

Drinking Water Revolving Loan Fund State Fiscal Year 2019 Annual Report

**State of Delaware
Department of Health and Social Services
Division of Public Health**

October 14, 2019

*Extension Granted by EPA on September 19, 2019



DELAWARE HEALTH AND SOCIAL SERVICES

Division of Public Health

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I. Introduction

The State of Delaware is pleased to submit the Annual report on the Drinking Water State Revolving Fund (DWSRF) for State Fiscal Year 2019. The report addresses operation of the DWSRF during the time period of July 1, 2018 to June 30, 2019. During that time period Delaware Health and Social Services (DHSS) received a capitalization grant award for the 2018 Federal Fiscal Year allotment.

This comprehensive report is provided to the public and to EPA Region III to detail the activities undertaken to reach the goals and objectives set forth in the Intended Use Plan (IUP) developed for State Fiscal Year 2019. The report documents the status of the program by describing the progress made toward long- and short-term program goals, the sources and uses of all funds, financial status of the DWSRF, and compliance with federal DWSRF requirements.

The report is presented in five major sections. Section II of the report provides a summary of progress made towards reaching long- and short-term goals of the program. Section III reports details on loan and set-aside activities. Section IV provides an overview of financial conditions of the program. Section V reports on compliance with the Operating Agreement and provisions of the federal capitalization grant agreement.

Delaware DWSRF – Overview

State Fiscal Year 2019

Number of Projects (Closed Loans): 12

Project Funding (Closed Loans): \$18,785,300

Total Population Served: 195,226

Average Interest Rate: 2.36%

Average Repayment Period: 20 Years

Small Systems Funded: 6 for \$4,543,200

Disadvantaged Community Loan Funding: 4 for \$3,648,200

II. Goals and Accomplishments

DHSS developed the goals below for the state fiscal year 2019 IUP/2018 Federal Allotment. Long-term goals provide a framework that guides management decisions for the DWSRF program. Short-term goals support the implementation of the program's long-term goals.

A. Progress toward long-term goals

1. Maintain the Drinking Water State Revolving Funds (DWSRF) in perpetuity by judicious use and management of the assets by utilizing an adequate rate of return
 - Although DHSS is committed to assisting those most in need, subsidy and additional subsidy requirements each year, per grant requirements, may have a negative impact of the corpus loan account in the future. DHSS urges EPA to lower subsidy requirements in the future.
2. Target resources and funds to address the most significant public health and compliance problems facing the State's drinking water resources
 - DHSS' priority ranking criteria ensures that the most significant public health needs are addressed.
3. Assist public water systems with achieving affordable compliance and public health protection through DHSS personnel and Set-Aside contracts
 - Continuing contracts with DRWA and DTCC effectively provide affordable 1:1 compliance assistance and public health protection via operator training.

B. Progress toward short-term goals

1. Provide funding to upgrade infrastructure for ten public water systems in Delaware
 - Eight public water systems closed loans with the program during the reporting period. The Town of Blades and the Town of Magnolia were not ready to proceed due to financial/audit issues.
2. Decrease public health risks in drinking water in 2018-2019 for 169,665 Delaware residents
 - Public health risks for 195,226 Delaware residents was decreased.
3. Meet Program Activity Measure of 93% of fund utilization rate, as negotiated with EPA by continuing to encourage expeditious spending with loan recipients and sub-grantees
 - Goal was achieved.
4. Continue to contract with Delaware Rural Water Association (DRWA), to provide technical assistance, training, along with strategies to small and mid-size municipalities to maintain and return to compliance with state and federal regulations
 - Successful contracts with DRWA allow a wide range of activities to happen in Delaware, from operator assistance to the Cover Crop Program.

5. Continue to provide operator education through contracts with Delaware Technical and Community College (DTCC)
 - Successful contracts with DTCC allow a wide range of operator training to occur.
6. Continue to offer financial training and 1:1 assessments through a contract with Kash Group LLC
 - 1:1 financial training and sustainability assessments were performed with DWSRF applicants, with small municipalities as the priority. The assessments are now an integral part of financial reviews.
7. Continue to hold quarterly meetings with Set-Aside recipients to monitor activity progress and evaluate expeditious spending
 - Quarterly meetings were held. Please refer to semi-annual reports for details.
8. Ensure borrowers are following cross-cutter requirements on construction projects
 - DHSS makes every effort to ensure borrowers are following cross-cutter requirements.
9. Continue to track the Drinking Water to Clean Water Transfer with EPA assistance
 - Ongoing, please see Appendix B for details. Table 3 details the Transfer account.
10. Utilize Set-Aside funds as outlined in the Work Plan
 - Goal was accomplished as intended through contracts and program activity
Please refer to the Set Aside Reports for further details.
11. Manage the Non-Fed Admin account judiciously
 - Ongoing
12. Provide improved evaluation and assistance on DWSRF applications to ensure that applicants meet technical, managerial, and financial capabilities in accordance with the SDWA
 - DHSS is meeting this goal through the Kash Group LLC contract.
13. Provide Cover Crop funds, per EPA's Ag Strategy recommendations, to the Sussex County Conservation District
 - https://www.epa.gov/sites/production/files/2019-07/documents/2018_annual_report_with_ais_addendum-july_2019_final-508_version.pdf
 - The Cover Crop program was a success in Sussex County. More specific details can be provided per EPA request.
14. Explore funding chloride monitors (salt water intrusion indicators) in coastal community wells/community water system
 - Assessments are ongoing.
15. Implement two new technologies in the UIC program: EQuIS and 'Tracer'
 - Implementation is in progress. Please refer to the Set Aside Reports for further details.

16. PER Action Items

1. Fund Lead Service Line Replacement projects with available unused 'Additional Subsidy' dollars as identified with EPA Region 3 assistance
 - o DHSS chose not to fund Lead Service Line Replacement projects this year as federal guidance was confusing, hard to implement, and could be a liability for the Department/State. DHSS is committed to learning how other states in the region implemented the program at the 2020 All States Meeting.
2. Maintain open communication and assistance as needed to DNREC for timely and accurate DWNIMS reporting
 - o Communication improved greatly between programs due to a change in leadership (administrator) of Environmental Finance mid-way through the reporting period.
3. Review the Operating Agreement between DHSS and DNREC to identify opportunities to improve PACE and close loans in a more timely fashion
 - o As of Friday, October 4th, the Operating Agreement that was sent to DNREC upper level management has not been amended per DHSS suggestions. During discussions, numerous barriers were raised that blocked any meaningful discussion of any Operating Agreement amendments. DPH is working with DHSS leadership to pursue additional conversations to gauge support at the Cabinet level. DHSS is happy to discuss further at EPA's next on-site visit.

III. DWSRF Loan and Set-Aside Activities

Detailed discussion of the DWSRF assistance activities during state fiscal year 2019 is provided in this Section; including sources of funding, status of loan activities, and the status of set-aside activities.

Equivalency

DHSS considers all projects on Project Priority Lists as equivalency projects. This is less confusing for borrowers with multiple projects, provides ease of use with Cross Cutters, and is easily reported.

Table 1 provides information about the sources and uses of DWSRF funding. Table 1 shows all sources of DWSRF funds available in state fiscal year 2019. Table 1 shows the binding commitments, work plan commitments, and administrative funding commitments made for the year. Table 1 shows actual DHSS disbursements for the state fiscal year. In accordance with the Operating Agreement all disbursements are handled by DNREC's Environmental Finance.

A. Sources of DWSRF funding

The funding available for the DWSRF program in this reporting period totaled \$22,697,393. (See Figure 1)

Capitalization Grants

EPA awarded DHSS \$11,107,000 in federal capitalization grants.

State Match

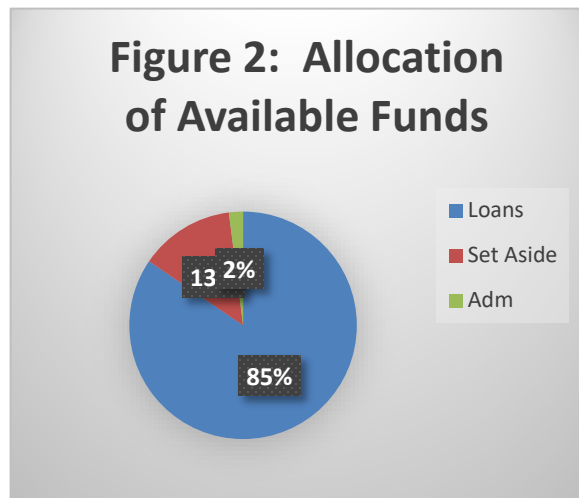
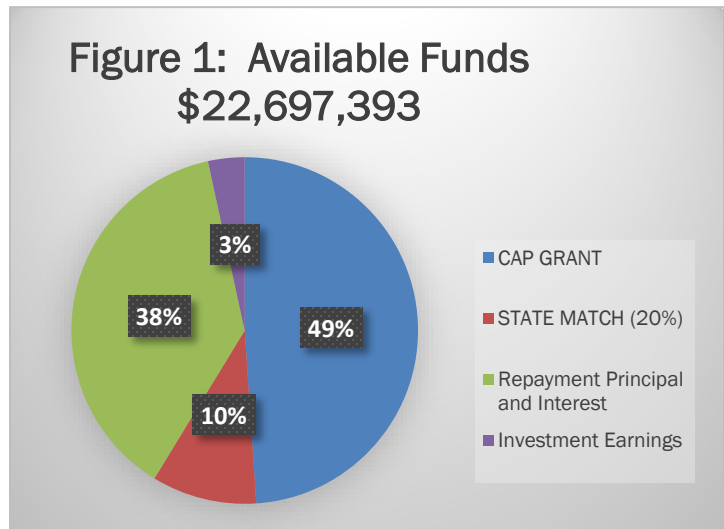
The State of Delaware provided \$2,221,400 as the required 20% state match for the state fiscal year. The state match was provided from the 2019 State Bond Bill.

Investment Earnings

The DWSRF received \$773,882 in Investment earnings on investments in this reporting period.

Repayments

DHSS received \$8,595,111 in repayments during the state fiscal year 2019.



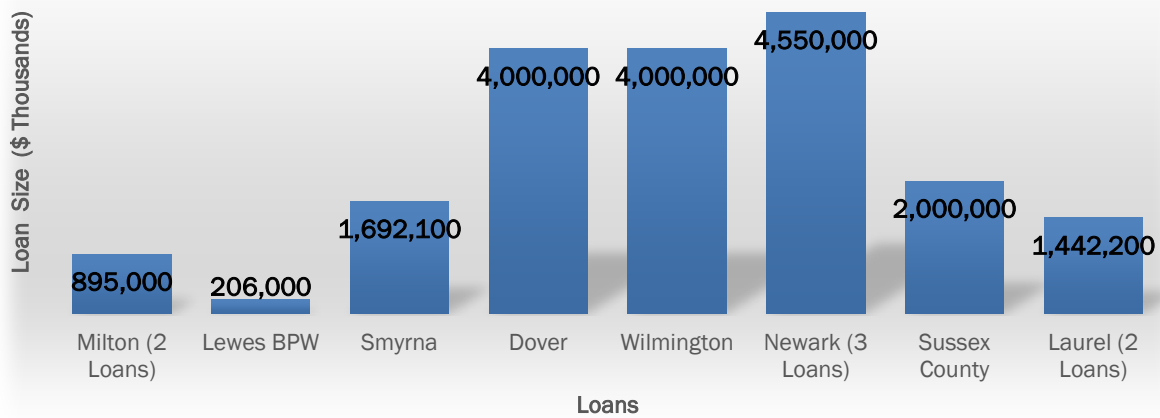
B. Uses of DWSRF Funds

The DWSRF provided \$18,785,300 in loans to public water systems (See Figure 2). The program committed \$3,443,170 in set-aside assistance to technical assistance providers, Division of Public Health, and DNREC for set-aside activities.

Loan Assistance Status

The DWSRF entered into loan agreements with eight public water systems totaling \$18,785,300 in this reporting period. The loans range in size from \$206,000 to \$4,000,000. (See Figure 3) The loan term for loans are 10 or 30 years, with an average interest rate of 2.36%. The water systems receiving loans serve 195,226 people. (See Figure 4) Four disadvantaged communities received a loan for \$3,648,800 with average interest of 2.60% and received 100% principal forgiveness. (See Figure 5) The fund has disbursed \$5,363,727 in DWSRF loans.

Figure 3: Distribution of Loans by Loan Size



Binding Commitments

DHSS obligated 57.5% of all available loan funds to projects. This utilizes 140.9% of the 2018 capitalization grant loan funds. Table 2 lists new loan agreements for this reporting period and provides a brief description of each project.

Project Bypass

The following projects were withdrawn:

Town of Blades PFOA and PFOS removal, the project was bypassed because State funds were used.

Town of Magnolia Lead service line replacement, the project pending, considering use of State funds.

City of Milford Lead Service Line Replacement, the project was bypassed due to liability issues when working on private property. Project will be reconsidered pending review of other Region 3 State's BMP's at the 2020 All States Conference.

Figure 4: Distribution of Loan Dollars by Population Served

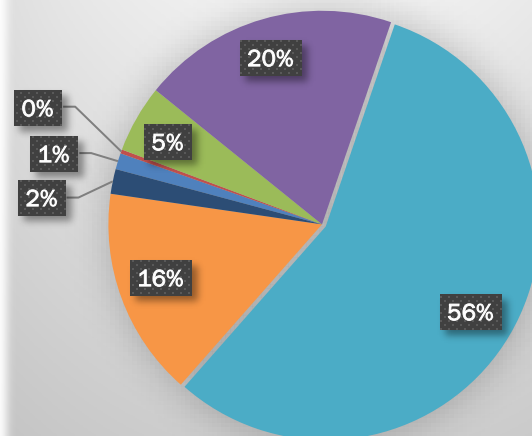


Table 1: DELAWARE DRINKING WATER STATE SOURCES AND USES OF FUNDS - Through			
SOURCE OF FUNDS	CUMULATIVE AS OF 6/30/18	DWSRF REVENUE AMOUNTS SFY 2019	CUMULATIVE AS OF 6/30/19
SDWA CAP. GRANT	\$202,078,729	\$11,107,000	\$213,185,729
STATE MATCH (20%)	\$34,174,499	\$2,221,400	\$36,395,899
Repayment Principal and Interest	\$59,404,560	\$8,595,111	\$67,999,671
Investment Earnings	\$3,792,152	\$773,882	\$4,566,034
Grant Amount Transferred to CW	-\$27,050,177		-\$27,050,177
State Match Transferred to CW	-\$5,410,035		-\$5,410,035
Sub-Total Sources	\$266,989,728	\$22,697,393	\$289,687,121
Detail Sources Amounts Allocated to Set-Asides/Projects			
Technical Assistance (2%)	\$2,950,767	\$222,140	\$3,172,907
1452 (G) (2) - (10%)	\$16,691,525	\$1,110,700	\$17,802,225
1452 (K) - (15%)	\$19,131,666	\$1,666,050	\$20,797,716
Administration (4%)	\$7,330,578	\$444,280	\$7,774,858
Total Set-Asides	\$46,104,536	\$3,443,170	\$49,547,706
Cumulative Amount Available for Projects	\$220,885,192	\$19,254,223	\$240,139,415
PROJECT USES OF FUNDS			
Less Cumulative Amount of Assistance Provided (Including	\$191,819,169	\$18,785,300	\$210,604,469
Loans issued Binding Commitments in FY19 but not settled		\$10,739,858	\$10,739,858
2019 PPL Remaining Loans		\$9,396,584	\$9,396,584
DWSRF Project Funding			\$230,740,911
Unobligated DWSRF Project Funding Available			\$9,398,504
SET-ASIDE USES OF FUNDS	CUMULATIVE AS OF 6/30/18	Actual Expenses in SFY 2019	CUMULATIVE AS OF 6/30/19
Less Cumulative 2% Amount of Set-Aside Expenditures	\$2,766,618	\$202,969	\$2,969,587
Less Cumulative 4% Amount of Set-Aside Expenditures	\$6,565,255	\$322,726	\$6,887,981
Less Cumulative 10% Amount of Set-Aside Expenditures	\$15,360,426	\$918,257	\$16,278,683
Less Cumulative 15% Amount of Set-Aside Expenditures	\$17,974,535	\$1,251,142	\$19,225,677
			\$45,361,928
Unobligated DWSRF Set-Aside Funding Available			\$4,185,778

Table 2: 2018 DWSRF Ready to Proceed PPL

Year	Score	Rank	Applicant	Project Title	Project Description	County	Population	PWSID#	DWSRF Loan Requested	Anticipated Subsidy*
2018	820	1	Sussex County	Winding Creek Village	Establishment of a water district	Sussex	300	n/a	\$2,000,000	\$2,000,000
2018	755	2	Tidewater Utilities	Town of Cheswold	distribution expansion to include Old Town Cheswold and private wells	Kent	TBD	DE0000004	\$325,000	\$325,000
2018	750	3	Town of Blades	PFOA&PFOS Removal	installation of GAC treatment to remove PFOA&PFOS and providing public water to contaminated private wells	Sussex	1,200	DE0000865	\$3,304,506	\$3,304,506
2018	485	4	City of Wilmington	Water Distribution Mains	Main upgrades throughout the City	New Castle	99,000	DE0000663	\$5,000,000	
2018	480	5	Town of Smyrna	East Commerce St	Main upgrades on E Commerce St	Kent	11,371	DE0000657	\$1,466,764	
2018	475	6	City of Newark	South Wellfield Water Treatment Plant Upgrades	Upgrades to existing water treatment plant	New Castle	30,897	DE0000630	\$3,000,000	
2018	450	7	City of Newark	Laird Tract Well Field Restoration	Construction of new supply configuration to restore Laird Tract wells	New Castle	30,897	DE0000630	\$1,925,000	
2018	425	8	City of Newark	Water Main Replacement	Main upgrades including lining and replacement throughout the City	New Castle	30,897	DE0000630	\$4,000,000	
2018	415	9	Town of Magnolia	Lead Service Line Replacement	Lead service line replacement throughout Town	Kent	235	DE0000610	\$1,400,000	**
2018	380	10	City of Milford	Lead Service Line Replacement	Main upgrades focusing on lead service line replacement	Kent/Sussex	11,394	DE0000616	\$900,000	\$900,000
2017	335	11	Town of Laurel	Phase 3 Transite Water Main Replacement	Replacement of transite (asbestos) distribution throughout town	Sussex	3,668	DE0000597	\$1,594,460	
2017	335	12	Town of Laurel	W 7th Street Distribution System Improvements	Replacement of undersized and antiquated water mains along W 7th St	Sussex	3,668	DE0000597	\$500,000	
2018	255	13	City of Newark	SCADA System	Development of SCADA system	New Castle	30,897	DE0000630	\$555,000	
2018	145	14	City of Newark	Water Tank Maintenance	Rehabilitation of storage tanks throughout the City, including lead paint removal	New Castle	30,897	DE0000630	\$2,250,000	
DE										\$486,291
Total									\$28,220,730	\$4,690,797

Funded Projects

City of Wilmington

Rank: 1 on 2014 PPL

Project Name: Main upgrades Phase 3 of 3

Score: 844

Project Description: Upgrades to distribution and transmission lines throughout the City

Population: 110,000

Project Cost: \$4,000,000

Interest Rate: 2.394%

Binding Commitment Date: 10/9/18

Loan Closing Date: 12/27/18

Subsidies: \$0

Disadvantaged Community: No

Public Health Benefit: replacement of antiquated and undersized mains, fewer service disruptions, and decreased public health risk due to back-siphonage.

Town of Milton

Rank: 7 on 2017 PPL

Project Name: Wagamon's Main Extension

Score: 410

Project Description: Installation 1,623 Linear feet of water main to redundancy and water system resiliency

Population: 2,400

Project Cost: \$395,000

Interest Rate: 2%

Binding Commitment Date: 7/27/18

Loan Closing Date: 12/14/18

Subsidies: \$0

Disadvantaged Community: No

Public Health Benefit: Reduces potential system contamination, improves fire suppression, and provides redundancy for southern section of water services.

Town of Milton

Rank: 8 on 2017 PPL

Project Name: Shipbuilders Well and Treatment Upgrades

Score: 340

Project Description: Installation of a new production well, a smaller treatment building, and treatment and flow monitoring equipment

Population: 2,400

Project Cost: \$500,000

Interest Rate: 2%

Binding Commitment Date: 7/26/18

Loan Closing Date: 12/14/18

Subsidies: \$0

Disadvantaged Community: No

Public Health Benefit: Reduces potential system contamination and provides redundancy for water supply.

Lewes Board of Public Works

Rank: 5 on 2017 PPL

Project Name: Abbotts Park

Score: 500

Project Description: Installation of drinking water mains to serve Abbott Park

Population: 60

Project Cost: \$206,000

Interest Rate: 2.3%

Binding Commitment Date: 7/27/18

Loan Closing Date: 11/16/18

Subsidies: \$206,000

Disadvantaged Community: Yes

Public Health Benefit: Reduces potential system contamination, reliable water service to community, better access to water systems for repairs, and provides fire suppression to the community.

Update: Lewes Board of Public Works withdrew their application on 9/26/19. No draws were made. Subsidies listed here will be applied to the 2019 PPL and reported in the 2020 Annual Report.

Town of Smyrna

Rank: 4 on 2017 PPL

Project Name: South Main Street Utility Replacement

Score: 525

Project Description: Upgrades to drinking water distribution system

Population: 10,001

Project Cost: \$1,692,100

Interest Rate: 2%

Binding Commitment Date: 7/30/18

Loan Closing Date: 12/19/18

Subsidies: \$0

Disadvantaged Community: No

Public Health Benefit: replacement of antiquated and undersized mains, fewer service disruptions, and decreased public health risk due to back-siphonage.

City of Dover

Rank: 10 on 2017 PPL

Project Name: Treatment Plant Upgrades

Score: 285

Project Description: Upgrade treatment process in the drinking water plant

Population: 38,000
Project Cost: \$4,000,000
Interest Rate: 2.3%
Binding Commitment Date: 8/6/18
Loan Closing Date: 11/16/18
Subsidies: \$0
Disadvantaged Community: No
Public Health Benefit: Decreases public health risk by optimizing disinfection and other chemical treatment processes.

City of Newark

Rank: 6 on 2018 PPL
Project Name: South Wellfield Water Treatment Plant Upgrades
Score: 475
Project Description: Upgrades to existing water treatment plant
Population: 30,897
Project Cost: \$
Interest Rate: 2.489%
Binding Commitment Date: 1/18/19
Loan Closing Date: 2/28/19
Subsidies: \$0
Disadvantaged Community: No
Public Health Benefit: Reduces potential system contamination and provides redundancy for water supply.

City of Newark

Rank: 8 on 2018 PPL
Project Name: Water Main Replacement
Score: 425
Project Description: Water main replacement throughout the City
Population: 30,897
Project Cost: \$
Interest Rate: 2.489%
Binding Commitment Date: 1/18/19
Loan Closing Date: 2/28/19
Subsidies: \$0
Disadvantaged Community: No
Public Health Benefit: replacement of antiquated and undersized mains, fewer service disruptions, and decreased public health risk due to back-siphonage

City of Newark

Rank: 13 on 2018 PPL
Project Name: SCADA System
Score: 255

Project Description: Installation of SCADA system
Population: 30,897
Project Cost: \$550,000
Interest Rate: 2.489%
Binding Commitment Date: 1/18/19
Loan Closing Date: 2/28/19
Subsidies: \$0
Disadvantaged Community: No
Public Health Benefit: Provides emergency alerts to water operators for storage and chemical feed, also modernizes treatment and system monitoring.

Sussex County – Winding Creek Village

Rank: 1 on 2018 PPL
Project Name: Winding Creek Village
Score: 820
Project Description: Establishment of a water district, installation of a public water system to remediate salt water and nitrate intrusion on private wells
Population: 300
Project Cost: \$2,000,000
Interest Rate: 2.831%
Binding Commitment Date: 1/29/19
Loan Closing Date: 5/17/19
Subsidies: \$2,000,000
Disadvantaged Community: Yes
Public Health Benefit: Installation of a public water system to remediate salt water and nitrate intrusion on private wells

Town of Laurel

Rank: 9 on 2017 PPL
Project Name: W 7th Street Upgrades (tie)
Score: 300
Project Description: Distribution upgrades along W 7th Street
Population: 3,668
Project Cost: \$501,246
Interest Rate: 2.641%
Binding Commitment Date: 12/11/18
Loan Closing Date: 6/10/19
Subsidies: \$501,246
Disadvantaged Community: Yes
Public Health Benefit: replacement of antiquated and undersized mains, fewer service disruptions, and decreased public health risk due to back-siphonage

Town of Laurel

Rank: 9 on 2017 PPL

Project Name: Phase 3 Transite Replacement (tie)

Score: 300

Project Description: Replacement of transite (asbestos) water mains throughout the Town

Population: 3,668

Project Cost: \$940,954

Interest Rate: 2.641%

Binding Commitment Date: 12/11/18

Loan Closing Date: 6/10/19

Subsidies: \$940,954

Disadvantaged Community: Yes

Public Health Benefit: replacement of antiquated and undersized mains, fewer service disruptions, and decreased public health risk due to back-siphonage, and elimination of asbestos in the water system.

Small Systems

In the IUP for 2018, DHSS planned to commit a total of \$21,923,511 to loans for small systems. This represents 20.72% of the funding available during the reporting period. Six small systems: the Town of Milton (2 Loans), Town of Smyrna, Lewes of Public Works, and Town of Laurel (2 Loans), received \$4,543,200 in loans.

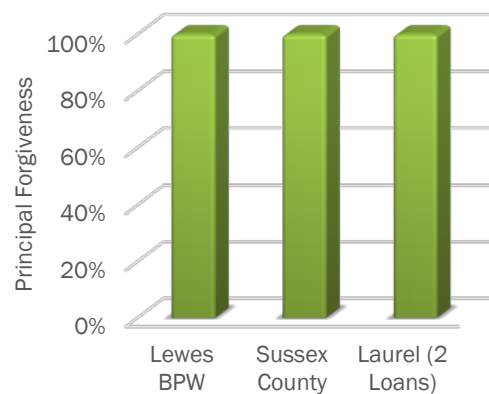
Disadvantaged Community Systems

In the State Fiscal Year 2018 IUP, DHSS planned to commit \$9,123,966 for disadvantaged communities. Sussex County, Lewes Board of Public Works, and the Town of Laurel met disadvantaged community criteria. Sussex County was loaned \$2,000,000 with 2.831% interest and 100% principal forgiveness. Lewes Board of Public Works was loaned \$206,000 with 2.300% interest and 100% principal forgiveness. Town of Laurel was loaned \$1,442,200 with 2.641% interest and 100% principal forgiveness. Please refer to the Funded Projects section above and PBR for details.

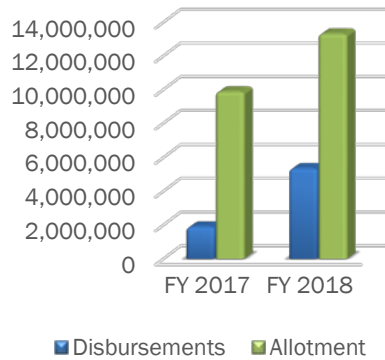
Disbursements

DHSS has disbursed \$138,970,975 (63.3%) of all available loan funds and 59.9% of all committed funds. \$5,363,727 (40.2%) has been disbursed of the 2018 capitalization grant.

Figure 5: Distribution of Disadvantaged Community Binding Commitments by Subsidy



**Figure 6:
Disbursement of
Allotted Loan Funds**

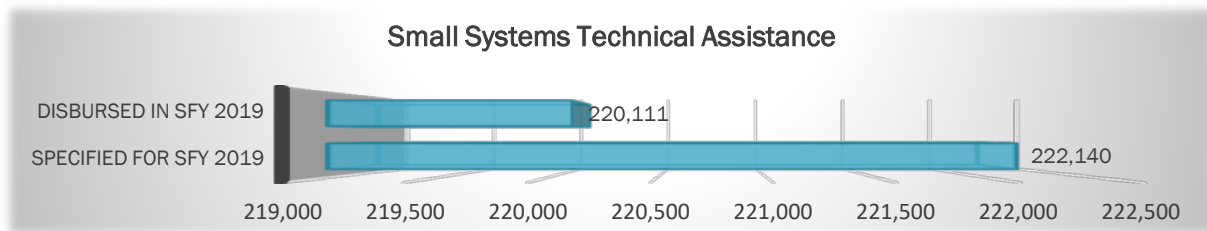


Set-Aside Activity Status

DHSS developed and submitted bi-annual performance status reports for DWSRF-funded activities in state fiscal year 2019. The following pages provide an overview of set-aside activities in the last year. A bar chart showing set-aside funding status accompanies the description of each set-aside activity. This chart shows dollars specified in the 2017 Work Plan and dollars actually disbursed in state fiscal year 2018.

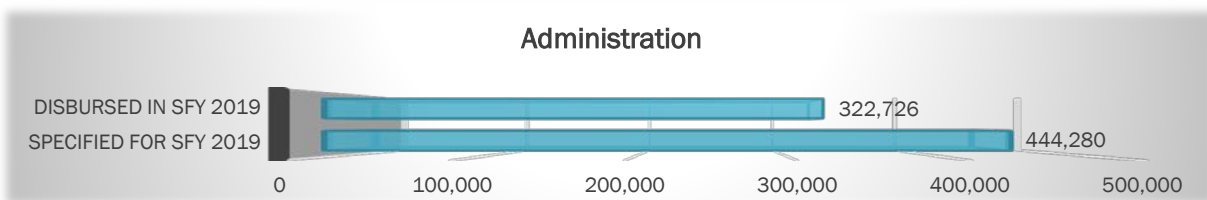
Set-Aside: Small Systems Technical Assistance (2%)

DWSRF have entered into contracts with two assistance providers, the Delaware Rural Water Association (DRWA) and Delaware Technical and Community College (DTCC).



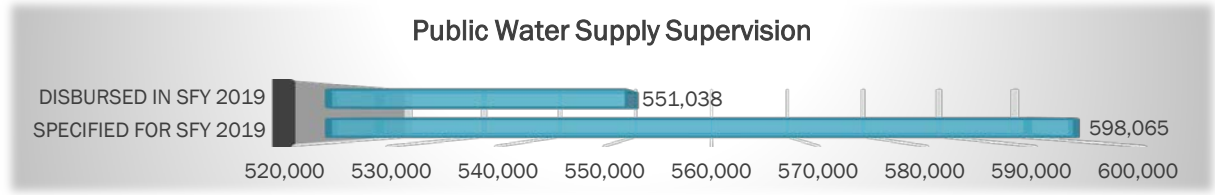
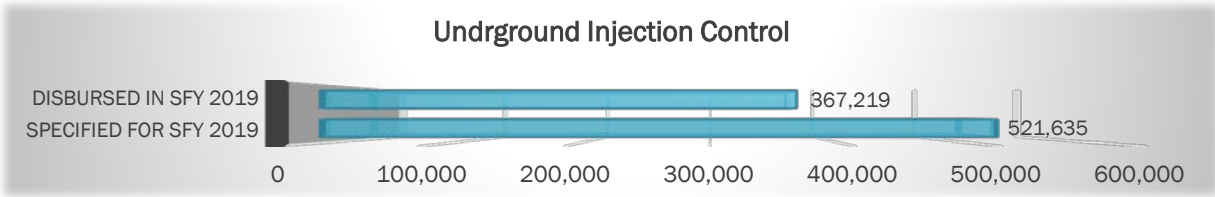
Set-Aside: Administration (4%)

Funds from this set-aside paid salaries and associated expenses of personnel administering the DWSRF program. Program administration of the DWSRF has required the work of 4.85 FTEs.



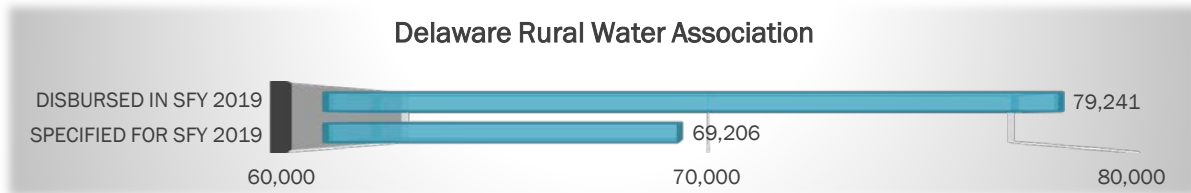
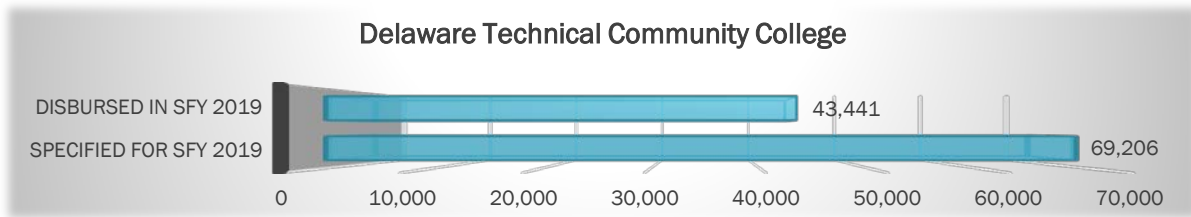
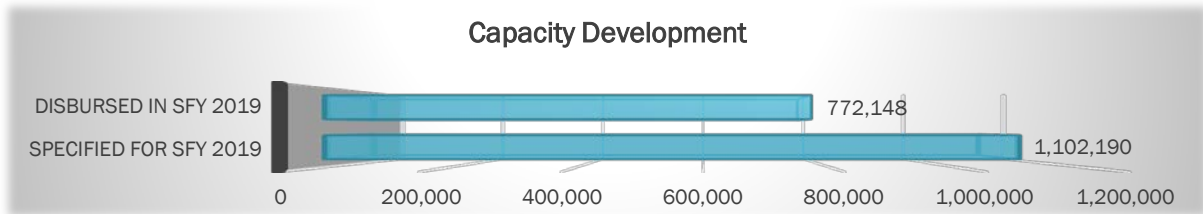
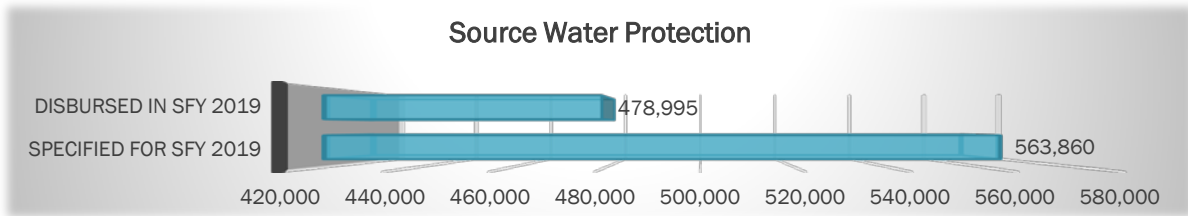
Set-Aside: State Program Management (10%)

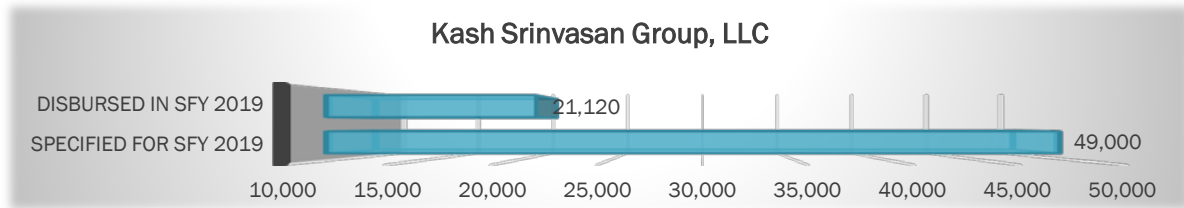
DHSS used funds from its state program management set-aside for Underground Injection Control and Public Water Supply Supervision (PWSS).



