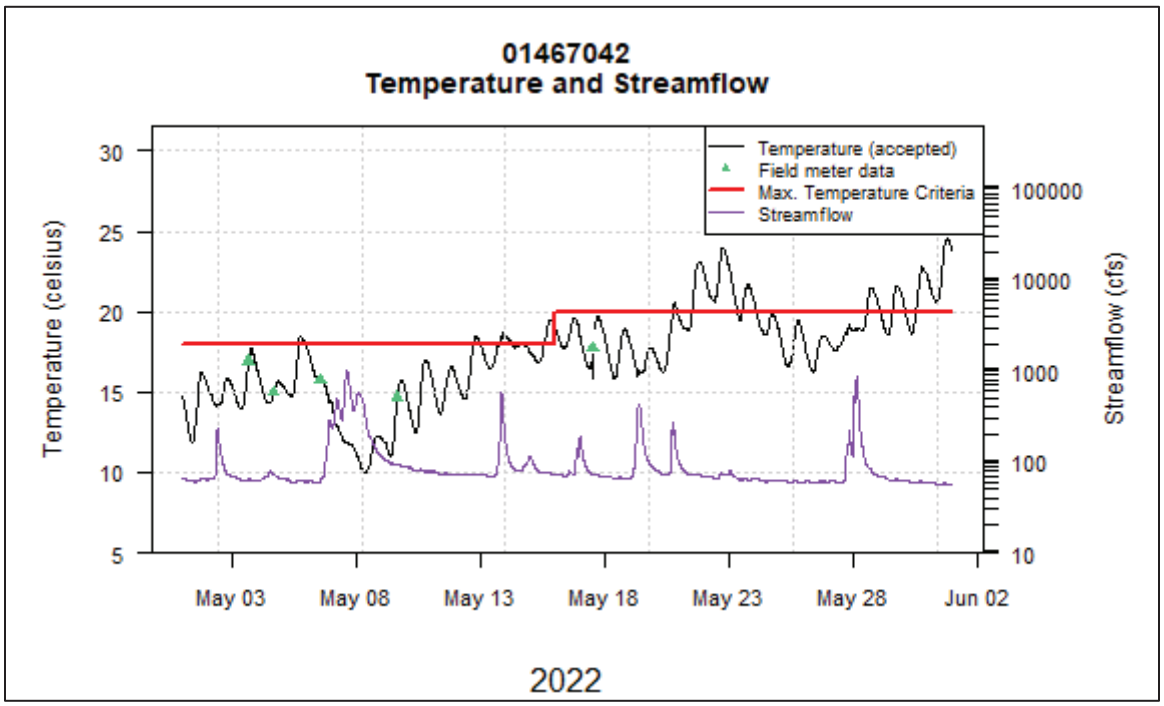


Figure 39. Gage 01467042, Temperature and Streamflow, May 2022.

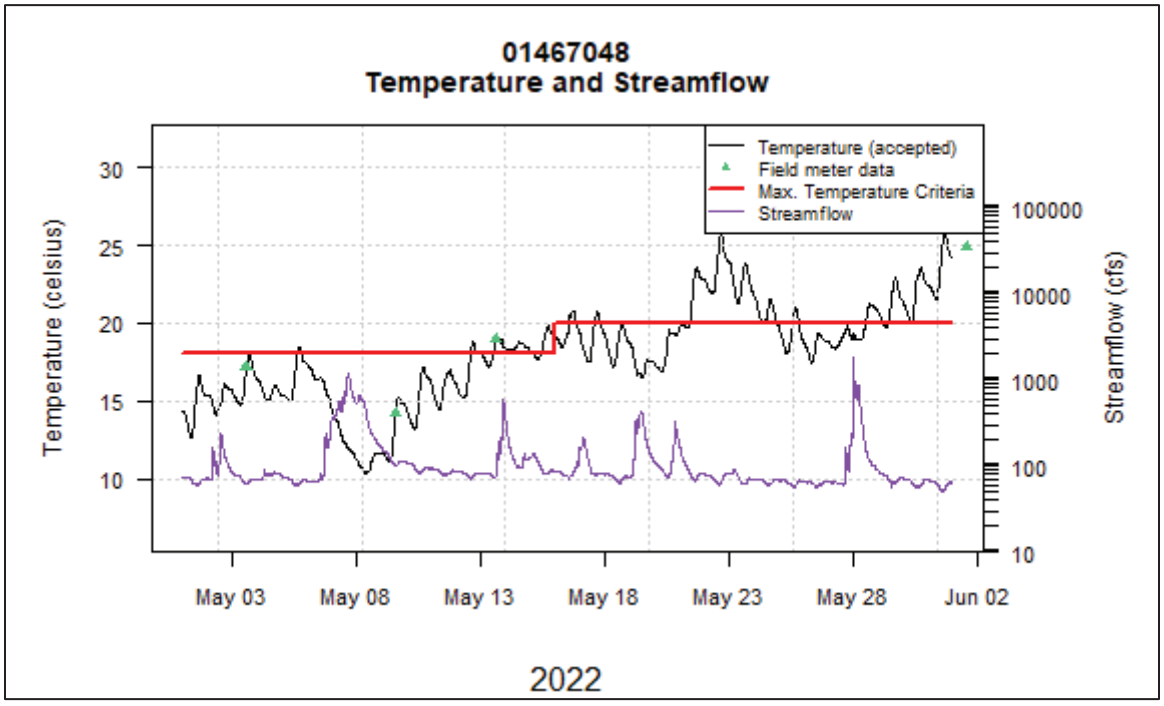
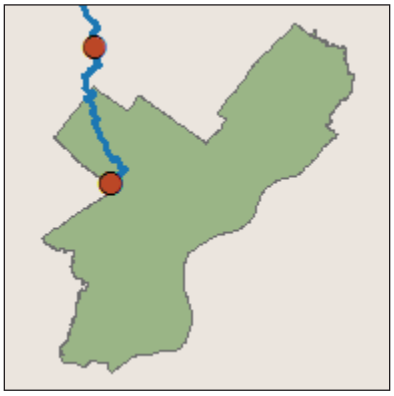


Figure 40. Gage 01467048, Temperature and Streamflow, May 2022.

Wissahickon Creek (Gages 01473900 and 01474000)



Dissolved oxygen and pH

Dissolved oxygen and pH data collected from the Wissahickon Creek gages also show signs of strong algal activity in the form of diel fluctuations. Although these two sites never exceeded the 7-day average guideline for dissolved oxygen, the upper gage (01473900) exhibits some of the most dramatic diel fluctuations of any of the Philadelphia USGS gage sites. In March 2022, dissolved oxygen can be observed to fluctuate by approximately 12 mg/L in a single day/night period (Figure 45), with pH experiencing significant swings at the same time (Figure 46). The pH maxima were exceeded in spring, a direct result of algal activity (Table 40).

Table 38. Gage 01473900 Dissolved Oxygen Minimum Criterion Summary Results by Month

Month	Des. Use	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% non-attaining	% attaining
Jul-21	TSF	1485	4.9	12.2	7.5	100	0	0.1	99.9
Aug-21	TSF	1484	4.6	10.9	7.3	100	0	2.2	97.8
Sep-21	TSF	1436	5.6	16.2	8.6	100	0	0	100
Oct-21	TSF	1459	6.1	12.7	8.5	100	0	0	100
Nov-21	TSF	1438	7.8	17.6	10.8	100	0	0	100
Mar-22	TSF	2136	6.1	20.4	12	100	0	0	100
Apr-22	TSF	2871	7.4	17.4	10.5	100	0	0	100
May-22	TSF	2967	5.7	18.2	8.7	100	0	0	100
Jun-22	TSF	2870	4.9	12.7	7.6	100	0	0.2	99.8

Table 39. Gage 01474000 Dissolved Oxygen Minimum Criterion Summary Results by Month

Month	Des. Use	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% non-attaining	% attaining
Jul-21	TSF	1472	6.2	12.4	8.4	100	0	0	100
Aug-21	TSF	1481	6.3	12.1	8.3	100	0	0	100
Sep-21	TSF	1411	7.5	13.3	9.1	100	0	0	100
Oct-21	TSF	1469	8.1	12.2	9.5	100	0	0	100
Nov-21	TSF	1274	9.3	14.2	11.5	100	0	0	100
Mar-22	TSF	1022	8.6	14.7	11.6	99.8	0.2	0	100
Apr-22	TSF	1436	8.9	14.5	10.8	100	0	0	100
May-22	TSF	1485	7.2	14.7	9.5	100	0	0	100
Jun-22	TSF	1439	6.6	13	8.7	100	0	0	100

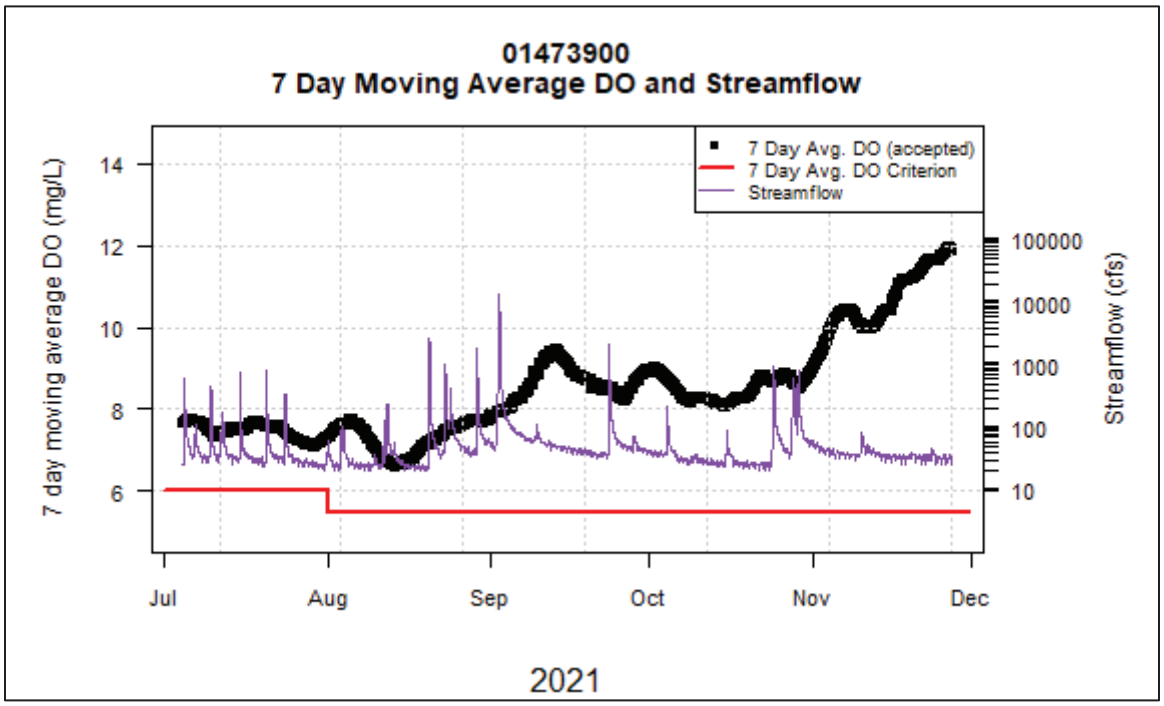


Figure 41. Gage 01473900, 7 Day Average Dissolved Oxygen and Streamflow, Jul-Nov 2021.

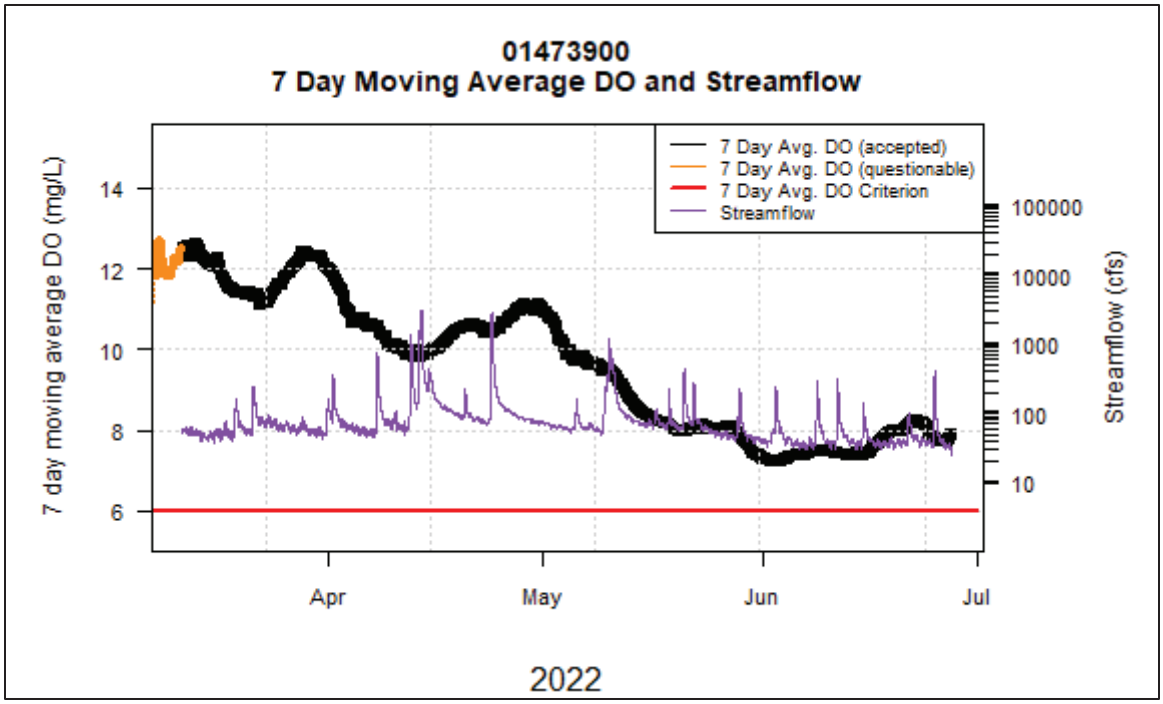


Figure 42. Gage 01473900, 7 Day Average Dissolved Oxygen and Streamflow, Mar-Jun 2022.

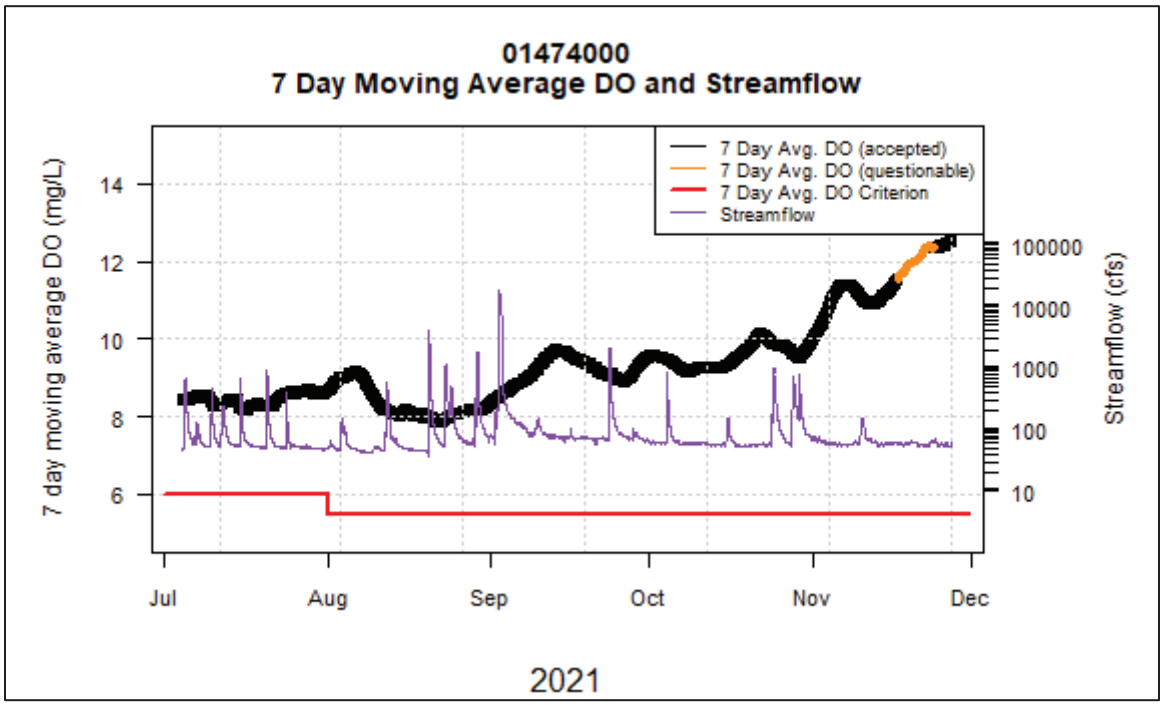


Figure 43. Gage 01474000, 7 Day Average Dissolved Oxygen and Streamflow, Jul-Nov 2021.

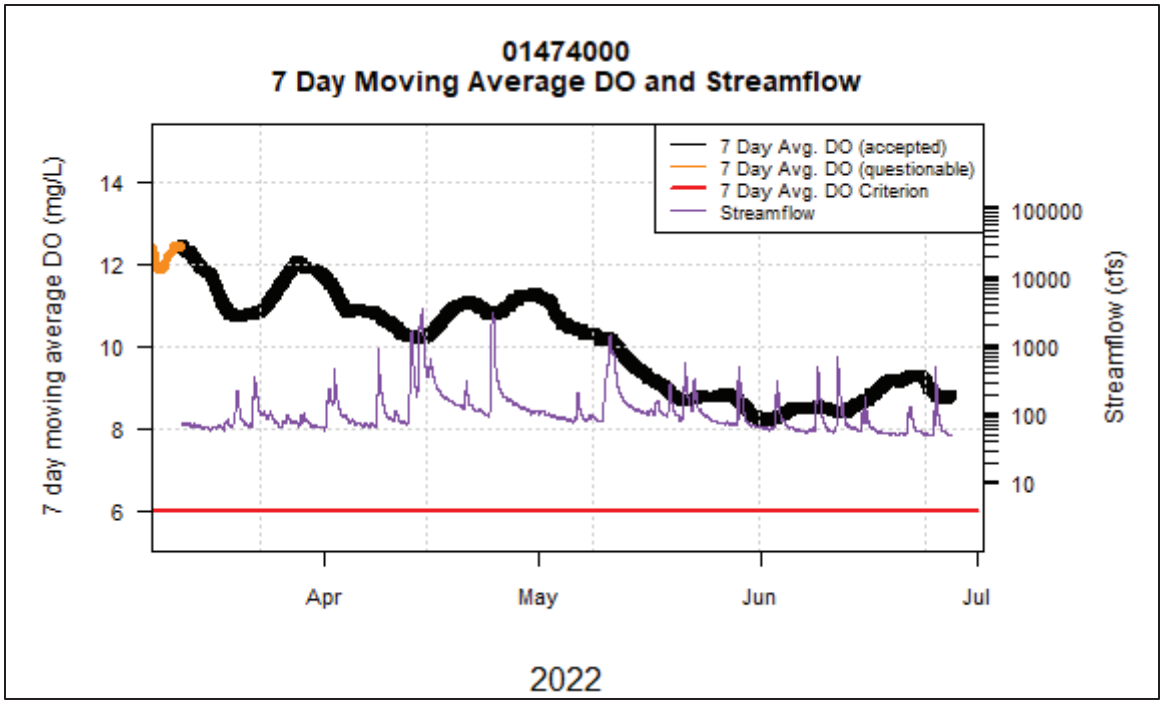


Figure 44. Gage 01474000, 7 Day Average Dissolved Oxygen and Streamflow, Mar-Jun 2022.

Table 40. Gage 01473900 pH Criteria Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% min non-attaining	% max non-attaining	% min attaining	% max attaining
Jul-21	1485	7.2	8.5	7.7	100	0	0	0	100	100
Aug-21	1484	6.9	8.2	7.6	100	0	0	0	100	100
Sep-21	1436	6.9	8.9	7.8	100	0	0	0	100	100
Oct-21	1480	7.3	8.4	7.7	100	0	0	0	100	100
Nov-21	1438	7.4	8.6	7.7	100	0	0	0	100	100
Mar-22	2139	7.4	9.1	8	100	0	0	1	100	99
Apr-22	2870	7.1	8.9	7.7	100	0	0	0	100	100
May-22	2965	7.3	9	7.7	100	0	0	0	100	100
Jun-22	2874	7.4	8.5	7.7	100	0	0	0	100	100

Table 41. Gage 01474000 pH Criteria Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% min non-attaining	% max non-attaining	% min attaining	% max attaining
Jul-21	1472	7.4	8.8	8.1	100	0	0	0	100	100
Aug-21	1481	7.2	8.7	8	100	0	0	0	100	100
Sep-21	1411	6.8	8.9	8.1	100	0	0	0	100	100
Oct-21	1468	7.6	8.5	8.1	100	0	0	0	100	100
Nov-21	1298	7.7	8.6	8.2	100	0	0	0	100	100
Mar-22	1024	7.7	8.7	8.2	100	0	0	0	100	100
Apr-22	1436	7.2	8.9	8	100	0	0	0	100	100
May-22	1485	7.6	9.1	8	100	0	0	0.3	100	99.7
Jun-22	1439	7.5	8.8	8.1	100	0	0	0	100	100

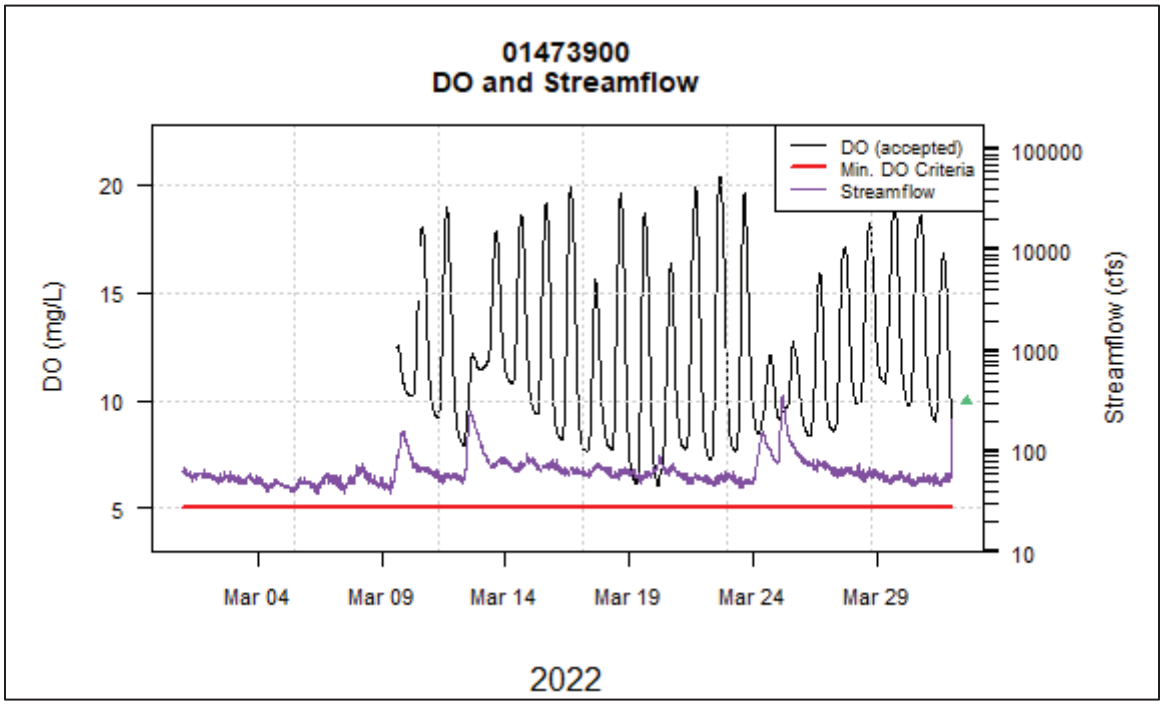


Figure 45. Gage 01473900, Dissolved Oxygen and Streamflow, March 2022.

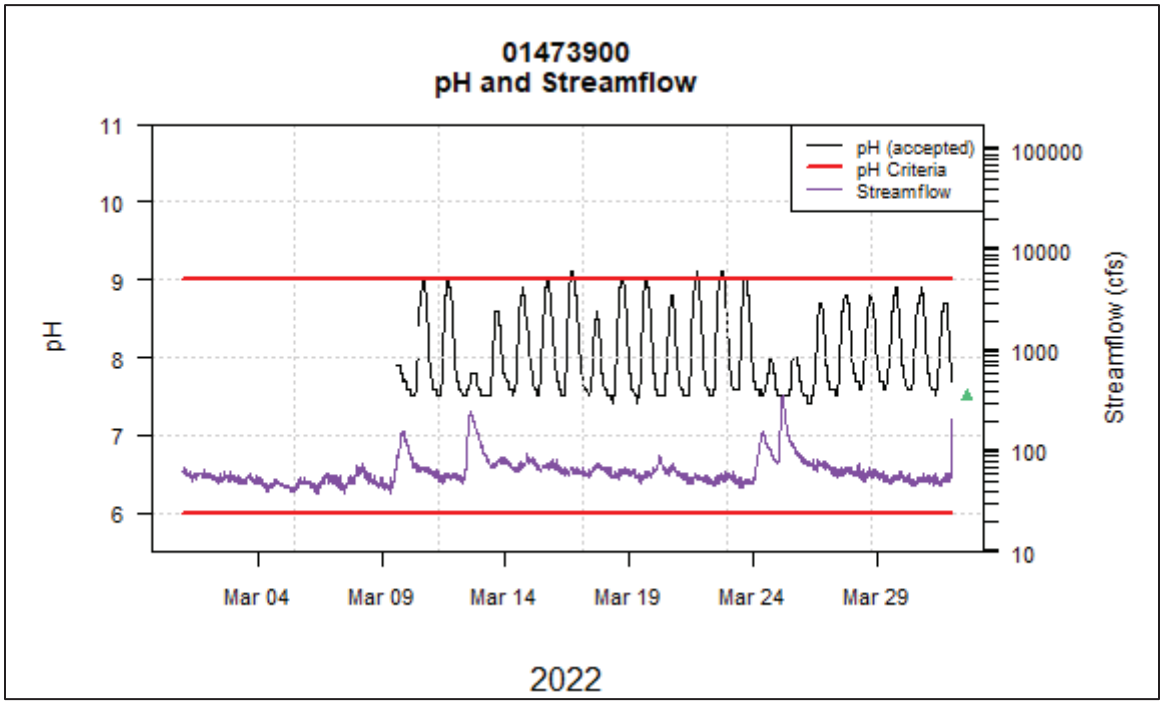


Figure 46. Gage 01473900, pH and Streamflow, March 2022.

Figure 47. Gage 01473900, Wissahickon Creek at Ft. Washington, looking downstream

Figure 48. Gage 01474000, Wissahickon Creek at mouth, looking downstream

Turbidity

Turbidity in the Wissahickon, as with most of Philadelphia's streams, increases drastically with increased flow from rainfall (Tables 42-43). It is possible that these spikes represent a temporarily fouled sensor (i.e., sediment or debris obscures the optical probe for turbidity), but the general rule in QAQC procedures is not to flag turbidity spikes that recede to normal levels on their own. If the sensor remains fouled after a storm or a field check confirms aberrant values, the data is flagged as in Figure 49.

Table 42. Gage 01473900 Turbidity Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% above max. guideline	% below max. guideline
Jul-21	1485	1.1	179	6.5	100	0	42.4	57.6
Aug-21	1485	0.3	267	5.8	100	0	35	65
Sep-21	1436	0.4	169	5.4	100	0	20.8	79.2
Oct-21	1439	0.5	122	6.6	97.2	2.8	25.6	74.4
Nov-21	1327	0.8	42.4	3.1	92.3	7.7	8.3	91.7
Mar-22	2137	0.3	50.8	3.4	100	0	28.7	71.3
Apr-22	2870	0.7	184	10.4	100	0	36.7	63.3
May-22	2966	0.4	56.2	3.7	100	0	24.9	75.1
Jun-22	2868	0.7	85.8	4.5	100	0	49.4	50.6

Table 43. Gage 01474000 Turbidity Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% above max. guideline	% below max. guideline
Jul-21	1472	0.7	124	5.8	100	0	34.6	65.4
Aug-21	1480	0.6	592	11.1	100	0	51.8	48.2
Sep-21	1410	0.3	501	8.9	100	0	20.9	79.1
Oct-21	1475	0.3	76.1	3.3	100	0	17.6	82.4
Nov-21	1270	0.7	14.4	1.6	100	0	5.3	94.7
Mar-22	1024	1.9	14.9	3.7	100	0	44.9	55.1
Apr-22	1434	0.6	188	13.5	100	0	68.9	31.1
May-22	1485	0.5	75.1	3.6	100	0	23	77
Jun-22	1439	0.4	129	2.7	100	0	17.2	82.8

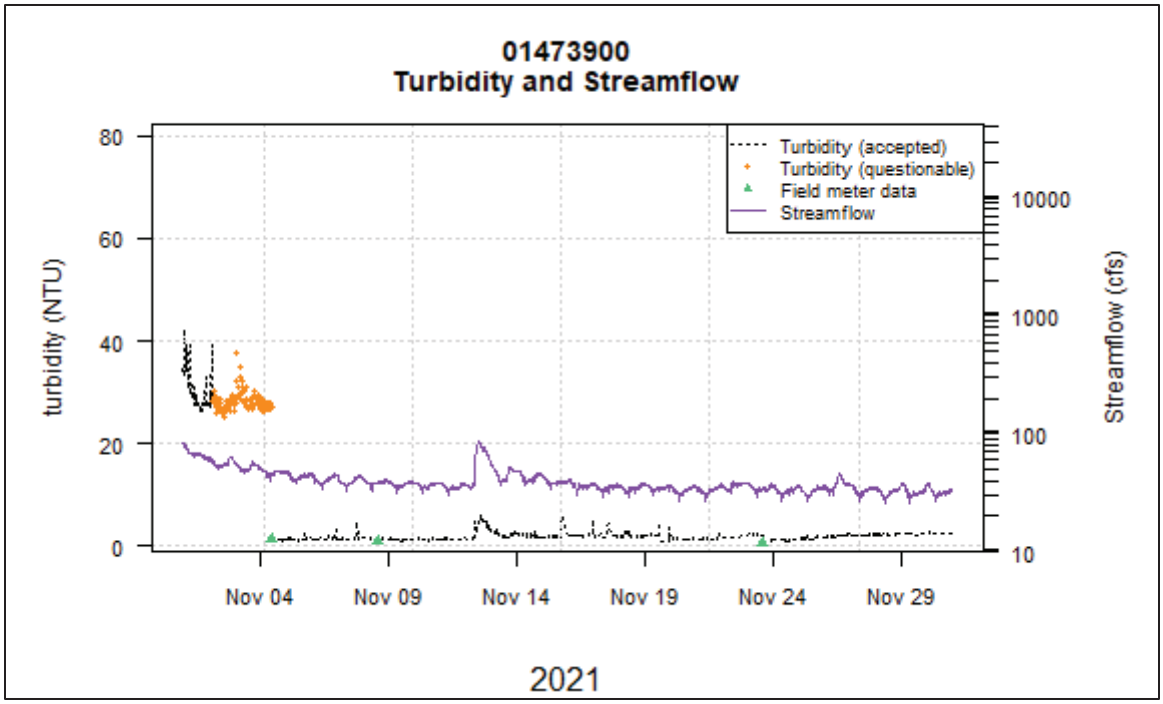


Figure 49. Gage 01473900, Turbidity and Streamflow, November 2021.

Specific Conductance

Specific conductance data at the Wissahickon Creek gage sites generally follow the established pattern in other Philadelphia streams: Runoff from rain events dilutes the stream and decreases conductivity (Figure 50). However, a reversal in this trend sometimes occurs during winter storms and during snowmelt, when it is presumed that the application of road salt (sodium chloride) prior to the storm washes into Wissahickon Creek and causes conductivity to increase in conjunction with streamflow.

Table 44. Gage 01473900 Specific Conductance Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data
Jul-21	1485	202	1160	687.8	100	0
Aug-21	1484	106	937	667.9	100	0
Sep-21	1436	63	822	658.7	100	0
Oct-21	1480	231	934	759.5	100	0
Nov-21	1437	420	890	781.1	100	0
Mar-22	2140	613	1410	911.7	100	0
Apr-22	2869	122	816	623.2	100	0
May-22	2966	208	813	658.7	100	0
Jun-22	2871	362	894	710.4	100	0

Table 45. Gage 01474000 Specific Conductance Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data
Jul-21	1472	284	855	626.6	100	0
Aug-21	1481	158	943	616.9	100	0
Sep-21	1413	64	806	649.5	100	0
Oct-21	1471	278	887	718.3	100	0
Nov-21	1311	329	854	757.5	100	0
Mar-22	1022	601	1220	874.8	100	0
Apr-22	1436	136	787	574.8	100	0
May-22	1485	223	776	638.9	100	0
Jun-22	1439	263	827	670.9	100	0

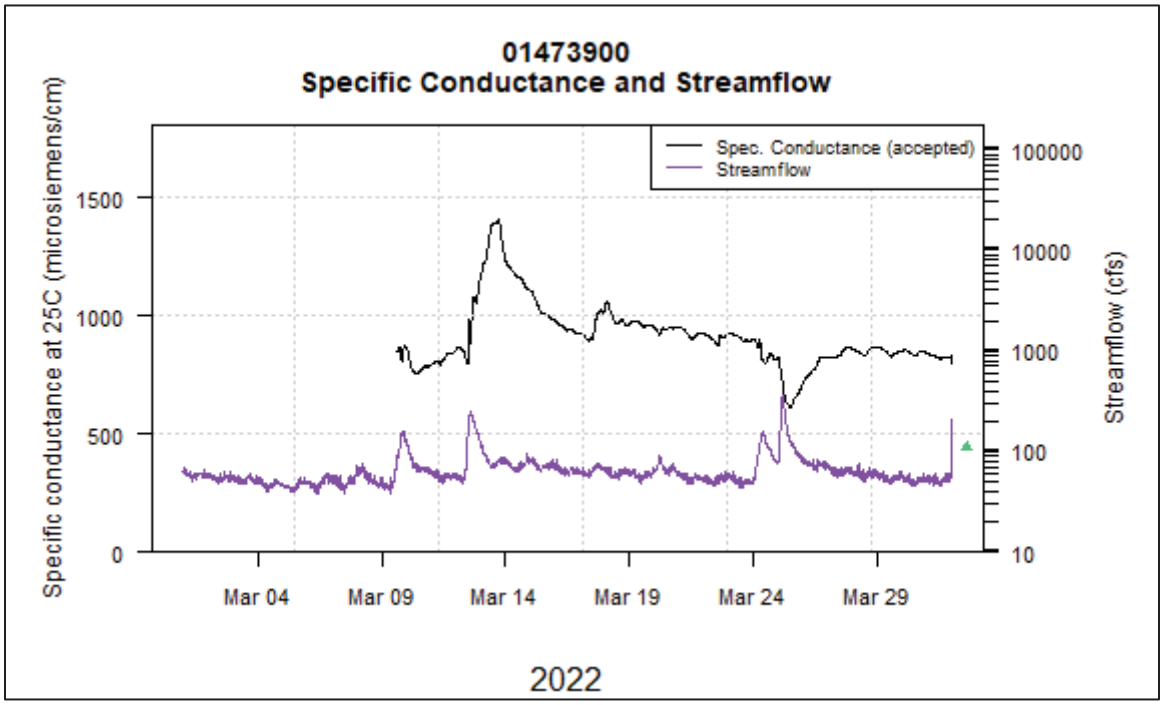


Figure 50. Gage 01473900, Specific Conductance and Streamflow, March 2022.

Temperature

Temperature trends and exceedance rates in Wissahickon Creek Watershed were similar to those observed in Pennypack Creek, with frequent exceedances during the spring in conjunction with higher ambient air temperatures (Tables 46-47, Figures 51-52).

Table 46. Gage 01473900 Temperature Summary Results by Month by Maximum Criteria Period

Designated Use	Date range start	Date range end	% exceedance	% attaining	% flagged data	% accepted data	Min	Max	Mean
TSF	1-Jul	31-Jul	60.5	39.5	0	100	18.1	27.4	23.3
TSF	1-Aug	15-Aug	1.5	98.5	0	100	19.3	27.6	22.8
TSF	16-Aug	31-Aug	0	100	0	100	21.4	25.9	23.6
TSF	1-Sep	15-Sep	0	100	0	100	17.8	24.2	20.8
TSF	16-Sep	30-Sep	0	100	0	100	16.6	23.3	19.9
TSF	1-Oct	15-Oct	0	100	0	100	14.8	20.6	18.5
TSF	16-Oct	31-Oct	5	95	0	100	12.7	20.8	15.6
TSF	1-Nov	15-Nov	6.5	93.5	0	100	7.8	15	11
TSF	16-Nov	30-Nov	10.3	89.7	0	100	5.2	12.1	8.1
TSF	1-Mar	31-Mar	67.6	32.4	0	100	2	16.7	9.4
TSF	1-Apr	15-Apr	52.5	47.5	0	100	8.4	19.9	12
TSF	16-Apr	30-Apr	30.3	69.7	0	100	7.4	17.1	12.8
TSF	1-May	15-May	6.6	93.4	0	100	10.1	19.4	15.2
TSF	16-May	31-May	28.3	71.7	0	100	15.4	25	19.2
TSF	1-Jun	15-Jun	44.2	55.8	0	100	17.6	24.4	20.8
TSF	16-Jun	30-Jun	27.5	72.5	0	100	16.6	25.5	20.9

Table 47. Gage 01474000 Temperature Summary Results by Month by Maximum Criteria Period

Designated Use	Date range start	Date range end	% exceedance	% attaining	% flagged data	% accepted data	Min	Max	Mean
TSF	1-Jul	31-Jul	74	26	0	100	17.1	27.4	23.8
TSF	1-Aug	15-Aug	0.6	99.4	0	100	19.6	27.2	22.9
TSF	16-Aug	31-Aug	0	100	0	100	22	25.8	23.8
TSF	1-Sep	15-Sep	0	100	0	100	18.3	23.4	20.5
TSF	16-Sep	30-Sep	0	100	0	100	16.6	22.8	19.8
TSF	1-Oct	15-Oct	0	100	0	100	14.8	19.3	18
TSF	16-Oct	31-Oct	0.4	99.6	0	100	13	19.1	15.1
TSF	1-Nov	15-Nov	3.5	96.5	0	100	7.5	14.6	10.3
TSF	16-Nov	30-Nov	0	100	0	100	5.1	9.7	6.9
TSF	1-Mar	31-Mar	65.9	34.1	0	100	3.8	16.2	9.3
TSF	1-Apr	15-Apr	53.3	46.7	0	100	9.3	19.2	12
TSF	16-Apr	30-Apr	37.7	62.3	0	100	7.4	17.4	13
TSF	1-May	15-May	3.6	96.4	0	100	10.7	19	15.1
TSF	16-May	31-May	33.3	66.7	0	100	16.6	24.4	19.5
TSF	1-Jun	15-Jun	53.5	46.5	0	100	18.2	24.5	21.2
TSF	16-Jun	30-Jun	31	69	0	100	17.8	24.4	21.1

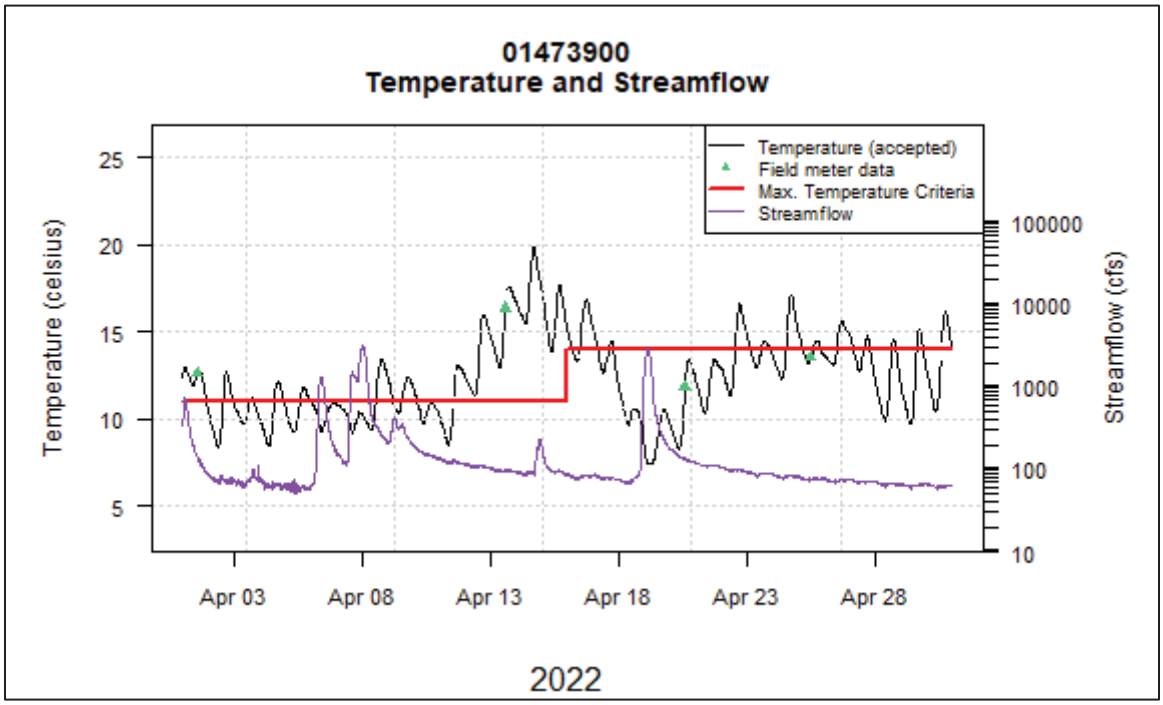


Figure 51. Gage 01473900, Temperature and Streamflow, April 2022.

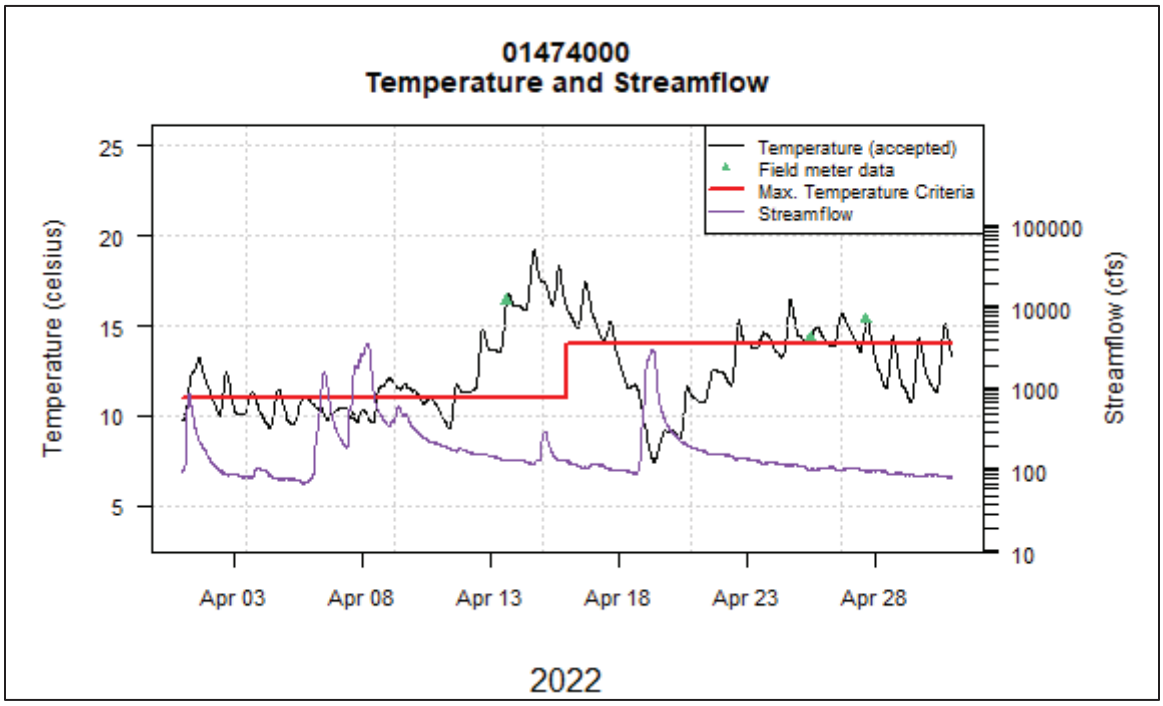


Figure 52. Gage 01474000, Temperature and Streamflow, April 2022.

Poquessing Creek (Gage 01465798)

Dissolved oxygen and pH

Dissolved oxygen and pH at this gage site were usually within acceptable ranges and only occasionally fell below the minimum DO criterion. The site rarely exceeded the pH maximum criterion (Tables 48-49, Figures 53-54). Data collected from Poquessing Creek did exhibit classic signs of algal activity, as indicated by diel fluctuations in both DO and pH.

As seen with previous sites, the algal activity and related diel fluctuations in DO and pH are only suppressed by storm events. These suppressions, however, are only very temporary. Given an adequate period of uninterrupted algal growth, such as occurred in April 2022 (Figures 55-56), one can expect increased DO and pH fluctuations.

A heavy storm in July 2021 affected the operation of the Poquessing Creek gage and resulted in equipment failure for several weeks. The gage sonde was redeployed on August 24, 2021.

Table 48. Gage 01465798 Dissolved Oxygen Min. Criteria Summary Results by Month

Month	Des. Use	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% non-attaining	% attaining
Jul-21	WWF	2432	2.8	10.2	6.7	100	0	9.2	90.8
Aug-21	WWF	703	4.6	10.7	7.3	100	0	0.3	99.7
Sep-21	WWF	2828	6.2	11.8	8.2	98.4	1.6	0	100
Oct-21	WWF	2814	7	13.7	9.1	99.4	0.6	0	100
Nov-21	WWF	2812	8.5	14.4	10.9	100	0	0	100
Mar-22	WWF	1955	7.2	17.8	11.8	100	0	0	100
Apr-22	WWF	2873	6.8	18.8	10.8	100	0	0	100
May-22	WWF	2966	3.7	16	8.4	100	0	0.6	99.4
Jun-22	WWF	2860	3.1	12.8	8	99.6	0.4	0.3	99.7

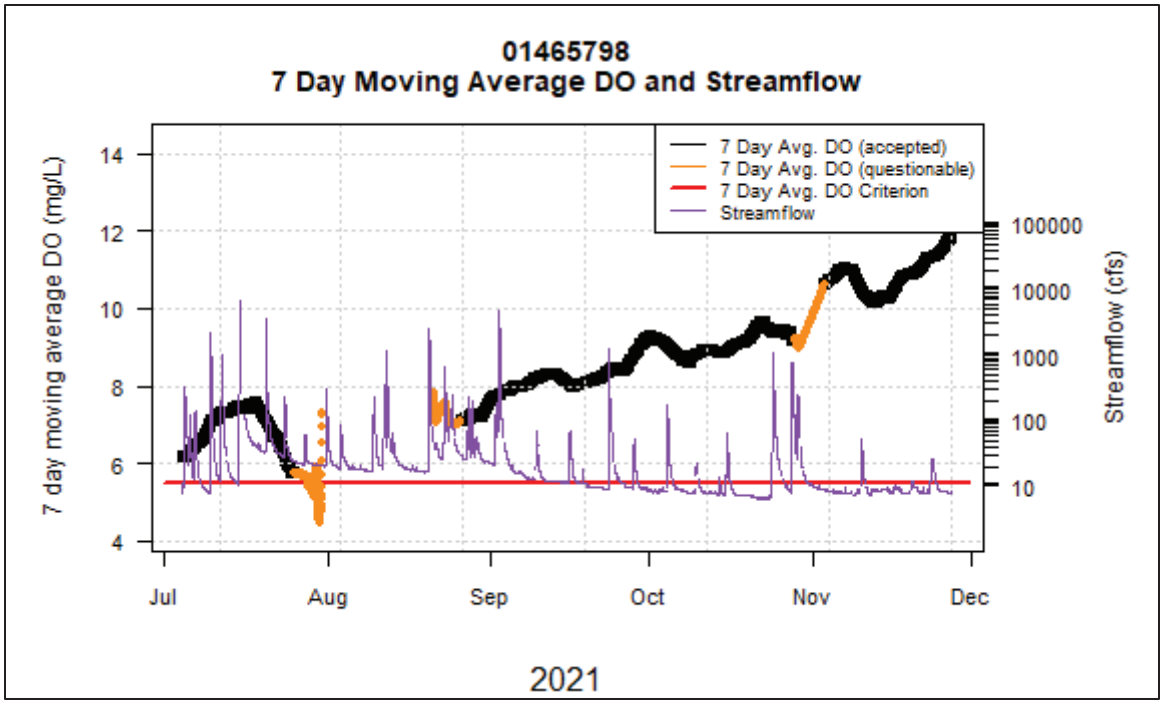


Figure 53. Gage 01465798, 7 Day Average Dissolved Oxygen and Streamflow, Jul-Nov 2021.

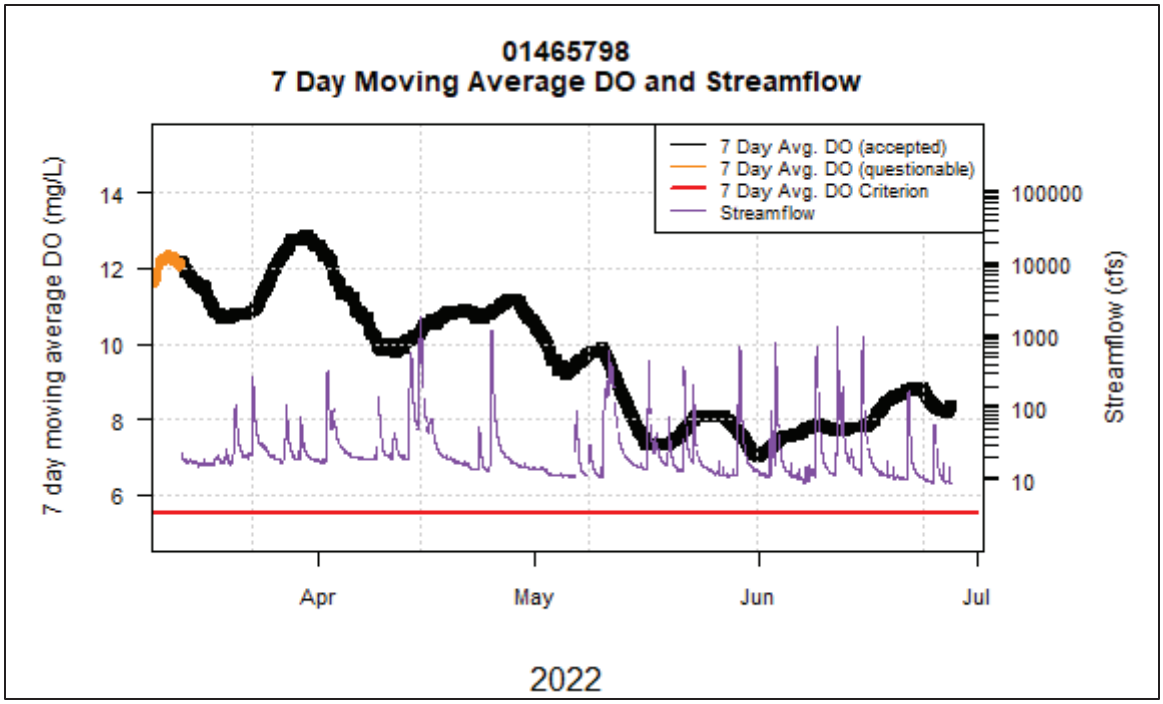


Figure 54. Gage 01465798, 7 Day Average Dissolved Oxygen and Streamflow, Mar-Jun 2022.

Table 49. Gage 01465798 pH Criteria Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% min non-attaining	% max non-attaining	% min attaining	% max attaining
Jul-21	2464	6.7	7.5	7.1	100	0	0	0	100	100
Aug-21	703	7	7.8	7.2	100	0	0	0	100	100
Sep-21	2874	6.9	7.7	7.2	100	0	0	0	100	100
Oct-21	2966	6.8	8.4	7.3	100	0	0	0	100	100
Nov-21	2811	7.1	7.6	7.3	97.5	2.5	0	0	100	100
Mar-22	1955	6.8	9	7.4	100	0	0	0	100	100
Apr-22	2873	6.9	9.5	7.5	100	0	0	1.7	100	98.3
May-22	2968	6.8	8.9	7.2	100	0	0	0	100	100
Jun-22	2871	6.8	8.6	7.2	100	0	0	0	100	100

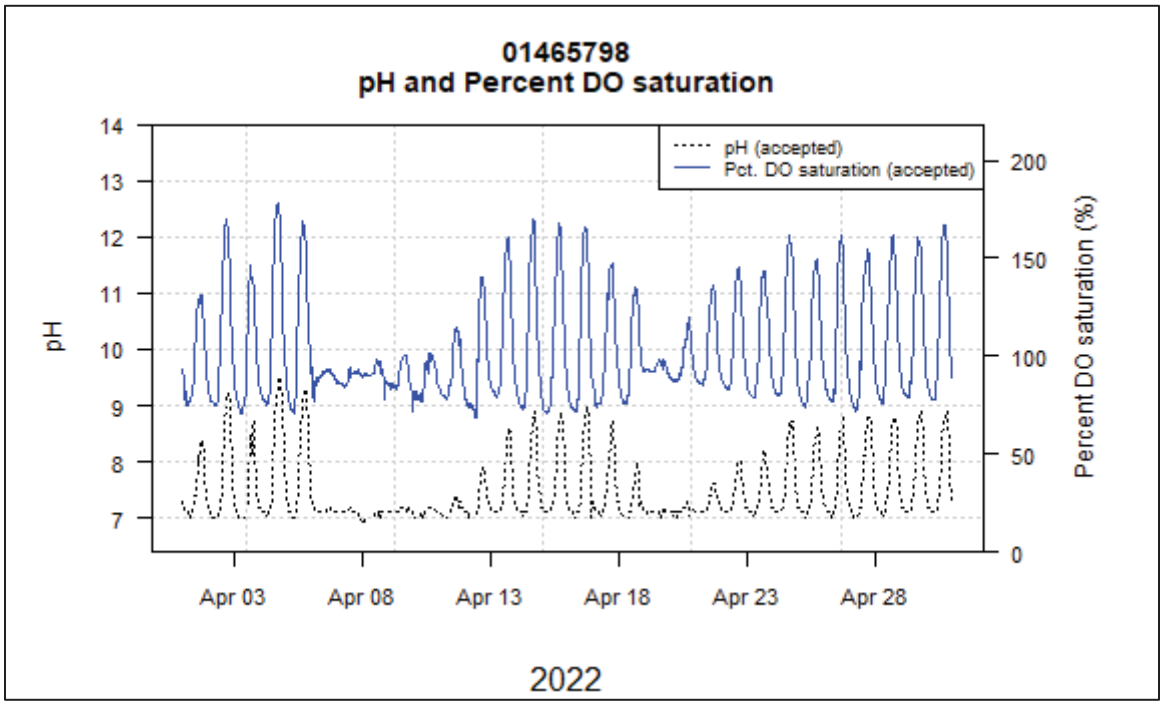


Figure 55. Gage 01465798, pH and Percent DO Saturation, April 2022.

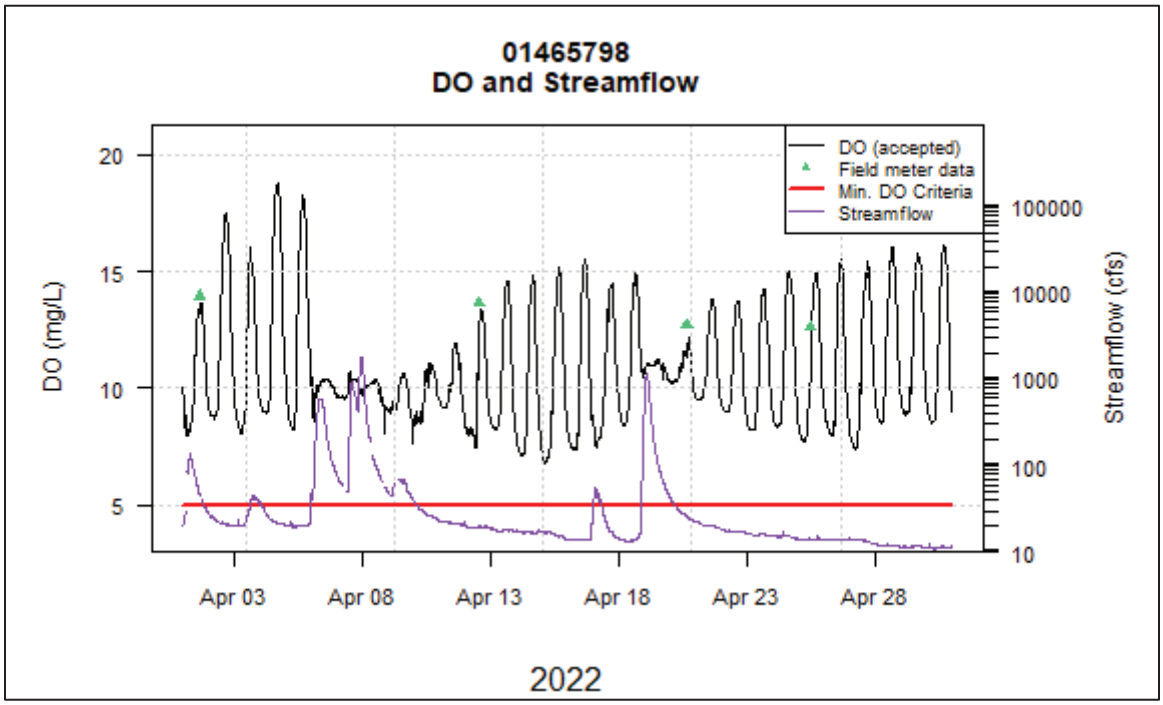


Figure 56. Gage 01465798, DO and Streamflow, April 2022.

Figure 57. Gage 01465798, Poquessing Creek at Grant Ave., looking upstream

Turbidity

As in other Philadelphia streams, high turbidity levels accompanied storm events and increased streamflow.

Table 50. Gage 01465798 Turbidity Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% above max. guideline	% below max. guideline
Jul-21	2277	0.7	453	14.7	92.6	7.4	54.2	45.8
Aug-21	703	1.1	67.2	4	100	0	26.9	73.1
Sep-21	2869	1.1	994	8.5	99.9	0.1	27.3	72.7
Oct-21	2965	0.8	1300	7.6	100	0	17.6	82.4
Nov-21	2811	0.3	20.9	1.3	97.5	2.5	3.1	96.9
Mar-22	1954	1.8	51.1	4.8	100	0	44	56
Apr-22	2873	1.3	653	14	100	0	37	63
May-22	2968	0.7	460	9.1	100	0	40.4	59.6
Jun-22	2871	1.3	552	9.4	100	0	33.8	66.2

Specific Conductance

Specific conductance data were similar to other Philadelphia streams.

Table 51. Gage 01465798 Specific Conductance Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data
Jul-21	2464	51	777	428.2	100	0
Aug-21	703	134	676	494.9	100	0
Sep-21	2872	53	742	550.5	100	0
Oct-21	2966	83	732	555.5	100	0
Nov-21	2809	392	706	642.1	97.5	2.5
Mar-22	1955	295	1550	801.3	100	0
Apr-22	2873	110	750	593.7	100	0
May-22	2966	115	733	510.9	100	0
Jun-22	2871	100	713	502.2	100	0

Temperature

Temperature exceedance rates observed in Poquessing Creek were similar to those in other WWF designated-use creeks (*e.g.*, Tacony and Cobbs Creeks). Lack of data during early August was due to equipment failure for much of the month.

Table 52. Gage 01465798 Temperature Summary Results by Maximum Criteria Period

Designated Use	Date range start	Date range end	% exceedance	% attaining	% flagged data	% accepted data	Min	Max	Mean
WWF	1-Jul	31-Jul	0	100	0	100	18.4	28.7	23.8
WWF	1-Aug	15-Aug	NA	NA	NA	NA	NA	NA	NA
WWF	16-Aug	31-Aug	0	100	0	100	21.6	27.5	24.5
WWF	1-Sep	15-Sep	0	100	0	100	17.9	25.1	21.3
WWF	16-Sep	30-Sep	0	100	0	100	16.3	24.6	20.2
WWF	1-Oct	15-Oct	0	100	0	100	14.6	21.1	18.5
WWF	16-Oct	31-Oct	4.4	95.6	0	100	12.2	21.4	15.4
WWF	1-Nov	15-Nov	3.8	96.2	0	100	7	15	10.2
WWF	16-Nov	30-Nov	3.8	96.2	0	100	3.9	11.2	6.8
WWF	1-Mar	31-Mar	68.4	31.6	0	100	1.2	17.9	9.3
WWF	1-Apr	15-Apr	59.4	40.6	0	100	7.8	22.7	12.5
WWF	16-Apr	30-Apr	42.4	57.6	0	100	7.7	19.2	13.3
WWF	1-May	15-May	19.8	80.2	0	100	9.7	21	15.5
WWF	16-May	31-May	20.3	79.7	0	100	15.9	27	20.2
WWF	1-Jun	15-Jun	0	100	0	100	18	25.9	21.5
WWF	16-Jun	30-Jun	0	100	0	100	16.8	26.9	21.4

Gages in Large Watersheds

Schuylkill River (Gage 01474500)

Dissolved oxygen and pH

DO water quality criteria were not exceeded at this location (Table 53, Figures 58-59), and pH criteria were also attained (Table 54). The Schuylkill gage usually attained pH criteria, even during stretches of spring when algal activity is usually greatest (Figure 60).