Set-Aside: Local Assistance and Other State Programs (15%)

DHSS used funds from the local assistance set-aside for Source Water Protection, Capacity Development, and contracts with DRWA and DTCC.





IV. Financial Summary

The following discussion provides additional details on the financial management activities in the DWSRF for the State Fiscal Year 2019.

A. Status of Loans

The DWSRF closed \$18,785,300 in loans this reporting period. Appendix A shows the status of all DWSRF loans to date. Information includes the following: loan amount, interest rate, term, cumulative disbursements, and schedule of principal and interest payments. Loan activity is presented by fiscal year.

B. Loan Disbursement/Cash Draw Proportionality

DHSS disbursed \$5,363,727 during this reporting period. Appendix A lists each disbursement, each loan-related federal ACH cash draw, and the cumulative federal/state proportionality ratio resulting from cash draw activities.

C. Set-Aside Disbursements

DHSS disbursed \$2,695,094 in set-asides in State Fiscal Year 2019. Appendix A lists each set-aside-related cash draw and disbursement by type and set-aside by fiscal year.

D. Annual Repayment/Aging of Accounts

The DWSRF received \$8,595,111 in repayments during this reporting period.

E. Loan Portfolio Analysis

DHSS conducts an annual review of its loan portfolio and summarizes findings in a Portfolio Tracking Report. Potentially weak loans are identified and tracked to ensure repayments can be made.

F. Funds Transferred to Clean Water from Drinking Water —See Appendix B

Table 3: Funds Transferred to CW from DW

Grant Amount Transferred to CW	27,050,176.00
State Match Transferred to CW	5,410,035.38
Total Transferred	<u>32,460,211.38</u>

Of the above total

Administration	1,298,408.46
Projects	31,161,802.92
	<u>32,460,211.38</u>

4% of grant amt and 4% of state match went to Admin	1,082,007.04	4% grant
Balance to projects	31,161,802.92	216,401.42 4% match
	<u>1,298,408.46</u>	total to admin

G. Financial Statements

The DWSRF audit reports are attached to this report in Appendix A. The audited financial statements are current through State Fiscal Year 2019 operation of the DWSRF. The audit reported no material issues for our management to address. The plan is to use the audited data from the financial reports of our program in performance assessments of the DWSRF. A summary of the program-wide financial conditions represented in the attached audit reports are provided below.

V. Compliance with Operating Agreement and Grant Conditions

Operating Agreement

During this reporting period, DHSS has complied with the Operating Agreement and has communicated any concerns with DNREC.

Grant Conditions

DHSS strives to comply with all applicable grant conditions as specified in FS-99391418-0 grant agreement.

A. Administrative Conditions

1. General Terms and Conditions
DHSS agrees to comply with the current EPA general terms and conditions.
2. Pre-Award Costs
DWSRF/DPH/DHSS does not claim any pre-award costs for reimbursement for the reporting period.

3. Payments
Payments received were based on reimbursement of allowable expenditures in accordance with the grant conditions.
4. Indirect Costs
All indirect cost charges are calculated from multiplying the approved indirect rate and the authorized payroll; calculations are done by individual set aside.
5. Annual Federal Financial Report
FFRs (SF-425) are prepared and submitted by DNREC based on the State Fiscal Year (1 July thru 30 June) and submitted to EPA-LV and EPA-RIII 90 days after the end of the fiscal year, unless an extension is requested and received.
6. Utilization of Small, Minority and Women's Business Enterprises
DHSS follows requirements in 40 CFR, Part 33 and the Six Good Faith Efforts procurement process and submits MBE/WBE reports annually.
7. Intergovernmental Review
DHSS makes every effort to meet Intergovernmental Review requirements; including established Environmental Review procedures
8. Extension of Project/Budget Period Expiration Date
DHSS did not request an extension during the reporting period.

B. Programmatic Conditions

1. Payment Schedule
DHSS accepted grant funds that were released by EPA utilizing the ASAP payment method as outlined in the grant award.
2. Cash Draws
DHSS drew cash from the ASAP System for the funds included in the grant based on 100% of incurred costs for set-aside activities and 77.53% of incurred costs for the DWSRF projects.
3. State Match
DHSS deposited into the State Revolving Fund a match of 20% percent of the amount awarded in the capitalization grant.
4. Intended Use Plan and Operating Agreement
DHSS make best efforts to adhere to the Intended Use Plan and Operating Agreement as provided to EPA, including any amendments that were presented and agreed upon by the Regional Office.
5. Set-Aside Work Plan
DHSS make best efforts to adhere to the Set-Aside Work Plan as provided to EPA, including any amendments that were presented and agreed upon by the Regional Office.
6. Set-Aside Subgrants and Contracts
DHSS provided and made available to Region III, upon request, copies of work plans associated with grants and contracts that were entered into as prescribed in the grant conditions. Semi-annual reports were provided which summarized activities completed under grants and contracts entered into.

7. Travel
DHSS participated in training and professional development activities during the reporting period. This included hosting the 2019 All States meeting.
8. Drinking Water National Information Management System (DWNIMS)
DNREC input data in DWNIMS per the operating agreement.
9. Drinking Water Projects Benefits Reporting
DHSS complied with all requests for data related to the use of the funds and entered this data into PBR in a timely manner. All additional requests for information or clarification were also provided regarding PBR.
10. Biennial/Annual Reporting
DHSS reports key project characteristics, milestones, and public health protection results in the Annual Report.
11. Set-Aside Reporting
Region III was provided with semi-annual reports on or before May 15 and November 15, of the reporting period.
12. Program Income from Administrative Fees
Fee accounts were maintained in a separate account from the DWSRF program loan fund. Program income was used for only purposes related to the administration of the DWSRF program.
13. Signage
DHSS complied with the SRF Signage Guidance to enhance public awareness of EPA assistance.
14. Additional Subsidization
DWSRF provided: the Lewes Board of Public Works a loan of \$206,000 at 100% principal forgiveness, Sussex County a loan of \$2,000,000 at 100% principal forgiveness, and Town of Laurel two loans of \$501,246 and \$940,954 at 100% principal forgiveness. Principal forgiveness allowed DHSS to meet 2017 and work towards 2018 grant condition requirements.
15. Green Project Reserve
DHSS designated no funds used for green infrastructure.
16. Geospatial Data Standards (Include in T&C if answer Yes to B15 on FR)
DHSS makes every effort to comply with Geospatial Data Standards.
17. American Iron and Steel
All applicable American Iron and Steel requirements were met for each DWSRF project.
18. Wage Rate Requirements
DHSS complies with the wage requirements by requiring the applicant or their delegate to review the certified payroll submitted by the general contractor and all subs on the job. The applicant/delegate must then submit a letter stating that the pay rate meets the required rates. It is only after this letter is received, will DHSS disburse the reimbursement funds.
19. Competency of Organizations Generating Environmental Measurement Data
DHSS is in compliance with all applicable requirements.
20. State Grant Cybersecurity Condition

DWSRF/DPH/DHSS complies with all State IT requirements and protective measures. At this time, data is input and shared only with EPA via DWNIMS and PBR. Any information shared via DHSS or DNREC websites is also compliant with State IT policies and procedures.

APPENDIX A
FINANCIAL INFORMATION

DWSRF ARRA Loan Balance

As of: 6/30/19

Borrower	Settlement Date	DPH Contract #	Contract Loan Amount						Cumulative			Balance
			Principal Forgiveness		Principal Repayment		Combined		Principal Repayment	Repayments	Balance	
			Principal Forgiveness	Principal Repayment	Principal Forgiveness	Principal Repayment	Combined					
City of Seaford 210.35	06/25/09	10-194	1,424,859.00 +	1,304,549.00 =	2,729,408.00	1,486,282.85 +	1,304,547.83 =	2,790,830.68	408,450.33	896,097.50		
City of Wilmington 210.37	06/25/09	10-199	4,510,155.00 +	4,389,845.00 =	8,900,000.00	4,510,154.58 +	4,389,844.58 =	8,899,999.16	1,373,096.76	3,016,747.82		
Town of Bridgeville 210.32	06/25/09	10-193	185,155.00 +	64,845.00 =	250,000.00	153,182.13 +	53,647.48 =	206,829.61	53,647.48	0.00		
Town of Greenwood 210.33	06/25/09	10-196	324,271.00 +	203,959.00 =	528,230.00	313,066.14 +	203,724.57 =	516,790.71	48,386.24	155,338.33		
Town of Millsboro 210.34	06/25/09	10-197	1,361,405.00 +	1,241,095.00 =	2,602,500.00	1,361,405.00 +	1,241,095.00 =	2,602,500.00	403,514.15	837,580.85		
Town of Smyrna 210.36	06/25/09	10-198	1,944,155.00 +	1,823,845.00 =	3,768,000.00	1,944,155.00 +	1,823,845.00 =	3,768,000.00	546,726.77	1,277,118.23		
			9,750,000.00 +	9,028,138.00 =	18,778,138.00	9,768,245.70 +	9,016,704.46 =	18,784,950.16	2,833,821.73	6,182,882.73		

FY19 Set Aside Disbursements

	<u>Ju</u>	<u>June</u>	
		<u>2019</u>	<u>Total</u>
2% Technical Assistance		202,969	\$ 202,969
4% Administration-FAB		166,373	
4% Administration-ODW		156,353	
Total 4% Administration		322,726	\$ 322,726
10% Program Mgmt-DNREC		367,219	
10% Program Mgmt-ODW		551,038	
Total 10% Program Mgmt		918,257	\$ 918,257
15% Local Assistance-DNREC		478,995	
15% Local Assistance-ODW		772,148	
Total 15% Local Assistance		1,251,142	\$ 1,251,142
			\$ 2,695,094

All Totals are from QuickBooks P&L Statements

APPENDIX B
FINANCIAL STATEMENT OF FUNDS
TRANSFERRED TO CLEAN WATER
FROM DRINKING WATER

Note 6 - Deobligation of Federal and State Match Funds Between the Fund and Water Pollution Control Revolving Loan Fund (WPCRLF)

On September 4, 2012, the Environmental Protection Agency (EPA) deobligated \$27,050,177 of the Fund's federal capitalization grant and awarded it to the WPCRLF. As part of the deobligation, \$5,410,035, which represented the required 20% state match, was appropriated to WPCRLF. \$4,214,548 of the \$5,410,035 was included in the Unearned revenue – state match of the Fund on the Statement of Net Position on June 30, 2012. The remaining \$1,195,487 was transferred from Nonfederal Administrative funds. During 2014, no additional funds were deobligated.

Note 7 - Transfer of Funds Between the Fund and WPCRLF

In accordance with WPCRLF's Intended Use Plan (Plan), the \$32,460,212, described in the previous note, will be returned to the Fund when they are needed for Drinking Water commitments. The transfer will occur at management's discretion to facilitate cash flow for loan commitments incurred by the fund. When funds are transferred between WPCRLF and the Fund, the funds will be accounted for as transfers out and in, respectively. No transfers were made to the Fund in 2014 or 2013.

APPENDIX C
MISCELLANEOUS

Status for implementing all PER Action Items:

PER Action Items

1. Fund Lead Service Line Replacement projects with available unused 'Additional Subsidy' dollars as identified with EPA Region 3 assistance
 - o DHSS chose not to fund Lead Service Line Replacement projects this year as federal guidance was confusing, hard to implement, and could be a liability for the Department/State. DHSS is committed to learning how other states in the region implemented the program at the 2020 All States Meeting
2. Maintain open communication and assistance as needed to DNREC for timely and accurate DWNIMS reporting
 - o Communication improved greatly between programs due to a change in leadership (administrator) of Environmental Finance mid-way through the reporting period
4. Review the Operating Agreement between DHSS and DNREC to identify opportunities to improve PACE and close loans in a more timely fashion
 - o As of Friday, October 4th, the Operating Agreement that was sent to DNREC upper level management has not been amended per DHSS suggestions. During discussions, numerous barriers were raised that blocked any meaningful discussion of any Operating Agreement amendments. DPH is working with DHSS leadership to pursue additional conversations to gauge support at the Cabinet level. DHSS is happy to discuss further at EPA's next on-site visit.

Address any errors identified by your Project Officer during the last annual review

DHSS has made every attempt to address any errors identified by our Project Officer during the last annual review.

Status of getting additional subsidy into closed loans

*Please refer to narrative and see above and refer to PBR.**

Status towards meeting the short-term and long-term goals identifies in the IUP that was submitted as part of the FFY2017 Grant

Please refer to narrative and see above

Status of Set-Aside semi-annual reporting in November and July

Please see appendices and previously submitted reports

APPENDIX D
SET ASIDE REPORTS



DELAWARE DRINKING
WATER STATE REVOLVING
FUND

Set-Aside Reports

April 1, 2018 – September 30, 2018

DWSRF Set-Aside Reports

April 1, 2018 – September 30, 2018

2%

DRWA – Cross Contamination Prevention
through Cross Connection
Control Planning & SRF
Technical Assistance

DTCC – Administrative Services &
Technical Training Water
Operators

DWSRF Program Set-Aside Report

Reporting Period April 1, 2018 – September 30, 2018

Report Prepared by: Richard Duncan Sr., DRWA

Date Report Prepared: October 10, 2018

Report Provided to EPA by: Jacquelyn Park, DWSRF Set Aside Program Manager

Date Report Submitted to EPA: November 1, 2018

Set aside Category: 2%

Reporting Period: April 1, 2018 through September 30, 2018

Date Report Prepared: October 10, 2018

Prepared by: Richard A Duncan Sr., DRWA

Project Description: Delaware Rural Water Association (DRWA), Contamination Prevention through Cross Connection Control Planning (CPCCC)

Set-Aside Project Goals from the 2017 application:

See attached report.

Set aside Category: 2%

Reporting Period: April 1, 2018 through September 30, 2018

Date Report Prepared: October 10, 2018

Prepared by: Richard Duncan Sr., DRWA

Project Description: Delaware Rural Water Association (DRWA), State Revolving Fund
Technical Assistance

Set-Aside Project Goals from the 2017 application:

See attached report.

DELAWARE RURAL WATER ASSOCIATION ANNUAL SRF REPORT 2017-2018

*A yearly overview of training and technical assistance
provided to the SRF funded water systems in
Delaware.*

Richard A. Duncan, Sr.

10/10/2018



DELAWARE RURAL WATER ASSOCIATION ANNUAL SRF REPORT 2017-2018

A yearly overview of training and technical assistance provided to the SRF funded water systems in Delaware.

About Delaware Rural Water Association

Incorporated in 1990, the Delaware Rural Water Association (DRWA) has emerged as our State's leading association dedicated to providing on-site technical assistance and specialized training for rural water and wastewater systems. Tapping into the expertise of experienced water and wastewater professionals, DRWA's governing Board of Directors, administrative staff, and technical field specialists work in concert to offer DRWA members an expansive range of essential programs and member services. We meet system needs though timely help in developing new rate schedules, setting up proper testing methods, understanding those ever-changing and complex government regulations, preparing a Consumer Confidence Report (CCR), or updating operator certification requirements. Delaware Rural Water Association is always ready with member assistance.

Mission Statement

“DRWA's mission is to meet the needs of member water and wastewater systems by providing quality information, training and technical assistance and legislative representation, and to assist them in maintaining a high standard of service to their communities.”

FOR more than twenty years, Delaware Rural Water Association has been providing through grants from the SRF set aside programs on-site, hands on training and technical expertise, this expertise has been proven to be the State's most effective resource for systems meeting compliance and maintaining operational and mechanical compliance.

Our formal training programs have offered the operators the newest technology in testing procedures, environmental awareness and regulatory responsibilities. The Delaware Rural Water specialized training sessions provide water professionals with an opportunity to resolve problems by sharing ideas with state and federal agencies, engineers, contractors, manufacturers, supplies, and other water system personnel.

Our Formal and Specialized Training Classes for 2018 consisted of the following topics:

Approved Basic Sampler/Tester Training (AST)

Confined Space Awareness/SCBA Review

Cross-Connection Control Planning & Legionella Basics

DRWA's Entry Level Water Specialist Course Part 1 and Fluoridation Training

DRWA's Entry Level Water Distribution Specialist Part 1

DRWA's Entry Level Water Treatment Specialist Course Part 2

Basic Understanding of Fluoride with Exam

Basic Understanding of Fluoride with Exam

AST Basic Sampler/Tester

AST Refresher Sampler/Tester

Consumer Confidence Report (CCR) Training

Entry Level Water Treatment Specialist Course and Fluoridation Training with Exam

DRWA's Entry Level Water Treatment Specialist Course Part 3

Water Specialist Training, including Fluoridation Training with Exam

DRWA's Entry Level Water Treatment Specialist Course Part 4 for the Local Officials

Cross Connection Control Planning for Local Officials

Introduction to Hydrant Operation and Maintenance

Flushing and Sampling to meet Compliance

Training sessions cover a broad spectrum of needs. Subjects range from water treatment and federal water regulations, to financial management practices and operator certification. Our training allows water professionals to upgrade their skills, improve the quality of their utility's service, and protect their community's health.

Delaware Rural Water continues to meet with state agencies in gathering training priorities and exploring new training methods to enhance the operator's skills.

Report Prepared By: Richard A. Duncan, Sr.

Date Report Prepared: October 1, 2018

Report Provided to EPA by: Jacquelyn Park, DWSRF Set Aside Program Manager

Date Report Submitted To EPA:

Set Aside Category: 18-177 Provide Contamination Prevention Through Cross Connection Control Planning (CPCCC)

Reporting Period: April 1, 2018 through September 30, 2018

Date Report Prepared: October 1, 2018

Prepared By: Richard A. Duncan, Sr.

Project Description:

Set-Aside Project Goals From the 2017-2018 Application:

18-177 Provide Contamination Prevention through Cross Connection Control Planning (CPCCC)

DRWA will assist five small State Revolving Fund compliant systems in addressing the need to prevent contamination of Delaware's drinking water systems.

DRWA will provide technical assistance training and/or on-site visits instructing on the five essential elements that make up the effective ongoing Cross Connection Control Program. The five essential elements consist of consumer education and awareness, risk assessment, ongoing reassessment, recordkeeping, and reporting.

The Delaware Rural Water with the expertise from Hydro Corp have been working aggressively with systems explaining the need for protecting their infrastructure by way of implementing a cross connection control plan to

date the following systems have shown interest or has requested meetings to start planning, most of these systems requested public educational materials, and methods of awareness, the following towns were:

Town of Lewes	Town of Selbyville
Town of Milton	Town of Millsboro
Town of Frederica	Town of Delmar
City of Wilmington	Town of Bethany
City of Delaware	
Town of Smyrna	
Town of Dagsboro	

Our Backflow training has been created to provide water professionals with the understanding of an ideal environment for learning a range of critical water system skills, our training brings together state and federal agencies, engineers, contractors for in depth, hands on training in cross connection control.

Cross Connections are a point within your water system that can allow the flow of potentially dangerously non-potable water into potable drinking water.

Delaware Rural Water continues to assist these water systems each day providing educational materials, on-site visits, council meetings and regulatory updates as needed.

The only issue we are seeing during the Cross Connection Control Planning program as we are speaking to water systems, council members about why they should be concerned about the possibility of contamination into their drinking water system is when they contact the State Office of Drinking Water they do not support the program, however during the SRF Application process it asks if you have an approved Cross Connection Control Plan so it is very confusing when trying to get water system to be receptive to this program. Meeting will be held to address this in the future to try to convince official on the need.

Shortfalls or Delayed Achievements:

No shortfalls to note. Delayed achievements, it is detailed into the barriers comments, the longer we continue to overlook the prevention of cross connections the greater chance of a potential cross connection and contamination of our drinking water supply's the greater chance of seeing possible health hazard.

Barriers -

During the 2018 contract year we continue to have discussion with the State for the need to have their support in water systems better protecting their drinking water supplies. The barrier is continuing to provide the State Office of Drinking Water with case studies showing on- site occurrences of contamination sites, we applaud the systems that have taken on the CCCP and adopted their own ordinances. It is a simple process but needs support from the State.

Resolutions -

It would be our suggestion to have regular meetings with the resources that have the expertise in this field such as EPA, ODW, DNREC, State of Delaware Plumbing Section

Report Prepared By: Richard A. Duncan, Sr.

Date Report Prepared: October 1, 2018

Report Provided to EPA by: Jacquelyn Park, DWSRF Set Aside Program Manager

Date Report Submitted To EPA:

Set Aside Category: 18-178 Fluoride Training and Certification for Small Systems and Accountability in Water Facilities

Reporting Period: April 1, 2018 through September 30, 2018

Date Report Prepared: October 1, 2018

Prepared By: Richard A. Duncan, Sr.

Project Description:

Set-Aside Project Goals From the 2017-2018 Application:

18-178 Fluoride Training and Certification for Small Systems and Accountability in Water Facilities

DRWA shall conduct four specialized fluoride training classes for water operators in training and current water operators in need of refresher training. The objectives will include the right to know, safety, installations, sampling procedures at small system treatment facilities, and testing.

Delaware Rural Water conducted four specialized training classes in Fluoridation using the CDC course materials. During the training operators were provided technical information that will enable them to improve the operation and maintenance of their water fluoridation facilities.

The fluoridation of public water supplies requires strict control of dosage rates for maximum dental health benefits.

Accurate analytical determination of the fluoride level in the water which is essential and is included within this training program shall be instructed.

During the Contract year 26 operators representing 19 water systems have completed the Base Level Fluoride Training Course with the State Exam being offered.

Delaware Rural Water Association has also conducted several one on one class for the municipalities for new operators that had less than one year's experience, during this class the operator was taught, equipment installations, testing methods, regulations, chemical awareness, safety in the workplace, reporting and monitoring.

Accountability in Water Facilities

DRWA shall conduct four Local Officials training classes at specific locations. This will allow the city/town officials to gain a better understanding of what the managers and water operators face on a daily routine. Training will include such topics as State Revolving Fund programs, state and federal regulations effecting today's water systems, basic water treatment operations and maintenance, and lessons learned from Asset Management.

Four Local Officials classes have been conducted, one at the Annual Conference, and three at the Delaware Rural Water Facility, the local Officials attendee's along with their direct responsible in charge of 9 local officials were taught basic distribution issues, Fluoridation operations and maintenance, regulations and installations, reporting and monitoring requirements and basic filtration methods, along with safety and security and emergency response planning.

Shortfalls or Delayed Achievements:

The only dated shortfall is that operators have now been educated on operation and maintenance, regulatory standards for several years now, Getting operators to attend course have shown a decrease in attendance.

Barriers -

Most water facilities personnel have now had the opportunity to attend our professional training sessions, our attendance is now showing smaller numbers most are now coming to obtain educational contact hour for their recertifications.

Resolutions -

Continue the current program and DRWA will evaluate the needed program and will work with the CDC Office on new methods of training that operators should become aware of.

Report Prepared By: Richard A. Duncan, Sr.

Date Report Prepared: October 1, 2018

Report Provided to EPA by: Jacquelyn Park, DWSRF Set Aside Program Manager

Date Report Submitted To EPA:

Set Aside Category: 18-179 Geographical Information Systems (GIS) Survey

Reporting Period: April 1, 2018 through September 30, 2018

Date Report Prepared: October 1, 2018

Prepared By: Richard A. Duncan, Sr.

Project Description:

Set-Aside Project Goals from the 2017-2018 Application:

18-179 Geographical Information Systems (GIS) Survey

Baseline GIS Survey

DRWA Sustainable Infrastructure Assistance Program shall develop, deliver, collect and assess baseline GIS Surveys from community water systems (small municipal and non-municipals, excluding tidewater, United, and Artesian-operated systems). DRWA will be working cooperatively with the DWSRF program to develop a multi-year plan for GIS assistance.

GIS Technical Assistance

Two very small municipalities (population under 500), five non-municipal communities, and at least three seasonal water systems will be provided with 1:1 GIS technical assistance. The information collected shall be used when systems conduct future Asset Management Program.

The following systems have received on site assistance in the collection of critical information that may be used within the development of an Asset Management Program and meet State Regulations on Sampling Plans.

Town of Selbyville	Jason Loar	Preview distribution sampling plan, new testing sites
Town of Frankford	Cheryl Lynch	Preview distribution sampling plan, new testing sites
Hartley MHP	Leticia Villabona	GIS Mapping Meeting, Hartley, Milford, GIS Maps
Woodland MHP	Mike Ibach	Survey system, wells, sample pts
Flying Dutchman	Sandy Holleger	GIS Info, survey system, wells, sample pts
Angola Crest II	Lawrence Lowendoski	GIS mapping info
Flying Dutchman Sys 1	Sandy Holleger	GIS Mapping Info
Hartley MHP	Leticia Villabona	Map wells, sample points, well house
Woodland MHP	Mike Ibach	GIS mapping, info, survey
Flying Dutchman Sys 2	Sandy Holleger	GIS Mapping
Town of Selbyville		GIS mapping, info
Flying Dutchman Sys 3	Sandy Holleger	Map data, system info
Town of Selbyville		Work on GIS
Woodland MHP	Mike Ibach	Mapping

Angola Crest II	Lawrence Lowendoski	Mapping, map using Ipad
Laurel Village	Gary Creppon	GIS Info
Town of Selbyville	Kevin Murray	GIS
Mt Pleasant MHP	Ed Cannon	GIS info
Angola Crest II	Lawrence Loendoski	Map data, I pad
Town of Selbyville	Stacy Long	GIS
Angola Crest II	Lawrence Loendoski	Mapping using I pad
Broadkill Water	David Wilkerson	GIS Info
Town of Camden/Wyoming	Kathleen Andrews	GIS Info
Town of Selbyville	Kevin Murray	GIS
Mt Pleasant MHP	Ed Cannon	GIS Info
Woodland MHP	April	Crate system map
Town Camden-Wyoming	Kathleen Andrews	
Angola Crest II	Lawrence Lowendoski	
Town of Frederica	Dustan Russum	
Town of Felton	Ralph Hughes	
Town of Camden/Wyoming	Kathleen Andrews	
Tall Pines	Bras Ferguson	
Fox Pointe	Mark Hester	
Holly Hill Estates	Walt Nelson	
Dover Air, DE Turf, Grandview	Dustan Russum	
Oak Grove Estates	Dustan Russum	

Shortfalls or Delayed Achievements:

No known shortfall, or Delayed achievements,

Barriers -

Only known barriers continue to be owner, operator participation in this program, having ample time to conduct the surveys, getting owner to buy into the program.

Resolutions -

This program has given water systems a better overview of their distribution, placement of the hydrants, sampling points, lead and copper sampling points which shall enhance their knowledge of what area's in need more attention.

Our suggestion would be to allow expansion of the system size, or population, and focus on more manufactured housing projects.

Report Prepared By: Richard A. Duncan, Sr.

Date Report Prepared: October 1, 2018

Report Provided to EPA by: Jacquelyn Park, DWSRF Set Aside Program Manager

Date Report Submitted To EPA:

Set Aside Category: 18-180 State Revolving Fund (SRF) Technical Assistance

Reporting Period: April 1, 2018 through September 30, 2018

Date Report Prepared: October 1, 2018

Prepared By: Richard A. Duncan, Sr.

Project Description:

Set-Aside Project Goals From the 2017-2018 Application:

18-180 State Revolving Fund (SRF) Technical Assistance

DWSRF Assistance/Promotion

The Delaware Rural Water Association (DRWA) will provide 75 technical assistance site visits to small Community Water Systems (CWS) and municipal water systems. Visits can include technical and managerial assistance along with promotion of the DWSRF program and 1:1 application/process help. Activities may include community/civic association meetings and acting as a liaison between interested parties and stakeholders.

Priority Technical Assistance

DRWA will work closely with the Office of Drinking Water, Office of Engineering, and the DWSRF program to identify systems in need of Priority Technical Assistance. Systems may be defined as community, non-transient non-community, transient, and/or seasonal. Priority identification criteria may include, but no limited to: systems receiving a Public Notice, critical Sanitary Survey violations, contamination exceedance, or those systems with an Electronic Tracking Tool score of 11 or greater. Assistance may include or contamination

prevention education, training or preventive maintenance assistance. Priority systems can be classified as those that are either already out of compliance or reaching non-compliance.

During this contract year the following water systems were provided some sort of compliance technical assistance and or hands on training.

2017-2018 On-site Visits

Town of Frankford	Cheryl Lynch	SRF loan and progress of evaluation of system
Town of Selbyville	Kevin Murray	Tower valve not holding during painting process, result was to plug it
Town of Dagsboro	Cindi Brought	Chlorination at tower progress
Town of Bethany Beach	Jim Seabreese	Operator Certification educational hours training
Sussex Shores	Brad Dorey	Distribution Flushing, Safety, chlorine residuals
Town of Delmar	Jerome Reed	Tower pressure during flushing program
Town of Laurel	Linda Little	Hydrant flushing and distribution monitoring
Town of Blades	Brandon Slater	Backwash water treatment process how to treat

Town of Seaford	Berley Mears	Operator Certification educational hours training for operators
Town of Greenwood	John McDonald	SRF Funding for infrastructure
Town of Delmar	Sophia Oberton	Fluoridation, filtration training methods
Selbyville Water Facility	Ron Foskey	SRF Funded system updates
Selbyville Water Facility	Ron Foskey	SRF Funded filter project
Selbyville Water Facility	Kevin Murray	Metering upgrades to commercial buildings
Town of Bethany	Ron Foreman	Cross Connection in irrigation systems, planning
Silver View	Jim Truitt	Continuing education for small systems
Selbyville Water Facility	Stacey Long	Water facility budget needs input
Town of Selbyville	Stacey Long	Water system site visit SRF needs
Selbyville Water Facility	Ron Foskey	M2 Meeting on filter project
Selbyville Water Facility	Kevin Murray	Backwash system needs and planning
Selbyville Water Facility	Stacey Long	Zoning, compliance, tthm, mteb's research each for new system
Milford Public Works	Charlie Nordberg	Loss of water pressure, line locating
Artesian Company	Ken Branner	Interconnections, SCADA to pressure
Selbyville Water Plant	Kevin Murray	tank footers, concrete placement

Town of Dagsboro	Cindi Brought	Water loss, tank elevations
Town of Milton	Kristy Rodgers	SRF Funding for water projects
Selbyville Water Plant	Ron Foskey	SRF Project updating for ODW
Town of Dagsboro	Cindi Brought	Follow up from water loss
Town of Milford	Steve Ellingsworth	Budgets for locators,
Selbyville Water Facility	Ron Foskey	SRF funded treatment system filtration tank installation
City of Wilmington	Joe Duggan	Understanding distribution system training
Artesian Water	Rob Penman	Distribution methods and rate studies
City of Milford	Steve Ellingsworth	Loss of water defining leaks and line locating
Artesian Company	Rob Penman	Frankford Interconnections, DELWARN
Selbyville Water Plant	Kevin Murray	SRF Project updating
Town of Dagsboro	Cindi Brought	SRF projects, metering with AMR's
Town of Bethany Beach	Ron Foreman	SRF funding for water projects, iron removal process
Selbyville Water Plant	Ron Foskey	SRF project updating filter plant
Town of Selbyville	Mayor Murray	Meeting with Heather/DHSS (Frankford Water)
Selbyville Public Works	Kevin Murray	Backwashing filtering systems
Town of Dagsboro	Cindi Brought	Chlorine testing procedures

Selbyville WTP	Ron Foskey	New filter plant under construction SRF project
Town of Selbyville	Kevin Murray	Conducting a flow test on N Main St & Cemetery Rd
Selbyville WTP	Ron Foskey	Filter media installation and testing procedures
Selbyville WTP	Kevin Murray	Filter plant startups, Medias, etc.
Selbyville WTP	Kevin Murray	Meeting with contractor pipe installations
Selbyville WTP	Ron Foskey	Pressure censoring distributions
Town of Camden/Wyoming	Matt Parrish	Distribution system knowledge, flushing procedures
Town of Dewey Beach	Bill Hague	Leak detection, pipe locations, metering system
Town of Selbyville	Ron Foskey	New SRF filter startup of backwashing system
Town of Selbyville	Jason Loar	Replacement of the under-drain system
Town of Bethany Beach	Jim Seabreeze	Chloramines in drinking water, chlorine vs the rest
Sussex Shores	Brad Dorey	SRF needs, flushing, water loss
Frankford WTP	Scott Walls Jr	Plant performance, regulations Fluoride additions
Town of Frederica	Dustan Russam	Water quality monitoring, sample surveys
Town of Georgetown	Bill Bradley	Filter screen stud bolt replacement

Town of Laurel	James Foskey	Pipe locators, SRF projects
Town of Seaford	Lisa Gillespie	Distribution performance, SRF infrastructure needs
City of Harrington	Alan Moore	Distribution performance, SRF infrastructure needs
Town of Selbyville	Kevin Murray	Meet with M2 (filter screen bolt replacement and rebedding SRF)
Cedar Creek Estates	Tom Farrah	Survey system for compliance issues, and SRF compliance
Town of Dagsboro	Cindi Brought	Chlorine residuals and flushing
Town of Millsboro	Rick Hudson	Upcoming training needs, SRF funding of infrastructure
Town of Clayton	Jeff Hurlock	SRF program infrastructure needs, loans and grants
Town of Smyrna	Dave Huff	SRF program infrastructure needs, loans and grants
City of Milford	Steve Ellingsworth	Well ordinances, right to second well, pros, cons
City of Dover	Shawn Ridgeway	Infrastructure leaks, water loss detection
City of Harrington	Rick Clough	Handout SRF materials for infrastructure needs
Town of Bridgeville	Scott Kimball	Handout SRF materials for infrastructure needs
DE State Fair Grounds	Kenny Baird	Infrastructure needs loans and SRF funding
Town of Bridgeville	Jesse Savage	Infrastructure needs loans and SRF funding

Town of Blades	Brandon Slater	Infrastructure needs loans and SRF funding
City of Seaford	Lisa Gillespie	Infrastructure needs loans and SRF funding
Town of Greenwood	Rodger Breeding	Infrastructure needs loans and SRF funding
Town of Camden	Kathy Andrews	Infrastructure needs loans and SRF funding
City of Lewes	Vaughn McCabe	Speak about the SRF program and funds for infrastructure needs
Town of Milton	Greg Wingo	Speak about the SRF program and funds for infrastructure needs

Operators Hands on Training on Distribution & Hydrant Maintenance - Class 1

Kevin Burdette

Ronnie Chester

Tim Baskett

Eric Darby

Mark Davis

Shawn Davis

Ed Dobos

Robin Eaton

Dwayne Evans

**Operator's Hands on Training on Distribution & Hydrant
Maintenance - Class 2**

Emmett Foraker

Kris Glanden

William Hague

Michael Harrington

George Hudson

LeRoy Lahman

Trevor McCandless

McCarter Austen

Kevin Murray

Walter Nelson Jr

Thomas O'Neal

Chris Parsons

Richard Passwaters

Dominic Poligardo

Stacey Selby

Greg Short

Hilbert Smith

James Staats

Brice Steele

Joe Stefanovicz

Clarence Swift

Michelle Toothman

James Truitt

Tom Turner

Scott Walls

Eric Wharton

Shortfalls or Delayed Achievements:

No known shortfalls or Delayed Achievements to date.