Table 53. Gage 01474500 Dissolved Oxygen Minimum Criterion Summary Results by Month

Month	Des. Use	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% non-attaining	% attaining
Jul-21	WWF	1472	6	18.8	7.9	100	0	0	100
Aug-21	WWF	1475	6.4	10.3	7.6	100	0	0	100
Sep-21	WWF	1434	6.5	9.6	8.6	100	0	0	100
Oct-21	WWF	1469	8	10.4	9	100	0	0	100
Nov-21	WWF	1434	9.8	12.7	11.3	100	0	0	100
Mar-22	WWF	1478	10.3	13.4	11.9	100	0	0	100
Apr-22	WWF	1437	9.3	12.4	10.7	100	0	0	100
May-22	WWF	1453	7.7	11.1	9.2	100	0	0	100
Jun-22	WWF	1418	7.1	21.4	9.6	100	0	0	100

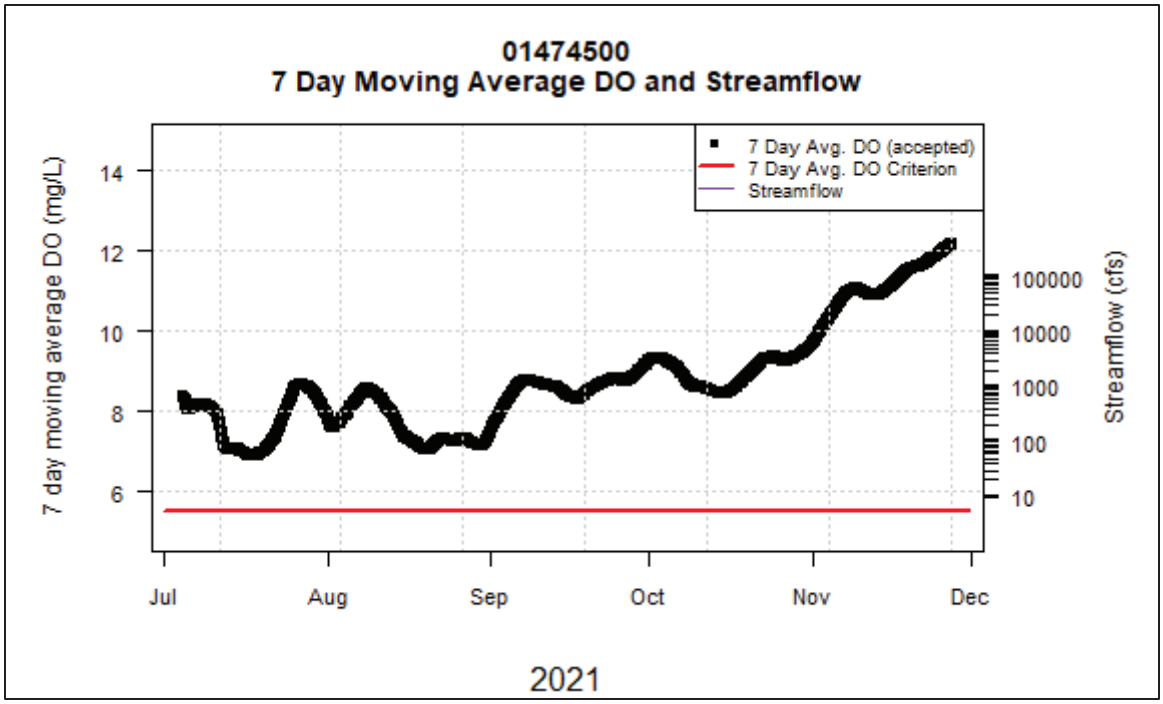


Figure 58. Gage 01474500, 7 Day Average Dissolved Oxygen and Streamflow, Jul-Nov 2021.

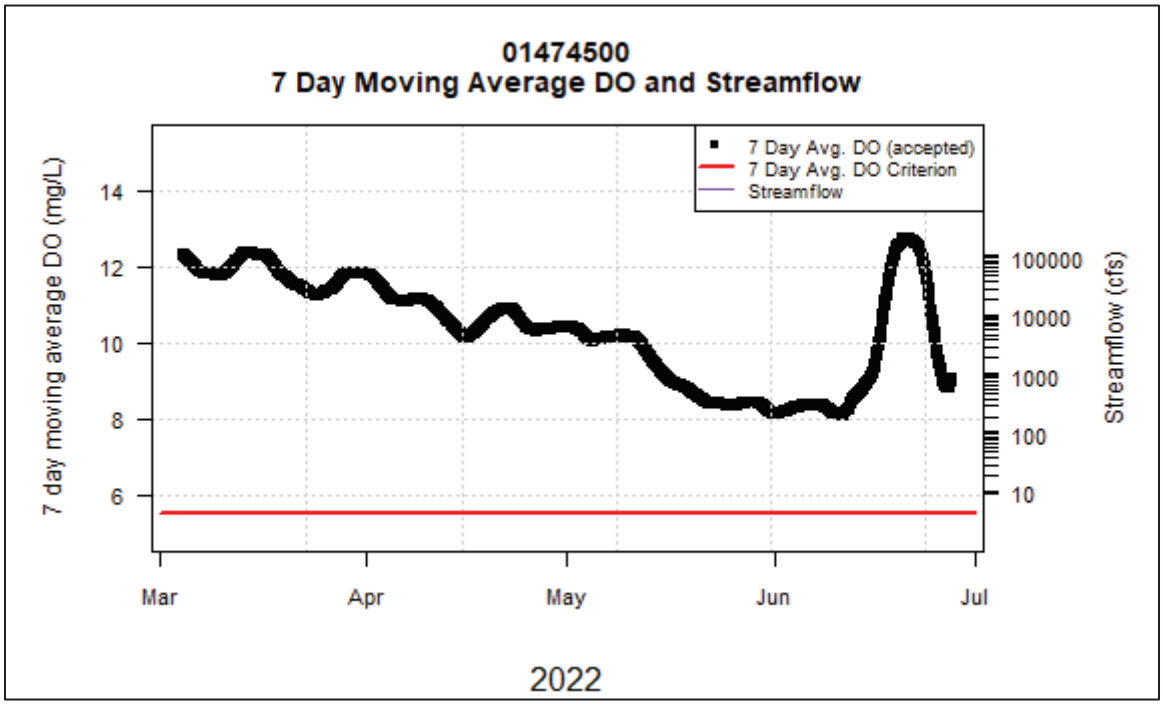


Figure 59. Gage 01474500, 7 Day Average Dissolved Oxygen and Streamflow, Mar-Jun 2022.

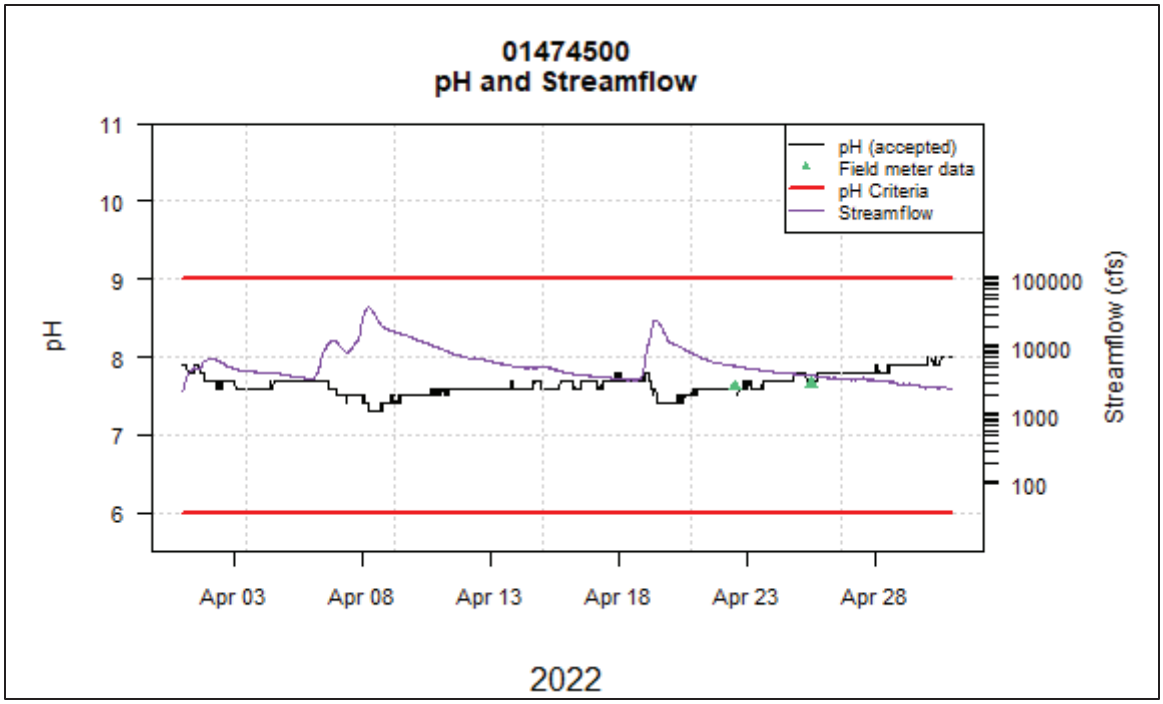


Figure 60. Gage 01474500, pH and Streamflow, April 2022.

Table 54. Gage 01474500 pH Criteria Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% min non-attaining	% max non-attaining	% min attaining	% max attaining
Jul-21	1472	7.4	9.2	7.8	100	0	0	0.8	100	99.2
Aug-21	1475	7.3	8.4	7.7	100	0	0	0	100	100
Sep-21	1434	7	8.4	7.7	100	0	0	0	100	100
Oct-21	1469	7.6	8.6	8	100	0	0	0	100	100
Nov-21	1435	7.5	8.4	7.9	100	0	0	0	100	100
Mar-22	1478	7.6	8.5	7.9	100	0	0	0	100	100
Apr-22	1437	7.3	8	7.7	100	0	0	0	100	100
May-22	1451	7.2	8.4	7.7	100	0	0	0	100	100
Jun-22	1418	7.5	9.4	8.1	100	0	0	4.9	100	95.1

Temperature

Table 55. Gage 01474500 Temperature Summary Results by Maximum Criteria Period

Designated Use	Date range start	Date range end	% exceedance	% attaining	% flagged data	% accepted data	Min	Max	Mean
WWF	1-Jul	31-Jul	0	100	0	100	24.4	30	27.5
WWF	1-Aug	15-Aug	0	100	0	100	23.9	30.3	26.3
WWF	16-Aug	31-Aug	0	100	0	100	24.2	29.3	26.3
WWF	1-Sep	15-Sep	0	100	0	100	19.1	25.9	21.3
WWF	16-Sep	30-Sep	0	100	0	100	18.7	24.2	21.6
WWF	1-Oct	15-Oct	0	100	0	100	18	20.9	19.5
WWF	16-Oct	31-Oct	12.8	87.2	0	100	14.6	20.5	16.7
WWF	1-Nov	15-Nov	8.8	91.2	0	100	8.9	14.6	11
WWF	16-Nov	30-Nov	0	100	0	100	5.3	9	7.2
WWF	1-Mar	31-Mar	52.6	47.4	0	100	4.6	13.7	8.6
WWF	1-Apr	15-Apr	25.3	74.7	0	100	7.7	16.7	11.2
WWF	16-Apr	30-Apr	44	56	0	100	8.6	16.3	13.4
WWF	1-May	15-May	11.9	88.1	0	100	11.9	18.9	15.7
WWF	16-May	31-May	15.8	84.2	0	100	18.2	25	20.6
WWF	1-Jun	15-Jun	0	100	0	100	21.6	26.3	24.1
WWF	16-Jun	30-Jun	0	100	0	100	21.8	27.8	24.1

Figure 61. Gage 01474500, Schuylkill River at the Fairmount Dam, looking upstream

Turbidity

Turbidity levels at the Schuylkill gage were less susceptible to extreme peaks due to storms and increased flow.

Table 56. Gage 01474500 Turbidity Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% above max. guideline	% below max. guideline
Jul-21	1383	1	6.5	2.2	88.6	11.4	13.9	86.1
Aug-21	1475	0.8	114	5.8	100	0	38.8	61.2
Sep-21	1434	1.5	529	19.5	100	0	80.5	19.5
Oct-21	1469	1.9	25.2	3.6	100	0	46.4	53.6
Nov-21	1435	1.7	21.9	3.5	100	0	43.1	56.9
Mar-22	1468	2.1	11.6	4.3	100	0	95.5	4.5
Apr-22	1437	2.4	233	15.2	100	0	96.7	3.3
May-22	1455	1.8	111	8.1	100	0	66.8	33.2
Jun-22	1418	1.5	7.9	3.5	100	0	76.3	23.7

Specific Conductance

The Schuylkill River generally exhibits intermediate conductance, lower than the small Philadelphia tributary streams described elsewhere in this report, but greater than that observed in the Delaware River. Observed differences are likely due to geology and preponderance of anthropogenic sources in the respective watersheds.

Table 57. Gage 01474500 Specific Conductance Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data
Jul-21	1471	324	573	469.7	100	0
Aug-21	1475	261	619	471.1	100	0
Sep-21	1434	106	442	329.4	100	0
Oct-21	1469	278	520	458.4	100	0
Nov-21	1434	284	466	390.9	100	0
Mar-22	1478	348	558	435.1	100	0
Apr-22	1437	189	454	325.8	100	0
May-22	1453	208	427	336.5	100	0
Jun-22	1418	384	500	431.7	100	0

Delaware River (Gages 01467200 and 014670261)

Dissolved oxygen and pH

The DRBC DO daily mean and pH criteria for Zone 3 was attained at Gage 01467200 for the entire reporting period (Tables 58 and 60). The Zone 2 DO daily mean and pH criteria were almost always attained at Gage 014670261 (Tables 59 and 61). Data is collected year-round at both gages.

Figure 62. Delaware River at Ben Franklin Bridge, near Gage 01467200

Table 58. Gage 01467200 Dissolved Oxygen Daily Mean Criterion Summary Results by Month

Month	Des. Use	Days	Daily Avg. Min	Daily Avg. Max	Daily Avg. Mean	% non-attaining	% attaining
Jul-21	DRBC	31	4.2	6.2	5.0	0	100
Aug-21	DRBC	27	4.1	5.8	5.3	0	100
Sep-21	DRBC	30	5.6	7.5	6.9	0	100
Oct-21	DRBC	31	7.3	9.0	7.7	0	100
Nov-21	DRBC	30	9.0	11.5	10.3	0	100
Dec-21	DRBC	28	11.6	12.1	11.9	0	100
Jan-22	DRBC	30	11.8	13.8	12.9	0	100
Feb-22	DRBC	26	12.7	13.6	13.2	0	100
Mar-22	DRBC	31	10.5	12.7	11.8	0	100
Apr-22	DRBC	30	9.7	12.1	10.8	0	100

May-22	DRBC	31	6.4	10.0	8.4	0	100
Jun-22	DRBC	30	6.1	7.9	7.0	0	100

Table 59. Gage 014670261 Dissolved Oxygen Daily Mean Criterion Summary Results by Month

Month	Des. Use	Days	Daily Avg. Min	Daily Avg. Max	Daily Avg. Mean	% non-attaining	% attaining
Jul-21	DRBC	31	5.8	7.5	6.4	0	100
Aug-21	DRBC	31	4.9	7.1	6.3	3.2	96.8
Sep-21	DRBC	30	6.6	8.0	7.5	0	100
Oct-21	DRBC	31	7.8	9.3	8.4	0	100
Nov-21	DRBC	30	9.2	12.0	10.8	0	100
Dec-21	DRBC	31	12.1	13.2	12.5	0	100
Jan-22	DRBC	31	11.4	13.9	13.2	0	100
Feb-22	DRBC	28	12.6	13.9	13.2	0	100
Mar-22	DRBC	31	10.9	13.0	12.0	0	100
Apr-22	DRBC	30	9.8	12.3	10.8	0	100
May-22	DRBC	31	6.9	10.2	8.6	0	100
Jun-22	DRBC	30	6.8	9.1	7.5	0	100

Table 60. Gage 01467200 pH Criteria Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% min non-attaining	% max non-attaining	% min attaining	% max attaining
Jul-21	8768	6.7	7.4	7	100	0	0	0	100	100
Aug-21	7176	6.6	7.1	6.9	100	0	0	0	100	100
Sep-21	8591	6.7	7.2	7	100	0	0	0	100	100
Oct-21	8848	6.7	7.5	7	100	0	0	0	100	100
Nov-21	8548	6.9	7.5	7.2	100	0	0	0	100	100
Dec-21	7510	7.2	7.6	7.4	100	0	0	0	100	100
Jan-22	8442	7.3	7.8	7.5	100	0	0	0	100	100
Feb-22	7244	7.3	7.6	7.4	100	0	0	0	100	100
Mar-22	8837	7.2	7.5	7.4	100	0	0	0	100	100
Apr-22	8510	7.1	7.6	7.4	100	0	0	0	100	100
May-22	8874	7.2	7.6	7.3	100	0	0	0	100	100
Jun-22	8591	7.2	7.7	7.3	100	0	0	0	100	100

Table 61. Gage 014670261 pH Criteria Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% min non-attaining	% max non-attaining	% min attaining	% max attaining
Jul-21	2958	6.9	7.6	7.2	99.9	0.1	0	0	100	100
Aug-21	2966	7	7.4	7.2	100	0	0	0	100	100
Sep-21	2860	7	7.6	7.4	100	0	0	0	100	100
Oct-21	2960	7.2	7.8	7.5	100	0	0	0	100	100
Nov-21	2871	7.3	7.8	7.6	100	0	0	0	100	100
Dec-21	2961	7.2	7.8	7.6	100	0	0	0	100	100
Jan-22	2951	7.3	7.7	7.6	99.9	0.1	0	0	100	100
Feb-22	2669	7.4	7.7	7.6	100	0	0	0	100	100
Mar-22	2954	7.2	7.8	7.6	99.9	0.1	0	0	100	100
Apr-22	2859	7.2	7.8	7.5	100	0	0	0	100	100
May-22	2961	7.3	7.8	7.5	100	0	0	0	100	100
Jun-22	2861	7	8	7.3	100	0	0	0	100	100

Temperature

Temperature criteria for the Delaware River were not exceeded at either gage.

Table 62. Gage 01467200 Temperature Summary Results by Maximum Criteria Period

Designated Use	Date range start	Date range end	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% non-attaining	% attaining
DRBC	1-Jul	31-Jul	8767	25.2	27.5	26.3	100	0	0	100
DRBC	1-Aug	31-Aug	7155	23.3	27.2	25.6	100	0	0	100
DRBC	1-Sep	30-Sep	8591	18.8	24.6	21.2	100	0	0	100
DRBC	1-Oct	31-Oct	8847	13.7	19.4	17.8	100	0	0	100
DRBC	1-Nov	30-Nov	8549	6.1	13.8	9.8	100	0	0	100
DRBC	1-Dec	31-Dec	7510	5	6.7	6.0	100	0	0	100
DRBC	1-Jan	31-Jan	8442	0.1	5.7	2.4	100	0	0	100
DRBC	1-Feb	28-Feb	7244	0.2	5	2.7	100	0	0	100
DRBC	31-Mar	31-Mar	8842	4.1	10.4	7.1	100	0	0	100
DRBC	1-Apr	30-Apr	8510	7	13.6	10.3	100	0	0	100
DRBC	1-May	31-May	8874	12.6	22.8	17.0	100	0	0	100
DRBC	1-Jun	30-Jun	8591	22.4	24.2	23.3	100	0	0	100

Table 63. Gage 014670261 Temperature Summary Results by Maximum Criteria Period

Designated Use	Date range start	Date range end	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% non-attaining	% attaining
DRBC	1-Jul	31-Jul	2959	24.3	27.9	25.9	100	0	0	100
DRBC	1-Aug	31-Aug	2966	22.7	27.8	25.5	100	0	0	100
DRBC	1-Sep	30-Sep	2863	18.2	24.1	20.8	100	0	0	100
DRBC	1-Oct	31-Oct	2969	13.4	19.4	17.2	100	0	0	100
DRBC	1-Nov	30-Nov	2880	5.2	13.7	9.0	100	0	0	100
DRBC	1-Dec	31-Dec	2965	3.9	6.8	5.3	100	0	0	100
DRBC	1-Jan	31-Jan	2802	0.1	6.6	2.0	99.9	0.1	0	100
DRBC	1-Feb	28-Feb	2613	0.1	5.1	2.6	100	0	0	100
DRBC	31-Mar	31-Mar	2957	3.3	11.1	6.9	99.9	0.1	0	100
DRBC	1-Apr	30-Apr	2867	6.5	14.1	10.4	100	0	0	100
DRBC	1-May	31-May	2967	12	22.7	17.4	100	0	0	100
DRBC	1-Jun	30-Jun	2868	21.7	24.5	22.9	100	0	0	100

Specific Conductance

The Delaware River exhibits much lower conductivity than the small Philadelphia tributary streams described elsewhere in this report. This is likely caused by differences in geology and proportionally fewer anthropogenic sources in the less-developed Delaware River watershed.

Table 64. Gage 01467200 Specific Conductance Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data
Jul-21	8768	153	305	221.6	100	0
Aug-21	7164	118	270	212.9	100	0
Sep-21	8591	86	228	172.6	100	0
Oct-21	8848	94	230	186.4	100	0
Nov-21	8549	117	227	173.8	100	0
Dec-21	7510	191	244	220.8	100	0
Jan-22	8442	217	381	284.5	100	0
Feb-22	7244	211	407	287.9	100	0
Mar-22	8836	200	260	231.4	100	0
Apr-22	8510	113	223	176.2	100	0
May-22	8874	183	248	214.8	100	0
Jun-22	8591	211	252	234.7	100	0

Table 65. Gage 014670261 Specific Conductance Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data
Jul-21	2956	130	301	204	100	0
Aug-21	2965	130	270	209.9	100	0
Sep-21	2860	90	245	172.5	100	0
Oct-21	2968	82	263	179.1	100	0
Nov-21	2876	129	244	168.1	100	0
Dec-21	2966	177	259	204.2	100	0
Jan-22	2954	175	416	281	100	0
Feb-22	2674	196	561	285.5	100	0
Mar-22	2954	192	336	230.8	100	0
Apr-22	2865	115	267	181.5	100	0
May-22	2967	183	267	213.5	100	0
Jun-22	2869	185	275	224.6	100	0

Turbidity

Turbidity guidelines at 014670261 were almost always exceeded throughout the year. Turbidity is not continuously measured at 01467200.

Table 66. Gage 014670261 Turbidity Summary Results by Month

Month	Observations, n	Min	Max	Mean	% accepted data	% flagged data	% non-attaining	% attaining
Jul-21	2956	1.6	23.8	6.6	100	0	95.6	4.4
Aug-21	2965	1.9	47.2	6.5	99.9	0.1	92.1	7.9
Sep-21	2859	2.8	181	16.8	100	0	99.9	0.1
Oct-21	2961	2.7	51.7	10.4	100	0	99.9	0.1
Nov-21	2852	3.1	40	9.3	100	0	100	0
Dec-21	2928	2.9	54.9	7.3	100	0	100	0
Jan-22	2952	2.8	46.7	11.1	99.9	0.1	100	0
Feb-22	2684	2.4	91.5	10.1	100	0	99.9	0.1
Mar-22	2963	2.3	26.8	6.5	99.9	0.1	99.9	0.1
Apr-22	2867	3	63.4	13.2	100	0	100	0
May-22	2969	2.6	80.5	8.1	100	0	99.9	0.1
Jun-22	2871	2.7	76.6	8.2	100	0	99.9	0.1

Wet Weather and Dry Weather Results

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Water quality data was also categorized as wet or dry for the purpose of evaluating weather effects on water quality, and specifically the incidence of non-attainment of water quality criteria. A wet weather condition was defined as rainfall greater than 0.05 inches in the preceding 72 hours, as measured at the nearest PWD rain gage.

In general, more frequent non-attainment of DO criteria was observed in wet weather due to the tendency of storm events to decrease DO via the introduction of stormwater runoff and BOD (Tables 67-68). The turbidity maximum guideline was also usually more frequently surpassed in wet weather (Tables 71-72). The pH maximum criterion was exceeded in both wet and dry weather (Tables 69-70). Temperature criteria were more likely to be exceeded at Trout Stocking Fishery (TSF) gages due to more stringent seasonal criteria (Tables 75-76).

Table 67. USGS Gage July 2021 - June 2022 Dissolved Oxygen Minimum Criterion Summary Results During Wet Weather

Gage number	Designated Use	Observations, n	% accepted data	% flagged data	% non-attaining	% attaining
01465798	WWF	15262	99.5	0.5	1.3	98.7
014670261*	DRBC	23281	100	0	NA	NA
01467042	TSF	18830	97.8	2.2	0	100
01467048	TSF	16824	100	0	0	100
01467086	WWF	8641	100	0	1	99
01467087	WWF	22856	96.4	3.6	17.7	82.3
01467200*	DRBC	21354	100	0	NA	NA
01473900	TSF	13210	100	0	0.2	99.8
01474000	TSF	8413	100	0	0	100
01474500	WWF	11353	100	0	0	100
01475530	WWF	17381	100	0	0	100
01475548	WWF	17848	99.2	0.8	3.7	96.3

*No minimum DO criterion applies at these locations.

Table 68. USGS Gage July 2021 - June 2022 Dissolved Oxygen Minimum Criterion Summary Results During Dry Weather

Gage number	Designated Use	Observations, n	% accepted data	% flagged data	% non-attaining	% attaining
01465798	WWF	7780	100	0	0.7	99.3
014670261*	DRBC	11550	100	0	NA	NA
01467042	TSF	6957	100	0	0	100
01467048	TSF	8840	100	0	0	100
01467086	WWF	3996	100	0	0	100
01467087	WWF	10491	98.4	1.6	9.1	90.9
01467200*	DRBC	11978	100	0	NA	NA
01473900	TSF	5012	100	0	0.2	99.8
01474000	TSF	4337	100	0	0	100
01474500	WWF	5976	100	0	0	100
01475530	WWF	8378	100	0	0	100
01475548	WWF	7574	100	0	1.3	98.7

*No minimum DO criterion applies at these locations.

Table 69. USGS Gage July 2021 - June 2022 pH Criteria Summary Results During Wet Weather

Gage number	Observations, n	% accepted data	% flagged data	% min. non-attaining	% max. non-attaining	% min. attaining	% max attaining	% attaining
01465798	15501	99.5	0.5	0	0.3	100	99.7	99.7
014670261	23262	100	0	0	0.0	100	100.0	100.0
01467042	18821	100	0	0	0.0	100	100.0	100.0
01467048	16821	100	0	0	0.0	100	100.0	100.0
01467086	8638	100	0	0	0.4	100	99.6	99.6
01467087	23520	99.8	0.2	0	0.0	100	100.0	100.0
01467200	21355	100	0	0	0.0	100	100.0	100.0
01473900	13238	100	0	0	0.1	100	99.9	99.9
01474000	8421	100	0	0	0.0	100	100.0	100.0
01474500	11351	100	0	0	0.1	100	99.9	99.9
01475530	17459	100	0	0	0.0	100	100.0	100.0
01475548	17844	100	0	0	0.4	100	99.6	99.6

Table 70. USGS Gage July 2021 - June 2022 pH Criteria Summary Results During Dry Weather

Gage number	Observations, n	% accepted data	% flagged data	% min. non-attaining	% max. non-attaining	% min. attaining	% max attaining	% attaining
01465798	7780	100	0	0	0.0	100.0	100.0	100.0
014670261	11575	100	0	0	0.0	100.0	100.0	100.0
01467042	6956	100	0	0	0.0	100.0	100.0	100.0
01467048	8831	100	0	0	0.0	100.0	100.0	100.0
01467086	3998	99.9	0.1	0	0.1	100.0	99.9	99.9
01467087	10491	100	0	0	0.0	100.0	100.0	100.0
01467200	11980	100	0	0	0.0	100.0	100.0	100.0
01473900	5009	100	0	0	0.1	100.0	99.9	99.9
01474000	4352	100	0	0	0.0	100.0	100.0	100.0
01474500	5977	100	0	0	1.2	100.0	98.8	98.8
01475530	8378	100	0	0	0.0	100.0	100.0	100.0
01475548	7575	100	0	0	0.1	100.0	99.9	99.9

Table 71. USGS Gage July 2021 - June 2022 Turbidity Summary Results During Wet Weather

Gage number	Observations, n	% accepted data	% flagged data	% above max. guideline	% below max. guideline
01465798	15491	98.4	1.6	42.9	57.1
014670261	23280	100.0	0.0	99.4	0.6
01467042	18819	95.5	4.5	45.6	54.4
01467048	16825	98.6	1.4	62.8	37.2
01467086*	0	NA	NA	NA	NA
01467087*	0	NA	NA	NA	NA
01467200*	20924	100.0	0.0	99.6	0.4
01473900	13234	98.8	1.2	40.4	59.6
01474000	8415	100.0	0.0	42.0	58.0
01474500	11440	98.4	1.6	68.4	31.6
01475530*	0	NA	NA	NA	NA
01475548*	0	NA	NA	NA	NA

*Turbidity not continuously monitored at this location

Table 72. USGS Gage July 2021 - June 2022 Turbidity Summary Results During Dry Weather

Gage number	Observations, n	%accepted data	% flagged data	% above max. guideline	% below max. guideline
01465798	7780	100.0	0.0	6.2	93.8
014670261	11553	100.0	0.0	97.9	2.1
01467042	6956	97.2	2.8	15.1	84.9
01467048	8853	99.7	0.3	21.3	78.7
01467086*	0	NA	NA	NA	NA
01467087*	0	NA	NA	NA	NA
01467200*	11940	100.0	0.0	99.5	0.5
01473900	5008	100.0	0.0	9.3	90.7
01474000	4333	100.0	0.0	9.4	90.6
01474500	5971	100.0	0.0	55.0	45.0
01475530*	0	NA	NA	NA	NA
01475548*	0	NA	NA	NA	NA

*Turbidity not continuously monitored at this location

Table 73. USGS Gage July 2021 - June 2022 Specific Conductance Summary Results During Wet Weather

Gage number	Observations, n	% accepted data	% flagged data
01465798	15497	99.5	0.5
014670261	23292	100.0	0.0
01467042	18819	100.0	0.0
01467048	16813	100.0	0.0
01467086	8636	100.0	0.0
01467087	23266	98.9	1.1
01467200	21351	100.0	0.0
01473900	13239	100.0	0.0
01474000	8425	100.0	0.0
01474500	11353	100.0	0.0
01475530	17386	100.0	0.0
01475548	18009	100.0	0.0

Table 74. USGS Gage July 2021 - June 2022 Specific Conductance Summary Results During Dry Weather

Gage number	Observations, n	% accepted data	% flagged data
01465798	7778	100.0	0.0
014670261	11582	100.0	0.0
01467042	6952	100.0	0.0
01467048	8834	100.0	0.0
01467086	3996	100.0	0.0
01467087	10373	99.8	0.2
01467200	11977	100.0	0.0
01473900	5005	100.0	0.0
01474000	4364	100.0	0.0
01474500	5975	100.0	0.0
01475530	8376	100.0	0.0
01475548	7574	100.0	0.0

Table 75. USGS Gage July 2021 - June 2022 Temperature Maximum Criteria Summary Results During Wet Weather

Gage number	Designated Use	Observations, n	% accepted data	% flagged data	% exceedance	% attaining
01465798	WWF	15501	100.0	0.0	17.7	82.3
014670261	DRBC	23115	100.0	0.0	0.0	100.0
01467042	TSF	18832	100.0	0.0	15.1	84.9
01467048	TSF	16825	100.0	0.0	18.3	81.7
01467086	WWF	8640	100.0	0.0	14.2	85.8
01467087	WWF	23525	100.0	0.0	12.6	87.4
01467200	DRBC	21351	100.0	0.0	0.0	100.0
01473900	TSF	13161	100.0	0.0	20.1	79.9
01474000	TSF	8421	100.0	0.0	15.5	84.5
01474500	WWF	11346	100.0	0.0	9.2	90.8
01475530	WWF	17459	100.0	0.0	11.9	88.1
01475548	WWF	18174	100.0	0.0	16.3	83.7

Table 76. USGS Gage July 2021 - June 2022 Temperature Maximum Criteria Summary Results During Dry Weather

Gage number	Designated Use	Observations, n	% accepted data	% flagged data	% exceedance	% attaining
01465798	WWF	7780	100	0	8.4	91.6
014670261	DRBC	11565	100	0	0	100
01467042	TSF	6956	100	0	7.0	93.0
01467048	TSF	8847	100	0	9.7	90.3
01467086	WWF	3998	100	0	10.4	89.6
01467087	WWF	10495	100	0	10.3	89.7
01467200	DRBC	11978	100	0	0	100
01473900	TSF	4973	100	0	9.9	90.1
01474000	TSF	4377	100	0	6.9	93.1
01474500	WWF	5975	100	0	7.3	92.7
01475530	WWF	8378	100	0	9.8	90.2
01475548	WWF	7574	100	0	8.9	91.1

References

Delaware River Basin Commission, 2007. Delaware River Basin Water Code: 18 CFR Part 410 (With Amendments Through September 27, 2006). West Trenton, NJ.

Appendix H - PWD/USGS Groundwater Monitoring Program

Background

The basis of PWD's CSO LTCPU wet weather source control strategy is the "capture" and infiltration of as much rainwater as possible with green stormwater infrastructure (GSI). The direct benefits of such an effort are a reduction of stormwater discharged directly to streams, as well as the increased recharge of stormwater to supplement groundwater resources. Increased infiltration, though advantageous in several respects, must be carefully planned and closely monitored to avoid unwanted impacts. Increasing groundwater levels in areas where the depth to water is shallow could result in the saturation of soils close to the surface, potentially causing basement flooding. In addition, building foundations could be impacted by rising groundwater levels.

The adaptive management approach being employed for the LTCPU is an iterative process strongly dependent on monitoring. In order to quantify the impact of this long-term effort on groundwater resources, it is necessary to monitor groundwater levels in Philadelphia. PWD has partnered with USGS to increase the geographic scope and frequency of groundwater monitoring in the Philadelphia region. A City-wide groundwater level monitoring network will provide long-term monthly data documenting current water levels and trends in groundwater elevations throughout the City, helping to track the impacts of widespread implementation of stormwater management practices (SMPs) and global climate change.

Data from the groundwater monitoring network will also be used to calibrate a Philadelphia groundwater model and update the USGS groundwater contour map of Philadelphia (Paulachok 1984). In addition to this City-wide, long term groundwater monitoring program, PWD is conducting site-scale monitoring to address the effectiveness of individual SMPs. The City-wide groundwater monitoring network and site-scale monitoring at GSI facilities provide complementary information regarding the effects of stormwater management practices at different spatial and temporal scales.

Methods

PWD and USGS identified existing wells that would be suitable for the network and obtained permission for site access. Once wells were identified and accessible, well condition and suitability for inclusion in the monitoring network were investigated by continuous water level monitoring and remote video camera inspection when accessible. Wells that met acceptance criteria were added to the monitoring network. After examining readily available information about existing wells, PWD elected to drill additional wells in order to provide better spatial distribution of wells in the monitoring network. USGS staff conduct groundwater observations monthly and upload water level data to the NWIS web server. PWD staff periodically download water level data from NWIS and summarize these data annually.

Well Network Establishment

Existing wells in the Philadelphia area were identified by USGS and PWD through digital and paper archives as well as through contacting representatives of other City agencies and large institutional landowners (*e.g.*, Philadelphia Fire Department, Philadelphia Department of Parks and Recreation, Philadelphia Gas Works, Southeastern Pennsylvania Transportation Authority, etc.). Priority was given to wells on publicly-owned or large institutional land uses in order to help ensure that wells would remain accessible in the future. The primary goal was to develop a network of wells with a spatial distribution and density sufficient to assess groundwater levels throughout the City of

Philadelphia. Other criteria for establishment of the well network were:

- Sufficient density of wells in critical areas with a shallow water table
- No bias given to combined-sewered or separate-sewered areas
- Denser distribution of monitoring wells in the Northern Piedmont Ecoregion to reflect its more varied groundwater contours.

Wells that met acceptance criteria were assigned USGS location codes and added to the USGS well monitoring network and National Water Information System (NWIS) database. The well monitoring network contains 29 active sites that are monitored monthly. Additional sites are expected to be added once landowner access agreements are finalized or new wells are drilled.

Video Camera Inspection

The availability of well attribute information varied from well to well and in most cases the physical characteristics and condition of candidate wells to be added to the network was unknown. USGS staff perform remote video camera inspection, when possible, to determine physical characteristics such as screened intervals, total depth, depth to bottom of casing, and the location of potential water-bearing zones within the bore hole. Wells narrower than 4" diameter and wells with pumps or other plumbing could not accommodate the camera equipment and were not inspected with this method.

Continuous Water Level Monitoring

Monthly measurements are appropriate for monitoring long term trends in groundwater levels. However, it is important to verify that these monthly observations are representative of the unconfined aquifer and not influenced by anthropogenic activity or other conditions. USGS staff used data logging pressure transducers (LevelTroll model 500, In-Situ, Inc.) to conduct continuous water level monitoring in candidate wells. These sensors are vented to the surface of the well to provide atmospheric pressure correction. Continuous monitoring was carried out across all wells in the network to identify any aberrant trends, such as those that might be caused by local pumping operations. Sensors were deployed for three-month periods on a rotating schedule with five wells actively monitored at a time. Wells that appear to be influenced by permanent pumping operations will be removed from the monitoring network (*e.g.*, permanent wells dewatering the stadiums). Wells that are temporarily affected by local, dewatering operations (*e.g.*, a short term construction site), will remain in the system, but data collected during the period when dewatering operations affected the well will not be used in estimates of current water levels and water level trends.

Routine Groundwater Observations

USGS staff conduct groundwater observations monthly at each well using a water sensor and graduated tape. Equipment is sterilized in 10% bleach solution prior to and after measurements are taken in order to prevent introducing or transferring contamination between wells. Well level measurements are converted to elevation above the North American Vertical Datum of 1988 (NAVD88) based upon the known elevation correction factor for each well. Water level data are recorded on site in field notebooks along with any pertinent field notes and then uploaded to the NWIS web server. PWD periodically downloads data from NWIS and summarizes these data annually.

Monitoring Well Locations

Currently the well monitoring network contains 29 active sites that are monitored monthly. (Table 1, Figure 1). Of the 29 active wells, 11 are located within the Middle Atlantic Coastal Plain Ecoregion,

while the remaining 18 wells are located in the Northern Piedmont (Omernik 1987). As stated above, higher well density is required in the latter region to reflect the more complex geology and interactions with groundwater.

Table 1. PWD-USGS Groundwater Monitoring Well Network Locations.

Site ID	Site Name	Lat.	Long.	Established
USGS-395342075102101	PH 12	39.895	-75.172	10/22/1978
USGS-395353075151501	PH 1052	39.898	-75.254	3/7/2011
USGS-395408075104001	PH 63	39.902	-75.177	9/14/1954
USGS-395416075150301	PH 1053	39.904	-75.251	4/24/2003
USGS-395459075140501	PH 797	39.916	-75.259	10/15/1980
USGS-395516075113901	PH 1051	39.921	-75.194	--
USGS-395611075091301	PH 1059	39.936	-75.154	8/14/2014
USGS-395656075100401	PH 136	39.949	-75.167	12/6/1978
USGS-395656075104401	PH 1064	39.948	-75.178	6/5/2015
USGS-395705075135901	PH 1061	39.951	-75.232	6/5/2015
USGS-395849075134201	PH 1063	39.98	-75.228	6/5/2015
USGS-395859075085401	PH 1042	39.983	-75.148	2/14/2011
USGS-395942075144301	MG 2164	39.995	-75.245	2/14/2011
USGS-400001075040301	PH 1057	40	-75.068	8/14/2014
USGS-400016075102801	PH 1062	40.004	-75.174	6/5/2015
USGS-400038075094601	PH 1058	40.011	-75.163	8/14/2014
USGS-400055075122501	PH 1060	40.015	-75.206	6/5/2015
USGS-400132075031001	PH 1056	40.026	-75.053	8/14/2014
USGS-400211075093701	PH 1050	40.036	-75.16	--
USGS-400217075142101	PH 540	40.038	-75.239	3/29/1948
USGS-400229075104601	PH 1043*	40.041	-75.179	2/14/2011
USGS-400308074592201	PH 397	40.052	-74.989	1/4/1979
USGS-400311075101301	PH 1040	40.053	-75.17	2/17/2011
USGS-400327075152201	PH 1044	40.057	-75.256	3/16/2011
USGS-400424075104901	PH 550	40.073	-75.18	--/--/1906
USGS-400512075033401	PH 1045	40.087	-75.059	7/18/2011
USGS-400516075033201	PH 1046	40.088	-75.059	7/18/2011
USGS-400524075042601	MG 2195	40.09	-75.074	--
USGS-400527075042801	MG 2193	40.091	-75.074	--
USGS-400527075042802	MG 2194	40.091	-75.074	--
USGS-400644074590801	PH 1041	40.112	-74.986	2/17/2011

* Philadelphia County observation well

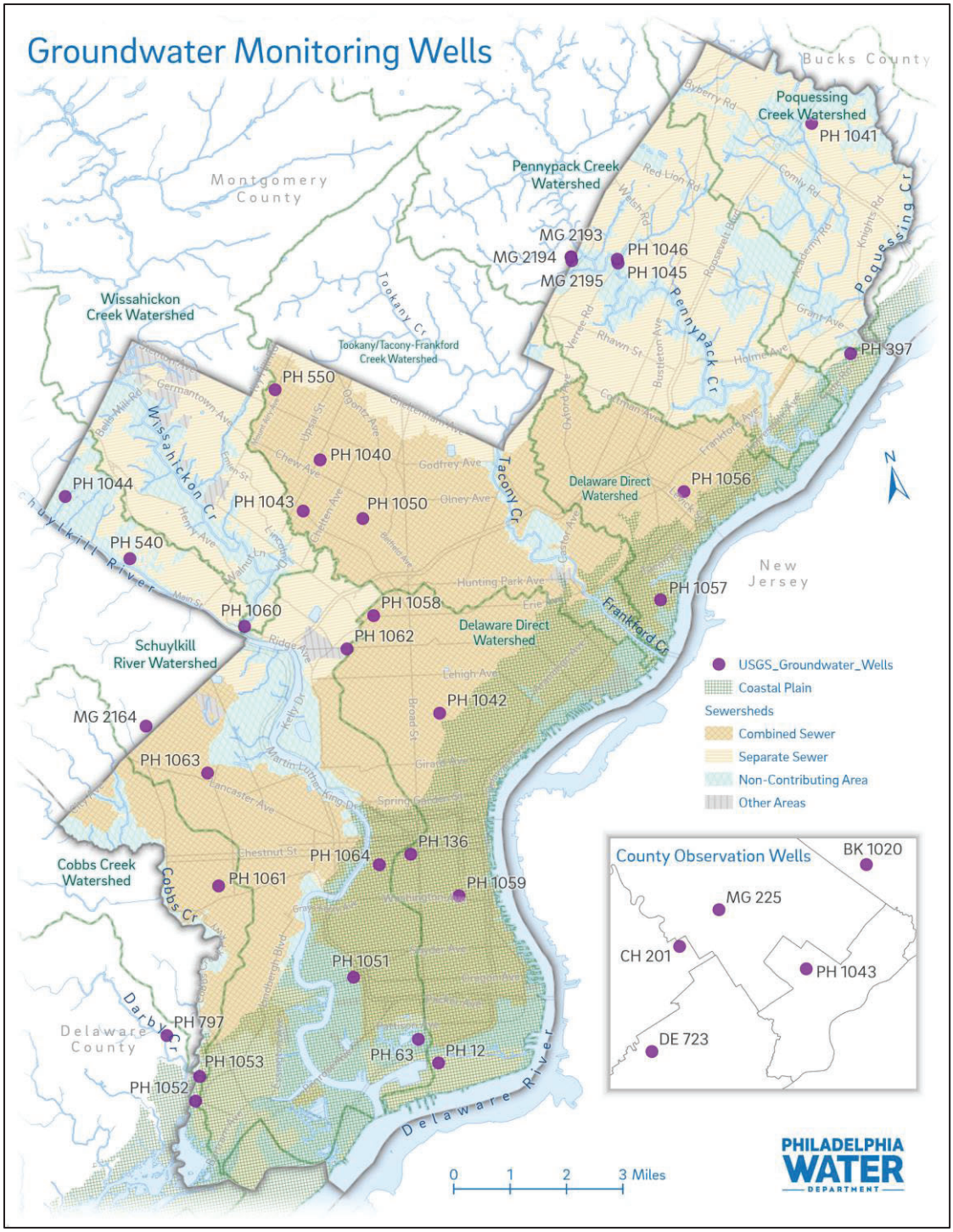

Figure 1. PWD-USGS Groundwater Monitoring Well Network Locations and (inset) County Reference Well Locations.

We lls were also classified according to predominant underlying geology and type of sewer system, *i.e.*, CSO

or separate-sewered (Table 2, Figure 1). Another consideration for siting new wells was the potential influence of buried utilities and historic creek beds. During the period of rapid expansion of Philadelphia's grid-like network of streets, historic streams were encased in large brick sewers and buried in order to level and prepare land for development. Recent groundwater mapping and modeling work suggests that these brick sewers strongly influence local groundwater elevations (Paulachok 1991, Maimone et al. 2011).

Table 2. PWD-USGS Groundwater Well Geology and Sewer System Type Classification.

Site ID	Site Name	Sewer Type	Geology
USGS-395353075151501	PH 1052	Separate	Trenton Gravel
USGS-395408075104001	PH 63	Separate	Trenton Gravel
USGS-395416075150301	PH 1053	Separate	Trenton Gravel
USGS-395516075113901	PH 1051	CSO	Magothy Raritan Potomac
USGS-395656075100401	PH 136	CSO	Trenton Gravel
USGS-395859075085401	PH 1042	CSO	Pennsauken and Bridgeton Formation
USGS-395942075144301	MG 2164	Separate	Granitic Gneiss and Granite
USGS-400211075093701	PH 1050	CSO	Wissahickon Formation
USGS-400217075142101	PH 540	Separate	Wissahickon Formation
USGS-400229075104601	PH 1043	CSO	Wissahickon Formation
USGS-400308074592201	PH 397	Separate	Trenton Gravel
USGS-400311075101301	PH 1040	CSO	Wissahickon Formation
USGS-400327075152201	PH 1044	Separate	Wissahickon Formation
USGS-400424075104901	PH 550	CSO	Wissahickon Formation
USGS-400512075033401	PH 1045	Separate	Granitic Gneiss and Granite
USGS-400516075033201	PH 1046	Separate	Granitic Gneiss and Granite
USGS-400527075042801	MG 2193	Separate	Wissahickon Formation
USGS-400527075042802	MG 2194	Separate	Wissahickon Formation
USGS-400644074590801	PH 1041	Separate	Wissahickon Formation
USGS-400132075031001	PH 1056	CSO	Wissahickon Formation
USGS-400001075040301	PH 1057	CSO	Trenton Gravel
USGS-400038075094601	PH 1058	CSO	Pennsauken Formation
USGS-395611075091301	PH 1059	CSO	Trenton Gravel
USGS-395459075140501	PH 797	CSO	Trenton Gravel
USGS-395656075104401	PH 1064	CSO	Trenton Gravel
USGS-395705075135901	PH 1061	CSO	Wissahickon Formation
USGS-395849075134201	PH 1063	CSO	Wissahickon Formation
USGS-400016075102801	PH 1062	Separate	Pennsauken Formation
USGS-400055075122501	PH 1060	Separate	Wissahickon Formation

USGS maintains at least one reference well in most Pennsylvania counties. Reference wells located in neighboring counties (Figure 1, Table 3) may be used as regional reference wells for data analyses. Continuous hourly data are collected at well DE 723 in Delaware County. Reference wells in Chester, Bucks and Montgomery counties are not monitored continuously.

Site ID	Site Name	Lat.	Long.	Established
USGS-400453075255601	CH 201 Chester County Observation Well	40.136	-75.351	06/19/1978
USGS-400808075210401	MG 225 Montgomery County Observation Well	40.199	-75.052	08/15/1956
USGS-401157075032001	BK 1020 Bucks County Observation Well	40.081	-75.432	04/13/1968
USGS-395512075293701	DE 723 Delaware County Observation Well	39.920	-75.493	1983

Data Analysis

USEPA (2009) published detailed guidance on statistical analysis of groundwater contaminant concentrations. In many of the examples, the same logic and techniques could apply to analysis of groundwater levels. In the case of the Philadelphia groundwater monitoring network, the goal is to understand if groundwater levels are changing over time, at either a single well or group of wells. The main statistical tests to be utilized are a) Seasonal Kendall Test, and b) ANOVA. The tests are briefly described below.

The Seasonal Kendall test performs the Mann-Kendall (MK) trend test for individual seasons of the year, where season is defined by the user. It then combines the individual results into one overall test for whether the dependent variable (*i.e.,* groundwater level) changes in a consistent direction (monotonic trend) over time. The magnitude (*i.e.*, slope) of the trend is also determined. The test is nonparametric, therefore non-normal data can be analyzed (Helsel *et al.* 2006). USEPA (2009) advises that at least 10-12 measurements are needed, whereas Helsel and Hirsch (2002) recommends that the product of number of years and number of seasons be greater than 25. Helsel *et al.* (2006) further caution that with more than 10 years of data, adjusted p-values should be calculated to account for the possibility of serial correlation. The Seasonal Kendall test can be applied to data from a single well, not multiple wells. To examine seasonal trends across multiple wells, the Covariance-Sum test is used (Lettenmaier 1988), which is essentially the execution of multiple seasonal Kendall tests and calculation of the covariances between them. To analyze regional trends over time from a group of wells, the Regional Kendall test can be applied. The Regional Kendall test essentially functions the same way as the Seasonal Kendall test, except the data is categorized by region rather than season.

An alternate method to analyze temporal trends on either a single well or group of wells is the analysis of variance (ANOVA). For a single well or group of wells with data subdivided by season, a one-way ANOVA would examine the significance of seasonality as a statistical factor. A two-way ANOVA would be applied to include location or region as a statistical factor. Either form of ANOVA assumes that the datasets are normally distributed with constant variance. Group residuals should be tested for normality and for equality of variance. If the data cannot be

transformed to a normal distribution, the nonparametric Kruskal-Wallis test can be used instead to detect significance of the specified statistical factor (USEPA 2009).

Well Monitoring Data Summary

Well monitoring data were summarized from July 2021 to June 2022 (Tables 4-5). These data are presented as an update of the program status. Additional data analysis will be completed as part of the groundwater model calibration and groundwater map update reports. Groundwater trends will be analyzed further once a sufficient amount of data has been collected (See Data Analysis section).

Table 4. PWD-USGS Groundwater Monitoring Well Data 7/2021-6/2022, Depth to Water Level (Feet below Land Surface).

Site ID	J	A	S	O	N	D	J	F	M	A	M	J
395353075151501	15.22	15.34	14.84	15.52	15.88	16.2	16.29	16.49	16.25	15.72	15.23	15.23
395408075104001	5.08			5.25	4.85	5.48					5.08	
395416075150301	8.7	9.63	9.76	10.23	10.66	11.14	11.05	11.23	9.77	9.5	9.29	8.55
395459075140501	13.55	13.51	13.58	13.76	13.77	13.92	13.77	13.84	13.83	13.41	13.5	13.44
395516075113901												
395611075091301	26.09	25.95	25.94	26.11	26.23	26.53	26.76	26.99	27.13	27.03	26.74	26.61
395656075100401												
395656075104401	4.70	9.01	3.40	13.73	18.30	20.03	20.67	20.99	20.52	17.38	17.29	16.03
395705075135901	14.55	14.74	13.97	14.99	15.08	15.44	14.75	14.46	14.25	13.18	13.46	14.06
395849075134201	13.27	13.32	13.04	13.35	13.55	13.74	13.61	13.52	13.6	13.11	12.88	12.96
395859075085401												
395942075144301	14.6	15.19	14.9	14.88	14.78	14.87	14.59	14.17	13.69	14.74	14.17	
400001075040301	15.06	15.4	15.46	15.74	15.79	16.13	15.87	15.5	16	15.8	15.48	15.45
400016075102801	10.79	10.86	10.86	10.94	10.99	11.15	11.06	10.99	11.02	10.7	10.91	10.96
400038075094601	19.59	19.72	19.66	19.76	19.89	20.03	20.02	19.22	19.8	19.46	19.33	19.46
400055075122501	15.83	15.53	15.43	15.51	15.55	15.86	15.24	15.5	15.46	14.3	15.1	15.49
400132075031001	20.41	20.56	20.28	20.57	20.69	29.93	21.05	21.28	20.98	20.65	20.21	20.26
400211075093701	13.61	13.56	13.53	13.68	13.96	14.07	14.16	14.24	14.18	14.12	13.97	13.89
400217075142101	25.26	26.81	27.45	27.12	28.15	28.48	27.96	29.04	28.65	28.28	26.97	24.37
400229075104601	16.3			16.06	16.12		15.86	15.46		13.97	14.47	15.32
400308074592201	2.94	3.79	3.75	4.26	4.61	5.21	5.77	5.26	5.34	4.32	4.69	5.51
400311075101301	11.5	11.03	10.81	11.63	11.21	11.77	11.05	10.49	10.1	8.63	9.05	9.83
400327075152201	66.31	71.35	63.71	63.68	65.29	69.01	71.38	62.99	63.64	59.71	60.05	61.48
400424075104901	18.43	18.86	17.51	18.03	18.32	18.97	19.48	18.97	18.66	17.74	16.67	16.98
400512075033401	34.82	34.74	35.18	36.29	36.2	36.56	32.98	33.25	33.75	32.22	34.54	34.96
400516075033201	28.98	29.37	29.73	30.19	30.64	30.98	31.01	31.18	31.39	30.8	27.82	26.92
400527075042801	19.23	19.15	19.16	19.33	20.35	22.05	19.53	19.29	20.19	19.46	19.75	19.9
400527075042802	14.62	14.31	14.55	14.86	19.69	23.65		16.36	20.51	16.15	16.91	
400644074590801	16.57	16.75	16.78	17.31	17.38	17.8	17.64	17.24	16.95	16.23	16.08	16.41

Table 5. Regional County Observation Well Data 7/2021 - 6/2022.

Site ID	J	A	S	O	N	D	J	F	M	A	M	J
400453075255601	22.14	21.17	19.54	21.73	21.2	22.11	21.8	20.99	20.61	17.15	18.53	19.84
400808075210401		11.51		11.5		12.76		10.86		6.7		11.52
401157075032001		32.34		32		33.4		30.14		28.67		29.05
395512075293701		7.2		6.97		7.46		7.01		5.72		6.94

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Appendix I – PWD Wadeable Streams Benthic Macroinvertebrate and Physical Habitat Assessments

PWD Wadeable Streams Benthic Macroinvertebrate and Physical Habitat Assessments

Background

Since 1999, the Philadelphia Water Department (PWD) has been using benthic macroinvertebrate sampling and instream physical habitat assessments in order to characterize watershed conditions and track trends in watershed health. Assessments are performed by the staff of PWD's Bureau of Laboratory Services (BLS) using PADEP Instream Comprehensive Evaluation (ICE) methods. As benthic invertebrates may be exposed to both short and long-duration stressors, data collected through this program are pertinent to all targets of PWD's Integrated Watershed Management Plan (IWMP) Strategy.

Common Acronyms Used in This Report

IBI - Index of Biotic Integrity, a biological assessment tool to indicate the capability of a stream to support a healthy aquatic community.
ICE - Instream Comprehensive Evaluation, a protocol to survey and evaluate wadeable streams.
PTV - Pollution Tolerance Values, a numeric measure of an organism's ability to withstand environmental degradation.
EPT - Ephemeroptera + Plecoptera + Trichoptera, the common names for pollution-sensitive mayflies, stoneflies and caddisflies.

Assessment Study Design

In recent years, agencies tasked with evaluating water quality have attempted to incorporate statistical sampling designs, or a "probabilistic" approach, to selecting sampling sites (Paulsen 2008, Borsuk *et al*. 2001) rather than relying on fixed sites. Statistical sampling design is particularly important when the goal of monitoring is to make an estimate of the percentage of waters affected by pollution. Another advantage of probabilistic study design is that the assessment units are distributed over a larger geographic area. When monitoring efforts are directed at individual watersheds on a rotating basis, as has been the case with PWD programs, the possibility arises that larger scale patterns may be missed. For example, the effects of floods or drought conditions are widespread, but only the watershed that is being monitored within the same time period will have data reflecting these effects. Disadvantages of a probabilistic approach include the technical demands of establishing and randomly selecting from geographic data sets containing all possible sampling locations as well as additional field reconnaissance work when conduct the actual monitoring.

The current PWD monitoring strategy is intended to be a compromise, recognizing the benefits of collecting data from randomly selected sites but also the importance of maintaining a consistent monitoring effort at selected locations over time. This plan is based on a similar monitoring program implemented by USGS in Chester County (Reif 2002, Reif 2004). The plan also reflects the manpower constraints of collecting and processing samples with the PADEP ICE protocol. It is hoped that this

compromise approach (Table 1) will achieve some of the benefits of a randomized approach, while providing periodic re-evaluation of our watersheds required to inform the watershed planning process and comply with environmental mandates.

Stream Conditions

This report summarizes results from samples that were collected between March 15 and April 7, 2021. PWD is not aware of any spills, discharges or unusual conditions that would tend to cause misleading results.

Table 1. PWD Wadeable Streams Assessments Schedule

Period	Monitoring Activity (number of samples)
2011	USGS gage samples (8); Randomly selected sites (16)
2012	Cobbs Creek Assessment (6*); USGS gage samples (9); Random (10)
2013	Tookany/Tacony Creek (10*); USGS gage samples (8); Random (7)
2014	Wissahickon Creek Tributaries (11); USGS gage samples (9); Random (5)
2015	Wissahickon Creek (12*); USGS gage samples (8); Random (2)
2016	Pennypack Creek Tributaries (11); USGS gage samples (9); Random (5)
2017	Pennypack Creek (12*); USGS gage samples (9); Random (4)
2018	Poquessing Creek (12*); USGS gage samples (9); Random (4)
2019	Schuylkill River Tributaries (3); USGS gage samples (8); Random (3)
2020	USGS gage samples (6); Random (2)
2021	Cobbs Creek (6*); USGS gage samples (9); Random (7)
2022	Tookany/Tacony Creek (10*); USGS gage samples (9); Random (6)

* Number of monitoring sites excludes USGS gage sites in target watershed

Methods

Benthic Macroinvertebrate Sample Collection

Using the PADEP Instream Comprehensive Evaluation (ICE) protocol (PADEP 2009), macroinvertebrate samples were collected by placing a handheld D-frame net (500µm) at the downstream portion of a riffle. Stream substrate directly upstream of the D-frame net was then disturbed for approximately one minute to a depth of approximately 10 cm as substrate allowed. This procedure was repeated at other riffle locations of variable flow within the 100-m reach such that the sample at each station was a composite of six riffle samples. Composited samples from each biological monitoring

location were then preserved in 95% ETOH (ethyl alcohol) and returned to the laboratory in polyethylene containers.

Benthic Macroinvertebrate Laboratory Procedures

Benthic macroinvertebrate samples were processed according to PADEP ICE protocols (PADEP 2009). Each composited sample was placed into an 18 x 12 x 3.5-inch pan marked with 28 four-square-inch grids. Four grids were randomly selected by drawing numbers. All material was extracted from the selected grids using a four-square-inch circular "cookie cutter," and placed into another identical empty pan. From this second pan, organisms were picked from randomly selected grids or “plugs” until a minimum of 200, but not more than 240, individuals were subsampled. This procedure was a misinterpretation of the actual technique, which stipulates a count of 200 (+/- 20%) individuals. When picking either the four initial “plugs” or additional plugs results in subsampling more than 240 individuals, the PADEP ICE protocol outlines a procedure for redistributing the subsample into a clean, gridded pan and “back counting” grids until a subsample consisting of 200 (+/-20%) is obtained. Invertebrates were identified under magnification, with taxonomic classification following PADEP 2009 guidelines.

Habitat Assessment

After collecting benthic invertebrates, biologists surveyed habitat features within the monitoring station and recorded scores for 12 habitat attributes according to the PADEP ICE protocol (Table 2). Biologists completed the survey independently and then discussed the interpretation of individual habitat attribute scores, averaging individual scores when necessary.

Table 2. PA DEP ICE Protocol Habitat Metrics

Habitat Parameter	Description
Instream Cover (Fish)	Mix of boulder, cobble or other stable habitat
Epifaunal Substrate	Length/width of riffles; characterization of boulders, gravel, cobble
Embeddedness	Presence/absence of fine sediment around boulders, gravel, cobble
Velocity/Depth Regimes	Presence/absence of four velocity/depth regimes
Channel Alteration	Degree of channelization or dredging
Sediment Deposition	Measure of sediment deposits, degree of change at the bottom
Frequency of Riffles	Occurrence of riffles and distance between riffles

Channel Flow Status	Degree to which water fills the available channel
Condition of Banks	Stability of streambanks and presence of erosion or bank failure
Bank Vegetative Protection	Percentage of streambank surface covered by vegetation
Grazing or Other Disruptive Pressure	Degree to which vegetation disrupted by grazing or mowing
Riparian Vegetative Zone Width	Width of riparian zone and determination of impact on vegetation by human activities

Data Analysis

Benthic macroinvertebrate and habitat data were compiled in a Microsoft Access database and queries were used to calculate scoring metrics. Individual metric standardized scores and the PADEP Index of Biotic Integrity (IBI) were calculated using the ICE protocol (Table 3).

Table 3. PADEP ICE Protocol Metrics and Metric Standardization Values

Metric	Standardization Value
Total Taxa Richness	33
EPT Taxa Richness (PTV 0-4)	19
Beck's Index, version 3	38
Hilsenhoff Biotic Index	1.89
Shannon Diversity	2.86
Percent Sensitive Individuals (PTV 0-3)	84.5

Monitoring Locations

Assessments were performed at 9 USGS gage sites, 6 sites in the targeted Cobbs Creek watershed, and 7 randomly chosen sites from PWD's watershed assessment site network between 3/15/2021 and 4/7/2021 (Figure 1, Tables 4-5). USGS stream gaging stations are used as long-term monitoring points at which streamflow and continuous water chemistry data are collected (refer to PWD-USGS Cooperative Water Quality Monitoring appendix). Water chemistry grab sampling for nutrient and bacterial parameters is also conducted at these USGS gage stations on a quarterly basis (refer to PWD Quarterly Dry Weather Water Quality Monitoring appendix). Combining different forms of monitoring at the same station allows for better integration of information and may enable more sophisticated analyses in the future. In some cases, when USGS gage sites are not appropriate or accessible for bioassessment activities, a nearby upstream or downstream location is used to collect macroinvertebrates and assess habitat conditions.

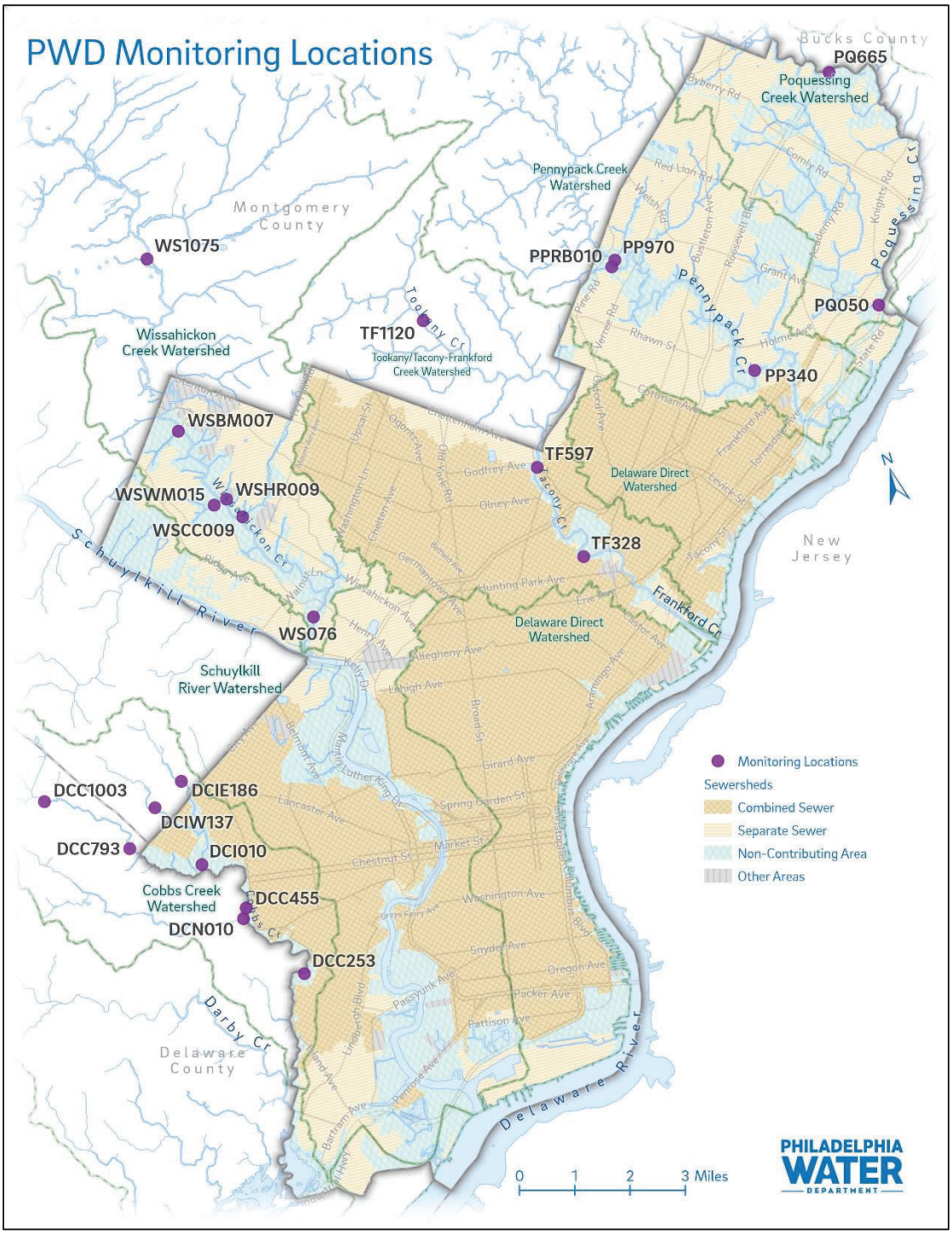


Figure 1. PWD Wadeable Streams Assessment Locations - Spring 2021

Table 4. PWD-USGS Cooperative Monitoring Program Sites

Site ID	USGS Gage	Site Description	Drainage Area (mi^2)
DCC253	01475548	Cobbs Creek at Mount Moriah Cemetery	19.78
DCC793	01475530	Behind Grange Estate, off private road (Myrtle Street)	4.60
PP340	01467048	Pennypack Creek at Lower Rhawn St bridge	49.84
PP970	01467042	Pennypack Creek at Pine Rd.	39.34
PQ053	01465798	Poquessing Creek at Holy Family College	21.67
TF324	01467087	Frankford Creek at Castor Ave.	29.69
TF597	01467086	Tacony Creek below Adams Ave. Bridge	16.25
WS076	01474000	Wissahickon Creek at Ridge Ave.	63.22
WS1075	01473900	Wissahickon Creek at Ft. Washington	40.44

Table 5. Targeted Sites in the Cobbs Creek Watershed

Site ID	Site Description	Drainage Area (mi^2)
DCC1003	Hathaway bridge off Hathaway Ln	2.38
DCC253	Cobbs Creek at Mount Moriah Cemetery	19.78
DCC455	650 ft upstream of CCCEEC footbridge	12.95
DCC793	Behind Grange Estate, off private road (Myrtle Street)	4.60
DCI010	CC Golf Course Near Haverford Ave; upstream of 2nd golf cart bridge	3.96
DCIE186	Lankenau Hospital parking area (Lankenau road bridge)	1.20
DCIW137	Manoa and Wiltshire Rds (adjacent)	1.26
DCN010	End of Walnut Park Dr off 69th St, at footbridge	4.59

Table 6. Random Monitoring Sites, Spring 2021

Site ID	Site Description	Drainage Area (mi^2)

PPRB010	650 ft upstream of Pennypack confluence	0.71
PQ665	500 ft downstream of Roosevelt Blvd. bridge	6.44
TF1120	Upstream side of Route 73 (Washington Ln) bridge	5.36
WSBM007	400 ft upstream of Wissahickon confluence	0.48
WSCC009	500 ft upstream of Wissahickon confluence	2.33
WSHR009	450 ft upstream of Wissahickon confluence	0.19
WSWM015	750 ft upstream of Wissahickon confluence	0.66

Benthic Macroinvertebrate Monitoring Results - Spring 2021

A total of 4,636 benthic macroinvertebrates from 33 taxa were collected from the 22 sampling sites. When compared to PADEP ICE protocol metric reference conditions, all assessment sites were classified as impaired and fell below 50% comparability, meaning that they are not meeting the Aquatic Life Use (ALU) designation (Figure 2). Percent comparability with the standard reference IBI score ranged from 18.6% to 28.5%. All sites were characterized by low taxa richness, low or absent modified EPT taxa, and elevated Hilsenhoff Biotic Index scores (Table 7, Figure 2).

Table 7. PADEP ICE Metric Scores

Site ID	Taxa Richness	EPT richness (PTV 0-4)	% Sensitive individuals	Beck's Index	HBI	Shannon Index	IBI score
DCC1003	15	1	1.5	0	5.8	1.4	25.7
DCC251	15	1	0.5	0	6.4	1.2	22.8
DCC455	11	1	0.5	0	6.8	1.0	18.7

DCC793	10	1	3.2	0	5.6	1.3	23.3
DCI010	14	1	0.5	0	5.9	0.7	20.2
DCIE186	11	0	0.4	0	6.0	0.9	19.1
DCIW137	14	1	2.8	1	5.8	1.3	25.2
DCN010	13	0	1.0	0	7.3	1.3	19.9
PP340	14	0	1.8	2	5.9	1.1	23.0
PP970	17	1	1.5	1	5.7	1.6	28.5
PPRB010	15	2	2.5	3	5.8	1.0	25.7
PQ054	10	0	4.9	0	5.8	1.1	20.8
PQ665	9	1	5.2	1	5.5	1.5	25.0
TF1120	13	1	5.0	0	5.6	1.5	26.1
TF324	10	0	0	0	6.8	1.2	18.6
TF597	14	1	3.0	0	5.9	1.7	25.3
WS076	15	1	0.9	0	6.0	1.1	23.4
WS1075	13	1	1.4	0	6.0	1.3	23.6
WSBM007	10	0	0.5	0	6.2	1.1	19.7
WSCC009	12	2	2.0	3	5.8	1.2	25.4
WSHR009	11	1	2.4	3	5.9	1.5	25.3
WSWM015	14	2	1.4	3	6.0	1.5	27.4

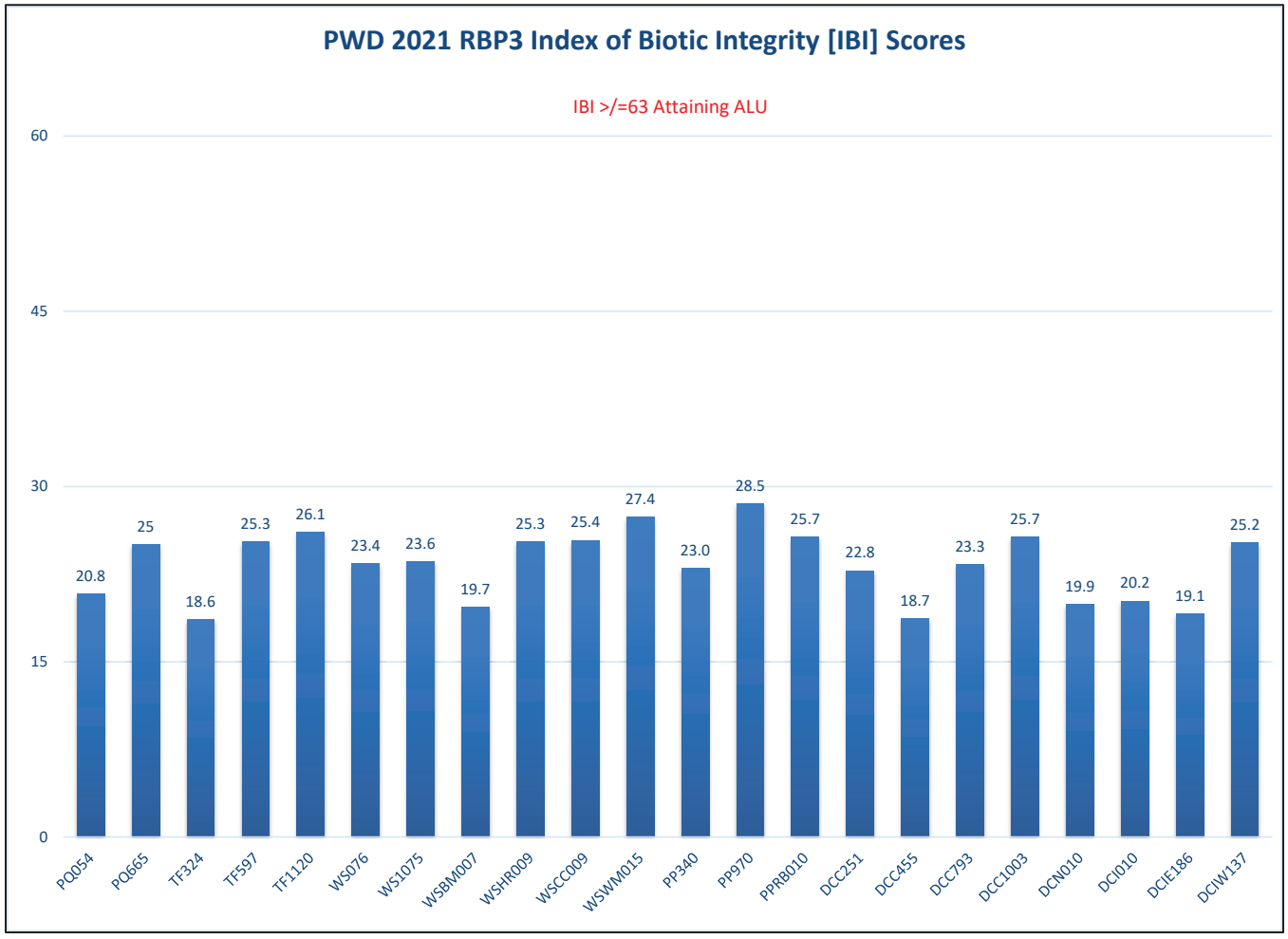


Figure 2. Spring 2021 Macroinvertebrate IBI Scores at USGS Sites

Very sensitive taxa (pollution tolerance value ≤ 2) were present at 8 of the 22 sites assessed in spring 2021. All sites fell below the PADEP reference standard for Percent Intolerant Taxa metric (PTV = 0 to 3) of 84.5%.

Overall diversity was low among all sites. The Shannon Diversity Index scores for all sites ranged from 0.7 to 1.7, compared to the reference metric value of 2.86. The site with the greatest diversity was the Tacony Creek site below Adams Ave. bridge (SDI=1.7), with a taxa richness (n=14), EPT taxa richness (n=1), and HBI (5.9).

The Hilsenhoff Biotic Index (HBI) is a metric used to determine the overall pollution tolerance of a site's benthic macroinvertebrate community. This community composition and tolerance metric generally increases with increasing ecosystem stress, resulting in increasing dominance of pollution-tolerant organisms. Oriented toward the detection of organic pollution, HBI scores can range from 0

(very sensitive) to 10 (very tolerant). The average HBI for all sites was 6.0, and scores at the 22 assessment sites ranged from 5.5 to 7.3.

Tolerance/intolerance measures are intended to be representative of relative sensitivity to perturbation and may include numbers of pollution tolerant and intolerant taxa or percent composition (Barbour *et al*., 1999). The proportion of moderately tolerant individuals at all sites averaged 87.3%, with a range of 76.0% to 96.6%. The site with the greatest proportion of moderately tolerant taxa was DCIE186, with 96.6% dominance directly related to a high number of Chironomidae (n=185) found within the sorted sample (n=232). Chironomids (Figure 3) were the dominant taxon at all assessment locations. The proportional dominance of Chironomids is evidence of increasingly homogenous community assemblages within the selected monitoring sites. Chironomids and other pollution-tolerant, generalist species increase in proportional dominance with increased disturbance due to the loss of optimal habitat conditions for less tolerant, more specialized species.

Figure 3. Chironomid, or non-biting midge
Photo: Simon Johnston

Tolerant taxa accounted for an average of 6.6% of all taxa, and the proportion of tolerant taxa at each monitoring site ranged from 0.9% to 34.0%. Intolerant taxa were similarly represented, averaging 6.1% of all taxa collected at the sites. The proportion of intolerant taxa at each site ranged from 1.0% to 19.2%. The Tacony Creek site at the Route 73 bridge (TF1120) had the highest proportion of intolerant taxa.

Sensitive taxa (pollution tolerance values ≤ 3) were collected at 21 of the 22 sites (Table 8). However, the rarity of sensitive taxa at suggests a response to watershed-wide perturbation, such as water quality degradation. Other potential explanations for the rarity of sensitive taxa are habitat degradation caused by fine sediment delivered to the stream channel via bank erosion or stormwater runoff and changes in seasonal base flow and temperature that tend to accompany urbanization. *Antocha* (Diptera; Tipulidae, pollution tolerance value =3) were the most commonly collected sensitive taxa.

Table 8. Sensitive Taxa Collected

Site	Order	Family	Genus	HBI
DCC1003	Diptera	Tipulidae	*Antocha*	3
DCC251	Diptera	Tipulidae	*Antocha*	3
DCC455	Diptera	Tipulidae	*Antocha*	3
DCC793	Diptera	Tipulidae	*Antocha*	3
DCI010	Diptera	Tipulidae	*Antocha*	3
DCIE186	Diptera	Tipulidae	*Antocha*	3
DCIW137	Diptera	Tipulidae	*Antocha*	3
DCIW137	Coleoptera	Elmidae	*Ancyronyx*	2
DCN010	Diptera	Tipulidae	*Antocha*	3
PP340	Diptera	Tipulidae	*Antocha*	3
PP340	Coleoptera	Elmidae	*Microcylloepus*	2
PP340	Coleoptera	Elmidae	*Ancyronyx*	2
PP970	Diptera	Tipulidae	*Antocha*	3
PP970	Coleoptera	Elmidae	*Microcylloepus*	2
PPRB010	Diptera	Tipulidae	*Antocha*	3
PPRB010	Trichoptera	Glossosomatidae	*Glossosoma*	0
PQ054	Diptera	Tipulidae	*Antocha*	3
PQ665	Diptera	Tipulidae	*Antocha*	3
PQ665	Coleoptera	Elmidae	*Ancyronyx*	2
TF1120	Diptera	Tipulidae	*Antocha*	3
TF597	Diptera	Tipulidae	*Antocha*	3
WS076	Diptera	Tipulidae	*Antocha*	3
WS1075	Diptera	Tipulidae	*Antocha*	3
WSBM007	Diptera	Tipulidae	*Antocha*	3
WSCC009	Diptera	Tipulidae	*Antocha*	3
WSCC009	Trichoptera	Philopotamidae	*Dolophilodes*	0
WSHR009	Diptera	Tipulidae	*Antocha*	3
WSHR009	Trichoptera	Philopotamidae	*Dolophilodes*	0
WSWM015	Diptera	Tipulidae	*Antocha*	3
WSWM015	Trichoptera	Philopotamidae	*Dolophilodes*	0

Table 9. 2021 Benthic Macroinvertebrate Taxa List

Order	Family	Genus
Amphipoda	Crangonyctidae	*Crangonyx*
Amphipoda	Gammaridae	*Gammarus*
Amphipoda	Talitridae	*Hyalella*
Bivalvia	Corbiculidae	*sp*
Coleoptera	Elmidae	*Ancyronyx*
Coleoptera	Elmidae	*Microcylloepus*
Coleoptera	Elmidae	*Stenelmis*
Decapoda	Cambaridae	*Cambarus*
Diptera	Ceratopogonidae	*Culicoides*
Diptera	Chironomidae	*spp*
Diptera	Empididae	*Chelifera*
Diptera	Empididae	*Hemerodromia*
Diptera	Psychodidae	*Psychoda*
Diptera	Simuliidae	*Simulium*
Diptera	Stratiomyidae	*Caloparyphus*
Diptera	Tipulidae	*Antocha*
Diptera	Tipulidae	*Tipula*
Ephemeroptera	Baetidae	*Baetis*
Gastropoda	Ancylidae	*sp*
Gastropoda	Lymnaeidae	*sp*
Gastropoda	Physidae	*sp*
Gastropoda	Planorbidae	*sp*
Hirudinea		
Hydracarina		
Isopoda	Asellidae	*Caecidotea*
Oligochaeta		
Ostracoda	Podocopa	*sp*
Trichoptera	Glossosomatidae	*Glossosoma*
Trichoptera	Hydropsychidae	*Cheumatopsyche*
Trichoptera	Hydropsychidae	*Hydropsyche*
Trichoptera	Hydroptilidae	*Hydroptila*
Trichoptera	Leptoceridae	*Oecetis*
Trichoptera	Philopotamidae	*Chimarra*
Trichoptera	Philopotamidae	*Dolophilodes*
Trichoptera	Polycentropodidae	*Polycentropus*
Turbellaria	Nematoda	*sp*
Turbellaria	Nemertea	*sp*
Turbellaria	Planariidae	*sp*

Physical Habitat Monitoring Results - Spring 2021

Habitat impairments such as hydrologic extremes (*i.e.,* low base flow and accentuated flow during storm events), physical obstructions, and sedimentation/siltation appear to be the major environmental stressors on the aquatic ecosystem. Accumulation of sediment in the interstitial spaces of riffles has been

shown to limit available habitat and possibly smother benthic invertebrate life stages (Runde and Hellenthal, 2000). Most sites received suboptimal or marginal total scores for habitat (Table 10). The site on Bells Mill Run, a tributary to the Wissahickon (WSBM007), achieved an optimal total score. The Frankford Creek site at Castor Ave (TF324) had the lowest total habitat scores of all sites (Table 10, Figure 4). Figures 5 and 6 depict the critical habitat parameters for mainstem and tributary sites, respectively.

Table 10. Physical Habitat Scores at All Monitoring Sites - Spring 2021

Site ID	Instream	Epifaunal	Embed	Veldep	Chanalt	Seddep	Riffreq	Chanflo	Bankcond	Vegpro	Graze	Ripveg	Total Score
DCC1003	10	11	9.5	13	12	12	12	12	8	13	7	7.5	127
DCC251	9	12	7	12	12.5	12	13	15	10	14.5	16	15	148
DCC455	8.5	7.5	4.5	12	14.5	8.5	5	12	11	16.5	17	17	134
DCC793	16	14.5	13	17	16.5	10	14.5	9	4.5	16	16.5	16.5	164
DCI010	13	9.5	9	16	16	6	9	8.5	9.5	16.5	15	15	143
DCIE186	12.5	12	12	10	13	10	15	10	12	15.5	8	7	137
DCIW137	9	7.5	8	11.5	12.5	11	12	15	10	16.5	10	10	133
DCN010	9	11	6.5	9	10	13	14	13	12	16	16.5	16.5	146.5
PP340	14	13.5	8	14	14.5	12	15	14.5	12	16	17	17.5	168
PP970	16.5	14.5	12.5	18	17	10	16.5	10.5	10.5	16	10	15	167
PPRB010	16	13.5	10.5	17	17	12	14.5	13	10	18	18.5	19	179
PQ054	9	9	6.5	11.5	13.5	8	11.5	12.5	5	13	14	14	127.5
PQ665	12	11	9.5	11.5	12	11.5	12.5	14	11	14.5	14.5	13.5	147.5
TF1120	14	14.5	14	16.5	10	14	13.5	12.5	13	10	14.5	9.5	156
TF324	12	8	9.5	11	11.5	9.5	9	8	5	11	9	8	111.5
TF597	9	10.5	9.5	12	11.5	13	11	13.5	10	16	14	14.5	144.5
WS076	13	12	12	17	10	13.5	9.5	14.5	10	7.5	12.5	6.5	138
WS1075	14.5	12.5	12	17	15	14	10.5	14.5	13.5	17	17.5	17	175
WSBM007	17	13	18	17	17.5	17	18.5	15	17	18.5	18	16.5	203
WSCC009	16.5	14	13	17	15	14	17	9	10	17.5	19	18.5	180.5
WSHR009	15	11.5	15	16.5	14.5	10.5	16.5	9	4.5	9.5	18.5	18.5	159.5
WSWM015	15	9	13.5	17	11.5	9.5	16.5	9.5	15.5	17	15.5	10	159.5

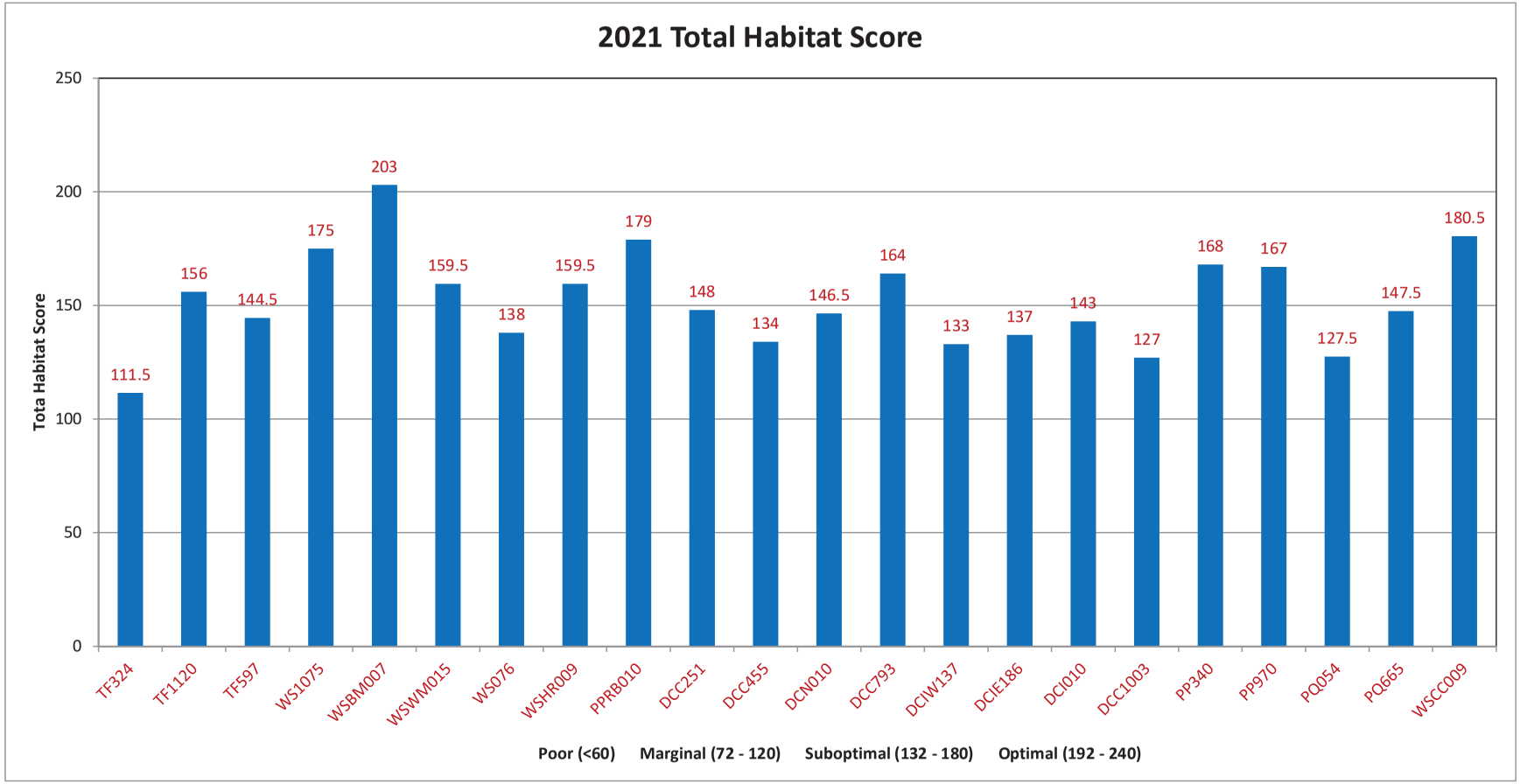
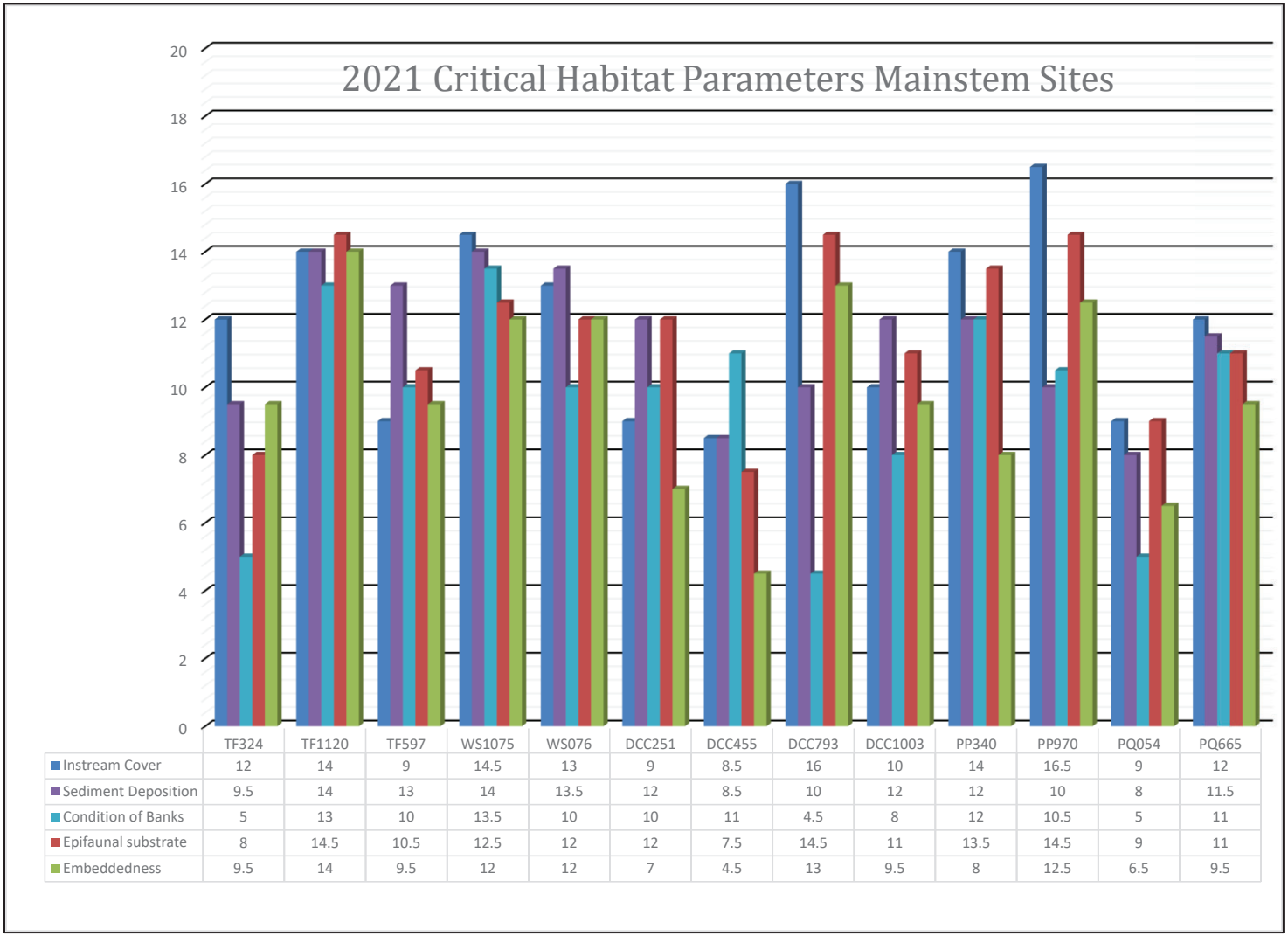
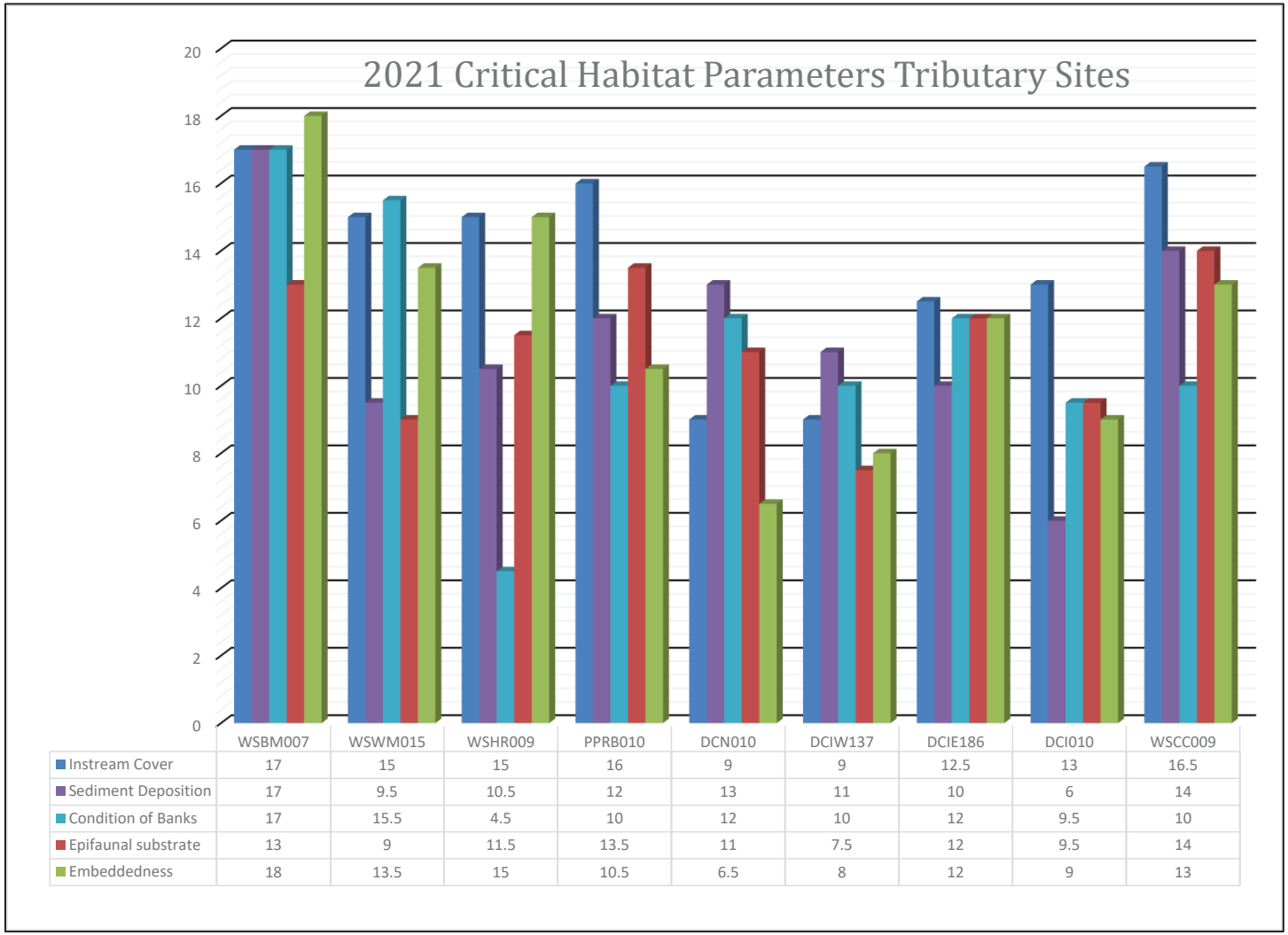


Figure 4. Habitat Scores, Spring 2021



	TF324	TF1120	TF597	WS1075	WS076	DCC251	DCC455	DCC793	DCC1003	PP340	PP970	PQ054	PQ665
Instream Cover	12	14	9	14.5	13	9	8.5	16	10	14	16.5	9	12
Sediment Deposition	9.5	14	13	14	13.5	12	8.5	10	12	12	10	8	11.5
Condition of Banks	5	13	10	13.5	10	10	11	4.5	8	12	10.5	5	11
Epifaunal substrate	8	14.5	10.5	12.5	12	12	7.5	14.5	11	13.5	14.5	9	11
Embeddedness	9.5	14	9.5	12	12	7	4.5	13	9.5	8	12.5	6.5	9.5

Figure 5. Critical Habitat Parameters for Mainstem Sites, Spring 2021



	WSBM007	WSWM015	WSHR009	PPRB010	DCN010	DCIW137	DCIE186	DCI010	WSCC009
Instream Cover	17	15	15	16	9	9	12.5	13	16.5
Sediment Deposition	17	9.5	10.5	12	13	11	10	6	14
Condition of Banks	17	15.5	4.5	10	12	10	12	9.5	10
Epifaunal substrate	13	9	11.5	13.5	11	7.5	12	9.5	14
Embeddedness	18	13.5	15	10.5	6.5	8	12	9	13

Figure 5. Critical Habitat Parameters for Tributary Sites, Spring 2021

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Appendix J – NPDES Industrial Stormwater Permitted Sites – Philadelphia County

Authority ID	Site Name	Program Description	Site Address
PAG-03 Discharge of Stormwater Associated with Industrial Activities			
21593	METRO MACH OF PA SHIP REPAIR FAC	Clean Water	FOOT OF MORTON AVE CHESTER, PA 19013
326466	PAARNG SOUTHAMPTON FAC	Clean Water	2734 SOUTHAMPTON RD PHILADELPHIA, PA 19154
326472	PAARNG OGONTZ OMS 14A	Clean Water	5350 OGONTZ AVE PHILADELPHIA, PA 19141
326557	PAARNG FT MIFFLIN FAC	Clean Water	BLDG 56 FORT MIFFLIN 6400 HOG ISLAND RD PHILADELPHIA, PA 19153
459823	PHILA WATER DEPT NE WPCP	Clean Water	3895 RICHMOND ST PHILADELPHIA, PA 19137-1418
459790	PHILA WATER DEPT SE WPCP	Clean Water	25 PATTISON AVE PHILADELPHIA, PA 19148-5607
459812	PHILA WATER DEPT SW WPCP	Clean Water	8200 ENTERPRISE AVE PHILADELPHIA, PA 19153-3813
577993	DHL EXPRESS COLUMBUS BLVD FAC	Clean Water	1101 N CHRISTOPHER COLUMBUS BLVD PHILADELPHIA, PA 19125
781605	NDV RECYCLING N 2ND ST FAC	Clean Water	3630 N 2ND ST PHILADELPHIA, PA 19140-4605
813532	HAROLDS USED AUTO PARTS WHITBY AVE FAC	Clean Water	5347 WHITBY AVE PHILADELPHIA, PA 19143
878137	ARDEX LAB	Clean Water	2050 BYBERRY RD PHILADELPHIA, PA 19116
886506	TRC TRANSFER STATION COLUMBUS BLVD FAC	Clean Water	2904 S CHRISTOPHER COLUMBUS BLVD PHILADELPHIA, PA 19148
887155	PASCO PASCHALL AVE FAC	Clean Water	7250 PASCHALL AVE PHILADELPHIA, PA 19142
921671	US POSTAL SVC LINDBERGH BLVD FAC	Clean Water	7500 LINDBERGH BLVD PHILADELPHIA, PA 19176-9998

Authority ID	Site Name	Program Description	Site Address
929399	REPUBLIC SVC OF PA PORT RICHMOND HAULING FAC	Clean Water	3000 E HEDLEY ST PHILA MARKET PLACE PHILADELPHIA, PA 19137
931796	REPUBLIC SVC QUICKWAY TRANSFER STATION	Clean Water	2960 ORTHODOX ST PHILADELPHIA, PA 19137
961161	ABF FREIGHT SYS	Clean Water	4000 RICHMOND ST PHILADELPHIA, PA 19137
970846	FC HAAB SCHUYLKILL AVE TERM	Clean Water	SCHUYLKILL AVE & MORRIS ST PHILADELPHIA, PA 19145
1002506	CSX INTERMODAL CHRISTOPHER COLUMBUS AVE FAC	Clean Water	3400 S CHRISTOPHER COLUMBUS BLVD PHILADELPHIA, PA 19148
1021396	SEPTA ROBERTS AVE FAC	Clean Water	2705 ROBERTS AVE PHILADELPHIA, PA 19129
1008654	GREENWICH TERM S COLUMBUS BLVD FAC	Clean Water	3301 S COLUMBUS BLVD PHILADELPHIA, PA 19148
1008765	TJ COPE NORCOM RD FAC	Clean Water	11500 NORCOM RD PHILADELPHIA, PA 19154
1011743	VANE LINE BUNKERING FT MIFLIN RD FAC	Clean Water	4925 FT MIFLIN RD CITY DOCK PHILADELPHIA, PA 19153
1016261	ATLANTIC AVIATION ENTERPRISE AVE FAC	Clean Water	8375 ENTERPRISE AVE PHILA INT AIRPORT PHILADELPHIA, PA 19153
1020028	DAVE'S DELAWARE VALLEY TOWING PASSYUNK AVE FAC	Clean Water	6159 PASSYUNK AVE PHILADELPHIA, PA 19153
1029239	FEDEX TOWNSEND RD FAC	Clean Water	14300 TOWNSEND RD PHILADELPHIA, PA 19154
1032035	ATLANTIC USED AUTO PARTS ESSINGTON AVE FAC	Clean Water	6544 ESSINGTON AVE PHILADELPHIA, PA 19153

Authority ID	Site Name	Program Description	Site Address
1033602	ESSINGTON AVE AUTO PARTS FAC	Clean Water	6746 ESSINGTON AVE PHILADELPHIA, PA 19153
1033629	JIM'S AUTO RECYCLING W PASSYUNK AVE FAC	Clean Water	6299 W PASSYUNK AVE PHILADELPHIA, PA 19153
1035983	LKQ VENICE AUTO PARTS	Clean Water	3350 SOUTH 61ST STREET PHILADELPHIA, PA 19153
1039992	BIG HEAD AUTO SALVAGE CORP	Clean Water	3511 S 61ST ST PHILADELPHIA, PA 19153
1043263	NAVAL FOUNDRY AND PROPELLER CTR	Clean Water	1701 KITTY HAWK AVE PHILADELPHIA, PA 19112-5087
1041802	B & L AUTO PARTS 61ST STREET FAC	Clean Water	3404 S 61ST ST PHILADELPHIA, PA 19153
1044986	STEVE'S AUTO PARTS II S 61ST ST FAC	Clean Water	3331 S 61ST ST PHILADELPHIA, PA 19153
1047066	JACK'S AUTO PARTS S 61ST ST FAC	Clean Water	3517-3555 S 61ST ST PHILADELPHIA, PA 19153
1056063	KANCO METALS INC	Clean Water	4601 BATH ST PHILADELPHIA, PA 19137-2216
1081910	SUN CHEM HUNTING PARK AVE PLT	Clean Water	3301 HUNTING PARK AVE PHILADELPHIA, PA 19132
1081872	BILL'S AUTO PARTS PASSYUNK AVE FAC	Clean Water	6235 PASSYUNK AVE PHILADELPHIA, PA 19153
1084018	RICHARDSAPEX MAIN ST FAC	Clean Water	4202-24 MAIN ST PHILADELPHIA, PA 19127
1084122	WASTE MGMT OF PA GRAYS FERRY AVE FAC	Clean Water	3605 GREYS FERRY AVE PHILADELPHIA, PA 19146
1086796	ECO ENERGY PHILLY	Clean Water	3400 S CHRISTOPHER COLUMBUS BLVD PHILADELPHIA, PA 19148-5110
1088603	ORTHODOX AUTO UNRUH AVE FAC	Clean Water	5247 UNRUH AVE PHILADELPHIA, PA 19135

Authority ID	Site Name	Program Description	Site Address
1098554	JT'S USED AUTO PARTS S 61ST ST FAC	Clean Water	3505 S 61ST ST PHILADELPHIA, PA 19153
1100667	CONRAIL - FRANKFORD JUNCTION YARD	Clean Water	2110 E BUTLER ST PHILADELPHIA, PA 19124
1100082	ALLEGHENY IRON & METAL TACONY ST FAC	Clean Water	TACONY ST & ADAMS AVE PHILADELPHIA, PA 19124
1100654	CONRAIL - ANN STREET YARD	Clean Water	2801 E ANN STREET PHILADELPHIA, PA 19134
1100662	CONRAIL - SOUTH PHILLY YARD	Clean Water	11TH ST & TERMINAL RD PHILADELPHIA, PA 19112
1101644	PHILA GAS WORKS PASSYUNK AVE PLT	Clean Water	3100 PASSYUNK AVE PHILADELPHIA, PA 19145
1102641	CLEAN EARTH OF PHILA FAC	Clean Water	3201 S 61ST ST PHILADELPHIA, PA 19153-3502
1107170	SWEET OVATIONS TOMLINSON RD FAC	Clean Water	1741 TOMLINSON RD PHILADELPHIA, PA 19116-3847
1133700	NORTHEAST PHILADELPHIA AIRPORT (PNE)	Clean Water	9800 ASHTON RD PHILADELPHIA, PA 19114
1135947	PEPSI BOTTLING ROOSEVELT BLVD PLT	Clean Water	11701 ROOSEVELT BLVD PHILADELPHIA, PA 19154-2108
1137392	CARTEL AUTO PARTS W PASSYUNK AVE FAC	Clean Water	6330 W PASSYUNK AVE PHILADELPHIA, PA 19153
1152621	WASTE MGMT BLEIGH AVE FAC	Clean Water	5109 BLEIGH AVE PHILADELPHIA, PA 19136
1154204	ADVANSIX INC	Clean Water	MARGARET & BERMUDA STS PHILADELPHIA, PA 19137-1193
1218996	RHOADS BUILDING 1028	Clean Water	4703 BASIN BRIDGE ROAD PHILADELPHIA, PA 19112

Authority ID	Site Name	Program Description	Site Address
1223833	RECLEIM PA LLC PHILA PLT	Clean Water	4301 N DELAWARE AVE BLDG A PHILADELPHIA, PA 19137
1240915	IVD LLC	Clean Water	10101 ROOSEVELT BLVD PHILADELPHIA, PA 19154
1283330	UNITED METAL TRADERS COMLY ST FAC	Clean Water	5240 COMLY ST PHILADELPHIA, PA 19135-4315
1290160	KINGSBURY	Clean Water	10385 DRUMMOND RD PHILADELPHIA, PA19154
1326318	AMAZON.COM SERVICES LLC - DPH8	Clean Water	7575 BREWSTER AVE PHILADELPHIA, PA 19153-3206
1326311	HP HOOD PHILADELPHIA	Clean Water	10975 DUTTON RD PHILADELPHIA, PA 19154-3203
1327767	AMAZON.COM SERVICES LLC DDP9	Clean Water	3025 MEETING HOUSE RD PHILADELPHIA, PA 19154
1343571	S D RICHMAN SONS WHEATSHEAF LN FAC	Clean Water	2435 WHEATSHEAF LANE PHILADELPHIA, PA 19137
1372235	BWC TERMINALS-PHILADELPHIA	Clean Water	2900 E ALLEGHENY AVE PHILADELPHIA, PA 19134-6302
1368362	AMAZON.COM SERVICES LLC-DDP1	Clean Water	2900 GRANT AVE PHILADELPHIA, PA 19114-2310
1390197	MARINE LUBRICANTS, INC-PHILLY	Clean Water	4700 BASIN BRIDGE RD THE NAVY YARD PHILADELPHIA, PA 19112
1397548	KINDER MORGAN POINT BREEZE TERM	Clean Water	6310 W PASSYUNK AVE PHILADELPHIA, PA 19153-3517
No Exposure Certification, Discharge of Stormwater Associated with Industrial Activities, PAG-03			
591838	PEARL PRESSMAN LIBERTY	Clean Water	7625 SUFFOLK AVE PHILADELPHIA, PA 19153-3020

Authority ID	Site Name	Program Description	Site Address
711143	VICINITY ENERGY SCHUYLKILL GEN STA	Clean Water	2800 CHRISTIAN ST PHILADELPHIA, PA 19146
758806	FRONTIDA BIOPHARM INC	Clean Water	1100 ORTHODOX ST PHILADELPHIA, PA 19124
874849	SPECTRUM MICROWAVE PHILADELPHIA OPERATIONS	Clean Water	2707 BLACK LAKE PLACE PHILADELPHIA, PA 19154-1008
1023590	SANDMEYER STEEL	Clean Water	10060 SANDMEYER LN PHILADELPHIA, PA 19116
1027714	VEOLIA ENV SVC HEDLEY ST FAC	Clean Water	3100 HEDLEY ST PHILADELPHIA, PA 19137-1934
1073324	SOUTHERN GRAPHIC SYSTEMS LLC	Clean Water	2781 ROBERTS AVE PHILADELPHIA, PA 19129
1078315	INNOVATION PRINTING & COMMUNICATION	Clean Water	11601 CAROLINE RD PHILADELPHIA, PA 19154
1078748	MUTUAL PHARM CO INC	Clean Water	7722 DUNGAN RD PHILADELPHIA, PA 19111-2733
1098231	FIBREFLEX PACKING & MFG UMBRIA ST FAC	Clean Water	5101 UMBRIA ST PHILADELPHIA, PA 19128-4345
1135081	WUXI APPTEC INC	Clean Water	4751 LEAGUE ISLAND BLVD PHILADELPHIA, PA 19112-1220
1107824	TASTYKAKE	Clean Water	2801 HUNTING PARK AVE PHILADELPHIA, PA 19129
1108533	COILPLUS BLEIGH AVE FAC	Clean Water	5135 BLEIGH AVE PHILADELPHIA, PA 19136
1109160	API TECH CORP - PHILA OPS	Clean Water	2707 BLACK LAKE PLACE PHILADELPHIA, PA 19154-1008
1137663	WUXI APP TEC INC	Clean Water	4000 S 26TH ST PHILADELPHIA, PA 19112
1142051	EFORCE COMPLIANCE	Clean Water	3115 WHARTON ST PHILADELPHIA, PA 19146

Authority ID	Site Name	Program Description	Site Address
1144476	SMITH EDWARDS DUNLAP	Clean Water	2867 E ALLEGHENY AVE PHILADELPHIA, PA 19134-5994
1228873	JOWITT & RODGERS STATE RD FAC	Clean Water	9400 STATE RD PHILADELPHIA, PA 19114
1235957	PURE FISHING	Clean Water	3028 W HUNTING PARK AVE PHILADELPHIA, PA 19132
1249111	HILLOCK ANODIZING MFG FAC	Clean Water	5101 COMLY ST PHILADELPHIA, PA 19135
1259174	PENN MAID DUTTON RD PLT	Clean Water	10975 DUTTON RD PHILADELPHIA, PA 19154-3288
1257040	ARCA RECYCLING INC	Clean Water	2000 BENNETT RD PHILADELPHIA, PA 19116
1292099	L3 TECH INC SPD ELEC SYS	Clean Water	13500 ROOSEVELT BLVD PHILADELPHIA, PA 19116-4201
1305859	USPS VEHICLE MAINTENANCE FAC	Clean Water	1902 BYBERRY RD PHILADELPHIA, PA 19116-9997
1303748	PACKAGING COORDINATORS INC	Clean Water	3001 RED LION RD PHILADELPHIA, PA 19114
1311981	USPS PHILA VEHICLE MAINTENANCE FACILITY	Clean Water	3201 SOUTH 74TH ST PHILADELPHIA, PA 19153-9996
1335502	ASTRAZENECA PLP	Clean Water	3001 RED LION RD PHILADELPHIA, PA 19114-1123
1337031	HONOR FOODS INC	Clean Water	5501 TACONY ST PHILADELPHIA, PA 19122
1355549	LANNETT CO INC	Clean Water	9000 STATE RD PHILADELPHIA, PA 19136-1615
1355556	LANNETT CO INC	Clean Water	9001 TORRESDALE AVE PHILADELPHIA, PA 19136-1586
1355540	EXELON GENERATION CO DELAWARE STA	Clean Water	1325 N BEACH ST PHILADELPHIA, PA 19125

Authority ID	Site Name	Program Description	Site Address
NPDES Permit Stormwater Industrial Site Runoff (Individual)			
18834	SEPTA VICTORY AVE TERM	Clean Water	110 & 103 VICTORY AVE UPPER DARBY, PA 19082
882940	PHILA ENERGY SOLUTIONS REFINING & MKTG LLC	Clean Water	3144 W PASSYUNK AVE PHILADELPHIA, PA 19145-5208
901759	PHILLY SHIPYARD INC	Clean Water	2100 KITTY HAWK AVE PHILADELPHIA, PA 19112-1808
963494	ROHM & HAAS PHILADELPHIA PLT	Clean Water	5000 RICHMOND ST PHILADELPHIA, PA 19137
1192681	PHILA INTL AIRPORT	Clean Water	DIV AVIATION/INTL AIRPORT TERMINAL E PHILADELPHIA, PA 19153
1201124	AMTRAK 30TH STREET STATION	Clean Water	2955 MARKET ST PHILADELPHIA, PA 19104
1281171	PHILLY G STREET TERMINAL	Clean Water	4210 G ST PHILADELPHIA, PA 19124
1329374	SUNOCO PARTNERS MKT & TERM LP FT MIFFLIN TERM	Clean Water	4 HOG ISLAND RD PHILADELPHIA, PA 19153-3809
1312193	PBF LOGISTICS PRODUCTS TERMINALS LLC	Clean Water	6850 ESSINGTON AVE PHILADELPHIA, PA 19153-3413
1338563	WHITE PINES PARTNERS GC	Clean Water	1 RED LION RD PHILADELPHIA, PA 19115
1374567	JDM MATERIALS GRANT AVE PLT	Clean Water	2750 GRANT AVE PHILADELPHIA, PA 19114
1374574	JDM MATERIALS CO BARTRAM BATCH PLT	Clean Water	PENROSE FERRY RD PHILADELPHIA, PA 19153

Appendix K – Defective Connections Group FY22 Report

Sewer Maintenance Unit

Defective Connections Group

Fiscal Year 2022 Annual Report

I. BACKGROUND INFORMATION

A. Phase I Stormwater Regulations

In 1990, the Environmental Protection Agency (EPA) promulgated Stormwater Regulations that required National Pollutant Discharge Elimination System (NPDES) permits for stormwater discharges from large (populations in excess of 250,000) and medium-sized (populations between 100,000 and 250,000) municipalities with separate storm sewer systems, (MS4)[1]. The City of Philadelphia with a 1990 population of 1.4 million was one of two NPDES Stormwater Phase I permittees in Pennsylvania. The other permittee was the City of Allentown.

B. NPDES Permit for Stormwater

The City of Philadelphia received its first NPDES Stormwater Permit under the 1990 Federal Regulations as issued by the Pennsylvania Department of Environmental Protection (PA DEP) in September 29, 1995. This permit had a 5-year term. Among other requirements, the permit required the city to reduce stormwater based pollution of local streams, creeks and rivers, from (1) residential and commercial areas, (2) construction sites, (3) industrial sites and (4) defective lateral connections.

The renewal of the NPDES Stormwater Permit that expired in September 2000 was approved by the PA DEP on September 30, 2005. The new permit provides for the same scope and requirements for the Defective Laterals Detection and Abatement Program as the previous permit and incorporates some provisions from the Consent Order and Agreement (COA) of July 1998 although the COA was successfully completed on March 18, 2004.

With the Water Department's internal reorganization and creation of the Office of Watersheds (OOW) in January 1999, the responsibilities numbered (1) through (3) above, along with the periodic reporting thereon was transferred to the OOW. The Defective Connections group (DCG) continues to pursue the 4th objective of NPDES Permit, namely the detection of defective laterals that cause sanitary wastewater to be carried to the local streams and rivers.

DCG field investigations began in March 1994.

II. DEFECTIVE LATERALS DETECTION AND ABATEMENT PROGRAM

A. Scope of Investigations

The MS4 impacts the areas of the city where there are two separate sewers in the street. The sanitary sewer system, which consists of a network of pipes of smaller diameter, carries domestic wastewater to the City's three Water Pollution Control Plants located in the Northeast, Southeast and Southwest sections. The storm sewer system consists of pipes of larger diameter but significantly shorter lengths and transports the stormwater to the nearest natural waterways. In general, the relatively newer sections of the city in the northeast, northwest and southwest are served by a MS4.

[1] Municipal Separate Storm Sewer System

Due to problems generally attributed to improper installation or lack of oversight during construction, sanitary wastewater from some properties can be transported into the storm sewers and from there, to the streams and rivers. This intrusion of sanitary wastewater causes pollution of the streams and rivers, which are the source of city's water supply. The polluted streams and rivers also endanger the physical health and safety of residents and users of the streams. The NPDES Permit requires the city to identify and abate the plumbing connections (defective laterals) that cause the sanitary wastewater to drain into the streams.

The **investigations** of stream pollution are triggered by the presence of a dry weather discharge from the storm sewer outfalls into the streams. There are over 400 stormwater outfalls in city's MS4 system of which some 220 have exhibited some dry weather flow.

It should be mentioned however, that not all dry weather discharge from an outfall comes from sanitary wastewater incursion; some may come from underground natural streams or from groundwater inflow. Additional testing of chemical and biochemical composition of samples collected from the outfalls determines whether or not stream pollution may be caused by defective laterals.

B. Outfall Inspections and Sampling

A systematic sampling of the quality of dry weather flow from the 200 plus wet outfalls was performed in 1991 as part of the initial NPDES permit application process. This program attempted to document the amount of flow (gph) and in many cases, fecal coliform count (number of fecal colonies per ml of water). The outfall sampling results were updated in 1998 when additional observations of fluoride levels (mg/l) were included to provide some indication of the origin of water seen in the outfalls. This is based on the fact that the natural water coming from streams or ground water seepage does not contain any significant fluorides, but the City water contains 0.7 mg/l of fluorides.

The more likely outcomes of fluoride and fecal count analyses are interpreted as follows:

i. **High fluoride level with high fecal count:** possible intrusion of sanitary wastewater into the storm sewer
ii. **Low fluoride level with high fecal count:** possible transport of surface contamination in the non-domestic discharge
iii. **High fluoride with low fecal count**: possible drinking water source

As a part of the MS4 permit, all stormwater outfalls are to be inspected once every five years. If there is dry-weather flow present then the outfall is to be sampled and tested for fecal presence and fluoride levels. In addition, the priority outfalls of the watersheds are to be sampled on a quarterly basis. Outfall inspections and sampling are handled by the Industrial Waste unit. Laboratory analysis is completed by the Bureau of Laboratory Services.

During FY2022, 41 outfall inspections were conducted, and 35 samples were taken due to observed dry-weather flow as part of the Priority Outfall Sampling program. During FY2022, 77 outfall inspections were conducted, and 31 samples were taken due to observed dry-weather flow as part of the Permit Inspection program.

C. Field Screening

The object of **field screening** is to identify the areas in a sewershed that are suspected of contributing to stream pollution through defective laterals. The field screening begins systematically at an outfall that shows a dry weather flow[2].

Proceeding upstream from the outfall, the storm sewer manholes are successively opened and observed for the presence of flow. The term "**flow**" has been widened to include "**wet**" stormwater manholes on the assumption that the wetness was caused by earlier active flow. These observations are continued upstream along a specified sewer line and stop when a stormwater manhole no longer exhibits any flow or wetness. The field screening is then continued along another tributary sewer and eventually through the entire sewershed of the outfall.

D. Identification of Defective Laterals

1) Dye Tests

Dye testing is a process by which a cross-connected lateral at a property that carries sanitary wastewater to a storm sewer is identified.

(a) Initial Dye Test

Before a test is conducted, the fresh air inlets (FAIs) located at the curbside of the property are identified as being the sanitary or storm FAIs. In Philadelphia, the sanitary lateral is located downstream of the stormwater lateral in relation to the flow of the main sewer[3]. The dye test protocol adopted by the City requires the presence of two properly functioning FAIs for successful initial tests. If one or no FAI is seen at a property or one or both of the FAIs are clogged or damaged, the initial dye test is aborted with a notation "**Inconclusive**".

During the initial dye test, a water-soluble fluorescent dye is placed in the fresh air inlets (FAIs). The dye is then washed down with water.

In the case of a **"Camera Assisted Dye Test"** the emergence of the dye is observed in the **storm sewer** by a closed circuit television camera positioned in the storm sewer in front of the stormwater lateral connection of the property. Possible observations include:

(i) Green dye placed in storm FAI is seen in the storm sewer
(ii) Green dye paced in storm FAI is not seen in the storm sewer
(iii) Red dye placed in the sanitary FAI is seen in the storm sewer
(iv) Red dye placed in the sanitary FAI is not seen in the storm sewer.

The above observations are interpreted as follows:

1) Combination of (i) and (iv): **Proper Connection**
2) Combination of (i) and (iii): **Probable Cross Connection**
3) Combination of (ii) and (iv): **Inconclusive**
4) Combination of (ii) and (iii): **Probable Cross Connection**

[2] A dry weather flow is defined as one that is detected after an elapse of 72 hours of a continuous dry spell from the previous rainfall event.
[3] As discussed in Section D. House Lateral Design, pages 5-3 and 5-4, in the PWD Water and Sewer Design Manual (2nd Edition) 2011.

In certain cases, the use of the closed circuit television camera is not possible. In such cases, the initial tests are conducted with a **"Manual Dye Test"**. Possible observations include:

In a **"Manual Dye Test"**, a green dye is placed in the storm FAI and observed in the **storm sewer**. At the same time, a red dye is placed in the sanitary FAI and observed in the **sanitary sewer**. If the red dye appears in the sanitary sewer, whether or not the green dye appears in the storm sewer, the conclusion arrived at is "**Proper Connection**".

If the red dye is not seen in the sanitary sewer, the test is repeated by placing more red dye in the sanitary FAI and observed in the **storm sewer**. If the red dye appears in the storm sewer, this result signifies the presence of a "**Probable Cross Connection**".

If dye is not seen in the sanitary and storm sewers the observation is "**Inconclusive**".

The initial dye tests, whether conducted manually or by a camera are intended to be least intrusive to the water customers. During these initial tests, no entry into the home is involved. In order to provide water for dye tests at the FAIs, field crews use portable water equipment. The Defective Connections group has two vehicles each retrofitted with water supply tanks.

(b) Confirmation Dye Test

A confirmation dye test is conducted in case of an Inconclusive test or a Probable cross connection. This test is conducted after a second notification to the customer has been sent. This test is **intrusive**; admission inside the home is required to conduct the testing.

The confirmation dye test is conducted **manually** by placing and flushing the fluorescent dye in household plumbing fixtures, such as a toilet[4]. The emergence of the dye is then observed in the **sanitary sewer**.

If the dye does appear only in the sanitary sewer, it is concluded that the property tested has a "**Proper Connection**." If the dye from the household plumbing does not appear in the sanitary sewer, then observation is made in the storm sewer. The presence of the dye in the storm sewer confirms the existence of a "**Cross Connection.**"

(c) Notification of Defective Lateral

When a confirmation dye test indicates that there exists a cross connection at the subject property, the property owner is advised that if the property qualifies as a residential property (with no more than 4 units in one of which the owner has his/her residence), the city will make repairs to the defective lateral(s) at no cost to the property owner. If later on it is discovered that the property does not fall within this category, the customer is informed by a follow up notice of his responsibility to repair the defect at their cost.

The Plumbing Repair Programs unit handles customer communications and is responsible for the abatement of these defects.

2) Customer Notifications

[4] This step was modified in CY2001 to conduct the tests from all plumbing fixtures, including any in the basement in order to identify the existence of an internal cross connection, where all fixtures but one are properly connected to the sanitary sewer, with one offending connection to the storm sewer.

(a) Initial Notification

The identification of the defective laterals begins after delineating the parts of a sewershed suspected of contributing dry weather flow to the MS4 system, after field screening. All property holders in the specified area receive an initial notification letter, generated through the Oracle-based DLS computer program. The notification provides an introduction of the program and requests the customer's cooperation in enabling **dye tests** at their property. A dye test is conducted after an initial notification is sent out to a customer. There are three possible outcomes of a dye test:

(i) A test is conducted and no cross connection is found. In this case, a result of "No Cross Connection" is entered in the database and the case is closed.

(ii) A test is conducted and it is concluded that there might exist a cross connection that results in the transport of sanitary wastewater into the storm sewer. This condition requires additional tests to confirm the existence of a cross connection.

(iii) A test cannot be conducted due to any of a variety of reasons, such as FAIs were not conclusively identified, were clogged, etc. This situation also warrants additional tests to conclude whether or not a cross connection exists.

(b) Confirmation Notification

In either of case (ii) or (iii) above, a follow up notification is sent out to the customer, informing them of the results of the previous attempt and requesting them to be available at a specified date for additional "Confirmation" tests at their property. Of course, if the date provided by the City is not suitable to the customer, they can schedule an alternative appointment that suits them.

Dye tests are then conducted at the property from within the customer's premises as described earlier. The results of the tests, (a) a Proper Connection or (b) a Cross Connection, are entered in the DLS computer program.

(c) Water Shutoff Notification

Not all dye tests are completed as a result of confirmation notifications. Some customers ignore the scheduled date and fail to make an alternative appointment. In such cases an informatory note is left at the property and a follow up attempt for tests is made. If this also results in no test, another notification is sent out informing the customer that if they do not make a firm appointment by a specified date (usually within two calendar weeks of the notification date), their water service would be scheduled to be turned off by the Customer Service unit. Of course if the customers do respond and make an appointment for dye tests, the service shutoff is withdrawn and tests are completed as soon as possible.

(d) Miscellaneous Closures

In some cases, where there was no response to dye test requests or water service shutoff notifications due to properties being vacant or abandoned, the cases were closed with a notation "**Miscellaneous Closure**". A miscellaneous closure is activated because of any of the following reasons:

- No active water service to the premises
- Property abandoned, empty or unoccupied
- No billing to the property per Revenue Department
- No sewer connection

From time to time, the miscellaneously closed accounts are revisited. If we find that the reason that caused the account to be originally closed is no longer valid, a dye test is conducted and the property is then re-classified according to the test results.

III. PRIORITY SCORE LIST OUTFALLS

The emphasis of the Defective Laterals Detection and Abatement program is on outfalls on the Priority Score List. The Priority Score List ranks all outfalls sampled with dry-weather flow based on a preset formula that includes the fecal coliform results, the estimated volume of flow, whether the outfall discharges to a drinking water source water, and a complaint factor. The Priority Score List is periodically updated based on the results of the (Permit) Outfall Inspection and Sampling Program described earlier. This list was updated in July 2013.

IV. SUMMARY OF DYE TESTS AND ABATEMENTS

Table 1 provides a summary of the work performed in detecting and abating defective laterals. It shows the cumulative numbers since the inception of the project in 1994, and the progress that was attained during FY2022.

Table 1.
Updated Progress on Dye Tests in Philadelphia MS4 Area

	Since Inception of the Program	During Fiscal 2022
Dye Tests Initiated	65,620	224
No Cross Connections Found	62750	268
Cross Connections Identified	1,832	30
Completed Tests	64,582	298
Abatements Completed	1,659	13

Of the 13 abatements done in FY2022, 12 were residential properties, and the cost for these abatements was $83,351.50. Additionally, 1 commercial property was abated at a cost of $500.00

V. MISCELLANEOUS

Estimates of Pollution Removed

The following data provides a rough measure of the effectiveness of the Defective Connections group's positive contribution to improving the local environment:

- Number of Cross Connections Abated
  - Since Inception of the Program 1,659
  - During FY2022 13

- Estimated gallons of Polluted Water Prevented from entering the stormwater outfalls[5]
  - Since Inception of the Program 230.03 million gallons per year
  - During FY2022 1.83 million gallons per year

VI. STAFF LEVELS

Because of the high priority assigned to the Defective Connections group, the availability of manpower is extremely important. The sanctioned personnel for the unit is as follows:

One **Water Conveyance Supervisor**

Two **Field Representative Supervisors**

Four **SM Crew Chief Is / Science Technicians**

Eight **Utility Representatives**
Two positions vacant

One **Data Services Support Clerk**

The above field and office staffs are organized under the Water Conveyance Supervisor. This position is responsible for all aspects of the unit. The two Field Representative Supervisors are each responsible for two field crews, four crews in all. Each crew is led by a SM Crew Chief I / Science Technician and has two Utility Representatives.