Barriers -

No known barriers, could use additional funding for more hands on training equipment and training guides for operators

Resolutions -

Continuation of this program shall be of great success, this program has been well excepted in providing all SRF systems the technical assistance as needed, This program allows for the Circuit Rider to spend time within the system evaluating their needs assessment, providing the needed educate in the application process.

One suggestion, since the water operator workforce has shown decreased numbers due to retirements, we at Delaware Rural Water wish to expand Water Treatment Specialist and our Water Specialist Apprenticeship program to the State where they can provide funding of training of such programs, Our program will give the Water system the opportunity to view students prior to offering them employment. We wish to have more discussion with the SRF Program manager on this endeavor for 2019.

The following water systems were given special technical assistance as directed by the state Office of Drinking Water:

Forest Park – Nitrate Removal System installed and is working great, however testing results were up and down, Delaware Rural provided onsite training on testing equipment calibration and proper sampling this corrected the problem, Violation #2 CCR, Owner did not submit letter of deliverance back to ODW on time.

Town of Laurel - Received a notice that the PH was low for one day, DRWA provided a site visit to remind them to adjust the PH to be in the 7.0 range or higher. Also, Delaware Rural Water is currently assisting them with their Cross-Connection Control Plan and Emergency Response Plan which are both required when submitting an SRF loan application.

Town of Frederica - Delaware Rural Water Association assisted the town with the delivery of a proposed **pre-boil water notice**, this was issued due to a small main crack with pressure loss and the State felt a contamination could occur. DRWA is also currently assisting with the implementation of a Cross Connection Control Plan.

Town of Frankford - The town with SRF funds constructed to new slow sand filtration system over ten years ago, since the system has shown numerous issue's, over the years two pressure vessels were installed to hope correct the discolored water. This only created additional issues, since the booster pumps had been sitting in sludge for many years they froze and the warranty expired. Another issue we at Delaware Rural Water Association were concerned about was the off gassing of chlorine which has ruined the SCADA system allowing corrosion to occur. After many meetings, Delaware Rural Water Association has decided to just participate in discussions when requested do to the legal issues.

Town of Selbyville - The town has just finished with three SRF projects, first was the MTBE well project, these were installed because of the high levels of MTBE's in several of the town's wells, SRF drilled two well's and only one is in use today which has no detects of MTBE's, the second well only needs a pump and some well control work which is estimated the cost \$20,000 according to the engineer.

SRF Project two was the installation of two new green sand plus pressure vessels for iron and manganese removal, project is complete and system is running.

SRF Project three was to rebidding of the current filter changing from carbon filter media to green sand plus filter media, project went well with some minor issues such as tray welding and hatch cover replacement.

The only issue we notice on this project was the supplier supplied Non-American flanges and the contractor and inspector did not pick this up until it was installed and the contractor reassembled and had to wait until new flanges were delivered around one week down. To date all issues have been corrected and the system passed all bacti's and is back on line.

Report Prepared By: Richard A. Duncan, Sr.

Date Report Prepared: October 1, 2018

Report Provided to EPA by: Jacquelyn Park, DWSRF Set Aside Program Manager

Date Report Submitted To EPA:

Set Aside Category: 18-181 Utility Management Scholarship (UMS)

Reporting Period: April 1, 2018 through September 30, 2018

Date Report Prepared: October 1, 2018

Prepared By: Richard A. Duncan, Sr.

Project Description:

Set-Aside Project Goals From the 2017-2018 Application:

18-181 Utility Management Scholarship (UMS)

Scholarships - DRWA will offer four scholarships. The course is an intense, two-day event that covers technical, financial, and managerial aspects of running a water utility. Students are tested, scored, and must receive a passing grade to receive their certificate.

Solicitation - DRWA shall solicit all municipalities in Delaware through the website, mailings, site visits, etc. and offer four scholarships to attend the Utility Management Certification Course.

Delivery - DRWA shall provide information on the 10 key management areas as described in the course outline. Also, included is the workbook and applicable information to help address small water management disciplines and improve system operations. DRWA staff participated rigorous training to prepare for adding this course to their toolbox for water operators.

On September 26-27, 2018 the Delaware Rural Water Association conducted the Water University Training program. Operators from the following systems attended the two-day course:

Dustan Russum, Town of Frederica Daniel Brooks, City of Wilmington
Linda Lewis, Town of Laurel Josh Smith, Town of Felton

The Water University course is a product that enhances the financial, managerial, and operational effectiveness of drinking water systems across the country. This course provides managers and operators interested in management with the tools they need to effectively manage a water utility and develop capacity based on federal standards.

Shortfalls or Delayed Achievements:

No know Shortfall, or Delayed Achievements to date

Barriers -

Water System not taking advantage of this training the last few years, we struggled to get the four operators.

Resolutions -

We would like to consider our newest training programs which are the Delaware Rural Water, Water Specialist Training and our Water Specialist Apprenticeship Program.

Along with our current operations and maintenance training covering the capacity development objectives within the water university manual, we feel this type of training will allow for us to broaden their interest in treatment, distribution and financial & managerial responsibilities at their water facilities.

DWSRF Program Set-Aside Report

Reporting Period April 1, 2018 – September 30, 2018

Report Prepared by: Hilary Valentine, Department Chair

Date Report Prepared: October 19, 2018

Report Provided to EPA by: Jacquelyn Park, DWSRF Set Aside Program Manager

Date Report Submitted to EPA: November 1, 2018

Set aside Category: 2%

Reporting Period: April 1, 2018 through September 30, 2018

Date Report Prepared: October 19, 2018

Prepared by: Hilary Valentine, Department Chair

Project Description: **Project Description:** Delaware Technical Community College, Environmental Training Center (ETC), Administrative Services for Water Operators Training Program

Set-Aside Project Goals from the 2017 application:

The ETC shall develop and improve training programs

During this time period an advisory board meeting was conducted in which new course ideas and workshop were identified for the upcoming grant periods. New course ideas include: sandblasting water tanks, cyber security, automation of plants/controls, PLC's for non-programmers, and reporting/tracking.

The online energy audit course and basic online math course were completed and are now available for licensed water operators to enroll in. A basic instrumentation course was also developed and will be offered in October to licensed water operators.

The ETC continues to expand its adjuncts by including more professionals from the field who can bring more hands on technical instruction to the classroom

The ETC continues to monitor student course evaluations to ensure the students are receiving the information necessary for their occupational fields. Staff members also evaluate the instructors to determine if changes in the curriculum are needed and if hands-on demonstrations/training tools would improve the effectiveness of the course.

Standard Operating Procedures for hands on lab equipment was updated. The ETC hired a new work study who stages hands on training equipment for upcoming courses.

The ETC shall provide 100 training events a year that have been approved for water operators
During this time period the ETC offered 36 training classes, totaling 96 courses from October – September. During this time period you see a decrease in courses because we are beginning the fall semester and ending the spring semester. Overall more than 100 courses for offered for this grant cycle.

Market Program to Delaware Operators

The ETC advertised in regional magazines, local papers, conferences, and through fliers and email blasts to inform students of technical training opportunities. Papers and magazines include: Ecoletter, Chesapeake Magazine, the Guide, Facebook, and targeted fliers. During this time period the Ecoletter highlighted the Operator of the Year Ceremony held at Del Tech which recognizes the operator of the year award winner.

Addresses and Emails are updated in our tracking systems every time a student enrolls in a class. Additional addresses are obtained through the state agencies as well as member lists from like organizations.

The ETC shall assist in placing new water operators in jobs

Del Tech's Career Services Center also focuses on noncredit students of the ETC. At the start of each Base Level Course, a representative presents the students with the services available to them including: resume writing, how to look for a job, interview skills, and dressing to impress. Career services as well as the ETC provides job postings to all students who are interested.

Shortfalls or Delayed Achievements: None

Barriers: None

Resolutions: None

Set aside Category: 2%

Reporting Period: April 1, 2018 through September 30, 2018

Date Report Prepared: October 19, 2018

Prepared by: Hilary Valentine, Department Chair

Project Description: Delaware Technical Community College, Environmental Training Center (ETC), Technical Training of Delaware Water Operators

Set-Aside Project Goals from the 2017 application:

The DTCC ETC will: provide tuition assistance for continuing education for approximately 100 Operators-In-Training and licensed water operators of small public water supply systems (non-profit) that include DTCC's 2018-11, 2018-12, 2018-13 and 2019-11 semesters

During this reporting period, 156 students were trained through open enrollment courses.

Provide tuition assistance for the Base Level Water Operators Course to approximately 30 new operators that include DTCC's 2018-11, 2018-12, 2018-13 and 2019-11 semesters

Currently for the fall semester there are 10 students enrolled in the base level water operators course, 34 additional students enrolled and completed the course over this grant period.

Provide 15 of the 30 new operators with a basic math course

Students during this reporting period passed the in house math assessment and it was determined that the math course was not needed.

Recruit students through advertisement in the local press to enter a drinking water training program

The ETC advertised for the program in the Guide magazine, Cape Gazette, as well as through Del Tech contact emails, course announcements, and fliers. Many of our students come to us via the Guide advertisement and/or word of mouth.

Provide tuition assistance for up to three students per semester to cover the cost of selected courses for over a one-year period to include DTCC's 2017-11, 2018-12, 2018-13 and 2018-11 semesters.

Unemployed, underemployed and new hires for any system will be eligible for this program

Two students received funding for selected courses over the semester. A third student was eligible, counseled and then decided to drop once enrolled in the program.

Shortfalls or Delayed Achievements: None

Barriers: None

Resolutions: None

DWSRF Set-Aside Reports

April 1, 2018 – September 30, 2018

10%

DNREC – UIC

DPHL – Public Health Laboratory

DTCC – Drinking Water Examinations

ODW – Operator Certification & PWSS

DWSRF Program Set-Aside Report

Reporting Period April 1, 2018 – September 30, 2018

Report Prepared by: John G. Hayes Jr., Program Manager, Groundwater Discharges Section

Date Report Prepared: October 15, 2018

Report Provided to EPA by: Jacquelyn Park, DWSRF Set Aside Program Manager

Date Report Submitted to EPA: November 1, 2018

Set aside Category: 10%

Reporting Period: April 1, 2018 through September 30, 2018

Date Report Prepared: October 15, 2018

Prepared by: John G. Hayes Jr., Program Manager, Groundwater Discharges Section

Project Description: Department of Natural Resources Environmental Control (DNREC), Underground Injection Control (UIC)

Set-Aside Project Goals from the 2018 application:

Review at least 20 permit applications:

During this reporting period the Groundwater Discharges Section (GWDS) processed a total of 7 permit applications: 1 application to construct geothermal wells was processed; 4 remediation UIC well permit applications were reviewed; and 2 Large On-Site Wastewater Treatment and Disposal System (OWTDS) permit applications were processed.

On April 3, 2018, May 1, 2018, June 5, 2018, and August 16, 2018, staff from the GWDS and the Surface Water Discharges Section participated in conference calls with the Wastewater Treatment Work Group (WWTWG) for the Chesapeake Bay Program. Other participants included representatives from the Environmental Protection Agency (EPA) and representatives from the states of Maryland, New York, Pennsylvania, Virginia, Washington D.C., and West Virginia. Items discussed included; modeling decisions for point source scenarios, 2025 forecasted conditions for wastewater loads, recommendations for SSO and Bypasses in the watershed model, scenario optimization tool for CAST, and Boat pump-out BMP panel's recommendations.

On the following dates, Jack Hayes of the GWDS, attended conference calls with EPA Decentralized Wastewater MOU Partnership, April 11, 2018, April 27, 2018, June 13, 2018, July 20, 2018, August 8, 2018, and August 9, 2018, to discuss Septic Smart Week 2018, the modification of existing documents, photographs, and protocols for the on-site industry with on-going out-reach and training opportunities.

Attended meetings via conference calls with others on the wastewater treatment working group for the National Sanitation Foundation considering and drafting changes to the Wastewater Treatment Standard 350 for commercial laundry. The dates of the calls were May 3, 2018 and June 28, 2018.

On the following dates, Jack Hayes, GWDS attended meetings regarding the implementation plan for the Chesapeake Bay, May 7, 2018, June 25, 2018, July 30, 2018, and September 20, 2018. The Chesapeake Bay Watershed Implementation Plan consists of discussions about various work group involvements, funding sources, consideration of the growth in the watershed, planning targets, CAST results, report preparation, sub-committee updates.

A new committee was established by the National Environmental Health Association (NEHA) called the Septic Systems Committee with the initial kick off meeting held on January 9, 2018. The purpose of the committee is to identify needs, develop resources, and provide information for septic system users, and identified projects. Also, the committee wants to develop a Septic Systems Emergency Toolkit (flood, wildfire, drought, earthquake, etc.). The ultimate goal is to create standardized resources that can be adapted to different localities. Additional meetings have occurred on April 12, 2018, June 14, 2018, July 12, 2018, August 2, 2018, and September 13, 2018. The committee is systematically going through various portions of the tool kit to create and standardize the contents within it.

Representatives of the Delaware On-Site Recycling Association (DOWRA) and GWDS staff along with the Director's Office met November 28, 2017, to discuss licensee questions, concerns, and interpretations of the Regulations Governing the Design, Installation, and Operation of OWTDS (Regulations) that were submitted by DOWRA. The intent of the meeting was for DNREC to provide guidance on the issues, questions, and concerns of the licensee community mainly pertaining to the inspections of new and existing on-site wastewater treatment and disposal systems. As an outcome of this meeting GWDS is preparing some outreach documentation that will be distributed to the on-site licensees that will provide clarification on regulatory interpretations and establish guidance on the concerns/issues that licensees have raised. This is still on-going and should be completed by the end of December 2018.

Report inspections of 250 large treatment systems annually

During this reporting period GWDS staff performed a total of 121 inspections. GWDS staff performed 100 routine/periodic inspections of large OWTDS's; along with 1 construction inspections, 11 recon inspections, 2 closure inspection, and 7 emergency inspections.

Perform recon inspections to identify and close automotive floor drains, large capacity cesspools, and industrial discharges with direct discharge to ground water

During this reporting period GWDS staff performed 11 at-random Recon inspections to identify automotive floor drains and large capacity cesspools. No active automotive floor drains were discovered during this reporting period. The UIC group authorized zero automotive discharge wells during this reporting period.

Identify water treatment facilities that discharge brine backwash to the subsurface to determine their impact to ground water

The UIC regulations require anyone who discharges backwash fluids from a water treatment plant treating more than 25,000 gallons of water per day to obtain a UIC permit for the discharge. During this reporting period the UIC "Brine Team" finalized permitting requirements for those facilities.

Conduct workshops and public outreach to educate the regulated community and public on the revised Underground Injection Control Regulations

Once promulgated the GWDS will conduct a workshop and/or provide public outreach to the UIC community to assist with the interpretation and comprehension of the amended Regulations. Still awaiting the Secretary's Order authorizing the promulgation of the amended regulations, the public hearing was held on May 25, 2017, and the technical response document was drafted and

submitted in November; however, a few minor edits were made in November and December so they needed to be publicly noticed again. The final open comment period ended in early January 2018. The UIC Regulations were promulgated on June 11, 2018. Due to the limited audience impacted by these regulations; the GWDS did not hold any workshops or information sessions as there was no interest from the industry. This project is now complete.

Revise and update Delaware's Underground Injection Control regulations

Still awaiting the Secretary's Order authorizing the promulgation of the amended regulations, the public hearing was held on May 25, 2017, and the technical response document was drafted and submitted in November; however, a few minor edits were made in November and December so they needed to be publicly noticed again. The final open comment period ended in early January 2018. These regulations were promulgated on June 11, 2018. This project is complete.

Perform at least 300 Class V injection well inspections annually

During this reporting period UIC staff performed 121 inspections. Staff performed 100 routine inspections; 11 Recon inspections to identify automotive floor drains; 7 emergency inspections; 4 construction inspections; and 1 closure inspection.

Complete data base upgrades

All of Delaware's active UIC data has now been transferred to the Exchange Network. During this reporting period UIC staff continued working on the scanning project to scan historic monitoring data into the Delaware Environmental Navigator (DEN). Over 300 large blueprints were digitally scanned have been scanned. UIC staff also worked with our IT department to investigate the possibility of having permittees electronically submits their monitoring data directly to the DEN. The IT staff completed the development of the eReporting application. UIC staff has tested the app and entered data through the eReporting application. To date, testing has been limited to internal staff. External user testing is on pending the implementation of EQuIS. We are continuing our investigation of incorporating an EQuIS application to the eReporting application which would allow laboratories and permittees to submit monitoring data to the eReporting application via a simple spreadsheet. This project should be completed in FY2019 pending budget shortfalls and limited available funding.

Finalize data base User Manual

Developing and updating the UIC data base User Manual is an on-going project. External user testing has been postponed until the implementation of EQuIS either becomes a reality or we revert back to the DEN eReporting.

Participate in Public Outreach and educational events

On June 4, 2018, Jack Hayes attended the Delaware Non-Point Source Advisory Committee meeting at the DNREC Lewes Field Office. The committee meets annually to discuss the impacts and mitigation activities of the various Divisions in DNREC as well as outside consultants in an effort to eliminate as much non-point source pollution as possible. Many success stories and changes in approaches were presented.

The GWDS attended the Delaware Technical College Environmental Training Center Advisory Board meeting on June 28, 2018. The Board meets annually to discuss what is new and

changing with the curriculum the training center provides to the on-site industry and other blue collar career fields. Often new classes are considered necessary due to regulation changes, job market changes, or a previous class is outdated. It is a great back and forth discussion regarding the state of the training meeting the needs of the various industries represented and, if not, brainstorming ways to find that niche.

The GWDS taught several high school students at the DTCC Environmental Training Center the art of soil science. The students heard lectures about soil properties, potential jobs related to soils, hands-on soil texturing, and in the field soil analysis. Also, they were exposed to the numerous forms of on-site wastewater treatment and disposal systems used in Delaware plus advanced treatment units. The students loved to be outside and to actually perform hands-on activities.

Shortfalls or Delayed Achievements: None

Barriers: Funds are needed to complete EQUIS implementation and for one additional Senior Environmental Compliance Specialist to perform inspections of Class V facilities.

Resolutions: None

DWSRF Program Set-Aside Report

Reporting Period April 1, 2018 – September 30, 2018

Report Prepared by: Clover Carlisle, Analytical Chemist IV/Laboratory Manager

Date Report Prepared: October 1, 2018

Report Provided to EPA by: Jacquelyn Park, DWSRF Set Aside Program Manager

Date Report Submitted to EPA: November 1, 2018

Set aside Category: 10%

Reporting Period: April 1, 2018 through September 30, 2018

Date Report Prepared: October 1, 2018

Prepared by: Clover Carlisle, Analytical Chemist IV/Laboratory Manager

Project Description: Division of Public Health Laboratory (DPHL). The primary responsibilities of the Laboratory, regarding the safe drinking water act, is to ensure the safety of drinking water sources in order to protect public health through the prevention of water borne diseases and contaminants.

Set-Aside Project Goals from the 2017 application:

Implement and validate updated US EPA approved methodologies per the Safe Water Act 1972
DPHL continues to implement and validate US EPA approved methodologies per the Safe Drinking Water Act 1972. EPA method 55.2 for Haloacetic Acids (HAA5) was implemented and validated and also most recently Standard Method 9215B for Heterotrophic Plate Count Pour Plate Method was sent to EPA, Standard Operating procedure and Proficiency Testing, for their approval for us to move forward with this method.

Continue to expand testing capabilities including pesticide testing and achieve certification
DPHL manager will be going to EPA director's meeting in October to help network with other states about the methodologies they use for pesticide testing. Also a manager will speak with the EPA with their availability or another states availability for staff to visit the laboratories that are performing methods. We will continue to work towards bringing on the pesticide method within the next year. It was discussed on bringing on a contract chemist to help with extraction for HAA5 testing to allow for chemists to be given time to evaluate bringing on pesticides.

Pursue grant funds to maintain updated technologies including equipment and supplies as required by the US EPA program
DPHL will pursue funding to support bringing on pesticide testing by EPA method 525.2 which will require a GC/MS, automated extraction and fume hood.

Maintain compliance with US EPA and state standards and regulations
DPHL maintains compliance with US EPA and state standards and regulations, last EPA inspection was March of 2016. DPHL has passed all Proficiency Testing for 2016, 2017, and 2018.

Continue to perform the responsibilities of the certification officer program for the state of Delaware
DPHL has a new Organics Certification Officer (CO), as of July 2018. DPHL now has two Organics CO, two Inorganic CO, and one Micro CO. Will probably send another Microbiologist next year for Micro CO course if funds allow.

Ensure that the Delaware Public Health Laboratory meets all certification testing standards defined by the US EPA

DPHL passed the last EPA inspection in 2016 and is due for next inspection in spring of 2019.

The laboratory in conjunction with the Office of Drinking Water are in the process of upgrading the lab to state system (SDWIS)

DPHL Environmental Manager and LIMS Administrator are uploading results from LIMS to Lab to State on a daily basis. Environmental Manager will be training chemists to help with this process. The LIMS Administrator is still working with Labware and Office of Drinking Water on additions and changes.

Ensure that the program is cooperating and integrating with associated programs to ensure best use of funding, personnel and equipment

Yes, the program is cooperating and integrating with associated programs to ensure the best use of funding, personnel, and equipment.

Anions testing will continue

Anions testing continues with three instrument performing the testing.

Halo acetic Acids testing will continue

Haloacetic Acid testing continues with two instruments able to perform testing.

Supplies and reagents will be purchased to maintain higher levels of operational efficiencies and cost effectiveness

Supplies and reagents continue to be purchased to maintain higher levels of operational efficiencies and cost effectiveness.

Cross training for continuity of operations in the event of emergency situations including flooding and other weather related events

Cross training continues for staff to cover all operations in the event of emergency situations, DPHL is a least two deep on trained personnel for all testing, including flooding, and other weather related events.

The geographic and analytical data will be maintained and reported via a Laboratory Information Management system that is maintained by a dedicated staff member

LIMS administrator and back up staff, maintain geographical and analytical data in DPHL LIMS by Labware.

Shortfalls or Delayed Achievements: Bringing on pesticide testing delayed due to staff having other obligations to testing performing now. Hiring a contract chemist will help to move the process of bringing on pesticides faster.

Barriers: Chemist have been consumed with performing sample extractions and testing making them unable to set aside time to start looking into pesticides methods.

Resolutions: Contract Chemist will start October 8, 2018, and after a few months of training the chemists will have more time to focus on evaluating and implementing pesticide testing.

DWSRF Program Set-Aside Report

Reporting Period April 1, 2018 – September 30, 2018

Report Prepared by: Hilary Valentine, Department Chair

Date Report Prepared: October 19, 2018

Report Provided to EPA by: Jacquelyn Park, DWSRF Set Aside Program Manager

Date Report Submitted to EPA: November 1, 2018

Set aside Category: 10%

Reporting Period: April 1, 2018 through September 30, 2018

Date Report Prepared: October 19, 2018

Prepared by: Hilary Valentine, Department Chair

Project Description: Delaware Technical Community College (DTCC), Environmental Training Center (ETC), Drinking Water Operator Examinations

Set-Aside Project Goals from the 2017 application:

Provide provisions and proctoring Operator examinations given twice each year

The ETC coordinate, and analyze the state water licensing examinations.

On January 8, 2018, forty-seven Water Operator Certification Examinations were given at the Delaware Technical Community College, Terry Campus. The exams were analyzed and individual reports given for each state exam. Base Level Water – 13/18 passed, Chemical Feed – 5/10 passed, Distribution – 9/11, Disinfection -0/2 passed, Filtration – 0/5 passed, and 0/1 for Surface Water Treatment. The Board was also provided with information regarding which students took certification examination preparation courses.

Shortfalls or Delayed Achievements: None

Barriers: None

Resolutions: None

DWSRF Program Set-Aside Report

Reporting Period April 1, 2018 – September 30, 2018

Report Prepared by: Keith Mensch, Program Administrator

Date Report Prepared: October 19, 2018

Report Provided to EPA by: Jacquelyn Park, DWSRF Set Aside Program Manager

Date Report Submitted to EPA: November 1, 2018

Set aside Category: 10%

Reporting Period: April 1, 2018 through September 30, 2018

Date Report Prepared: October 19, 2018

Prepared by: Keith Mensch, Program Administrator

Project Description: Office of Drinking Water (ODW), Operator Certification Program

Set-Aside Project Goals from the 2017 application:

Monitor, track, and report water operator licensures

Data on licensed operators in Delaware is monitored and tracked via a database maintained under the Operator Certification Program in the Office of Drinking Water. The number of licensed operators in Delaware continues to be robust at 416 licensed operators, which is down slightly from the 418 reported in the previous Semi-Annual Set-Aside Report.

Provide water operator licenses renewal

ODW continues to renew operator licenses as renewal requests are received. In order to renew their license, operators must have 20 hours of educational contact hours with a minimum of 10 hours directly related to process control.

Maintain Operator database

ODW maintains a Microsoft Access database for all licensed water operators that includes all applicable information about the individual operators, including personal contact information, certifications, relevant dates, etc. The database is updated regularly with new operator information as well as archiving records for operators whose licenses expire. Additionally, queries and reports are generated from this database as needed to support the Operator Certification Program.

Make referrals to DRWA and DTCC to assist water systems in retaining or obtaining qualified operators

ODW refers any public water system in need of a licensed operator to Delaware Rural Water Association (DRWA) in the cases of sudden or urgent operator needs and; Delaware Technical Community College (DTCC) for new operator training. Licensed Water Operators are referred to DTCC or DRWA as applicable for appropriate endorsement training. ODW also refers all proposed Non-Transient Non-Community Water Systems that are eligible to maintain compliance with the Licensed Water Operator requirement to DTCC for the Limited License Water Operator Class.

Coordinate with DTCC to provide provisions and proctoring for Drinking Water Operator examinations

ODW continues to work with DTCC on examination reviews, examination preparatory classes, and proctoring the biannual water operator examinations.

Enhance communication actions such as participating in state-wide conferences and alerting operators about educational opportunities through the ODW newsletter

ODW regularly participated in two state-wide conferences each year: DRWA Annual Conference in February and the DRWA Water Expo in September. Each of these conferences is attended by 300-400 attendees. Additionally, the ODW works with education providers in providing water system contact information for mailings about upcoming education opportunities. ODW also issues a monthly digital newsletter, which includes educational opportunities such as webinars, local classroom training, and State and Federal regulatory updates.

Ensure public water systems that are required to have an operator do so, either by directly employing an operator or by contracting with an operator

Proposed public water systems in need of a Licensed Water Operator are issued a list of eligible contract operators or referred to DTCC for the Limited License Water Operator course as applicable. The requirement for a Licensed Water Operator for existing Public Water Systems is enforced through ODW Public Water System Supervision Program by the issuance of violations and follow-up enforcement actions as necessary.

Ensure all operators have the proper endorsements for the water systems they operate

The Public Water System Supervision Program and the Capacity Development Program work closely with the Office of Engineering, which conducts plan review, to ensure that new and existing systems installing treatment obtain the proper endorsements for their operator(s). Additionally, sanitary surveys are conducted triennially by the Public Water System Supervision Program, where the public water systems are reviewed for needed endorsements as part of the survey.

Shortfalls or Delayed Achievements: None

Barriers: None

Resolutions: None

Set aside Category: 10%

Reporting Period: April 1, 2018 through September 30, 2018

Date Report Prepared: October 19, 2018

Prepared by: Keith Mensch, Program Administrator

Project Description: Office of Drinking Water (ODW), Public Water System Supervision Program

Set-Aside Project Goals from the 2017 application:

Monitor, track and report compliance for approximately 500 PWS

All public water systems (currently 491) are monitored in accordance with the Safe Drinking Water Act and Delaware regulations. Compliance is determined monthly and ODW submits the Fed Rep report quarterly to EPA.

Work with EPA towards implementing lab-to-state software

ODW has recently implemented Lab-to-State with the Delaware Division of Public Health Laboratory. Minor post-implementation errors are in the process of correction, but the implementation is considered complete and functional.

Continue to utilize the new EPA reporting under Enforcement Response Policy and Electronic Tracking Tool (ETT)

The PWSS Program consults quarterly with EPA Enforcement staff on the ETT list to prioritize systems for which formal enforcement action should be taken. Ten public water systems were identified as having ETT scores greater than 10. The PWSS Program has been actively engaged in ensuring these systems return to compliance. Enforcement actions have been taken as applicable, including the issuance of violations. The Lead and Copper Program has engaged the public water systems included on the ETT list for Lead and Copper Rule violations and has ensured they have returned to compliance. Other systems have returned to compliance by maintaining compliance sample results below the Maximum Contaminant Level.

Work with Bureau of Public Health Informatics to post all relevant lead and copper information and sample results per EPA guidance and Delaware law

The Bureau of Public Health Informatics continues to maintain SDWIS and the publicly accessible Drinking Water Watch website to ensure that all the lead and copper sample results are available to the public. Sample results for all compliance sampling, including lead and copper, are available to the public through Delaware Drinking Water Watch.

Continue to work with DNREC to better integrate the Safe Drinking Water Act and the Clean Water Act authorities to protect sources of drinking water

The PWSS Program continues to work with DNREC to protect our sources of drinking water by integrating the Safe Drinking Water Act and the Clean Water Act. Consultation is ongoing between agencies for completing Source Water Assessments. During the reporting period, the PWSS Program assisted DNREC with 30 Source Water Assessments.

Shortfalls or Delayed Achievements: None

Barriers: None

Resolutions: None

DWSRF Set-Aside Reports

April 1, 2018 – September 30, 2018

15%

DNREC – SWP

DRWA – GIS, Fluoride Training and
Certification, & Utility
Management Scholarship

DTCC – Course Development & Purchase
Automated Training Devices

Kash Srinivasan Group, LLC – Statewide
Cyber Security Consulting &
Sustainability 1:1 Assistance

ODW – Capacity Development Program

DWSRF Program Set-Aside Report

Reporting Period April 1, 2018 – September 30, 2018

Report Prepared by: Amber C. Bataille, P.G., Hydrologist IV
Matthew T. Grabowski, Environmental Program Manager II
Douglas E. Rambo, P.G., Hydrologist IV
DNREC, Division of Water, Water Supply Section
Source Water Assessment and Protection Program

Date Report Prepared: October 19, 2018

Report Provided to EPA by: Jacquelyn Park, DWSRF Set-Aside Program Manager

Date Report Submitted to EPA: November 1, 2018

Set-Aside Category: 15%

Reporting Period: April 1, 2018 through September 30, 2018

Date Report Prepared: October 19, 2018

Prepared by: Amber C. Bataille, P.G., DNREC, Source Water Assessment and Protection Program
Matthew T. Grabowski, DNREC, Source Water Assessment and Protection Program
Douglas E. Rambo, P.G., DNREC, Source Water Assessment and Protection Program

Project Description: Delaware Department of Natural Resources and Environmental Control (DNREC), Source Water Assessment and Protection Program (SWAPP)

Set-Aside Project Goals from the 2017 application:

I. SOURCE WATER ASSESSMENT, CHARACTERIZATION AND MONITORING

Final Source Water Assessments Distributed:

High Point Park/Spring Valley	Fairways Inn	South Fork Deli
Hartly Mobile Home Park	Milford Water Department	Camden Wyoming Sewer and Water Authority

Draft Source Water Assessments Prepared:

Lewes BPW	Stargate Pizza Restaurant	TUI Indian River Acres
Blades		

Source Water Assessments Started:

Hedgerow Hollow	Town of Georgetown	Rehoboth Beach Community
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II. PUBLIC AVAILABILITY AND PUBLIC PARTICIPATION

Web Postings: During this period the following source water assessments were posted on the Delaware Source Water Protection Program (SWAPP) website (<http://delawaresourcewater.org>)

South Fork Deli	Milford Water Department (*)	Hartly Mobile Home Park (*)
Fairways Inn (*)	High Point Park/Spring Valley (*)	Camden Wyoming Sewer and Water Authority (*)

(Entries marked with a "*" are reassessments)

Well Head Protection Area Project (WHPA): The SWAPP provides regularly updated well head protection area GIS layers on DE First Map (<https://firstmap.delaware.gov/>)

WHPA Added to DE First Map:

Fieldstone Golf	Fairways Inn	TUI Indian River Acres
Rehoboth Beach Community	Milford Water Department	South Fork Deli
AWC Slaughter Beach	Town of Georgetown	Blades Water

WHPA Removed from DE First Map:

Refresh and Refuel	Smyrna Rest and Information Center
Chesdel Restaurant	Slaughter Beach Water I & II

Source Water Protection (SWP) Citizen & Technical Advisory Committee (CTAC)

The SWAPP held one meeting of the Delaware Source Water Protection Citizen and Technical Advisory Committee on May 2, 2018. The focus of this meeting was to discuss Per- and polyfluoroalkyl substances (PFAS) and the response to the recent Blades, DE PFAS contamination event.