In addition to the field staff, the Defective Connections group has the following position which provides general support:

Data Services Support Clerk: The DSSC handles the intricacies of the DLS database, creation of various correspondences related to dye tests, and follows-up with the field staff.

The DSSC also handles a variety of communications with the customers, makes appointments, and follows-up with delinquent customers. They also maintain the record of water shutoff warnings and miscellaneous closures.

At the end of FY2022, 14 of the 16 approved positions in the Defective Connections group were filled.

[5] Based on an average use of 110 gallons per capita per day, over a family size of 3.5 persons.

Appendix L – Sanitary Infiltration Events

Report Date	Report Time	Problem Location	Spill Notes	Affected Outfall	Abatement Date	Abatement Time	Abatement
7/7/2021	10:40 AM	NAVY YARD PS 603	PUDDLE OF SEWAGE OBSERVED COMING FROM THE GROUND ABOUT 250 FT NE OF STATION	N/A	7/8/2021	2:00 PM	VACTORS AND FLUSHERES DEPLOYED TO CLEAN UP SEWAGE AND MANAGE PS FLOWS, CONTRACT FOR FORCE MAIN REPLACEMENT NEEDED
7/12/2021	5:15 PM	4701 GRANT AVE	SEWAGE OBSERVED ON GROUND AND IN POQUESSING CREEK FOLLOWING STORM EVENT	UNK	7/12/2021	9:20 PM	WRT DID SITE CLEAN UP AS WELL AS RESET AND LIMED AREA
7/13/2021	7:45 AM	NAVY YARD PS 603	PUDDLE OF SEWAGE OBSERVED DUE TO BREACHED FORCE MAIN	N/A	7/13/2021	2:45 PM	VACTOR DEPLOYED TO CONTAIN SEWAGE, FINALIZING CONTRACT FOR FORCE MAIN REPLACEMENT
7/22/2021	9:20 AM	NAVY YARD PS 603	PUDDLE OF SEWAGE OBSERVED DUE TO BREACHED FORCE MAIN	N/A	7/23/2021	12:40 PM	VACTOR DEPLOYED TO CONTAIN SEWAGE, FINALIZING CONTRACT FOR FORCE MAIN REPLACEMENT
8/10/2021	12:45 PM	NAVY DRIVE PS 603	PUDDLE OF SEWAGE OBSERVED DUE TO BREACHED FORCE MAIN	N/A	8/10/2021	1:00 PM	VACTOR DEPLOYED TO CONTAIN SEWAGE, FINALIZING CONTRACT FOR FORCE MAIN REPLACEMENT
8/12/2021	9:45 AM	TABOR AVE & STANWOOD ST	WATER OBSERVED COMING OUT OF MANHOLE	P-099-01	8/12/2021	12:00 PM	BYPASS PUMPING, SWEPT AND REMOVED DEBRIS FROM WATER, FLUSHED CREEK WITH WATE AND DECHLOR TABS
8/17/2021	11:30 AM	TABOR AVE & STANWOOD ST	BREACH IN BYPASS PUMPING HOSE	N/A	8/17/2021	12:00 PM	DAMAGED HOSE REPLACE AND CREEK WAS FLUSHED WITH DECHLOR TABS

Report Date	Report Time	Problem Location	Spill Notes	Affected Outfall	Abatement Date	Abatement Time	Abatement
8/19/2021	1:00 AM	CRESHEIM VALLER DR & LINCOLN DR	SANITARY SEWER OVERTAXED FROM STORM	N/A	8/19/2021	9:00 AM	WRT CLEANED FROM CV-0145 20 YARDS IN FRONT
8/20/2021	12:45 PM	LEVERINGTON & HIGH ST	CHOKED SEWER	S-059-04	8/20/2021	9:30 PM	BYPASS PUMPING USED TO CLEAN MANHOLE AND MAKE REPAIRS
8/23/2021	12:54 PM	RENNARD PS	BYPASS PUMPING FLOAT LEVEL TOO HIGH	P-116-01	8/23/2021	1:04 PM	FLOAT LEVEL READJUSTED AND WRT WAS NOTIFIED TO CLEAN OUTFALL
9/15/2021	9:30 AM	RED LION RD & NORTHEAST BLVD	CHOKED SEWER	P-113-01	9/15/2021	11:30 AM	FLUSHER RELIEVED CHOKE AND USED DECHLOR TABS THEN REFERRED TO WRT
9/16/2021	11:00 AM	MT. AIRY AVE & MT. AIRY TERR WISSAHICKON PARK TRAIL	SEWAGE SPILLED FROM MOBILE DREDGE CLEANING TRUCK TO GROUND	N/A	9/16/2021	11:00 AM	WRT APPLIED LIME AND REMOVED ALL SOLIDS
10/4/2021	10:30 AM	NAVY DRIVE PS 603	ADDITIONAL LEAKS IN FORCE MAIN FOUND	N/A	10/18/2021	2:00 PM	CONTRACT FOR FORCE MAIN REPLACEMENT FINALIZED AND PRESSURE SENSOR WILL BE INSTALLED
10/13/2021	2:00 PM	GREENMONT & TELFAIR RD	SEWAGE DISCHARGED AT ~ 4 GPM FROM 10 INCH SEWER.	Q-107-01	10/13/2021	4:45 PM	SEWER MAINTENANCE REMOVED DEBRIS AND FLUSHED STORM SEWER WITH DE-CHLOR TABS TO CLEAN OUTFALL
10/27/2021	3:43 PM	CENTRAL SCHUYLKILL	PUMP STATION INLETS CLOSED CAUSING DISCHARGE OUT OF VARIOUS CSOS AND INTO RIVER	MULTIPLE	10/28/2021	9:06 AM	PWD CREWS DISPATCHED TO CLEAN UP SPILLS

Report Date	Report Time	Problem Location	Spill Notes	Affected Outfall	Abatement Date	Abatement Time	Abatement
		PUMPING STATION					
10/28/2021	7:39 PM	CENTRAL SCHUYLKILL PUMPING STATION	PUMP STATION INLETS CLOSED	S-7	10/29/2021	6:02 AM	PWD CREWS DISCPATCHED TO CLEAN UP SPILLS AND NEW PLAN PUT IN PLACE FOR ALARMS
11/16/2021	4:30 PM	KEYSTONE & LINDEN	SEWAGE COMING OUT OF MANHOLE AT INTERSECTION DUE TO CHOKED SEWER	D-092-05	11/16/2021	7:20 PM	REMOVED WATER AND DEBRIS FROM MANHOLE, SET UP BYPASS PUMP, AND FLUSHED SEWER AS WELL AS DISINFECTED THE AREA AND FLUSHED STORM WITH DE-CHLOR TABS
11/29/2021	10:12 AM	920 JOHNSTON ST	SEWAGE FOUND IN BASEMENT DUE TO CHOKED SEWER	N/A	11/29/2021	10:12 AM	SEWER FLUSHED TO RELIEVE CHOKE AND JOB REFERRED TI CUSTOMER SERVICE FOR PROPERTY DAMAGES
12/17/2021	9:00 AM	COMLY RD	SEWAGE OBSERVED IN STREAM ON ROCKS AND AT OUTFALL BUT NOT ACTIVELY DISCHARGING	Q-114-04	12/17/2021	9:00 AM	SWEPT AND REMOVED DEBRIS FROM WATER AND FLUSHED CREEK WITH DE-CHLOR TABS
12/24/2021	6:10 AM	INTER CALEDONIA & MANATAWNA	CHOKED SEWER DISCHARGING INTO INLET	N/A	12/28/2021	10:15 AM	SEWER FLUSHED

Report Date	Report Time	Problem Location	Spill Notes	Affected Outfall	Abatement Date	Abatement Time	Abatement
12/28/2021	1:40 PM	8901 ASHTON RD	CHOKED SEWER AT MANHOLE IN FRONT OF RESIDENCE CAUSING DISCHARGE OUT OF OUTFALL	P-100-10	12/28/2021	2:20 PM	FLUSHER RELIEVED CHOKED SEWER THEN STORM SEWER, INLETS, AND OUTFALL WERE FLUSHED WITH DE-CHLOR TABS
12/29/2021	4:36 PM	528 W HORTTER ST	CHOKED SEWER CAUSED DISCHARGE INTO RESIDENTIAL BASEMENTS	N/A	12/30/2021	11:30 PM	CHOKE CLEARED BY SEWER MAINTENANCE AND CUSTOMER SERVICE CLEANED BASEMENTS
1/11/2022	8:45 AM	3760-80 CRESSON ST	SEWAGE COMING DOWNHILL BEHIND 3809 MAIN ST	N/A	N/A	N/A	N/A
1/24/2022	8:09 PM	NEILL DRIVE PUMPING STATION	SMELL AND DEBRIS IN THE CREEK WEST OF PUMP STATION	S-046-05	1/26/2022	12:00 PM	WRT CLEANED CREEK OF ANY RESIDUAL DEBRIS
2/28/2022	9:30 AM	HOLME AVE & WINCHESTER AVE	CHOKED SEWER CAUSING SEWAGE TO RUN INTO CREEK	P-091-07	2/28/2021	8:00 PM	BYPASS PUMPING USED TO RELIEVE CHOKE AND WRT WAS DISPATCHED FOR CLEAN UP
3/3/2022	12:00 AM	PARKDALE RD & DEERPATH LN	GRAY DEBRIS SEEN ON ROCKS IN STREAM	Q-107-02	3/3/2022	1:00 PM	SWWPT AND REMOVED DEBRIS FROM WATER AND FLUSHED CREEK WITH DE-CHLOR TABS
3/31/2022	4:00 PM	FERNDALE ST & GREYMONT ST	CHOKED SEWER CAUSED DISHARGE INTO UNNAMED CREEK	UNK	3/31/2022	4:45 PM	FLSUHER RELIEVED CHOKE AND WRT FLUSHED INLETS AND STORM SEWER WITH DE-CHLOR TABS

Report Date	Report Time	Problem Location	Spill Notes	Affected Outfall	Abatement Date	Abatement Time	Abatement
4/1/2022	11:30 PM	S 52ND ST & HADFIELD ST	SEWAGE SPILL FROM BYPASS PUMP HOSE	N/A	4/1/2022	11:33 PM	REFECTIVE PART REPLACED
4/15/2022	11:30 AM	2800 W CHELTENHAM AVE	CHOKED SEWER CAUSING SPILL INTO STREET AND INTO INLET AND OUT OF OUTFALL	T-097-01	4/15/2022	3:10 PM	BROKE CHOKE IN SEWER WITH FLUSHER AND CLEAN UP AT OUTFALL
4/16/2022	12:06 PM	9229 FRANKFORD AVE	CHOKED SEWER CAUSING DISCHARGE TO STORM SEWER	Q-101-09	4/16/2022	3:30 PM	FLUSHED OPEN AND REMOVED DEBRIS WITH VACTOR THEN FLUSHED STORM SEWER WITH DE-CHLOR TABS
4/21/2022	11:00 AM	531 RIGHTER ST	CHOKED SEWER DISCHARGING INTO STORM SEWER	S-051-08	4/21/2022	7:00 PM	SET UP BYPASS PUMP AND BROKE CHOKE IN MORNING OF 4/22/2022
5/2/2022	2:00 PM	2555 WELSH RD	SEWAGE OVERFLOWING INTO SHOWERS AT APARTMENTS	N/A	5/2/2022	8:30 PM	VACTOR RELIEVED GREASE BUILD UP AND NOTIFIED CUSTOMER SERVICE FOR CLEAN UP
5/8/2022	8:28 AM	PUMP STATION 796	ALARM SYSTEM NOTIFIED OF OVERFLOW BUT NO SPILL SEEN	D-73	N/A	N/A	N/A
5/13/2022	11:45 AM	12001 MILLBROOK	CHOKED SEWER DISCHARGING INTO STORM SEWER	W-060-11	5/13/2022	5:45 PM	FLUSHER RELIEVED CHOKED SEWER AND WRT NOTIFIED FOR CLEAN UP
5/18/2022	2:00 PM	4023 FAIRDALE RD	SEWAGE RUNNING INTO STORM SEWER	Q-107-02	5/20/2022	4:00 PM	WRT NOTIFIED TO CLEAN UP STREAM

Report Date	Report Time	Problem Location	Spill Notes	Affected Outfall	Abatement Date	Abatement Time	Abatement
5/20/2022	1:00 PM	KNIGHTS RD & WOODHAVEN RD	CCTV FOUND CHOKED SEWER DISCHARGIN INTO STORM SEWER	Q-107-02	5/20/2022	4:00 PM	WRT NOTIFIED TO CLEAN UP STREAM
5/20/2022	4:30 PM	608 WELSH RD	SEWER BUBBLES OBSERVED COMING OUT OF MANHOLE INDICATING CHOKED SEWER	N/A	5/20/2022	6:30 PM	FLUSHER ELIEVED CHOKE IN SEWER
5/26/2022	4:30 PM	HENRY AVE & HERMIT ST	SEWAGE IN GOLF COURSE	W-060-12	5/26/2022	6:00 PM	CHOKED SEWER RELIEVED AND WRT CLEANED OUTFALL AND STREAM
6/15/2022	2:35 PM	608 WELSH RD	SUDS AND TOILET TISSUE COMING OUT OF MANHOLE	N/A	N/A	N/A	ONGOING INVESTIGATION BY PWD INDUSTRIAL WASTE UNIT
6/21/2022	1:30 PM	6700 RIDGE AVE	CUSTOMER SERVICE REPORTED WASTE AT OUTFALL AND CHOKE WAS FOUND	W-067-01	6/21/2022	7:00 PM	FLUSHER BROKE CHOKE IN SEWER THEN WRT CLEANED OUTFALL AND FLUSHED STORM SEWER WITH DE-CHLOR TBAS

Appendix M – Pollution Migration / Infiltration

Date Reported	Date Completed	Who Called	Location	Pollutant	Pollutant Type Desc	Drainage Area	Incident Type	Destination	Observations	Vulnerability Assessment	Vulnerability Assessment Comment
07/06/2021 11:07 AM	07/09/2021 11:00 AM	Other	2932 Devereaux Ave	Sewage		Combined - D5/D7	Other - Sewage Back Up	Spill To Ground Only	Drain in the rear of the house (outside) has an accumulation of sewage.	No Impact On Department Operation Or Structure	
07/07/2021 10:58 AM	07/16/2021 09:30 AM	Wwtp	3899 Richmond St	Undetermined		Not Applicable	Color	Drain To Sewer	there was a red/pink color in the effluent of the PST2 and in the area between aeration and final tanks. PST1 was normal.	Minor Impact On Department Operation Or Structure	
07/08/2021 15:30 PM	07/09/2021 12:00 PM	Citizen	232 E Johnson St	Construction Material (Cement/Dry Wall Cmpd)		Combined - T14	Spill | Slug Discharge	Overland To Inlet	Cement dumped on property and entered inlet at Johnson and Musgrave St.	Minor Impact On Department Operation Or Structure	
07/19/2021 22:08 PM	09/23/2021 11:13 AM	311	118 Farson St	Sewage		Combined - S50	Other -	Drain To Sewer	Residential sanitary backup from backyard storm drain.	No Impact On Department Operation Or Structure	
07/23/2021 08:28 AM	08/20/2021 10:45 AM	Other City Department	N 5Th St & W Allegheny Ave	Petroleum (Oil | Fuel)	Transformer Oil	Combined - D25	Spill | Slug Discharge	Overland To Inlet	PECO transformer leaked ~15 gallons of non-pcb oil to inlet.	No Impact On Department Operation Or Structure	
07/23/2021 15:27 PM		Other City Department	S 80Th St & Lyons Ave	Petroleum (Oil | Fuel)	Transformer Oil	MS4 - M005-07 & M005-08	Spill | Slug Discharge	Overland To Inlet	No sheen was observed at out or pump station.	No Impact On Department Operation Or Structure	
07/26/2021 15:05 PM	07/28/2021 12:00 PM	Other Pwd Department	730 S 6Th St	Petroleum (Oil | Fuel)	Heating Oil	Combined - D-63	Spill | Slug Discharge	Spill To Ground Only	A clean up crew was pumping water from a 30" WMB from the basement. The pumping ceased when there was heating oil in the water. PWD inspector observed heating oil with sand on the sidewalk IFO the property. There was an odor of heating near the house. There was no obvious staining in the gutter of the street and the flow from other pump outs did not have a sheen. There was no oil in the inlet or at the outfall. PWD inspector talked to the PWD Director of Operations, Risk Management and Customer Field Services. It was decided that the City would use their contractor remediation vendor to evaluate and clean the site. PWD Claims Administrator will coordinate. The remediation vendor, L&I and PWD Customer Field Services met at the site on 7/28/2021.	No Impact On Department Operation Or Structure	No oil in inlet at SEC of 6th and Fitzwater Streets or at the outfall.
07/28/2021 11:20 AM	07/28/2021 14:00 PM	Fire Communications	Red Lion Rd & E Roosevelt Blvd	Petroleum (Oil | Fuel)	Diesel Fuel	MS4 - Q-109-06	Other - Car Accident	Spill To Ground Only	At 0936hrs, PFD reported an accident in the vicinity of Red Lion Rd. & Roosevelt Blvd., involving a tractor trailer. Reports state, that approximately 20 gallons of oil is leaking onto the roadway. A sand truck was requested. At this time there are no reports of the oil entering any storm drains. PWD inspector verified that there was no oil at the outfall.	No Impact On Department Operation Or Structure	No oil migrated to the inlet and no sheen or odor at the outfall.
08/01/2021 14:45 PM	08/01/2021 18:00 PM	Fire Communications	2335 Wheatsheaf Ln	Water	Fire	MS4 - T-056-03	Fire	Overland To Inlet	Runoff entered stream at the outfall. No major impact observed in stream.	No Impact On Department Operation Or Structure	
08/06/2021 07:49 AM	08/05/2021 13:00 PM	Citizen	Boone St & Roxborough Ave	Construction Material		MS4 - S-51-03	Illegal Discharge | Dumping		Grates on inlets stained with drywall cmpd/paint. The catchment of both inlets were normal. The responsible party could not be determined.	No Impact On Department Operation Or Structure	
08/06/2021 09:24 AM	08/20/2021 11:03 AM	311	Wilde St & Mallory St	Chemical	Antifreeze	MS4 - S-059-04	Illegal Discharge | Dumping	Overland To Inlet	Green liquid observed in inlet. Inlet cleaning notified.	Minor Impact On Department Operation Or Structure	
08/09/2021 13:58 PM	08/18/2021 09:32 AM	Citizen	1 Boathouse Row	Plastic Bottles, Garbage Containers, Trash		MS4 - S035-02	Illegal Discharge | Dumping	Direct To Receiving Stream	Excessive algea bloom in the area, trash littered in the area.	No Impact On Department Operation Or Structure	
08/10/2021 14:33 PM	08/20/2021 11:19 AM	Business	8500 Essington Ave	Petroleum (Oil | Fuel)	Jet Fuel	MS4 - M-005-13	Spill | Slug Discharge	Overland To Inlet	2 gallons jetfuel leaked to inlet. No impacts to creek.	No Impact On Department Operation Or Structure	
08/12/2021 09:37 AM	08/10/2021 10:45 AM	Citizen	7418-20 Frankford Ave	Petroleum (Oil | Fuel)	Oil	Combined - D02	Spill | Slug Discharge	Spill To Ground Only	No spill observed at the site (7418 Frankford Ave).	No Impact On Department Operation Or Structure	
08/12/2021 13:45 PM	08/19/2021 16:01 PM	Citizen	S Frazier St & Spruce St	Food Waste	Grease	Combined	Illegal Discharge | Dumping	Other		No Impact On Department Operation Or Structure	
08/16/2021 14:25 PM	08/18/2021 12:00 PM	Citizen	2392 S 66Th St	Petroleum (Oil | Fuel)	Oil	Combined	Spill | Slug Discharge	Spill To Ground Only	No sheen in inlet.	No Impact On Department Operation Or Structure	
08/18/2021 14:16 PM	08/19/2021 10:00 AM	Citizen	7055 Torresdale Ave	Petroleum (Oil | Fuel)	Diesel Fuel	Combined - D03	Spill | Slug Discharge	Spill To Ground Only	Oil was removed from site.	No Impact On Department Operation Or Structure	
08/18/2021 21:07 PM	08/21/2021 09:31 AM	Citizen	3 N Columbus Blv	Petroleum (Oil | Fuel)	Diesel Fuel	Not Applicable	Spill | Slug Discharge	Direct To Receiving Stream	No impact to PWD collection system.	No Impact On Department Operation Or Structure	
08/19/2021 09:15 AM		Citizen	1114 S 11Th St	Food Waste	Grease	Combined - D65	Illegal Discharge | Dumping	Overland To Inlet	Grease found in inlet.	Minor Impact On Department Operation Or Structure	
08/23/2021 12:29 PM	08/25/2021 14:00 PM	Wwtp	3901 Richmond St	Foam		Not Applicable	Spill | Slug Discharge	Drain To Sewer	NE Crew Chief called PWD at 12:29 PM on 8/23/2021 to report that there was a foaming substance in the grit basin and PST. He said there was a soapy odor. The PWD inspector arrived at the plant at 1300. She noticed that the doors to the PTB were open, The crew chief told her the soapy odor was strong. She did not the smell any unusual odors. The slug discharge of soapy material was dissipated. She saw some residue at the channel of the PTB south of the operators door. The sample had no soapy odor. A sample was pulled and a id a Qual test for surfactants was requestd. The Qual test results showed that the sample contains proteins, surfactants, and oils / dietary fatty acids. There was no definite match to any specific product. No further action was taken.	Minor Impact On Department Operation Or Structure	Strong soapy odors. The doors to the PTB were opened for ventilation.
08/23/2021 14:40 PM	08/24/2021 12:33 PM	Fire Communications	3144 W Passyunk Ave	Foam		Non-Contributing	Other - Fire	Other	HMAU called PWD to reported that there was a fire in tank at the old PES plant that contained residual oil. Foam was applied and all run off was contained. PWD contacted PES personnel who verified that the runoff was contained. PES made all required notifications. PWD inspected arrived at the site. PES security restricted access to PWD, PGW and PECO because the fire was contained. No further action was taken by PWD.	No Impact On Department Operation Or Structure	Run off from fire contained
08/25/2021 13:40 PM	08/25/2021 15:00 PM	Other Pwd Department	S 20Th St & Samson St	Solid	Construction Debris	Combined - S13	Illegal Discharge | Dumping	Drain To Sewer	PWD responded to a report from traffic control about concrete dumping in inlet at 20th & Samson St. A construction site is at the corner but there was no trail from the site to the inlet. A responsible party has not been determined.	Major Impact - Caused Pass Through Or Interference	
08/27/2021 12:49 PM	08/28/2021 13:07 PM	311	3847 Terrace St	Unspecified Type Of Oil Reported.		MS4 - S-051-08	Illegal Discharge | Dumping	Other	PWD received an anonymous 311 call that oil was leaking from barrels to the inlet 3847 Terrace St. PWD inspector did not observe any barrels next to the inlets at Terrace St. and Salaignac St. There is a restaurant at the corner. There are drums that store cooking oil on the sidewalk on Salaignac St. 86' from the inlets. There is some staining on the sidewalk around the drums but not near the inlet. There also some staining in the middle of the intersection. No product was found in any of the inlet. No further action is required at this time.	No Impact On Department Operation Or Structure	No oil was observed in inlet.
09/01/2021 13:27 PM	09/15/2021 13:59 PM	Business	1440 W Rockland St	Sewage		Combined	Spill | Slug Discharge	Overland To Inlet	Sewage flowing out from the fresh air vent and into the inlet	No Impact On Department Operation Or Structure	
09/02/2021 15:41 PM	09/04/2021 18:00 PM	Citizen	2344 E Clearfield St	Food Waste	Grease	Combined - D22/D25	Spill | Slug Discharge	Spill To Ground Only	Both inlets ifo 2344 E. Clearfield did not have any signs of grease dumping. There was runoff from trash/grease/oil storage in the rear of the property.	No Impact On Department Operation Or Structure	
09/04/2021 06:29 AM	11/02/2021 13:00 PM	Citizen	6224 Greene St	Undetermined, Could Be Roof Runoff		MS4 - W-68-05	Spill | Slug Discharge	Spill To Ground Only	Ground was dry and no sewage was coming from drain. There was no evidence of sewage (toilet paper and such). Ground was stained in rear driveway. Complainant says problem is intermittent.	No Impact On Department Operation Or Structure	
09/06/2021 22:24 PM	09/07/2021 10:10 AM	Citizen	4611 Whitaker Ave	Sewage		Combined - T13	Choke	Drain To Sewer	Possible blockage, referred to Customer Service	No Impact On Department Operation Or Structure	
09/07/2021 10:37 AM	09/07/2021 12:00 PM	Other	1 N 30Th St	Water	Groundwater	Combined - S11	Spill | Slug Discharge	Overland To Inlet,Overland To Receiving Stream	Updated PADEP about water discharging from Amtrak building. Water discharging into river.	No Impact On Department Operation Or Structure	
09/08/2021 11:45 AM	09/09/2021 12:15 PM	Other	S 16Th St & Walnut St	Sewage		Combined - S18	Other -	Other	Sewerage was found in PECO manhole.	Minor Impact On Department Operation Or Structure	
09/10/2021 10:02 AM	09/11/2021 12:25 PM	Citizen	Ridge Ave & Grakyn Ln	Petroleum (Oil | Fuel)	Diesel Fuel	MS4 - W084-01	Spill | Slug Discharge	Spill To Ground Only	Spill to ground only.	No Impact On Department Operation Or Structure	

Date Reported	Date Completed	Who Called	Location	Pollutant	Pollutant Type Desc	Drainage Area	Incident Type	Destination	Observations	Vulnerability Assessment	Vulnerability Assessment Comment
09/10/2021 15:35 PM		Other City Department	9910 Frankford Ave	Water	Potable	MS4	Other -	Overland To Receiving Stream	Drinking water private service line leaked to creek.	Minor Impact On Department Operation Or Structure	
09/16/2021 14:36 PM		Other	1728 N 2Nd St	Water	Groundwater	Combined - D44	Illegal Discharge | Dumping	Overland To Inlet	Contractor pumping groundwater to storm inlet.	Minor Impact On Department Operation Or Structure	
09/17/2021 14:34 PM	09/22/2021 12:00 PM	Business	2600 Christian St	Petroleum (Oil | Fuel)	#6 Oil	Combined - S-25	Spill | Slug Discharge	Overland To Inlet	PWD received an NRC notice reported a fuel leak on fuel oil heater that resulted in a sheen on the Schuylkill River at Vicinity at 2600 Christian St. About 4000 gallons were lost. The majority of the oil was contained in the storm system. About 5 gallons was discharged to the river through the Vicinity storm water outfall. A sump pump was down so no oil was discharged to the sanitary sere. Vicinity cleaned the site.	No Impact On Department Operation Or Structure	No water department structures were impacted.
09/20/2021 14:56 PM	09/24/2021 18:00 PM	Other	2636 E York St	Petroleum (Oil | Fuel)	#2 Oil	Combined - D-38	Odor	Other	NRC reported fuel odors in the area of 2600 E. York St. PWD inspector did not smell any fuel odors at the construction site at E. Cabot St and York. The inlets in the area were protected and clean. HMAU responded earlier in the day with L&I and PADEP and found no issue. The water in excavation had a sheen. The operator on site told the inspector that earlier a truck was brought in the pump the residual oil. The water in excavation had a sheen. No ongoing leak is occurring. The oil odor most like is from contamination in the excavation. No impact to PWD structures. The inlets in the area were protected and clean. At this time no further action is required.	No Impact On Department Operation Or Structure	No PWD structures were impacted.
09/20/2021 18:30 PM	09/21/2021 18:00 PM	Other Pwd Department	Loney St & Loretto Ave	Water	Potable	MS4 - P-090-02	Spill | Slug Discharge	Overland To Inlet	Water emergency reported to PWD that a hydrant at the SWC of Loretto and Loney Street could not be shut down. PWD inspector dropped dechlor at the site. She inspected the outfall at Sandyford and Brous. The flow was clear and the Cl2 was .85 mg/l. Downstream prior to the confluence with the Pennypack the Cl2 was .08 mg/l. No dead aquatic life was observed on Sandy Run. The incident was reported to the PADEP through the water main reporting system. The hydrant was fixed later in the day.	Minor Impact On Department Operation Or Structure	Discharge occurred at outfall
09/21/2021 09:30 AM	09/24/2021 15:55 PM	Citizen	7303 N 20Th St	Food Waste	Grease	MS4 - T-088-01	Spill | Slug Discharge	Spill To Ground Only	The air vent behind 7303 N 20th was overflowing. PWD checked the basement and grease trap at 7301 N 20th street but there were no overflows.PWD inspected the sewer on 5/28/2021 and found no issues.	No Impact On Department Operation Or Structure	
09/22/2021 09:56 AM	09/22/2021 12:00 PM	Citizen	5233 Morris St	Car Fluids		MS4 - S-046-06	Illegal Discharge | Dumping	Spill To Ground Only	Anonymous 311 caller reporting car leaking fluid to inlet at 5233 Morris St. PWD inspector found some stains but no active leaking. No trail of staining was found to the inlet. No impact the inlet at NEC of Morris and West Queen Lane Streets. No further action is required at this time.	No Impact On Department Operation Or Structure	No product migrated to an inlet.
09/24/2021 15:15 PM	09/25/2021 12:00 PM	Fire Communications	S 11Th St & Pattison Ave	Petroleum (Oil | Fuel)	Diesel Fuel	Combined - D-73	Spill | Slug Discharge	Overland To Inlet	HMAU requested PWD at 11th and Pattison. A tractor trailer leaked diesel fuel to an inlet. HMAU called ACV to clean the street an inlet. No oil was discharged to the sanitary sewer. PWD inspected the inlet the next day and all was clean.	Minor Impact On Department Operation Or Structure	Oil in inlet was cleaned by ACV.
09/24/2021 15:45 PM	09/28/2021 09:53 AM	Citizen	N 17Th St & Fairmount Ave	Solid	Dirt-Mud	Combined - D48	Illegal Discharge | Dumping	Spill To Ground Only	Dirt, sand and silt were found at 1718 Fairmount. Requested contractors to place silt in front of drain and inlets.	No Impact On Department Operation Or Structure	
09/25/2021 00:00 AM	10/05/2021 11:42 AM	Other	1100 Orleans Rd	Petroleum (Oil | Fuel)	Gasoline	MS4	Illegal Discharge | Dumping	Drain To Sewer	Gasoline odors reported in basement of Cheltenham TWP residence. Source unfounded. Sewer was flushed.	No Impact On Department Operation Or Structure	
09/27/2021 01:33 AM	10/05/2021 12:05 PM	Fire Communications	2200 N 28Th St	Petroleum (Oil | Fuel)	Oil	Combined - D39	Illegal Discharge | Dumping	Overland To Inlet	18 drums of waste oil from trailer spilled to street.	Minor Impact On Department Operation Or Structure	
09/27/2021 10:28 AM	10/07/2021 14:13 PM	Other City Department	N 11Th St & Noble St	Water	Fire	Combined - D48	Spill | Slug Discharge	Overland To Inlet	PECO substation fire suppression system discharged.	No Impact On Department Operation Or Structure	
09/28/2021 23:40 PM		Other Pwd Department	2005 Walnut St	Food Waste	Cooking Oil	Combined - S13	Illegal Discharge | Dumping	Overland To Inlet	Restaurant reported for dumping cooking oil to street. Unfounded.	No Impact On Department Operation Or Structure	
10/02/2021 12:15 PM	10/02/2021 13:00 PM	Other Pwd Department	9101 Frankford Ave	Water	Groundwater	MS4 - P083-03	Spill | Slug Discharge	Overland To Inlet	Contractor was pumping water into nearby inlet. PWD inspector required the Wawa contractor to shut off pumping and file for a ground water permit.	Minor Impact On Department Operation Or Structure	
10/05/2021 16:29 PM	10/06/2021 12:00 PM	Citizen	2600 E Hagert St	Water	Groundwater	Combined - D38	Spill | Slug Discharge	Other	No pumping was observed on site both days.	No Impact On Department Operation Or Structure	
10/08/2021 14:18 PM	10/08/2021 15:00 PM	Citizen	Convent Ave & Treaty Rd			MS4 - Q-101-03	Spill | Slug Discharge	Overland To Inlet	There was concrete/sand on the interior apron of the inlet. Some foaming in the water accumulated in the inlet. Water was murky. Discharge had ceased. No responsible party could be determined.	Minor Impact On Department Operation Or Structure	
10/12/2021 10:25 AM	10/12/2021 13:30 PM	Citizen	7418 Frankford Ave	Automotive Fluids		Combined - D02	Spill | Slug Discharge	Spill To Ground Only	Street and inlet clear of fluids. Some staining in parking lot/alley.	No Impact On Department Operation Or Structure	
10/13/2021 10:30 AM	10/13/2021 11:00 AM	Citizen	3143 Englewood St	Automotive Fluids		Combined - D05	Spill | Slug Discharge	Spill To Ground Only	No gasoline in inlets.	No Impact On Department Operation Or Structure	
10/13/2021 10:30 AM	10/16/2021 13:45 PM	Citizen	1914-24 Grant Ave	Car Wash Fluids		MS4 - P-105-01	Illegal Discharge | Dumping	Overland To Inlet	Bubble Bath Car Wash is discharging directly into storm inlet. The discharge was stopped at PWD inspector request. PADEP was notified.	Minor Impact On Department Operation Or Structure	
10/14/2021 17:05 PM	10/18/2021 13:40 PM	Other Pwd Department	3900 Richmond St	Unknown, Sample Taken To Bls For Analysis		MS4	Spill | Slug Discharge	Other		No Impact On Department Operation Or Structure	
10/18/2021 10:35 AM	10/25/2021 12:00 PM	Other Pwd Department	23 Osborn St	Sewage		MS4 - S-052-05	Illegal Discharge | Dumping	Spill To Ground Only	PWD construction reported sewage from septic systems was leaking into the trench they were digging for new sewer system on Osborn St south of Ridge. PWD inspector observed the discharge and contacted the land owner who said he would have the septic systems looked at. PWD also notified Public Health who inspected the trench and notified users to pump the septic systems. At this time no further action is required.	No Impact On Department Operation Or Structure	No PWD structure was impacted.
10/18/2021 12:00 PM	02/03/2022 12:00 PM	Citizen	2120 Fairmount Ave	Food Waste	Liquids From Trash Bags At A Restaurant.	Combined - S-06	Illegal Discharge | Dumping	Overland To Inlet	311 call reporting that employees from a restaurant are washing out the dumpster with bleach water on Wallace St. There is a strong odor of bleach and trash on the street. PWD inspector observed water in the gutters but no strong odors. The inspector spoke to two residents who said there also is a strong odor of alcohol. When the trash truck compresses the trash liquid is spilled to the street. The workers then use bleach on the it to clean the street. The inspector talked to the manager on duty at the restaurant. He said that he did not do that. The inspector suggested that the liquids in the cups be emptied before putting then in the trash bags. PWD will issue an NOV.	No Impact On Department Operation Or Structure	No issues were observed at the inlet.
10/18/2021 14:53 PM	10/21/2021 15:26 PM	Other City Department	4431 Main St	Petroleum (Oil | Fuel)	Transformer Oil	MS4 - S-051-05	Spill | Slug Discharge	Overland To Inlet	2 PECO transformers fell over and leaked. PECO cleaned up the soil. No sheen was observed on the river.	Minor Impact On Department Operation Or Structure	
10/20/2021 08:38 AM	10/22/2021 12:00 PM	Other	S Sydenham St & Hartranft St	Sewage		Combined - S-010	Odor	Other	Odor have been an issue along Hartranft for years. PADEP visited the site on 10/14. He observed odors along the stretch of road in question. The area is a combined area. PWD inspector visited the site and reported a manure like odor in the area. Smelled like Lancaster County. The sewers on Chaucer and Sydenham were flowing. The NovaCare Complex is across the street. There was some construction going on in the fenced off area. The inlet on Sydenham was cleaned later in the day. A foul odor was recorded on the work order. The inspector returned 2 days later and the odor was less noticeable. Source of odor was not determined.	No Impact On Department Operation Or Structure	No issues were observed at PWD structures
10/21/2021 11:58 AM	11/05/2021 13:59 PM	Citizen	7335 Malvern Ave	Petroleum (Oil | Fuel)	Unknown Type From A Car.	Combined - C34	Spill | Slug Discharge	Spill To Ground Only	PFD responded at 1125 AM and took up with no findings. PWD also found some staining but no standing liquid and no migration to the inlet 170' down street. There was some oil dry and leaves in the gutter. No further action required at this time.	No Impact On Department Operation Or Structure	No oil migrated to inlet

Date Reported	Date Completed	Who Called	Location	Pollutant	Pollutant Type Desc	Drainage Area	Incident Type	Destination	Observations	Vulnerability Assessment	Vulnerability Assessment Comment
10/22/2021 09:04 AM	10/22/2021 12:00 PM	Citizen	4556 Overbrook Ave	Sewage		Combined - S-050	Illegal Discharge | Dumping	Spill To Ground Only	Dept. of Public Health forwarded a citizen report of a resident dumping septic waste from his motor home directly to the alley. PWD inspector spoke to the homeowner who told her that mice chewed a hole in the waste line and that he was collecting the waste in a bucket and some overflowed to the ground. He was washing the area around the waste line. The complaint is angry with the resident over motorhome. The PWD inspector found no evidence of dumping to the sewer There was no trail or staining on the cement. No further action is required at this time.	No Impact On Department Operation Or Structure	No structures were impacted
10/26/2021 13:27 PM	10/26/2021 16:00 PM	Citizen	1514 Benner St	Petroleum (Oil | Fuel)	#2 Oil	Combined - F21	Spill | Slug Discharge	Spill To Ground Only	Fire department stated no oil made it to drain, possible spill in dug up basement.	No Impact On Department Operation Or Structure	
10/26/2021 14:17 PM	10/26/2021 16:20 PM	Citizen	709 Atwood Rd	Petroleum (Oil | Fuel)	Oil	Combined - C-07	Spill | Slug Discharge	Spill To Ground Only	Majority of oil appeared to be absorbed by ground.	No Impact On Department Operation Or Structure	
10/27/2021 11:37 AM	10/27/2021 16:20 PM	Other	1 Washington Ave	Solid		Not Applicable	Other - Floating Drum	Other	Floating drums was retrieved from the river by USCG.	No Impact On Department Operation Or Structure	
11/03/2021 12:06 PM	11/29/2021 23:00 PM	Other Pwd Department	2236 Sepviva St	Sewage		Combined - D38	Illegal Discharge | Dumping	Overland To Inlet	No pumping was occurring at time of inspection.	No Impact On Department Operation Or Structure	
11/04/2021 22:45 PM	11/04/2021 13:30 PM	Citizen	8200 Lindbergh Blvd	Petroleum (Oil | Fuel)	Petroleum Type Not Listed. Suspected Undetermined Type Of Home Heating Oil.	MS4 - M-005-03	Illegal Discharge | Dumping	Overland To Inlet	Inlet had some oil. Outfall had some sheen, however not unusual for outfall M-005-03. Oil dry was placed along the curb line. No responsible party was determined.	Minor Impact On Department Operation Or Structure	
11/17/2021 12:54 PM	12/13/2021 12:00 PM	Business	7500 Central Ave	Petroleum (Oil | Fuel)	Transformer Oil	MS4 - T-098-03	Spill | Slug Discharge	Overland To Inlet	PECO notified PWD that pole transformer was knocked over in front of the Fox Chase Water Tower. Most of the non-PCB oil was contained on the grass but some migrated towards a non-PWD inlet. Clean up crew was on site. Very little oil made it to the inlet and the inlet level was below the discharge pipe. The outfall to the rain garden was dry. PECO will do a wipe test of the inlet. No PWD structures were impacted. No further action is required at this time.	No Impact On Department Operation Or Structure	The oil was contained in a non-PWD inlet
11/21/2021 10:16 AM	12/01/2021 14:16 PM	PWD Engineering Support	P-083-04	Chlorinated Waster		MS4 - P-083-04	Discharge At Outfall	Direct To Receiving Stream	The was determined to be a contractor working on the clear well. The flow was dechlorinated. PADEP was notified.	Other	TBD
11/22/2021 10:17 AM	11/29/2021 09:10 AM	Citizen	Marlborough St & Richmond St	Construction Waste/ Equipment Wash Up Waste Water		Combined - D-43	Illegal Discharge | Dumping	Overland To Inlet		No Impact On Department Operation Or Structure	
11/23/2021 11:04 AM	12/02/2021 11:50 AM	Citizen	2843 W Montgomery Ave	Gas Odor From Unknown Gas Station		Combined - S05	Odor	Air Emissions		No Impact On Department Operation Or Structure	
11/23/2021 11:25 AM	12/01/2021 15:20 PM	Citizen	1400 Warfield St	Petroleum (Oil | Fuel)	Transformer Oil	Combined - S31	Spill | Slug Discharge	Overland To Inlet		No Impact On Department Operation Or Structure	
11/30/2021 13:30 PM	11/30/2021 14:15 PM	Business	267 E Johnson St	Sewage		Combined - T14	Choke	Overland To Inlet	Choked lateral was fixed at time of inspection. Curb line was wet, no evidence of detritus. Estimated discharge time was 5 minutes.	No Impact On Department Operation Or Structure	
12/07/2021 09:44 AM	12/07/2021 11:00 AM	Citizen	7414 Sommers Rd	Petroleum (Oil | Fuel)	Oil	Combined - T-08	Spill | Slug Discharge	Spill To Ground Only	Staining on street. Oil did not make it to the drain.	No Impact On Department Operation Or Structure	
12/07/2021 09:47 AM	12/09/2021 12:00 PM	Citizen	3598 Indian Queen Lane	Solid	Construction Debris	MS4 - S-52-04	Illegal Discharge | Dumping	Overland To Inlet	Evidence of dumping into inlet	Minor Impact On Department Operation Or Structure	
12/07/2021 12:10 PM	12/07/2021 13:30 PM	Other City Department	5950 Sansom St	Petroleum (Oil | Fuel)	#2 Oil	Combined - C-17	Spill | Slug Discharge	Spill To Ground Only	Heating oil spilled onto ground only and did not make it to drains.	No Impact On Department Operation Or Structure	
12/09/2021 09:41 AM	12/09/2021 14:11 PM	Other City Department	N 12Th St & W Girard Ave	Water	Potable	Combined - D45	Spill | Slug Discharge	Overland To Inlet	Service line was leaking and PWD crew was onsite to shut off valves.	Minor Impact On Department Operation Or Structure	
12/14/2021 14:15 PM	12/17/2021 16:41 PM	Citizen	3200 N American St	Unspecified Type Of Oil		Combined - D-25	Illegal Discharge | Dumping	Spill To Ground Only	311 caller reported someone dumping an unspecified type of oil to the inlet at 3200 N American St. PWD inspector found no evidence of dumping to the inlet. The inlet at the NWC was surrounded by trash. The inlet on the NEC was clean. The restaurant across the street is closed. There was some oil staining on west sidewalk. No further action is required at this time.	No Impact On Department Operation Or Structure	No oil was observed at any of the inlets in the intersection.
12/15/2021 12:39 PM	12/17/2021 17:09 PM	Citizen	1221 Vernon Rd	Unspecified Type Of Feces.		Combined - T-14	Illegal Discharge | Dumping	Other	311 caller reported a citizen throwing feces into an inlet at 1221 Vernon Rd. PWD inspector found no evidence of feces in the inlet on NWC of Rugby and Vernon. There were no odors. The inlet is scheduled to be cleaned later in the month. No further action is required at this time.	No Impact On Department Operation Or Structure	No PWD structures were impacted.
12/15/2021 14:05 PM	12/21/2021 13:10 PM	311	E Berks St & Moyer St	Construction Material (Concrete/Dry Wall Compound)		Combined - D40	Illegal Discharge | Dumping	Other	Evidence of dumping. Did not appear to affect inlet.	Minor Impact On Department Operation Or Structure	
12/17/2021 11:25 AM	12/17/2021 17:46 PM	Citizen	2949 Gaul St	Petroleum (Oil | Fuel)	Motor Oil	Combined - D-25	Spill | Slug Discharge	Spill To Ground Only	Citizen reported that someone was changing oil in their vehicle and an unknown amount was released to the street. PWD inspector found fresh oil on the street and a container with about 1 gallon of used oil next to the tree. No PWD structures were impacted. As per procedure the inspector called PFD. The PFD put oil dry down and the container of oil into a plastic bag and took with them. The responsible party could not be determined. No further action is required at this time.	No Impact On Department Operation Or Structure	No inlets were impacted.
12/29/2021 15:31 PM	01/06/2022 10:32 AM	Citizen	Martin Luther King Dr & Montgomery Dr	Possible Green Dye		MS4	Spill | Slug Discharge	Direct To Receiving Stream		No Impact On Department Operation Or Structure	
12/29/2021 15:31 PM		Other	Martin Luther King Dr & Montgomery Dr			Non-Contributing	Discharge At Outfall	Overland To Inlet	Green dye at outfall at Montgomery and MLK drive.	Minor Impact On Department Operation Or Structure	
01/12/2022 10:16 AM	01/11/2022 12:00 PM	Citizen	6301-19 Frankford Ave	Petroleum (Oil | Fuel)	#2 Oil	Combined - D-05	Illegal Discharge | Dumping	Other	Outback along the back of the building there were 5 1 gallon buckets with various amount of oil with oil dry on the ground. No evidence of spilling or a trail to the inlets along Sterling Street. I walked the perimeter and found no issues. The area looked better than past inspections. Residents leave their oil outside and Mavis brings it inside to s collection drum. Mavis has the oil shipped away. PWD inspector spoke to the assistant manager of Mavis about the oils in the back. No further action is required at this time.	No Impact On Department Operation Or Structure	No impact on inlets
01/12/2022 15:48 PM	01/12/2022 22:00 PM	Fire Communications	S 70Th St & Essington Ave	Petroleum (Oil | Fuel)	Diesel Fuel	MS4 - M-005	Spill | Slug Discharge	Overland To Inlet	PFD requested PWD at 70th and Essington where a truck lost the diesel fuel from a saddle tank. An unknown amount made it to the inlet. ACV was call by PFD HMAU to clean the street and the impacted inlet. No oil migrated to Mingo Creek. The inlet was clean.	No Impact On Department Operation Or Structure	No impact to MIngo Creek
01/13/2022 04:45 AM		Business	2450 Wakeling St	Chemical	Phenol	Combined - D-24	Spill | Slug Discharge	Overland To Inlet	Advansix reported that a tank car leaked phenol to the ground. An unknown amount migrated to storm sewer which discharges to the collector and NEWPCP. There were some odors at the plant. Advansix cleaned the spill up and are review their processes.	Minor Impact On Department Operation Or Structure	The only impact on treatment operations was phenol odors within the plant. This resulted in a need for facility ventilation and an advisory to refrain from entering certain buildings.The treatment process did not experience any impacts and no damage.
01/13/2022 09:52 AM	03/15/2022 15:31 PM	Other Pwd Department	B St & E Clearfield St	Petroleum (Oil | Fuel)	Unknown Type Of Oil	Combined - D-25	Illegal Discharge | Dumping	Overland To Inlet	GSI reported that the GSI inlet at B & Clearfield is impacted by oil. PWD inspectors observed the oil in the inlet from the short dumping that was occurring on the street. PWD is working on getting a PO for AVC to clean the inlet.	Major Impact - Caused Pass Through Or Interference	GSI has oil in it that prevents it from operating as designed.
01/13/2022 11:07 AM	02/03/2022 15:42 PM	Other	14040 Dana Ave	Petroleum (Oil | Fuel)	Oil	Not Applicable	Spill | Slug Discharge	Direct To Receiving Stream	NRC report of construction machine leaking oil to stream. Unfounded.	No Impact On Department Operation Or Structure	

Date Reported	Date Completed	Who Called	Location	Pollutant	Pollutant Type Desc	Drainage Area	Incident Type	Destination	Observations	Vulnerability Assessment	Vulnerability Assessment Comment
01/13/2022 23:35 PM	03/03/2022 09:38 AM	Citizen	3325 N 9Th St	Petroleum (Oil | Fuel)	Oil	Combined - D25	Illegal Discharge | Dumping	Overland To Inlet		No Impact On Department Operation Or Structure	
01/24/2022 12:00 PM	02/03/2022 15:17 PM	Other City Department	5033 Frankford Ave	Sewage		Combined - F21	Illegal Discharge | Dumping	Overland To Inlet	Reports of sewage being dumped to storm inlet. Responsible party not found.	No Impact On Department Operation Or Structure	
01/31/2022 13:45 PM	02/04/2022 10:00 AM	Other Pwd Department	Sandyford Ave & Brous Ave	Unknown		MS4 - P-90-01	Discharge At Outfall	Other	Plunge pool at P-90-02 was very darker than normal. Flow from outfall was clear. A sample was taken from the flow and it appeared cloudy, typical to snow melt runoff. Sample did not have a sewage odor and had a slight sweet odor. The plunge pool had a thick layer of ice and a sample could not be obtained. The issue could be from sediment from plowed snow. PWD will recheck the outfall to see if the situation worsens. Outfall rechecked on Feb. 4th. Snowmelt was gone and the outfall appeared normal.	No Impact On Department Operation Or Structure	
02/01/2022 12:50 PM	02/01/2022 14:30 PM	Other	1500 N 17Th St	Sewage		Combined - D45	Spill | Slug Discharge	Spill To Ground Only	No pumping of sewage at time of inspections but there was evidence of prior pumping.	No Impact On Department Operation Or Structure	Spill did not appear to reach the inlet
02/08/2022 09:18 AM		Citizen	1 W Hartwell Ln	Sewage		MS4	Spill | Slug Discharge		No odor observed at location. Connected stormwater outfall was inspected and found to be dry.	No Impact On Department Operation Or Structure	
02/08/2022 09:29 AM	02/07/2022 11:00 AM	Citizen	G St & E Venango St	Petroleum (Oil | Fuel)	Oil	Combined - D17/D22	Illegal Discharge | Dumping	Overland To Inlet	Nine 5 gallon buckets of oil left on the bridge. There are some leaking. Sheen is present on the street.	No Impact On Department Operation Or Structure	Inlet was clear.
02/08/2022 10:00 AM	02/08/2022 16:00 PM	Citizen	700 N 23Rd St	Water	Construction Site Run Off	Combined	Illegal Discharge | Dumping	Drain To Sewer	Arrived at location at 12:03pm. Citizen complaint indicated PGW crew was working near inlet. The crew was not discharging any water and the foreman indicated that any material or water would be hauled off site.	No Impact On Department Operation Or Structure	
02/14/2022 13:00 PM	02/17/2022 12:00 PM	Citizen	9725 Northeast Ave	Automotive Fluids		MS4 - P-108-20	Spill | Slug Discharge	Other	No fluids leaking from the vehicle. Stream not impacted.	No Impact On Department Operation Or Structure	
02/17/2022 10:28 AM	04/05/2022 13:22 PM	Citizen	1704 Locust St	Food Waste	Grease	Combined - S18	Illegal Discharge | Dumping	Drain To Sewer	Waited on proof trap grease disposal. No manifest were provided.	Minor Impact On Department Operation Or Structure	Grease found in manhole
02/17/2022 10:28 AM	04/05/2022 13:22 PM	Citizen	1704 Locust St	Food Waste	Grease	Combined - S18	Spill | Slug Discharge	Drain To Sewer	Waited on proof trap grease disposal. See manifest. GTO was contracted to start cleaning grease trap.	Minor Impact On Department Operation Or Structure	Grease found in manhole.
02/17/2022 13:59 PM	04/01/2022 13:15 PM	Other Pwd Department	2639-47 E Hagert St	Petroleum (Oil | Fuel)	Petroleum Type Not Listed. Unknown	Combined - D38	Odor	Air Emissions	Slight odor. Gas meter readings normal.	No Impact On Department Operation Or Structure	
02/22/2022 11:54 AM		Other City Department	Levick St & E Roosevelt Blvd	Petroleum (Oil | Fuel)	Diesel Fuel	Combined - F-21	Spill | Slug Discharge	Overland To Inlet		No Impact On Department Operation Or Structure	
02/23/2022 10:57 AM	02/24/2022 09:25 AM	Business	2610 S Chris Columbus Blv	Water	Fire	Combined - D-70	Spill | Slug Discharge	Overland To Inlet		No Impact On Department Operation Or Structure	
02/23/2022 11:43 AM	05/25/2022 10:02 AM	Citizen	2843 W Montgomery Ave	Petroleum (Oil | Fuel)	Gasoline	Combined - S-05	Spill | Slug Discharge	Other		No Impact On Department Operation Or Structure	
02/23/2022 13:16 PM	02/23/2022 16:30 PM	Business	S 57Th St & Malcolm St	Chemical	Chemical Not Listed; Hydraulic Oil	Combined - C-17	Spill | Slug Discharge	Overland To Inlet		No Impact On Department Operation Or Structure	
02/25/2022 06:18 AM	03/15/2022 14:01 PM	Other	Gypsy Ln & Lincoln Dr	Petroleum (Oil | Fuel)	Transformer Oil	MS4 - W-052-01	Spill | Slug Discharge	Overland To Inlet	Report of an auto accident resulting in transformer spill at Gypsy Ln and Lincoln Dr. About 20 gals of oil spilled from transformer to the ground and estimated about 1 gal made it to the storm drain. Absorbent booms were placed down at the storm drain and out fall W-052-01. The PECO Environmental Coordinator, was unable to get a sample to analyze for PCB. However, the transformer tag indicates a manufacture date of August 1997 and the certification that it is non-PCB.	No Impact On Department Operation Or Structure	
02/28/2022 21:22 PM	02/28/2022 13:00 PM	Other Pwd Department	Reservoir Dr & Edgley Dr	Water	Potable	MS4	Spill | Slug Discharge	Overland To Inlet	PWD requested to investigate a leak at Reservoir Dr. PWD inspector observed not flow but staining evidenced flow in the area of Reservoir Dr/Edgely. No impact was observed to aquatic life in either the creek or the Schuylkill River. DEP notified via WMB hotline 3/1/22 1:30pm.	No Impact On Department Operation Or Structure	
02/28/2022 21:37 PM	02/28/2022 12:00 PM	Other City Department	10 Hog Island Rd	Petroleum (Oil | Fuel)	Jet Fuel A	Non-Contributing	Spill | Slug Discharge	Spill To Ground Only	OEM requested PWD to determen if any Jet Fuel A impacted PWD structures. PWD inspector me Airport maintenance at site. The spill occurred on UPS property NE of their runway at the densimeter. The fuel pipe line is above ground and the densimeter measures the density of the fuel in a slip stream from the pipeline. An unknown amount of Jet A fuel leaked to the ground at densimeter. The ground around the pad was saturated with fuel. There was no fuel in the gully area before the road 70' away. No oil migrated to Eagle Creek 350" away. Eagle Creek was inspected to Mingo Creek. No sheen was observed on either creek. No further action is required.	No Impact On Department Operation Or Structure	No structures were impacted
03/02/2022 14:30 PM	03/08/2022 12:00 PM	Wwtp	3899 Richmond St	Possible Red Dye Slug		Combined	Color	Drain To Sewer	NE crew chief reported that the PST was red. PWD inspector walked through the NE plant. They did not smell any unusual odors. The PID highest reading was 1.5 ppm. They did observe a reddish color at the N PST. No color was observed at the influent of the PTB. Qual test indicated an organic red dye. They reached out to known sources of red color and did not find any issues. PGW discharge was clear. The source of the dye was not located.	No Impact On Department Operation Or Structure	No impact on the discharge to the Delaware River
03/04/2022 10:03 AM	03/04/2022 16:00 PM	Other Pwd Department	N 7Th St & W Schiller St	Petroleum (Oil | Fuel)	No Oil Was Found In Inlet.	Combined	Spill | Slug Discharge	Other	PWD inlet cleaning reported oil in inlet at 7th and Schiller Streets. PWD inspector observed no signs of oil in the inlet or any dumpling in the vicinity. The water in the inlet was black. There was no odor. An oil absorbent rag was put in a sample of the water and the rag stayed clean. After sitting the water was clear and black sediment settled. No further action is required.	No Impact On Department Operation Or Structure	No oil in inlet
03/16/2022 10:26 AM	03/23/2022 10:57 AM	311	W Lehigh Ave & N American St	Food Waste	Grease	Combined - D38	Illegal Discharge | Dumping	Overland To Inlet		No Impact On Department Operation Or Structure	
03/16/2022 11:05 AM	03/29/2022 16:23 PM	Citizen	408 Sepviva St	Solid	Construction Debris	Combined - D41	Illegal Discharge | Dumping	Overland To Inlet	No evidence of dumping in the inlets.	No Impact On Department Operation Or Structure	
03/19/2022 04:40 AM	03/26/2022 12:00 PM	Business	Guilford St & Brous Ave	Petroleum (Oil | Fuel)	Transformer Oil	MS4 - P-091-01	Spill | Slug Discharge	Overland To Inlet	PECO reported a down transformer pole to PWD. Oil leaked from the transformer to an inlet. PWD arrived at the scene to find that the inlet was blocked and the clean up crew was on site. The inlet was cleaned. No impact was observed at the outfall. Testing of the oil and a swipe test of the inlet walls showed ND detect for PCBs (<.5 UGS ABS)	Minor Impact On Department Operation Or Structure	Inlet had a layer oil in it. Contractor used vactor truck to suck out the water oil mixture.
03/21/2022 10:35 AM	03/21/2022 16:00 PM	Citizen	2909 N 22Nd St	Solid	Sand From Accident Clean Up	Combined - S-07	Spill | Slug Discharge	Spill To Ground Only	PADEP forwarded complaint of adsorption material that was used to clean up oils after a vehicle crash is still on the off ramp of 676 and 22nd St. PWD inspector inspected the off the ramp the day after the accident. There was some sand on the ramp. The PA DOT inlets were clear. No impact on PWD structures.	No Impact On Department Operation Or Structure	No PWD structures impacted
03/22/2022 11:45 AM	05/02/2022 10:42 AM	Other Pwd Department	11000 Rennard St	Methane		MS4 - P116-01	Odor	Air Emissions		No Impact On Department Operation Or Structure	
03/24/2022 10:45 AM	04/26/2022 12:00 PM	Citizen	1603 Snyder Ave	White Paint (Water Based)		Combined - S-42	Spill | Slug Discharge	Drain To Sewer	Sherwin Williams employee and customer washed down white paint spilled by customer to nearby drain. White paint can be seen in the drain.	No Impact On Department Operation Or Structure	
03/29/2022 09:30 AM	04/08/2022 12:00 PM	Business	Lancaster Ave & Drexel Rd	Chemical	Nitric Acid	Combined - S50	Spill | Slug Discharge	Overland To Inlet	Nitric acid spill to the street. A small amount entered the inlet.	Minor Impact On Department Operation Or Structure	Slight pH change in inlet

Date Reported	Date Completed	Who Called	Location	Pollutant	Pollutant Type Desc	Drainage Area	Incident Type	Destination	Observations	Vulnerability Assessment	Vulnerability Assessment Comment
03/31/2022 01:50 AM	04/04/2022 11:30 AM	Fire Communications	831-43 E Cayuga St	Petroleum (Oil | Fuel)	Diesel Fuel	Combined - T14	Spill | Slug Discharge	Overland To Inlet	Diesel spill along curbline.	Minor Impact On Department Operation Or Structure	It appeared to be less than 1 gallon in the inlet.
04/07/2022 13:53 PM	04/07/2022 14:38 PM	Other Pwd Department	25 Pattison Ave	Foam		Combined - D17	Spill | Slug Discharge	Other	SE operator noticed the foam from the previous night and PWD was notified early that morning. By the time PWD inspector arrived, foam were no longer at the plant.	Minor Impact On Department Operation Or Structure	
04/07/2022 15:38 PM		Other Pwd Department	1322 Callowhill St	Water	Groundwater	Combined - S06	Illegal Discharge | Dumping	Drain To Sewer	PWD employee sent photos of constriction pumping groundwater to inlet. PWD inspector did not observe the pumping on 2 site visits. PWD will issue an NOV to the responsible party.	Minor Impact On Department Operation Or Structure	
04/13/2022 14:47 PM		Other Pwd Department	1510-48 N Randolph St	Water	Construction Site Run Off	Combined - D45	Illegal Discharge | Dumping	Overland To Inlet	No active discharge; evidence of past discharge was observed.	Potential Illicit Discharge	
04/18/2022 08:09 AM		Citizen	2400 E Huntingdon St	Water	Groundwater	Combined - D37	Illegal Discharge | Dumping	Drain To Sewer	A citizen reported that a construction company was pumping groundwater directly into inlet. They ceased pumping when the PWD inspector arrived. PWD will issue an NOV.	Minor Impact On Department Operation Or Structure	
04/21/2022 14:10 PM		Other Pwd Department	Mansfield Ave & Mohican St	Petroleum (Oil | Fuel)	Oil	Green Infrastructure -	Illegal Discharge | Dumping	Overland To Inlet	Motor oil observed in two green stormwater inlets.	Minor Impact On Department Operation Or Structure	
04/22/2022 15:50 PM	08/08/2022 12:24 PM	Citizen	2207-29 E Ontario St	Petroleum (Oil | Fuel)	Oil	Combined - D18	Spill | Slug Discharge	Other	Claims of power wash runoff going into the inlet. No sign of power washing at the site and water in inlet is clear, no sheen or oil was observed.	No Impact On Department Operation Or Structure	
04/25/2022 09:45 AM	04/28/2022 10:38 AM	311	1836 Mountain St	Green Fluorescein Dye Powder		Combined - S-42A	Spill | Slug Discharge	Overland To Inlet	PWD resonded to a 311 call about the water in inlet at Mountain St. being bright green. The PWD inspector observed a red powder staining in the gutter west of the inlet that is consistent with powder fluorescein dye. The FAI on the side walked looked like they were repaired recently. The water in the inlet was consistent with green dye, which is not toxic. A sewer inlet cleaning work order was also created. No further action is required at this time.	No Impact On Department Operation Or Structure	The green dye is used for dye testing and is non-toxic.
05/03/2022 13:30 PM	06/03/2022 12:00 PM	Fire Communications	3646 N 2Nd St	Petroleum (Oil | Fuel)	Oil	Combined - D25	Spill | Slug Discharge	Spill To Ground Only	No impact to the nearby inlets.	No Impact On Department Operation Or Structure	
05/04/2022 08:00 AM		Iwbc Engineering Support	123-27 S 12Th St	Water	Groundwater	Combined - D54	Illegal Discharge | Dumping	Other	PVC pipe installed into manhole D54-U003610	Potential Illicit Discharge	
05/04/2022 08:46 AM	05/04/2022 12:00 PM	Other Pwd Department	130 S 11Th St	Food Waste	Unknown	Combined - D54	Spill | Slug Discharge	Spill To Ground Only	No visible signs of dumping at time of inspection.	No Impact On Department Operation Or Structure	
05/04/2022 09:30 AM	05/04/2022 12:00 PM	Citizen	5855 Montrose St	Sewage		Combined - R01	Spill | Slug Discharge	Other	Inlet appears normal.	No Impact On Department Operation Or Structure	
05/04/2022 14:30 PM	05/06/2022 08:30 AM	Citizen	718 Saint Andrew Rd	Sewage		MS4 - W-76-14	Odor	Air Emissions	Outfall, creek, and adjacent sewer appeared normal, but there was a strong sewage odor at the culvert.	No Impact On Department Operation Or Structure	
05/09/2022 09:59 AM	05/31/2022 10:14 AM	Citizen	2126 S 58Th St	Petroleum (Oil | Fuel)	Oil	Combined - S-38	Illegal Discharge | Dumping	Overland To Inlet		No Impact On Department Operation Or Structure	
05/10/2022 10:35 AM	05/11/2022 10:34 AM	311	3858 Kirkwood Rd	Solid	Construction Debris	MS4 - Q-101-04	Illegal Discharge | Dumping	Overland To Inlet	Concrete debris observed at inlet. No responsible party found.	Minor Impact On Department Operation Or Structure	
05/13/2022 11:00 AM	05/13/2022 13:00 PM	Citizen	Harvey St & Lincoln Dr			MS4 - W-060-11	Discharge At Outfall	Drain To Sewer	Report of blue/gray discharge at outfall. Unfounded during investigation.	No Impact On Department Operation Or Structure	
05/16/2022 16:48 PM	05/24/2022 15:59 PM	Citizen	608 Welsh Rd	Foam		MS4 - P112-01	Spill | Slug Discharge	Overland To Inlet		No Impact On Department Operation Or Structure	
05/17/2022 10:25 AM	06/02/2022 10:10 AM	Other Pwd Department	S-02	Sewage		Combined - S-02	Spill | Slug Discharge	Direct To Receiving Stream		No Impact On Department Operation Or Structure	
05/18/2022 13:46 PM	05/31/2022 14:43 PM	Citizen	3462 E St	Sewage		Combined	Spill | Slug Discharge	Overland To Inlet		No Impact On Department Operation Or Structure	
05/23/2022 14:41 PM	05/27/2022 12:00 PM	Other Pwd Department	Cherokee St & W Hartwell Ln	Sewage		MS4 - W-076-14	Odor	Other	PWD took fecal samples at W-076-14 Cherokee and Hartwell because there was a strong sewage odor in the area. There were no chokes in the area PWD inspected smelled a sewage odor. There was no obvious signs of sewage in the creek. PWD inspector took fecal and fluoride samples at the effluent and influent of the culvert that the outfall discharged into. The samples did not indicate sewage. PWD forward the complaint to PWD sewer maintenance.	No Impact On Department Operation Or Structure	Odors in the area. No PWD structure impacted.
05/24/2022 13:20 PM		Other Pwd Department	6311-17 Germantown Ave	Water	Construction Site Run Off	Combined - T-14	Illegal Discharge | Dumping	Overland To Inlet	PWD received a report that a construction crew at 6311 Germantown Ave was pumping groundwater directly to an inlet. PWD inspector observed the pumping. There was no sediment or issue with the inlet. The inspector told the foreman that only rainwater can go tot the inlet and him to cease pumping. The contactor remove the immediately. He said that it was a mistake by the labors. PWD will issue an NOV.	Minor Impact On Department Operation Or Structure	Inlet was taking water.
05/25/2022 11:45 AM	05/27/2022 10:39 AM	Other Pwd Department	4070 Haverford Ave	Water	Construction Site Run Off	Combined - S50	Illegal Discharge | Dumping	Overland To Inlet		No Impact On Department Operation Or Structure	
05/26/2022 14:00 PM	05/27/2022 12:00 PM	Citizen	Henry Ave & Hermit St	Sewage		MS4 - W-060-12	Choke	Direct To Receiving Stream	Concerned citizen reported sewage like discharge from a pipe near the 12th hole tee off at the Walnut Lane Golf Course to PADEP. PWD inspector confirmed that it was a sewage discharge from outfall W-060-12. There was gray matting on the stream bed by the outfall and downstream, PWD reported the potential choke. A choke was cleared on Henry Avenue. The stream bed was cleaned. The discharge was reported to PADEP.	Potential Sanitary Sewer Overflow (Sso)	Sewer maintenance filed a SSO field report to PADEP
06/03/2022 13:09 PM		Other	10800 Knights Rd	Food Waste	Grease	MS4	Illegal Discharge | Dumping	Overland To Inlet	Multiple significant sources of pollutants discharging from waste recepticals	Potential Illicit Discharge	
06/06/2022 11:00 AM	06/06/2022 17:00 PM	Citizen	700 Gorgas Ln	Sewage		MS4 - W-067-01	Discharge At Outfall	Direct To Receiving Stream	Outfall has heavy flow. Mild mildew odor. Flow is clear. Plunge pool is cloudy and greyish.	Potential Illicit Discharge	Referred to Defective Lateral Unit
06/10/2022 11:51 AM		Citizen	608 Welsh Rd	Soap/Surfactant		MS4 - P-112-01	Spill | Slug Discharge	Drain To Sewer	Suds shooting our from manhole. Nearby inlet filled with soapy material. Creek is clear, no impact to stream.	Minor Impact On Department Operation Or Structure	
06/10/2022 12:16 PM	06/09/2022 12:30 PM	PWD Engineering Support	1101-53 Chestnut St	Groundwater		Combined - D53	Illegal Discharge | Dumping	Overland To Inlet	Contractor is pumping groundwater into inlet at NWC 11th & Clover.	No Impact On Department Operation Or Structure	
06/14/2022 11:00 AM	06/14/2022 14:00 PM	Other	4725 N 2Nd St	Petroleum (Oil | Fuel)	Oil	Combined - T14	Spill | Slug Discharge	Spill To Ground Only	White van with staining around it. No active leak or impact to storm inlet.	No Impact On Department Operation Or Structure	
06/17/2022 08:00 AM	07/07/2022 08:05 AM	Citizen	2440 Montrose St	Water	Construction Site Run Off	Combined - S25	Illegal Discharge | Dumping	Overland To Inlet	Report of contractor pumping GW to street. Unfounded at time of inspection.	No Impact On Department Operation Or Structure	
06/17/2022 13:33 PM	06/07/2022 13:30 PM	Other Pwd Department	25 Pattison Ave	Rags		Not Applicable - Sewpcp	Spill | Slug Discharge	Other	Rag pile was inspected and appears to be a heavy fabric brown and orange in color. Some mesh material is also present.	Major Impact - Caused Pass Through Or Interference	Clog caused interference at the plant and caused staff to work overtime to clear clog.
06/20/2022 10:52 AM	06/29/2022 13:47 PM	Business	S 21St St & Walnut St	Sewage		Combined - S-13	Spill | Slug Discharge	Other		No Impact On Department Operation Or Structure	
06/22/2022 11:32 AM		Citizen	3800 Lancaster Ave	Food Waste	Grease	Combined -	Illegal Discharge | Dumping	Overland To Inlet	Grease Inspection of 3800 Lancaster Ave and surrounding restaurants. Significant grease impact associated with 3800 Lancaster Ave (Level 38 Bar & Grill)	Minor Impact On Department Operation Or Structure	
06/27/2022 15:15 PM	06/27/2022 17:00 PM	Citizen	Pennypack Footbridge 240' N Frankford Ave	Chemical	Household Bleach	Non-Contributing - Directly To Creek	Illegal Discharge | Dumping	Direct To Receiving Stream	The incident occurred on Sunday. PWD received the complaint from DEP Monday afternoon. It rained on Monday. PWD inspector went by the site on Monday afternoon. There was police tape around and no chlorine bottles. The creek was high from the rain. No deal aquatic life. The state forwarded the issue to Fish and Wildlife. At this time no further action is required.	No Impact On Department Operation Or Structure	No PWD structures were impacted.
06/28/2022 11:14 AM	06/28/2022 13:00 PM	Citizen	Spruce St & S 9Th St	Purple Liquid		Combined - D-54	Spill | Slug Discharge	Spill To Ground Only	PWD received a 311 call reporting purple liquid leaking from an ambulance at 9th and Spruce Streets. There were no signs of a dumping of purple liquid at the intersection of Spruce and 9th Street. There was no residual liquid in the street leading to the ambulance bay on 9th Street. The 5 inlet grates were dry and no staining was in the area. No further action required at this time.	No Impact On Department Operation Or Structure	No inlets were impacted.

Date Reported	Date Completed	Who Called	Location	Pollutant	Pollutant Type Desc	Drainage Area	Incident Type	Destination	Observations	Vulnerability Assessment	Vulnerability Assessment Comment
06/30/2022 15:45 PM	06/30/2022 18:00 PM	Citizen	6301-19 Frankford Ave	Report Of Hazardous Chemicals		Combined - D-05	Illegal Discharge | Dumping	Spill To Ground Only	311 call reporting dumping of hazardous chemicals in the back of Mavis Tire on Frankford Avenue. PWD inspector found no issues outback along the back of the building there were no buckets with used oil. No evidence of spilling or a trail to the inlets along Sterling Street. The inspector walked the perimeter and found no issues. The area looked much better than past inspections. There was no staining near the parking lot drain. Residents leave their oil outside and Mavis brings it inside to a collection drum. Mavis has the oil shipped away. Saw no major issues in the area. No further action is required at this time.	No Impact On Department Operation Or Structure	No structures were impacted
06/30/2022 15:45 PM		Citizen	Fairmount Ave & N 34Th St	Solid	Cement Wash Water	Combined - S-01	Illegal Discharge | Dumping	Overland To Inlet	A concerned citizen reported by 311 that a construction site at 32 and Fairmount was discharging to the storm inlet. PWD inspector found a sock at the inlet caked with debris. There was grey staining in the area consistent with cement wash. PWD passed on the compliant to PWD storm water who visited the site and required the contractor to address the ESS matters. The contractor did address the matter. PWD is evaluating the need of a n NOV.	Minor Impact On Department Operation Or Structure	Inlet blocked
06/30/2022 16:30 PM	06/30/2022 18:00 PM	Citizen	E Birch St & Frankford Ave	Report Of Hazardous Chemical		Combined - D-25	Illegal Discharge | Dumping	Other	311 caller reported that there was someone dumping hazardous chemicals at Birch St and Frankford. PWD inspector found no signs of hazardous chemical dumping in the intersection of Birch St and Frankford. Normal trash around the inlets. There was no wet areas or straining around the inlet at the SEC. No further action is required at this time.	No Impact On Department Operation Or Structure	No impact on inlet
06/30/2022 18:59 PM	07/29/2022 12:00 PM	Citizen	S 13Th St & Washington Ave	Water	Construction Site Run Off	Combined - D-63	Illegal Discharge | Dumping	Overland To Inlet	Concerned citizen reported that there was a discharge from a construction site at 13th and Washington that was causing flooding on the street. PWD inspector observed a constant discharge from the site to the street which flowed down the gutter to the inlet at 13th and Carpenter Streets. The site has a groundwater discharge permit to discharge groundwater to an onsite sanitary sewer vent. The vent could not take all the water and was overflowing. A new connection to sewer has been installed. The contractor moved the discharge to the new connection. The discharge to the inlet ceased. PWD will issue an NOV.	Minor Impact On Department Operation Or Structure	Inlet was slowly taking water. The water was clear.

Appendix N – Defective Lateral Quarterly Report FY22

STORM WATER MANAGEMENT PROGRAM
NPDES PERMIT NO. PA0054712

DEFECTIVE LATERAL CONNECTION STATUS REPORT
(Covering Period from July 1, 2021 to September 30, 2021)

Submitted to

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER QUALITY MANAGEMENT

By

CITY OF PHILADELPHIA
PHILADELPHIA, PA

November 24, 2021

DLC Program Update
3rd Quarter 2021

I. INTRODUCTION

This Defective Lateral Connection Status Report is submitted to the Pennsylvania Department of Environmental Protection (PADEP) as part of the reporting requirements of the City of Philadelphia NPDES Storm Water Management Permit No. PA 0054712. The report covers the three-month period beginning July 1, 2021 and ending September 30, 2021.

The body of this report will describe the recent activities of the City during the past quarter within the 1998 COA Priority Outfall areas and at other significant outfalls on the Stormwater Outfall Priority Score list. Additionally, goals for the next quarter will be listed.

Table 1 provides a summary of the program with respect to Complete tests, Cross-connections identified, and Abatements performed. Table 2 provides a listing of all laboratory analyses of samples taken at stormwater outfalls or within the stormwater system during the previous quarter. Table 3 provides a listing of properties with cross-connections outstanding greater than 120 days. Finally, Table 4 provides a listing of reported wastewater spills to the stormwater system or receiving streams.

II. PAST QUARTER REVIEW

A. Priority Outfalls

1. 7th & Cheltenham Outfall (T-088-01)

DLC program activities have performed 2,831 Complete tests in this sewershed, identifying 134 Cross-connections, all but one of which have been Abated.

Eight (8) sites intercepting flow are listed below.

1. CFD-01 Plymouth St. west of Pittsville St.
2. CFD-02 Pittsville St. south of Plymouth St.
3. CFD-03 Elston St. east of Bouvier St.
4. CFD-04 Ashley St. west of Bouvier St.
5. CFD-05 Cheltenham Ave. east of 19th St.
6. CFD-06 Verbena St. south of Cheltenham Ave.
7. CFD-07 Cheltenham Ave. east of 7th St.
8. CFD-08 7th St. south of Cheltenham Ave.

The number of inspections, blockages cleared and discharges noted during this quarter are listed below.

Flap Gate	Inspections	Blockages	Discharges
CFD-01	8	0	0
CFD-02	7	1	0
CFD-03	6	0	0
CFD-04	4	0	0
CFD-05	2	0	0
CFD-06	1	0	0
CFD-07	16	6	0
CFD-08	16	0	0

The most recent fecal sample value was 5,475 MPN per 100 ml. at the outfall on September 21, 2021.

2. Monastery Ave. Outfall (W-060-01)

DLC program activities have performed 632 Complete tests in this sewershed, identifying 17 Cross-connections, 16 of which have been Abated.

Two (2) sites intercepting flow are listed below.

1. MFD-01 Jannette St. west of Monastery Ave.
2. MFD-02 Green La. north of Lawnton St.

The number of inspections, blockages cleared and discharges noted during this quarter are listed below.

Flap Gate	Inspections	Blockages	Discharges
MFD-01	6	0	0
MFD-02	6	0	0

The most recent fecal sample value was 146 MPN per 100 ml. at the outfall on July 16, 2021.

3. Monoshone Creek Outfalls (W-060-04, W-060-08, W-060-09, W-060-10, W-060-11, W-068-04 and W-068-05)

DLC program activities have performed 2,750 Complete tests in these sewershed areas, identifying 94 Cross-connections, all of which have been Abated. The majority of the efforts have been in the W-068-05 sewershed area which is by far the largest in terms of drainage area and properties served.

The most recent fecal sample value was 24,196 MPN per 100 ml. at the W-068-05 outfall on July 16, 2021.

4. Manayunk Canal Outfalls (S-051-06, S-058-01, S-059-01 through S-059-11)

DLC program activities have performed 2,477 Complete tests in these sewershed areas, identifying 63 Cross-connections, 62 of which have been Abated. The majority of the efforts have been in the S-059-04 sewershed area.

The most recent fecal sample values at each outfall were:

- No flow at the S-058-01 on August 26.
- 3,255 MPN per 100 ml. at the S-059-01 outfall on August 26.
- 51,720 MPN per 100 ml. at the S-059-02 outfall on August 26.
- 241,960 MPN per 100 ml. at the S-059-03 outfall on August 27.
- 3,640 MPN per 100 ml. at the S-059-04 outfall on September 8.
- 3,880 MPN per 100 ml. at the S-059-05 outfall on September 8.
- 64,880 MPN per 100 ml. at the S-059-09 outfall on September 8.

B. Other Outfalls

1. Sandyford Run Outfall (P-090-02)

DLC program activities have performed 5,837 Complete tests in this sewershed, identifying 88 Cross-connections, all of which have been Abated.

One (1) site intercepting flow is listed below.

1. PFD-01 Sandyford Run (Brous and Lexington Aves.)

The number of inspections, blockages cleared and discharges noted during this quarter are listed below.

Flap Gate	Inspections	Blockages	Discharges
PFD-01	19	3	1

The most recent fecal sample value was 19,863 MPN per 100 ml. at the P-090-02 outfall on September 28, 2021.

2. Franklin and Hasbrook Outfall (T-089-04)

DLC program activities have performed 1,021 Complete tests in this sewershed, identifying 46 Cross-connections, all of which have been Abated.

One (1) site intercepting flow is listed below.

1. CFD-01 Franklin and Hasbrook Aves.

The number of inspections, blockages cleared and discharges noted during this quarter are listed below.

Flap Gate	Inspections	Blockages	Discharges
CFD-01	17	0	0

The outfall was found dry on September 21, 2021.

3. A current summary of additional outfalls from the Stormwater Outfall Priority Score list that the City has performed complete testing or abatements this quarter is as follows.

Outfall #	Complete Test	Cross Connection	Abatement
D-056-09	1	1	0
P-091-01	2	0	0
P-091-06	10	0	0
P-099-03	1	1	0
P-100-05	1	0	0
P-100-11	1	0	0
P-100-16	1	0	0
P-105-01	1	0	0
P-108-19	1	0	0
Q-101-09	51	0	0
Q-102-02	1	0	0
Q-106-22	1	0	0
Q-109-07	1	0	0
Q-114-12	3	0	0
R18	8	2	0
S-046-06	2	0	0
S-052-04	29	1	0
T-080-02	1	0	0
T-089-01	(20)	1	0
T01	1	1	0
W-076-01	1	0	0
W-086-01	(2)	0	0
W-086-02	20	2	0

III. NEXT QUARTER GOALS

A. Priority Outfalls

1. 7th & Cheltenham Outfall (T-088-01)

Goals for the Quarter

- Continue to monitor the operation of the diversion apparatuses.
- Continue sampling at the outfall with dry-weather flow.

2. Monastery Ave. Outfall (W-060-01)

Goals for the Quarter

- Continue to monitor the operation of the diversion apparatuses.
- Continue sampling at the outfall with dry-weather flow.

3. Monoshone Creek Outfalls (W-060-04, W-060-08, W-060-09, W-060-10, W-060-11, W-068-04 and W-068-05)

Goals for the Quarter

- Continue sampling at outfall W-068-05 with dry-weather flow.

4. Manayunk Canal Outfalls (S-051-06, S-058-01, S-059-01 through S-059-11)

Goals for the Quarter

- Continue sampling at the outfalls with dry-weather flow.

B. Other Outfalls

1. Sandyford Run Outfall (P-090-02)

Goals for the Quarter

- Continue to monitor the operation of the diversion apparatus.

2. Franklin and Hasbrook Outfall (T-089-04)

Goals for the Quarter

- Continue to monitor the operation of the diversion apparatus.

3. Continue to perform abatements of identified cross-connections within the following outfalls.

- D-056-09
- P-083-03
- P-091-06
- P-091-09
- P-099-03
- P-100-04

- Q-109-07
- Q-110-09
- Q-114-12
- R18
- S-046-06
- S-052-03
- S-052-04
- S-052-05
- T-079-01
- T-080-02
- T-089-01
- T01
- W-067-01
- W-077-02
- W-086-02

4. Continue to perform property testing within the following outfalls.

- D-056-09
- P-091-01
- P-091-06
- P-099-03
- P-100-04
- P-100-11
- P-100-16
- P-105-01
- P-108-19
- Q-101-09
- Q-102-02
- Q-106-21
- Q-109-07
- Q-114-12
- R18
- S-046-06
- S-052-04
- T-080-02
- T-089-01
- T01
- W-076-01
- W-086-02

Table 1
DLC Program Summary
July 1, 2021 to September 30, 2021

Complete Tests:

- 64,400 Complete tests have been performed under the DLC program
- **116 Complete tests were performed this past quarter**
- 1 Complete test was performed in outfall D-056-09
- 2 Complete tests were performed in outfall P-091-01
- 10 Complete tests were performed in outfall P-091-06
- 1 Complete test was performed in outfall P-099-03
- 1 Complete test was performed in outfall P-100-05
- 1 Complete test was performed in outfall P-100-11
- 1 Complete test was performed in outfall P-100-16
- 1 Complete test was performed in outfall P-105-01
- 1 Complete test was performed in outfall P-108-019
- 51 Complete tests were performed in outfall Q-101-09
- 1 Complete test was performed in outfall Q-102-02
- 1 Complete test was performed in outfall Q-106-22
- 1 Complete test was performed in outfall Q-109-07
- 3 Complete tests were performed in outfall Q-114-12
- 8 Complete tests were performed in outfall R18
- 2 Complete tests were performed in outfall S-046-06
- 29 Complete tests were performed in outfall S-052-04
- 1 Complete test was performed in outfall T-080-02
- (20) Complete tests were performed in outfall T-089-01
- 1 Complete test was performed in outfall T01
- 1 Complete test was performed in outfall W-076-01
- (2) Complete tests were performed in outfall W-086-01
- 20 Complete tests were performed in outfall W-086-02

Cross-Connections Found:

- 1,812 Cross-connections have been identified under the DLC program
- **10 Cross-connections were identified this past quarter**
- 1 Cross-connection was identified in outfall D-056-09
- 1 Cross-connection was identified in outfall P-099-03
- 2 Cross-connections were identified in outfall R18
- 1 Cross-connection was identified in outfall S-052-04
- 1 Cross-connection was identified in outfall S-059-02
- 1 Cross-connection was identified in outfall T-089-01
- 1 Cross-connection was identified in outfall T01
- 2 Cross-connections were identified in outfall W-086-02

Abatements:

- 1,645 Abatements have been performed under the DLC program
- **0 Abatement was performed this past quarter**

Outfall/Manhole Screening and Sampling:

- 10 outfall inspections were made as part of the **Priority Outfall Inspection Program** this past quarter
- 9 outfall samples were taken due to observed dry-weather flow during the above inspections

- 2 outfall inspections were made as part of the **Permit Inspection Program** this past quarter
- 1 outfall samples were taken due to observed dry-weather flow during the above inspections

Table 2

Lab Analysis of Water at Outfalls and/or in the Storm Sewers

July 1, 2021 to September 30, 2021

Outfall	Date	Time	Location	Sewer Size (in)	Flow (gph)	Fluoride (mg/l)	Fecal Count (MPN per 100 ml)	Comments
A. Priority Outfalls								
T-088-01	9/21/2021	12:30	Outfall: 7th and Cheltenham	84"	10800	<.1	5475	Odd smell, almost like decaying flesh, maybe not from water
W-060-01	7/16/2021	12:25	Outfall Monastery and Jeanette	4'4" x 5'0"	300	0.157	146	Clear flow, bluish clear pool
W-068-05	7/16/2021	12:00	Outfall: Lincoln & Morris	90	NR	0.539	24196	Unable to determine flow rate (subm). Sampled with jar and string flung into OF from inside culvert.
S-058-01	8/26/2021	11:15	Outfall: Domino Lane	54"	NF	NS	NS	Outfall partially submerged, no evidence of flow.
S-059-01	8/26/2021	11:40	Outfall: Parker & Towpath	42"	3600	0.331	3255	Sampled soon after Hurricane Ida
S-059-02	8/26/2021	12:05	Outfall: Fountain & Towpath	42"	60	0.115	51720	Sampled soon after Hurricane Ida
S-059-03	8/27/2021	12:05	Outfall: Towpath & Wright	42"	NR	0.21	241960	Sampled soon after Hurricane Ida. Grey bacterial matt with significant growth.
S-059-04	9/8/2021	12:38	Outfall: Leverington (S)	51"	900	0.211	3640	Inspection after Hurricane Ida flooding event.
S-059-05	9/8/2021	12:45	Outfall: Leverington (N)	4'0"x2'8"	NR	0.139	3880	Outfall submerged, not able to estimate flow.
S-059-09	9/8/2021	13:00	Outfall: Green Lane & Towpath	36"	300	0.578	64880	Storm debris partially blocking channel
B. Permit Inspection Program								
P-090-02	9/28/2021	10:40	Outfall: Sandyford	156"	1800	0.196	19863	Somewhat submerged by adjacent outfall. Much trash nearby, possible encampment
T-089-04	9/21/2021	12:55	Outfall: Franklin & Hasbrook	3'0"x6'6"	NR	NS	NS	No flow observed from City side.

Table 3
Residential Cross Connections Not Abated Within 120 Days

A. Properties Abated & Confirmed Prior to Reporting:

Address	Outfall Code	Complete Date	Admin. Action	Abatement Confirmation Date	Comments

B. Properties Active As Of Reporting:

Address	Outfall Code	Complete Date	Admin. Action	Comments
00015 Osborn St	S-052-05	01-17-2018		
01941 Kentwood St	Q-109-07	01-19-2018		
03411 W Penn St	S-052-04	02-13-2018		
03424 W Penn St	S-052-04	02-17-2018		
03433 W Penn St	S-052-04	02-21-2018		
03425 Conrad St	S-052-04	03-01-2018		
03340 W Penn St	S-052-04	03-03-2018		
03530 Henry Ave	S-052-04	03-03-2018		
03313 Tilden St	S-052-04	03-24-2018		
03305 Tilden St	S-052-04	03-24-2018		
03329 Tilden St	S-052-04	03-27-2018		
03316 Tilden St	S-052-04	03-28-2018		
03333 Tilden St	S-052-04	03-29-2018		
03461 Sunnyside Ave	S-052-04	04-02-2018		
03411 Osmond St	S-052-04	04-28-2018		
03449 W Penn St	S-052-04	05-03-2018		
03446 Crawford St	S-052-04	05-17-2018		
03467 Indian Queen La	S-052-04	05-26-2018		
03433 Crawford St	S-052-04	05-26-2018		
03317 W Penn St	S-052-04	06-02-2018		
03448 W Queen La	S-052-04	06-23-2018		
03335 W Queen La	S-052-04	07-02-2018		
03419 W Queen La	S-052-04	07-02-2018		

Table 3
Residential Cross Connections Not Abated Within 120 Days

Address	Outfall Code	Complete Date	Admin. Action	Comments
03417 W Queen La	S-052-04	07-05-2018		
03326 W Queen La	S-052-04	07-12-2018		
03452 W Queen La	S-052-04	07-13-2018		
03469 W Queen La	S-052-04	07-17-2018		
03414 W Queen La	S-052-04	07-20-2018		
03333 W Queen La	S-052-04	07-21-2018		
03474 Tilden St	S-052-04	07-21-2018		
03440 W Queen La	S-052-04	07-21-2018		
03435 W Queen La	S-052-04	07-30-2018		
03464 W Queen La	S-052-04	07-30-2018		
03429 W Queen La	S-052-04	08-02-2018		
03459 W Queen La	S-052-04	08-16-2018		
03434 W Queen La	S-052-04	08-17-2018		
03460 W Queen La	S-052-04	08-24-2018		
02612 Woodward St	P-100-04	09-12-2018		
04437 Riverview La	S-052-03	09-19-2018		
04456 Riverview La	S-052-03	09-26-2018		
04423 Driftwood Dr	S-052-03	09-27-2018		
04406 Driftwood Dr	S-052-03	09-29-2018		
04433 Driftwood Dr	S-052-03	09-29-2018		
03235 Comly Pl	Q-110-09	10-06-2018		
04410 Driftwood Dr	S-052-03	10-06-2018		
04415 Driftwood Dr	S-052-03	10-12-2018		
04402 Driftwood Dr	S-052-03	10-13-2018		
04312 Ashburner St	P-083-03	10-20-2018		
03454 W Penn St	S-052-04	10-24-2018		

Table 3
Residential Cross Connections Not Abated Within 120 Days

Address			Outfall Code	Complete Date	Admin. Action	Comments
04425	Driftwood	Dr	S-052-03	10-27-2018		
04431	Driftwood	Dr	S-052-03	10-27-2018		
04404	Driftwood	Dr	S-052-03	10-31-2018		
04412	Driftwood	Dr	S-052-03	11-09-2018		
04417	Driftwood	Dr	S-052-03	11-17-2018		
03700	Falls	Cir	S-052-03	12-15-2018		
08726	Cottage	St	P-083-03	12-22-2018		
03702	Falls	Cir	S-052-03	12-24-2018		
04702	Almond	St	D-056-09	12-26-2018		
03704	Falls	Cir	S-052-03	01-17-2019		
03706	Falls	Cir	S-052-03	01-19-2019		
04408	Driftwood	Dr	S-052-03	01-19-2019		
02629	Pratt	St	D-056-09	01-26-2019		
04416	Ashburner	St	P-083-03	02-02-2019		
04312	M	St	R18	03-13-2019		
04300	M	St	R18	03-15-2019		
04422	Ashburner	St	P-083-03	03-22-2019		
04337	Glendale	St	R18	03-23-2019		
04232	O	St	R18	03-28-2019		
04254	O	St	R18	04-06-2019		
00223	Stearly	St	T-080-02	04-06-2019		
04310	Glendale	St	R18	04-13-2019		
00215	Stearly	St	T-080-02	04-20-2019		
05930	Newtown	Ave	T-080-02	04-22-2019		
04250	Neilson	St	R18	04-25-2019		
05922	Newtown	Ave	T-080-02	04-26-2019		

Table 3
Residential Cross Connections Not Abated Within 120 Days

Address	Outfall Code	Complete Date	Admin. Action	Comments
04215 Castor Ave	R18	04-27-2019		
04219 Castor Ave	R18	05-02-2019		
04249 Neilson St	R18	05-04-2019		
04242 Castor Ave	R18	05-11-2019		
08336 Ditman St	P-083-03	05-18-2019		
01434 E Bristol St	R18	05-28-2019		
04236 Neilson St	R18	06-01-2019		
04245 Ormond St	R18	06-08-2019		
04309 Glendale St	R18	06-15-2019		
04122 M St	R18	07-06-2019		
08635 Ditman St	P-083-03	07-10-2019		
04146 Markland St	R18	07-27-2019		
04144 M St	R18	07-29-2019		
04144 Markland St	R18	07-30-2019		
04142 Markland St	R18	08-03-2019		
04122 Markland St	R18	08-05-2019		
01409 E Lycoming St	R18	08-13-2019		
04114 Markland St	R18	08-17-2019		
01413 E Lycoming St	R18	08-20-2019		
01447 E Lycoming St	R18	08-26-2019		
04025 Castor Ave	R18	08-29-2019		
01404 E Lycoming St	R18	08-31-2019		
04023 Castor Ave	R18	09-04-2019		
04034 Castor Ave	R18	09-06-2019		
04051 Castor Ave	R18	09-11-2019		
04224 Markland St	R18	09-14-2019		

Table 3
Residential Cross Connections Not Abated Within 120 Days

Address	Outfall Code	Complete Date	Admin. Action	Comments
04024 Castor Ave	R18	09-17-2019		
01444 E Lycoming St	R18	09-19-2019		
04143 M St	R18	09-21-2019		
04215 M St	R18	09-24-2019		
07331 Hill Rd	W-067-01	09-30-2019		
02623 W Allegheny Ave	S-046-06	10-05-2019		
04033 Castor Ave	R18	10-08-2019		
04014 Castor Ave	R18	10-08-2019		
04030 Castor Ave	R18	10-12-2019		
03063 Winchester Ave	P-091-09	10-19-2019		
04259 Castor Ave	R18	10-22-2019		
04261 Castor Ave	R18	10-26-2019		
01431 E Lycoming St	R18	11-02-2019		
08820 Cottage St	P-083-03	11-06-2019		
04259 Neilson St	R18	12-02-2019		
00531 Roxborough Ave	W-060-01	12-14-2019		
02320 Benson St	P-091-06	01-06-2020		
01352 E Hunting Park Ave	R18	01-08-2020		
04123 Markland St	R18	02-06-2020		
02306 Benson St	P-091-06	02-10-2020		
01441 E Hunting Park Ave	R18	02-29-2020		
00038 W Hartwell La	W-077-02	03-05-2020		
02128 Emerson St	P-091-06	10-24-2020		
02214 Hoffnagle St	P-091-06	10-26-2020		
04116 Markland St	R18	11-09-2020		

Table 4

Spills to Storm Sewers and/or Receiving Waters

July 1, 2021 to September 30, 2021

Date	Outfall	Address	Source Code	Material Involved	Completion Date	Remarks
07/07/21		Langley Ave, PS 603 Force main	3008	Sewage	07/08/21	Sewer Maintenance unit ran vactor trucks to clean up the sewage causing approximate 1 gpm discharge. Contractor JPC excavated and replaced 25 ft of the 8 inch force main. PWD is finalizing a contract for the next-step replacement.
07/12/21		4701 Grant Ave, PC-0030 Poquessing Creek	3011	Sewage	07/12/21	500-year strom exceeded sewer capacity limitation causing approximate 7000 gpm discharge. WRT did the clean up. Site is montiored and returned to normal.
07/13/21		Langley Ave, PS 603 Force main	3008	Sewage	07/13/21	Sewer Maintenance unit ran vactor trucks to clean up the sewage causing approximate 1 gpm discharge. Contractor JPC excavated and replaced 35 ft of the 8 inch force main. PWD is finalizing a contract for the next-step replacement.
07/22/21		Langley Ave, PS 603 Force main	3008	Sewage	07/23/21	Sewer Maintenance unit ran vactor trucks to clean up the sewage causing approximate 1 gpm discharge. Contractor JPC excavated and replaced 3 ft of the 8 inch force main. PWD is finalizing a contract for the next-step replacement.
08/06/21	S-059-04	Wilde St & Mallory St	3009	Sewage	08/20/21	Industrial Waste unit investigated a report of green liquid observed in the inlet. Refered to inlet cleaning.
08/10/21	M-005-13	8500 Essington Ave	3009	Sewage	08/20/21	Industrial Waste unit investigated a report of 2 gallons jetfuel leaked to inlet. Airport contracted cleanout of inlet. No impacts to creek.
08/10/21		Langley Ave, PS 603 Force main	3008	Sewage	08/10/21	Sewer Maintenance unit ran vactor trucks to clean up the sewage causing approximate 1 gpm discharge. Contractor JPC excavated and replaced 3 ft of the 8 inch force main. PWD is finalizing a contract for the next-step replacement.
08/12/21		Tabor Av & Stanwood St Sedden's Creek	3011	Sewage	08/12/21	Sewer Maintenance unit bypassed the choked sewer causing the approximate 1 gpm discharge. Swept and removed debris from water. Flushed creek with water and dechlorination tabs.
08/17/21		Tabor Av & Stanwood St Sedden's Creek	3011	Sewage	08/17/21	Sewer Maintenance unit replaced damaged hose from bypass pump, causing the approximate 1 gpm discharge. WRT applied lime to ground. Sewer blockage removed. Swept and removed debris from water. Flushed creek with water and dechlorination tabs.
08/19/21		Cresheim Valley Dr & Lincoln Dr Cresheim Creek	3010	Sewage	08/19/21	Sanitary combined sewer was overtaxed from storm causing approximate 1 gpm discharge. Sewer Maintenance unit cleaned the waterways near manhole CV-0145.
08/20/21	S-059-04	Leverington & High St Manayunk Canal	3011	Sewage	08/20/21	Sewer Maintenance unit bypassed the choked sewer causing the approximate 1 gpm discharge. Cleaned manhole and repaired hole inside. All pumps removed and opened street. Sewer flow returned back to normal.
08/23/21		11064 Rennard St Poquessing Creek	3009	Sewage	08/23/21	Temporary bypass pumping caused approximate 1 gpm discharge. Sewer Maintenance unit adjusted the pump float level. Following dye tests confirmed the overflow had stopped. WRT unit did the cleanup.
09/15/21	P-113-01	Red Lion Rd & Northeast Blvd Pennypack Creek	3011	Sewage	09/15/21	Sewer Maintenance unit flushed sanitary sewer causing approximate 2 gpm discharge. Cleaned up streames with dechlorination tabs.

Source Codes:

3008 - Spill to Ground Only
3009 - Spill to Storm Sewer
3010 - Spill to Sanitary Sewer
3011 - Spill to Receiving Stream

STORM WATER MANAGEMENT PROGRAM
NPDES PERMIT NO. PA0054712

DEFECTIVE LATERAL CONNECTION STATUS REPORT
(Covering Period from October 1, 2021 to December 31, 2021)

Submitted to

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER QUALITY MANAGEMENT

By

CITY OF PHILADELPHIA
PHILADELPHIA, PA

February 16, 2022

DLC Program Update
4th Quarter 2021

I. INTRODUCTION

This Defective Lateral Connection Status Report is submitted to the Pennsylvania Department of Environmental Protection (PADEP) as part of the reporting requirements of the City of Philadelphia NPDES Storm Water Management Permit No. PA 0054712. The report covers the three-month period beginning October 1, 2021, and ending December 31, 2021.

The body of this report will describe the recent activities of the City during the past quarter within the 1998 COA Priority Outfall areas and at other significant outfalls on the Stormwater Outfall Priority Score list. Additionally, goals for the next quarter will be listed.

Table 1 provides a summary of the program with respect to Complete tests, Cross-connections identified, and Abatements performed. Table 2 provides a listing of all laboratory analyses of samples taken at stormwater outfalls or within the stormwater system during the previous quarter. Table 3 provides a listing of properties with cross-connections outstanding greater than 120 days. Finally, Table 4 provides a listing of reported wastewater spills to the stormwater system or receiving streams.

II. PAST QUARTER REVIEW

A. Priority Outfalls

1. 7th & Cheltenham Outfall (T-088-01)

DLC program activities have performed 2,831 Complete tests in this sewershed, identifying 134 Cross-connections, all of which have been Abated.

Eight (8) sites intercepting flow are listed below.

1. CFD-01 Plymouth St. west of Pittsville St.
2. CFD-02 Pittsville St. south of Plymouth St.
3. CFD-03 Elston St. east of Bouvier St.
4. CFD-04 Ashley St. west of Bouvier St.
5. CFD-05 Cheltenham Ave. east of 19th St.
6. CFD-06 Verbena St. south of Cheltenham Ave.
7. CFD-07 Cheltenham Ave. east of 7th St.
8. CFD-08 7th St. south of Cheltenham Ave.

The number of inspections, blockages cleared, and discharges noted during this quarter are listed below.

Flap Gate	Inspections	Blockages	Discharges
CFD-01	9	0	0
CFD-02	8	0	0
CFD-03	8	0	0
CFD-04	7	0	0
CFD-05	5	0	0
CFD-06	3	0	0
CFD-07	24	6	0
CFD-08	24	0	0

The most recent fecal sample value was 648,800 MPN per 100 ml. at the outfall on December 21, 2021.

2. Monastery Ave. Outfall (W-060-01)

DLC program activities have performed 636 Complete tests in this sewershed, identifying 17 Cross-connections, 16 of which have been Abated.

Two (2) sites intercepting flow are listed below.

1. MFD-01 Jannette St. west of Monastery Ave.
2. MFD-02 Green La. North of Lawnton St.

The number of inspections, blockages cleared, and discharges noted during this quarter are listed below.

Flap Gate	Inspections	Blockages	Discharges
MFD-01	6	0	0
MFD-02	6	0	0

The most recent fecal sample value was 1,354 MPN per 100 ml. at the outfall on December 17, 2021.

3. Monoshone Creek Outfalls (W-060-04, W-060-08, W-060-09, W-060-10, W-060-11, W-068-04 and W-068-05)

DLC program activities have performed 2,749 Complete tests in these sewershed areas, identifying 94 Cross-connections, all of which have been Abated. The majority of the efforts have been in the W-068-05 sewershed area which is by far the largest in terms of drainage area and properties served.

The most recent fecal sample value was 7,701 MPN per 100 ml. at the W-068-05 outfall on December 17, 2021.

4. **Manayunk Canal Outfalls (S-051-06, S-058-01, S-059-01 through S-059-11)**

DLC program activities have performed 2,477 Complete tests in these sewershed areas, identifying 63 Cross-connections, all of which have been Abated. The majority of the efforts have been in the S-059-04 sewershed area.

The most recent fecal sample values at each outfall were:

- 187 MPN per 100 ml. at the S-058-01 outfall on December 15, 2021.
- 1,789 MPN per 100 ml. at the S-059-01 outfall on December 15, 2021
- >24196 MPN per 100 ml. at the S-059-02 outfall on December 15, 2021.
- >241960 MPN per 100 ml. at the S-059-03 outfall on August 27, 2021.
- 46,110 MPN per 100 ml. at the S-059-04 outfall on December 15, 2021.
- No flow at the S-059-05 outfall on December 15, 2021.
- 24196 MPN per 100 ml. at the S-059-09 outfall on December 15, 2021.

B. Other Outfalls

1. Sandyford Run Outfall (P-090-02)

DLC program activities have performed 5,837 Complete tests in this sewershed, identifying 88 Cross-connections, all of which have been Abated.

One (1) site intercepting flow is listed below.

1. PFD-01 Sandyford Run (Brous and Lexington Aves.)

The number of inspections, blockages cleared, and discharges noted during this quarter are listed below.

Flap Gate	Inspections	Blockages	Discharges
PFD-01	26	4	0

The most recent fecal sample value was <10 MPN per 100 ml. at the P-090-02 outfall on December 2, 2021.

2. Franklin and Hasbrook Outfall (T-089-04)

DLC program activities have performed 1,021 Complete tests in this sewershed, identifying 46 Cross-connections, all of which have been Abated.

One (1) site intercepting flow is listed below.

1. CFD-01 Franklin and Hasbrook Aves.

The number of inspections, blockages cleared, and discharges noted during this quarter are listed below.

Flap Gate	Inspections	Blockages	Discharges
CFD-01	26	0	0

The outfall was found dry on December 21, 2021.

3. A current summary of additional outfalls from the Stormwater Outfall Priority Score list that the City has performed complete testing or abatements this quarter is as follows.

Outfall #	Completed Test	Cross Connection	Abatement
P-091-01	2	0	0
P-091-06	5	1	0
P-099-03	(86)	0	0
P-100-11	1	0	0
P-108-19	1	0	0
P-112-03	2	0	0
Q-101-05	(3)	0	0
Q-101-09	8	0	0
Q-107-06	1	0	0
Q-109-07	1	1	0
Q-115-12	(13)	1	0
R18	4	1	1
S-052-04	58	4	2
S-052-05	0	0	1
T-080-02	1	0	0
T-089-01	18	0	0
W-086-02	12	0	0

III. NEXT QUARTER GOALS

A. Priority Outfalls

1. 7th & Cheltenham Outfall (T-088-01)

Goals for the Quarter

- Continue to monitor the operation of the diversion apparatuses.
- Continue sampling at the outfall with dry-weather flow.

2. Monastery Ave. Outfall (W-060-01)

Goals for the Quarter

- Continue to monitor the operation of the diversion apparatuses.
- Continue sampling at the outfall with dry-weather flow.

3. Monoshone Creek Outfalls (W-060-04, W-060-08, W-060-09, W-060-10, W-060-11, W-068-04 and W-068-05)

Goals for the Quarter

- Continue sampling at outfall W-068-05 with dry-weather flow.

4. Manayunk Canal Outfalls (S-051-06, S-058-01, S-059-01 through S-059-11)

Goals for the Quarter

- Continue sampling at the outfalls with dry-weather flow.

B. Other Outfalls

1. Sandyford Run Outfall (P-090-02)

Goals for the Quarter

- Continue to monitor the operation of the diversion apparatus.

2. Franklin and Hasbrook Outfall (T-089-04)

Goals for the Quarter

- Continue to monitor the operation of the diversion apparatus.

3. Continue to perform abatements of identified cross-connections within the following outfalls.

- P-091-06
- Q-109-07
- Q-115-12
- S-052-04
- S-052-05

4. Continue to perform property testing within the following outfalls.

- P-091-01
- P-091-06
- P-099-03
- P-100-11
- P-108-19

- Q-101-05
- Q-101-09
- Q-107-06
- Q-109-07
- Q-115-12
- R18
- S-052-04
- T-080-02
- T-089-01
- W-086-02

Table 1
DLC Program Summary
October 1, 2021 to December 31, 2021

Complete Tests:

- 64,415 Complete tests have been performed under the DLC program
- **15 Complete tests were performed this past quarter**
- 2 Complete tests were performed in outfall P-091-01
- 5 Complete tests were performed in outfall P-091-06
- (86) Complete tests were performed in outfall P-099-03
- 1 Complete test was performed in outfall P-100-11
- 1 Complete test was performed in outfall P-108-019
- 2 Complete tests were performed in outfall P-112-03
- (3) Complete tests were performed in outfall Q-101-05
- 8 Complete tests were performed in outfall Q-101-09
- 1 Complete test was performed in outfall Q-107-06
- 1 Complete test was performed in outfall Q-109-07
- (13) Complete tests were performed in outfall Q-115-12
- 4 Complete tests were performed in outfall R18
- 58 Complete tests were performed in outfall S-052-04
- 1 Complete test was performed in outfall T-080-02
- 18 Complete tests were performed in outfall T-089-01
- 4 Complete tests were performed in outfall W-060-01
- 12 Complete tests were performed in outfall W-086-02
- (1) Complete tests were performed in outfall W-068-05

Cross-Connections Found:

- 1,820 Cross-connections have been identified under the DLC program
- **8 Cross-connections were identified this past quarter**
- 1 Cross-connection was identified in outfall P-091-06
- 1 Cross-connection was identified in outfall Q-109-07
- 1 Cross-connection was identified in outfall Q-115-12
- 1 Cross-connection was identified in outfall R18
- 4 Cross-connections were identified in outfall S-052-04

Abatements:

- 1,650 Abatements have been performed under the DLC program
- **5 Abatements were performed this past quarter**
- 1 Abatement was performed in outfall R18
- 2 Abatements were performed in outfall S-052-04
- 1 Abatement was performed in outfall S-052-05
- 1 Abatement was performed in outfall S-059-02

Outfall/Manhole Screening and Sampling:

- 10 outfall inspections were made as part of the **Priority Outfall Inspection Program** this past quarter
- 9 outfall samples were taken due to observed dry-weather flow during the above inspections

- 6 outfall inspections were made as part of the **Permit Inspection Program** this past quarter
- 1 outfall sample was taken due to observed dry-weather flow during the above inspections

Table 2
Lab Analysis of Water at Outfalls and/or in the Storm Sewers
October 1, 2021 to December 31, 2021

Outfall	Date	Time	Location	Sewer Size (noted)	Flow (gph)	Fluoride (mg/l)	Fecal Count (MPN per 100 ml)	Comments
A. Priority Outfalls								
T-088-01	12/21/2021	10:55	Outfall: 7th and Cheltenham	84"	NR	0.214	648800	Odd smell, almost like decaying flesh, maybe not from water.
W-060-01	12/17/2021	11:25	Outfall: Monastery and Jeanette	4'4" x 5'0"	300	0.103	1354	Green algae. Trees fallen over. Good pool. Water flowing not from outfall, but through rocks at the bottom.
W-068-05	12/17/2021	10:50	Outfall: Lincoln and Morris	90"	NR	0.316	7701	Outfall submerged. Water mostly clear.
S-058-01	12/15/2021	11:10	Outfall: Domino Lane	54"	3600	0.215	187	Orange Sediments. Partially submerged. Cloudy.
S-059-01	12/15/2021	11:20	Outfall: Parker & Towpath	42"	1300	0.414	1789	Foaming/sudsing. Tree fell over.
S-059-02	12/15/2021	11:30	Outfall: Fountain & Towpath	42"	1000	0.458	>24196	Cloudy. Surface scum. Green Algae.
S-059-03	12/15/2021	11:45	Outfall: Towpath & Wright	42"	2000	0.347	>241960	Sewage odor. Cloudy. Foaming. Algae.
S-059-04	12/15/2021	11:50	Outfall: Leverington (S)	51"	NR	0.292	46110	Cloudy. Sewage (possibly toilet paper) seen. Cloudy.
S-059-05	12/15/2021	11:50	Outfall: Leverington (N)	4'0" x 2'8"	NR	NS	NS	No flow.
S-059-09	12/15/2021	12:00	Outfall: Green Lane & Towpath	36"	1200	0.741	>24196	Slight foaming and small amounts of solids.
B. Permit Inspection Program								
Q-120-11	11/23/2021	12:20	Outfall: Brookshire Terrace (aka Philmont & Lukens)	28"	NR	NS	NS	Contractor is doing work upstream on the creek. Silty discharge from worksite dewatering. PADEP was notified.
Q-110-09	12/3/2021	10:30	Outfall: Comly & Academy	36"	NF	NS	NS	No flow observed but evidence of past flow visible.
Q-114-18	12/22/2021	12:45	Outfall: Thorton & Townsend	48"	300	NS	NS	Not dry weather inspection. Outfall had white staining/sediments. Pool was grey and cloudy. Slight foaming/suds. Obvious illicit discharge. Did back track but could not find source.
P-090-02	12/2/2021	11:07	Outfall:Sandyford	156"	2700	0.71	<10	Bacteria build up and decomposing rat. Much trash nearby, possible encampment.
P-113-06	12/2/2021	9:27	Outfall: NE Ave & Serota	42"	NF	NS	NS	Some scum in creek but outfall is dry.
T-089-04	12/21/2021	10:45	Outfall: Franklin & Hasbrook	3'0" x 6'6"	NR	NS	NS	No flow observed from City side.

Table 3
Residential Cross Connections Not Abated Within 120 Days

A. Properties Abated & Confirmed Prior to Reporting:

Address	Outfall Code	Complete Date	Admin. Action	Abatement Confirmation Date	Comments

B. Properties Active As Of Reporting:

Address	Outfall Code	Complete Date	Admin. Action	Comments
01941 Kentwood St	Q-109-07	01-19-2018		
03411 W Penn St	S-052-04	02-13-2018		
03424 W Penn St	S-052-04	02-17-2018		
03433 W Penn St	S-052-04	02-21-2018		
03425 Conrad St	S-052-04	03-01-2018		
03530 Henry Ave	S-052-04	03-03-2018		
03340 W Penn St	S-052-04	03-03-2018		
03313 Tilden St	S-052-04	03-24-2018		
03305 Tilden St	S-052-04	03-24-2018		
03329 Tilden St	S-052-04	03-27-2018		
03333 Tilden St	S-052-04	03-29-2018		
03461 Sunnyside Ave	S-052-04	04-02-2018		
03411 Osmond St	S-052-04	04-28-2018		
03449 W Penn St	S-052-04	05-03-2018		
03446 Crawford St	S-052-04	05-17-2018		
03433 Crawford St	S-052-04	05-26-2018		
03317 W Penn St	S-052-04	06-02-2018		
03448 W Queen La	S-052-04	06-23-2018		
03419 W Queen La	S-052-04	07-02-2018		
03335 W Queen La	S-052-04	07-02-2018		
03417 W Queen La	S-052-04	07-05-2018		
03326 W Queen La	S-052-04	07-12-2018		
03452 W Queen La	S-052-04	07-13-2018		

Table 3
Residential Cross Connections Not Abated Within 120 Days

Address	Outfall Code	Complete Date	Admin. Action	Comments
03469 W Queen La	S-052-04	07-17-2018		
03414 W Queen La	S-052-04	07-20-2018		
03474 Tilden St	S-052-04	07-21-2018		
03440 W Queen La	S-052-04	07-21-2018		
03333 W Queen La	S-052-04	07-21-2018		
03435 W Queen La	S-052-04	07-30-2018		
03464 W Queen La	S-052-04	07-30-2018		
03429 W Queen La	S-052-04	08-02-2018		
03459 W Queen La	S-052-04	08-16-2018		
03434 W Queen La	S-052-04	08-17-2018		
03460 W Queen La	S-052-04	08-24-2018		
02612 Woodward St	P-100-04	09-12-2018		
04437 Riverview La	S-052-03	09-19-2018		
04456 Riverview La	S-052-03	09-26-2018		
04423 Driftwood Dr	S-052-03	09-27-2018		
04406 Driftwood Dr	S-052-03	09-29-2018		
04433 Driftwood Dr	S-052-03	09-29-2018		
03235 Comly Pl	Q-110-09	10-06-2018		
04410 Driftwood Dr	S-052-03	10-06-2018		
04415 Driftwood Dr	S-052-03	10-12-2018		
04402 Driftwood Dr	S-052-03	10-13-2018		
04312 Ashburner St	P-083-03	10-20-2018		
03454 W Penn St	S-052-04	10-24-2018		
04425 Driftwood Dr	S-052-03	10-27-2018		
04431 Driftwood Dr	S-052-03	10-27-2018		
04404 Driftwood Dr	S-052-03	10-31-2018		

Table 3
Residential Cross Connections Not Abated Within 120 Days

Address			Outfall Code	Complete Date	Admin. Action	Comments
04412	Driftwood	Dr	S-052-03	11-09-2018		
04417	Driftwood	Dr	S-052-03	11-17-2018		
03700	Falls	Cir	S-052-03	12-15-2018		
08726	Cottage	St	P-083-03	12-22-2018		
03702	Falls	Cir	S-052-03	12-24-2018		
04702	Almond	St	D-056-09	12-26-2018		
03704	Falls	Cir	S-052-03	01-17-2019		
03706	Falls	Cir	S-052-03	01-19-2019		
04408	Driftwood	Dr	S-052-03	01-19-2019		
02629	Pratt	St	D-056-09	01-26-2019		
04416	Ashburner	St	P-083-03	02-02-2019		
04312	M	St	R18	03-13-2019		
04300	M	St	R18	03-15-2019		
04422	Ashburner	St	P-083-03	03-22-2019		
04337	Glendale	St	R18	03-23-2019		
04232	O	St	R18	03-28-2019		
00223	Stearly	St	T-080-02	04-06-2019		
04254	O	St	R18	04-06-2019		
04310	Glendale	St	R18	04-13-2019		
00215	Stearly	St	T-080-02	04-20-2019		
05930	Newtown	Ave	T-080-02	04-22-2019		
04250	Neilson	St	R18	04-25-2019		
05922	Newtown	Ave	T-080-02	04-26-2019		
04215	Castor	Ave	R18	04-27-2019		
04219	Castor	Ave	R18	05-02-2019		
04249	Neilson	St	R18	05-04-2019		

Table 3
Residential Cross Connections Not Abated Within 120 Days

Address	Outfall Code	Complete Date	Admin. Action	Comments
04242 Castor Ave	R18	05-11-2019		
08336 Ditman St	P-083-03	05-18-2019		
01434 E Bristol St	R18	05-28-2019		
04236 Neilson St	R18	06-01-2019		
04245 Ormond St	R18	06-08-2019		
04309 Glendale St	R18	06-15-2019		
04122 M St	R18	07-06-2019		
08635 Ditman St	P-083-03	07-10-2019		
04146 Markland St	R18	07-27-2019		
04144 Markland St	R18	07-30-2019		
04142 Markland St	R18	08-03-2019		
04122 Markland St	R18	08-05-2019		
01409 E Lycoming St	R18	08-13-2019		
04114 Markland St	R18	08-17-2019		
01413 E Lycoming St	R18	08-20-2019		
01447 E Lycoming St	R18	08-26-2019		
04025 Castor Ave	R18	08-29-2019		
01404 E Lycoming St	R18	08-31-2019		
04023 Castor Ave	R18	09-04-2019		
04034 Castor Ave	R18	09-06-2019		
04051 Castor Ave	R18	09-11-2019		
04224 Markland St	R18	09-14-2019		
04024 Castor Ave	R18	09-17-2019		
01444 E Lycoming St	R18	09-19-2019		
04143 M St	R18	09-21-2019		
04215 M St	R18	09-24-2019		

Table 3
Residential Cross Connections Not Abated Within 120 Days

Address	Outfall Code	Complete Date	Admin. Action	Comments
07331 Hill Rd	W-067-01	09-30-2019		
02623 W Allegheny Ave	S-046-06	10-05-2019		
04033 Castor Ave	R18	10-08-2019		
04014 Castor Ave	R18	10-08-2019		
04030 Castor Ave	R18	10-12-2019		
03063 Winchester Ave	P-091-09	10-19-2019		
04259 Castor Ave	R18	10-22-2019		
04261 Castor Ave	R18	10-26-2019		
01431 E Lycoming St	R18	11-02-2019		
08820 Cottage St	P-083-03	11-06-2019		
04259 Neilson St	R18	12-02-2019		
00531 Roxborough Ave	W-060-01	12-14-2019		
02320 Benson St	P-091-06	01-06-2020		
01352 E Hunting Park Ave	R18	01-08-2020		
04123 Markland St	R18	02-06-2020		
02306 Benson St	P-091-06	02-10-2020		
01441 E Hunting Park Ave	R18	02-29-2020		
00038 W Hartwell La	W-077-02	03-05-2020		
02128 Emerson St	P-091-06	10-24-2020		
02214 Hoffnagle St	P-091-06	10-26-2020		
04116 Markland St	R18	11-09-2020		

Table 4
Spills to Storm Sewers and/or Receiving Waters
October 1, 2021 to December 31, 2021

Date	Outfall	Address	Source Code	Material Involved	Completion Date	Remarks
10/2/2021	P-083-03	9101 Frankford Ave Pennypack Creek	3009	Ground Water	10/2/2021	Contractor was pumping water into a PWD inlet. IWBC required the contractor to stop pumping and apply for a permit.
10/4/2021	S-010-46	Langley Ave, PS 603	3008	Sewage	10/18/2021	PWD Sewer Maintenance worked with a contractor to address a leak found in the 8" force main leaving the pump station. Additional leaks were found and approximtely 250 gals were discharged at about 5.5 gpm before the force main was bypassed.
10/8/2021	Q-101-03	Convent Ave. & Treaty Rd. Poquessing Creek	3009	Debris	10/8/2021	IWBC responded to a call and found concrete/sand on the interior of inlet, causing murky and foamy water. Discharge has ceased and responsible party found.
10/13/2021	P-105-01	1914-24 Grant Ave Pennypack Creek	3009	Car Wash Fluids	10/16/2021	Car wash fluids were being discharged directly to storm inlet. Discharging was stopped by IWBC and PADEP was notified.
10/13/2021	Q-107-01	Greenmont & Telfair Rd. Poquessing Creek	3009	Sewage	10/13/2021	Discharge from a 10" VCP sewer occurred at a rate of approximately 4 gpm. Sewer Maintenance flushed and removed debris from sanitary sewer as well as flushed storm sewer with de-chlor tablets to clean the outfall.
10/18/2021	S-052-05	23 Osborn St.	3008	Sewage	10/25/2021	PWD Construction reported septic systems were leaking into a trench being dug for a new sewer system on Osborn St. The landowner and Public Health were notified and no further action is required.
10/18/2021	S-051-05	4431 Main St.	3009	Petroleum	10/21/2021	2 PECO transformers fell over causing a discharge of approximately 150 gallons in a parking lot. The leak was cleaned up by PECO and no sheen was seen on the river.
11/4/2021	M-005-03	8200 Lindbergh Blvd Mingo Creek	3009	Petroleum	11/4/2021	Approximately 20 gallons of oil from a drum was dumped. Oil seen at inlet and sheen observed at outfall and in creek, although that is not unusual for Mingo Creek. Clean Venture placed oil dry along the curb line spill (100ft).
11/17/2021	T-098-03	7500 Central Ave Tacony Creek	3009	Petroleum	12/13/2021	A PECO pole transformer was knocked over leaking approximately 5-10 gallons of oil. Most of the oil was contained to the grassed area and taken care of by a PECO clean up crew.
11/29/2021		920 Johnston St	3008	Sewage	11/29/2021	A choked 10" VCP sewer caused a 2 gpm discharge to the basement at 920 Johnston St. The sewer was flushed by Sewer Maintenance to relieve the choke.
12/7/2021	S-052-04	3598 Indian Queen Lane	3009	Debris	12/9/2021	Industrial Waste units responded to a call regarding concrete dumped into an inlet. Approximately 5 gallons were dumped. Warning letter to be sent to property owner.
12/17/2021	Q-114-04	Comly Rd. Walton's Run	3011	Sewage	12/17/2021	Sewage and debris observed on rocks and in stream by Sewer Maintenance but no active discharge. Sewer blockage relieved itself. No further action required.
12/24/2021		Inter Caledonia & Manatawna	3008	Sewage	12/28/2021	Sewer Maintenance used a flusher to break a choke in the 10" VCP sewer.
12/28/2021	P-100-10	8901 Ashton Rd. Pennypack Creek	3011	Sewage	12/28/2021	Discharge of 3-4 gpm into 10" VCP. Sewer Maintenance used a flusher to clear the blockage. They also flushed the storm sewer with de-chlor tablets.
12/29/2021		528 W Hortter St.	3008	Sewage	12/30/2021	Choke in sewer caused discharge into residential basements. Choke in sewer cleaned by Sewer Maintenance. Customer service was needed to clean basements of 528, 526, and 524 W Hortter St.
12/29/2021		MLK Drive & Montgomery Drive Schuylkill River	3011	Green Dye	12/29/2021	IWBC responded to tweets about green dye at an outfall from an undetermined source.The dye dissipated on its own after several days.

Source Codes:
3008 - Spill to Ground Only **3010 - Spill to Sanitary Sewer**
3009 - Spill to Storm Sewer **3011 - Spill to Receiving Stream**

STORM WATER MANAGEMENT PROGRAM
NPDES PERMIT NO. PA0054712

DEFECTIVE LATERAL CONNECTION STATUS REPORT
(Covering Period from January 1, 2022 to March 31, 2022)

Submitted to

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER QUALITY MANAGEMENT

By

CITY OF PHILADELPHIA
PHILADELPHIA, PA

May 5, 2022

DLC Program Update
1st Quarter 2022

I. INTRODUCTION

This Defective Lateral Connection Status Report is submitted to the Pennsylvania Department of Environmental Protection (PADEP) as part of the reporting requirements of the City of Philadelphia NPDES Storm Water Management Permit No. PA 0054712. The report covers the three-month period beginning January 1, 2022, and ending March 31, 2022.

The body of this report will describe the recent activities of the City during the past quarter within the 1998 COA Priority Outfall areas and at other significant outfalls on the Stormwater Outfall Priority Score list. Additionally, goals for the next quarter will be listed.

Table 1 provides a summary of the program with respect to Complete tests, Cross-connections identified, and Abatements performed. Table 2 provides a listing of all laboratory analyses of samples taken at stormwater outfalls or within the stormwater system during the previous quarter. Table 3 provides a listing of properties with cross-connections outstanding greater than 120 days. Finally, Table 4 provides a listing of reported wastewater spills to the stormwater system or receiving streams.

II. PAST QUARTER REVIEW

A. Priority Outfalls

1. 7th & Cheltenham Outfall (T-088-01)

DLC program activities have performed 2,831 Complete tests in this sewershed, identifying 134 Cross-connections, all of which have been Abated.

Eight (8) sites intercepting flow are listed below.

1. CFD-01 Plymouth St. west of Pittsville St.
2. CFD-02 Pittsville St. south of Plymouth St.
3. CFD-03 Elston St. east of Bouvier St.
4. CFD-04 Ashley St. west of Bouvier St.
5. CFD-05 Cheltenham Ave. east of 19th St.
6. CFD-06 Verbena St. south of Cheltenham Ave.
7. CFD-07 Cheltenham Ave. east of 7th St.
8. CFD-08 7th St. south of Cheltenham Ave.