EPA Region 3 Source Water Protection States Meeting (June 6/7, 2018)

On June 6th and 7th 2018, a DNREC SWAPP Hydrologist represented Delaware at the 2018 Region 3 Source Water Programs States Meeting in Charlottesville, VA.

Source Water CTAC – Source Water Assessment Plan Subcommittee

The Delaware SWAPP CTAC held the first two subcommittee meetings looking at updating of the 1999 State of Delaware Source Water Assessment Plan (August 16, 2018 and September 21, 2018). To date, over 20 representatives of Federal, State, local agencies, non-government organizations, and public water providers have attended the subcommittee meetings. The subcommittee has reviewed the first three chapters of the 1999 Plan.

III. PRIORITIZATION OF STATE SW PROTECTION ACTIVITIES

SWAPP Hydrologists regularly update the Source Water Assessment Priority List based upon requests from DHSS ODW, DRWA, or DNREC Programs.

The DNREC SWAPP coordinates with DHSS Office of Drinking Water (ODW) to reconcile and correct ODW SDWIS well locations with SWAP database locations.

The DNREC SWAPP coordinates with the DNREC Division of Waste and Hazardous Substances when groundwater modeling exercises are requested. On September 26, 2018, a SWAPP Hydrologist responded to a request from the DNREC Site Investigation and Restoration Section (SIRS) located within the Division of Waste and Hazardous Substances which included modeling groundwater flow within the Town of Georgetown.

Freedom of Information Act (FOIA) and Data Requests:

A SWAPP Hydrologist responded to 28 FOIA requests for public well related information during this time period.

IV. INTEGRATION OF SWAPP WITH OTHER STATE, FEDERAL, AND LOCAL PROGRAMS

Work with local and national organizations to protect source water:

The DE SWAPP continues to be active on the Association of State Drinking Water Administrators (ASDWA) Special Committee on Source Water and Climate Change as well as the joint ASDWA – Ground Water Protection Council (GWPC) Committee on Source Water Protection.

On April 19, 2018, SWAPP Staff attended the quarterly meeting of the Delaware Water Supply Coordinating Council in case questions arose regarding current and future projects involving the sampling of public wells.

On May 16, 2018, a SWAPP Hydrologist attended a meeting of the State of Delaware Sediment and Stormwater Regulations Committee to discuss setbacks of new Stormwater infiltration practices related to potable wells, both public and private. Also discussed would be what happens if setbacks cannot be met and what procedures can be put into place to make sure that the source of drinking water is protected.

On May 9, 2018, SWAPP staff met with a representative of the Delaware Department of Transportation's Nonpoint Source Program to discuss how to better coordinate programs and to work together on projects that could impact groundwater quality in an effort to minimize said impacts.

On August 8, 2018, Source Water Program staff met with Hans Medlarz of the Sussex County Engineering Department to discuss a proposed Stormwater Utility concept being designed for Sussex County and implications/benefits it could have for Source Water Protection.

On September 4, 2018, Source Water Program staff met with USDA Delaware NRCS Conservation Program staff to discuss possible projects that could be included in the National Water Quality Initiative. NRCS is highly interested in working with the DE SWAPP but has currently maxed out the available practices in the current NWQI Targeted Watershed and would like to work with DE SWAPP for a suggestion towards a new Targeted Watershed that would work for both agencies for the 2019 pilot project.

On September 19, 2018, Source Water Program staff attended a meeting of the Christina Basin Early Warning System at the University of Delaware Water Resources Center (WRC). Representatives from the WRC, City of Newark, City of Wilmington, U.S. Geological Survey, U.S. EPA, PA Dept. of Environmental Protection, AQUA Pennsylvania, and Chester County Water Resources Agency were in attendance. The focus of this meeting was the status of stream gages in the Christina Basin and what would be needed to upgrade them to be more useful to the project. Discussion was held on how the contact structure should operate for the system and through what incident structure calls should originate into the system. Doug Rambo also provided a presentation to the group on a U.S. EPA smartphone application for water and wastewater utilities to use for Emergency Response and on a software package that the DNREC is using to determine time of travel calculations on streams within the Christina Basin and to potentially model chemical spills upstream of the drinking water intakes for City of Newark, City of Wilmington, and SUEZ Water Delaware.

In May 2018, a DNREC SWAPP Hydrologist conducted a round of sampling of coastal wells in the Potomac Formation of New Castle County to monitor for conductivity/salinity changes in the County's principal drinking water aquifer used for public water supply.

On April 30, 2018, a DNREC SWAPP Hydrologist gave a 3-hour training about Source Water Protection at a Southeast Rural Community Assistance Project Training. The focus of the training was: What is Source Water Protection; Cost/Benefits of Source Water Protection; Information about Delaware's Source Water Program, How Source Water Assessments are completed; How to move from the assessment to creating a source water protection plan.

During the reporting period, a DNREC SWAPP Hydrologist worked with Sussex Shores Water Company in planning for a new well. One of the Sussex Shores Water Company wells has been

experiencing an increase in chlorides over the past five years. At the request of Sussex Shores Water Company, the DNREC SWAPP opened an investigation into two neighboring community's irrigation wells to determine if these wells were impacting Sussex Shores Water Company. The irrigation systems within the neighboring communities are not part of the DNREC Water Allocation Program however the ongoing investigation with aid in determining if these community wells needs to allocated.

A DNREC SWAPP Hydrologist assisted an engineering firm during the reporting period with a Wellhead Protection Area that was removed from the Georgetown map due to inactivation.

DNREC SWAPP assisted the USGS in providing additional wells to replace wells for the 3rd round of Contaminants in the unconfined aquifer study.

Local Ordinances

On September 5, 2018, SWAPP staff met with the Kent County Department of Land Use to discuss a proposed ordinance for protecting Excellent Ground Water Recharge Areas as required under Delaware Law. The County provided a draft version for the SWAPP to review and accepted SWAPP comments on the draft prior to their next meeting with stakeholders.

Work With Authorities That Regulate Contamination Sources To Ensure Public Water Protection Compliance.

DNREC SWAPP continues to work with investigators from the Delaware Geological Survey (DGS) on the evaluation of the aquifers east of the City of Dover. The SWAPP has provided well information to assist the DGS in developing a groundwater flow model for the area, which includes the City of Dover's Long Point Road wellfield. Over-pumping of the surficial aquifer in this area is a cause for concern for two primary reasons: 1) the risk for saltwater intrusion from saline tidal creeks and marshes on the east, north, and south; and, 2) drawdown could reduce the transmissivity of the aquifer and decrease well yields.

The DNREC SWAPP continues to coordinate with the DNREC Tank Management Section on issues related to the siting and installation of new underground storage tanks systems.

During the reporting period, the DNREC SWAPP continued to coordinate with the DNREC Wetlands and Subaqueous Lands Section on monitoring the impacts of land-based dredge spoil disposal and groundwater quality near potable wells.

During the reporting period, the DNREC SWAPP coordinated with the DNREC Stormwater Program to provide comments on small lots and stormwater infiltration facilities with public wells onsite or nearby.

During the reporting period, the DNREC SWAPP coordinated with the Well Permitting Branch to provide comments on public well applications that cannot meet the required isolation distance from potential sources of contamination.

Training & Webinars

4/03/18	ITRC Webinar on Sequence Stratigraphy
4/18/18	EPA Region 3 on Using CWSRF & DWSRF Funds for Source Water Protection
5/09/18	Source Water Collaborative Webinar: A Preliminary Look at the National Forests to Faucets Analysis 2.0

- 7/18/18 Webinar: Critical Issues: Managing Groundwater Storage
- 7/19/18 Webinar: Groundwater Control and Dewatering Methods
- 8/1/18 Webinar: USDA NRCS National Water Quality Initiative--Source Water Protection
- 8/29/18 U.S. DOT Rail Car Response for Ethanol & Other Flammable Liquids
- 9/05/18 Webinar: Understanding Chemical and Microbial Contaminants in Drinking Water: Raw, Treated, and Tap Water Confirmation

Meetings / Conference Calls

- 4/4 – 4/8 Nat’l Association of State Boards of Geology Council of Examiners Workshop
- 4/13/18 Delaware Board of Professional Geologists Meeting
- 4/19/18 Delaware Water Supply Coordinating Council
- 4/27/18 DE SWAPP Meeting with EPA R3 SWAPP to discuss DE SWAP update
- 5/02/18 SWAPP CTAC Meeting
- 5/11/18 Delaware Board of Professional Geologists Meeting
- 5/23/18 ASDWA Committee on Source Water & Climate Change Conference Call
- 5/24/18 Meeting with DDA to discuss Data Sharing between SWAPP & DNMC
- 5/25/18 Meeting with DelDOT NPS Program to discuss program coordination with SWAPP
- 5/29/18 USDA NRCS Delaware State Technical Committee Meeting
- 6/6-6/7 EPA Region 3 Source Water States Meeting
- 6/14/18 ASDWA/GWPC Joint Source Water Protection Committee Conference Call
- 7/13/18 Delaware Board of Professional Geologists Meeting
- 7/18/18 Meeting with DTI to discuss a secure portal to share SWAPP Data
- 7/24/18 Nat’l Association of State Boards of Geology Committee Chair Conference Call
- 8/02/18 ASDWA Committee on Source Water & Climate Change Conference Call
- 8/08/18 Meeting with Sussex County Engineer to discuss Stormwater Utility
- 8/10/18 Delaware Board of Professional Geologists Meeting
- 8/16/18 SWAPP CTAC Source Water Assessment Plan Subcommittee Meeting
- 8/22/18 Smyrna Planning & Zoning Committee Meeting
- 9/05/18 Meeting with Kent County Planning to discuss Recharge Area Protections
- 9/17/18 City of Dover Comprehensive Plan Update Meeting
- 9/19/18 Christina Basin Early Warning System (CBEWS) Meeting
- 9/20/18 Meeting with DE Div. of Energy & Climate to discuss ASDWA Questionnaire on Source Water Protection and Climate Change plus potential updates to Delaware SWAP.
- 9/21/18 SWAPP CTAC Source Water Assessment Plan Subcommittee Meeting

V. MOTIVATING LOCAL SWP ACTIVITIES

Track and report PLUS request – Reviewed

SWAPP Management or Staff Attended PTAC & PLUS meetings during the following months:

Meeting	April 2018	May 2018	June 2018	July 2018	Aug. 2018	Sept. 2018
PTAC	X	X	X	X	X	
PLUS						

The following projects were reviewed by the DNREC SWAPP:

Developments: (6)

Brick Mill Early Childhood Center - Appoquinimink School District
Middletown High School Expansion - Appoquinimink School District
Olive B. Loss Campus Expansion - Appoquinimink School District
Summit Campus – Appoquinimink School District
Sussex Central High School – Indian River School District
Whitehall Campus - Appoquinimink School District

Comprehensive Plans: (15)

Town of Kenton	Town of Woodside
Town of Houston	Town of Millsboro
New Castle County	Town of Clayton
Town of Bridgeville	City of Lewes
Town of Smyrna	Town of Bowers Beach
Town of Cheswold	City of Harrington
City of Rehoboth Beach	City of New Castle
Sussex County	

VI. MANAGING INFORMATION

Mentoring: A Hydrologist IV within the DNREC SWAPP has recently retired leaving a vacancy within the Program. The position will be posted and hired as a Hydrologist II. The SWAPP continues to mentor a recently hired Hydrologist in the Water Allocations Branch with GIS and local geologic information/resources.

Maintenance: As reported in the April 2018 Set-Aside Report, updates and new systems were crashing SWAP database. These concerns have since been addressed and corrected.

Shortfalls or Delayed Achievements: None

Barriers: The SWAPP is continuing to evaluate a means to better obtain more current raw water quality data from DHSS Office of Drinking Water or the water providers. For some systems, the available raw water data is years old and, as such, is affecting the quality of the Source Water Assessment reports generated by the SWAPP.

Resolutions: None

DWSRF Program Set-Aside Report

Reporting Period April 1, 2018 – September 30, 2018

Report Prepared by: Richard Duncan Sr., DRWA

Date Report Prepared: October 10, 2018

Report Provided to EPA by: Jacquelyn Park, DWSRF Set Aside Program Manager

Date Report Submitted to EPA: November 1, 2018

Set aside Category: 15%

Reporting Period: April 1, 2018 through September 30, 2018

Date Report Prepared: October 10, 2018

Prepared by: Richard A Duncan Sr., DRWA

Project Description: Delaware Rural Water Association (DRWA), Fluoride Training and Certification for Small Systems and Local Officials Training on Accountability in Water Facilities (FTAW)

Set-Aside Project Goals from the 2017 application:

See attached report located in the 2% set aside report.

Set aside Category: 15%

Reporting Period: April 1, 2018 through September 30, 2018

Date Report Prepared: October 10, 2018

Prepared by: Richard A Duncan Sr., DRWA

Project Description: Delaware Rural Water Association (DRWA), Geographical Information Systems Survey (GIS)

Set-Aside Project Goals from the 2017 application:

See attached report located in the 2% set aside report.

Set aside Category: 15%

Reporting Period: April 1, 2018 through September 30, 2018

Date Report Prepared: October 10, 2018

Prepared by: Richard A Duncan Sr., DRWA

Project Description: Delaware Rural Water Association (DRWA), Water Utility Management Scholarship (UMS)

Set-Aside Project Goals from the 2017 application:

See attached report located in the 2% set aside report.

DWSRF Program Set-Aside Report

Reporting Period April 1, 2018 – September 30, 2018

Report Prepared by: Hilary Valentine, Department Chair

Date Report Prepared: October 19, 2018

Report Provided to EPA by: Jacquelyn Park, DWSRF Set Aside Program Manager

Date Report Submitted to EPA: November 1, 2018

Set aside Category: 15%

Reporting Period: April 1, 2018 through September 30, 2018

Date Report Prepared: October 19, 2018

Prepared by: Hilary Valentine, Department Chair

Project Description: Delaware Technical Community College, Environmental Training Center (ETC), Course Development for Delaware Water Operators

Set-Aside Project Goals from the 2017 application:

Online Course Development - The ETC shall update the Base Level Water Operator's Certification Course to include: updated materials, videos, PowerPoint, and etc. to reflect updated regulations

No questions or comments were received from the Board of Water Operators regarding the Base Level Exam. Questions were updated during this time, after a third party expert updated in class material to reflect updates in regulations. A third party expert also completed a thorough analysis of the online testing platform and found it to be easy to maneuver through. The Board is currently deciding piloting the exam in January.

Pilot Online Distribution Certification Exam

The Distribution Certification Exam has been put in an online format and is currently be tested by the Water Operator Board. An interactive online math basic course has been developed and is currently being offered. An energy audit course was also developed during this reporting period and is being offered to students.

Develop an Interactive Online Math Basic Course Tutorial

The course has been completed we are enrolling students at this time. The course includes interactive activities and relative course work that is applicable to water operators in the field.

Shortfalls or Delayed Achievements: None

Barriers: None

Resolutions: None

Set aside Category: 15%

Reporting Period: April 1, 2018 through September 30, 2018

Date Report Prepared: October 19, 2018

Prepared by: Hilary Valentine, Department Chair

Project Description: Delaware Technical Community College, Environmental Training Center (ETC), Purchase Automated Training Devices

Set-Aside Project Goals from the 2017 application:

The ETC shall research, assess and purchase training equipment, textbooks, curriculum and/or software pertaining to water quality control and processes to enhance classroom instruction and improve field skills

During the former reporting period the ETC purchased a new inspection camera and Elmo projector which spent out the funds. No equipment purchases were made during this reporting period.

Shortfalls or Delayed Achievements: None

Barriers: None

Resolutions: None

DWSRF Program Set-Aside Report

Reporting Period April 1, 2018 – September 30, 2018

Report Prepared by: Kash Srinivasan

Date Report Prepared: October 8, 2018

Report Provided to EPA by: Jacquelyn Park, DWSRF Set Aside Program Manager

Date Report Submitted to EPA: November 1, 2018

Set aside Category: 15%

Reporting Period: April 1, 2018 through September 30, 2018

Date Report Prepared: October 8, 2018

Prepared by: Kash Srinivasan

Project Description: Kash Srinivasan Group, 1:1 Sustainability Assistance Program

Set-Aside Project Goals from the 2017 application:

1:1 Sustainably Assistance Program

See Attached Report

Shortfalls or Delayed Achievements: None

Barriers: None

Resolutions: None

1:1 SUSTAINABILITY ASSISTANCE PROGRAM

DPH Contract #18-344



October 8, 2018



*Kash Srinivasan Group
LLC*

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UNC Financial Tools and Sustainability Report

This report provides an update on work completed to date under the Sustainability 1:1 Phase II project. The contract amount is \$48,000. The total billing through June 27, 2018 is estimated at \$33,280.

The table on the next page provides a summary of the work completed since the project was initiated in February of 2018. Since the status update provided in June 2018, three cities have been added to the roster – Milford, Newark and Wilmington.

Owing to initial expressed reluctance to commit the resources need for the rate analysis, work on Milford was conducted using published financial information and correspondence with their Engineer on water system assets. The City has since decided to move ahead with exploring the UNC Rate Analysis tool and this work is being initiated later in October 2018.

Newark and Wilmington use a rate consultant for the development of their water/sewer rates. The Financial assessments for these cities was conducted using the Financial health Checkup tool only and published financial data. Staff engineers cooperated in the development of the asset tabulations.

Raw Water Sharing project: In addition to the standard content, the Sustainability Report prepared for Wilmington includes a discussion of a preliminary proposal to consider an ambitious program for the shared use of Wilmington's Hoopes Reservoir. Hoopes is a pumped storage reservoir. The primary water source is the Brandywine River. The City and Suez (Delaware operations) have long-standing water supply interconnection agreements and the proposed project is an extension of this relationship. The project proposes to establish a secure connection between Hoopes Reservoir and the Suez surface water treatment plant at Stanton to enhance regional drought proofing and also provides a hedge against contamination events in the Red Clay and White Clay Creeks, the primary water sources for Suez Delaware. The project could also potentially establish a means of transferring water from the Red and White Clay to Hoopes during high flow periods.

Blades: The development of financial tools for town remains an open item pending completion of a financial audit.

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TABLE: Status of work completed since initiation

Municipality	Initial	Supplemental	Comments
Blades			Waiting on 2016 Audit and billing info; set up draft tools; set up draft report contents
Delaware City		X	Tools and report updated to FY 2017
Delmar		X	Tools and report updated to FY 2017
Georgetown		X	Tools and report updated to FY 2017
Laurel		X	Tools and report updated to FY 2017; original report remains in draft awaiting asset data
Millsboro	X		Tools and Report (initial) for FY 2017
Milton	X		Tools for FY 2016; Draft report awaiting data confirmation
Selbyville	X		Tools and Report (initial) for FY 2017
Smyrna	X		Tools and Report (initial) for FY 2017
Milford	X		FHC tool, Rate Analysis based on prior history only, Report based on these findings. Town has decided to move forward with UNC Rate tool development - being initiated
Wilmington	X		FHC tool, Rate Analysis not performed; City uses a rate consultant; Report based on these findings. Preliminary discussion of proposed Raw Water sharing project
Newark	X		FHC tool, Rate Analysis based on prior history only, Report based on these findings.

Background Information

The financial planning tools utilized in the project were created by the University of North Carolina through a grant from EPA. The two tools are:

- Financial Health Checkup Tool: This tool uses information from the audited financials of the government entity and generates a set of financial health metrics that identify areas of strength and weakness in the town's finances.
- Rate Analysis Tool: this tool utilizes rate and billing revenue information together with the debt service and operating expense information from the latest audit to generate projections of revenues, expenses and fund balances for a 5 to 20 year period. The tool can be utilized to conduct "what-if" scenarios on rate modifications to accommodate planned or needed infrastructure investments to identify timing and extent of rate modifications needed.

In addition to the tools, a report is developed for each town/city expressly targeted to the town/city manager that highlights management aspects of the utility that are important to sustainability of the utility service. The report includes:

- A description of the service area, including income demographics
- The water assets used by the system to deliver services and the approximate replacement value of these assets
- A brief discussion of the status of asset management efforts
- A summary review of the key findings of the financial tools
- Current methods used and recommendations on building stakeholder support
- Long-range capital planning efforts related to the utility
- A general statement on source water assessments, water quality and climate change impacts
- Cyber security efforts if any
- Summary information in ISO programs (ISO 140001 and 50001) that the town/city could consider adopting to foster a culture of sustainability

As noted in the table, some of the reports developed remain in draft form, awaiting input from the towns. Completed (including draft) reports have been separately provided to DPH.

DWSRF Program Set-Aside Report

Reporting Period April 1, 2018 – September 30, 2018

Report Prepared by: Ashley Kunder, Capacity Development Program Manager

Date Report Prepared: October 19, 2018

Report Provided to EPA by: Jacquelyn Park, DWSRF Set Aside Program Manager

Date Report Submitted to EPA: November 1, 2018

Set aside Category: 15%

Reporting Period: April 1, 2018 through September 30, 2018

Date Report Prepared: October 19, 2018

Prepared by: Ashley Kunder, Capacity Development Program Manager

Project Description: Office of Drinking Water (ODW), Capacity Development Program, Existing Systems

Set-Aside Project Goals from the 2017 application:

Assist systems high on the ETT to compliance

The Capacity Development Program reviews systems that are high on the ETT list and provides necessary assistance as required. Assistance may be in the form of on-site reviews, recommending enforcement actions, referral to DRWA or other assistance providers as applicable, and/or technical assistance over the phone. Eight existing systems had ETT scores greater than 10 during the reporting period. The Capacity Development Program referred these systems to the PWSS Program for enforcement as necessary and the Lead and Copper Rule manager issued monitoring violations to three of these systems. One of these systems has since returned to compliance for Lead and Copper.

Provide assistance to public water systems that are in need

The Capacity Development Program assists public water systems in need when identified. Identification is carried out via the ETT list, the annual review of 1/3 of all public water systems for the Capacity Development Annual Implementation Report, recurring violations, and overall performance checks when systems are reviewed as part of the DWSRF loan application process.

Three systems identified via the DWSRF Loan application process were Artesian Water Company, Wilmington Water Department, and Smyrna Water Department.

Sixteen public water systems were identified as not having licensed water operators and were issued violations. Systems that were eligible to obtain Limited Licenses were directed to DTCC to register for the Limited License Water Operator Certification Course with follow-up assistance provided by the Capacity Development Program to complete the licensing process. Systems not eligible for Limited Licenses were directed to the DRWA and/or a list of contract water operators was provided.

Provide training for public water systems operators on Lead and copper Rule compliance

The Capacity Development Program provides training on Lead and Copper Rule compliance at periodic training events hosted by the DRWA and the Southeast Rural Community Assistance Project. These occur two to three times per year. During this reporting period, Lead and Copper Rule compliance training was provided at DRWA's training facility on May 16 (four attendees) and at the offices of Tidewater Utilities, Inc., where a joint training was conducted by the Southeast Rural Community Assistance Project and the Chesapeake Section of the American Water Works Association on April 30 (nine attendees). Additionally, as part of their regular

activities, the Capacity Development Program Manager and the Lead and Copper Rule Manager provide additional customized individual training to public water system operators and administrative contacts to assist in matters pertaining to Lead and Copper Rule compliance.

Evaluate and report the technical, managerial, and financial capacities of at least one third of Delaware's water systems

A third of Delaware's water systems are evaluated for TMF capacity annually in preparation for the Capacity Development Program Implementation Report and Annual Review. More information on the specific systems that were evaluated can be found at <https://www.dhss.delaware.gov/dhss/dph/hsp/files/2017capdevar.pdf>

Monitor and assist public water systems in lead and copper rule compliance, schedules, and reporting

The Lead Copper Rule Manager performs this task on a daily basis. Approximately 170 systems are expected to have interacted with our office during the reporting period. Assistance provided included preparation of Lead and Copper notices, results notification to sampling participants, and assisting systems to complete all the requirements set forth by the Lead and Copper Rule.

Track and report PWS appearing on ETT report with scores between 5 and 10 referred to DRWA for assistance to achieve compliance with SDWA

The Capacity Development Program reviews the ETT score reports that are generated quarterly. The systems listed on the ETT are referred to the DRWA for assistance as needed and once their issues and areas of improvement are clearly identified.

Shortfalls or Delayed Achievements: None

Barriers: None

Resolutions: None

Set aside Category: 15%

Reporting Period: April 1, 2018 through September 30, 2018

Date Report Prepared: October 19, 2018

Prepared by: Ashley Kunder, Capacity Development Program Manager

Project Description: Office of Drinking Water (ODW), Capacity Development Program, New Systems

Set-Aside Project Goals from the 2017 application:

Provide assistance to all new drinking water systems to ensure that before water is available for consumption, the water system owner/operator has demonstrated technical, managerial, financial capacity, and that the water meets all applicable SDWA limits

The Capacity Development Program reviews all new (proposed) water systems. Systems are required to complete an application that allows them to demonstrate technical, managerial, and financial capacity, which is then reviewed by the Capacity Development Program for sufficiency. Prior to systems being approved to operate, the Capacity Development Program conducts a complete sanitary survey that includes sample collection for analysis to ensure that systems meet SDWA standards.

The Capacity Development Program reviewed five proposed systems during the reporting period which are listed below:

- Fieldstone Golf Course
- Kent County Regional Sports Complex
- First United Pentecostal Church
- Allen Harim – Pinnacle Processing Facility
- Marydel Ag Supply, LLC

Monitor, assist, and track assistance to new public water systems in lead and copper rule compliance, schedules, and reporting

The Lead Copper Rule Manager performs this task on a daily basis. Three new systems were provided assistance to start their monitoring for Lead and Copper during this reporting period as listed below:

- Fieldstone Golf Course
- Kent County Regional Sports Complex
- Allen Harim – Pinnacle Processing Facility

Report the name of new water systems or applications evaluated for the Semi-Annual DWSRF Set-Aside reports

The Capacity Development Program evaluated the following proposed public water systems during this reporting period:

- Fieldstone Golf Course: Capacity Development Review complete and system activated in April 2018.

- Allen Harim – Pinnacle Processing Facility: Capacity Development Review complete and system activated in September 2018.
- Kent County Regional Sports Complex: Capacity Development Review complete and system activated in September 2018.
- Marydel Ag Supply, LLC: Capacity Development Review complete and system activated in September 2018.
- Akridge Scout Reservation: Currently under Capacity Development review.
- First United Pentecostal Church: Currently under Capacity Development review.

Shortfalls or Delayed Achievements: None

Barriers: None

Resolutions: None



DELAWARE DRINKING
WATER STATE REVOLVING
FUND

Set-Aside Reports

October 1, 2018 – March 31, 2019

DWSRF Set-Aside Reports

October 1, 2018 – March 31, 2019

2%

DRWA – Cross Contamination Prevention
through Cross Connection
Control Planning, Cross
Connection Control Field
Surveys & SRF Technical
Assistance

DTCC – Administrative Services &
Technical Training Water
Operators

DWSRF Program Set-Aside Report

Reporting Period October 1, 2018 – March 31, 2019

Report Prepared by: Richard Duncan Sr., DRWA

Date Report Prepared: April 10, 2019

Report Provided to EPA by: Jacquelyn Park, DWSRF Set Aside Program Manager

Date Report Submitted to EPA: May 14, 2019

Set aside Category: 2%

Reporting Period: October 1, 2018 through March 31, 2019

Date Report Prepared: April 10, 2019

Prepared by: Richard Duncan Sr., DRWA

Project Description: Delaware Rural Water Association (DRWA), Contamination Prevention through Cross Connection Control Planning (CPCCC)

Set-Aside Project Goals from the 2018 application:

DRWA will assist five small State Revolving Fund compliant systems in addressing the need to prevent contamination of Delaware's drinking water systems.

DRWA revisited Selbyville due to school upgrades effecting the system. Met with Tidewater Utilities (TWU) referencing Barkers Landing and other systems TWU supply water to. Working with Milford Public Works Department on areas in the system that may be vulnerable to contamination. We have future on site visits planned with Dover Air Park.

DRWA will provide technical assistance training and/or on-site visits instructing on the five essential elements that make up the effective ongoing Cross Connection Control Program. The five essential elements consist of consumer education and awareness, risk assessment, ongoing reassessment, recordkeeping, and reporting.

DRWA will be conducting training on the 5 essentials during the next quarter.

DRWA with the expertise from Hydro Corp have been working aggressively with systems explaining the need for protecting their infrastructure by way of implementing a cross connection control plan. The following systems have shown interest or have requested meetings to start planning, most of these systems requested public educational materials and methods of awareness. Currently we are assisting with Rehoboth, Milton, and Dover getting the system survey ready. The following Towns have been visited and received materials referencing the need for contamination prevention; Delmar, Rehoboth, Smyrna, Dover, and Middletown

Shortfalls or Delayed Achievements: None

Barriers: The State of Delaware does not have regulation to require systems to have a Cross Connection Control Program and to work with the State Plumbing inspectors, and the State of Delaware's Plumbing Board to identify needs and concerns.

Resolutions: EPA and the State of Delaware need to work together in the adoption of a regulation to prevent contamination of our drinking water supplies.

Set aside Category: 2%

Reporting Period: October 1, 2018 through March 31, 2019

Date Report Prepared: April 14, 2019

Prepared by: Richard Duncan Sr., DRWA

Project Description: Delaware Rural Water Association (DRWA), Cross Connection Control Planning for Municipals

Set-Aside Project Goals from the 2018 application:

Drwa and the Hydrocorp group will provide to the City of Rehoboth Beach, The Town of Milton and The City of Dover necessary data and information to establish, update and implement a working Cross Connection Control Plan(s) Services provided will be conducted in accordance with current state, local and federal guidance's and regulations

Rehoboth Beach

- Start-up meeting – complete
- Internal training – complete
- “Draft” Cross Connection Control Plan delivered
- “Draft” ordinance delivered
- Twenty-three on-site inspections completed March 25–26, 2019 (see attached report)
 - Scheduled inspections: April 10–11, 2019 and May 8–5, 2019

Milton

- Start-up meeting - complete
- “Draft” Cross Connection Control Plan and “Draft” ordinance delivered
- Waiting for water customer listing
 - HydroCorp met with Greg Wing on March 19, 2019, to discuss the cross-connection control program. Mr. Wing indicated he will attempt to provide account list soon. The account listing has not been received to date, and a follow-up email has been sent.

Dover

- Steve Fox met with Kate Mills and addressed City questions. Mrs. Mills had some additional questions that were addressed via email
 - Followed-up on Friday, April 12th to address questions and determine status.

Shortfalls or Delayed Achievements: The City of Rehoboth is moving along well as is Milton. There was a delay with the City of Dover, they try to decide if they have the time to work on this project. Recently the City of Dover opted to not enter into the program but wishes to be considered next year.

Barriers: Need systems sign an agreement because of time restrictions completing the programs.

Resolutions: Continuation of this program is very beneficial to the water suppliers.

Prepared for:

Town of Milton
101 Federal St.
Milton, DE 19968



CROSS CONNECTION CONTROL PLAN

For

Town of Milton, DE

Town of Milton Approved: (insert date)
ODW Approved: (insert date)

Prepared by:



210 Vickers Drive
Milford, DE 19963
Phone: 248.250.5000



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1. INTRODUCTION

The purpose of this document is to outline the Town of Milton, DE's Cross Connection Control policies for all commercial, institutional, industrial and miscellaneous facilities, and are summarized as follows:

- Protect the public water system from contaminants and/or pollutants that could backflow through the customer service connection.
- Promote the elimination of actual and/or potential cross connections between the public potable water system and non-potable water systems, plumbing fixtures, sources and/or systems containing substances of unknown or questionable quality.
- Provide guidance for the maintenance of a continuing Cross Connection Control program.



2. AUTHORITY

The authority to carry out and enforce the local CCCP is provided from local ordinance (see Appendix A), the Best Practices Manual for Cross Connection Control prepared by the department, office of Drinking Water and Municipal Assistance, Delaware Plumbing Code, and Delaware Residential Code.

2.1. Inspector/Designated Agent

The Town of Milton or Designated Agent (Authority/Agent) conducting inspections on behalf of the Town of Milton must be designated/approved by the Town of Milton. The Authority/Agent must meet both 1) an experience component and 2) a certification/training component. Acceptable components are as follows:

Experience

- Be employed by a Utility, Water Purveyor, Building Department, or body of jurisdiction and must meet the qualifications and training requirements as dictated by the Authority conducting inspections/surveys on behalf of the Town of Milton
- Have held a similar position (CCC Inspector) with a previous municipality
- One year full time experience in conducting cross connection control inspections in commercial, institutional and industrial facilities

Certification/Training

- Meet American Society of Sanitary Engineer Standards (ASSE) 5120 and completed their Cross Connection Inspector Course (40 hours)
- Possess a certificate of completion from one of the following:
 - USC *Cross Connection Control Specialist Course* (40 hours)
 - TREEO *Cross Connection Control Program Manager Course* (40 hour)
- Other approved cross connection courses for surveying, as approved by the Authority for conducting inspections/surveys on behalf of the “city name”. Submission requirements for approvals must include the following:
 - Course outline
 - Date of attendance
 - Outline of test questions
 - Categories and grading criteria
 - Certificate of satisfactory completion



3. PROGRAM APPROACH

The objectives of this program will be met primarily by:

- Routinely inspecting water customers for cross connections or potential cross connections.
- Requiring water customers to test backflow prevention assemblies.
- Maintaining cross connection control records.
- Actively enforcing violations of the program.
- Providing public education.
- Reporting the status of the program to the State of Delaware - Division of Public Health of the Department of Health and Social Services, Office of Drinking Water.

The Town of Milton shall ensure that there are adequate personnel and resources to carry out the necessary field and administrative requirements for this program. The Town of Milton adopts the most current American Water Works (AWWA) M14 Manual as a guide to prevent and eliminate cross connections.



4. INSPECTIONS

The water connections and plumbing systems of all water customers or accounts shall be initially inspected for the presence of cross connections. As a result of the initial inspection, a detailed record of each account shall be established (see Section 6). A representative of the water utility or their designated agent shall be responsible for inspections. Individuals responsible for conducting inspections shall have obtained sufficient training on cross connection rules, identification, and corrective actions.

Inspections shall consist of entering a facility from the point where water service enters the facility (usually the meter) and tracing the piping to each end point of use. Using the inspection forms in Appendix B the inspector shall identify and note the location and nature of any direct and potential cross connections, location and details of backflow prevention devices, and other pertinent information. Inspectors having proper identification, shall be permitted to enter the building/premises at reasonable times for the purpose of cross connection inspections. If the inspector is refused proper access or if customer plumbing is untraceable, the Town of Milton will assume a cross connection is present and take the necessary action to ensure the public water supply is protected.

The highest priority for inspections shall be placed on facilities that pose a high degree of hazard, that have a high probability that backflow will occur, or are known/suspected to have cross connections.

Once initial inspections are complete then a re-inspection frequency shall be determined for each account based on the degree of hazard and potential for backflow. The AWWA M14 Cross Connection Rules Manual & ASSE 5000 Standards will be a guide in classifying the degree of hazard of each account. However, in general, situations in which backflow could cause illness or death shall be considered high hazard. Non-Residential and residential accounts that pose a high hazard or have a high potential for backflow to occur, must be re-inspected at least once per year. All other non-residential accounts must be re-inspected once every 1-5 years based on the degree of risk. All other residential accounts must be inspected a minimum of once every 10 years. Other factors such as new construction, water quality complaints, or anomalies in customer billing, may prompt an immediate re-inspection. After initial cross connection inspections are complete, a comprehensive list or inventory of all backflow prevention devices shall be on record including all pertinent data.

Following an inspection, the Town of Milton shall inform the customer of their compliance status with the cross connection rules. Template notices in Appendix D may be used to inform customers of upcoming inspections, required corrective actions, compliance status, etc.



4.1 Request for Internal Cross Connection Control Information

The Authority has the legal right to request specific cross connection control information to include but not limited to piping information, piping drawings or information related to a specific point of water use in relation to cross connections. The Authority shall issue a request notice for any one of the following:

- Facility is determined by the Inspector to be large and/or complex requiring considerable amount of additional time to inspect
- Facility does not allow for free and unlimited access to areas requiring inspection/survey
- Piping configurations are complex
- Piping is not readily accessible. (i.e. concealed piping)
- Multiple piping systems
- Inadequate piping identification
- Facility changes their plumbing configurations on a regular frequency
- Secondary/auxiliary water sources
- Manufacturing/use of industrial fluids in piping systems or facility operations
- Refusal of entry
- No current as-built/engineering drawings of the potable water system

If, the Authority/Agent is not able to complete an inspection the property owner must, at their own expense, have the plumbing inspected for cross-connections by a certified firm or individual that has met the requirements in [Section 2.1](#).

4.2 Submission of Internal Cross Connection Control Information

Information that must be included is as follows:

- Methodology used to conduct the survey
- General facility overview
- List of violations/requirements - information must include the following:
 - Type of backflow prevention device to be installed
 - Size of backflow prevention device to be installed
 - Location description/remarks to include what the backflow prevention device will be supplying
- List of all existing backflow prevention devices (both testable and non-testable). Information that must be included is as follows:
 - Type of backflow prevention device installed
 - Size of backflow prevention device installed
 - Manufacturer of backflow prevention device to include:
 - Model
 - Serial number
 - Location description/remarks
- A proposed plan for the correction of violations/requirements must be submitted along with a proposed time table for completion
- Drawings of the facility's potable water piping system may be required



4.3 Containment

“Containment” * is the installation of a backflow prevention device between the facility and public distribution systems. Containment assures there is no chance for water of questionable quality to leave a facility and to enter the public distribution system.

While a facility may be contained, the Authority may still require an inspection downstream of the containment device(s). It is the responsibility of the facility to provide potable water at all times to its employees and/or public. Failure on the facility's part to take corrective action would constitute a violation thus exposing the facility to possible legal ramifications.

A Containment Notice will be issued for any one of the following:

- Facility determined to be high hazard
 - Refusal to comply with the normal steps for non-compliance
 - Facility does not allow free and unlimited access to areas requiring inspection/survey
 - Piping not differentiable or determined to be complex
 - Piping is not readily accessible (i.e. concealed piping)
 - Multiple piping systems
 - Inadequate piping identification
 - Facility changes their plumbing configurations on a regular frequency
 - Secondary/auxiliary water sources
 - Manufacturing/use of industrial fluids in piping systems or facility operations
 - Refusal of entry
 - No current as-built/engineering drawings of the potable water system
- * Containment assembly(s)/device(s) does not negate the facility’s responsibility to ensure the internal water system is protected utilizing appropriate backflow prevention methods.



5 APPLICATION OF BACKFLOW PREVENTERS

The following table outlines acceptable backflow protection for certain types of cross connection conditions that may be encountered. The table is to be used as a guideline in determining adequate cross connection control measures, not as an absolute requirement, see Appendix G for sample installation schematics.

Backflow Preventer Type	Degree of Hazard	Application	Applicable Standard
Backflow prevention assemblies:			
Double Check Valve Assembly (DCV)	Low hazard	Backpressure or backsiphonage	ASSE 1015, AWWA C510, CSA B64.5, CSA B64.5.1
Double Check Detector Assembly (DCDA)	Low hazard	Backpressure or backsiphonage	ASSE 1048
Pressure Vacuum Breaker Assembly (PVB)	High or low hazard	Backsiphonage	ASSE 1020, CSA B64.1.2
Reduced Pressure Principle Backflow Prevention Assembly (RPBP)	High or low hazard	Backpressure or backsiphonage	ASSE 1013, AWWA C5411, CSA B64.4, CSA B64.4.1
Reduced Pressure Detector Assembly (RPDA)	High or low hazard	Backsiphonage	ASSE 1047
Spill-resistant Vacuum Breaker Assembly (SVB)	High or low hazard	Backsiphonage	ASSE 1056
Backflow prevention devices:			
Antiphon-type Fill Valve (FV)	High hazard	Backsiphonage	ASSE 1002, CSA B125.3
Atmospheric Vacuum Breaker (AVB)	High hazard	Backsiphonage	ASSE 1001, CSA B64.1.1
Backflow Preventer for Carbonated Beverage Equipment (VMBP)	Low hazard	Backpressure or backsiphonage	ASSE 1022
Backflow Preventer with Intermediate Atmospheric Vent (VDCV)	Low hazard	Backpressure or backsiphonage	ASSE 1012, CSA B64.3
Dual Check (DC)	Low hazard	Backpressure or backsiphonage	ASSE 1024, CSA B64.6
Hose Connection Backflow Preventer (HCBP)	High or low hazard	Low head backpressure or backsiphonage	ASSE 1052, ASME A112.21.3, CSA B64.2.1.1
Hose Bibb Vacuum Breaker (HBVB)	High or low hazard	Low head backpressure or backsiphonage	ASSE 1011, ASME A112.21.3, CSA B64.2, CSA B64.2.1
Anti-frost Hose Bibb Vacuum Breaker	High or low hazard	Low head backpressure or backsiphonage	ASSE 1011, ASME A112.21.3, CSA B64.2, CSA B64.2.1
Lab Faucet Vacuum Breaker (LFVB)	High or low hazard	Backsiphonage	ASSE 1035, CSA B64.7



Backflow Preventer Type	Degree of Hazard	Application	Applicable Standard
Backflow prevention devices:			
Vacuum Breaker Wall Hydrants (HBIVB)	High or low hazard	Low head backpressure or backsiphonage	ASSE 1019, ASME A112.21.3, CSA B64.2.2
Other means or methods:			
Air Gap (AG)	High or low hazard	Backsiphonage	ASME A112.1.2
Air Gap Fittings for use with Plumbing Fixtures, Appliances and Appurtenances	High or low hazard	Backsiphonage	ASME A112.1.3
Barometric Loop	High or low hazard	Backsiphonage	MI Plumbing Code Sec. 608.13.4



6 TESTING BACKFLOW PREVENTION ASSEMBLIES

When inspections have been completed, a comprehensive list of backflow preventers installed on customer plumbing systems will be on record. The backflow preventers that are testable assemblies shall be placed on a routine testing schedule. All testable assemblies will be tested upon installation, upon repair and on an annual basis.

Upon notice from the Town of Milton, it shall be the responsibility of the water customer to arrange and absorb any costs associated with assembly testing and subsequent repair/replacement of backflow prevention assemblies.

Following the initial cross connection inspections and subsequent classification of accounts (e.g. assigning a degree of hazard), assembly testing notices shall be sent to non-residential water customers annually. Residential water customers shall receive testing notices every 3 years or every 5 years for non-chemically treated lawn irrigation systems. The notices shall be sent out in a timely manner to provide adequate time for customers to comply, and the timing will consider seasonal assemblies. Template notices in Appendix D may be used to inform customers of testing requirements. These notices will:

- Clearly identify the assembly requiring testing (size, make, model, location, etc.)
- Stipulate the date by which the assembly must be tested.
- Indicate that tests must be completed by a ASSE 5110 certified tester. A list of approved testers may be provided and updated lists may be obtained from the ASSE Website.
- Enclose either a standard test form (see Appendix E) or a list of testable backflow prevention assemblies.

When assembly testing reports are received by the utility, they will be checked for the following:

- All the necessary information was provided
- Name and certification number of the tester is provided
- The test results appear valid
- The assembly tested matches the assembly requiring testing (Make, Model, etc.)
- The assembly is approved

Test results are only valid if testing was performed by an individual holding an active ASSE 5110 certification.

Cross connection control program staff will follow up with owner or tester on questionable test forms. A customer may be asked to have an assembly retested if the original test results do not appear valid. Test forms must be received and kept on record for each required test.



7 RECORD KEEPING

A system of cross connection record keeping shall be maintained. Special software specifically for cross connections may be used for:

- Efficient record searches
- Easy reporting
- Simple updating
- Automatic letter generation
- Automatic deadline notification

All cross connections account information must be in the records including:

- Address and location
- Owner name and contact information
- List of testable assemblies
- Description of other cross connections within the facility
 - Air gaps
 - Non-testable assemblies
- Degree of hazard classification and basis
- Required re-inspection frequency
- Photos or sketches if available

All testable assemblies must be in the records including:

- Location of the assembly
- Name and contact information of assembly owner
- Make, model, and size of assembly
- Degree of hazard classification
- Required testing frequency and basis

Tracking changes in water use or tracking new customers is a critical part of the cross connection program. The Town of Milton shall make every attempt to prevent/eliminate cross connections at installations to ensure future compliance. An effort shall be made to cooperate and communicate with the local plumbing code inspector to better accomplish this goal.

Standard letter, form, and report templates may be used to simplify the program requirements including:

- Inspection forms
- Assembly testing forms
- Inspection and/or assembly testing notification letters
- Noncompliance letters
- Water service termination notice
- Hydrant use authorization forms

Copies of the written cross connection control program, ordinance, and ODW approval letter should be kept on file. Copies of the ODW annual reports shall be kept for a minimum of 10 years.



8 ENFORCEMENT

To protect public health, water customers found to be in violation of the cross connection rules will be brought into compliance in a timely manner or lose their privilege to be connected to the public water system. To properly enforce these rules the Town of Milton ordinance provides authority to inspect facilities, terminate water service, and assess fines.

Following an inspection, the customer will be sent either a compliance notice or a non-compliance notice. The timeframe to complete the necessary corrective actions is at the discretion of the utility and will be based primarily on the degree of risk posed by the violation but should also consider the complexity/cost of the necessary corrective actions. Cross connections that pose an imminent and extreme hazard shall be disconnected immediately and so maintained until proper protection is in place. Cross connections that do not pose an extreme hazard are generally expected to be eliminated within 30-60 days. The necessary corrective action and deadline shall be described in the non-compliance notice to the customer.

Failure to submit a test form for a backflow prevention assembly that has successfully passed testing requirements constitutes a cross connection and must be corrected and may result in the termination of water service and/or the assessment of a fine(s).

If a water shut off is necessary to protect the public water system, the local health department, fire department, local law enforcement, and Town of Milton manager may need to be notified.



9 NEW SERVICE INSPECTION

9.1 Procedures

All plumbing plans and permits for a proposed building shall be reviewed by the Authority, Plumbing Inspector, Building Inspector and building contractor(s). The Authority's Cross Connection Control Plan and Backflow Prevention requirements will be reviewed with the responsible party.

9.2 Inspections

The Authority/Designated Agent conducting the cross connection control inspection shall inspect the building for compliance with the Cross Connection Control Program.

9.3 Compliance

Upon completion of the cross connection control inspection and determination that the building is in compliance and has met any required actions of this plan, a certificate of occupancy and water service may be initiated as applicable.

9.4 Non-Compliance

If the building does not comply with the Cross Connection Control Program the Authority shall enforce this plan as required. The water service and the certificate of occupancy will not be initiated until compliance is achieved and approved.



10 PUBLIC EDUCATION

The cross connection control program staff must have a good understanding of the program. The Town of Milton shall ensure their cross-connection control staff receives proper in-the-field training as well as classroom education focusing on terminology, backflow prevention devices/assemblies, regulations, and hydraulic concepts. In addition, cross connection control staff will be encouraged to receive continuing education to be made aware of new backflow prevention devices/assemblies, regulation changes (i.e. plumbing code updates), new water use devices that pose cross connection concerns, etc.

Furthermore, attempts to educate the public about cross connections will be made by distributing pamphlets on common residential cross connections, visiting schools, providing onsite education of facility management and maintenance staff during routine inspections, speaking at condominium association meetings, showing videos on local access channels, or posting newspaper announcements.

Cross connection staff shall also be available upon request to provide backflow prevention education to pertinent community officials and Town of Milton employees.



11 ANNUAL REPORT

State of Delaware - Division of Public Health of the Department of Health and Social Services, Office of Drinking Water may require a program status report annually. The report summarizes testing, inspection, and corrective action efforts. Cross connection records shall be on file to document each number on the report. The annual report form shall be filled out completely and submitted by the deadline. A narrative description shall be included explaining any unusual numbers or significant events such as:

- The addition or loss of a cross connection staff person
- Greatly expanded/contracted number of cross connection accounts
- Status of accounts not currently in compliance



APPENDIX A - LOCAL ORDINANCE



APPENDIX B - FIELD FORMS

Facility Comments	
-------------------	--

Facility Information			Mailing Information		
Facility Name:			First:	Last:	
Address:			Address:		
Address 2:			Address 2:		
City:	State:	Zip:	City:	State:	Zip:
Phone:	Ext:	Fax:	Phone:	Ext:	Fax:
Contact Name:			Email:		

Inspection Date	<input type="text"/>	Facility Type	<input type="text"/>	Requirements	<input type="text"/>
Inspection Status	<input type="text"/>	Facility Status	<input type="text"/>	Assemblies	<input type="text"/>
Inspection Frequency	<input type="text"/>	Test Cycle	<input type="text"/>	Devices	<input type="text"/>
High Hazard	<input type="checkbox"/>			Last Insp Notice	<input type="text"/>
				Next Insp Notice	<input type="text"/>

Containment:

Potable Supply	<input type="text"/>	Private Well	<input type="text"/>	Reclaim Water	<input type="text"/>
Fire Supply	<input type="text"/>	Surface Water	<input type="text"/>	Grey Water	<input type="text"/>
Containment Existing	<input type="checkbox"/>	Containment Required	<input type="checkbox"/>	FP Properly Protect	<input type="checkbox"/>

Isolation Hazards:

Facility Comments	
Inspector's Name	<input type="text"/>
Contact's Name	<input type="text"/>
Contact's Signature	<input type="text"/>



Sample

Inspection Form

Facility Name:	Service Address:	Insp. Date:
----------------	------------------	-------------

ID#	Req	Type	Size	Manufacturer	Model	Serial #	PT	Recommendation
	<input type="checkbox"/>							
	<input type="checkbox"/>							
	<input type="checkbox"/>							
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APPENDIX C ASSEMBLY AND DEVICE LEGEND

Hydro Designs, Inc Device Legend			
A.S.S.E Standard	Legend	Acronym	Testable Device
1001	Atmospheric Type Vacuum Breakers	AVB	No
1002	Anti-siphon Fill Valves (Ballcocks)	ASBC	No
1011	Hose Connection Vacuum Breaker	HBVB	No
1012	Backflow Preventer w/Intermediate Atmospheric Vent	VDCV	No
1013	Reduced Pressure Backflow Prevention Assembly	RPBP	Yes
1015	Double Check Valve Backflow Prevention Assembly	DCV	Yes
1019	Vacuum Breaker Wall Hydrants	HBIVB	No
1020	Pressure Vacuum Breaker Assembly	PVB	Yes
1022	Backflow Preventer for Carbonated Beverage Machine	VMBP	No
1024	Dual Check Valve Type Backflow Preventers	DC	No
1024	Residential Dual Check	RDC	Yes/No
1035	Laboratory Faucet Backflow Preventer	LFVB	No
1037	Pressurized Flushing Devices (Flushometers)	PFD	No
1047	RP Detector Backflow Prevention Assembly	RPDA	Yes
1048	Double Check Detector Backflow Prevention Assembly	DDCV	Yes
1052	Hose Connection Backflow Preventer	HCBP	No
1055	Chemical Dispensing Systems	AG	No
1056	Spill Resistant Vacuum Breaker Assembly	SVB	Yes
1057	Freeze Resistant Yard Hydrant W/Backflow		No
A112.1.2	Air Gap	AG	No
	Single Check Valve	SCV	No



APPENDIX D – NON-RESIDENTIAL PROGRAM NOTICE TEMPLATES



Cross Connection Control Program Inspection Notice

RE: [FACILITYNAME] at [SERVICEADDRESS1]

Dear [GREETING]

The purpose of the [ORGNOME]'s Cross Connection Control Program, as defined in local Ordinance [ORDINANCENUMBER], is to help eliminate possible contamination of the public water distribution system. There are two required components of the program; 1) site inspection and 2) testing of backflow prevention assemblies.

The [ORGNOME] will be working jointly with inspectors from HydroCorp to conduct these inspections. Thank you in advance for your cooperation in this matter.

As part of this program, an inspection of your facility's internal water system is to be completed. Inspectors will be reviewing your water system for connections that could possibly contaminate the water distribution system. The inspection is tentatively scheduled for **[SCHEDULEDDATE]**. Our inspector will do their best to be on site this day, however, we may be on site the day before or after the scheduled date. The inspection must be completed during normal business hours of 8:00 AM to 5:00 PM. If you need a more specific time, please call 1.800.690.6651 to arrange an appointment.

Any costs associated with the replacement, modification(s), installation, and/or testing of backflow prevention assemblies is the responsibility of the property owner/manager and/or occupant.

You will be notified following the inspection if modification(s) and/or testing of backflow prevention assemblies are necessary. We look forward to working with you in protecting the drinking water supply. If you have any questions or concerns, please contact HydroCorp at 1.800.690.6651 or visit their website at www.hydrocorpinc.com/resources/links/.



Cross Connection Control Program Inspection Compliance Notice

RE: [FACILITYNAME] at [SERVICEADDRESS1]

Dear [GREETING]

The purpose of the [ORGNNAME]'s Cross Connection Control Program, as defined in local ordinance [ORDINANCENUMBER], is to help eliminate possible contamination of the public water distribution system. There are two required components of the program; 1) site inspection and 2) testing of backflow prevention assemblies.

As part of this program, an inspection of your facility's internal water distribution system was completed on [SCHEDULEDDATE]. Inspectors reviewed your water distribution system for any piping or connections that could possibly contaminate the water distribution system.

Your facility was either found compliant and/or the necessary changes made to comply with local ordinance. This inspection is valid until your facility's next scheduled inspection date. You will receive future notice for your next inspection date.

If your facility has backflow prevention assemblies requiring testing, you will be receiving additional notice detailing test requirements.

If you have any questions or require additional information, please contact **HydroCorp** at **1.800.690.6651** or visit their website at **www.hydrocorpinc.com**.



Cross Connection Control Program Containment Compliance Notification

RE: [FACILITYNAME] at [SERVICEADDRESS1]

Dear [GREETING]

A Cross Connection Control inspection was performed at your facility. At that time, it was determined that your facility's potable water system is "contained" by an approved, properly installed backflow prevention device or assembly at the main inlet which is intended to minimize the potential backflow threat to the [ORGNOME]'s public water system. Therefore, your facility has met the intent of the inspection portion of the Cross Connection Program as defined in local Ordinance [ORDINANCENUMBER]. Compliance with the inspection portion of the program requirements shall remain in effect until your facility's next scheduled inspection date.

However, to fully meet the intent of the CCC Program, two- (2) items must be addressed:

1. Inspection of the facility: Completed.
2. Successful annual testing of any existing testable backflow prevention assemblies within your facility.

This facility will be in compliance with the Cross Connection Control Program when the existing backflow prevention assemblies are tested this year and at yearly intervals hereafter. When it is necessary to test such assemblies, your facility will receive a notification letter, test forms to be completed by a certified tester for each identified testable assembly, and a list of certified testers within your facility's area. Upon the successful testing of the backflow prevention assembly, please submit a copy of the completed test record(s) to HydroCorp.

Note, however, it is still possible for existing cross connections within your facility to potentially affect the water quality within your internal plumbing system. The installation of an approved backflow preventer at the main inlet does not relieve your facility of the responsibility of providing potable water to your employees and the public. To comply with all applicable codes and laws, it is recommended that your facility:

- Have a cross connection control survey of the potable water piping system performed within your facility.
- Ensure all piping systems downstream of the containment device/assembly are labeled properly.
- Ensure backflow prevention assemblies connected to the potable water supply within your facility are tested annually.

If you have any questions or require additional information, please contact HydroCorp at 1.800.690.6651.



Request for Internal Cross Connection Control Information Notice

RE: [FACILITYNAME] at [SERVICEADDRESS1]

Dear [GREETING]

The purpose of the [ORGNAME]'s Cross Connection Control Program, as defined in the local Ordinance [ORDINANCENUMBER] is to help eliminate direct and potential hazards to the public water distribution system. A cross connection is an actual or potential connection between the potable water supply and any other environment which may introduce contaminants into the drinking water. We have hired a specialized consulting firm (HydroCorp) to assist in helping water customers comply with the CCC Program.

There are two required components of the CCC program; 1) Site inspection of your plumbing system, and 2) Compliance with the local CCC Ordinance and State Plumbing Code. HydroCorp conducted a cursory CCC assessment of your facility on [LASTSURVEYDATE]. At the time of that initial contact, it was indicated that your facility has not had a thorough cross connection inspection. Due to the size and complexity of your building(s) and plumbing system(s) the Utility cannot undertake the responsibility of the inspection at your facility.

The [ORGNAME] recommends, but does not require, that your company contract HydroCorp for your initial CCC inspection. This recommendation is because HydroCorp ultimate role in this process would be to "protect the water system" and provide the most cost effective and unbiased opinion of how to correct any cross connections. However, should you choose to select your own contractor, coordination of services is required with HydroCorp since they have ultimate approval of our CCC program.

If your company has had a complete Cross Connection Control Survey, please provide inspection/survey results of the entire potable water piping system within your facility along with the following required information:

- Testers Certification number of the person(s) conducting the inspection/survey
- A list of all testable backflow preventers with locations, serial # and Regulated Object #
- A list of all non-testable type backflow preventers with locations
- A list of all water connections with no backflow prevention with locations
- A written plan for correcting any cross connections identified during inspection
- A copy of the survey performed and name and contact information of the company who performed it
- A time frame for correcting all cross connections found during inspection.

If you have any questions or require additional information, please contact HydroCorp at 1.800.690.6651. Your facility's cooperation in this important safety program is greatly appreciated.



Containment Notice

RE: [FACILITYNAME] at [SERVICEADDRESS1]

Dear [GREETING]

The purpose of the [ORGNAME]'s Cross Connection Control Program, as defined in Ordinance [ORDINANCENUMBER], is to help eliminate possible contamination of the public water distribution system.

“Containment” is the installation of a backflow prevention device, or a testable assembly between the facility and the public water distribution system. Containment assures there is no chance for water of questionable quality to leave your facility and to enter the public water distribution system.

As authorized by Ordinance [ORDINANCENUMBER], the containment backflow prevention assemblies on the attached list are to be installed immediately after the municipal water meter and before the first tap. If a by-pass around the backflow prevention assembly is required, the by-pass shall also be protected with a backflow prevention assembly of equal protection. **Your facility has 30 days to install the assemblies shown on the attached pages.**

Please be advised that the installation of containment devices does not relieve your facility of the responsibility of providing potable water to its employees and visitors. To comply with applicable laws, and to ensure the integrity of your internal water distribution system, a comprehensive cross connection inspection should be completed. If you have any questions, please contact HydroCorp at 1.800.690.6651.



Inspection Non-Compliance Notice 1

RE: [FACILITYNAME] at [SERVICEADDRESS1]

Dear [GREETING]

The purpose of the [ORGNAME]'s Cross Connection Control Program, as defined in the [ORDINANCENUMBER], is to help eliminate possible contamination of the public water distribution system. There are two required components of the program; 1) site inspection and 2) testing of backflow prevention assemblies.

An inspection of your facility's internal water distribution system was completed on [LASTSURVEYDATE]. Inspectors reviewing your water system found connections that could possibly contaminate the public water distribution system. A list of requirements is enclosed.

Requirements on this list must be addressed using only State approved backflow prevention devices. A licensed plumber should be able to assist you with acquiring approved backflow prevention devices. Some backflow prevention devices (assemblies) also require testing by a State Certified Tester. We suggest that the licensed plumber installing the testable assemblies also have the state certification to test assemblies. ***All testable assemblies must be tested immediately at the time of installation.***

These requirements must be completed by [RESPONSEDATE]. After the requirements and devices have been installed (if applicable) please call the number below on or before the date listed above to schedule a compliance inspection. Failure to do so will result in future non-compliant notices.

To arrange for compliance review please contact HydroCorp at 1.800.690.6651. If you require additional information, please visit their website at www.hydrocorpinc.com.



Inspection Non-Compliance Notice 2

RE: [FACILITYNAME] at [SERVICEADDRESS1]

Dear [GREETING]

The purpose of the [ORGNAME]'s Cross Connection Control Program, as defined in the [ORDINANCENUMBER], is to help eliminate possible contamination of the public water distribution system. There are two required components of the program; 1) site inspection and 2) testing of backflow prevention assemblies.

An inspection of your facility's internal water distribution system was completed on [LASTSURVEYDATE]. Inspectors reviewing your water system found connections that could possibly contaminate the public water distribution system. **A letter of notification was previously sent to you outlining the required corrective measures.** For your reference, a duplicate list of requirements is enclosed.

Requirements on this list must be addressed using only State approved backflow prevention devices. A licensed plumber should be able to assist you with acquiring approved backflow prevention devices. Some backflow prevention devices (assemblies) also require testing by a State Certified Tester. We suggest that the licensed plumber installing the testable assemblies also have the state certification to test assemblies. ***All testable assemblies must be tested immediately at the time of installation.***

These requirements must be completed by [RESPONSEDATE]. After the requirements and devices have been installed (if applicable) please call the number below on or before the date listed above to schedule a compliance inspection. Failure to do so will result in future non-compliant notices.

To arrange for compliance review please contact HydroCorp at 1.800.690.6651. If you require additional information, please visit their website at www.hydrocorpinc.com.



Inspection Non-Compliance – Shut-Off Notice

RE: [FACILITYNAME] at [SERVICEADDRESS1]

Dear [GREETING]

The purpose of the [ORGNAME]'s Cross Connection Control Program, as defined in the [ORDINANCENUMBER], is to help eliminate possible contamination of the public water distribution system. There are two required components of the program; 1) site inspection and 2) testing of backflow prevention assemblies.

As part of this program, an inspection of your facility's internal water distribution system was completed on [LASTSURVEYDATE]. Inspectors reviewing your water system found connections that could possibly contaminate the public water distribution system. Two- (2) previous letters of notification were sent to you outlining the required corrective measures. For your reference, a duplicate list of requirements is attached.

We presently have no record or notification from you that the corrective action has been completed. If you have already completed the requirements, please call the number below to schedule a compliance inspection.

You are hereby notified that in accordance with the [ORGNAME] local ordinance, the water supply to the above noted premises will be discontinued as of _____ . Water service may not be resumed until corrective measures have been addressed

To arrange for compliance review please contact HydroCorp at 1.800.690.6651. If you require additional information, please visit their website at www.hydrocorpinc.com.

Sincerely,

[Name]

[Title]



Cross Connection Control Program Testing Notice

RE: [FACILITYNAME] at [SERVICEADDRESS1][SERVICEADDRESS2]

Reference #: **[REFERENCENUMBER]**

Dear [GREETING]

The purpose of the [ORGNOME]'s Cross Connection Control Program, as defined in local ordinance [ORDINANCENUMBER], is to help eliminate possible contamination of the public water distribution system. There are two required components of the program; 1) site inspection, and 2) testing of backflow prevention assemblies.

This correspondence addresses testing of backflow prevention assemblies and is independent of previous correspondence pertaining to site inspection(s). Periodic testing of backflow prevention assemblies is required to ensure proper working order.

Our records indicate it is time for testing of backflow prevention assemblies at your facility. The assemblies required to be tested at this time are listed on the following page(s). Testing should be completed in advance of the completion date noted to allow for repair(s) should they be necessary. Testing of backflow prevention assemblies must be completed by a State approved certified tester. A partial listing of testers available in your area can be viewed on HydroCorp's website at hydrocorpinc.com/resources/testers.

Following completion of testing and/or repairs, all test results must be entered electronically by your plumber &/or certified tester at gethydrosoft.com Test forms will no longer be accepted via mail, fax or email.

Completed test forms are to be entered online by [RESPONSEDATE]. Please retain a copy of the report for your records.

If you have any questions or require additional information, please contact HydroCorp at 1.800.690.6651 or visit their website at hydrocorpinc.com.

THE FOLLOWING PAGE(S) MUST BE FORWARDED TO YOUR TESTER



INSERT CLIENT LOGO

Cross Connection Control Program Testing Notice

Sample Person
12345 Somewhere
City, St, Zip

Print Date: [PRINTDATE]

Dear Water Customer, please provide this page(s) to your tester.

ATTENTION TESTERS: This correspondence addresses testing of backflow prevention assemblies. Following completion of testing and/or repairs, all test results must be submitted online at gethydrosoft.com. Test forms will no longer be accepted via mail, fax or email. A onetime registration process must be completed by each tester before any test results will be accepted. Assistance with the registration and test form entry process can also be found at gethydrosoft.com. Testers will be required to provide the reference number listed below upon submission of test results for each facility where testing has been completed. If you have any questions or require additional information, please contact HydroCorp at 1-844-950-5026.

Completed test forms are to be entered online by 09/15/2017.

RE: Facility For Sample Notice at 12345 Somewhere

Reference #: 4C5DA5A9E

Device	Protection	Manufacturer	Model	Serial #	Size	Test Date	Test Status
Location/Comments:							
Line PSI:		CV1:		CV2:		RV:	



Cross Connection Control Program Testing Notice #2

RE: [FACILITYNAME] at [SERVICEADDRESS1][SERVICEADDRESS2]

Reference #: **[REFERENCENUMBER]**

Dear [GREETING]

The purpose of the [ORGNOME]'s Cross Connection Control Program, as defined in local ordinance [ORDINANCENUMBER], is to help eliminate possible contamination of the public water distribution system. There are two required components of the program; 1) site inspection, and 2) testing of backflow prevention assemblies.

This is your second notice pertaining to testing of backflow prevention assemblies and is independent of previous correspondence pertaining to site inspection(s). Periodic testing of backflow prevention assemblies is required to ensure proper working order.

Our records indicate it is time for testing of backflow prevention assemblies at your facility. The assemblies required to be tested at this time are listed on the following page(s). Testing should be completed in advance of the completion date noted to allow for repair(s) should they be necessary. Testing of backflow prevention assemblies must be completed by a State approved certified tester. A partial listing of testers available in your area can be viewed on HydroCorp's website at hydrocorpinc.com/resources/testers.

Following completion of testing and/or repairs, all test results must be entered electronically by your plumber &/or certified tester at gethydrosoft.com Test forms will no longer be accepted via mail, fax or email.

Completed test forms are to be entered online by [RESPONSEDATE]. Please retain a copy of the report for your records.

If you have any questions or require additional information, please contact HydroCorp at 1.800.690.6651 or visit their website at hydrocorpinc.com.

THE FOLLOWING PAGE(S) MUST BE FORWARDED TO YOUR TESTER



INSERT CLIENT LOGO

Cross Connection Control Program Testing Notice

Sample Person
12345 Somewhere
City, St, Zip

Print Date: [PRINTDATE]

Dear Water Customer, please provide this page(s) to your tester.

ATTENTION TESTERS: This correspondence addresses testing of backflow prevention assemblies. Following completion of testing and/or repairs, all test results must be submitted online at gethydrosoft.com. Test forms will no longer be accepted via mail, fax or email. A onetime registration process must be completed by each tester before any test results will be accepted. Assistance with the registration and test form entry process can also be found at gethydrosoft.com. Testers will be required to provide the reference number listed below upon submission of test results for each facility where testing has been completed. If you have any questions or require additional information, please contact HydroCorp at 1-844-950-5026.

Completed test forms are to be entered online by 09/15/2017.

RE: Facility For Sample Notice at 12345 Somewhere

Reference #: 4C5DA5A9E

Device	Protection	Manufacturer	Model	Serial #	Size	Test Date	Test Status
Location/Comments:							
Line PSI:		CV1:		CV2:		RV:	



Testing Shut-Off Notice

RE: [FACILITYNAME] at [SERVICEADDRESS1][SERVICEADDRESS2]

Reference #: **[REFERENCENUMBER]**

Dear [GREETING]

The purpose of the [ORGNAME]'s Cross Connection Control Program, as defined in local ordinance [ORDINANCENUMBER], is to help eliminate possible contamination of the public water distribution system. There are two required components of the program; 1) site inspection, and 2) testing of backflow prevention assemblies.