The number of inspections, blockages cleared, and discharges noted during this quarter are listed below.

Flap Gate	Inspections	Blockages	Discharges
CFD-01	12	0	0
CFD-02	12	1	1
CFD-03	12	0	0
CFD-04	10	0	0
CFD-05	6	0	0
CFD-06	5	0	0
CFD-07	19	1	1
CFD-08	18	1	1

The most recent fecal sample value was 17,329 MPN per 100 ml. at the outfall on February 10, 2022.

2. Monastery Ave. Outfall (W-060-01)

DLC program activities have performed 637 Complete tests in this sewershed, identifying 17 Cross-connections, 16 of which have been Abated.

Two (2) sites intercepting flow are listed below.

1. MFD-01 Jannette St. west of Monastery Ave.
2. MFD-02 Green La. North of Lawnton St.

The number of inspections, blockages cleared, and discharges noted during this quarter are listed below.

Flap Gate	Inspections	Blockages	Discharges
MFD-01	6	0	0
MFD-02	6	0	0

The outfall has no flow when an Industrial Waste team went to sample the outfall on March 23, 2022.

3. Monoshone Creek Outfalls (W-060-04, W-060-08, W-060-09, W-060-10, W-060-11, W-068-04 and W-068-05)

DLC program activities have performed 2,750 Complete tests in these sewershed areas, identifying 95 Cross-connections, 94 of which have been Abated. The majority of the efforts have been in the W-068-05 sewershed area which is by far the largest in terms of drainage area and properties served.

The most recent fecal sample value was 5,172 MPN per 100 ml. at the W-068-05 outfall on March 23, 2022.

4. **Manayunk Canal Outfalls (S-051-06, S-058-01, S-059-01 through S-059-11)**

DLC program activities have performed 2,477 Complete tests in these sewershed areas, identifying 63 Cross-connections, all of which have been Abated. The majority of the efforts have been in the S-059-04 sewershed area.

The most recent fecal sample values at each outfall were:

- 41 MPN per 100 ml. at the S-058-01 outfall on March 2, 2022.
- 3,076 MPN per 100 ml. at the S-059-01 outfall on March 2, 2022.
- 57,940 MPN per 100 ml. at the S-059-02 outfall on March 3, 2022.
- 435,200 MPN per 100 ml. at the S-059-03 outfall on March 3, 2022.
- No flow at the S-059-05 outfall on March 3, 2022.
- 1,090 MPN per 100 ml. at the S-059-09 outfall on March 22, 2022.

B. Other Outfalls

1. Sandyford Run Outfall (P-090-02)

DLC program activities have performed 5,837 Complete tests in this sewershed, identifying 88 Cross-connections, all of which have been Abated.

One (1) site intercepting flow is listed below.

1. PFD-01 Sandyford Run (Brous and Lexington Aves.)

The number of inspections, blockages cleared, and discharges noted during this quarter are listed below.

Flap Gate	Inspections	Blockages	Discharges
PFD-01	19	1	1

The most recent fecal sample value was <10 MPN per 100 ml. at the P-090-02 outfall on March 23, 2022.

2. Franklin and Hasbrook Outfall (T-089-04)

DLC program activities have performed 1,021 Complete tests in this sewershed, identifying 46 Cross-connections, all of which have been Abated.

One (1) site intercepting flow is listed below.

1. CFD-01 Franklin and Hasbrook Aves.

The number of inspections, blockages cleared, and discharges noted during this quarter are listed below.

Flap Gate	Inspections	Blockages	Discharges
CFD-01	21	3	3

The outfall was found dry on February 10, 2022.

3. A current summary of additional outfalls from the Stormwater Outfall Priority Score list that the City has performed complete testing or abatements this quarter is as follows.

Outfall #	Completed Test	Cross Connection	Abatement
D-093-01	1	0	0
P-091-02	(4)	0	0
P-099-03	16	5	1
P-100-08	1	0	0
P-100-11	1	0	0
P-100-13	1	0	0
P-112-03	3	0	0
P-113-04	1	0	0
P-113-06	1	0	0
P-116-02	(5)	0	0
Q-101-03	2	0	0
Q-101-05	(6)	0	0
Q-110-14	2	0	0
Q-115-12	3	1	2
R18	1	0	1
S-046-02	13	0	0
S-052-04	15	0	0
T-056-08	1	0	0
W-077-02	1	0	0

III. NEXT QUARTER GOALS

A. Priority Outfalls

1. 7th & Cheltenham Outfall (T-088-01)

Goals for the Quarter

- Continue to monitor the operation of the diversion apparatuses.
- Continue sampling at the outfall with dry-weather flow.

2. Monastery Ave. Outfall (W-060-01)

Goals for the Quarter

- Continue to monitor the operation of the diversion apparatuses.
- Continue sampling at the outfall with dry-weather flow.

3. Monoshone Creek Outfalls (W-060-04, W-060-08, W-060-09, W-060-10, W-060-11, W-068-04 and W-068-05)

Goals for the Quarter

- Continue sampling at outfall W-068-05 with dry-weather flow.

4. Manayunk Canal Outfalls (S-051-06, S-058-01, S-059-01 through S-059-11)

Goals for the Quarter

- Continue sampling at the outfalls with dry-weather flow.

B. Other Outfalls

1. Sandyford Run Outfall (P-090-02)

Goals for the Quarter

- Continue to monitor the operation of the diversion apparatus.

2. Franklin and Hasbrook Outfall (T-089-04)

Goals for the Quarter

- Continue to monitor the operation of the diversion apparatus.

3. Continue to perform abatements of identified cross-connections within the following outfalls.

- D-056-09
- P-08303
- P-091-06
- P-091-09
- P-099-03
- P-100-04
- Q-109-07
- Q-110-09
- Q-114-12
- R18
- S-046-06
- S-052-03

- S-052-04
- T-079-01
- T-080-02
- T-089-01
- T01
- W-067-01
- W-077-02
- W-086-02

4. Continue to perform property testing within the following outfalls.

- D-093-01
- P-091-02
- P-099-03
- P-100-08
- P-100-11
- P-100-13
- P-112-03
- P-113-04
- P-113-06
- P-116-02
- Q-101-03
- Q-101-05
- Q-115-12
- R18
- S-046-02
- S-052-04
- T-056-08
- W-076-13

Table 1
DLC Program Summary
January 1, 2022 to March 31, 2022

Complete Tests:

- 64,465 Complete tests have been performed under the DLC program
- **50 Complete tests were performed this past quarter**
- 1 Complete test was performed in outfall D-093-01
- (4) Complete tests were performed in outfall P-091-02
- 16 Complete tests were performed in outfall P-099-03
- 1 Complete test was performed in outfall P-100-08
- 1 Complete test was performed in outfall P-100-11
- 1 Complete test was performed in outfall P-100-13
- 3 Complete tests were performed in outfall P-112-03
- 1 Complete test was performed in outfall P-113-04
- 1 Complete test was performed in outfall P-113-06
- (5) Complete tests were performed in outfall P-116-02
- 2 Complete tests were performed in outfall Q-101-03
- (6) Complete tests were performed in outfall Q-101-05
- 2 Complete tests were performed in outfall Q-110-14
- 3 Complete tests were performed in outfall Q-115-12
- 1 Complete test was performed in outfall R18
- 13 Complete tests were performed in outfall S-046-02
- 15 Complete tests were performed in outfall S-052-04
- 1 Complete test was performed in outfall T-056-08
- 1 Complete test was performed in outfall W-060-01
- 1 Complete test was performed in outfall W-068-05
- 1 Complete test was performed in outfall W-077-02

Cross-Connections Found:

- 1,827 Cross-connections have been identified under the DLC program
- **7 Cross-connections were identified this past quarter**
- 5 Cross-connections were identified in outfall P-099-03
- 1 Cross-connection was identified in outfall Q-115-12
- 1 Cross-connection was identified in outfall W-068-05

Abatements:

- 1,654 Abatements have been performed under the DLC program
- **4 Abatements were performed this past quarter**
- 1 Abatement was performed in outfall P-099-03
- 2 Abatements were performed in outfall Q-115-12
- 1 Abatement was performed in outfall R18

Outfall/Manhole Screening and Sampling:

- 10 outfall inspections were made as part of the **Priority Outfall Inspection Program** this past quarter
- 8 outfall samples were taken due to observed dry-weather flow during the above inspections

- 46 outfall inspections were made as part of the **Permit Inspection Program** this past quarter
- 15 outfall sample was taken due to observed dry-weather flow during the above inspections

Table 2
Lab Analysis of Water at Outfalls and/or in the Storm Sewers
January 1, 2022 to March 31, 2022

Outfall	Date	Time	Location	Sewer Size (noted)	Flow (gph)	Fluoride (mg/l)	Fecal Count (MPN per 100 ml)	Comments
A. Priority Outfalls								
T-088-01	2/10/2022	12:05	Outfall: 7th and Cheltenham	84"	NR	0.204	17329	Flaky solids initially observed, no longer present.
W-060-01	3/23/2022	12:22	Outfall: Monastery and Jeanette	4'4" x 5'0"	NF	NS	NS	No flow, bluish tint to pool.
W-068-05	3/23/2022	11:52	Outfall: Lincoln and Morris	90"	NR	0.23	5172	Very slight musty odor, cloudy in drop pools.
S-058-01	3/2/2022	11:35	Outfall: Domino Lane	54"	3600	0.183	41	No sewage smell but grey/green color observed.
S-059-01	3/2/2022	12:03	Outfall: Parker & Towpath	42"	1800	0.337	3076	Slightly musty odor and grey/green cloud.
S-059-02	3/3/2022	10:35	Outfall: Fountain & Towpath	42"	600	0.351	57940	Clear stream of water.
S-059-03	3/3/2022	11:08	Outfall: Towpath & Wright	42"	1800	0.275	435200	Sudsing in drop pool and clear interconnection evidence.
S-059-04	3/3/2022	11:22	Outfall: Leverington (N)	51"	NR	0.254	6240	Outfall submerged but flow detectible by sound.
S-059-05	3/3/2022	11:25	Outfall: Leverington (S)	4'0" x 2'8"	NF	NS	NS	Outfall partially submerged but no indication of flow.
S-059-09	3/22/2022	12:50	Outfall: Green Lane & Towpath	36"	100	0.583	1090	Standard conditions for this outfall.
B. Permit Inspection Program								
Q-106-07	1/26/2022	11:45	Outfall: Chesterfield & Berea	21"	NF	NS	NS	No flow.
Q-106-10	1/26/2022	12:00	Outfall: Churchill & Wessex	24"	NF	NS	NS	Outfall partially submerged intro creek however no flow from outfall into creek.
Q-106-13	1/26/2022	10:40	Outfall: Red Lion & Waldemire	42"	NF	NS	NS	Crack at top of outfall pipe was stained indicating possible source of water at some point. Sediment and gravel bottom of pipe was stained idicating moisture, but no flow or standing water of consequence.
Q-106-14	1/26/2022	10:40	Outfall: Red Lion & Waldemire	30"	NF	NS	NS	Sediment and gravel bottom of pipe was stained idicating moisture, but no flow or standing water of consequence.
Q-106-15	1/26/2022	10:40	Outfall: Red Lion & Waldemire	42"	NF	NS	NS	Sediment and gravel bottom of pipe was stained idicating moisture, but no flow or standing water of consequence.
Q-106-03	1/27/2022	8:40	Outfall: Berea & Glenn	54"	NF	NS	NS	Outfall partially submerged. Standing water/ice present but no evidence of flow. No sample taken.
Q-106-08	1/27/2022	9:30	Outfall: S Keswick Rd & Keswick Pl	27"	73.07	0.109	>24196	Clear sample.
Q-106-09	1/27/2022	9:45	Outfall: S Keswick Rd & Keswick Pl	24"	NF	NS	NS	Outfall partially submerged. Standing water/ice present but no evidence of flow. No sample taken.
Q-106-04	2/10/2022	10:55	Outfall: Berea & Glenn	42"	NR	NS	NS	Outfall is collapsed into huge sections, not able to be sampled. Slight trickle of flow observed but is unreachable.
Q-106-05	2/10/2022	10:25	Outfall: Chesterfield & Berea	42"	15.83	<0.1	266	Clear sample.
Q-106-06	2/10/2022	10:45	Outfall: Chesterfield & Berea	27"	NF	NS	NS	Outfall partially submerged. No flow.
Q-106-20	2/10/2022	9:55	Outfall: Waldemire & Oakhill	18"	7.92	<0.1	4352	Clear sample.
Q-106-12	2/11/2022	11:45	Outfall: Morrell & Ashfield	30"	27.14	0.355	>24196	Suspected toilet paper particles in effluent.
Q-106-21	2/11/2022	10:55	Outfall: Morrell & S Keswick	66"	158.11	0.649	1842	0.11 field Chlorine meter reading.
Q-114-11	3/7/2022	11:50	Outfall: SE of Woodhaven & Riverside	42"	NF	NS	NS	Spalling on concrete spillway.
Q-114-13	3/7/2022	12:00	Outfall: SW of Woodhaven & Tyrone	30"	NF	NS	NS	No flow.
Q-106-16	3/11/2022	11:30	Outfall: Waldemire & Greenacres	30"	NF	NS	NS	Dry, no flow.
Q-106-19	3/11/2022	12:15	Outfall: Waldemire & Dorchester	24"	NF	NS	NS	Outfall collapsed. No evidence of flow.
Q-106-17	3/16/2022	11:20	Outfall: Rayland & Helmer	36"	8	0.205	24196	Clear with a musty odor.
Q-106-18	3/16/2022	10:50	Outfall: Waldemire & Inwood	30"	8	0.134	437	Clear with slight sewage odor.
Q-102-01	3/30/2022	10:00	Outfall: Frankford & Hegerman	36"	NF	NS	NS	Dry, no flow.
Q-107-01	3/30/2022	11:45	Outfall: Greenmount & Telfair Dr	54"	NF	NS	NS	Decaying vegetation.
Q-107-03	3/30/2022	11:00	Outfall: Deer Path LN & Parkview Rd	24"	NF	NS	NS	Outfall partially submerged. No evidence of flow.
Q-107-04	3/30/2022	10:43	Outfall: Dimarco & Lawnbrook	27"	NF	NS	NS	Outfall partially submerged. Stagnant water very shallow, less than 1/2" and no evidence of flow.
P-090-02	3/23/2022	10:52	Outfall:Sandyford	156"	NR	<0.1	<10	Much trash and debris, slightly less than usual.
P-092-01	2/17/2022	10:30	Outfall: Pennypack St N of Crispin	18"	NF	NS	NS	Manhole in street, no flow. P092-01-0010.
P-092-02	2/17/2022	12:25	Outfall: Pennypack St N of Crispin	20"	180	NS	NS	2-3 gpm. Need to return to sample. P092-02-0010.
P-092-03	2/17/2022	10:20	Outfall: Crispin & Harvard Pl by walkway	18"	NF	NS	NS	Manhole in street, no flow. P092-03-0010.
P-092-04	2/17/2022	10:00	Outfall: Crispin & Amherst Pl	18"	NF	NS	NS	Manhole in street, no flow. P092-04-0015.
P-092-04	2/17/2022	10:10	Outfall: Crispin & Harvard Pl	18"	NF	NS	NS	Manhole in street, no flow. P092-04-0010.
P-105-10	3/30/2022	1:30	Outfall: Grant Ave & Blue Grass Rd	36"	NF	NS	NS	Dry, no flow.
P-100-15	3/31/2022	11:16	Outfall: Cloverly & Arland	30"	NF	NS	NS	Channel of outfall crumbling.
P-100-18	3/31/2022	11:32	Outfall: Cloverly & Willits	15"	NF	NS	NS	No flow observed but indications of cross connection in drop pool.
P-100-20	3/31/2022	11:57	Outfall: Ryerson Rd & Ryerson Place	30"	NF	NS	NS	No flow observed but indications of cross connection in drop pool.
P-100-22	3/31/2022	11:50	Outfall: Angus Rd & Angus Place	18"	NF	NS	NS	Dry, no flow.
T-089-04	2/10/2022	12:25	Outfall: Franklin & Hasbrook	3'0" x 6'6"	0	NS	NS	No flow from city side of outfall.
W-084-01	1/12/2022	10:00	Outfall: Bells Mills & Forbidden Dr	36"	30	<0.1	74	Faintly cloudy in pool, flow is slight trickle. No odor.
W-084-02	1/12/2022	10:30	Outfall: Bells Mills & Lykens	48"	500	0.69	<1	Steady, clear flow, no odor.
W-085-01	1/12/2022	9:45	Outfall: Bells Mills & Forbidden Dr	48"	NF	NS	NS	Outfall partially submerged, no evidence of flow.
W-067-01	2/17/2022	12:25	Outfall: Gorgas Ln & Lawnton St	72"	300	0.139	>24196	Steady flow. High fecal indicates possible cross connection.
W-067-02	2/17/2022	12:20	Outfall: NE of Faountain St & Henry Ave	36"	100	<0.2	199	Steady trickle, no color/odor.
W-067-03	2/17/2022	11:30	Outfall: NW Henry Ave & Gates St	4 8"	50	0.168	41	Trickle of flow, steady and clear.
W-067-04	2/17/2022	11:45	Outfall: E of Henry Ave & Hermitage St	18"	10	NS	NS	Will return for sample. Low flow, no odor/color.
W-067-05	2/17/2022	12:05	Outfall: N of Henry Ave & Leverington	27"	NF	NS	NS	Erosion under D/S apron, parially collapsed. No flow.
S-051-08	3/28/2022	12:50	Outfall: Main & Shurs	9'0" x 7'0"	100	0.299	21300	No odors, some scum on surface. S051-08-0010.
S-052-05	3/30/2022	11:50	Outfall: Sumac & Rochelle	72"	1800	0.595	224700	No sheen, slight sewage odor. S052-05-0010.

Table 3
Residential Cross Connections Not Abated Within 120 Days

A. Properties Abated & Confirmed Prior to Reporting:

Address	Outfall Code	Complete Date	Admin. Action	Abatement Confirmation Date	Comments

B. Properties Active As Of Reporting:

Address	Outfall Code	Complete Date	Admin. Action	Comments
01941 Kentwood St	Q-109-07	01-19-2018		
03411 W Penn St	S-052-04	02-13-2018		
03424 W Penn St	S-052-04	02-17-2018		
03433 W Penn St	S-052-04	02-21-2018		
03425 Conrad St	S-052-04	03-01-2018		
03530 Henry Ave	S-052-04	03-03-2018		
03340 W Penn St	S-052-04	03-03-2018		
03305 Tilden St	S-052-04	03-24-2018		
03313 Tilden St	S-052-04	03-24-2018		
03329 Tilden St	S-052-04	03-27-2018		
03333 Tilden St	S-052-04	03-29-2018		
03461 Sunnyside Ave	S-052-04	04-02-2018		
03411 Osmond St	S-052-04	04-28-2018		
03449 W Penn St	S-052-04	05-03-2018		
03446 Crawford St	S-052-04	05-17-2018		
03433 Crawford St	S-052-04	05-26-2018		
03317 W Penn St	S-052-04	06-02-2018		
03448 W Queen Ln	S-052-04	06-23-2018		
03419 W Queen Ln	S-052-04	07-02-2018		
03335 W Queen Ln	S-052-04	07-02-2018		
03417 W Queen Ln	S-052-04	07-05-2018		
03326 W Queen Ln	S-052-04	07-12-2018		
03452 W Queen Ln	S-052-04	07-13-2018		

Table 3
Residential Cross Connections Not Abated Within 120 Days

Address	Outfall Code	Complete Date	Admin. Action	Comments
03469 W Queen Ln	S-052-04	07-17-2018		
03414 W Queen Ln	S-052-04	07-20-2018		
03333 W Queen Ln	S-052-04	07-21-2018		
03440 W Queen Ln	S-052-04	07-21-2018		
03474 Tilden St	S-052-04	07-21-2018		
03435 W Queen Ln	S-052-04	07-30-2018		
03464 W Queen Ln	S-052-04	07-30-2018		
03429 W Queen Ln	S-052-04	08-02-2018		
03459 W Queen Ln	S-052-04	08-16-2018		
03434 W Queen Ln	S-052-04	08-17-2018		
03460 W Queen Ln	S-052-04	08-24-2018		
02612 Woodward St	P-100-04	09-12-2018		
04437 Riverview Ln	S-052-03	09-19-2018		
04456 Riverview Ln	S-052-03	09-26-2018		
04423 Driftwood Dr	S-052-03	09-27-2018		
04406 Driftwood Dr	S-052-03	09-29-2018		
04433 Driftwood Dr	S-052-03	09-29-2018		
03235 Comly Pl	Q-110-09	10-06-2018		
04410 Driftwood Dr	S-052-03	10-06-2018		
04402 Driftwood Dr	S-052-03	10-13-2018		
04312 Ashburner St	P-083-03	10-20-2018		
03454 W Penn St	S-052-04	10-24-2018		
04425 Driftwood Dr	S-052-03	10-27-2018		
04431 Driftwood Dr	S-052-03	10-27-2018		
04404 Driftwood Dr	S-052-03	10-31-2018		
04412 Driftwood Dr	S-052-03	11-09-2018		

Table 3
Residential Cross Connections Not Abated Within 120 Days

Address			Outfall Code	Complete Date	Admin. Action	Comments
04417	Driftwood	Dr	S-052-03	11-17-2018		
03700	Falls	Cir	S-052-03	12-15-2018		
08726	Cottage	St	P-083-03	12-22-2018		
03702	Falls	Cir	S-052-03	12-24-2018		
04702	Almond	St	D-056-09	12-26-2018		
03704	Falls	Cir	S-052-03	01-17-2019		
03706	Falls	Cir	S-052-03	01-19-2019		
04408	Driftwood	Dr	S-052-03	01-19-2019		
02629	Pratt	St	D-056-09	01-26-2019		
04416	Ashburner	St	P-083-03	02-02-2019		
04312	M	St	R18	03-13-2019		
04300	M	St	R18	03-15-2019		
04422	Ashburner	St	P-083-03	03-22-2019		
04337	Glendale	St	R18	03-23-2019		
04232	O	St	R18	03-28-2019		
04254	O	St	R18	04-06-2019		
00223	Stearly	St	T-080-02	04-06-2019		
04310	Glendale	St	R18	04-13-2019		
00215	Stearly	St	T-080-02	04-20-2019		
05930	Newtown	Ave	T-080-02	04-22-2019		
04250	Neilson	St	R18	04-25-2019		
05922	Newtown	Ave	T-080-02	04-26-2019		
04215	Castor	Ave	R18	04-27-2019		
04219	Castor	Ave	R18	05-02-2019		
04249	Neilson	St	R18	05-04-2019		
04242	Castor	Ave	R18	05-11-2019		

Table 3
Residential Cross Connections Not Abated Within 120 Days

Address	Outfall Code	Complete Date	Admin. Action	Comments
04236 Neilson St	R18	06-01-2019		
04245 Ormond St	R18	06-08-2019		
04309 Glendale St	R18	06-15-2019		
04122 M St	R18	07-06-2019		
08635 Ditman St	P-083-03	07-10-2019		
04146 Markland St	R18	07-27-2019		
04144 Markland St	R18	07-30-2019		
04142 Markland St	R18	08-03-2019		
04122 Markland St	R18	08-05-2019		
01409 E Lycoming St	R18	08-13-2019		
04114 Markland St	R18	08-17-2019		
01413 E Lycoming St	R18	08-20-2019		
01447 E Lycoming St	R18	08-26-2019		
04025 Castor Ave	R18	08-29-2019		
01404 E Lycoming St	R18	08-31-2019		
04023 Castor Ave	R18	09-04-2019		
04034 Castor Ave	R18	09-06-2019		
04051 Castor Ave	R18	09-11-2019		
04224 Markland St	R18	09-14-2019		
04024 Castor Ave	R18	09-17-2019		
01444 E Lycoming St	R18	09-19-2019		
04143 M St	R18	09-21-2019		
04215 M St	R18	09-24-2019		
07331 Hill Rd	W-067-01	09-30-2019		
02623 W Allegheny Ave	S-046-06	10-05-2019		
04033 Castor Ave	R18	10-08-2019		

Table 3
Residential Cross Connections Not Abated Within 120 Days

Address	Outfall Code	Complete Date	Admin. Action	Comments
04014 Castor Ave	R18	10-08-2019		
04030 Castor Ave	R18	10-12-2019		
03063 Winchester Ave	P-091-09	10-19-2019		
04259 Castor Ave	R18	10-22-2019		
04261 Castor Ave	R18	10-26-2019		
01431 E Lycoming St	R18	11-02-2019		
08820 Cottage St	P-083-03	11-06-2019		
04259 Neilson St	R18	12-02-2019		
00531 Roxborough Ave	W-060-01	12-14-2019		
02320 Benson St	P-091-06	01-06-2020		
01352 E Hunting Park Ave	R18	01-08-2020		
04123 Markland St	R18	02-06-2020		
02306 Benson St	P-091-06	02-10-2020		
01441 E Hunting Park Ave	R18	02-29-2020		
00038 W Hartwell Ln	W-077-02	03-05-2020		
02128 Emerson St	P-091-06	10-24-2020		
02214 Hoffnagle St	P-091-06	10-26-2020		
04116 Markland St	R18	11-09-2020		
04118 Castor Ave	R18	12-05-2020		
03452 Division St	S-052-04	01-13-2021		
03430 Division St	S-052-04	01-16-2021		
03424 Division St	S-052-04	01-23-2021		
03460 Division St	S-052-04	01-23-2021		
03690 Eveline St	S-052-04	01-30-2021		
08118 Lister St	P-091-06	03-03-2021		
02216 Emerson St	P-091-06	03-22-2021		

Table 3
Residential Cross Connections Not Abated Within 120 Days

Address	Outfall Code	Complete Date	Admin. Action	Comments
03660 Haywood St	S-052-04	03-27-2021		
03666 Haywood St	S-052-04	03-27-2021		
03602 Haywood St	S-052-04	03-27-2021		
03613 Haywood St	S-052-04	03-29-2021		
03643 Haywood St	S-052-04	03-29-2021		
03611 Haywood St	S-052-04	03-29-2021		
08138 Shawnee St	W-077-02	04-03-2021		
03432 Warden Dr	S-052-04	04-08-2021		
00040 W Hartwell Ln	W-077-02	04-23-2021		
03108 Midvale Ave	S-052-04	05-10-2021		
03230 Midvale Ave	S-052-04	05-12-2021		
00216 Claremont Rd	T-079-01	05-29-2021		
04150 Markland St	R18	06-02-2021		
03617 Midvale Ave	S-052-04	06-02-2021		
03209 W Coulter St	S-052-04	06-02-2021		
03001 Midvale Ave	S-052-04	06-05-2021		
03915 W Netherfield Rd	S-052-04	06-12-2021		
07524 Boyer St	W-086-02	06-21-2021		
07506 Boyer St	W-086-02	06-21-2021		
00016 Mc Pherson St	W-086-02	06-28-2021		
00062 W Gowen Ave	W-086-02	07-10-2021		
07627 Germantown Ave	W-086-02	07-21-2021		
03648 Haywood St	S-052-04	07-23-2021		
04733 Belgrade St	D-056-09	07-23-2021		
01410 E Hunting Park Ave	R18	07-30-2021		
01350 E Hunting Park Ave	R18	07-31-2021		

Table 3
Residential Cross Connections Not Abated Within 120 Days

Address			Outfall Code	Complete Date	Admin. Action	Comments
08422	Pickering	Ave	T01	09-04-2021		
00207	Passmore	St	T-089-01	09-11-2021		
01829	Kendrick	St	P-099-03	09-25-2021		
10710	Haldeman	Ave	Q-109-07	10-18-2021		
04040	Castor	Ave	R18	10-23-2021		
03513	New Queen	St	S-052-04	10-23-2021		
03568	New Queen	St	S-052-04	10-30-2021		
03501	New Queen	St	S-052-04	10-30-2021		
03517	New Queen	St	S-052-04	11-13-2021		
02233	Benson	St	P-091-06	11-17-2021		

Table 4
Spills to Storm Sewers and/or Receiving Waters
January 1, 2022 to March 31, 2022

Date	Outfall	Address	Source Code	Material Involved	Completion Date	Remarks
01/11/22	S-051-01	3760-80 Cresson St Schuylkill River	3008	Sewage	01/11/22	Sewage was seeing coming downhill behind 3809 Main St. Approximately 100 gallons were discharged. Customer service dye tested 3780 Cresson St and it was positive. Exam crew dye tested 3766 Cresson and no dye was found.
1/12/2022	M-005-04	S 70th St & Essington	3009	Petroleum	1/12/2022	PFD requested IWBC at 70th and Essington due to a truck that lost the diesel fuel from a saddle tank. An unkown amount made it to the inlet, but 60 gallons were recovered from a 90 gallon tank. ACV was called by PFD HMAU to clean the street and the impacted inlet. No oil migrated to Mingo Creek. The inlet was clean.
01/24/22	S-046-05	Neill Drive Pump Station Schuylkill River	3011	Sewage	01/26/22	A tripped circuit breaker caused a discharge of about 17,464 gallons. Flow Control responded and walked the creek leading to the Schuylkill River where he saw and smelled debris of a discharge. WRT cleaned the creek of residual debris. The feeder circuit breaker was reset.
1/31/2022	P-090-01	Sandyford Ave & Brous Ave	3011	Unknown	2/4/2022	Flow Control contacted IWBC for possible discharge at outfall. IWBC found the Plunge Pool at P-09-02 was darker than normal but flow from outfall was clear. IWBC sampled the flow found it to be typical of snow melt runoff. The sample had a slightly sweet odor, not one of sewage. The plunge pool couldn't be sampled due to an ice layer. IWBC rechecked the outfall on 2/4/2022 when the snowmelt was gone and the outfall appeared normal.
2/25/2022	W-052-01	Gypsy Ln & Lincoln Dr Wissahickon Creek	3011	Petroleum	3/15/2022	An auto accident resulted in about 20 gallons of oil spilled from transofrmer to the ground. An estimated 1 gallon made it to the storm drain. Absorbent booms were placed at the storm drain and outfall W-052-01. The PECO Environmental Coordinator was unable to get a sample to alayze for PCB. The transformer tag indicates a manufacture date of August 1997 and the certification states that it is non-PCB.
2/28/2022	P-091-07	Holme Ave & Winchester Ave Pennypack Creek	3011	Sewage	3/1/2022	Found sewage running into creek from choked sewer. Approximately 5,040 gallons were discharged into the creek. Bypass pumping relieved the choke and WRT was on site for clean up.
2/28/2022		Reservoir Dr & Edgley Dr Schuylkill River	3009	Water	2/28/2022	WRT requested IWBC to take a Cl2 reading and investigate a leak at Reservoir Dr. IWBC inspector observed staining/evidenced flow in the area. Chlorine residual varied at testing locations between 0.71 mg/L to 1.71 mg/L. No impact was observed to aquatic life in Randolph Creek or the Schuylkill River. DEP was notified via WMB hotline on 3/1/22 at 1:30 pm.
3/3/2022	Q-107-02	Parkdale Rd & Deerpath Ln Poquessing Creek	3011	Sewage	3/3/2022	Gray debris seen on rocks in stream. Blocked sewer relieved itself, but it is estimated that 500 gallons were discharged from the outfall to the stream. WRT swept and removed debris from water. The creek was flushed with water and de-chlor tabs.
3/19/2022	P-091-01	Guilford St & Brous Ave	3009	Petroleum	3/26/2022	PECO reported a down transformer pole that discharged about 50 gallons to IWBC. 5 gallons of oil from the transformer leaked to an inlet. IWBC arrived to find the inlet was blocked and the clean up crew was on site. A contractor cleaned the inlet via vactor truck, and no impacts were observed at the outfall. Testing of the oil and a swipe test of the inlet walls showed ND detect for PCBs. DEP was notified via the NRC (called by PECO).
3/31/2022		Ferndale St & Greymont St Pennypack Creek	3011	Sewage	3/31/2022	A choked sewer caused a discharge of about 450 gallons to the creek. The inlets and storm were were flushed with water and de-chlor tabs for an hour. WRT was on site for clean up.

Source Codes:

3008 - Spill to Ground Only	**3010 - Spill to Sanitary Sewer**
3009 - Spill to Storm Sewer	**3011 - Spill to Receiving Stream**

STORM WATER MANAGEMENT PROGRAM
NPDES PERMIT NO. PA0054712

DEFECTIVE LATERAL CONNECTION STATUS REPORT
(Covering Period from April 1, 2022 to June 30, 2022)

Submitted to

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER QUALITY MANAGEMENT

By

CITY OF PHILADELPHIA
PHILADELPHIA, PA

August 4, 2022

DLC Program Update
2nd Quarter 2022

I. INTRODUCTION

This Defective Lateral Connection Status Report is submitted to the Pennsylvania Department of Environmental Protection (PADEP) as part of the reporting requirements of the City of Philadelphia NPDES Storm Water Management Permit No. PA 0054712. The report covers the three-month period beginning April 1, 2022 and ending June 30, 2022.

The body of this report will describe the recent activities of the City during the past quarter within the 1998 COA Priority Outfall areas and at other significant outfalls on the Stormwater Outfall Priority Score list. Additionally, goals for the next quarter will be listed.

Table 1 provides a summary of the program with respect to Complete tests, Cross-connections identified, and Abatements performed. Table 2 provides a listing of all laboratory analyses of samples taken at stormwater outfalls or within the stormwater system during the previous quarter. Table 3 provides a listing of properties with cross-connections outstanding greater than 120 days. Finally, Table 4 provides a listing of reported wastewater spills to the stormwater system or receiving streams.

II. PAST QUARTER REVIEW

A. Priority Outfalls

1. 7th & Cheltenham Outfall (T-088-01)

DLC program activities have performed 2,831 Complete tests in this sewershed, identifying 134 Cross-connections, all of which have been Abated.

Eight (8) sites intercepting flow are listed below.

1. CFD-01 Plymouth St. west of Pittsville St.
2. CFD-02 Pittsville St. south of Plymouth St.
3. CFD-03 Elston St. east of Bouvier St.
4. CFD-04 Ashley St. west of Bouvier St.
5. CFD-05 Cheltenham Ave. east of 19th St.
6. CFD-06 Verbena St. south of Cheltenham Ave.
7. CFD-07 Cheltenham Ave. east of 7th St.
8. CFD-08 7th St. south of Cheltenham Ave.

The number of inspections, blockages cleared, and discharges noted during this quarter are listed below.

Flap Gate	Inspections	Blockages	Discharges
CFD-01	10	0	0
CFD-02	9	1	0
CFD-03	7	0	0
CFD-04	4	0	0
CFD-05	4	0	0
CFD-06	4	0	0
CFD-07	20	5	0
CFD-08	16	1	0

The most recent fecal sample value was 630 MPN per 100 ml. at the outfall on May 6, 2022.

2. Monastery Ave. Outfall (W-060-01)

DLC program activities have performed 637 Complete tests in this sewershed, identifying 17 Cross-connections, 16 of which have been Abated.

Two (2) sites intercepting flow are listed below.

1. MFD-01 Jannette St. west of Monastery Ave.
2. MFD-02 Green La. North of Lawnton St.

The number of inspections, blockages cleared, and discharges noted during this quarter are listed below.

Flap Gate	Inspections	Blockages	Discharges
MFD-01	3	0	0
MFD-02	2	0	0

The most recent fecal sample value was 2720 MPN per 100 ml. at the outfall on June 27, 2022.

3. Monoshone Creek Outfalls (W-060-04, W-060-08, W-060-09, W-060-10, W-060-11, W-068-04 and W-068-05)

DLC program activities have performed 2,750 Complete tests in these sewershed areas, identifying 95 Cross-connections, 94 of which have been Abated. The majority of the efforts have been in the W-068-05 sewershed area which is by far the largest in terms of drainage area and properties served.

The most recent fecal sample value was 98,040 MPN per 100 ml. at the W-068-05 outfall on June 29, 2022.

4. **Manayunk Canal Outfalls (S-051-06, S-058-01, S-059-01 through S-059-11)**

DLC program activities have performed 2,479 Complete tests in these sewershed areas, identifying 63 Cross-connections, all of which have been Abated. The majority of the efforts have been in the S-059-04 sewershed area.

The most recent fecal sample values at each outfall were:

- 86 MPN per 100 ml. at the S-058-01 outfall on April 25, 2022.
- 6,867 MPN per 100 ml. at the S-059-01 outfall on April 25, 2022.
- 22,470 MPN per 100 ml. at the S-059-02 outfall on April 25, 2022.
- >241,960 MPN per 100 ml. at the S-059-03 outfall on June 30, 2022.
- 1,050 MPN per 100 ml. at the S-059-03 outfall on June 30, 2022.
- No flow at the S-059-05 outfall on June 30, 2022.
- 92,080 MPN per 100 ml. at the S-059-09 outfall on June 30, 2022.

B. Other Outfalls

1. Sandyford Run Outfall (P-090-02)

DLC program activities have performed 5,810 Complete tests in this sewershed, identifying 88 Cross-connections, all of which have been Abated.

One (1) site intercepting flow is listed below.

1. PFD-01 Sandyford Run (Brous and Lexington Aves.)

The number of inspections, blockages cleared, and discharges noted during this quarter are listed below.

Flap Gate	Inspections	Blockages	Discharges
PFD-01	22	1	0

The most recent fecal sample value was 22 MPN per 100 ml. at the P-090-02 outfall on April 29, 2022.

2. Franklin and Hasbrook Outfall (T-089-04)

DLC program activities have performed 1,021 Complete tests in this sewershed, identifying 46 Cross-connections, all of which have been Abated.

One (1) site intercepting flow is listed below.

1. CFD-01 Franklin and Hasbrook Aves.

The number of inspections, blockages cleared, and discharges noted during this quarter are listed below.

Flap Gate	Inspections	Blockages	Discharges
CFD-01	22	6	0

The outfall was found dry on May 6, 2022.

3. A current summary of additional outfalls from the Stormwater Outfall Priority Score list that the City has performed complete testing or abatements this quarter is as follows.

Outfall #	Completed Test	Cross Connection	Abatement
P-083-03	0	0	2
P-091-01	1	0	0
P-091-02	4	1	0
P-099-03	40	2	0
P-100-11	1	0	0
P-116-02	4	0	0
Q-101-05	8	0	0
Q-114-12	0	0	1
Q-115-12	13	0	0
S-046-02	9	0	0
S-052-03	0	0	2
S-052-04	15	0	0
S50	23	0	0
T-089-01	11	0	0
T-098-01	16	0	0
W-067-01	(1)	0	0
W-086-01	(2)	0	0

III. NEXT QUARTER GOALS

A. Priority Outfalls

1. 7th & Cheltenham Outfall (T-088-01)

Goals for the Quarter

- Continue to monitor the operation of the diversion apparatuses.
- Continue sampling at the outfall with dry-weather flow.

2. Monastery Ave. Outfall (W-060-01)

Goals for the Quarter

- Continue to monitor the operation of the diversion apparatuses.
- Continue sampling at the outfall with dry-weather flow.

3. Monoshone Creek Outfalls (W-060-04, W-060-08, W-060-09, W-060-10, W-060-11, W-068-04 and W-068-05)

Goals for the Quarter

- Continue sampling at outfall W-068-05 with dry-weather flow.

4. Manayunk Canal Outfalls (S-051-06, S-058-01, S-059-01 through S-059-11)

Goals for the Quarter

- Continue sampling at the outfalls with dry-weather flow.

B. Other Outfalls

1. Sandyford Run Outfall (P-090-02)

Goals for the Quarter

- Continue to monitor the operation of the diversion apparatus.

2. Franklin and Hasbrook Outfall (T-089-04)

Goals for the Quarter

- Continue to monitor the operation of the diversion apparatus.

3. Continue to perform abatements of identified cross-connections within the following outfalls.

- D-056-09
- P-083-03
- P-090-02
- P-091-02
- P-091-06
- P-091-09
- P-099-03
- P-100-04
- Q-109-07
- Q-110-09
- R18
- S-046-06
- S-052-03
- S-052-04

- T-079-01
- T-080-02
- T-089-01
- T01
- W-067-01
- W-077-02
- W-086-02

4. Continue to perform property testing within the following outfalls.

- P-090-02
- P-091-01
- P-091-02
- P-099-03
- P-100-11
- P-116-02
- Q-101-05
- Q-115-12
- S-046-02
- S-052-04
- S50
- T-089-01
- T-098-01
- W-067-01
- W-086-01

Table 1
DLC Program Summary
April 1, 2022 to June 30, 2022

Complete Tests:

- 64,582 Complete tests have been performed under the DLC program
- **117 Complete tests were performed this past quarter**
- (27) Complete tests were performed in outfall P-090-02
- 1 Complete test was performed in outfall P-091-01
- 4 Complete tests were performed in outfall P-091-02
- 40 Complete tests were performed in outfall P-099-03
- 1 Complete test was performed in outfall P-100-11
- 4 Complete tests were performed in outfall P-116-02
- 8 Complete tests were performed in outfall Q-101-05
- 13 Complete tests were performed in outfall Q-115-12
- 9 Complete tests were performed in outfall S-046-02
- 15 Complete tests were performed in outfall S-052-04
- 2 Complete tests were performed in outfall S-059-04
- 23 Complete tests were performed in outfall S50
- 11 Complete tests were performed in outfall T-089-01
- 16 Complete tests were performed in outfall T-098-01
- (1) Complete test was performed in outfall W-067-01
- (2) Complete tests were performed in outfall W-086-01

Cross-Connections Found:

- 1,832 Cross-connections have been identified under the DLC program
- **5 Cross-connections were identified this past quarter**
- 2 Cross-connections were identified in outfall P-090-02
- 1 Cross-connection was identified in outfall P-091-02
- 2 Cross-connections were identified in outfall P-099-03

Abatements:

- 1,659 Abatements have been performed under the DLC program
- **5 Abatements were performed this past quarter**
- 2 Abatements were performed in outfall P-083-03
- 1 Abatement was performed in outfall Q-114-12
- 2 Abatements were performed in outfall S-052-03

Outfall/Manhole Screening and Sampling:

- 11 outfall inspections were made as part of the **Priority Outfall Inspection Program** this past quarter
- 9 outfall samples were taken due to observed dry-weather flow during the above inspections

- 23 outfall inspections were made as part of the **Permit Inspection Program** this past quarter
- 14 outfall sample was taken due to observed dry-weather flow during the above inspections

Table 2
Lab Analysis of Water at Outfalls and/or in the Storm Sewers
April 1, 2022 to June 30, 2022

Outfall	Date	Time	Location	Sewer Size (noted)	Flow (gph)	Fluoride (mg/l)	Fecal Count PN per 100	Comments
A. Priority Outfalls								
T-088-01	5/6/2022	6:35	Outfall: 7th & Cheltenham	84"	NR	0.106	630	No issues.
W-060-01	6/27/2022	12:22	Outfall: Monastery & Jannette	60" x 48"	600	0.1	2720	Flow coming from beneath outfall.
W-068-05	6/29/2022	12:00	Outfall: Lincoln & Morris	90"	Submerged	0.562	98040	Significant matting and odor. SM contacted.
S-058-01	4/22/2022	12:50	Outfall: Domino Lane	54"	Submerged	0.17	NS	Observed from culvert DS of railroad tracks. Submerged, rain runoff likely. Cl = 0.05.
S-058-01	4/25/2022	12:10	Outfall: Domino Lane	54"	Submerged	0.141	86	Observed from culvert DS of railroad tracks. High flow, Cl = 0.35. Probably water main connection.
S-059-01	4/25/2022	12:25	Outfall: Parker & Towpath	42"	1800	0.27	6867	Tide flowing into drop pool.
S-059-02	4/25/2022	12:40	Outfall: Fountain & Towpath	42"	1200	0.452	22470	Bacteria matting around mouth of outfall.
S-059-03	6/30/2022	11:08	Outfall: Wright & Towpath	42"	3600	0.189	>241960	Moderate sewage odors.
S-059-04	6/30/2022	11:22	Outfall: Leverington (N)	51"	Submerged	0.185	1050	Algae evident. Outfall submerged.
S-059-05	6/30/2022	11:25	Outfall: Leverington (S)	4'0" x 2'8"	NF	NS	NS	No flow.
S-059-09	6/30/2022	12:50	Outfall: Green Lane	36"	600	0.409	92080	Clear, no sheen or odors.
B. Permit Inspection Program								
Q-107-06	4/29/2022	10:00	Outfall: Orchard & Crestmont	42"	NF	NS	NS	Contractor across stream has construction materials/asphalt leaching into Poquessing Creek.
Q-110-08	4/29/2022	11:10	Outfall: Academy & Comly	42"	NF	NS	NS	No issues, fish observed in creek.
Q-110-03	4/29/2022	11:40	Outfall: Decataur & Darnell	42"	NF	NS	NS	Outfall collapsed into stream.
Q-110-13	4/29/2022	12:10	Outfall: Academy & Newberry	36"	NF	NS	NS	No issues, fish observed in creek.
Q-110-14	4/29/2022	12:10	Outfall: Academy & Newberry	54"	NF	NS	NS	No issues, fish observed in creek.
Q-110-02	5/11/2022	10:35	Outfall: Decataur & Darnell	42"	8	0.14	20	Very slow trickle.
Q-110-09	5/11/2022	10:55	Outfall: Academy & Comly	36"	8	0.16	122	Very slow trickle.
Q-114-02	6/21/2022	9:47	Outfall: Bennnett & Roosevelt	42"	NF	NS	NS	Outfall partially submerged. No evidence of flow.
P-090-02	4/29/2022	12:05	Outfall: Sandyford	156"	900	<0.1	22	Cleaner than usual.
P-099-06A	5/6/2022	8:30	Outfall: Peachtree & Cherryblossom	30"	NF	0.11	75	Observed from MH P-099-06A-0010. Manhole had stagnant water.
P-099-06B	5/6/2022	8:35	Outfall: Peachtree & Cherryblossom	30"	NF	0.325	63	Stagnant water in outfall pipe (not submerged).
P-105-13A	5/11/2022	11:00	Outfall: Roosevelt & Blue Grass Rd	78"	100	0.218	228	Algae growth on rocks.
P-105-12	5/11/2022	10:45	Outfall: Grant Ave & Blue Grass Rd	42"	60	0.13	743	Slight sheen.
P-105-10	5/12/2022	10:45	Outfall: Grant Ave & Blue Grass Rd	24"	60	<0.1	<10	Cracked concrete.
P-105-09	5/12/2022	10:40	Outfall: Grant Ave & Blue Grass Rd	21"	5	0.103	134	Algae film on flow line.
P-108-14	6/7/2022	6:00	Outfall: South of Baldi MS	66"	300	0.129	>2419.6	Inspection is a result of a WMB. SD at time of inspection. No Cl2 in flow.
T-089-04	5/6/2022	6:20	Outfall: Franklin & Hasbrook	3' x 6'6"	NF	NS	NS	No issues.
W-076-14	5/6/2022	7:30	Outfall: Cherokee & Hartwell	57"	NR	0.138	14670	Observed from culvert effluent. Emergency response: sewage smell in surrounding area. Sample had no odor and clear.
W-076-14	5/24/2022	11:10	Outfall: Cherokee & Hartwell	57"	NR	<0.1	3230	Observed from culvert effluent. Emergency response: sewage smell in surrounding area. Sample had no odor and clear. Sample taken at influent of culvert (100MPN/100ml).
W-060-12	5/6/2022	16:10	Outfall: Henry & Hermit	36"	1440	NS	NS	Emergency response: sewage smell in surrounding area. Obvious sewage discharge. Choke found and cleared.
W-067-01	6/6/2022	14:30	Outfall: Gorgas & Lawnton	6' x 6'	3000	0.143	>241960	Incident response referral. Contacted SM. Found a choke at 7900 Ridge Ave. Still investigating possible cross connection.
W-076-01	6/7/2022	10:00	Outfall: Cathedral & Wissahickon	4'6"	NF	NS	NS	Inspection is a result of a WMB. No flow.
S-052-05	4/26/2022	12:25	Outfall: Sumac & Rochelle	72"	3600	0.644	133300	Observed from MH S-052-05-0020. Chlorine = 0.03.

Table 3
Residential Cross Connections Not Abated Within 120 Days

A. Properties Abated & Confirmed Prior to Reporting:

Address	Outfall Code	Complete Date	Admin. Action	Abatement Confirmation Date	Comments

B. Properties Active As Of Reporting:

Address	Outfall Code	Complete Date	Admin. Action	Comments
01941 Kentwood St	Q-109-07	01-19-2018		
03411 W Penn St	S-052-04	02-13-2018		
03424 W Penn St	S-052-04	02-17-2018		
03433 W Penn St	S-052-04	02-21-2018		
03425 Conrad St	S-052-04	03-01-2018		
03530 Henry Ave	S-052-04	03-03-2018		
03340 W Penn St	S-052-04	03-03-2018		
03305 Tilden St	S-052-04	03-24-2018		
03313 Tilden St	S-052-04	03-24-2018		
03329 Tilden St	S-052-04	03-27-2018		
03333 Tilden St	S-052-04	03-29-2018		
03461 Sunnyside Ave	S-052-04	04-02-2018		
03411 Osmond St	S-052-04	04-28-2018		
03449 W Penn St	S-052-04	05-03-2018		
03446 Crawford St	S-052-04	05-17-2018		
03433 Crawford St	S-052-04	05-26-2018		
03317 W Penn St	S-052-04	06-02-2018		
03448 W Queen Ln	S-052-04	06-23-2018		
03419 W Queen Ln	S-052-04	07-02-2018		
03335 W Queen Ln	S-052-04	07-02-2018		
03417 W Queen Ln	S-052-04	07-05-2018		
03326 W Queen Ln	S-052-04	07-12-2018		
03452 W Queen Ln	S-052-04	07-13-2018		

Table 3
Residential Cross Connections Not Abated Within 120 Days

Address	Outfall Code	Complete Date	Admin. Action	Comments
03469 W Queen Ln	S-052-04	07-17-2018		
03414 W Queen Ln	S-052-04	07-20-2018		
03333 W Queen Ln	S-052-04	07-21-2018		
03440 W Queen Ln	S-052-04	07-21-2018		
03474 Tilden St	S-052-04	07-21-2018		
03435 W Queen Ln	S-052-04	07-30-2018		
03464 W Queen Ln	S-052-04	07-30-2018		
03429 W Queen Ln	S-052-04	08-02-2018		
03459 W Queen Ln	S-052-04	08-16-2018		
03434 W Queen Ln	S-052-04	08-17-2018		
03460 W Queen Ln	S-052-04	08-24-2018		
02612 Woodward St	P-100-04	09-12-2018		
04437 Riverview Ln	S-052-03	09-19-2018		
04456 Riverview Ln	S-052-03	09-26-2018		
04423 Driftwood Dr	S-052-03	09-27-2018		
04433 Driftwood Dr	S-052-03	09-29-2018		
03235 Comly Pl	Q-110-09	10-06-2018		
04410 Driftwood Dr	S-052-03	10-06-2018		
04402 Driftwood Dr	S-052-03	10-13-2018		
04312 Ashburner St	P-083-03	10-20-2018		
03454 W Penn St	S-052-04	10-24-2018		
04425 Driftwood Dr	S-052-03	10-27-2018		
04431 Driftwood Dr	S-052-03	10-27-2018		
04404 Driftwood Dr	S-052-03	10-31-2018		
04412 Driftwood Dr	S-052-03	11-09-2018		
04417 Driftwood Dr	S-052-03	11-17-2018		

Table 3
Residential Cross Connections Not Abated Within 120 Days

Address			Outfall Code	Complete Date	Admin. Action	Comments
03700	Falls	Cir	S-052-03	12-15-2018		
08726	Cottage	St	P-083-03	12-22-2018		
03702	Falls	Cir	S-052-03	12-24-2018		
04702	Almond	St	D-056-09	12-26-2018		
03704	Falls	Cir	S-052-03	01-17-2019		
04408	Driftwood	Dr	S-052-03	01-19-2019		
03706	Falls	Cir	S-052-03	01-19-2019		
02629	Pratt	St	D-056-09	01-26-2019		
04312	M	St	R18	03-13-2019		
04300	M	St	R18	03-15-2019		
04422	Ashburner	St	P-083-03	03-22-2019		
04337	Glendale	St	R18	03-23-2019		
04232	O	St	R18	03-28-2019		
04254	O	St	R18	04-06-2019		
00223	Stearly	St	T-080-02	04-06-2019		
04310	Glendale	St	R18	04-13-2019		
00215	Stearly	St	T-080-02	04-20-2019		
05930	Newtown	Ave	T-080-02	04-22-2019		
04250	Neilson	St	R18	04-25-2019		
05922	Newtown	Ave	T-080-02	04-26-2019		
04215	Castor	Ave	R18	04-27-2019		
04219	Castor	Ave	R18	05-02-2019		
04249	Neilson	St	R18	05-04-2019		
04242	Castor	Ave	R18	05-11-2019		
04236	Neilson	St	R18	06-01-2019		
04245	Ormond	St	R18	06-08-2019		

Table 3
Residential Cross Connections Not Abated Within 120 Days

Address	Outfall Code	Complete Date	Admin. Action	Comments
04309 Glendale St	R18	06-15-2019		
04122 M St	R18	07-06-2019		
08635 Ditman St	P-083-03	07-10-2019		
04146 Markland St	R18	07-27-2019		
04144 Markland St	R18	07-30-2019		
04142 Markland St	R18	08-03-2019		
04122 Markland St	R18	08-05-2019		
01409 E Lycoming St	R18	08-13-2019		
04114 Markland St	R18	08-17-2019		
01413 E Lycoming St	R18	08-20-2019		
01447 E Lycoming St	R18	08-26-2019		
04025 Castor Ave	R18	08-29-2019		
01404 E Lycoming St	R18	08-31-2019		
04023 Castor Ave	R18	09-04-2019		
04034 Castor Ave	R18	09-06-2019		
04051 Castor Ave	R18	09-11-2019		
04224 Markland St	R18	09-14-2019		
04024 Castor Ave	R18	09-17-2019		
01444 E Lycoming St	R18	09-19-2019		
04143 M St	R18	09-21-2019		
04215 M St	R18	09-24-2019		
07331 Hill Rd	W-067-01	09-30-2019		
02623 W Allegheny Ave	S-046-06	10-05-2019		
04033 Castor Ave	R18	10-08-2019		
04014 Castor Ave	R18	10-08-2019		
04030 Castor Ave	R18	10-12-2019		

Table 3
Residential Cross Connections Not Abated Within 120 Days

Address	Outfall Code	Complete Date	Admin. Action	Comments
03063 Winchester Ave	P-091-09	10-19-2019		
04259 Castor Ave	R18	10-22-2019		
04261 Castor Ave	R18	10-26-2019		
01431 E Lycoming St	R18	11-02-2019		
08820 Cottage St	P-083-03	11-06-2019		
04259 Neilson St	R18	12-02-2019		
00531 Roxborough Ave	W-060-01	12-14-2019		
02320 Benson St	P-091-06	01-06-2020		
01352 E Hunting Park Ave	R18	01-08-2020		
04123 Markland St	R18	02-06-2020		
02306 Benson St	P-091-06	02-10-2020		
01441 E Hunting Park Ave	R18	02-29-2020		
00038 W Hartwell Ln	W-077-02	03-05-2020		
02128 Emerson St	P-091-06	10-24-2020		
02214 Hoffnagle St	P-091-06	10-26-2020		
04116 Markland St	R18	11-09-2020		
04118 Castor Ave	R18	12-05-2020		
03452 Division St	S-052-04	01-13-2021		
03430 Division St	S-052-04	01-16-2021		
03424 Division St	S-052-04	01-23-2021		
03460 Division St	S-052-04	01-23-2021		
03690 Eveline St	S-052-04	01-30-2021		
08118 Lister St	P-091-06	03-03-2021		
02216 Emerson St	P-091-06	03-22-2021		
03660 Haywood St	S-052-04	03-27-2021		
03666 Haywood St	S-052-04	03-27-2021		

Table 3
Residential Cross Connections Not Abated Within 120 Days

Address	Outfall Code	Complete Date	Admin. Action	Comments
03602 Haywood St	S-052-04	03-27-2021		
03613 Haywood St	S-052-04	03-29-2021		
03643 Haywood St	S-052-04	03-29-2021		
03611 Haywood St	S-052-04	03-29-2021		
08138 Shawnee St	W-077-02	04-03-2021		
03432 Warden Dr	S-052-04	04-08-2021		
00040 W Hartwell Ln	W-077-02	04-23-2021		
03108 Midvale Ave	S-052-04	05-10-2021		
03230 Midvale Ave	S-052-04	05-12-2021		
00216 Claremont Rd	T-079-01	05-29-2021		
04150 Markland St	R18	06-02-2021		
03617 Midvale Ave	S-052-04	06-02-2021		
03209 W Coulter St	S-052-04	06-02-2021		
03001 Midvale Ave	S-052-04	06-05-2021		
03915 W Netherfield Rd	S-052-04	06-12-2021		
07524 Boyer St	W-086-02	06-21-2021		
07506 Boyer St	W-086-02	06-21-2021		
00016 Mc Pherson St	W-086-02	06-28-2021		
00062 W Gowen Ave	W-086-02	07-10-2021		
07627 Germantown Ave	W-086-02	07-21-2021		
03648 Haywood St	S-052-04	07-23-2021		
04733 Belgrade St	D-056-09	07-23-2021		
01410 E Hunting Park Ave	R18	07-30-2021		
01350 E Hunting Park Ave	R18	07-31-2021		
08422 Pickering Ave	T01	09-04-2021		
00207 Passmore St	T-089-01	09-11-2021		

Table 3
Residential Cross Connections Not Abated Within 120 Days

Address			Outfall Code	Complete Date	Admin. Action	Comments
01829	Kendrick	St	P-099-03	09-25-2021		
10710	Haldeman	Ave	Q-109-07	10-18-2021		
04040	Castor	Ave	R18	10-23-2021		
03513	New Queen	St	S-052-04	10-23-2021		
03568	New Queen	St	S-052-04	10-30-2021		
03501	New Queen	St	S-052-04	10-30-2021		
03517	New Queen	St	S-052-04	11-13-2021		
02233	Benson	St	P-091-06	11-17-2021		

Table 4
Spills to Storm Sewers and/or Receiving Waters
April 1, 2022 to June 30, 2022

Date	Outfall	Address	Source Code	Material Involved	Completion Date	Remarks
4/1/2022	C17	S 52nd St & Hadfield St	3008	Sewage	4/1/2022	About 100 gallons of sewage spilled from a bypass pump hose operating around a choked sewer onto the paved area. The defecting ring on the pump hose was replaced and the site was restored. PADEP was later contacted by PWD.
4/15/2022	T-097-01	2800 W Cheltenham Ave Tacony Creek	3011	Sewage	4/15/2022	A choked sewer caused a discharge of approximately 500 gallons out of MH T097-01-S0010 to inlet and to the outfall. The choke was broken up with the flusher and the outfall was cleaned up.
4/16/2022	Q-101-09	9229 Frankford Ave	3011	Sewage	4/16/2022	Investigators found a choked sewer discharging into the storm sewer. Approximately 210 gallons of sewage were discharged. A flusher and vactor were used to removed debris. The storm sewer was flushed with chlorine tablets.
4/21/2022	S-051-08	531 Righter St	3009	Sewage	4/22/2022	A choked sewer was discovered by PWD, affecting manholes S051-08-S0560 to S051-08-S0695. About 400 gallons of seweage were discharging into the storm sewer. A bypass pump was set up and the choke was broken up the following morning. The problem was referred to CCTV to observe the sewer line.
5/2/2022	P-100-08	2555 Welsh Road	3008	Sewage	5/2/2022	Residents at 2555 Welsh Road fouond sewage overflowing in their showers and tubs, and was running onto the floors at several apartments. Upon inspection, the sanitary sewer was found to be packed with grease. The choke caused an overflow for approximately 6 hours. The choke was relieved with a vactor and customer service was notified for clean up.
5/4/2022	W-076-14	718 Saint Andrew Rd	3011	Sewage	5/6/2022	IWBC observed that the oufall, creek, and asjacent sewer appeared normal but that there was a strong sewage odor at the culvert. Samples were taken but it was determined that this was only an air emissions issue.
5/8/2022	D-73	PS-796		Sewage	5/8/2022	The Navy Yard Pump Station 796 alarm system called out for a power failure. The pump station reached the overflow level, however, no sewage was seen in storm sewers, on land, or in waterways close to the pump station. The estimated overflow is 45,401 gallons but no SSO was observed.
5/10/2022	Q-101-04	3858 Kirkwood Rd	3009	Construction Debris	5/11/2022	IWBC observed concrete debris at the storm inlet. No responsible party was found.
5/13/2022	Q-107-02	12001 Millbrook	3009	Sewage	5/13/2022	PWD found a sewer that was choked and discharging into the storm sewer. An estimated 5 GPM flow over 5 hours was discharged. A flusher relieved the choke in the sanitary sewer and WRT was notified for clean up.
5/13/2022	W-060-11	Harvey St & Lincoln Dr	3011		5/13/2022	Friends of Wissahickon reported a blue/gray discharge at outfall. IWBC determined this was an unfounded report during their investigation.
5/16/2022	P-112-01	608 Welsh Rd Pennypack Creek	3009	Foam	5/24/2022	Motorists and residents of the block complained of a white, foamy substance shutting out from a manhole onto the street and approaching storm inlet. IWBC concducted a chlorine residue test and got a reuslt of 0.2. Further investigation is required.
5/18/2022	Q-107-02	4023 Fairdale Rd	3009	Sewage	5/20/2022	PWD found sewage running in storm sewer and bubbles from laundry mat running into storm sewer, indicating a possible cross connection. An estimated 5 gpm was dsicharged over 50 hours. This was referred to WRT to clean up.
5/20/2022	Q-107-02	Knights Rd & Woodhaven Rd	3011	Sewage	5/20/2022	PWD found choked sanitary sewer discharging nto storm sewer and outfall Q-107-02. Approximately 5 gpm were discharged over 3 hours. The spill was referred to waterways for clean up.
5/20/2022	P-112-01	608 Welsh Rd	3008	Soap	5/20/2022	PWD found a choked sewer. Suds and sewer bubbles were observed coming out of the manhole. Approximately 1 gpm over 2 hours was discharged. A flusher relieved the choke in the sewer. No sewage was observed at the outfall or in the sotrm system.
5/23/2022	W-076-14	Cherokee St & W Hartwell Lane Wissahickon Creek	3011	Sewage	5/27/2022	IWBC received a request from WRT to take fecal samples at W-076-14 Cherokee and Hartwell because there was a strong sewage odor in the area. There were no chokes in the area but IWBC smelled a sewage odor. There were no obvious signs of sewage in the creek. IWBC inspector took fecal and fluoride samples at the effluent and influent of the culvert that the outfall discharged into. The samples did not indicate sewage. IWBC forwarded the complaint to PWD sewer maintenance.
5/26/2022	W-060-12	Henry Ave & Hermit St Wissahickon Creek	3011	Sewage	5/27/2022	A citizen reported a sewgae like discharge from a pipe near the 12th hole tee off at the Walnut lane Golf Course to PADEP. IWBC inspectors confirmed that the discharge was sewage from outfall W-060-12. IWBC found gray matting on the streambed by the outfall and downstream. IWBC reported the potential choke to PWD Sewer Manintenance. SM cleared a choke on Henry Ave and the streambed was cleaned by PWD WRT. The discharge was reported to PADEP.
6/3/2022	Q-106-15	10800 Knights Rd	3009	Grease		Tier II inspection at Jefferson Torressdale Hospital revealed illicit discharge to storm inlet. The discharge contained food waste and bio waste. The discharge came from multiple sources at the hospital. A NOV will be issued.
6/6/2022	W-067-01	700 Gorgas Ln Wissahickon Creek	3011	Sewage	6/6/2022	IWBC noted that outfall has heavy flow and a mild mildew odor. The flow was clear but the plunge pool was observed to be a cloudy, greyish color. IWBC referred the potential illicit discharge to PWD Defective Lateral Unit.
6/10/2022	P-112-01	608 Welsh Rd	3008	Soap		IWBC received a report of foam shooting up from the street. IWBC observed the manhole surcharging foam and possible toilet paper and a soapy substance in the nearby inlet on two different investigations. The creek was clear and there is no apparent impact ti the stream.
6/15/2022	P-112-01	608 Welsh Rd	3008	Soap	6/15/2022	Suds and potentially toilet tissue were observed coming out of manhole again. No sewage was found in storm sewer or at the outfall.
6/21/2022	W-067-01	6700 Ridge Ave	3011	Sewage		Customer service reported waste in outfall W-067-01. The choke in the sewer causing the spill was found at 6700 Ridge Avenue. A flusher broke the choke and the outfall was flushed using hydrants and dechlor tabs. WRT cleaned the outfall and flushed the storm sewer.

Source Codes:
3008 - Spill to Ground Only **3010 - Spill to Sanitary Sewer**
3009 - Spill to Storm Sewer **3011 - Spill to Receiving Stream**

Appendix O – City of Philadelphia Snow and Ice Operations Plan Winter 2021-2022

STREETS DEPARTMENT

WINTER 2021 — 2022

SNOW AND ICE OPERATIONS PLAN

Streets Commissioner: Carlton Williams
Deputy Commissioner: Richard Montanez
Chief Highways Engineer: Stephen Lorenz

City of Philadelphia

STREETS PHILADELPHIA

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SECTION 1
SNOW & ICE REMOVAL OPERATIONS PLAN

PLAN SUMMARY

Philadelphia, like many other northeastern cities in the United States, often faces winter storms that bring potentially dangerous accumulations of ice, sleet, freezing rain, and snow.

To provide roadway conditions that are safe for traffic on primary, secondary, and tertiary (residential) streets throughout the entire City of Philadelphia, the Streets Department has prepared a Snow and Ice Removal Operations Plan outlining the City's response to adverse winter weather conditions. This document outlines procedures and responsibilities for responding to winter weather emergencies.

The goal of the Plan is to ensure a continuity of City services by reducing, if not eliminating, the occasions when the City government will have to close or reduce City services due to severe winter weather, particularly with regards to curbside trash & recycling collection. The chief objective for the City in all severe winter weather is to allow all Philadelphians to return to their normal daily activities as quickly as possible.

The Plan prioritizes route systems, indicates the appropriate distribution of resources, and identifies the duties and responsibilities of all personnel engaged in the response. Also, the Plan delineates necessary linkages with other City departments and agencies including but not limited to, the Office of Fleet Management and the Office of Emergency Management.

In addition, the Plan outlines areas requiring planning before, during, and after a winter weather event, understanding that the severity of storms and the resulting conditions vary depending on many environmental factors, the plan allows for flexibility in the department's response. A matrix (see: Chart A, page 6) indicating the storm type with a brief description and resources required to respond to the emergency is provided. An in-depth description of resources required to respond to each storm type is provided in subsequent sections of the plan.

CHART A
RESOURCE DEPLOYMENT WINTER EVENT

POST STORM FORECAST: ABOVE FREEZING TEMPERATURES

STORM TYPE		HIGHWAY DIVISION	SANITATION DIVISION	NEIGHBORHOOD OPERATIONS	BRINE APPLICATION*	CONTRACTORS	LIFT SETS*
1	 Sleet/ freezing rain less than 1 inch of snow	✓			✓		
2	 1 – 3 inches of snow	✓		Partial clearing focusing on higher terrain (15 routes)	✓		
3	 3 – 5 inches of snow	✓		Partial clearing focusing on higher terrain	✓	✓	
4	 Above 5 inches of snow	✓	✓	Full Deployment (135 routes)	✓	✓	✓

POST STORM FORECAST: BELOW FREEZING TEMPERATURES

STORM TYPE		HIGHWAY DIVISION	SANITATION DIVISION	NEIGHBORHOOD OPERATIONS	BRINE APPLICATION*	CONTRACTORS	LIFT SETS*
5	 Sleet/ freezing rain less than 1 inch of snow	✓		Partial clearing focusing on higher terrain (15 routes)			
6	 1 – 3 inches of snow	✓		Partial clearing focusing on higher terrain	✓		
7	 3 – 5 inches of snow	✓	✓	Partial clearing focusing on higher terrain	✓	✓	
8	 Above 5 inches of snow	✓	✓	Full Deployment (135 routes)	✓	✓	✓

- For pre-storm forecasts of rain to snow, brine will not be pre-applied. It will wash away.
- Lift sets are generally in Center City.
- Full Deployment may be deployed when the National Weather Service issues a winter storm warning.

ESSENTIAL STAFF

A. Purpose

The Streets Department is the primary response agency for the City in winter weather events such as snow and ice storms. As such, it is essential the Department maintain an adequate workforce in such emergencies.

B. Definitions

Weather Event: Includes all weather emergencies as declared by the Managing Director's Office through the Office of Emergency Management, in consultation with the Mayor's Office, and any weather event that requires the mobilization of staff to maintain clear roadways.

Essential Staff: *All Department employees and any employees assigned to Streets Department Operations during a weather event are deemed essential and must report to work unless otherwise instructed by the appropriate supervisor.*
(see: Streets Order No. 100 – Change #6, page 9)

C. Policy Statement

When a weather emergency occurs, all personnel, as determined essential by the appropriate supervisor, will be required to report to their assigned functions. Since there are significant differences in the size and severity of weather events, those employees required to report may vary from event to event. When possible, employees will be notified by the appropriate supervisor/manager as to their status prior to an event. However, since such notification is not feasible in all situations, employees should report for duty unless otherwise instructed.

During weather events all employees should monitor local news broadcasts for information and should contact their work location to obtain direction on their work status.

Employees who are not instructed to report for duty during a weather event shall be authorized to utilize accrued vacation, comp, or AL leave during weather events. Employees not engaged in storm operations may be required to report to work, at the discretion of their supervisor, if the nature of their regular work assignments has become critical.

Employees may be assigned shift work as required by the event response plan.

D. Responsibilities

Streets Commissioner: The Commissioner will serve as incident commander for snow and ice operations. These duties include supervising the logistical response of the Streets Department to winter storm events, and consulting with the Managing Director regarding the declaration of a Snow Event, the declaration of a Snow Emergency, and the activation of the Emergency Operations Center (EOC).

The decision to activate the EOC will be made by the Managing Director's Office.

The Streets Commissioner, MDO, and the EOC will coordinate with the Philadelphia School District and the Philadelphia Archdiocese regarding winter storm events.

Chief Highway Engineer: will develop and maintain a comprehensive snow plan that defines required staffing levels during weather events and identifies specific job positions and functions. Direct all field operations during winter weather events. In addition, will coordinate (or delegate) with all other support Departments and external partners (ie: SEPTA, PPA, PennDOT)

Supervisors: will maintain a list of employees and phone numbers, and notify those employees assigned to snow operations as required by this policy. Supervisors are to grant leave time only as prescribed in this policy statement, or in the event of extraordinary circumstances.

Human Resource Division: will communicate the Essential Staff Policy to all employees prior to the winter season.

Residential Snow Coordinator: under direction of the Chief Highway Engineer, coordinate all residential snow activity.

Snow Contractor Liaison: will maintain a list of contracted snow and ice removal vendors and order their services when necessary. The liaison also monitors contractors' performance and services rendered and authorizes payment for services.

Field Staff: All personnel, including all supporting departments, will be under the direction of the Streets Department personnel. In the interest of public safety, all personnel will report directly to Streets Department supervisors, and will not be released until directed by the Chief Highway Engineer. All are expected to be in place, on time, and ready to perform the duties for which they have been trained. Exceptions will be at the Streets Commissioner's or Managing Director's discretion through the Chief Highway Engineer.

Department of Streets
Office of the Commissioner
City of Philadelphia

Streets Order No. 100 — Change #6
Subject: Essential Staff Policy

General

The City of Philadelphia Streets Department's mission is to maintain clean and safe streets. The Department delivers a number of City services that are critical to maintaining public health and safety in our communities. These essential services include, but are not limited to, maintaining all traffic control devices and street lighting, the safe operation and maintenance of our roads and bridges, timely and consistent removal of trash and debris, and during winter weather events the plowing and salting of City streets. In the performance of such functions, it is essential that employees of the Department report to work on time when scheduled to provide services to the public. Since each division has varying needs, each division head is responsible for implementing staffing policies to effectively manage the number of employees required for duty on a mandatory basis, to insure that these essential services are delivered and that public health and safety are maintained in communities at all times.

To maintain the essential services identified above, employee leave may be canceled as determined necessary by the division head. In addition, employees assigned to essential services are required to continue their assignments until properly relieved.

Winter Weather Events

During a winter weather event, all Streets Department employees are expected to report to work at their regularly scheduled time unless notified to report to a different location and/or at a different time. All employees with a valid Pennsylvania Commercial Driver's License (CDL) shall be considered essential during a winter weather event. Any employee holding a valid Pennsylvania Driver's License will be considered essential if notified of such by the Department. During an event, the times and location of reporting may vary significantly depending upon the nature of the event. The Department will notify, in a timely manner, essential employees whose starting time and location are modified. However, all employees should monitor weather conditions and are expected to report for duty during winter weather events or snow emergencies.

Since there are significant variations in the time, nature and intensity of events, the assignments of employees will vary. Some employees may be excused from reporting during an event. Those employees excluded from reporting shall be granted exemptions on a case by case basis provided their assigned function will not be required as dictated by the event, and if the Department Head, or designee, grants such exception.

Compliance

The Streets Department cannot successfully deliver core services without the participation of its entire team. Due to the critical nature and importance of the work to be performed, an employee who does not work his or her assigned hours may be subject to disciplinary action up to and including discharge.

GOALS

The Streets Department is the lead City agency for development and implementation of Philadelphia's snow and ice removal (de-icing) program. The goal of the program is to maintain safe egress for citizens throughout the duration of a storm and to return the City to normal operations as soon as possible after the event has ceased. The Department works closely with other City & external agencies to clear and make safe more than 2,500 miles of streets and roadways. This allows businesses, SEPTA and City agencies to maintain their normal operations during most events. Significant resources in the form of vehicles, materials, and staff are dedicated to the operation. As in similar emergency response plans, priority is given to major thoroughfares, the primary route system; however, the plan also addresses the needs of all streets within the City limits.

Sanitation service is a critical function for the citizens of Philadelphia; as such an important component of the plan is to maintain trash and recycling collections. To minimize the need to mobilize the Sanitation fleet, and the subsequent cessation of this service, the current plan augments the Streets Department's current resources with a partnership of snow fighting fleet of vehicles from various departments. The Streets Department and supporting agencies are committed to providing the most efficient and effective snow and ice removal operations as possible and are continually evaluating new methods and processes.

SCOPE

The Roadway System

There is a network of approximately 2,575 miles of City and State roads within the boundaries of the City of Philadelphia. The responsibility for maintaining these roadways during winter storms is split among the Pennsylvania Department of Transportation (PennDOT), the Streets Department, and the Department of Parks & Recreation. Of the 360 miles of state roads, PennDOT maintains 50 miles of limited access state highways. These include I-95, the Schuylkill Expressway(I-76), The Vine Street Expressway (I-676), Roosevelt Blvd Extension (Rt-1), Woodhaven Rd extension (Rt-63), all on & off ramps, and Gustine Lakes interchange. 310 miles are state roads that PennDOT contracts with the City for snow and ice removal. This amounts to a total of 2,525 miles of City and State roads that the City maintains.

The Department of Parks & Recreation de-ices 35 miles of Park roads, including but not limited to B.F. Parkway Lincoln Drive, Kelly Drive and Martin Luther King Drive. Snow and ice removal on the remaining 2,490 miles of City streets is the responsibility of the Streets Department. The Highway

Division maintains general responsibility for the organization and deployment of City forces during winter storm operations. In storms of large accumulation, the Sanitation Division will be mobilized to supplement the snow removal effort with vehicles outfitted with plows. Finally, private contractors supplement City forces in storms of significant magnitude.

In order to provide effective service during winter storms, the City's street system is divided into primary, secondary, and tertiary route systems. The primary route system encompasses 665 miles, including 110 miles of Snow Emergency Routes. The secondary route system includes another 700 miles of streets (both systems exclude the roadway maintained by the Department of Parks & Recreation). The balance of City streets falls into the tertiary street system, covering approximately 1,125 miles of streets, 25 miles of which are private streets where the residents or Home Owner Associations contract for private snow removal.

Route Priority

When a Snow Emergency is declared, Snow Emergency and *Primary* Routes become the first priority for snow removal efforts. **The Snow Emergency Route System is clearly marked and consists of the major street network within the City.** Primary routes include major access roads through the central business district, and in and out of neighborhoods. Most primary routes encompass major and minor arterials, which serve the highest traffic volumes and distribute traffic throughout the City.

The secondary route system, which includes other streets that primarily convey traffic within neighborhoods, is the second focus of snow removal efforts. Most SEPTA routes fall within the boundaries of the primary and secondary route system.

The tertiary system includes most local residential streets. These streets are cleared based upon storm type as defined in this document.

The primary and secondary route systems are salted as soon as significant moisture has accumulated on roadways, thereby minimizing travel conditions that are potentially dangerous. Certain roads may also be pre-treated with salt brine when conditions warrant. Plowing begins when there is such a sufficient build-up of snow that salting is no longer effective. Plowing and salting will occur on local and residential streets as defined in this document.

Residential streets that are inaccessible for snow and ice removal efforts due to illegally parked or abandoned vehicles cannot be treated until those vehicles are removed by the owner or ticketed and subsequently towed.

Snow Emergency Declaration

The Mayor, Managing Director, Deputy Managing Director of Emergency Management (DMD-EM) and the Commissioner of Streets will consult to determine if a declaration of a Snow Emergency is necessary.

A snow emergency declaration allows curb to curb plowing on designated snow emergency routes (see: Section 2 for Snow Emergency Route Listings). No parking is allowed on snow emergency routes during a snow emergency. The Philadelphia Parking Authority and Police Department are responsible for ticketing and towing vehicles parked on snow emergency routes.

Signs are posted on the Snow Emergency Routes by the Traffic Engineering Division. The signs are MUTCD approved accept for the 686-SNOW phone number. This number is answered by the Police Communications. 311 is also notified.

WINTER WEATHER ACTION OUTLINE

SNOW AND ICE REMOVAL OPERATIONS ARE DIVIDED INTO THREE ELEMENTS:

Planning

The Deputy Commissioner for Transportation, the Chief Highway Engineer and the Deputy Commissioner of Sanitation, under direction of the Streets Commissioner, are responsible for developing a comprehensive winter response plan. The planning activity will include all other support departments such as Fleet, Parks and Recreation, Water and others. Planning will encompass continuing communications with the Office of Fleet Management to ensure that vehicles are properly maintained and outfitted for salting and snow removal. Further, the plan includes periodic reviews of the Snow and Ice Operations and the route structures.

During this phase, responsibilities are outlined, key positions are identified, and crews are trained. In addition, materials are requisitioned, received, and stockpiled; equipment is repaired and readied, and snow routes and route maps are reviewed and revised as needed.

Operations

The operations phase begins when the forecast is for temperatures consistent with snow, ice, sleet or freezing rain, with at least a 50 percent chance of precipitation. The Highway Division supervisors, the Residential Snow Coordinator, Fleet Management, Water Dept, & Dept of Parks & Rec are notified of the possibility of precipitation and possible plan.

The Chief Highway Engineer is made aware of "Special Events" and major closures. The De-icing crews will be forwarded this information, so the appropriate actions can be taken.

The Highway Division directs all anti-icing and de-icing efforts undertaken by the Streets Department. The Division operates under the supervision of the Chief Highway Engineer, and is divided into six regional Highway Districts, supervised by District Highway Engineers. The District Highway Engineers and the Residential Snow Coordinator, in consultation with the Snow Headquarters, located at the Bridge Maintenance Office at Whitaker Avenue and Luzerne Street, direct the winter weather operations.

The 6 Highway District yards are at the following locations:

Highway District 1	48th Street and Parkside Avenue
Highway District 2	63rd Street and Essington Avenue
Highway District 3	22nd Street and York Street
Highway District 4	Stenton Avenue and Sylvania Street
Highway District 5	Whitaker Avenue and Luzerne Street
Highway District 6	State Road and Ashburner Street

The 6 Residential District Headquarters are at the following locations:

District 1	Belmont & Concourse Dr. – Carousel house
District 2	3033 63rd St. (63rd St & Essington). Trailer next to dome
District 3	Gustine Lakes Rec. Center 4700 Ridge Ave.
District 4	4501 G St. (G & Ramona Ave.) Street Lighting Shop
District 5	4040 Whitaker Ave. (Whitaker & Luzerne) 2nd Floor
District 6	8401 State Road (State & Ashburner) – Training Center

Resources are deployed as needs dictate, however, operations generally follow a set pattern. Once the storm arrives and precipitation is falling creating icy or snow-covered streets, salting operations begin. Certain roads may also be pre-treated with salt brine when conditions warrant. In additions, some trucks are equipped with a pre-wet system that will brine the salt before it is spread Salt trucks are deployed to cover the route structure. Salting will continue until it is no longer necessary or has become ineffective.

As snow continues to fall and build up on the streets, plows are deployed to the routes. Plowing will continue until the streets are passable and safe for use by vehicular traffic.

Once this is complete, individual complaints are addressed. 311 is notified by the Streets Dept, Public Relations Unit as to how to handle snow & ice complaints.

Cleanup and Assessment

Following each storm, the snow removal equipment is cleaned (including the brine equipment); spreaders and plows are removed and stored; personnel are released from snow duty; and final reports are submitted. At this time, after action reviews are undertaken. If contractors are used, all paperwork will be submitted and prepared for billing before the shift is over and Managers are released. All vehicles are post-checked and reported to Fleet for repairs.

All Highway Districts shall notify the Assistant Chief Highway Engineer as to how much salt so replenishment orders can be made following the event. An assessment of the salt dome at Domino Lane will also be done.

PARTICIPATING ORGANIZATIONS— ASSIGNMENTS & RESPONSIBILITIES

Assignments and Reporting Structure

All personnel involved in winter weather operations will be under the direction of Streets Department. **Once deployed to snow operations, they will be relieved from their respective daily assignments and will not be released, except for emergency, to their respective operating departments without approval of Streets Department snow headquarters. It is the responsibility of the employee to notify their supervisor that they will be working snow operations.**

Streets Department

The Streets Commissioner is the incident commander for all winter weather operations The Highway Division coordinates the citywide program for snow removal from the City street system and is directly responsible for salting and plowing the primary, secondary, and tertiary route structures. In addition, the Chief Highway Engineer is responsible for the supervision and organization of all de-icing efforts. With the approval of the Streets Commissioner, the Chief Highway Engineer is responsible for mobilizing necessary plowing and lifting operations. These operations may require the suspension of normal Sanitation Division operations under certain conditions, and the conversion of Sanitation vehicles for plow operations. However, the Department's goal is to minimize the impact on Sanitation operations and avoid the delay or interruption of curbside collection services. In addition, private contractors may be called in to supplement the de-icing efforts as conditions dictate. Sanitation personnel, Highway personnel, other Departmental personnel and contractors are responsible for de-icing under the direction of the Highway Division.

Department of Parks and Recreation

The Department of Parks and Recreation maintains a portion of the roadways in and around the Park system. The Benjamin Franklin Parkway, Kelly Drive, MLK Drive, Lincoln Drive, & Strawberry Mansion Bridge are the primary routes that are de-iced in all events. When full residential is deployed, they are assigned some residential grids.

In addition, they are responsible for the trail system and for treating the sidewalks and parking lots at the parks and recreation centers. The Leadership of the Dept of Parks & Rec will decide the priorities. In the event equipment has to be taken from the roadway de-icing operation, the Parks & Rec Coordinator will communicate with the Chief Highway Engineer. Since the residential program uses two of their facilities (Carousel House and Gustine Lakes), the residential manager will have those parking lots treated. The Chief Highway Engineer & the Parks & Rec winter coordinator will discuss and communicate prior to and throughout the event.

If a circumstance occurs where the winter event may cause trees to or limbs to fall and block roadways, the Chief Highway Engineer and Parks & Rec winter coordinator will communicate the concerns and report back to the appropriate staffing (both field and administrative). If the EOC is activated, they will be notified as well.

Office of Fleet Management

The Office of Fleet Management is responsible for the maintenance and repair of all vehicles in the City's fleet is responsible for opening fuel sites (see: Fuel Site Locations Table) during winter weather events, providing and installing chains, and where necessary, assisting with the installation of plows, except for the Sanitation Division, which installs chains and plows on compactors. The Chief Highway Engineer and Fleet Management Liaison will discuss the event. This discussion will include Brine, Salt, Plow, shifts, shop openings, and post event issues.

FUEL SITE LOCATION

SITE #	OPERATING HOURS	DEPARTMENTS	SITE NAME	STREET ADDRESS	ZIP	CONTACT #	FUEL TYPE	UNLEADED TANK CAP	DIESEL TANK CAP
01	24/7	Police Department	24th & Wolf	2301 S. 24th Street	19145	686-3010	U	10,000	N/A
02	24/7	Police Department	11th & Wharton	1100 Wharton Street	19147	686-3030	U	10,000	N/A
03	MON – FRI 7:30 – 3:00	Philadelphia Water Department	8200 Enterprise	8200 Enterprise Avenue	19153	685-4047	U/D	2,500	2,500
04	MON – FRI 7:30 – 3:00	Commerce/ Division of Aviation	International Airport	8500 Essington Avenue	19153	492-3056	U/D	8,000	8,000

R

	05	24/7	Streets Department	51st & Grays	5014 Grays Avenue	19143	685-2612	D	N/A	10,000
	06	24/7	Police Department	55th & Pine	5524-30 Pine Street	19143	686-3180	U	10,000	N/A
	07	24/7	Police Department	61st & Thompson	6059 Haverford Avenue	19151	686-3190	U/D	6,000	N/A
	08	MON – FRI 7:00 – 3:30	Office of Fleet Management	25th & Tasker	2500 Tasker Street	19145	952-6201	U/D	20,000	10,000
	09	24/7	Police Department	Girard & Montgomery	611-17 E. Girard Avenue	19125	686-3260	U	10,000	N/A
R	10	24/7	Police Department	21st & Pennsylvania	401 N. 21st Street	19130	686-3090	U	10,000	N/A
	11	MON – FRI 7:00 – 10:00	Streets Department	26th & Glenwood	2601 Glenwood Avenue	19121	685-3978	U/D	10,000	10,000
	12	MON – FRI 7:00 – 3:00	Philadelphia Water Department	7800 Penrose	7800 Penrose Ferry Road	19145	685-4068	U/D	10,000	20,000
	13	MON – FRI 7:00 – 3:00	Philadelphia Water Department	3900 Richmond	3899 Richmond Street	19137	685-1336	U/D	6,000	4,000
	14	MON – FRI 7:00 – 3:00	Streets Department	Delaware & Wheatsheaf	3101 Castor Avenue	19134	685-1364	U/D	2EA/1,500	10,000
	15	24/7	Office of Fleet Management	Front & Hunting Park	100 East Hunting Park Avenue	19124	685-9100	U/D	10,000	10,000
	16	MON – FRI 8:00 – 4:30	Philadelphia Water Department	29th & Cambria	2900 N. 29th Street	19132	685-9633	U/D	20,000	10,000
	17	24/7	Police Department	22nd Hunting Park	2201 W. Hunting Park Avenue	19124	686-3390	U	10,000	N/A
	18	24/7	Police Department	Harbison & Levick	2809 Levick Street	19149	686-3150	U	10,000	N/A
	19	24/7	Police Department	Broad & Champlost	5960 N. Broad Street	19141	685-2862	U	10,000	N/A
	20	24/7	Police Department	Germantown & Haines	39-43 Haines Street	19126	686-3140	U	10,000	N/A
	21	24/7	Police Department	Ridge & Cinnaminson	6666 Ridge Avenue	19128	686-3050	U	6,000	N/A
	22	MON – FRI 7:00 – 11:00	Streets Department	Domino & Umbria	200 Domino Lane	19128	685-2580	U/D	10,000	10,000
	23	MON – FRI 7:00 – 11:00	Office of Fleet Management	State & Ashburner	8401 State Road	19136	685-8977	U/D	10,000	20,000

24	24/7	Fire Department	Germantown & Carpenter	6800 Germantown Avenue	19119	685-2225	U/D	600	2,500
25	24/7	Fire Department	3rd & Spring Garden	276 Spring Garden Street	19123	686-1372	U	6,000	N/A
26	MON – FRI 7:00 – 5:00	Philadelphia Water Department	Fox & Abbottsford	3201 Fox Street	19129	685-2054 685-2024	U/D	10,000	10,000
27	MON – FRI 6:00 – 11:00	Streets Department	4040 Whitaker	4040 Whitaker	19124	685-9800	U/D	6,000	10,000
28	24/7	Fire Department	28th & Thompson	1301 N. 28th Street	19121	685-3889	D	N/A	1,000
29	24/7	Fire Department	Cottman & Loretta	1900 Cottman Avenue	19111	685-0591	D	N/A	1,000
30	24/7	Fire Department	Pennypack Circle	8205 Roosevelt Blvd	19152	685-8891	D	N/A	1,000
31	24/7	Fire Department	Broad & Fitzwater	711 S. Broad Street	19147	685-6897	D	N/A	1,000
32	24/7	Fire Department	4th & Snyder	414 Snyder	19148	685-1792	D	N/A	1,000
33	MON – FRI 7:00 – 3:30	Parks and Recreation	Chamounix (Parks/ Recreation)	715 Chamounix Drive	19131	685-0110	U/D	10,000	10,000
34	24/7	Fire Department	63rd & Lancaster	1913 N. 63rd Street	19151	685-0068	D	N/A	1,000
35	MON – FRI 7:00 – 6:00	Streets Department	48th & Parkside	4804-48 Parkside Avenue	19131	685-0164	D	N/A	2,000
36	24/7	Fire Department	10th& Cherry	133 N. 10th Street	19107	686-1350	D	N/A	1,000
37	24/7	Fire Department	4th & Girard	400-08 Girard Avenue	19123	686-1349	D	N/A	1,000
38	24/7	Fire Department	82nd & Tinicum	8201 Tinicum	19153	492-3393	D	N/A	1,000
39	24/7	Fire Department	52nd & Willows	783 S. 52nd Street	19143	685-1987	D	N/A	2,000
40	24/7	Fire Department	Foulkrod & Darrah	1652-54 Foulkrod Street	19124	685-1295	D	N/A	1,000
41	24/7	Fire Department	Bustleton & Bowler	1701 Bowler Street	19115	685-0387	D	N/A	3,000
42	24/7	Fire Department	Bustleton & Hendrix	812 Hendrix Street	19116	685-0388	D	N/A	1,000
43	24/7	Fire Department	Chelten & Baynton	300 E. Chelten Avenue	19144	685-2227	D	N/A	1,000

	44	24/7	Fire Department	30th & Grays Ferry	3023-45 Grays Ferry Avenue	19146	685-1790	D	N/A	1,000
	45	24/7	Fire Department	Belgrade & Ontario	2520 E. Ontario Street	19134	685-9849	D	N/A	1,000
	46	24/7	Fire Department	13th & Shunk	2600 S. 13th Street	19148	685-1783	D	N/A	1,000
	47	24/7	Fire Department	24th & Ritner	2301 S. 24th Street	19145	685-1793	D	N/A	600
R	48	MON – FRI 7:00 – 3:30	Commerce/ Division of Aviation	Northeast Airport	3001 Grant Avenue	19114	685-0311	D	N/A	4,000
	49	24/7	Fire Department	Academy & Comly	11650 Academy Road	19154	685-9374	D	N/A	600
	50	24/7	Fire Department	Ridge & Cinnaminson	6666 Ridge Avenue	19128	685-2555	D	N/A	600
R	51	24/7	Police Department	Dungan Road	7790 Dungan Road	19111	685-5101	U	8,000	N/A
	52	24/7	Fire Department	Park & Cambria	1325 W. Cambria Street	19132	685-9773	D	N/A	600
	53	24/7	Fire Department	Old York Road	5931 Old York Road	19141	685-2881	D	N/A	600
	54	24/7	Fire Department	43rd & Market	4299 Market Street	19104	685-7699	D	N/A	600
	55	24/7	Fire Department	Belgrade & Huntington	2601 Belgrade Street	19125	685-9847	D	N/A	600
	56	24/7	Fire Department	Rising Sun	5332 Rising Sun Avenue	19120	685-9197	D	N/A	600
	57	24/7	Office of Fleet Management	3033 S. 63 Rd	3033 South 63rd Street	19125	685-4250	D	N/A	10,000
R	58	MON – FRI 6:00 – 3:00	School District of Philadelphia	Shallcross	Byberry & Woodhaven	19154	281-2617	D	N/A	10,000
R	59	MON – FRI 6:00 – 3:00	School District of Philadelphia	Broad & Lehigh	2600 N. Broad Street	19132	215-227-4430	D	N/A	10,00

Total number of sites is fifty-nine
"R"= restricted to vehicles assigned to the department only

Managing Director's Office

The Managing Director, in consultation with the Mayor, has the authority to declare a snow emergency and if necessary, close City offices. This plan should limit, if not eliminate, the need to enforce any closures during snow events.

When a snow emergency is declared the Managing Director's Office is responsible for coordinating the citywide response to the emergency. Streets Department personnel, along with personnel from other departments, participate in the staffing of the Emergency Operations Center, located at 3rd and Spring Garden Streets in the Fire Administration Building, and in other coordinated efforts as necessary

Police Department

Police Department support is required to support existing parking regulations. Police will ticket vehicles identified as impeding snow removal efforts including, but not limited to, vehicles parked on corner radii and double-parked vehicles. Police officers will stop all private entities placing snow in previously cleared streets. During declared snow emergencies, Police support will ensure snow emergency routes are clear. The Police Department is responsible for performing de-icing activities in their facilities. The Police Department will coordinate with the Philadelphia Parking Authority for towing.

As Routes are cleared of vehicles, the Police will notify both the EOC and Snow Headquarters, so the appropriate de-icing can occur.

Other City Departments

The tertiary route structure is maintained by the following City Departments under the direction of the Residential Snow Coordinator.

- Streets Department
- Public Property
- Managing Director's Office (CLIP)
- Prisons Department
- Free Library
- Water Department
- Parks & Recreation
- Licenses & Inspections
- Revenue Department
- Health Department

SNOW FIGHTING EQUIPMENT INVENTORY

Streets Department 2019 – 2020 Fleet Summary

Listed below is the Streets Department's fleet inventory for snow operations. Due to the age of the fleet and the challenges facing the Office of Fleet Management, we (the City) have concerns about the reliability of the equipment. Winter operations place a great strain on aging vehicles, and equipment availability will have a significant impact on the Department's ability to effectively respond to weather events. With projected downtime, the City will be challenged to field a full complement of equipment to cover all routes.

The result of insufficient equipment will be slow response time, particularly on residential streets. To address this issue, in part, the Streets Department has snow contract agreements to provide supplemental equipment for both large and residential streets. The Department also continues to work closely with the Managing Director's Office to identify interdepartmental equipment that can supplement the inventory.

All departments are required to provide a full complement of necessary vehicles for snow operations for clearing the roadway system.

STREETS DEPT. SNOW VEHICLES

100	HIGHWAY SALT
13	LOADERS, HIGHWAY, ARTICULATED
14	SANITATION SKID STEER
144	COMPACTORS
8	BRINE VEHICLES
2	SNOW TRAILERS FOR ROOSEVELT BLVD
135	ALL SNOW VEHICLES ASSIGNED TO RESIDENTIAL

ROUTE DESIGNATIONS AND TREATMENT

The primary and secondary route systems are divided into 148 specific routes. Salting and/or plowing of these routes will continue until the routes are deemed passable and safe for vehicular traffic.

The tertiary street system is covered in a grid pattern determined by each District Highway Engineer and the Residential Snow Coordinator. These streets are salted/plowed as storm type dictates (see Chart A, page 3). Grids are assigned, and the plows attempt to clear all streets in that grid. Streets that are blocked by parked cars or other obstructions will not be treated until the obstruction is removed. Double-parked vehicles or vehicles parked on corner radii will be ticketed and towed by Police to permit snow removal efforts.

All tertiary grids will not be treated during every storm. The City's topography will primarily dictate the specific areas that will be treated during every storm type. Storm severity will dictate the expansion of treatment in the tertiary network. Regional commerce, public health, mass transit issues, sporting & special events and time of year will guide these decisions.

Snow and ice on the tertiary street system will be cleared to provide one passable lane for each direction that the specific streets can accommodate. Residential efforts are designed to allow access to the primary and secondary route system and mass transit.

Use of Salt and Other De-icing Materials

Salt (sodium chloride) or a brine solution of the same chemical, or in extreme situations, sand or other abrasives, will be spread on Philadelphia's roadway network to ensure safety for the traveling public.

Salt brine is a liquid containing a 23 per cent sodium chloride solution. Applied at rates of 30 gallons per lane mile, this treatment should effectively melt the first 2 inches of snow before re-application is necessary. The treatment can also be applied before storms begin. The Department will utilize this program in the Northwest and Northeast sections of the city, areas that typically have higher evaluations. In addition, the department may Brine the sports complex if there is an event. This should provide greater service delivery at a reduced cost, especially in the higher elevation areas of the City. The decision to Brine will be made 72 hours in advance. Brine is primarily used to pre-treat the roadway, so snow does not bind to roadway. As conditions permit, brine trucks may be re-filled and used on some routes or parking lots during the event. This is most effective when there is less than 2 inches of snow, temperatures are greater than 20 degrees and no rain.

STORM TYPES AND RESPONSE

There are eight (8) basic storm types that require different responses as outlined below.

POST STORM FORECAST

ABOVE FREEZING TEMPERATURES

	Storm Type	Deployment of Fleet
	1 Sleet/ Freezing Rain	City salt truck deployment and primary and secondary routes only.
	2 1 to 3 inches of snow	City salt truck deployment on primary and secondary routes. Partial residential deployment in limited areas of higher elevation. If cold temperatures are forecast, limited plowing may occur. (No contractors).
	3 3 to 5 inches of snow	City and contractor salt truck deployment on primary and secondary Routes. Partial residential deployment in limited areas of higher elevation. A snow lifting may be deployed in the central business district.
	4 Above 5 inches of snow*	As above, plus the declaration of a "snow emergency." Sanitation compactors will plow the primary and secondary route system. Additional contractor equipment will be deployed. Full residential will be deployed.

BORDERLINE AND BELOW FREEZING TEMPERATURES

	Storm Type	Deployment of Fleet
	5 Sleet/ Freezing Rain	City salt trucks deployed on primary and secondary routes only. Possible partial residential deployment in limited areas of higher elevation.
	6 1 to 3 inches of snow	City salt truck contractor deployment on primary and secondary routes. Salting Operation for tertiary streets may occur once the primary and secondary network is complete. This operation will be performed by primary and secondary route vehicles that can navigate smaller streets. Partial residential deployment in limited areas of higher elevation. If cold temperatures are forecast, limited plowing may occur.
	7 3 to 5 inches of snow	As above, plus a snow lifting may be deployed in the central business district.
	8 Above 5 inches of snow*	As above, plus the declaration of a snow emergency. Sanitation compactors will plow the primary and secondary route system. Additional contractor vehicles will help clear snow. Full residential will be deployed.

*Full deployment may be deployed when the National Weather Service issues a winter storm warning. Lifting snow from other sections of the City will only occur when directed by the Chief Highway Engineer.

Weather Forecasting Services

The City of Philadelphia will, in addition to monitoring local national weather forecasts for our metropolitan region, contracts with an independent private weather service to ensure that forecasts are made specific to our needs. The City recognizes that there are unique geographic differences within our boundaries and expects detail in our contracted services to assist in deployment decisions.

STORM OPERATIONS

Storm Conditions

Philadelphia's geographic position contributes substantially to the forecasting uncertainties that it faces. Due to our location, with the mountains to our west and the Atlantic Ocean to our east, forecasters usually must watch storm systems for as long as possible before determining if they are going to hit Philadelphia or be deflected to the east or west. In addition, there are literally thousands of types of winter storms - each storm combines a number of factors that lends to its uniqueness.

The Streets Department must be prepared to deal with these planning uncertainties, as well as uncertainties that occur during the storm. For example, the Blizzard of March 1993 was originally forecasted as a 3" storm. It mushroomed into a major storm of upwards of 12 inches, including sleet and freezing rain. In early December 2013, a forecasted 1" storm during an Eagles game turned into a 9-inch winter event. The unexpected changes in forecasts made it more difficult for the Streets Department to mobilize the most effective response to react to a storm of such magnitude. The Blizzard of January 2016 (Winter Storm Jonas) was supposed to start at 10PM and started at 7PM. In March 2017 (Winter Storm Stella) was forecasted for over 12 inches of snow, about 4 inches of snow fell followed by a couple of inches of sleet and below freezing temperatures.

In March 2018, 3 different Nor-Easter storms effected the City of Philadelphia with temperatures at freezing. This caused many trees to block the roadways and parks. These storms had all available equipment to remove trees and de-ice the streets, so crews can perform the necessary work.

There are several other variables that affect the Department's timely response to storm events. These variables are briefly outlined below. Each of the variables listed may have a significant impact on the Department's response. Proper planning and the development of appropriate procedures, combined with some level of operational flexibility is a priority to develop the most appropriate, effective response possible, given the existing conditions. Communication through Snow Headquarters is the key to success.

- Storms may fail to materialize at the forecasted hour. Conversely, storms may stall, thereby increasing the duration of the event and the amount of accumulation. These factors increase the expense associated with responding to a storm and the chance of work force fatigue.
- During a storm, the type of precipitation may change. Different types of precipitation require different responses. For example, plowing may be hampered as ice accumulates on the top of the snow, creating a hard crust.
- The time of the year also impacts the Department's response to storms. In the late fall and early spring months when the temperature is warmer, it may be possible to fight a storm of four to five-inch accumulation with salt alone. In colder months, plowing would be necessary.
- If two or more severe storms occur in rapid succession, the Department's response may be affected. Response to the initial event may be expanded in anticipation of the subsequent storm. For example, in 2015, we had 2 storms within 36 hours at accumulations of 12 inches and 5 inches respectively with 8 hours in between.
- Low temperatures increase the amount of salt necessary to melt off precipitation.
- Winds can create havoc during storms. Although light breezes help to dry roadways following storms, stronger winds may hamper snow fighting efforts by drifting snow across cleared roadways.
- Significant elevation differences exist between the southern portion of the City and the areas in the northeast and northwest. In the northeast and northwest, snow frequently accumulates to greater depths.
- The city has developed micro-climates along the rivers creating black ice.
- Other Department's core services may impact equipment and personnel (ie: Water main breaks or down trees due to ice and wind)

The Department's Snow and Ice Operations Plan presents a flexible framework providing effective response to all types of storms.

It is the goal of the City of Philadelphia that for the majority of the winter weather events that typically affect this city, that we will have, depending on storm type and response protocol, all routes identified in these response protocols passable within 24 to 48 hours of the fall of the last flake. Storms outside of the protocol upper limits may lead to significant adjustments in this timeline.

STORM TYPES 1, 2 & 3

DEPLOYMENT

Streets Department

Chief Highway Engineer

— Will develop the operations plan for approval by the Streets Commissioner
— Once the plan is approved, The Chief & Assistant Chief Highway Engineers will notify as listed below:

- Notifies District Highway Engineers, Central Maintenance Unit (CMU), Bridge Maintenance Unit (BMU) of mobilization time and plan
- Notifies the yard supervisors
- Notifies Residential Snow Coordinator of mobilization time
- Notifies Highway Division Snow Headquarters, located at the Bridge Maintenance Yard – 4040 Whitaker Avenue, personnel to report at specified deployment time
- Notifies OIT
- Notifies Office of Fleet Management of mobilization decision
- Notifies SEPTA
- Notifies Sanitation
- Notifies maintenance supervisors
- Notifies Parks and Recreations
- Notifies Unified Dispatch
- Notifies Water Department
- Notifies the Streets Department, Public Affairs
  — Will coordinate with 311
- An email notification will be sent out to all involved. The Streets Commissioner will be included so it can be shared with the MDO or Mayor's Office at his discretion. This is a follow-up to phone calls.
- Establish communication with the EOC (if activated).

Highway District Engineers

— Notify spotters to report at specified deployment time

Highway District Maintenance Supervisors

— Notify personnel to report at specified deployment time

Residential Snow Coordinator

— Notifies residential snow operations personnel of partial residential deployment (if needed)

Office of Fleet Management

— Will determine which garages for Fleet maintenance support and fueling sites for duration of event at determined times. This will be coordinated with Snow Headquarters

Parks and Recreation

— Responsible to activate operation for salting Park road system including Benjamin Franklin Parkway, MLK, Kelly, Lincoln Drive. Report times will be coordinated with the Chief Highway Engineer.

OPERATIONS

Highway Districts

Spotters monitor street conditions. Salt trucks are loaded and positioned at the start of an assigned route. As street surfaces accumulate sufficient moisture for effective salting, spotters notify Maintenance Supervisors to begin salting activity. Spotters will provide route condition reports to their district headquarters on intervals as directed. District headquarters will compile this data and forward to Highway Division Snow Headquarters.

The Highway Yard Districts will work with the Sanitation yards to ensure the Citizen Drop off centers are de-iced.

Residential Districts

Spotters monitor street conditions. Trucks are positioned at the start of an assigned route. Treatment of the street surface begins upon notification from the Residential Snow Coordinator. Spotters will provide route condition reports to their district headquarters on three (3) hour intervals. District headquarters will compile this data and forward it to the Residential Snow Coordinator, who in turn summarizes the information and forwards it to Highway Division headquarters.

Highway Division Snow Headquarters

Snow Headquarters will:

— Inform Highway Districts of weather forecasts
— Monitor, through Highway Districts, the status of all salting operations
— Maintain a log of all service calls for snow and ice related activities
— Monitor weather conditions and forecasts
— Analyze the data and forward it to the appropriate parties
— Analyze reports from the field and make changes to future operations where required
— Forward emergency calls from Police and Fire Departments to Highway Districts
— Maintain Snow Route Status Report
— Order commodities as required to maintain an adequate supply at all Districts
— Take calls from the EOC
— View PennDOT, Police and Streets Department cameras.
— Monitor GPS

Office of Fleet Management

— Repair vehicles as necessary
— Report vehicle down time to Snow Headquarters

Parks and Recreation

— Treat Park road system, trails, and parks & recreation facilities

CESSATION OF OPERATIONS

Highway Districts
— District Engineers release spotters to regularly assigned duties.
— District Engineers collect route inspection information

Residential Districts
— Release spotters and drivers to their respective departments
— Forward all reports to Residential Snow Coordinator who, in turn, forwards them to Highway Division Snow Headquarters
— Supervise the cleaning and redeployment of residential snow equipment

Highway Division Snow Headquarters
— Compile final report on personnel, equipment utilized and material usage and forward to Streets Commissioner.
— Estimate cost of event

Office of Fleet Management
— Compile final report on equipment costs and return to normal Fleet repair activities
— Prepare for the next event

Parks and Recreation
— Compile final report on personnel and equipment utilized
— Return to normal Park maintenance activities

STORM TYPES 6, 7 & 8

DEPLOYMENT | Same as response 1, 2 & 3, except the following additions:
Streets Department

Chief Highway Engineer
— Notifies District Highway Engineers and Residential Snow Coordinator of decision to salt/plow tertiary system (Note: Storm type 6 only, partial to full residential deployment depending on event specifics).
— Will advise everyone for potential of multiple shifts

Residential Snow Coordinator
— Notifies residential snow operations personnel of partial to full residential deployment

STORM TYPES 4 & 8

DEPLOYMENT | Same as 1, 2 & 3, but also includes:
Streets Department

Chief Highway Engineer
- Notifies District Highway Engineers of initial mobilization time for salting operations and subsequent mobilization time for plowing operation
- Advises district that Sanitation, contractor equipment and residential roadway treatment will occur
- Notifies Highway Division Snow Headquarters, personnel to report at specified deployment time
- Notifies Snow Contractor Liaison to order contractor support equipment at specified time
- Notifies Residential Snow Coordinator of mobilization time
- Notifies Deputy Commissioner for Sanitation for full deployment of Sanitation resources, both for plowing primary and secondary routes
- Notifies Office of Fleet Management of mobilization decisions
- Advises all involved of anticipated number of shifts
- Notifies SEPTA
- Notifies Sanitation
- Notifies Water

Snow Contractor Liaison
- Contact private sector vendors and orders equipment for each highway district.
- Advises of deployment time and likelihood of deployment duration
- Advises contractors of lifting set (if any) requirements

Highway District Engineers
- Notify Maintenance Supervisors to deploy their staff at specified time
- Notify spotters to report at specified time
- Notify inspection staff for contracted equipment to report at specified time
- Are advised that residential street system snow removal has been activated

Residential Snow Coordinator
- Notifies residential snow operations personnel of residential deployment

Highway District Maintenance Supervisors
- Notify personnel to report at specified deployment time

Streets Department — Sanitation Division

Deputy Commissioner — Sanitation

- Mobilizes plows for primary/secondary route system at six Sanitation yards at specified time.
- Notify Chief of Operations to designate a Sanitation representative for Highway Division Snow Headquarters
- Notify division management of deployment times and subsequent suspension of curbside collections

Office of Fleet Management

- Will deploy sufficient resources to support fleet maintenance activities for duration of winter weather event
- Will open fuel sites and staff appropriate garages for duration of event
- Will support Sanitation Division of Streets Department during plow and chain mounting for Sanitation compactors and support equipment

Parks and Recreation

- Responsible to activate operations for salting/plowing road system and trail system. The Leadership of Parks & Rec will create a plan for treating the trails and recreation centers

Office of the Managing Director

- Will issue declaration of snow emergency
- Will activate the city's Emergency Operations Center located at the Fire Administration Building 3rd and Spring Garden Streets.

OPERATIONS

Streets Department

Highway Division

- Spotters monitor street conditions
- District Highway Engineers assign inspection staff to contact salting vehicles
- Salt trucks are loaded & positioned at the start of an assigned route. As street conditions accumulate sufficient moisture for salt to be effective, spotters notify districts to begin salting operation. Salt will be applied prior to plowing operations or until no longer effective
- Plowing operations will begin at 2"-3" accumulation and continue until routes are clear
- Chief Highway Engineer directs Residential Snow Coordinator to begin Tertiary Street plowing/salting when needed
- Highway District Engineers direct Sanitation plowing commencement
- All spotters & inspectors will provide route condition reports on three (3) hour intervals. Each district headquarters will compile this information & forward to Highway Division Snow Headquarters
- Highway District Engineers will ensure that all routes are salted upon completion of plowing efforts
- Highway District Engineers will direct snow lifting/melting operations within their respective district

Residential Snow Districts

— Spotters monitor street conditions. Trucks are positioned at the start of an assigned route. Treatment of the street surface begins upon notification from the Residential Snow Coordinator
— Spotters will provide route condition reports to their district headquarters on three (3) hour intervals. District headquarters will compile this data and forward it to the Residential Snow Coordinator, who in turn summarizes the information and forwards it to Highway Division Snow Headquarters

Sanitation Division

— Sanitation Assistant Chiefs of Operation and District Managers direct Sanitation Operations and report progress to Highway District Engineers
— At the Highway District Engineers direction, they will adjust on-street operations for specified route assignments
— Progress reports are to be provided at two (2) hour intervals to Highway District Sanitation Coordinator
— Managers will ensure that all vehicles are manned at shift change
— Personnel will not be released without replacement
— Sanitation and Highway Yard Liaison will coordinate completion of the routes so a salt truck can follow behind.
    • Sanitation will support the Residential program by treating the small streets with the skid steers.

Highway Division Snow Headquarters

Snow Headquarters will:

— Inform Highway Districts of weather forecasts
— Monitor, through Highway Districts, the status of all salting operations
— Maintain a log of all service calls for snow and ice related activities
— Monitor weather conditions & forecasts. Analyze the data & forward it to the appropriate parties
— Analyze reports from the field & make changes to future operations where required
— Forward emergency calls from Police and Fire Departments to Highway Districts
— Maintain Snow Route Status Report
— Order commodities as required to maintain an adequate supply at all Districts
— Provide Emergency Operations Center (EOC) reports route conditions, weather updates and identified trouble spots

Office of Watersheds (Division of PWD)

— Office of Watersheds will de-ice the porous streets when a conditional deployment is called. During a full deployment, they will appropriately treat those streets. If they are not treated by the Office of Watersheds, then the residential program will treat the porous streets. As of October 2019, there are 6 porous blocks within the City.

Office of Fleet Management (OFM)

— OFM will provide necessary manpower & garage space as need to support storm type
— OFM will supply vehicle status reports to Highway Division Snow Headquarters, the Managing Director's Office and Emergency Operations Center on an hourly basis

Parks and Recreation

— Treat Park road system and Benjamin Franklin Parkway as required by conditions
— Clear all sidewalks around recreation centers
— All trails will be treated

CESSATION OF OPERATIONS

Streets Department

Highway Division

— Highway District Engineers will release all equipment to their respective departments for regularly assigned duties
— Highway District Engineers will release all personnel to their regularly assigned duties
— District Maintenance Supervisors will ensure salt truck operators return unused material to stockpiles and wash truck beds, augers and spinners.
— Highway District Engineers will compile final contractor billing information
— All storm related information on personnel, equipment deployed, contract support & material used will be compiled by each district and forwarded to Snow Headquarters

Residential Districts

— Release spotters and drivers to their respective departments.
— Forward all reports to Residential Snow Coordinator who in turn forwards them to Highway Division Snow Headquarters
— Supervise the cleaning and redeployment of residential snow equipment

Sanitation Division

— Sanitation Division will dismount plows, remove chains and ready fleet for return to normal collection/cleaning activities

Highway Division Snow Headquarters

— Compile final report on all elements deployed for specific storm type
— Forward report to Streets Commissioner and EOC
— Compile cost estimate for event
— Direct highway districts post storm clean up deployment

Office of Fleet Management (OFM)

— OFM to compile final report on equipment repair costs and vehicle status and return to normal fleet repair activities
— Prepare for next event

Parks and Recreation

— Compile final report on personnel and equipment utilized
— Return to normal Park maintenance activities

Office of the Managing Director

— End snow emergency declaration and close EOC
— Effective in 2015, the 686-SNOW phone number has been permanently changed to inform citizens of their responsibilities of parking on a Snow Emergency Route. It is routinely checked to make sure it is active.

DE-ICING SUPPORT PERSONNEL ASSIGNMENTS

The following functions will be performed by Streets Department and other City agencies personnel not directly involved with the operation of snow fighting equipment:

Bridge Maintenance Unit

The Bridge Maintenance Unit will perform anti-icing activities on the sidewalks of the City's vehicle bridges & pedestrian bridges as well as removing snow from the 15 stairways in Manayunk. Highway maintenance district yard personnel and Sanitation area personnel will be called to assist with this effort as dictated by storm type.

Highway Maintenance District Personnel and Sanitation Area Personnel

Highway maintenance district personnel and Sanitation area personnel, as dictated by storm type, will be provided hand snow removal equipment and will clear snow from curb ramps and open city inlets. This is to allow melting snow access to the drainage system and provide pedestrian accessibility. Snow may also be cleared from areas surrounding fire hydrants. Efforts will be made to keep select bike lanes clear of snow & ice. All bike lanes will be attempted to receive de-icing treatment.

SWEEP Support (Streets & Walkways Education and Enforcement Program)

SWEEP Officers will, beginning in commercial corridors, enforce sidewalk clearance — Ordinance 10-719. Upon completion, enforcement will expand to schools, hospitals, etc., culminating in residential inspection.

All City Departments

— Dry salting Will NOT be practiced.
— Sidewalks & ADA ramps: All City departments will be responsible for removing snow on the sidewalks abutting their facilities. Salt can be requested through snow HQ. In addition, bagged salt & Calcium Chloride is available on a Citywide contract for all Departments to Purchase
— Parking Lots: All Departments are responsible for treating & salting their respective parking lots.
  - The Police Department will coordinate with the Chief Highway Engineer for salt needed to salt all Police parking lots & driveways. The Streets Dept will treat the Round House ramp and the Traffic Police ramp on Erie Ave.
  - No Department will be supplied salt for the purposes of dry salting

- Dilworth Park is the responsibility of Center City District
- Dilworth Plaza is the responsibility of Public Property. Note: It is not recommended to drive heavy equipment on Dilworth Plaza.
- Sanitation will provide salting & plowing vehicles to treat the citizen's drop off areas.

Highway Division Support Personnel

Highway Division support personnel will continue snow removal support functions as part of their daily work activities after Sanitation workers return to regular collections. Snow removal equipment will supplement these efforts as it becomes available.

Small Streets

As part of the City's responsibility of making streets passable, the Sanitation Division will be de-icing several miles of streets that are less than 10 feet in width. These are known as Gator Routes. These will be treated when a full deployment is called. The crew chief in charge of this operation will report to the residential manager.

PWD Support (Philadelphia Water Department)

During major events, PWD crews will be dispatched to clear snow at inlets to prevent intersection flooding (if appropriate)

Bus Stops

OTIS has contracted with Intersection to de-ice all bus stops. This contract includes access to the bus stops and ADA ramp. In addition, they will be clearing the snow at the Direct Bus Stops along Roosevelt Blvd.

Police Department Support

The Philadelphia Police Department will enforce existing ordinance/regulations prohibiting the discharge of snow back onto city streets. Private plow contractors caught in the act of plowing snow from private property onto city streets risk fine and/or forfeiture of equipment.

Bicycle Facilities

The City of Philadelphia is becoming one of the most bicycle friendly City in the United States. As doing so, the de-icing plan shall include bike facilities. However, in certain events, the treatment may not occur until 24 hours after the final snowflake has fallen.

— The City (OTIS) has permitted bicycle corrals to be installed within the parking lanes. The private sponsor of the bike corral is responsible for clearing snow and de-icing. Note, throwing snow into the travel lane is not permitted. The City does not take on any responsibility for damage done by de-icing operations.
  - No bike corrals are permitted on snow emergency routes during winter months.
  - The INDEGO bike share program is privately owned and coordinated with OTIS. INDEGO is responsible for snow removal and de-icing. Snow shall not be placed in the treated street.
  - As part of the Streets Department's Deicing and snow removal program, an effort will be placed on bike lanes where it is feasible.
    — Salting the bike lanes can occur with the salting of the travel lanes.
    — If the bike lane is next to the curb, efforts will be made to push the snow as close to the curb as possible. As the snow begins to melt, additional plowing and salting may be performed to expedite the snow melting
    — The City will be treating each protected bike lane in a different manner.

PUBLIC RELATIONS AND EDUCATION

Major Media Notification

The City will use various media types to ensure that notification of the Department's plan is timely as well as effective.

Key communications tools include:

— Issuing of press releases/advisories. This will be done by or coordinated with the Mayor's press office.
— Social Media
— Nextdoor Social Site

— Posting information on Streets Department's website including list of FAQs, snow tips and status of departmental services as appropriate. Suggested snow tips will include:
  - "Park car as far away from the corner as possible. Cars parked too close to the corner limit the turning radius of snow equipment."
  - "Obstructions, such as, illegally parked cars affect our ability to plow effectively."
  - For effective snow and ice management partnership, City and citizens need to work together.
  - Do not throw snow into the street or bike lanes.
  - Posting information on community websites/list serves
  - Utilizing OIT to distribute announcements email

Notification System

The Department uses OEM's ReadyPhilly system to notify of snow alerts.

311/Streets Department Communication Protocols for Snow Events

During storm events, all snow related inquiries will be accepted by 311, however, formal service requests will not be taken until 311 is notified by the Streets Department Public Relations that the event is officially declared over. During the event, 311 will advise the public of the level of deployment and let citizens know if their street is to be serviced depending on the level of service. After the event is ended, 311 will resume taking complaints from the public and the requests will be forwarded to the Streets Department for response within a reasonable time.

Responding to Citizens' Complaints

— **Delegation** — Service requests are, as always, delegated from the centralized system to operational units for appropriate action.
— **Tabulation** — Information can be gathered from the Public Relation's computerized system to provide a post-storm picture of complaints.
— **Planning** — This information can be further utilized to plan appropriately and change plans for future snow events.

School Closure Policy

When inclement weather is present or anticipated that may impact schools opening or closing early, Streets, SDP, Archdiocese, MDO, and MDO/OEM will conference to determine appropriate action relating to storm conditions.

Post Season Survey/Spring Maintenance

Beginning on or about March 1 of each year and continuing through April 30th, weather conditions permitting, sweeps will be made of Philadelphia road network, identifying defects for the upcoming spring repair season. Streets Department personnel, as well as those involved with residential inspection, may be asked to perform this task.

SNOW FIGHTING IN PHILADELPHIA OPERATIONAL GUIDELINES

Snow Operations COVID Prevention Protocols:

Snow operations events typically involve a high volume of employees, and, sometimes contractor support to clear and remove snow and ice from city streets and roadways. With the advent of the COVID-19 epidemic, the Streets Department has a responsibility to ensure the health, wellness and safety of our employees, contractors and general public while snow event operations are taking place. We have therefore established clear guidelines and protocols to follow in order to protect the health, wellness and safety participants and the general public. To prevent COVID-19 exposure, it is important that these health and safety guidelines are monitored and enforced during an event.

An assigned senior manager will serve in the role of COVID Prevention Director ensuring all snow operations facility sites are equipped and trained to implement prevention protocols. One trained person at each individual facility site will fulfill the responsibilities of a COVID Prevention Coordinator. The coordinator will ensure health and safety practices and COVID prevention measures are monitored and enforced at all times. The following represents the various protocols the coordinator is responsible for monitoring and enforcing:

All employees and contractors arriving to an event site must successfully complete a COVID health assessment screener via link at https://www.phila.gov/employee-screener/#/. If an employee or contractor cannot take the assessment on-line using their cell phone, paper assessment questionnaires will be available and administered to the individual. A negative response to any of the series of questions asked on the questionnaire, will result in a failed assessment, indicating the individual is at risk and cannot work the snow event. Employees and contractors must successfully complete the health screener assessment indicating that they are cleared to work. The coordinator will check and verify that the screener clears the individual to work. If the screener does not clear the individual, the coordinator must notify the individual that they are required to leave the facility and cannot work the snow event. If necessary, the coordinator will obtain the support and assistance of a manager to ensure the individual does not work the event and is directed to go home.

Other responsibilities include:

- Requiring event participants maintain social distancing from other participants and general public throughout the event by keeping at least three to six-foot distance from others unless it is absolutely necessary and they are wearing appropriate PPE
- Requiring all participants to wear either a face mask covering their nose and mouth while working at least three to six-feet of other participants or individuals (masks will be available for the event)
- Participants who refuse to maintain proper social distance or to wear proper PPE must leave the project site
- You must inspect and monitor participants throughout the event to ensure proper PPE is being worn by employees, they are reminded about required safety protocols and that they should immediately go home if not feeling well
- Ensuring hand sanitizer and/or hand soap is available during the event with the expectation that participants clean their hands frequently throughout the day
- Participants should clean their hands frequently during the event, after any breaks and directly after any restroom break
- Employees who indicate they are feeling ill while working onsite, must be immediately informed to go home and leave the project site

Material Resources

Salt inventory is dictated by several factors: storage capacity (including salt domes at secure, satellite locations throughout the city), availability of product, and environmental concerns. A salt dome is located at the six Highway District Yards and Domino Lane, Area 4. The City has the capacity to store over 50,000 tons of salt. Note, Anti-skid may be added to the salt if the inventory starts to run low or if the temperatures are cold where the salt may not be as effective. The Sanitation will sweep the street as conditions permit.

The Department orders salt as the inventory is depleted to maintain maximum capacity throughout the winter. Initial salt orders are placed against purchase orders cut from a blanket purchase order under the Commonwealth of Pennsylvania's contract. The City of Philadelphia has a secondary salt contract in place

Subsequent product is obtained from the City of Philadelphia's citywide rock salt contract. This contract provides for a primary and secondary vendor, and has language that includes the product specification, testing procedures, delivery locations, quantities and requirements, and weight certifications, and liquidated damages.

Requisitioning

The District Supervisor keeps an up-to-date inventory of the materials used for snow and ice removal during the winter months. S/he notifies the Administrative Officer (AO) and Assistant Chief Highway Engineer as orders need to be placed. An overall salt inventory for all six Districts & Domino Lane is maintained by the Assistant Chief Highway Engineer.

At the end of the winter season, the Chief Highway Engineer, AO, the Director of Planning & Analysis, and the Budget Officer review the remaining salt inventory to determine the necessary amount of salt needed to meet the following year's requirements. Accordingly, the State is notified of our estimated quantities, as is the Procurement Department for use in developing contracts for the following year.

Salting Policy

The Highway Division endeavors to maximize every application of de-icing to maintain the safest roads possible in the most economical way while protecting the environment. This also puts the City of Philadelphia in compliance with the MS-4 permit, this is maintained by PWD. The policy includes:

DRY SALTING WILL NOT BE PRACTICED.
This is not an effective way of treating streets and is a waste of material.

Personnel Training: The Streets Department is committed to providing continuing personnel training to ensure that staff is well equipped to perform their jobs effectively.

Equipment: The Streets Department and Office of Fleet Management should update and replace equipment in an economically responsible manner.

Calibration of Spreaders: Regardless of whether automatic or manual controls are used, they should be calibrated before the snow season starts. Poorly maintained and un-calibrated controls are responsible for excessive salt use.

Use of Automatic Controls: The use of automatic controls is recommended for spreaders to make sure the correct amount of salt is being spread at all times.

Adequate Covered Storage: Storage facilities are vital to any winter operation. They must have sufficient capacity and good cover preferably under roof. Stock piles that are stored unprotected should be covered to prevent loss of materials and to protect the environment.

Proper maintenance procedures should be followed around storage areas. Outside stockpiles should be properly shaped and should be on impermeable pads. There must also be proper drainage to keep the salt dry and protect the surrounding area. A method for disposal or retention of the leached salt should be in place. Any salt that is stored outside of a protected area, may be temporarily tarped. This shall occur not only while deliveries are being made, but also if it is stored in areas outside of the designated salt storage areas (i.e.: Parking lots)

The 7 salt storage locations are domes or sheds. This will protect the salt from the weather.

The Street's Department is committed to work with the MDO, Clean Water task force & GSI initiatives.

Safeguarding the Environment: Salt and de-icing materials should be used in a manner that safeguards the environment. If misused, de-icing can pollute. If improperly used or stored it can get into wells or ground water. Excessive salt use can be damaging to certain plants and trees when runoff leaves sodium chloride in the soil. This practice makes the City of Philadelphia in compliance with the MS-4 permit.