This your third notice pertaining to testing of backflow prevention assemblies and is independent of previous correspondence pertaining to site inspection(s). Periodic testing of backflow prevention assemblies is required to ensure proper working order.

Our records indicate it is time for testing of backflow prevention assemblies at your facility. The assemblies required to be tested at this time are listed on the following page(s). Testing should be completed in advance of the completion date noted to allow for repair(s) should they be necessary. Testing of backflow prevention assemblies must be completed by a State approved certified tester. A partial listing of testers available in your area can be viewed on HydroCorp's website at hydrocorpinc.com/resources/testers.

You are hereby notified that in accordance with local ordinance, the water supply to the above noted premises will be discontinued as of **[RESPONSEDATE]**. Water service may not be resumed until corrective measures have been addressed.

Following completion of testing and/or repairs, all test results must be entered electronically by your plumber &/or certified tester at gethydrosoft.com. Test forms will no longer be accepted via mail, fax or email.

If you have any questions or require additional information, please contact HydroCorp at 1.800.690.6651 or visit their website at hydrocorpinc.com.

Sincerely,

[NAME]
[TITLE]



INSERT CLIENT LOGO

Cross Connection Control Program Testing Notice

Sample Person
12345 Somewhere
City, St, Zip

Print Date: [PRINTDATE]

Dear Water Customer, please provide this page(s) to your tester.

ATTENTION TESTERS: This correspondence addresses testing of backflow prevention assemblies. Following completion of testing and/or repairs, all test results must be submitted online at gethydrosoft.com. Test forms will no longer be accepted via mail, fax or email. A onetime registration process must be completed by each tester before any test results will be accepted. Assistance with the registration and test form entry process can also be found at gethydrosoft.com. Testers will be required to provide the reference number listed below upon submission of test results for each facility where testing has been completed. If you have any questions or require additional information, please contact HydroCorp at 1-844-950-5026.

Completed test forms are to be entered online by 09/15/2017.

RE: Facility For Sample Notice at 12345 Somewhere

Reference #: 4C5DA5A9E

Device	Protection	Manufacturer	Model	Serial #	Size	Test Date	Test Status
Location/Comments:							
Line PSI:		CV1:		CV2:		RV:	



APPENDIX E – RESIDENTIAL PROGRAM NOTICE TEMPLATES



Cross Connection Control Program Inspection Notice

RE: [FACILITYNAME] at [SERVICEADDRESS1]

Dear Water Customer,

The [ORGNAME] is required under Public Act 399, Part 14, to maintain a cross connection control program to identify and eliminate any possible connections that could contaminate the public water system. The City has implemented a program for its commercial and industrial customers for a number of years; however, in order to fully comply with this State mandate, we must now include residential customers as part of this program. The City has contracted with HydroCorp of Troy, MI to assist with facilitating this program.

An inspector from HydroCorp will be in your neighborhood within the next two weeks reviewing the **exterior** of your home for connections that could possibly contaminate the water distribution system. A typical site visit lasts less than twenty minutes and the inspector will be looking at exterior garden hose connections, lawn sprinkler systems, pools/spas and any secondary water sources, such as privately owned wells. HydroCorp inspectors will **not** be entering your home at this time.

There are no fees for the inspection(s); however, in circumstances where cross-connections exist, any costs associated with the replacement, modification, installation and/or testing of backflow prevention assemblies remain the obligation of the home owner. The most common requirement for home owners is for an Anti-Frost Hose Bibb Vacuum Breaker on outside hose bibbs.

At this time there is no action required on your part. You will be notified following the survey if modification(s) and/or testing of backflow prevention assemblies are necessary.

We look forward to working with you in protecting everyone's drinking water supply. If you have any questions or concerns, please contact HydroCorp by phone at 1.800.690.6651 or email residential@hydrocorpinc.com. For additional information regarding the program, please visit their website at www.hydrocorpinc.com/residential.



Cross Connection Control Program Inspection Compliance Notice

Upon completion of inspection and the water customer is in compliance with all aspects of the program, they will receive a compliance door hanger or be notified by mail informing the water customer of their compliance status, see below.

RE: [FACILITYNAME] at [SERVICEADDRESS1]

Dear Water Customer,

The purpose of the [ORGNAME]'s Cross Connection Control Program, as defined in local ordinance [ORDINANCENUMBER], is to help eliminate possible contamination of the public water distribution system. There are two required components of the program; 1) site inspection, and 2) testing of backflow prevention assemblies.

As part of this program, an external inspection of the water distribution system at your home was completed on [SCHEDULEDDATE]. Inspectors reviewed your water distribution system for any piping or connections that could possibly contaminate the water distribution system.

Your home was either found compliant and/or the necessary changes were made to comply with local ordinance. This inspection is valid until your homes' next scheduled inspection date. You will receive a future notice for your next inspection date.

If your home has backflow prevention assemblies requiring testing, you will be receiving additional notices detailing test requirements.

Thank you for assisting the [ORGNAME] in protecting our water supply! If you have any questions or concerns please contact HydroCorp by phone 1.800.690.6651 or email residential@hydrocorpinc.com.



Inspection Non-Compliance Notice 1

RE: [FACILITYNAME] at [SERVICEADDRESS1]

Dear Water Customer,

The [ORGNAME] has contracted with HydroCorp of Troy, MI to perform the State mandated Cross Connection Control and Backflow Prevention Program inspections. As part of this program, a survey of your property was completed on [LASTSURVEYDATE]. During the survey the inspector found water uses on your property that could potentially contaminate the public water distribution system and/or the water inside your home.

The State of Michigan Safe Drinking Water Act, P.A. 399 Part 14, mandates that any connections to a public water system shall comply with the State Plumbing Act, PA 733. The attached list details the connections found on your property that are in violation with these State of Michigan requirements. The [ORGNAME] is mandated by the State to ensure these connections either (1) comply with the laws and rules of the State or (2) are permanently disconnected from the public water system.

Many of the items found by our contracted inspection provider are very simple to correct and can be completed by the home owner at very little expense. Some items, particularly lawn irrigation systems, may require the assistance of a licensed plumber. **If you have questions or are unsure of what you need to do, please contact HydroCorp at 248-250-5000.** They have staff in their office that are trained specifically to assist you with technical and other questions regarding the program.

Please complete these requirements and call HydroCorp on or before [RESPONSEDATE] to arrange a compliance inspection. Failure to do so will lead to further enforcement action in accordance with the [ORGNAME] Code of Ordinances and possible interruption of service.

Thank you for assisting the [ORGNAME] in protecting our water supply! If you have any questions or concerns or would like to schedule a compliance review please contact HydroCorp by phone 1.800.690.6651 or email residential@hydrocorpinc.com. For additional information regarding the program please visit their website at www.hydrocorpinc.com/residential.



Inspection Non-Compliance Notice 2

RE: [FACILITYNAME] at [SERVICEADDRESS1]

Dear Water Customer,

The [ORGNAME] has contracted with HydroCorp of Troy, MI to perform the State mandated Cross Connection Control and Backflow Prevention Program inspections. As part of this program, a survey of your property was completed on [LASTSURVEYDATE]. During the survey the inspector found water uses on your property that could potentially contaminate the public water distribution system and/or the water inside your home.

The State of Michigan Safe Drinking Water Act, P.A. 399 Part 14, mandates that any connections to a public water system shall comply with the State Plumbing Act, PA 733. The attached list details the connections found on your property that are in violation with these State of Michigan requirements. The [ORGNAME] is mandated by the State to ensure these connections either (1) comply with the laws and rules of the State or (2) are permanently disconnected from the public water system.

Many of the items found by our contracted inspection provider are very simple to correct and can be completed by the home owner at very little expense. Some items, particularly lawn irrigation systems, may require the assistance of a licensed plumber. **This is the second notice you should have received regarding this matter. If you have questions or are unsure of what you need to do, please contact HydroCorp at 248-250-5000.** They have staff in their office that are trained specifically to assist you with technical and other questions regarding the program. **Please complete these requirements and call HydroCorp on or before [RESPONSEDATE] to arrange a compliance inspection. Failure to do so will lead to further enforcement action in accordance with the [ORGNAME] Code of Ordinances and possible interruption of service.**

Thank you for assisting the [ORGNAME] in protecting our water supply! If you have any questions or concerns or would like to schedule a compliance review please contact HydroCorp by phone 1.800.690.6651 or email residential@hydrocorpinc.com. For additional information regarding the program please visit their website at www.hydrocorpinc.com/residential.



Inspection Non-Compliance – Shut-Off Notice

RE: [FACILITYNAME] at [SERVICEADDRESS1]

Dear Water Customer,

The [ORGNAME] has contracted with HydroCorp of Troy, MI to perform the State mandated Cross Connection Control and Backflow Prevention Program inspections. As part of this program, a survey of your property was completed on [LASTSURVEYDATE]. During the survey the inspector found water uses on your property that could potentially contaminate the public water distribution system and/or the water inside your home.

The State of Michigan Safe Drinking Water Act, P.A. 399 Part 14, mandates that any connections to a public water system shall comply with the State Plumbing Act, PA 733. The attached list details the connections found on your property that are in violation with these State of Michigan requirements. The [ORGNAME] is mandated by the State to ensure these connections either (1) comply with the laws and rules of the State or (2) are permanently disconnected from the public water system.

Many of the items found by our contracted inspection provider are very simple to correct and can be completed by the home owner at very little expense. Some items, particularly lawn irrigation systems, may require the assistance of a licensed plumber. **This is the third notice you should have received regarding this matter. If you have questions or are unsure of what you need to do, please contact HydroCorp at 248-250-5000.** They have staff in their office that are trained specifically to assist you with technical and other questions regarding the program. **Please complete these requirements and call HydroCorp on or before [RESPONSEDATE] to arrange a compliance inspection. Failure to do so will lead to further enforcement action in accordance with the [ORGNAME] Code of Ordinances and possible interruption of service.**

Thank you for assisting the [ORGNAME] in protecting our water supply! If you have any questions or concerns or would like to schedule a compliance review please contact HydroCorp by phone 1.800.690.6651 or email residential@hydrocorpinc.com. For additional information regarding the program please visit their website at www.hydrocorpinc.com/residential.



Cross Connection Control Program Testing Notice

RE: [FACILITYNAME] at [SERVICEADDRESS1][SERVICEADDRESS2]

Reference #: **[REFERENCENUMBER]**

Dear [GREETING]

The purpose of the [ORGNAME]'s Cross Connection Control Program, as defined in local ordinance [ORDINANCENUMBER], is to help eliminate possible contamination of the public water distribution system. There are two required components of the program; 1) site inspection, and 2) testing of backflow prevention assemblies.

This correspondence addresses testing of backflow prevention assemblies and is independent of previous correspondence pertaining to site inspection(s). Periodic testing of backflow prevention assemblies is required to ensure proper working order.

Our records indicate it is time for testing of backflow prevention assemblies at your facility. The assemblies required to be tested at this time are listed on the following page(s). Testing should be completed in advance of the completion date noted to allow for repair(s) should they be necessary. Testing of backflow prevention assemblies must be completed by a State approved certified tester. A partial listing of testers available in your area can be viewed on HydroCorp's website at hydrocorpinc.com/resources/testers.

Following completion of testing and/or repairs, all test results must be entered electronically by your plumber &/or certified tester at gethydrosoft.com Test forms will no longer be accepted via mail, fax or email.

Completed test forms are to be entered online by [RESPONSEDATE]. Please retain a copy of the report for your records.

If you have any questions or require additional information, please contact HydroCorp at 1.800.690.6651 or visit their website at hydrocorpinc.com.

THE FOLLOWING PAGE(S) MUST BE FORWARDED TO YOUR TESTER



INSERT CLIENT LOGO

Cross Connection Control Program Testing Notice

Sample Person
12345 Somewhere
City, St, Zip

Print Date: [PRINTDATE]

Dear Water Customer, please provide this page(s) to your tester.

ATTENTION TESTERS: This correspondence addresses testing of backflow prevention assemblies. Following completion of testing and/or repairs, all test results must be submitted online at gethydrosoft.com. Test forms will no longer be accepted via mail, fax or email. A onetime registration process must be completed by each tester before any test results will be accepted. Assistance with the registration and test form entry process can also be found at gethydrosoft.com. Testers will be required to provide the reference number listed below upon submission of test results for each facility where testing has been completed. If you have any questions or require additional information, please contact HydroCorp at 1-844-950-5026.

Completed test forms are to be entered online by 09/15/2017.

RE: Facility For Sample Notice at 12345 Somewhere

Reference #: 4C5DA5A9E

Device	Protection	Manufacturer	Model	Serial #	Size	Test Date	Test Status
Location/Comments:							
Line PSI:		CV1:		CV2:		RV:	



Cross Connection Control Program Testing Notice #2

RE: [FACILITYNAME] at [SERVICEADDRESS1][SERVICEADDRESS2]

Reference #: **[REFERENCENUMBER]**

Dear [GREETING]

The purpose of the [ORGNOME]'s Cross Connection Control Program, as defined in local ordinance [ORDINANCENUMBER], is to help eliminate possible contamination of the public water distribution system. There are two required components of the program; 1) site inspection, and 2) testing of backflow prevention assemblies.

This is your second notice pertaining to testing of backflow prevention assemblies and is independent of previous correspondence pertaining to site inspection(s). Periodic testing of backflow prevention assemblies is required to ensure proper working order.

Our records indicate it is time for testing of backflow prevention assemblies at your facility. The assemblies required to be tested at this time are listed on the following page(s). Testing should be completed in advance of the completion date noted to allow for repair(s) should they be necessary. Testing of backflow prevention assemblies must be completed by a State approved certified tester. A partial listing of testers available in your area can be viewed on HydroCorp's website at hydrocorpinc.com/resources/testers.

Following completion of testing and/or repairs, all test results must be entered electronically by your plumber &/or certified tester at gethydrosoft.com Test forms will no longer be accepted via mail, fax or email.

Completed test forms are to be entered online by [RESPONSEDATE]. Please retain a copy of the report for your records.

If you have any questions or require additional information, please contact HydroCorp at 1.800.690.6651 or visit their website at hydrocorpinc.com.

THE FOLLOWING PAGE(S) MUST BE FORWARDED TO YOUR TESTER



INSERT CLIENT LOGO

Cross Connection Control Program Testing Notice

Sample Person
12345 Somewhere
City, St, Zip

Print Date: [PRINTDATE]

Dear Water Customer, please provide this page(s) to your tester.

ATTENTION TESTERS: This correspondence addresses testing of backflow prevention assemblies. Following completion of testing and/or repairs, all test results must be submitted online at gethydrosoft.com. Test forms will no longer be accepted via mail, fax or email. A onetime registration process must be completed by each tester before any test results will be accepted. Assistance with the registration and test form entry process can also be found at gethydrosoft.com. Testers will be required to provide the reference number listed below upon submission of test results for each facility where testing has been completed. If you have any questions or require additional information, please contact HydroCorp at 1-844-950-5026.

Completed test forms are to be entered online by 09/15/2017.

RE: Facility For Sample Notice at 12345 Somewhere

Reference #: 4C5DA5A9E

Device	Protection	Manufacturer	Model	Serial #	Size	Test Date	Test Status
Location/Comments:							
Line PSI:		CV1:		CV2:		RV:	



Testing Shut-Off Notice

RE: [FACILITYNAME] at [SERVICEADDRESS1][SERVICEADDRESS2]

Reference #: **[REFERENCENUMBER]**

Dear [GREETING]

The purpose of the [ORGNOME]'s Cross Connection Control Program, as defined in local ordinance [ORDINANCENUMBER], is to help eliminate possible contamination of the public water distribution system. There are two required components of the program; 1) site inspection, and 2) testing of backflow prevention assemblies.

This your third notice pertaining to testing of backflow prevention assemblies and is independent of previous correspondence pertaining to site inspection(s). Periodic testing of backflow prevention assemblies is required to ensure proper working order.

Our records indicate it is time for testing of backflow prevention assemblies at your facility. The assemblies required to be tested at this time are listed on the following page(s). Testing should be completed in advance of the completion date noted to allow for repair(s) should they be necessary. Testing of backflow prevention assemblies must be completed by a State approved certified tester. A partial listing of testers available in your area can be viewed on HydroCorp's website at hydrocorpinc.com/resources/testers.

You are hereby notified that in accordance with local ordinance, the water supply to the above noted premises will be discontinued as of **[RESPONSEDATE]**. Water service may not be resumed until corrective measures have been addressed.

Following completion of testing and/or repairs, all test results must be entered electronically by your plumber &/or certified tester at gethydrosoft.com. Test forms will no longer be accepted via mail, fax or email.

If you have any questions or require additional information, please contact HydroCorp at 1.800.690.6651 or visit their website at hydrocorpinc.com.

Sincerely,

[NAME]
[TITLE]



APPENDIX F – TEST FORM

Test Status Not Tested Passed Failed

Facility Name Address Address 2

City State Zip Code

Type: Size: Meter #: Manufacturer: Model:

Serial:3 Permit: Containment Isolation Fire Protection

Location Comments:

Shut Off Valve 1: Closed Leaked Shut Off Valve 2: Closed Leaked Line Pressure: Initial Test Date:

1st Check	2nd Check	Relief Valve	PVB/SVB Air Inlet	PVB/SVB Check Valve
<input type="checkbox"/> Closed <input type="checkbox"/> Leaked	<input type="checkbox"/> Closed <input type="checkbox"/> Leaked	<input type="checkbox"/> Opened <input type="checkbox"/> Did Not Open <input type="checkbox"/> Leaked	<input type="checkbox"/> Opened <input type="checkbox"/> Failed	<input type="checkbox"/> Held <input type="checkbox"/> Failed
PSID: <input type="text"/>	PSID: <input type="text"/>	PSID: <input type="text"/>	PSID: <input type="text"/>	PSID: <input type="text"/>

Tester/Repair Comments:

Tester Name: Testing Company:

Tester Cert #: Gauge Manufacturer: GaugeModel: Gauge Serial #: Calibration Date:

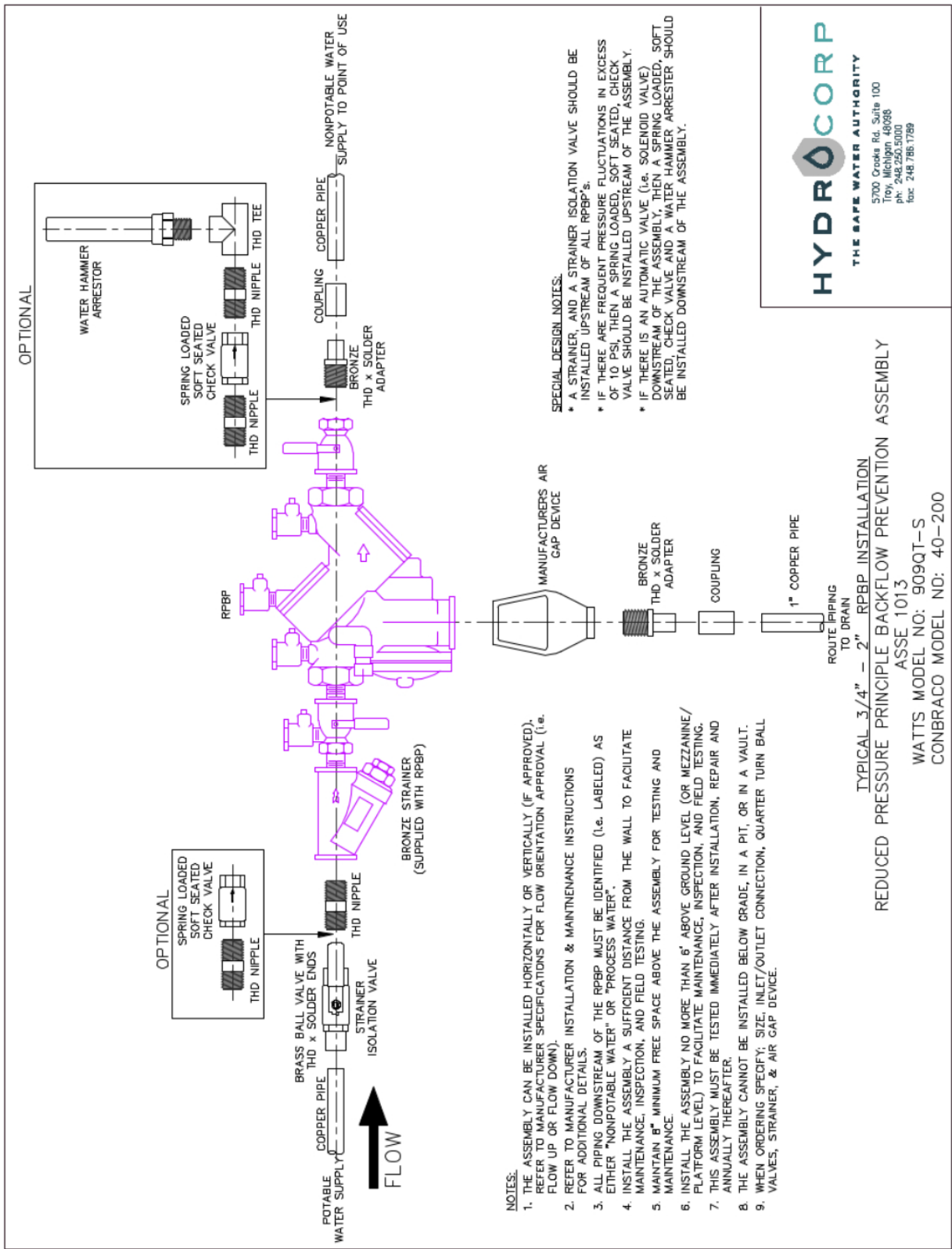
1st Check	2nd Check	Relief Valve	PVB/SVB Air Inlet	PVB/SVB Check Valve
<input type="checkbox"/> Closed <input type="checkbox"/> Leaked	<input type="checkbox"/> Closed <input type="checkbox"/> Leaked	<input type="checkbox"/> Opened <input type="checkbox"/> Did Not Open <input type="checkbox"/> Leaked	<input type="checkbox"/> Opened <input type="checkbox"/> Failed	<input type="checkbox"/> Held <input type="checkbox"/> Failed
PSID: <input type="text"/>	PSID: <input type="text"/>	PSID: <input type="text"/>	PSID: <input type="text"/>	PSID: <input type="text"/>

Final Test Date:

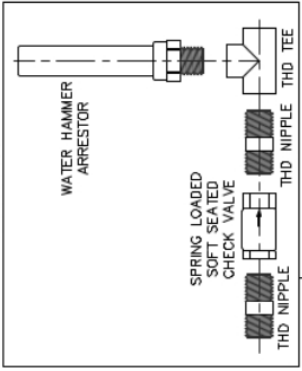


APPENDIX G – INSTALLATION SCHEMATICS

Drawings contained in this section are only “typical” installations for reference purposes. All new installations must be installed per code and manufacturer specifications.



OPTIONAL



NOTES:

1. THE ASSEMBLY CAN BE INSTALLED HORIZONTALLY OR VERTICALLY (IF APPROVED). REFER TO MANUFACTURER SPECIFICATIONS FOR FLOW ORIENTATION APPROVAL (I.e. FLOW UP OR FLOW DOWN).
2. REFER TO MANUFACTURER INSTALLATION & MAINTENANCE INSTRUCTIONS FOR ADDITIONAL DETAILS.
3. ALL PIPING DOWNSTREAM OF THE RFBP MUST BE IDENTIFIED (I.e. LABELED) AS EITHER "NONPOTABLE WATER" OR "PROCESS WATER".
4. INSTALL THE ASSEMBLY A SUFFICIENT DISTANCE FROM THE WALL TO FACILITATE MAINTENANCE, INSPECTION, AND FIELD TESTING.
5. MAINTAIN 6" MINIMUM FREE SPACE ABOVE THE ASSEMBLY FOR TESTING AND MAINTENANCE.
6. INSTALL THE ASSEMBLY NO MORE THAN 6' ABOVE GROUND LEVEL (OR MEZZANINE/PLATFORM LEVEL) TO FACILITATE MAINTENANCE, INSPECTION, AND FIELD TESTING.
7. THIS ASSEMBLY MUST BE TESTED IMMEDIATELY AFTER INSTALLATION, REPAIR AND ANNUALLY THEREAFTER.
8. THE ASSEMBLY CANNOT BE INSTALLED BELOW GRADE, IN A PIT, OR IN A VAULT.
9. WHEN ORDERING SPECIFY: SIZE, INLET/OUTLET CONNECTION, QUARTER TURN BALL VALVES, STRAINER, & AIR GAP DEVICE.

SPECIAL DESIGN NOTES:

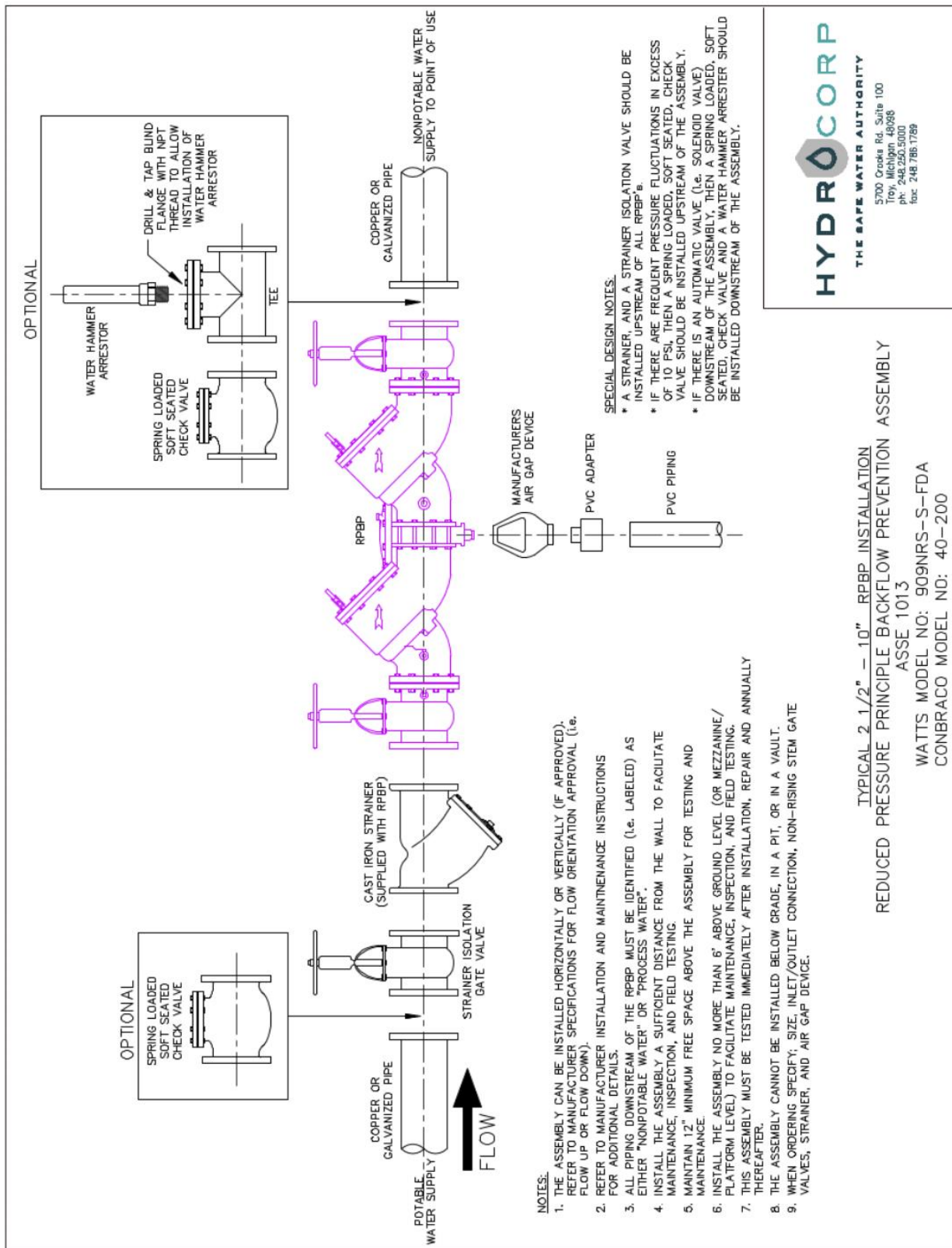
- A STRAINER, AND A STRAINER ISOLATION VALVE SHOULD BE INSTALLED UPSTREAM OF ALL RFBP's.
- IF THERE ARE FREQUENT PRESSURE FLUCTUATIONS IN EXCESS OF 10 PSI, THEN A SPRING LOADED, SOFT SEATED, CHECK VALVE SHOULD BE INSTALLED UPSTREAM OF THE ASSEMBLY.
- IF THERE IS AN AUTOMATIC VALVE (I.e. SOLENOID VALVE) DOWNSTREAM OF THE ASSEMBLY, THEN A SPRING LOADED, SOFT SEATED, CHECK VALVE AND A WATER HAMMER ARRESTER SHOULD BE INSTALLED DOWNSTREAM OF THE ASSEMBLY.

HYDRACORP
THE SAFE WATER AUTHORITY

5700 Crooks Rd, Suite 100
Troy, Michigan 48068
ph: 248.250.5000
fax: 248.786.1789

TYPICAL 3/4" - 2" RFBP INSTALLATION
REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY
ASSE 1013
WATTS MODEL NO: 909QT-S
CONBRACO MODEL NO: 40-200

dwg. name: PWA.dwg effective: 2/27/02



- NOTES:**
1. THE ASSEMBLY CAN BE INSTALLED HORIZONTALLY OR VERTICALLY (IF APPROVED). REFER TO MANUFACTURER SPECIFICATIONS FOR FLOW ORIENTATION APPROVAL (I.e. FLOW UP OR FLOW DOWN).
 2. REFER TO MANUFACTURER INSTALLATION AND MAINTENANCE INSTRUCTIONS FOR ADDITIONAL DETAILS.
 3. ALL PIPING DOWNSTREAM OF THE RPBP MUST BE IDENTIFIED (I.e. LABELED) AS EITHER "NONPOTABLE WATER" OR "PROCESS WATER".
 4. INSTALL THE ASSEMBLY A SUFFICIENT DISTANCE FROM THE WALL TO FACILITATE MAINTENANCE, INSPECTION, AND FIELD TESTING.
 5. MAINTAIN 12" MINIMUM FREE SPACE ABOVE THE ASSEMBLY FOR TESTING AND MAINTENANCE.
 6. INSTALL THE ASSEMBLY NO MORE THAN 6' ABOVE GROUND LEVEL (OR MEZZANINE/PLATFORM LEVEL) TO FACILITATE MAINTENANCE, INSPECTION, AND FIELD TESTING.
 7. THIS ASSEMBLY MUST BE TESTED IMMEDIATELY AFTER INSTALLATION, REPAIR AND ANNUALLY THEREAFTER.
 8. THE ASSEMBLY CANNOT BE INSTALLED BELOW GRADE, IN A PIT, OR IN A VAULT.
 9. WHEN ORDERING SPECIFY: SIZE, INLET/OUTLET CONNECTION, NON-RISING STEM GATE VALVES, STRAINER, AND AIR GAP DEVICE.

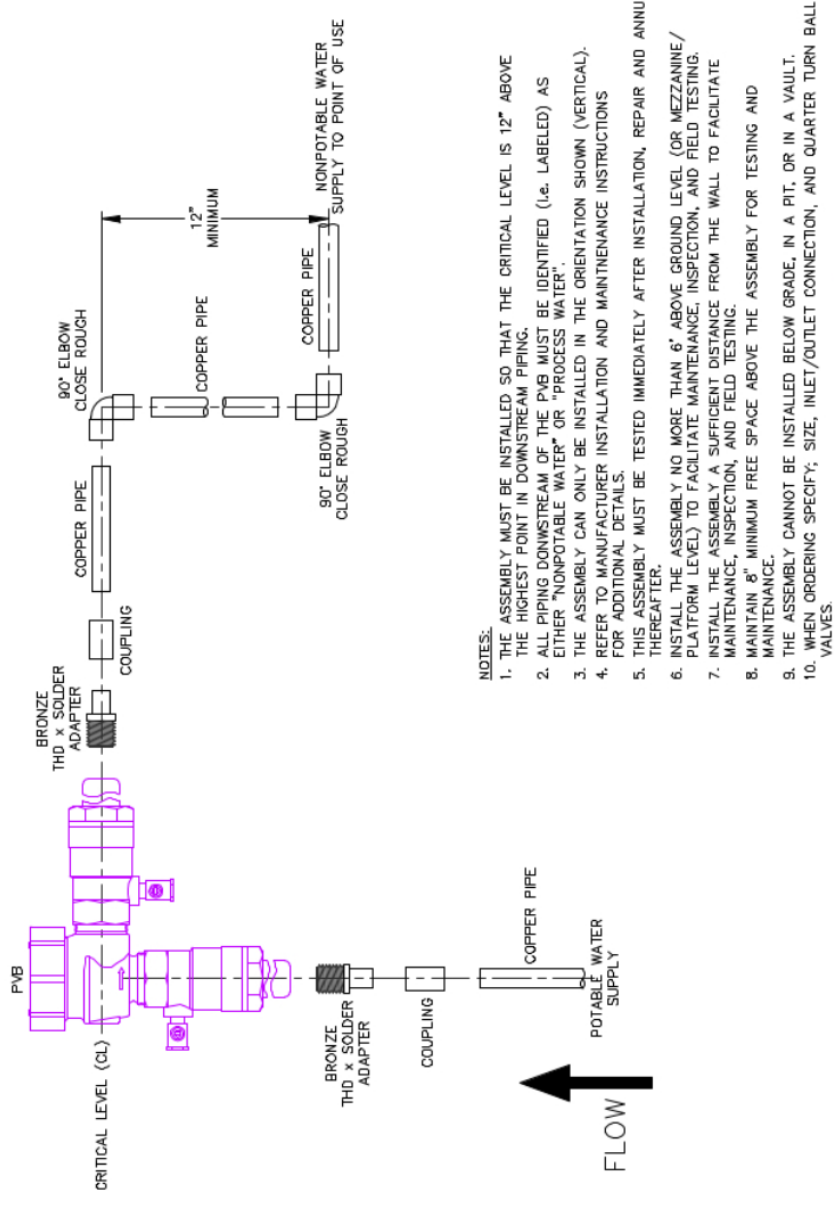
SPECIAL DESIGN NOTES:

- * A STRAINER, AND A STRAINER ISOLATION VALVE SHOULD BE INSTALLED UPSTREAM OF ALL RPBP's.
- * IF THERE ARE FREQUENT PRESSURE FLUCTUATIONS IN EXCESS OF 10 PSI THEN A SPRING LOADED, SOFT SEATED, CHECK VALVE SHOULD BE INSTALLED UPSTREAM OF THE ASSEMBLY.
- * IF THERE IS AN AUTOMATIC VALVE (I.e. SOLENOID VALVE) DOWNSTREAM OF THE ASSEMBLY, THEN A SPRING LOADED, SOFT SEATED, CHECK VALVE AND A WATER HAMMER ARRESTER SHOULD BE INSTALLED DOWNSTREAM OF THE ASSEMBLY.