Application: The application of salt alone depends on the type of precipitation, temperature, and snowfall intensity. When there is adequate frozen precipitation on the pavement (non-plowable depth), and the temperature is above 25 degrees Fahrenheit, straight salt is optimized. Below 25 degrees Fahrenheit, a mixture of salt and abrasives will be used. The initial treatment of the roadway before plowing operations begin is to reduce ice or snow bonding to the pavement. Salt application rates range from 200 to 800 pounds per two-lane mile, depending on the storm conditions. Salt can be applied in a windrow or full width, which is sometimes necessary. Brine, formed by salt and water, will run to other parts of the road and be spread by traffic. Plowing operations should be timed to allow maximum melting. Salt reaction time is usually 20 to 30 minutes. (Reaction time increases as temperature decreases.)

Operation of Equipment:

Within the City of Philadelphia, there are many bridges with weight restrictions. The drivers are not to drive crew cabs or tri-axles loaded with salt over bridges with low weight restrictions. These bridges include but not limited to:

FALLS BRIDGE

MARTIN LUTHER KING DRIVE

In addition, the following bridges are closed or will be closed during the winter of 2021–22:

MARGIE ST BRIDGE, WEST OF GLENWOOD

CHESTNUT ST BRIDGE, CROSSING THE SCHUYLKILL RIVER

MONTGOMERY AVE BETWEEN 29TH AND 31ST

COULTER ST, EAST OF WISSAHICKON AVE

ERIE AVE, WEST OF 3RD ST

CRESHEIM VALLEY DR, GERMANTOWN AV TO EMLEN ST

In addition, drivers who are responsible for driving vehicles with "dumps" need to be aware of the height restrictions so to avoid low clearance bridges, wires and tree limbs.

Equipment Resources

Certain specialized equipment is required to support the snow and ice removal plan; specifically, snowplows, salt spreaders, and snow loaders. Much of this equipment is available within the Department. Additional equipment is obtained through contract and is provided by other operating departments.

- **Spreaders:** Spreaders including tailgate and V-box spreaders are used to apply salt or sand, which are the primary de-icing chemicals used for fighting winter storms. Application rates are set for various conditions following Salt Institute guidelines.
- **Plows:** Plows are mounted on Highway Division trucks and Sanitation Division compactors of the Streets Department, as well as equipment in supporting departments for residential plowing once accumulation predictions are for 4" or more snow (or as conditions permit)

- **Contract Equipment:** City equipment is supplemented using private sector contracted equipment for significant weather events. This equipment is used to assist clearing snow and ice from the primary/secondary network, as well as hauling snow from the CBD to a predetermined snow field.
- **Footbridge/Sidewalk Clearance Protocol:** Bridge Maintenance employees of the Streets Department are dispatched after each event ends to clear snow and de-ice from pre-determined footbridges and from the sidewalks of bridges. Other personnel may be asked to clear of sidewalks as conditions permit.
- **Bus Stops & Kiosks:** In 2017 and 2018, OTIS entered into a contract with Intersection to maintain the Bus Stops & Kiosks. As part of the maintenance agreement, they are to shovel and treat the sidewalks around the Bus Stops & Kiosks. This also includes the upgraded bus stops along Blvd Connect.
- **Communication:** All vehicles will be equipped with either radios or cell phones for communication during the events. GPS units are installed on most vehicles.
- **Winter Maintenance Facilities:** The six Highway Division maintenance facilities serve, along with Snow Headquarters, located in the Bridge Maintenance Yard, as the bases of all de-icing operations. During significant events, they are supplemented by Sanitation area and residential facilities. Salt is stored at the six Highway Division yards and Domino Lane.
- **Operation and Safety:** Equipment will be operated in a safe, effective manner by trained, properly licensed, operators. Winter is the season when equipment fails to start, personnel take shortcuts, traction is poor, visibility is poor, and other motorists may not see the operators of other vehicles. All drivers and crews should make required checks prior to and during the use of equipment to ensure safe operations are maintained. Pre and post trip inspections are mandatory.

Usage of Snow Melters

If the amount of snow in a single event or multiple events combine warrant a large-scale removal, the City may invest in the rental of snow melting equipment. The Streets Dept will work with Fleet Management and the Airport in arranging for this equipment to be delivered to a pre-determined location. The location will be approved by the Water Dept so that MS-4 permit will not be violated. In addition, the inlets will be cleared so not to produce flooding from a choked inlet.

Personnel Resources

All Streets Department personnel are subject to reporting to duty during snow and ice storms. Failure to notify the supervisor of the inability to work during a storm is grounds for disciplinary action. Please see the Essential Staff Policy in Section 1, page 6.

The Highway Division is responsible for overall coordination of snow and ice control preparations. Supervisors are responsible for providing the direction required for effective snow and ice control.

- **Clothing:** The lack of proper clothing is a direct cause of most frostbite occurrences, falls, and in many cases, is a factor in equipment accidents. All crews are urged to dress for the possibility that they may be stranded without heat for several hours. It is contemplated that within two hours assistance will be provided to any crew having trouble.
- **Communications:** On street communications are maintained by inspectors and spotters, who are in constant communication with the Highway and Sanitation Districts and Snow Headquarters.

Personnel Notification Lists (and equipment and other assignments) will be provided to required personnel. Phone trees are to be initiated as necessary at the beginning of a snow alert.

Reporting Procedures

Status Reports: District Highway Engineers will be responsible for maintaining contact with all supervisors and operators in their districts and reporting on the progress of the field personnel to the Snow Headquarters. District Highway Engineers or their designee will make their first report one hour after notification of the snow alert and will continue to make reports as needed throughout the duration of the snow removal operations.

Accident Reports: The following are the responsibilities of the driver if an accident should occur during snow removal operations:

- Check for injury to persons, never admit liability, call 911 immediately for medical emergencies and state that there is a medical emergency;
- Obtain identification of the other vehicle and driver;
- Notify Police immediately either through radio dispatcher or by telephone. Do not leave the scene of an accident except in cases where physical harm is threatened. If physical harm is threatened, relocate then notify the police;
- Notify supervisor by radio or telephone immediately. All accident should be reported to Snow Headquarters.
- Forms 77-501 (Employee Accident/Incident Information) and 77-502 (Citizen Accident Information) should be carried in every vehicle and thoroughly completed at the scene of any accident then forwarded to either a supervisor or directly onto Form 82-S-87 (Traffic Accident Report);

- Employee should not sign statements, suggest any settlement or volunteer information about the accident except as noted above. All other requests for statements or signatures should be forwarded to the City of Philadelphia's Risk Management Department;
- The Safety Office shall be notified. Also, Email sent to the Safety Office.

Non-Municipal Employees contracted for snow removal operations should follow all of the directives listed above except completion of Form 82-S-7 which should be completed by the City on duty supervisor. The contractor is responsible for their own equipment.

Training

Requirements and Timelines: Training will be held for all personnel involved in snow removal as needs determine. Snowplow training for Highway Division and Sanitation Division personnel is part of on-going CDL training. Residential training is an intensive effort that will take place in November of each year for required personnel.

Field Inspection Procedure

Spotters/inspectors- will report on actual roadway condition. Reports will include surface condition, material application, plow progress, and problem locations. Conditions which have prevented the removal of snow and ice, such as illegally parked cars, abandoned cars, vehicles stuck in snow, etc. will be noted for follow-up removal efforts. Spotters/inspectors will file field reports with their respective coordinators after each event.

- **Primary/Secondary:** Spotters/inspectors are to report on the condition of the network, with a focus on identifying areas that are particularly troublesome for immediate follow- up.
- **Residential:** Spotters/inspectors, as well as the residential navigators, are to report on residential conditions, noting streets that will require follow-up work due to problems encountered during the initial effort.
- **Frequency of Report & Detail:** Reports are to be made as needed to the district managers and forwarded to Snow Headquarters. Detail to include whether road is passable, snow covered, salted, plowed or bare pavement. Conditions are coded and noted on inspector's reports.
- **Expectations:** It is the City's expectation that the road network will be made passable, 12 hours after the last flake has fallen. Additionally, it is the City's goal to have all routes identified in this manual's response protocols clear within 24 hours of the fall of the last flake.

Policy on Snow Plowed into Streets and Bike Lanes

As noted in the Philadelphia Code, Chapter 9, Section 601 (4) (f), Chapter 9, Section 404 and Chapter 10, Section 720, snow is not permitted to be plowed or shoveled onto City streets. Enforcement and penalties are described in the respective chapters.

Police Department Responsibility: Police Department personnel are to stop private contractors from plowing snow off of parking lots and driveways into city streets.

Streets Department Responsibility: SWEEP Officers will be dispatched to warn residents about throwing snow in the streets, as well as enforcing the 6-hour timeline to have your sidewalk shoveled to a minimum of a 36-inch path.

Communication

Internal: Communication of on-street activity during winter weather events will occur as needed. Spotters and inspectors will report to their respective coordinators route conditions and any identified trouble spots on their assigned routes. Operators will report any mechanical problems to both their headquarters and the Office of Fleet Management. All district coordinators will forward the updates to Highway Division Snow Headquarters, where the information will be compiled.

External: Highway Division Snow Headquarters will disseminate all information concerning winter weather events to external sources. Route progress reports, street conditions, equipment and personnel deployed, and materials used will be included in these reports. For major events, this information will be forwarded to the Streets Commissioner. He will then forward this information. Snow Headquarters will communicate to the Emergency Operations Center.

SECTION 2
SNOW EMERGENCY ROUTES

VISIT PHILADELPHIA®

SNOW EMERGENCY ROUTES

2.1 Snow Declaration

The Mayor, through the Managing Director, has the authority to issue a Snow Emergency Declaration for significant events. This declaration implements parking regulations on dedicated snow emergency routes.

2.2 Citizen Responsibility

Citizens are required to remove their vehicles from snow emergency routes.

2.3 Inspector Responsibility

Inspectors are required to report locations where cars have not been moved and to ensure that designated routes are plowed completely curb to curb.

2.4 Police/Parking Authority Support and Timelines

Police Tow Squad and Parking Authority tow vehicles will remove vehicles from snow emergency routes. Towing will begin at the designated snow emergency starting time and continue as necessary until the declaration is lifted.

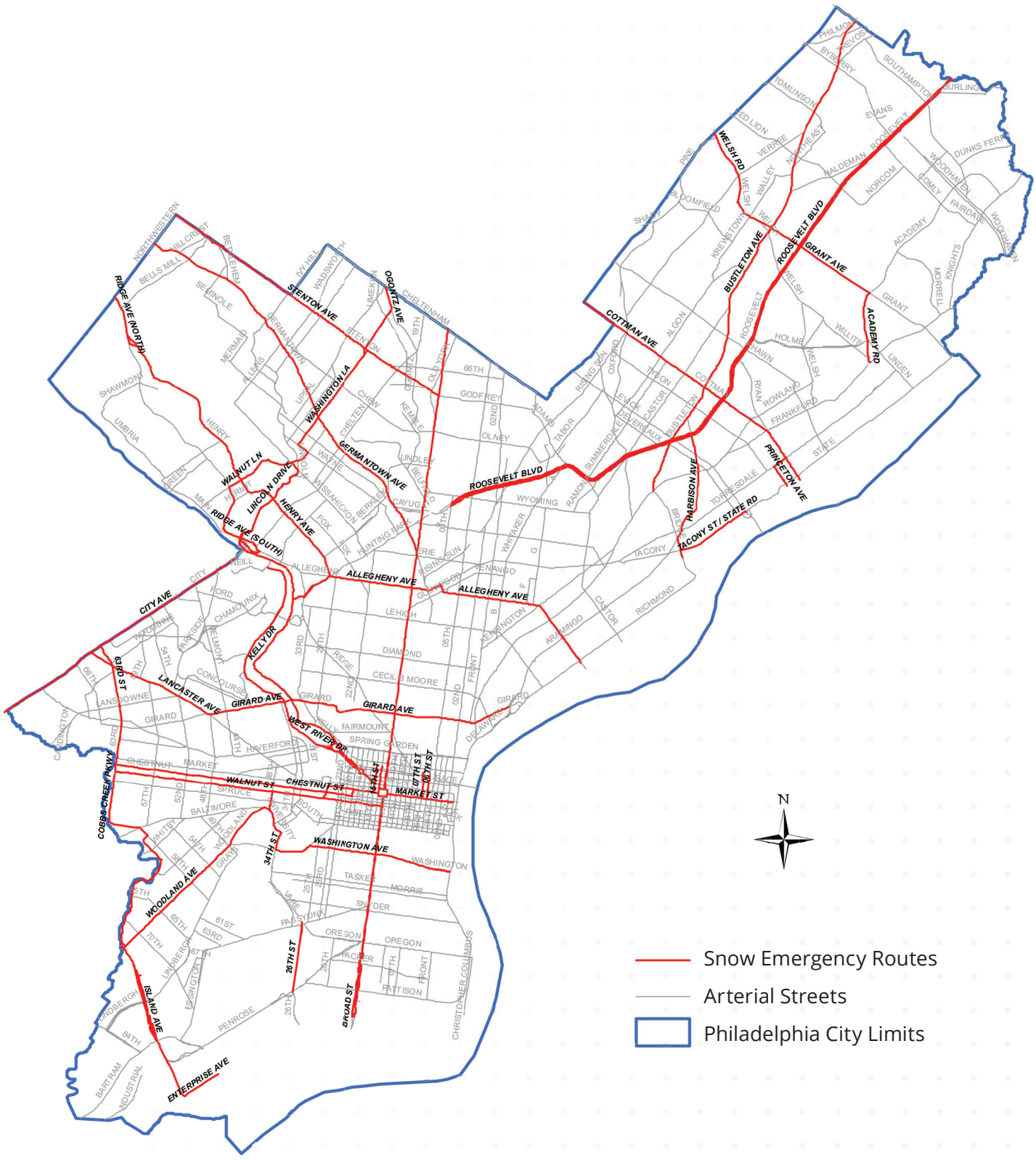
2.5 Record Keeping

Police Department and the Parking Authority personnel will keep records of the location of the relocated vehicles.

2.6 Snow Emergency Routes

Reference Map and Route Table

CITY OF PHIADEPHIA
SNOW EMERGENCY ROUTES



ON	FROM	FROM HUNDRED	TO	TO HUNDRED
06TH ST	I-676 OFF RAMP	300 N	MARKET ST	UNIT BLOCK
07TH ST	MARKET ST	UNIT BLOCK	I-676 ON RAMP	300 N
15TH ST	I-676 OFF RAMP	300 N	MARKET ST	UNIT BLOCK
16TH ST	MARKET ST	UNIT BLOCK	I-676 ON RAMP	300 N
20TH ST	CHESTNUT ST	UNIT BLOCK	MARKET ST	UNIT BLOCK
26TH ST	I-676 ON/OFF RAMPS	2500 S	PENROSE AVE	3800 S
34TH ST	UNIVERSITY AVE	1100 S	GRAYS FERRY AVE	1100 S
38TH ST	WALNUT ST	200 S	UNIVERSITY AVE	200 S
63RD ST	CITY AVE	2100 N	WALNUT ST	100 S
ACADEMY RD	FRANKFORD AVE	9100	GRANT AVE	9400
ALLEGHENY AVE	HUNTING PARK AVE	2900 W	I-95 ON/OFF RAMPS	2800 E
BEN FRANKLIN PKWY	ART MUSEUM CIRCLE	2300	16TH ST	1600
BRIDGE ST	HARBISON AVE	2100	I-95 ON RAMP	2300
BROAD ST	CHELTENHAM AVE	7200 N	I-95 ON/OFF RAMPS	3800 S
BUSTLETON AVE	FRANKFORD AVE	5200	ROOSEVELT BLVD	6300
BUSTLETON AVE	ROOSEVELT BLVD	UNIT BLOCK	COUNTY LINE	UNIT BLOCK
CHESTNUT ST	COBBS CREEK PKWY	6200	20TH ST	2000
CITY AVE	CITY BOUNDARY	7700	I-76 ON RAMPS	3800
COBBS CREEK PKWY	WALNUT ST	200	WOODLAND AVE	2100
COTTMAN AVE	I-95 OFF RAMP	5000	FILLMORE ST	UNIT BLOCK
ENTERPRISE AVE	ISLAND AVE	8400	I-95 ON/OFF RAMPS	8200
GIRARD AVE	LANCASTER AVE	4700W	I-95 ON/OFF RAMPS	800 E
GERMANTOWN AVE	BROAD ST	UNIT BLOCK	NORTHWESTERN	UNIT BLOCK
GRANT AVE	WELSH RD	1300 E	ACADEMY RD	3000 E
GRAYS FERRY AVE	34TH ST	3300	WASHINGTON AVE	2600
HARBISON AVE	BRIDGE ST	5200	ROOSEVELT BLVD	6500
HENRY AVE	CATHEDRAL RD	8500	HUNTING PARK AVE	3000
HUNTING PARK AVE	HENRY AVE	3000 W	KELLY DR	3300
ISLAND AVE	WOODLAND AVE	2200	ENTERPRISE AVE	4000
KELLY DR	LINCOLN DR	4600	ART MUSEUM CIRCLE	2300
LANCASTER AVE	CITY AVE	6300	GIRARD AVE	4800
LINCOLN DRIVE	RIDGE AVE	3600	WISSAHICKON AVE	5900
MARKET ST	SCHUYLKILL AVE	2300	I-95 ON RAMP	100
OGONTZ AVE	WASHINGTON LN	7400	CHELTENHAM AVE	8000
POPLAR ST	WEST COLLEGE AVE	2500	GIRARD AVE	2400
PRINCETON AVE	TORRESDALE AVE	4700	I-95 ON/OFF RAMPS	5000
RIDGE AVE (NORTH)	NORTHWESTERN AVE	9100	CATHEDRAL RD	8600

ON	FROM	FROM HUNDRED	TO	TO HUNDRED
RIDGE AVE (SOUTH)	WALNUT LN	5600	CITY AVE ON RAMP	4500
ROOSEVELT BLVD	09TH ST	800 W	CITY BOUNDARY	16000 E
SCHUYLKILL AVE	MARKET ST	UNIT BLOCK	WALNUT ST	100
SEDGLEY AVE	ALLEGHENY AVE	1000 W	ALLEGHENY AVE	900 W
STENTON AVE	NORTHWESTERN AVE	9600	BROAD ST	1400
TACONY ST/STATE RD	BRIDGE ST	5200	TACONY-PALMYRA BRIDGE	6300
TORRESDALE AVE	COTTMAN AVE	7200	PRINCETON AVE	7100
UNIVERSITY AVE	38TH/39TH ST	300/400	34TH ST	600
WALNUT LN	WAYNE AVE	400 W	RIDGE AVE	500
WALNUT ST	BROAD ST	1400	COBBS CREEK PKWY	6200
WASHINGTON AVE	GRAYS FERRY AVE	2600	CHRISTOPHER COLUMBUS BLVD	UNIT BLOCK
WASHINGTON LN	WAYNE AVE	200 W	OGONTZ AVE	2000 E
WAYNE AVE	WALNUT LN	6100	WASHINGTON LN	6200
WELSH RD	CITY BOUNDARY	UNIT BLOCK	GRANT AVE	1100
WEST COLLEGE AVE	POPLAR ST	900	GIRARD AVE	900
WEST RIVER DRIVE	ART MUSEUM CIRCLE	2300	FALLS BRIDGE	2700
WISSAHICKON AVE	LINCOLN DR	6000	WALNUT LN	6000
WOODLAND AVE	COBBS CREEK PKWY	7200	UNIVERSITY AVE	3800


57 RISING SUN-OLNEY
7461
5619
SEPTA

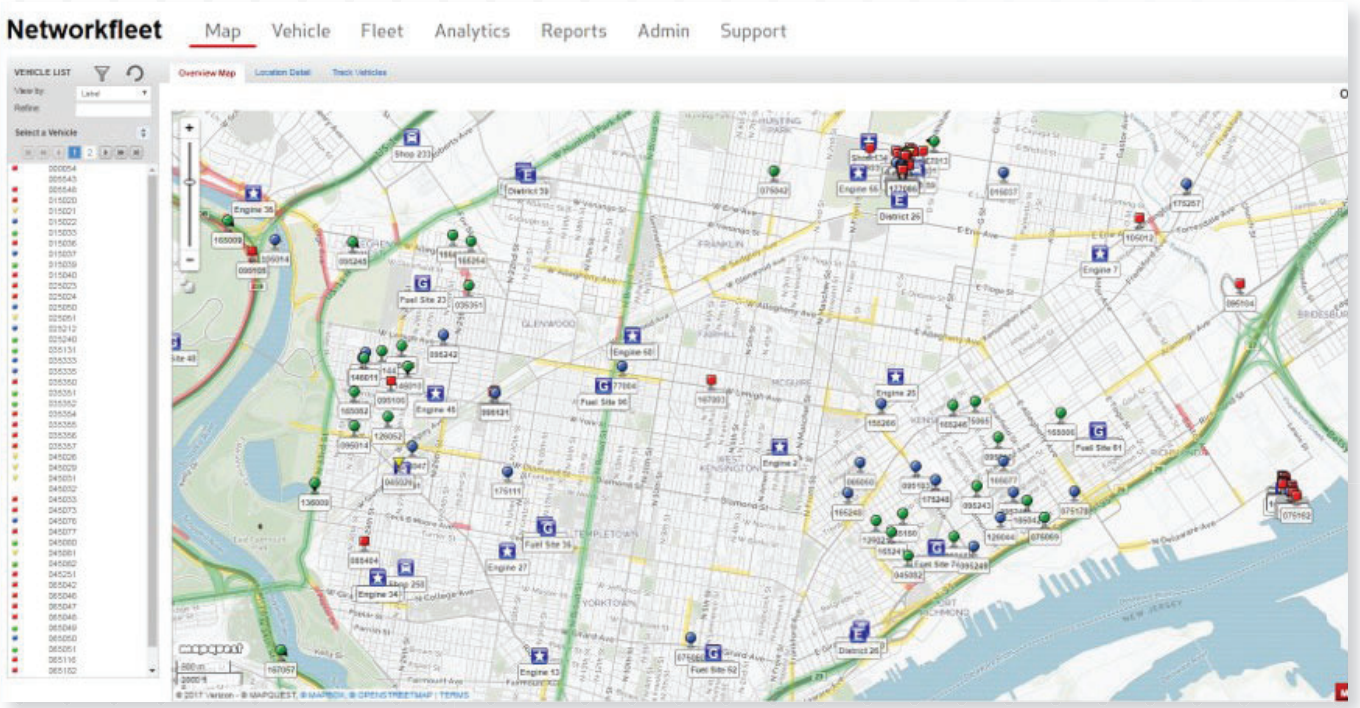
SECTION 3
TECHNOLOGY

NEW TECHNOLOGY TOOLS

GPS Tracking

In 2018, the Streets Department began using GPS in all its snow vehicles (city and contractors). The goal was to integrate the software with operations as a method to track completion of snow routes. Using automated dashboards and real-time reporting, the Department can track the number of times a route has been cleared and record historical information that allow the snow operations teams to review past performance on snow removal and if need be adjust their responses based on the severity of each storm.

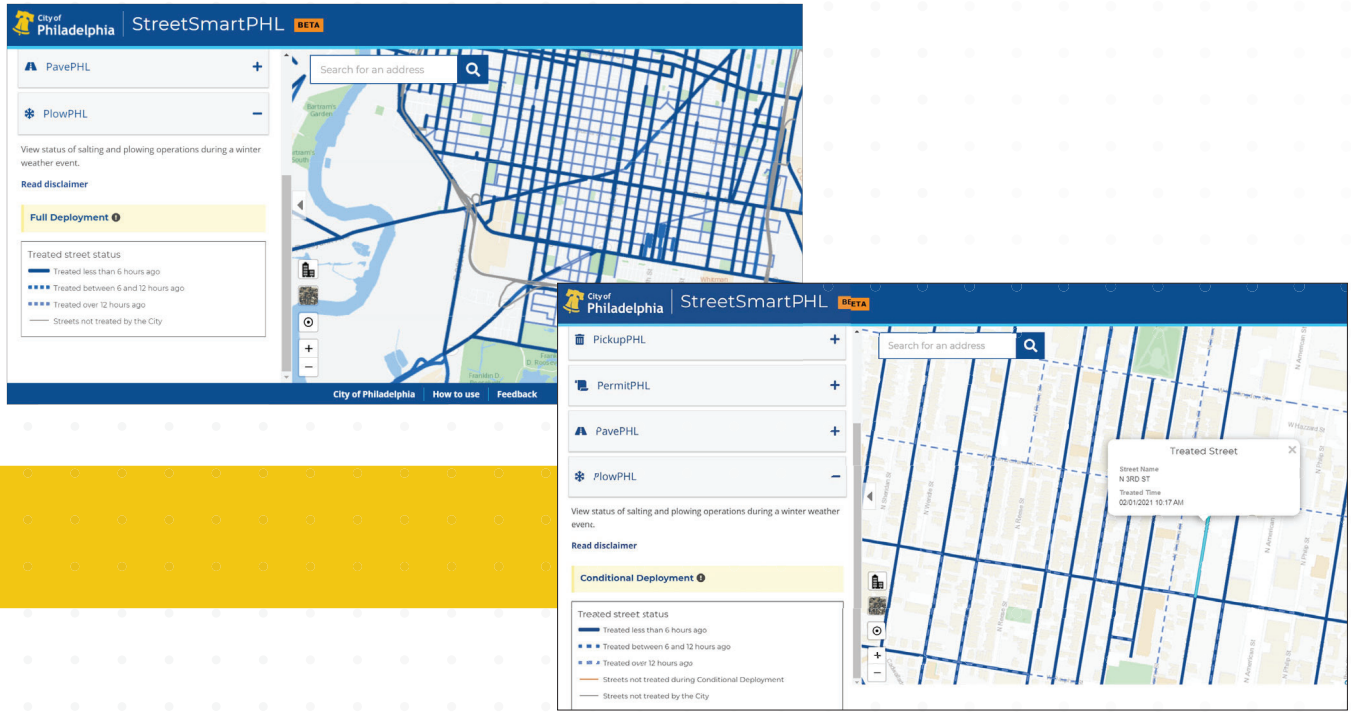
To complement the tracking, Streets Department Field Supervisors and Navigators input three-hour route data updates on run numbers, sequences completed, salt fills and missed location sequences. The data is used to generate a Route Status Map to assess progress. The routes are then inspected and determined if passable.



Cameras

The Streets Department also began using mobile visual monitoring to view snow operations in real-time. Video footage from cameras installed at the Department's Transportation Operations Center, Police Department and PennDOT are used to track and document progress of route completion. The cameras allow "live" visual viewing to determine which streets have already been plowed and which streets may still require snow removal. Visual monitoring provides real-time data of the location of vehicles as they navigate through a storm, and it helps to improve route completion by providing drivers advance warning of any traffic delays and any potential safety hazards on the road.

Each of the tools allow the Snow Operations Teams to provide more effective and efficient service to residents. They also provide valuable insight into how the snow fleets are being used and improves communication between operation teams while out in the field.



PlowPHL

In 2019, the Streets Department unveiled StreetSmartPHL which answers the question, "Are you Street Smart?" by connecting residents and stakeholders to near real-time information related to permits, paving, snow plowing, and trash and recycling collections. The fourth component on the StreetSmartPHL platform is PlowPHL. PlowPHL is a public facing web map designed to provide residents with real-time status of their street during a snowstorm by:

- Tracks vehicles assigned to a route for plowing and salting during a highways, conditional or full deployment
- Map highlights which streets can expect to receive treatment
- Color-coded dashed and continuous lines display how long it has been since the last treatment: less than 6 hours, between 6 and 12 hours, more than 12 hours

SnowCat

As part of its snow operations on residential streets the Streets Department uses skid steers or "SnowCats" as part of its snow operations to service small/narrow streets. The "SnowCats" are also equipped with GPS to provide status updates of treated routes every three hours.

311 Complaints

311 complaints tracked and mapped to determine effectiveness during storms, equipment need and route planning.

SECTION 4
SNOW/PLOW ROUTES

Highway Snow Operations (Map Location)

Go to the Streets Department's Intranet site
http://streetsweb.city.phila.local/

Select "Streets GIS"
http://streetsweb.city.phila.local/streets_gis.html

Select "Divisional Maps"
ftp://streetsweb.city.phila.local/Maps/

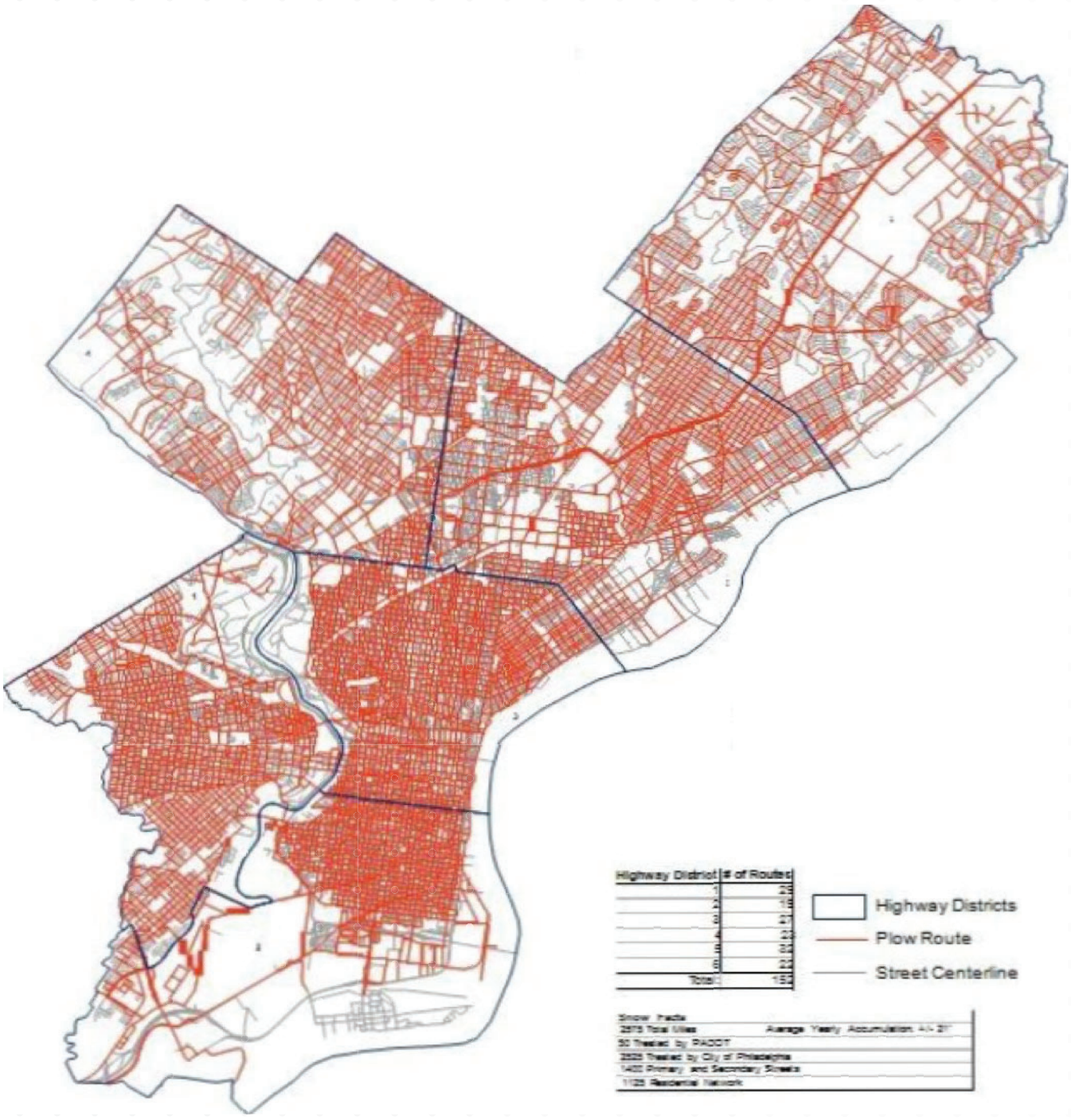
Select "Highways"
ftp://streetsweb.city.phila.local/Maps/Highways/

Select "Snow"
ftp://streetsweb.city.phila.local/Maps/Highways/Snow/

Select "Snow Maps"
ftp://streetsweb.city.phila.local/Maps/Highways/Snow/Snow%20Maps/

Select:
"Directory Overviews"
"Directory Plow Trip Packs"

PRIMARY AND SECONDARY SNOW PLOW ROUTES



SECTION 5
KEY INFORMATION

VISIT PHILADELPHIA®

SECTION 6
RESIDENTIAL STREET SYSTEM

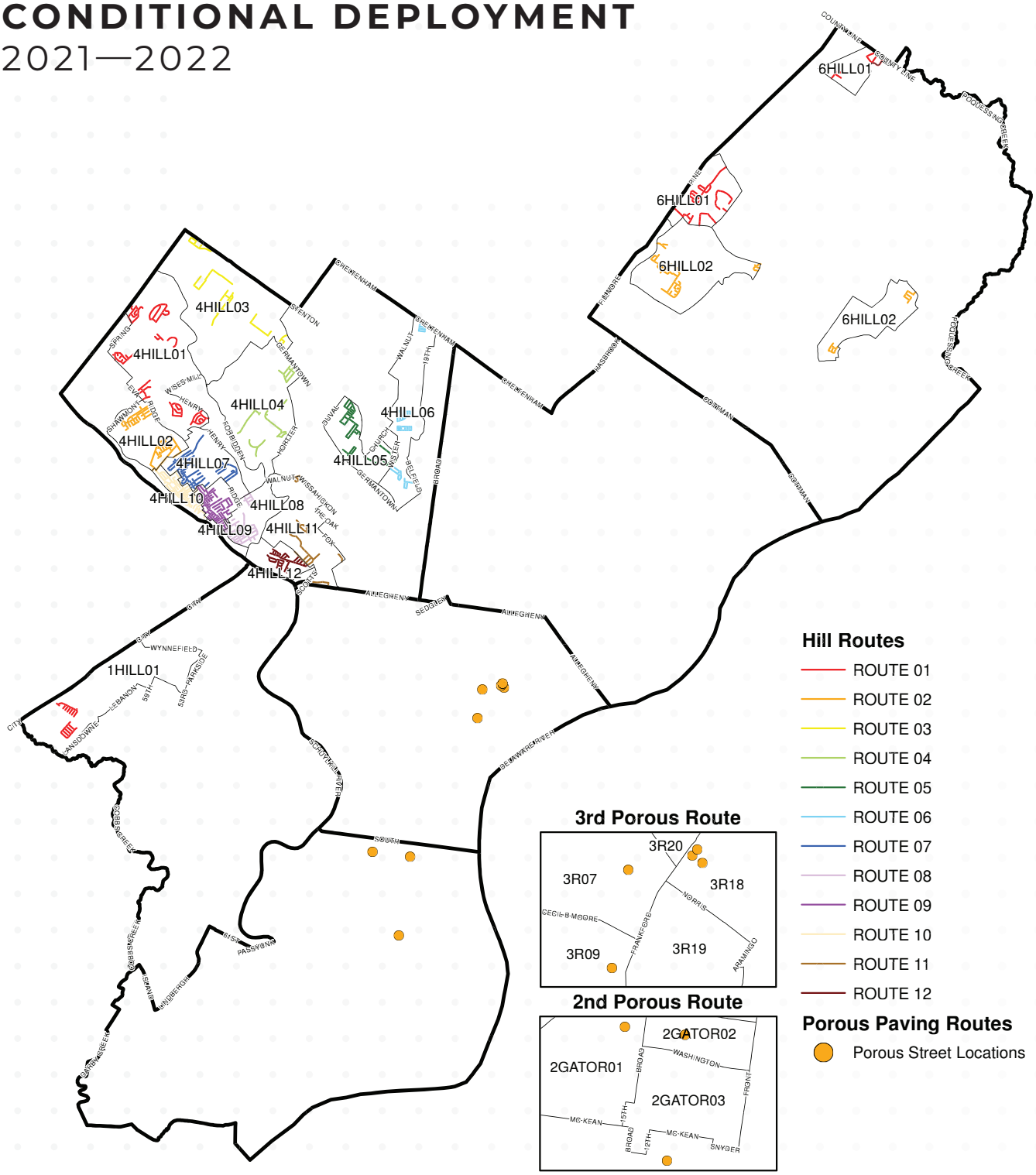
Deployment Maps

- Conditional Hill – Deployment Route Summary
- Conditional Hill – Deployment by Department
- Full – Deployment Route Summary
- Full – Deployment by Department

Office Location & Phone List

Support Departments – Manager Contacts

RESIDENTIAL PLAN CONDITIONAL DEPLOYMENT
2021—2022

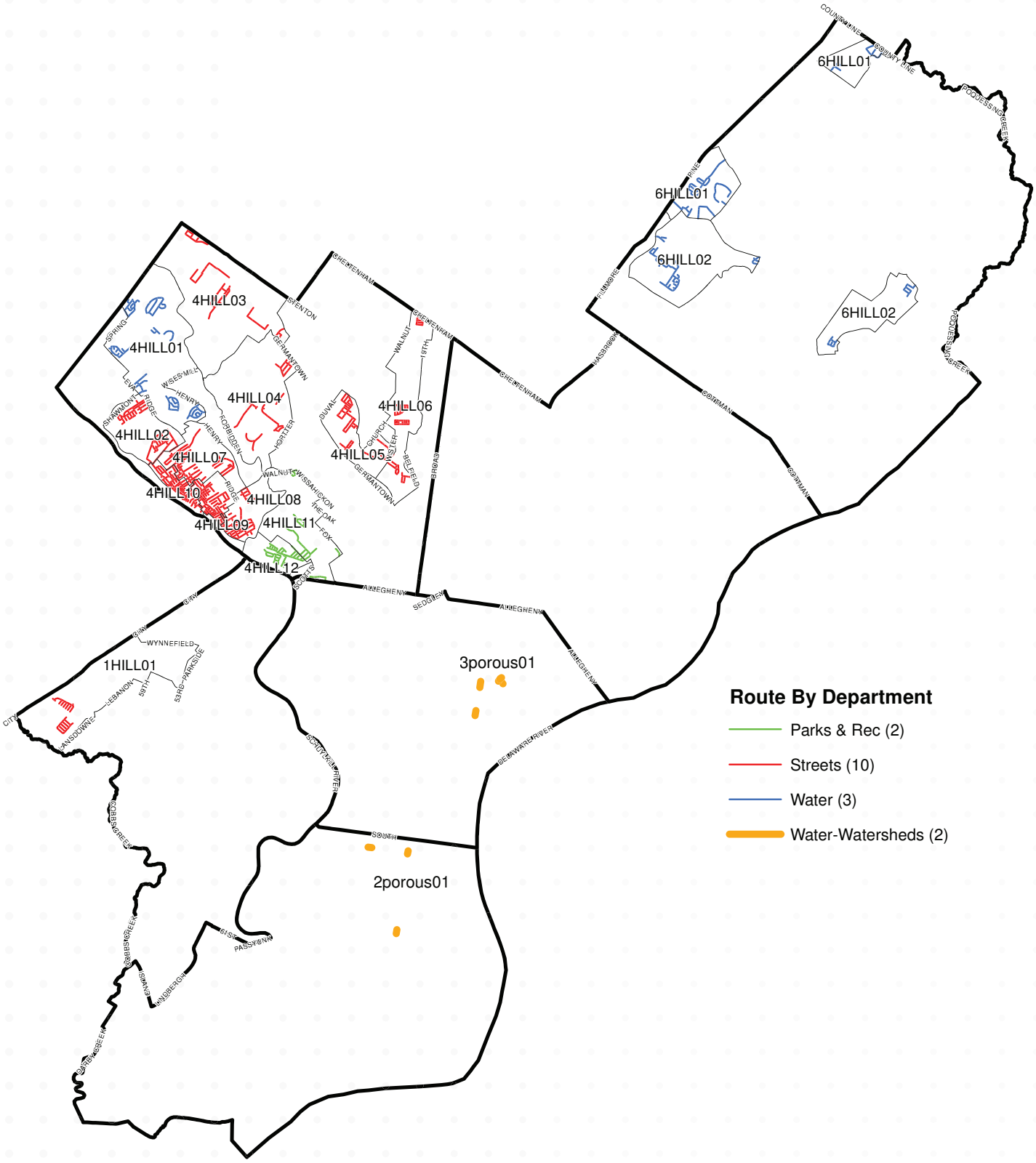


Operaton	District	Deployment	Miles Serviced	
Hill	1st	1 Route	2.42	72.06
	4th	12 Routes	59.53	
	6th	2 Routes	10.11	
Porous Streets	2nd	1 Route	0.18	0.45
	3rd	1 Route	0.27	

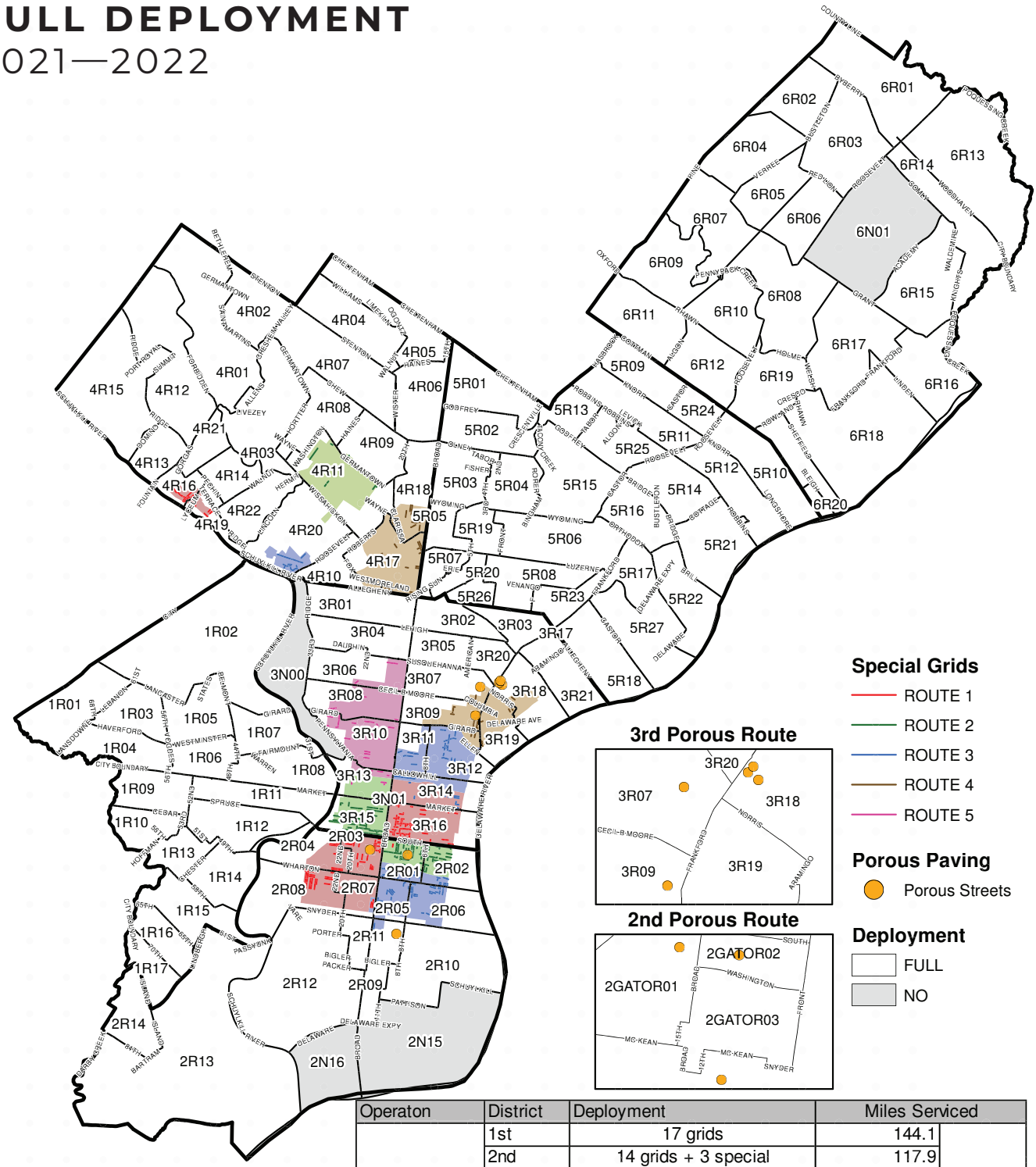
Map Created: 11/19/2021 - MxS

CONDITIONAL DEPLOYMENT BY DEPARTMENT

2021—2022



RESIDENTIAL PLAN FULL DEPLOYMENT
2021—2022

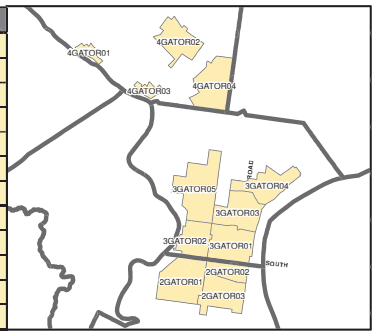


Operaton	District	Deployment	Miles Serviced	
Full	1st	17 grids	144.1	1132.8
	2nd	14 grids + 3 special	117.9	
	3rd	21 grids + 5 special	197.2	
	4th	22 grids + 4 special	206.3	
	5th	27 grids	253.8	
	6th	20 grids	213.5	
	Summary	133 Routes		
Porous Streets	2nd	1 Route	0.18	0.45
	3rd	1 Route	0.27	
	Summary	2 Routes		

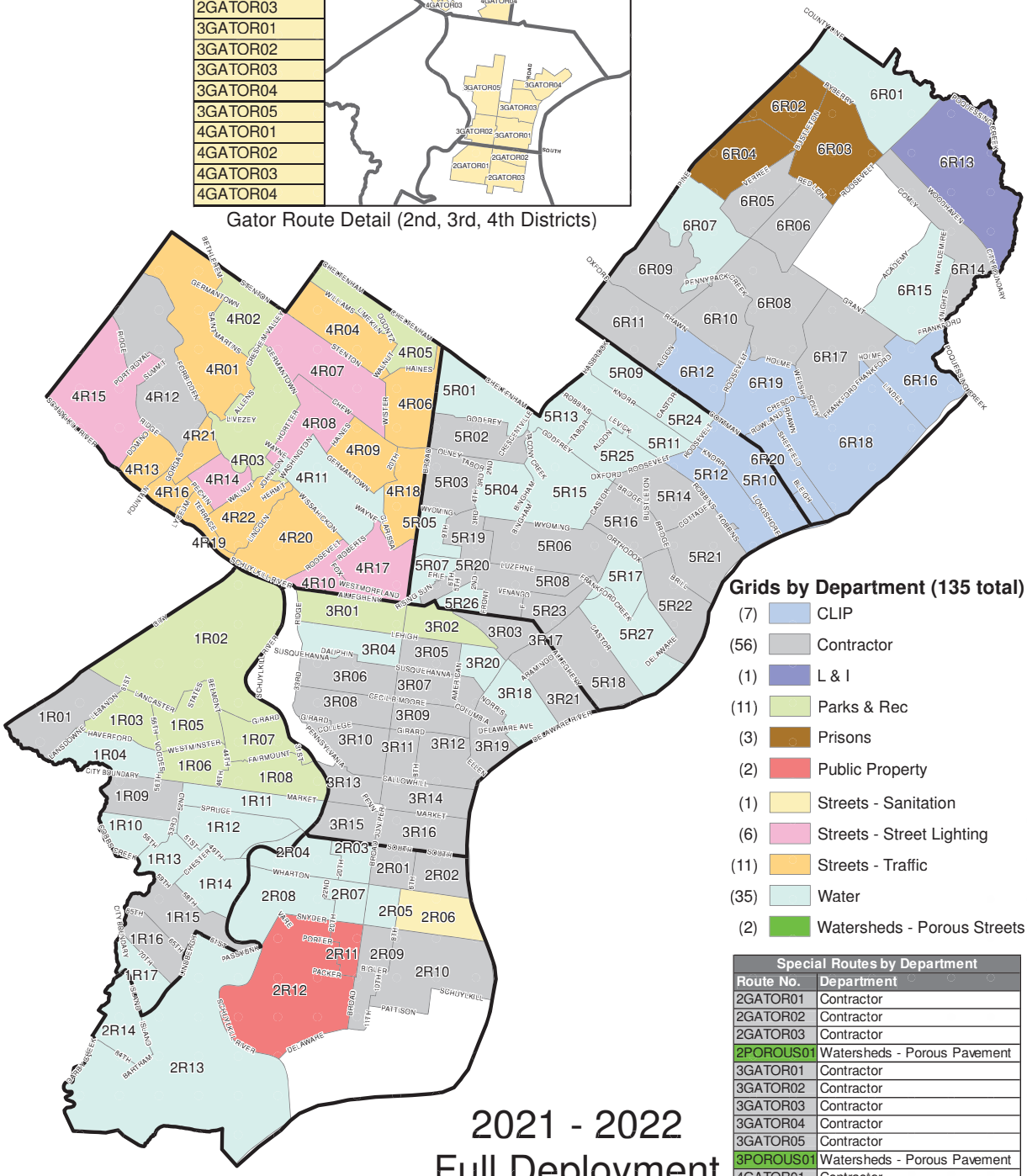
Map Created: 11/22/2021 - MxS

FULL DEPLOYMENT BY DEPARTMENT
2021—2022

Route No.
2GATOR01
2GATOR02
2GATOR03
3GATOR01
3GATOR02
3GATOR03
3GATOR04
3GATOR05
4GATOR01
4GATOR02
4GATOR03
4GATOR04



Gator Route Detail (2nd, 3rd, 4th Districts)



Grids by Department (135 total)

(7)	CLIP
(56)	Contractor
(1)	L & I
(11)	Parks & Rec
(3)	Prisons
(2)	Public Property
(1)	Streets - Sanitation
(6)	Streets - Street Lighting
(11)	Streets - Traffic
(35)	Water
(2)	Watersheds - Porous Streets

Special Routes by Department	
Route No.	Department
2GATOR01	Contractor
2GATOR02	Contractor
2GATOR03	Contractor
2POROUS01	Watersheds - Porous Pavement
3GATOR01	Contractor
3GATOR02	Contractor
3GATOR03	Contractor
3GATOR04	Contractor
3GATOR05	Contractor
3POROUS01	Watersheds - Porous Pavement
4GATOR01	Contractor
4GATOR02	Contractor
4GATOR03	Water Department
4GATOR04	Contractor

2021 - 2022
Full Deployment
By Department

Map Created: 11/22/2021 - MxS

SECTION 7
SNOW LIFTING ACCOUNTING PROCEDURES

SNOW LIFTING RECORDS

In 2021 the Streets Department successfully completed snow lifting operations with city forces. With the success of the existing lifting operations, Streets leadership has decided to continue this practice in the same manner until circumstances are deemed necessary to change. The following steps will be put in place if lifting operations are implemented.

1. Snow Equipment Rental Form (77-298)

a. The District Engineer will be responsible for recording the following information for each piece of equipment assigned to their location.
   1. Highway District
   2 Contractor
   3. Who notified you
   4. Day of the week
   5. Time called
   6. Type of equipment ordered
   7. Operation to be performed by the equipment
   8. Where the equipment is to be assigned

b. The contractor will assign the equipment and the operator as directed by the Streets Department, and record the license number of the equipment, and the name and address of the operator on the 77-298 form. The form will be given to the contractor operator to be used as his assignment and time record.

c. The District Engineer will give the 77-298 form to his inspector assigned to the operation. The inspector will be told to report at the designated time and location for the start of operations. The inspector will sign-in the equipment assigned to him on the 77-298 form, recording the following information:
   1. Equipment license number
   2. Contractor's employee name
   3. Contractor's employee address
   4. Starting time
   5. Phone number

The contractor's operator will indicate on the 77-298 form the Time Started.

d. The inspector will call his District Engineer at hourly intervals and inform him of the progress being made. When the assignment is completed the inspector and the contractor's operator will each note **Time Stopped** on their form.

e. The City of Philadelphia will pay only for the operating time for the contractor's equipment. Stand-by time or lost time will be entered under "Penalty Time" and an explanation of the

cause under "Penalty Remarks". When additional assignments are given to the inspector, he will complete "Location From To" on form 77-298. He will give this information to the contractor's operator, who will note this added assignment on his copy of form 77-298.

f. Whenever the contractor replaces a piece of equipment, or replaces an operator, the contractor will initiate a new form 77-298. The inspector at the worksite will then prepare a new form 77-298 to cover the replacement. Procedures will then proceed as previously outlined.

g. When a form 77-298 is completed, the city inspector will sign his copy and the contractor's operator copy. The inspector's copy of the form will be returned at the end of his tour of duty to his District Engineer.

h. When a form 77-298 is completed, the contractor's operator will sign his copy and the city inspector's copy. The operator's copy of the form will be returned to his employer.

i. The reverse side of form 77-298 can be used for remarks or explanations of unusual situations. On forms 77-298 containing the time record for dump trucks the city inspector will note on the reverse side the following information:
   1. The time the dump truck leaves the work location to unload
   2. The time the dump truck returns to the work location from unloading.

j. When the District Engineer receives the city inspector's forms, his personnel will enter on each line the "Total Working Hours". This is the number of hours at the site (start-finish) less the "penalty time" lost. Appropriate travel time will be added for each piece of equipment.

k. The District Engineer will check the city inspector's form and will then forward them to the Snow Contractor Liaison of Department of Streets. The contractor will use his copies of the form 77-298 to prepare his invoice, in triplicate, will be drawn on the Accounting Division, Office of the Director of Finance, Room 1330 Municipal Services Building, and sent directly to Administrative Office, Highway Division, Department of Streets for pre-auditing. The invoice will contain the following information and will be submitted for each 24-hour period:
   1. Contractor's name and address
   2. Snow Event
   3. Number of pieces, kind and class of equipment in operation
   4. Location of operations, i.e.: streets on which equipment operated
   5. Dates and hours of work at specified rate per hour for
      a. Equipment with operator
         - Regular Time
         - Premium Time
      b. Foreman
         - Regular Time
         - Premium Time
      c. Laborers
         - Regular Time
         - Premium Time
      d. Travel time for equipment only (rate times the standard level travel time allowed)

l. The Snow Contractor Liaison, Highway Division, Department of Streets will summarize

the form 77-298 and prepare a receiving report (form 71-20) in the usual manner for each 24-hour period. The receiving report and supporting form 77-298 will be forwarded to the Accounting Division.

m. Time calculations for equipment and personnel will be based on full 15- minute periods. For example, a piece of equipment operating for 4 hours and 27 minutes will be paid for 4½ hours.

2. Contractor Labor-Snow Emergency Form (77-298)

a. Procedures applicable to "Snow Equipment Rental", form 77-298 are also applicable to "Contract Labor – Snow Emergency", form 77-298 except as indicated below.

b. The contractor's foreman will maintain the contractor's time record for the foreman and the labor crew.

3. The Chief Highway Engineer will terminate Snow lifting operations.

4. This procedure will also be included with the rental of loaders for the salt domes if needed.

SECTION 8
SNOW REMOVAL COST ACCOUNTING PROCEDURE

SNOW AND SALTING COST ACCOUNTING PROCEDURES

A. Purpose

The Purpose of this procedure is to (1) provide a means for determining the cost of plowing and salting city streets and legislative routes within the city street system, and (2) provide a method for allocating these costs to both legislative routes and city streets. Most of this data is kept in the SSIS. Hard copies are not necessary to be kept.

B. Scope

The use of the forms described in this procedure shall apply to ALL agencies involved during snow and salting operations. Since the methods of attaching snow and ice storms vary, the accounting for costs will be compiled separately. The Department of Parks & Recreation shall report to the Department of Streets the cost of plowing and salting the Kelly Drive (Legislative Route #67292).

C. Definitions

1. Light snow requiring only de-icing techniques shall be considered **Salting Operations**
2. Snow operations shall include storms of such magnitude that plowing and de- icing operations are necessary.
3. The Snow Season will extend from October to April of the following year.

D. Cost Accounting Policies

1. The cost of snow emergency headquarters and agencies outside the Department of Streets (other than Department of Parks & Recreation) shall be allocated to snow. Snow headquarters is normally opened when storm conditions require plowing operations. Even though there is preliminary salting, the entire cost will be allocated to Snow Operations. However, if only salting is required, the cost of snow headquarters and that of other agencies will be allocated to Salting Operations.
2. The ratio of State and City costs shall be calculated by comparing the sum of the City and State plow miles in Snow Operations. For salting, the ratio shall be computed by applying the percentage of City and State salt route miles to the tons of salt required for each route. Plow miles and salt route miles shall be the product of the linear mileage and the number of cuts or passes made by the vehicle.
3. For Streets Department, the labor cost will be the actual hourly labor cost for each employee. The vehicle cost will be the average hourly operational cost of a vehicle by type as determined by PennDOT/FEMA. Fleet Managements will supply these costs.

4. Standby time prior to plowing or salting will be charged at the district City - State ratio of the actual storm.
    a. In the event that standby personnel are not used, the cost will be shared in the ratio of existing City-State miles or roadway.
    b. For snow, this ratio shall be City 58.6%, State 41.4%; for salting operations City 66.5%, State 33.5%. These ratios are subject to change when snow and salt routes are revised.

5. The cost of snow removal on legislative routes is not chargeable to PennDOT since $2.5 million is paid to the City on an annual basis for this service.

E. Forms

The following forms will be used in conjunction with this procedure. Instructions for the use of these forms are described in the body of the procedures.

77-307 Rev. 4/71, 77-307A – Report on Snow Plowing/Salting
77-360 = Salting Report

Time and Costing Snow and Salting Operations, formerly recorded on forms 77-308 Rev. 8/98 and 77-308A, are now recorded in the Snowstorm Information System (SSIS), a MS Access database designed by the IT unit of the Streets Department.

F. Snow Operations

All personnel reporting for snow duty will sign in on the approved time sheet for their department or agency. Prior to leaving the yard the inspector will receive Form # 77-307 Rev. 4/71 which will delineate the route.

Each District prior to the snow season will type on Form 77-307 Rev. 4/71 the following information:

1. Legislative route number if the street segment is part of the State highway system.
2. The street that is to be plowed or salted.
3. The “from – to” limits of plowing or salting.
4. The mileage of the street segment.
5. The route number or letter.

The inspector (plowing) or the truck driver (salting) will complete the following items:

6. The date and day of the week.
7. The operation, plowing or salting, day or night
8. Driver’s name
9. Truck number
10. The number of cuts or passes required
11. Time reported for duty
12. Time started plowing/salting
13. Time finished plowing/salting

If the inspector/driver works on more than one route, items (12) and (13) are to be completed for the time spent on the route – **NOT THE TOTAL TIME**. Item (11) is time reported for duty and will not change even though the route may change.

14. Any delays in route
15. Cause of delay
16. The inspector/driver will sign his name to the report

The inspector supervisor in district will calculate item (17) Total Miles plowed for each segment, total all miles plowed and determine the City and State shares, item (18).

19. Will be used during salting operations

The Highway district office will then determine the ratio of City and State plow miles for each route, and by summing the routes, the district ratio.

The time of ALL personnel combating a storm will be accounted for in the SSIS (previously tracked on form 77-308 rev. 8/72).

The District or Area Office completes this information as follows:

1. Organization – 5th Highway, Area 2, Water Department, etc.
2. Condition
3. Date personnel called in and released
4. Time personnel called in and released
5. Employee name
6. Employee number
7. Function – the particular function the person was performing (e.g.: plow driver, inspector plow, auto repair, install chains, etc.)
8. Vehicle number – if applicable
9. Hours – the district office will enter the actual number of hours worked in the appropriate column (regular, time and a half, double time)
10. Vehicle cost – the hourly operating cost multiplied by the operating hours. The Accounting Section will supply these costs.

The Sanitation Area office will complete items #1 through #10.

During severe storms when contractor personnel are called to augment City personnel, it is the responsibility of the Highway District Engineers to ensure that the contractors submit the following necessary information required when invoicing the City:

1. Number of pieces, kind and class of equipment in operation
2. Number of foremen, operators, laborers, regular hours worked, premium hours worked, hourly rates
3. Location of operations (e.g.: streets on which equipment operated)
4. Dates and hours of work at specified hourly rates

At the time invoices are received by Highway District Offices it will be the responsibility of each Highway District Engineer to call and discuss with the Snow Contractor Liaison cost applicable to the State as per existing agreements between the Commonwealth of Pennsylvania and the City of Philadelphia with respect to snow plowing and salting operations.

G. Salting Operations

Since the rate of salt expended on a street varies by such factors as the type of spreader and size and speed of vehicle, the use of miles salted by itself is not an indication of the labor required to complete a route. Therefore, for Salting Operations, the City - State ratio will be used and defined in Section "D".

Personnel called-in to combat an ice storm will sign in on the authorized sign-in sheet for the Highway yard. The streets repair supervisor will issue the salt truck operator Form # 77-307 rev. 4/71, which delineates the route. The equipment operator will complete the form as described under Snow Operations and will note in column (10) the number of passes necessary for each street segment. Upon completion of the route the operator will sign the form and return it to the streets repair supervisor.

The streets repair supervisor will perform the following tasks:

1. Complete SSIS information as described under Snow Plowing for each person in his district.

H. Responsibilities

1. Accounting Section Streets Department
    a. The Accounting Section will determine the average fringe rates to be applied to labor, retrieve PennDOT vehicle rates, and distribute the information to all divisions of the Streets Department.
    b. SSIS will accumulate the cost of each snow and ice storm. The Accounting Section will prepare any cost reports required by PennDOT on a schedule determined by PennDOT.
2. Sanitation Division Streets Department
    a. Each Sanitation District will be responsible for accurately entering all necessary data in SSIS and marking the storm data complete. All data must be in the system within 24 hours of the close of each storm.
    b. Time sheets and supporting data will be kept in the Area office. These will be filed chronologically by date of storm for every snow season. Records will be kept for four (4) years after the snow season.
    c. Sanitation Headquarters will summarize the payroll cost of each storm and submit these costs to the Budget Officer within two (2) days after the storm.

3. Highway District Offices
    a. For Snow Operations the Highway district office will calculate the plow miles for each route on Form # 77-307 rev. 4/71 and determine the City / State ratio for each route and the district as a whole.
    b. For Snow Operations the District Office and Yards will be responsible for accurately entering all necessary data in SSIS and marking the storm data complete. All data must be in the system within 24 hours of the close of each storm.
    c. For Salting Operations, the street repair supervisor will forward form 77-360 and form 77-307 to the office of the Assistant Chief Engineer Maintenance.
    d. After Salting Operations, the office of the Assistant Chief Engineer will be responsible for making sure all data is entered into SSIS and marking the storm data complete. All data must be in the system within 24 hours of the close of each storm and inform the Chief Highway Engineer and the Accounting Officer of the information available.
    e. The Assistant Chief Engineer will submit the report out of the SSIS system

4. Other Agencies
    a. When other agencies are involved in snow or salting operations, they will submit the required SSIS information to the Chief Highway Engineer immediately after the storm. The labor cost for these agencies will be the actual wage rates for the employees assigned to snow duty. SSIS will add fringe benefits and overhead.

CONCLUSION

The system described herein provides a standard system for allocating the cost of snow and salting operations. Deviations from the system will be authorized only when the Chief Highway Engineer, the Accounting Officer and Budget Officer agree to the change.

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