HYDRACORP
 THE SAFE WATER AUTHORITY
 5700 Crooks Rd, Suite 100
 Troy, Michigan 48068
 ph: 248.250.5000
 fax: 248.786.1789

TYPICAL 2 1/2" - 10" RPBP INSTALLATION
 REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY
 ASSE 1013
 WATTS MODEL NO: 909NRS-S-FDA
 CONBRACO MODEL NO: 40-200

des. name: PW10.dwg eff: date: 2/27/02

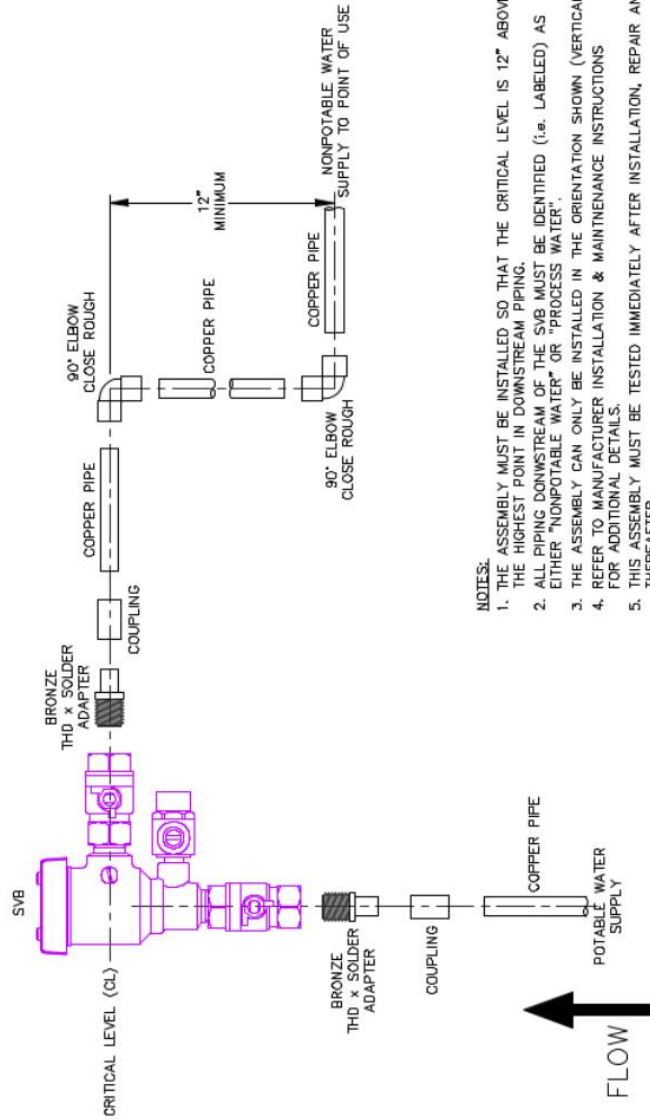


- NOTES:**
1. THE ASSEMBLY MUST BE INSTALLED SO THAT THE CRITICAL LEVEL IS 12" ABOVE THE HIGHEST POINT IN DOWNSTREAM PIPING.
 2. ALL PIPING DOWNSTREAM OF THE PVB MUST BE IDENTIFIED (i.e. LABELED) AS EITHER "NONPOTABLE WATER" OR "PROCESS WATER".
 3. THE ASSEMBLY CAN ONLY BE INSTALLED IN THE ORIENTATION SHOWN (VERTICAL). REFER TO MANUFACTURER INSTALLATION AND MAINTENANCE INSTRUCTIONS FOR ADDITIONAL DETAILS.
 4. THIS ASSEMBLY MUST BE TESTED IMMEDIATELY AFTER INSTALLATION, REPAIR AND ANNUALLY THEREAFTER.
 5. INSTALL THE ASSEMBLY NO MORE THAN 6' ABOVE GROUND LEVEL (OR MEZZANINE/PLATFORM LEVEL) TO FACILITATE MAINTENANCE, INSPECTION, AND FIELD TESTING.
 6. INSTALL THE ASSEMBLY A SUFFICIENT DISTANCE FROM THE WALL TO FACILITATE MAINTENANCE, INSPECTION, AND FIELD TESTING.
 7. MAINTAIN 8" MINIMUM FREE SPACE ABOVE THE ASSEMBLY FOR TESTING AND MAINTENANCE.
 8. THE ASSEMBLY CANNOT BE INSTALLED BELOW GRADE, IN A PIT, OR IN A VAULT.
 9. WHEN ORDERING SPECIFY: SIZE, INLET/OUTLET CONNECTION, AND QUARTER TURN BALL VALVES.

TYPICAL PVB INSTALLATION
 PRESSURE VACUUM BREAKER ASSEMBLY
 ASSE 1020
 WATTS MODEL NO: 800M4QT
 CONBRACO MODEL NO: 40-500

HYDROCORP
 THE SAFE WATER AUTHORITY
 5700 Credle Rd, Suite 100
 Troy, Michigan 48068
 ph: 248.250.5000
 fax: 248.786.1789

dwg. name: PVB.dwg effective: 2/27/02



NOTES:

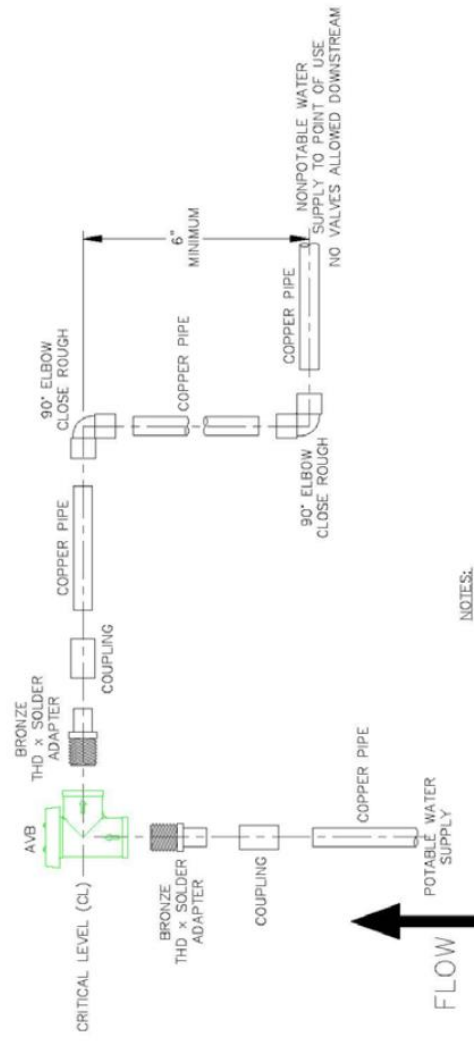
1. THE ASSEMBLY MUST BE INSTALLED SO THAT THE CRITICAL LEVEL IS 12" ABOVE THE HIGHEST POINT IN DOWNSTREAM PIPING.
2. ALL PIPING DOWNSTREAM OF THE SVB MUST BE IDENTIFIED (i.e. LABELED) AS EITHER "NONPOTABLE WATER" OR "PROCESS WATER".
3. THE ASSEMBLY CAN ONLY BE INSTALLED IN THE ORIENTATION SHOWN (VERTICAL).
4. REFER TO MANUFACTURER INSTALLATION & MAINTENANCE INSTRUCTIONS FOR ADDITIONAL DETAILS.
5. THIS ASSEMBLY MUST BE TESTED IMMEDIATELY AFTER INSTALLATION, REPAIR AND ANNUALLY THEREAFTER.
6. INSTALL THE ASSEMBLY NO MORE THAN 6' ABOVE GROUND LEVEL (OR MEZZANINE / PLATFORM LEVEL) TO FACILITATE MAINTENANCE, INSPECTION, AND FIELD TESTING.
7. INSTALL THE ASSEMBLY A SUFFICIENT DISTANCE FROM THE WALL TO FACILITATE MAINTENANCE, INSPECTION, AND FIELD TESTING.
8. MAINTAIN 8" MINIMUM FREE SPACE ABOVE THE ASSEMBLY FOR TESTING AND MAINTENANCE.
9. THE ASSEMBLY CANNOT BE INSTALLED BELOW GRADE, IN A PIT, OR IN A VAULT.
10. WHEN ORDERING SPECIFY; SIZE, INLET/OUTLET CONNECTION, AND QUARTER TURN BALL VALVES.

TYPICAL SVB INSTALLATION
 SPILL RESISTANT VACUUM BREAKER ASSEMBLY
 ASSE 1056
 WATTS MODEL NO: 008QT
 CONBRACO MODEL NO: N/A



5700 Crooks Rd. Suite 100
 Troy, Michigan 48068
 PH: 248.250.0000
 FOC: 248.786.1789

diag. name: PM4.dwg effective: 2/27/02



- NOTES:
1. THE DEVICE MUST BE INSTALLED SO THAT THE CRITICAL LEVEL IS 6" ABOVE THE HIGHEST POINT IN DOWNSTREAM PIPING.
 2. NO VALVES ARE ALLOWED DOWNSTREAM OF THE AVB.
 3. ALL PIPING DOWNSTREAM OF THE AVB MUST BE IDENTIFIED (I.E. LABELED) AS EITHER "NONPOTABLE WATER" OR "PROCESS WATER".
 4. THE DEVICE CAN ONLY BE INSTALLED IN THE ORIENTATION SHOWN (VERTICAL). REFER TO MANUFACTURER INSTALLATION & MAINTENANCE INSTRUCTIONS FOR ADDITIONAL DETAILS.
 5. WHEN ORDERING SPECIFY: SIZE AND INLET/OUTLET CONNECTION.

TYPICAL AVB INSTALLATION
 ATMOSPHERIC VACUUM BREAKER
 ASSE 1001
 WATTS MODEL NO: 288A-C
 CONBRACO MODEL NO: 38-100

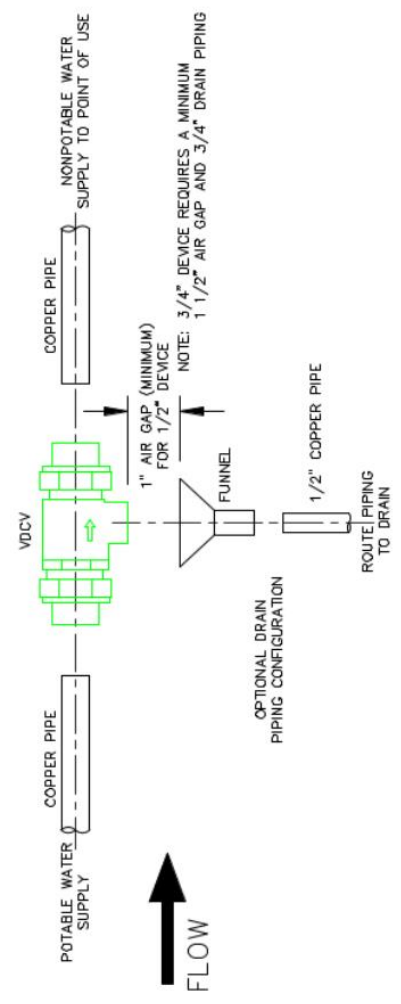


HYDR^OCORP

THE SAFE WATER AUTHORITY

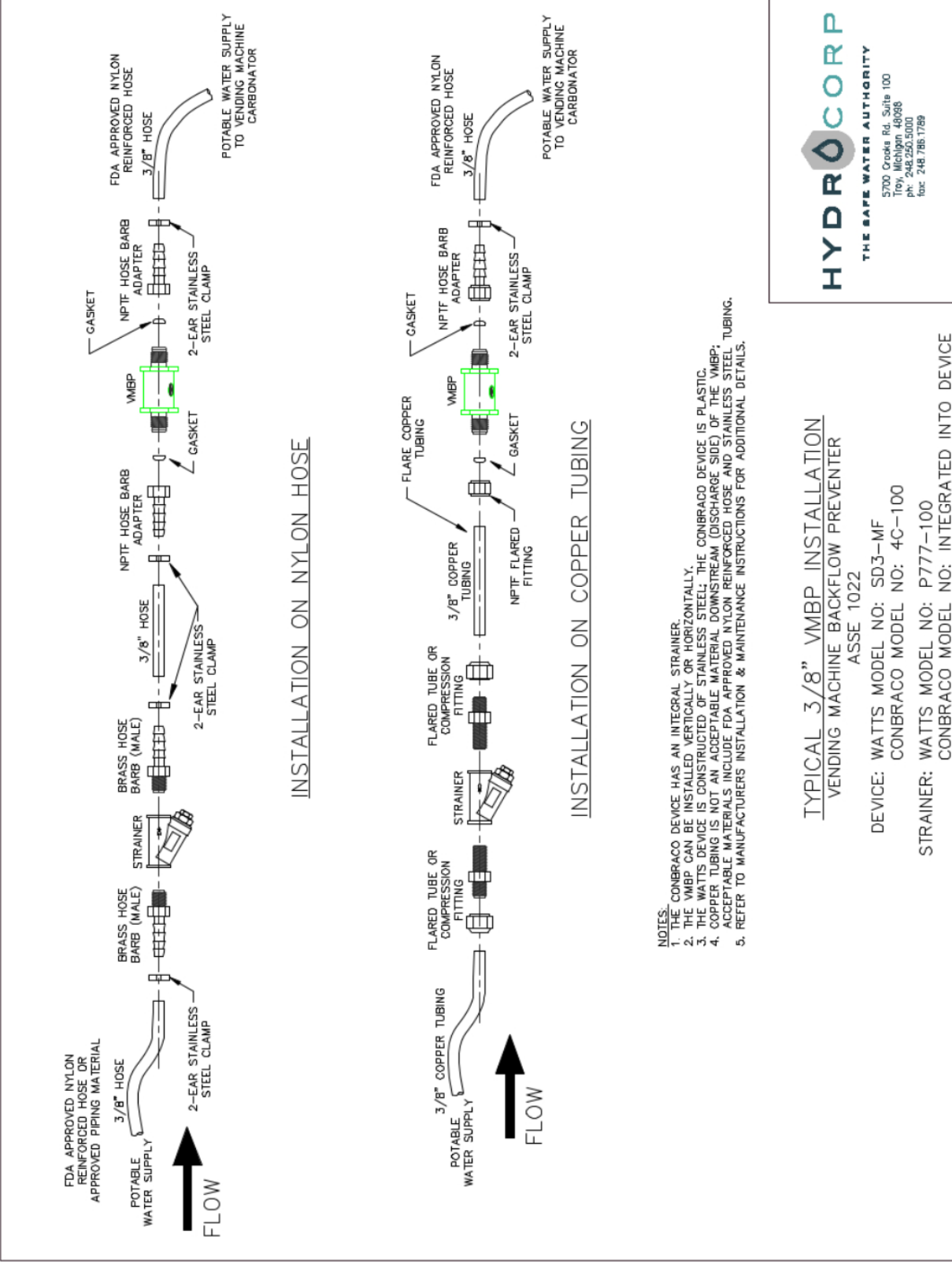
5700 Crooks Rd, Suite 100
Troy, Michigan 48068
ph: 248.250.5000
fax: 248.766.1789

dwg. name: PWS.dwg effective: 2/27/02



- NOTES:
1. THE VDCV CAN BE INSTALLED VERTICALLY OR HORIZONTALLY.
 2. ENSURE VENT FROM THE DEVICE IS ORIENTED IN THE DOWN POSITION.
 3. REFER TO MANUFACTURERS' INSTALLATION & MAINTENANCE INSTRUCTIONS FOR ADDITIONAL DETAILS.
 4. WHEN ORDERING SPECIFY: SIZE & INLET/OUTLET CONNECTION.

TYPICAL VDCV INSTALLATION
 VENTED DUAL CHECK VALVE
 ASSE 1012
 WATTS MODEL NO: 9D
 CONBRACO MODEL NO: 40-400



INSTALLATION ON NYLON HOSE

INSTALLATION ON COPPER TUBING

- NOTES:**
1. THE CONBRACO DEVICE HAS AN INTEGRAL STRAINER.
 2. THE VMBP CAN BE INSTALLED VERTICALLY OR HORIZONTALLY.
 3. THE WATTS DEVICE IS CONSTRUCTED OF STAINLESS STEEL; THE CONBRACO DEVICE IS PLASTIC.
 4. COPPER TUBING IS NOT AN ACCEPTABLE MATERIAL DOWNSTREAM (DISCHARGE SIDE) OF THE VMBP.
 5. ACCEPTABLE MATERIALS INCLUDE FDA APPROVED NYLON REINFORCED HOSE AND STAINLESS STEEL TUBING.

TYPICAL 3/8" VMBP INSTALLATION
VENDING MACHINE BACKFLOW PREVENTER
 ASSE 1022

DEVICE: WATTS MODEL NO: SD3-MF
 CONBRACO MODEL NO: 4C-100

STRAINER: WATTS MODEL NO: P777-100
 CONBRACO MODEL NO: INTEGRATED INTO DEVICE

HYDROCORP
 THE SAFE WATER AUTHORITY
 5700 Crooke Rd. Suite 100
 Troy, MI 48066
 PH: 248.262.5000
 FAX: 248.786.1789

Prepared for:

City of Rehoboth Beach
229 Rehoboth Avenue
Rehoboth Beach, Delaware 19971



CROSS CONNECTION CONTROL PLAN

For

City of Rehoboth Beach, DE

City of Rehoboth Beach Approved: (insert date)
ODW Approved: (insert date)

Prepared by:



210 Vickers Drive
Milford, DE 19963
Phone: 248.250.5000



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1. INTRODUCTION

The purpose of this document is to outline the City of Rehoboth Beach, DE's Cross Connection Control policies for all commercial, institutional, industrial and miscellaneous facilities, and are summarized as follows:

- Protect the public water system from contaminants and/or pollutants that could backflow through the customer service connection.
- Promote the elimination of actual and/or potential cross connections between the public potable water system and non-potable water systems, plumbing fixtures, sources and/or systems containing substances of unknown or questionable quality.
- Provide guidance for the maintenance of a continuing Cross Connection Control program.



2. AUTHORITY

The authority to carry out and enforce the local CCCP is provided from local ordinance (see Appendix A), the Best Practices Manual for Cross Connection Control prepared by the department, office of Drinking Water and Municipal Assistance, Delaware Plumbing Code, and Delaware Residential Code.

2.1. Inspector/Designated Agent

The City of Rehoboth Beach or Designated Agent (Authority/Agent) conducting inspections on behalf of the City of Rehoboth Beach must be designated/approved by the City of Rehoboth Beach. The Authority/Agent must meet both 1) an experience component and 2) a certification/training component. Acceptable components are as follows:

Experience

- Be employed by a Utility, Water Purveyor, Building Department, or body of jurisdiction and must meet the qualifications and training requirements as dictated by the Authority conducting inspections/surveys on behalf of the City of Rehoboth Beach
- Have held a similar position (CCC Inspector) with a previous municipality
- One year full time experience in conducting cross connection control inspections in commercial, institutional and industrial facilities

Certification/Training

- Meet American Society of Sanitary Engineer Standards (ASSE) 5120 and completed their Cross Connection Inspector Course (40 hours)
- Possess a certificate of completion from one of the following:
 - USC *Cross Connection Control Specialist Course* (40 hours)
 - TREEO *Cross Connection Control Program Manager Course* (40 hour)
- Other approved cross connection courses for surveying, as approved by the Authority for conducting inspections/surveys on behalf of the “city name”. Submission requirements for approvals must include the following:
 - Course outline
 - Date of attendance
 - Outline of test questions
 - Categories and grading criteria
 - Certificate of satisfactory completion



3. PROGRAM APPROACH

The objectives of this program will be met primarily by:

- Routinely inspecting water customers for cross connections or potential cross connections.
- Requiring water customers to test backflow prevention assemblies.
- Maintaining cross connection control records.
- Actively enforcing violations of the program.
- Providing public education.
- Reporting the status of the program to the State of Delaware - Division of Public Health of the Department of Health and Social Services, Office of Drinking Water.

The City of Rehoboth Beach shall ensure that there are adequate personnel and resources to carry out the necessary field and administrative requirements for this program. The City of Rehoboth Beach adopts the most current American Water Works (AWWA) M14 Manual as a guide to prevent and eliminate cross connections.



4. INSPECTIONS

The water connections and plumbing systems of all water customers or accounts shall be initially inspected for the presence of cross connections. As a result of the initial inspection, a detailed record of each account shall be established (see Section 6). A representative of the water utility or their designated agent shall be responsible for inspections. Individuals responsible for conducting inspections shall have obtained sufficient training on cross connection rules, identification, and corrective actions.

Inspections shall consist of entering a facility from the point where water service enters the facility (usually the meter) and tracing the piping to each end point of use. Using the inspection forms in Appendix B the inspector shall identify and note the location and nature of any direct and potential cross connections, location and details of backflow prevention devices, and other pertinent information. Inspectors having proper identification, shall be permitted to enter the building/premises at reasonable times for the purpose of cross connection inspections. If the inspector is refused proper access or if customer plumbing is untraceable, the City of Rehoboth Beach will assume a cross connection is present and take the necessary action to ensure the public water supply is protected.

The highest priority for inspections shall be placed on facilities that pose a high degree of hazard, that have a high probability that backflow will occur, or are known/suspected to have cross connections.

Once initial inspections are complete then a re-inspection frequency shall be determined for each account based on the degree of hazard and potential for backflow. The AWWA M14 Cross Connection Rules Manual & ASSE 5000 Standards will be a guide in classifying the degree of hazard of each account. However, in general, situations in which backflow could cause illness or death shall be considered high hazard. Non-Residential and residential accounts that pose a high hazard or have a high potential for backflow to occur, must be re-inspected at least once per year. All other non-residential accounts must be re-inspected once every 1-5 years based on the degree of risk. All other residential accounts must be inspected a minimum of once every 10 years. Other factors such as new construction, water quality complaints, or anomalies in customer billing, may prompt an immediate re-inspection. After initial cross connection inspections are complete, a comprehensive list or inventory of all backflow prevention devices shall be on record including all pertinent data.

Following an inspection, the City of Rehoboth Beach shall inform the customer of their compliance status with the cross connection rules. Template notices in Appendix D may be used to inform customers of upcoming inspections, required corrective actions, compliance status, etc.



4.1 Request for Internal Cross Connection Control Information

The Authority has the legal right to request specific cross connection control information to include but not limited to piping information, piping drawings or information related to a specific point of water use in relation to cross connections. The Authority shall issue a request notice for any one of the following:

- Facility is determined by the Inspector to be large and/or complex requiring considerable amount of additional time to inspect
- Facility does not allow for free and unlimited access to areas requiring inspection/survey
- Piping configurations are complex
- Piping is not readily accessible. (i.e. concealed piping)
- Multiple piping systems
- Inadequate piping identification
- Facility changes their plumbing configurations on a regular frequency
- Secondary/auxiliary water sources
- Manufacturing/use of industrial fluids in piping systems or facility operations
- Refusal of entry
- No current as-built/engineering drawings of the potable water system

If, the Authority/Agent is not able to complete an inspection the property owner must, at their own expense, have the plumbing inspected for cross-connections by a certified firm or individual that has met the requirements in [Section 2.1](#).

4.2 Submission of Internal Cross Connection Control Information

Information that must be included is as follows:

- Methodology used to conduct the survey
- General facility overview
- List of violations/requirements - information must include the following:
 - Type of backflow prevention device to be installed
 - Size of backflow prevention device to be installed
 - Location description/remarks to include what the backflow prevention device will be supplying
- List of all existing backflow prevention devices (both testable and non-testable). Information that must be included is as follows:
 - Type of backflow prevention device installed
 - Size of backflow prevention device installed
 - Manufacturer of backflow prevention device to include:
 - Model
 - Serial number
 - Location description/remarks
- A proposed plan for the correction of violations/requirements must be submitted along with a proposed time table for completion
- Drawings of the facility's potable water piping system may be required



4.3 Containment

“Containment” * is the installation of a backflow prevention device between the facility and public distribution systems. Containment assures there is no chance for water of questionable quality to leave a facility and to enter the public distribution system.

While a facility may be contained, the Authority may still require an inspection downstream of the containment device(s). It is the responsibility of the facility to provide potable water at all times to its employees and/or public. Failure on the facility's part to take corrective action would constitute a violation thus exposing the facility to possible legal ramifications.

A Containment Notice will be issued for any one of the following:

- Facility determined to be high hazard
 - Refusal to comply with the normal steps for non-compliance
 - Facility does not allow free and unlimited access to areas requiring inspection/survey
Piping not differentiable or determined to be complex
 - Piping is not readily accessible (i.e. concealed piping)
 - Multiple piping systems
 - Inadequate piping identification
 - Facility changes their plumbing configurations on a regular frequency
 - Secondary/auxiliary water sources
 - Manufacturing/use of industrial fluids in piping systems or facility operations
 - Refusal of entry
 - No current as-built/engineering drawings of the potable water system
- * Containment assembly(s)/device(s) does not negate the facility’s responsibility to ensure the internal water system is protected utilizing appropriate backflow prevention methods.



5 APPLICATION OF BACKFLOW PREVENTERS

The following table outlines acceptable backflow protection for certain types of cross connection conditions that may be encountered. The table is to be used as a guideline in determining adequate cross connection control measures, not as an absolute requirement, see Appendix G for sample installation schematics.

Backflow Preventer Type	Degree of Hazard	Application	Applicable Standard
Backflow prevention assemblies:			
Double Check Valve Assembly (DCV)	Low hazard	Backpressure or backsiphonage	ASSE 1015, AWWA C510, CSA B64.5, CSA B64.5.1
Double Check Detector Assembly (DCDA)	Low hazard	Backpressure or backsiphonage	ASSE 1048
Pressure Vacuum Breaker Assembly (PVB)	High or low hazard	Backsiphonage	ASSE 1020, CSA B64.1.2
Reduced Pressure Principle Backflow Prevention Assembly (RPBP)	High or low hazard	Backpressure or backsiphonage	ASSE 1013, AWWA C5411, CSA B64.4, CSA B64.4.1
Reduced Pressure Detector Assembly (RPDA)	High or low hazard	Backsiphonage	ASSE 1047
Spill-resistant Vacuum Breaker Assembly (SVB)	High or low hazard	Backsiphonage	ASSE 1056
Backflow prevention devices:			
Antiphon-type Fill Valve (FV)	High hazard	Backsiphonage	ASSE 1002, CSA B125.3
Atmospheric Vacuum Breaker (AVB)	High hazard	Backsiphonage	ASSE 1001, CSA B64.1.1
Backflow Preventer for Carbonated Beverage Equipment (VMBP)	Low hazard	Backpressure or backsiphonage	ASSE 1022
Backflow Preventer with Intermediate Atmospheric Vent (VDCV)	Low hazard	Backpressure or backsiphonage	ASSE 1012, CSA B64.3
Dual Check (DC)	Low hazard	Backpressure or backsiphonage	ASSE 1024, CSA B64.6
Hose Connection Backflow Preventer (HCBP)	High or low hazard	Low head backpressure or backsiphonage	ASSE 1052, ASME A112.21.3, CSA B64.2.1.1
Hose Bibb Vacuum Breaker (HBVB)	High or low hazard	Low head backpressure or backsiphonage	ASSE 1011, ASME A112.21.3, CSA B64.2, CSA B64.2.1
Anti-frost Hoe Bibb Vacuum Breaker	High or low hazard	Low head backpressure or backsiphonage	ASSE 1011, ASME A112.21.3, CSA B64.2, CSA B64.2.1
Lab Faucet Vacuum Breaker (LFVB)	High or low hazard	Backsiphonage	ASSE 1035, CSA B64.7



Backflow Preventer Type	Degree of Hazard	Application	Applicable Standard
Backflow prevention devices:			
Vacuum Breaker Wall Hydrants (HBIVB)	High or low hazard	Low head backpressure or backsiphonage	ASSE 1019, ASME A112.21.3, CSA B64.2.2
Other means or methods:			
Air Gap (AG)	High or low hazard	Backsiphonage	ASME A112.1.2
Air Gap Fittings for use with Plumbing Fixtures, Appliances and Appurtenances	High or low hazard	Backsiphonage	ASME A112.1.3
Barometric Loop	High or low hazard	Backsiphonage	MI Plumbing Code Sec. 608.13.4



6 TESTING BACKFLOW PREVENTION ASSEMBLIES

When inspections have been completed, a comprehensive list of backflow preventers installed on customer plumbing systems will be on record. The backflow preventers that are testable assemblies shall be placed on a routine testing schedule. All testable assemblies will be tested upon installation, upon repair and on an annual basis.

Upon notice from the City of Rehoboth Beach, it shall be the responsibility of the water customer to arrange and absorb any costs associated with assembly testing and subsequent repair/replacement of backflow prevention assemblies.

Following the initial cross connection inspections and subsequent classification of accounts (e.g. assigning a degree of hazard), assembly testing notices shall be sent to non-residential water customers annually. Residential water customers shall receive testing notices every 3 years or every 5 years for non-chemically treated lawn irrigation systems. The notices shall be sent out in a timely manner to provide adequate time for customers to comply, and the timing will consider seasonal assemblies. Template notices in Appendix D may be used to inform customers of testing requirements. These notices will:

- Clearly identify the assembly requiring testing (size, make, model, location, etc.)
- Stipulate the date by which the assembly must be tested.
- Indicate that tests must be completed by a ASSE 5110 certified tester. A list of approved testers may be provided and updated lists may be obtained from the ASSE Website.
- Enclose either a standard test form (see Appendix E) or a list of testable backflow prevention assemblies.

When assembly testing reports are received by the utility, they will be checked for the following:

- All the necessary information was provided
- Name and certification number of the tester is provided
- The test results appear valid
- The assembly tested matches the assembly requiring testing (Make, Model, etc.)
- The assembly is approved

Test results are only valid if testing was performed by an individual holding an active ASSE 5110 certification.

Cross connection control program staff will follow up with owner or tester on questionable test forms. A customer may be asked to have an assembly retested if the original test results do not appear valid. Test forms must be received and kept on record for each required test.



7 RECORD KEEPING

A system of cross connection record keeping shall be maintained. Special software specifically for cross connections may be used for:

- Efficient record searches
- Easy reporting
- Simple updating
- Automatic letter generation
- Automatic deadline notification

All cross connections account information must be in the records including:

- Address and location
- Owner name and contact information
- List of testable assemblies
- Description of other cross connections within the facility
 - Air gaps
 - Non-testable assemblies
- Degree of hazard classification and basis
- Required re-inspection frequency
- Photos or sketches if available

All testable assemblies must be in the records including:

- Location of the assembly
- Name and contact information of assembly owner
- Make, model, and size of assembly
- Degree of hazard classification
- Required testing frequency and basis

Tracking changes in water use or tracking new customers is a critical part of the cross connection program. The City of Rehoboth Beach shall make every attempt to prevent/eliminate cross connections at installations to ensure future compliance. An effort shall be made to cooperate and communicate with the local plumbing code inspector to better accomplish this goal.

Standard letter, form, and report templates may be used to simplify the program requirements including:

- Inspection forms
- Assembly testing forms
- Inspection and/or assembly testing notification letters
- Noncompliance letters
- Water service termination notice
- Hydrant use authorization forms

Copies of the written cross connection control program, ordinance, and ODW approval letter should be kept on file. Copies of the ODW annual reports shall be kept for a minimum of 10 years.



8 ENFORCEMENT

To protect public health, water customers found to be in violation of the cross connection rules will be brought into compliance in a timely manner or lose their privilege to be connected to the public water system. To properly enforce these rules the City of Rehoboth Beach ordinance provides authority to inspect facilities, terminate water service, and assess fines.

Following an inspection, the customer will be sent either a compliance notice or a non-compliance notice. The timeframe to complete the necessary corrective actions is at the discretion of the utility and will be based primarily on the degree of risk posed by the violation but should also consider the complexity/cost of the necessary corrective actions. Cross connections that pose an imminent and extreme hazard shall be disconnected immediately and so maintained until proper protection is in place. Cross connections that do not pose an extreme hazard are generally expected to be eliminated within 30-60 days. The necessary corrective action and deadline shall be described in the non-compliance notice to the customer.

Failure to submit a test form for a backflow prevention assembly that has successfully passed testing requirements constitutes a cross connection and must be corrected and may result in the termination of water service and/or the assessment of a fine(s).

If a water shut off is necessary to protect the public water system, the local health department, fire department, local law enforcement, and City of Rehoboth Beach manager may need to be notified.



9 NEW SERVICE INSPECTION

9.1 Procedures

All plumbing plans and permits for a proposed building shall be reviewed by the Authority, Plumbing Inspector, Building Inspector and building contractor(s). The Authority's Cross Connection Control Plan and Backflow Prevention requirements will be reviewed with the responsible party.

9.2 Inspections

The Authority/Designated Agent conducting the cross connection control inspection shall inspect the building for compliance with the Cross Connection Control Program.

9.3 Compliance

Upon completion of the cross connection control inspection and determination that the building is in compliance and has met any required actions of this plan, a certificate of occupancy and water service may be initiated as applicable.

9.4 Non-Compliance

If the building does not comply with the Cross Connection Control Program the Authority shall enforce this plan as required. The water service and the certificate of occupancy will not be initiated until compliance is achieved and approved.



10 PUBLIC EDUCATION

The cross connection control program staff must have a good understanding of the program. The City of Rehoboth Beach shall ensure their cross-connection control staff receives proper in-the-field training as well as classroom education focusing on terminology, backflow prevention devices/assemblies, regulations, and hydraulic concepts. In addition, cross connection control staff will be encouraged to receive continuing education to be made aware of new backflow prevention devices/assemblies, regulation changes (i.e. plumbing code updates), new water use devices that pose cross connection concerns, etc.

Furthermore, attempts to educate the public about cross connections will be made by distributing pamphlets on common residential cross connections, visiting schools, providing onsite education of facility management and maintenance staff during routine inspections, speaking at condominium association meetings, showing videos on local access channels, or posting newspaper announcements.

Cross connection staff shall also be available upon request to provide backflow prevention education to pertinent community officials and City of Rehoboth Beach employees.



11 ANNUAL REPORT

State of Delaware - Division of Public Health of the Department of Health and Social Services, Office of Drinking Water may require a program status report annually. The report summarizes testing, inspection, and corrective action efforts. Cross connection records shall be on file to document each number on the report. The annual report form shall be filled out completely and submitted by the deadline. A narrative description shall be included explaining any unusual numbers or significant events such as:

- The addition or loss of a cross connection staff person
- Greatly expanded/contracted number of cross connection accounts
- Status of accounts not currently in compliance



APPENDIX A - LOCAL ORDINANCE



APPENDIX B - FIELD FORMS

Facility Comments	
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Facility Information			Mailing Information		
Facility Name:			First:	Last:	
Address:			Address:		
Address 2:			Address 2:		
City:	State:	Zip:	City:	State:	Zip:
Phone:	Ext:	Fax:	Phone:	Ext:	Fax:
Contact Name:			Email:		

Inspection Date	<input type="text"/>	Facility Type	<input type="text"/>	Requirements	<input type="text"/>
Inspection Status	<input type="text"/>	Facility Status	<input type="text"/>	Assemblies	<input type="text"/>
Inspection Frequency	<input type="text"/>	Test Cycle	<input type="text"/>	Devices	<input type="text"/>
High Hazard	<input type="checkbox"/>			Last Insp Notice	<input type="text"/>
				Next Insp Notice	<input type="text"/>

Containment:

Potable Supply	<input type="text"/>	Private Well	<input type="text"/>	Reclaim Water	<input type="text"/>
Fire Supply	<input type="text"/>	Surface Water	<input type="text"/>	Grey Water	<input type="text"/>
Containment Existing	<input type="checkbox"/>	Containment Required	<input type="checkbox"/>	FP Properly Protect	<input type="checkbox"/>

Isolation Hazards:

Facility Comments	
Inspector's Name	<input type="text"/>
Contact's Name	<input type="text"/>
Contact's Signature	<input type="text"/>



APPENDIX C ASSEMBLY AND DEVICE LEGEND

Hydro Designs, Inc Device Legend			
A.S.S.E Standard	Legend	Acronym	Testable Device
1001	Atmospheric Type Vacuum Breakers	AVB	No
1002	Anti-siphon Fill Valves (Ballcocks)	ASBC	No
1011	Hose Connection Vacuum Breaker	HBVB	No
1012	Backflow Preventer w/Intermediate Atmospheric Vent	VDCV	No
1013	Reduced Pressure Backflow Prevention Assembly	RPBP	Yes
1015	Double Check Valve Backflow Prevention Assembly	DCV	Yes
1019	Vacuum Breaker Wall Hydrants	HBIVB	No
1020	Pressure Vacuum Breaker Assembly	PVB	Yes
1022	Backflow Preventer for Carbonated Beverage Machine	VMBP	No
1024	Dual Check Valve Type Backflow Preventers	DC	No
1024	Residential Dual Check	RDC	Yes/No
1035	Laboratory Faucet Backflow Preventer	LFVB	No
1037	Pressurized Flushing Devices (Flushometers)	PFD	No
1047	RP Detector Backflow Prevention Assembly	RPDA	Yes
1048	Double Check Detector Backflow Prevention Assembly	DDCV	Yes
1052	Hose Connection Backflow Preventer	HCBP	No
1055	Chemical Dispensing Systems	AG	No
1056	Spill Resistant Vacuum Breaker Assembly	SVB	Yes
1057	Freeze Resistant Yard Hydrant W/Backflow		No
A112.1.2	Air Gap	AG	No
	Single Check Valve	SCV	No



APPENDIX D – NON-RESIDENTIAL PROGRAM NOTICE TEMPLATES



Cross Connection Control Program Inspection Notice

RE: [FACILITYNAME] at [SERVICEADDRESS1]

Dear [GREETING]

The purpose of the [ORGNOME]'s Cross Connection Control Program, as defined in local Ordinance [ORDINANCENUMBER], is to help eliminate possible contamination of the public water distribution system. There are two required components of the program; 1) site inspection and 2) testing of backflow prevention assemblies.

The [ORGNOME] will be working jointly with inspectors from HydroCorp to conduct these inspections. Thank you in advance for your cooperation in this matter.

As part of this program, an inspection of your facility's internal water system is to be completed. Inspectors will be reviewing your water system for connections that could possibly contaminate the water distribution system. The inspection is tentatively scheduled for **[SCHEDULEDDATE]**. Our inspector will do their best to be on site this day, however, we may be on site the day before or after the scheduled date. The inspection must be completed during normal business hours of 8:00 AM to 5:00 PM. If you need a more specific time, please call 1.800.690.6651 to arrange an appointment.

Any costs associated with the replacement, modification(s), installation, and/or testing of backflow prevention assemblies is the responsibility of the property owner/manager and/or occupant.

You will be notified following the inspection if modification(s) and/or testing of backflow prevention assemblies are necessary. We look forward to working with you in protecting the drinking water supply. If you have any questions or concerns, please contact HydroCorp at 1.800.690.6651 or visit their website at www.hydrocorpinc.com/resources/links/.



Cross Connection Control Program Inspection Compliance Notice

RE: [FACILITYNAME] at [SERVICEADDRESS1]

Dear [GREETING]

The purpose of the [ORGNNAME]'s Cross Connection Control Program, as defined in local ordinance [ORDINANCENUMBER], is to help eliminate possible contamination of the public water distribution system. There are two required components of the program; 1) site inspection and 2) testing of backflow prevention assemblies.

As part of this program, an inspection of your facility's internal water distribution system was completed on [SCHEDULEDDATE]. Inspectors reviewed your water distribution system for any piping or connections that could possibly contaminate the water distribution system.

Your facility was either found compliant and/or the necessary changes made to comply with local ordinance. This inspection is valid until your facility's next scheduled inspection date. You will receive future notice for your next inspection date.

If your facility has backflow prevention assemblies requiring testing, you will be receiving additional notice detailing test requirements.

If you have any questions or require additional information, please contact **HydroCorp** at **1.800.690.6651** or visit their website at **www.hydrocorpinc.com**.



Cross Connection Control Program Containment Compliance Notification

RE: [FACILITYNAME] at [SERVICEADDRESS1]

Dear [GREETING]

A Cross Connection Control inspection was performed at your facility. At that time, it was determined that your facility's potable water system is "contained" by an approved, properly installed backflow prevention device or assembly at the main inlet which is intended to minimize the potential backflow threat to the [ORGNOME]'s public water system. Therefore, your facility has met the intent of the inspection portion of the Cross Connection Program as defined in local Ordinance [ORDINANCENUMBER]. Compliance with the inspection portion of the program requirements shall remain in effect until your facility's next scheduled inspection date.

However, to fully meet the intent of the CCC Program, two- (2) items must be addressed:

1. Inspection of the facility: Completed.
2. Successful annual testing of any existing testable backflow prevention assemblies within your facility.

This facility will be in compliance with the Cross Connection Control Program when the existing backflow prevention assemblies are tested this year and at yearly intervals hereafter. When it is necessary to test such assemblies, your facility will receive a notification letter, test forms to be completed by a certified tester for each identified testable assembly, and a list of certified testers within your facility's area. Upon the successful testing of the backflow prevention assembly, please submit a copy of the completed test record(s) to HydroCorp.

Note, however, it is still possible for existing cross connections within your facility to potentially affect the water quality within your internal plumbing system. The installation of an approved backflow preventer at the main inlet does not relieve your facility of the responsibility of providing potable water to your employees and the public. To comply with all applicable codes and laws, it is recommended that your facility:

- Have a cross connection control survey of the potable water piping system performed within your facility.
- Ensure all piping systems downstream of the containment device/assembly are labeled properly.
- Ensure backflow prevention assemblies connected to the potable water supply within your facility are tested annually.

If you have any questions or require additional information, please contact HydroCorp at 1.800.690.6651.



Request for Internal Cross Connection Control Information Notice

RE: [FACILITYNAME] at [SERVICEADDRESS1]

Dear [GREETING]

The purpose of the [ORGNAME]'s Cross Connection Control Program, as defined in the local Ordinance [ORDINANCENUMBER] is to help eliminate direct and potential hazards to the public water distribution system. A cross connection is an actual or potential connection between the potable water supply and any other environment which may introduce contaminants into the drinking water. We have hired a specialized consulting firm (HydroCorp) to assist in helping water customers comply with the CCC Program.

There are two required components of the CCC program; 1) Site inspection of your plumbing system, and 2) Compliance with the local CCC Ordinance and State Plumbing Code. HydroCorp conducted a cursory CCC assessment of your facility on [LASTSURVEYDATE]. At the time of that initial contact, it was indicated that your facility has not had a thorough cross connection inspection. Due to the size and complexity of your building(s) and plumbing system(s) the Utility cannot undertake the responsibility of the inspection at your facility.

The [ORGNAME] recommends, but does not require, that your company contract HydroCorp for your initial CCC inspection. This recommendation is because HydroCorp ultimate role in this process would be to "protect the water system" and provide the most cost effective and unbiased opinion of how to correct any cross connections. However, should you choose to select your own contractor, coordination of services is required with HydroCorp since they have ultimate approval of our CCC program.

If your company has had a complete Cross Connection Control Survey, please provide inspection/survey results of the entire potable water piping system within your facility along with the following required information:

- Testers Certification number of the person(s) conducting the inspection/survey
- A list of all testable backflow preventers with locations, serial # and Regulated Object #
- A list of all non-testable type backflow preventers with locations
- A list of all water connections with no backflow prevention with locations
- A written plan for correcting any cross connections identified during inspection
- A copy of the survey performed and name and contact information of the company who performed it
- A time frame for correcting all cross connections found during inspection.

If you have any questions or require additional information, please contact HydroCorp at 1.800.690.6651. Your facility's cooperation in this important safety program is greatly appreciated.



Containment Notice

RE: [FACILITYNAME] at [SERVICEADDRESS1]

Dear [GREETING]

The purpose of the [ORGNAME]'s Cross Connection Control Program, as defined in Ordinance [ORDINANCENUMBER], is to help eliminate possible contamination of the public water distribution system.

“Containment” is the installation of a backflow prevention device, or a testable assembly between the facility and the public water distribution system. Containment assures there is no chance for water of questionable quality to leave your facility and to enter the public water distribution system.

As authorized by Ordinance [ORDINANCENUMBER], the containment backflow prevention assemblies on the attached list are to be installed immediately after the municipal water meter and before the first tap. If a by-pass around the backflow prevention assembly is required, the by-pass shall also be protected with a backflow prevention assembly of equal protection. **Your facility has 30 days to install the assemblies shown on the attached pages.**

Please be advised that the installation of containment devices does not relieve your facility of the responsibility of providing potable water to its employees and visitors. To comply with applicable laws, and to ensure the integrity of your internal water distribution system, a comprehensive cross connection inspection should be completed. If you have any questions, please contact HydroCorp at 1.800.690.6651.



Inspection Non-Compliance Notice 1

RE: [FACILITYNAME] at [SERVICEADDRESS1]

Dear [GREETING]

The purpose of the [ORGNAME]'s Cross Connection Control Program, as defined in the [ORDINANCENUMBER], is to help eliminate possible contamination of the public water distribution system. There are two required components of the program; 1) site inspection and 2) testing of backflow prevention assemblies.

An inspection of your facility's internal water distribution system was completed on [LASTSURVEYDATE]. Inspectors reviewing your water system found connections that could possibly contaminate the public water distribution system. A list of requirements is enclosed.

Requirements on this list must be addressed using only State approved backflow prevention devices. A licensed plumber should be able to assist you with acquiring approved backflow prevention devices. Some backflow prevention devices (assemblies) also require testing by a State Certified Tester. We suggest that the licensed plumber installing the testable assemblies also have the state certification to test assemblies. ***All testable assemblies must be tested immediately at the time of installation.***

These requirements must be completed by [RESPONSEDATE]. After the requirements and devices have been installed (if applicable) please call the number below on or before the date listed above to schedule a compliance inspection. Failure to do so will result in future non-compliant notices.

To arrange for compliance review please contact HydroCorp at 1.800.690.6651. If you require additional information, please visit their website at www.hydrocorpinc.com.



Inspection Non-Compliance Notice 2

RE: [FACILITYNAME] at [SERVICEADDRESS1]

Dear [GREETING]

The purpose of the [ORGNAME]'s Cross Connection Control Program, as defined in the [ORDINANCENUMBER], is to help eliminate possible contamination of the public water distribution system. There are two required components of the program; 1) site inspection and 2) testing of backflow prevention assemblies.

An inspection of your facility's internal water distribution system was completed on [LASTSURVEYDATE]. Inspectors reviewing your water system found connections that could possibly contaminate the public water distribution system. **A letter of notification was previously sent to you outlining the required corrective measures.** For your reference, a duplicate list of requirements is enclosed.

Requirements on this list must be addressed using only State approved backflow prevention devices. A licensed plumber should be able to assist you with acquiring approved backflow prevention devices. Some backflow prevention devices (assemblies) also require testing by a State Certified Tester. We suggest that the licensed plumber installing the testable assemblies also have the state certification to test assemblies. ***All testable assemblies must be tested immediately at the time of installation.***

These requirements must be completed by [RESPONSEDATE]. After the requirements and devices have been installed (if applicable) please call the number below on or before the date listed above to schedule a compliance inspection. Failure to do so will result in future non-compliant notices.

To arrange for compliance review please contact HydroCorp at 1.800.690.6651. If you require additional information, please visit their website at www.hydrocorpinc.com.



Inspection Non-Compliance – Shut-Off Notice

RE: [FACILITYNAME] at [SERVICEADDRESS1]

Dear [GREETING]

The purpose of the [ORGNAME]'s Cross Connection Control Program, as defined in the [ORDINANCENUMBER], is to help eliminate possible contamination of the public water distribution system. There are two required components of the program; 1) site inspection and 2) testing of backflow prevention assemblies.

As part of this program, an inspection of your facility's internal water distribution system was completed on [LASTSURVEYDATE]. Inspectors reviewing your water system found connections that could possibly contaminate the public water distribution system. Two- (2) previous letters of notification were sent to you outlining the required corrective measures. For your reference, a duplicate list of requirements is attached.

We presently have no record or notification from you that the corrective action has been completed. If you have already completed the requirements, please call the number below to schedule a compliance inspection.

You are hereby notified that in accordance with the [ORGNAME] local ordinance, the water supply to the above noted premises will be discontinued as of _____ . Water service may not be resumed until corrective measures have been addressed

To arrange for compliance review please contact HydroCorp at 1.800.690.6651. If you require additional information, please visit their website at www.hydrocorpinc.com.

Sincerely,

[Name]

[Title]



Cross Connection Control Program Testing Notice

RE: [FACILITYNAME] at [SERVICEADDRESS1][SERVICEADDRESS2]

Reference #: [REFERENCENUMBER]

Dear [GREETING]

The purpose of the [ORGNOME]'s Cross Connection Control Program, as defined in local ordinance [ORDINANCENUMBER], is to help eliminate possible contamination of the public water distribution system. There are two required components of the program; 1) site inspection, and 2) testing of backflow prevention assemblies.

This correspondence addresses testing of backflow prevention assemblies and is independent of previous correspondence pertaining to site inspection(s). Periodic testing of backflow prevention assemblies is required to ensure proper working order.

Our records indicate it is time for testing of backflow prevention assemblies at your facility. The assemblies required to be tested at this time are listed on the following page(s). Testing should be completed in advance of the completion date noted to allow for repair(s) should they be necessary. Testing of backflow prevention assemblies must be completed by a State approved certified tester. A partial listing of testers available in your area can be viewed on HydroCorp's website at hydrocorpinc.com/resources/testers.

Following completion of testing and/or repairs, all test results must be entered electronically by your plumber &/or certified tester at gethydrosoft.com Test forms will no longer be accepted via mail, fax or email.

Completed test forms are to be entered online by [RESPONSEDATE]. Please retain a copy of the report for your records.

If you have any questions or require additional information, please contact HydroCorp at 1.800.690.6651 or visit their website at hydrocorpinc.com.

THE FOLLOWING PAGE(S) MUST BE FORWARDED TO YOUR TESTER



INSERT CLIENT LOGO

Cross Connection Control Program Testing Notice

Sample Person
12345 Somewhere
City, St, Zip

Print Date: [PRINTDATE]

Dear Water Customer, please provide this page(s) to your tester.

ATTENTION TESTERS: This correspondence addresses testing of backflow prevention assemblies. Following completion of testing and/or repairs, all test results must be submitted online at gethydrosoft.com. Test forms will no longer be accepted via mail, fax or email. A onetime registration process must be completed by each tester before any test results will be accepted. Assistance with the registration and test form entry process can also be found at gethydrosoft.com. Testers will be required to provide the reference number listed below upon submission of test results for each facility where testing has been completed. If you have any questions or require additional information, please contact HydroCorp at 1-844-950-5026.

Completed test forms are to be entered online by 09/15/2017.

RE: Facility For Sample Notice at 12345 Somewhere

Reference #: 4C5DA5A9E

Device	Protection	Manufacturer	Model	Serial #	Size	Test Date	Test Status
Location/Comments:							
Line PSI:		CV1:		CV2:		RV:	



Cross Connection Control Program Testing Notice #2

RE: [FACILITYNAME] at [SERVICEADDRESS1][SERVICEADDRESS2]

Reference #: **[REFERENCENUMBER]**

Dear [GREETING]

The purpose of the [ORGNOME]'s Cross Connection Control Program, as defined in local ordinance [ORDINANCENUMBER], is to help eliminate possible contamination of the public water distribution system. There are two required components of the program; 1) site inspection, and 2) testing of backflow prevention assemblies.

This is your second notice pertaining to testing of backflow prevention assemblies and is independent of previous correspondence pertaining to site inspection(s). Periodic testing of backflow prevention assemblies is required to ensure proper working order.

Our records indicate it is time for testing of backflow prevention assemblies at your facility. The assemblies required to be tested at this time are listed on the following page(s). Testing should be completed in advance of the completion date noted to allow for repair(s) should they be necessary. Testing of backflow prevention assemblies must be completed by a State approved certified tester. A partial listing of testers available in your area can be viewed on HydroCorp's website at hydrocorpinc.com/resources/testers.

Following completion of testing and/or repairs, all test results must be entered electronically by your plumber &/or certified tester at gethydrosoft.com Test forms will no longer be accepted via mail, fax or email.

Completed test forms are to be entered online by [RESPONSEDATE]. Please retain a copy of the report for your records.

If you have any questions or require additional information, please contact HydroCorp at 1.800.690.6651 or visit their website at hydrocorpinc.com.

THE FOLLOWING PAGE(S) MUST BE FORWARDED TO YOUR TESTER



INSERT CLIENT LOGO

Cross Connection Control Program Testing Notice

Sample Person
12345 Somewhere
City, St, Zip

Print Date: [PRINTDATE]

Dear Water Customer, please provide this page(s) to your tester.

ATTENTION TESTERS: This correspondence addresses testing of backflow prevention assemblies. Following completion of testing and/or repairs, all test results must be submitted online at gethydrosoft.com. Test forms will no longer be accepted via mail, fax or email. A onetime registration process must be completed by each tester before any test results will be accepted. Assistance with the registration and test form entry process can also be found at gethydrosoft.com. Testers will be required to provide the reference number listed below upon submission of test results for each facility where testing has been completed. If you have any questions or require additional information, please contact HydroCorp at 1-844-950-5026.

Completed test forms are to be entered online by 09/15/2017.

RE: Facility For Sample Notice at 12345 Somewhere

Reference #: 4C5DA5A9E

Device	Protection	Manufacturer	Model	Serial #	Size	Test Date	Test Status
Location/Comments:							
Line PSI:		CV1:		CV2:		RV:	



Testing Shut-Off Notice

RE: [FACILITYNAME] at [SERVICEADDRESS1][SERVICEADDRESS2]

Reference #: **[REFERENCENUMBER]**

Dear [GREETING]

The purpose of the [ORGNOME]'s Cross Connection Control Program, as defined in local ordinance [ORDINANCENUMBER], is to help eliminate possible contamination of the public water distribution system. There are two required components of the program; 1) site inspection, and 2) testing of backflow prevention assemblies.

This your third notice pertaining to testing of backflow prevention assemblies and is independent of previous correspondence pertaining to site inspection(s). Periodic testing of backflow prevention assemblies is required to ensure proper working order.

Our records indicate it is time for testing of backflow prevention assemblies at your facility. The assemblies required to be tested at this time are listed on the following page(s). Testing should be completed in advance of the completion date noted to allow for repair(s) should they be necessary. Testing of backflow prevention assemblies must be completed by a State approved certified tester. A partial listing of testers available in your area can be viewed on HydroCorp's website at hydrocorpinc.com/resources/testers.

You are hereby notified that in accordance with local ordinance, the water supply to the above noted premises will be discontinued as of **[RESPONSEDATE]**. Water service may not be resumed until corrective measures have been addressed.

Following completion of testing and/or repairs, all test results must be entered electronically by your plumber &/or certified tester at gethydrosoft.com. Test forms will no longer be accepted via mail, fax or email.

If you have any questions or require additional information, please contact HydroCorp at 1.800.690.6651 or visit their website at hydrocorpinc.com.

Sincerely,

[NAME]
[TITLE]



INSERT CLIENT LOGO

Cross Connection Control Program Testing Notice

Sample Person
12345 Somewhere
City, St, Zip

Print Date: [PRINTDATE]

Dear Water Customer, please provide this page(s) to your tester.

ATTENTION TESTERS: This correspondence addresses testing of backflow prevention assemblies. Following completion of testing and/or repairs, all test results must be submitted online at gethydrosoft.com. Test forms will no longer be accepted via mail, fax or email. A onetime registration process must be completed by each tester before any test results will be accepted. Assistance with the registration and test form entry process can also be found at gethydrosoft.com. Testers will be required to provide the reference number listed below upon submission of test results for each facility where testing has been completed. If you have any questions or require additional information, please contact HydroCorp at 1-844-950-5026.

Completed test forms are to be entered online by 09/15/2017.

RE: Facility For Sample Notice at 12345 Somewhere

Reference #: 4C5DA5A9E

Device	Protection	Manufacturer	Model	Serial #	Size	Test Date	Test Status
Location/Comments:							
Line PSI:		CV1:		CV2:		RV:	



APPENDIX E – RESIDENTIAL PROGRAM NOTICE TEMPLATES



Cross Connection Control Program Inspection Notice

RE: [FACILITYNAME] at [SERVICEADDRESS1]

Dear Water Customer,

The [ORGNOME] is required under Public Act 399, Part 14, to maintain a cross connection control program to identify and eliminate any possible connections that could contaminate the public water system. The City has implemented a program for its commercial and industrial customers for a number of years; however, in order to fully comply with this State mandate, we must now include residential customers as part of this program. The City has contracted with HydroCorp of Troy, MI to assist with facilitating this program.

An inspector from HydroCorp will be in your neighborhood within the next two weeks reviewing the **exterior** of your home for connections that could possibly contaminate the water distribution system. A typical site visit lasts less than twenty minutes and the inspector will be looking at exterior garden hose connections, lawn sprinkler systems, pools/spas and any secondary water sources, such as privately owned wells. HydroCorp inspectors will **not** be entering your home at this time.

There are no fees for the inspection(s); however, in circumstances where cross-connections exist, any costs associated with the replacement, modification, installation and/or testing of backflow prevention assemblies remain the obligation of the home owner. The most common requirement for home owners is for an Anti-Frost Hose Bibb Vacuum Breaker on outside hose bibbs.

At this time there is no action required on your part. You will be notified following the survey if modification(s) and/or testing of backflow prevention assemblies are necessary.

We look forward to working with you in protecting everyone's drinking water supply. If you have any questions or concerns, please contact HydroCorp by phone at 1.800.690.6651 or email residential@hydrocorpinc.com. For additional information regarding the program, please visit their website at www.hydrocorpinc.com/residential.



Cross Connection Control Program Inspection Compliance Notice

Upon completion of inspection and the water customer is in compliance with all aspects of the program, they will receive a compliance door hanger or be notified by mail informing the water customer of their compliance status, see below.

RE: [FACILITYNAME] at [SERVICEADDRESS1]

Dear Water Customer,

The purpose of the [ORGNAME]'s Cross Connection Control Program, as defined in local ordinance [ORDINANCENUMBER], is to help eliminate possible contamination of the public water distribution system. There are two required components of the program; 1) site inspection, and 2) testing of backflow prevention assemblies.

As part of this program, an external inspection of the water distribution system at your home was completed on [SCHEDULEDDATE]. Inspectors reviewed your water distribution system for any piping or connections that could possibly contaminate the water distribution system.

Your home was either found compliant and/or the necessary changes were made to comply with local ordinance. This inspection is valid until your homes' next scheduled inspection date. You will receive a future notice for your next inspection date.

If your home has backflow prevention assemblies requiring testing, you will be receiving additional notices detailing test requirements.

Thank you for assisting the [ORGNAME] in protecting our water supply! If you have any questions or concerns please contact HydroCorp by phone 1.800.690.6651 or email residential@hydrocorpinc.com.



Inspection Non-Compliance Notice 1

RE: [FACILITYNAME] at [SERVICEADDRESS1]

Dear Water Customer,

The [ORGNAME] has contracted with HydroCorp of Troy, MI to perform the State mandated Cross Connection Control and Backflow Prevention Program inspections. As part of this program, a survey of your property was completed on [LASTSURVEYDATE]. During the survey the inspector found water uses on your property that could potentially contaminate the public water distribution system and/or the water inside your home.

The State of Michigan Safe Drinking Water Act, P.A. 399 Part 14, mandates that any connections to a public water system shall comply with the State Plumbing Act, PA 733. The attached list details the connections found on your property that are in violation with these State of Michigan requirements. The [ORGNAME] is mandated by the State to ensure these connections either (1) comply with the laws and rules of the State or (2) are permanently disconnected from the public water system.

Many of the items found by our contracted inspection provider are very simple to correct and can be completed by the home owner at very little expense. Some items, particularly lawn irrigation systems, may require the assistance of a licensed plumber. **If you have questions or are unsure of what you need to do, please contact HydroCorp at 248-250-5000.** They have staff in their office that are trained specifically to assist you with technical and other questions regarding the program.

Please complete these requirements and call HydroCorp on or before [RESPONSEDATE] to arrange a compliance inspection. Failure to do so will lead to further enforcement action in accordance with the [ORGNAME] Code of Ordinances and possible interruption of service.

Thank you for assisting the [ORGNAME] in protecting our water supply! If you have any questions or concerns or would like to schedule a compliance review please contact HydroCorp by phone 1.800.690.6651 or email residential@hydrocorpinc.com. For additional information regarding the program please visit their website at www.hydrocorpinc.com/residential.



Inspection Non-Compliance Notice 2

RE: [FACILITYNAME] at [SERVICEADDRESS1]

Dear Water Customer,

The [ORGNAME] has contracted with HydroCorp of Troy, MI to perform the State mandated Cross Connection Control and Backflow Prevention Program inspections. As part of this program, a survey of your property was completed on [LASTSURVEYDATE]. During the survey the inspector found water uses on your property that could potentially contaminate the public water distribution system and/or the water inside your home.

The State of Michigan Safe Drinking Water Act, P.A. 399 Part 14, mandates that any connections to a public water system shall comply with the State Plumbing Act, PA 733. The attached list details the connections found on your property that are in violation with these State of Michigan requirements. The [ORGNAME] is mandated by the State to ensure these connections either (1) comply with the laws and rules of the State or (2) are permanently disconnected from the public water system.

Many of the items found by our contracted inspection provider are very simple to correct and can be completed by the home owner at very little expense. Some items, particularly lawn irrigation systems, may require the assistance of a licensed plumber. **This is the second notice you should have received regarding this matter. If you have questions or are unsure of what you need to do, please contact HydroCorp at 248-250-5000.** They have staff in their office that are trained specifically to assist you with technical and other questions regarding the program. **Please complete these requirements and call HydroCorp on or before [RESPONSEDATE] to arrange a compliance inspection. Failure to do so will lead to further enforcement action in accordance with the [ORGNAME] Code of Ordinances and possible interruption of service.**

Thank you for assisting the [ORGNAME] in protecting our water supply! If you have any questions or concerns or would like to schedule a compliance review please contact HydroCorp by phone 1.800.690.6651 or email residential@hydrocorpinc.com. For additional information regarding the program please visit their website at www.hydrocorpinc.com/residential.



Inspection Non-Compliance – Shut-Off Notice

RE: [FACILITYNAME] at [SERVICEADDRESS1]

Dear Water Customer,

The [ORGNAME] has contracted with HydroCorp of Troy, MI to perform the State mandated Cross Connection Control and Backflow Prevention Program inspections. As part of this program, a survey of your property was completed on [LASTSURVEYDATE]. During the survey the inspector found water uses on your property that could potentially contaminate the public water distribution system and/or the water inside your home.

The State of Michigan Safe Drinking Water Act, P.A. 399 Part 14, mandates that any connections to a public water system shall comply with the State Plumbing Act, PA 733. The attached list details the connections found on your property that are in violation with these State of Michigan requirements. The [ORGNAME] is mandated by the State to ensure these connections either (1) comply with the laws and rules of the State or (2) are permanently disconnected from the public water system.

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Thank you for assisting the [ORGNAME] in protecting our water supply! If you have any questions or concerns or would like to schedule a compliance review please contact HydroCorp by phone 1.800.690.6651 or email residential@hydrocorpinc.com. For additional information regarding the program please visit their website at www.hydrocorpinc.com/residential.



Cross Connection Control Program Testing Notice

RE: [FACILITYNAME] at [SERVICEADDRESS1][SERVICEADDRESS2]

Reference #: **[REFERENCENUMBER]**

Dear [GREETING]

The purpose of the [ORGNOME]'s Cross Connection Control Program, as defined in local ordinance [ORDINANCENUMBER], is to help eliminate possible contamination of the public water distribution system. There are two required components of the program; 1) site inspection, and 2) testing of backflow prevention assemblies.

This correspondence addresses testing of backflow prevention assemblies and is independent of previous correspondence pertaining to site inspection(s). Periodic testing of backflow prevention assemblies is required to ensure proper working order.

Our records indicate it is time for testing of backflow prevention assemblies at your facility. The assemblies required to be tested at this time are listed on the following page(s). Testing should be completed in advance of the completion date noted to allow for repair(s) should they be necessary. Testing of backflow prevention assemblies must be completed by a State approved certified tester. A partial listing of testers available in your area can be viewed on HydroCorp's website at hydrocorpinc.com/resources/testers.

Following completion of testing and/or repairs, all test results must be entered electronically by your plumber &/or certified tester at gethydrosoft.com Test forms will no longer be accepted via mail, fax or email.

Completed test forms are to be entered online by [RESPONSEDATE]. Please retain a copy of the report for your records.

If you have any questions or require additional information, please contact HydroCorp at 1.800.690.6651 or visit their website at hydrocorpinc.com.

THE FOLLOWING PAGE(S) MUST BE FORWARDED TO YOUR TESTER



INSERT CLIENT LOGO

Cross Connection Control Program Testing Notice

Sample Person
12345 Somewhere
City, St, Zip

Print Date: [PRINTDATE]

Dear Water Customer, please provide this page(s) to your tester.

ATTENTION TESTERS: This correspondence addresses testing of backflow prevention assemblies. Following completion of testing and/or repairs, all test results must be submitted online at gethydrosoft.com. Test forms will no longer be accepted via mail, fax or email. A onetime registration process must be completed by each tester before any test results will be accepted. Assistance with the registration and test form entry process can also be found at gethydrosoft.com. Testers will be required to provide the reference number listed below upon submission of test results for each facility where testing has been completed. If you have any questions or require additional information, please contact HydroCorp at 1-844-950-5026.

Completed test forms are to be entered online by 09/15/2017.

RE: Facility For Sample Notice at 12345 Somewhere

Reference #: 4C5DA5A9E

Device	Protection	Manufacturer	Model	Serial #	Size	Test Date	Test Status
Location/Comments:							
Line PSI:		CV1:		CV2:		RV:	



Cross Connection Control Program Testing Notice #2

RE: [FACILITYNAME] at [SERVICEADDRESS1][SERVICEADDRESS2]

Reference #: **[REFERENCENUMBER]**

Dear [GREETING]

The purpose of the [ORGNOME]'s Cross Connection Control Program, as defined in local ordinance [ORDINANCENUMBER], is to help eliminate possible contamination of the public water distribution system. There are two required components of the program; 1) site inspection, and 2) testing of backflow prevention assemblies.

This is your second notice pertaining to testing of backflow prevention assemblies and is independent of previous correspondence pertaining to site inspection(s). Periodic testing of backflow prevention assemblies is required to ensure proper working order.

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INSERT CLIENT LOGO

Cross Connection Control Program Testing Notice

Sample Person
12345 Somewhere
City, St, Zip

Print Date: [PRINTDATE]

Dear Water Customer, please provide this page(s) to your tester.

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Reference #: 4C5DA5A9E

Device	Protection	Manufacturer	Model	Serial #	Size	Test Date	Test Status
Location/Comments:							
Line PSI:		CV1:		CV2:		RV:	



Testing Shut-Off Notice

RE: [FACILITYNAME] at [SERVICEADDRESS1][SERVICEADDRESS2]

Reference #: **[REFERENCENUMBER]**

Dear [GREETING]

The purpose of the [ORGNOME]'s Cross Connection Control Program, as defined in local ordinance [ORDINANCENUMBER], is to help eliminate possible contamination of the public water distribution system. There are two required components of the program; 1) site inspection, and 2) testing of backflow prevention assemblies.

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You are hereby notified that in accordance with local ordinance, the water supply to the above noted premises will be discontinued as of **[RESPONSEDATE]**. Water service may not be resumed until corrective measures have been addressed.

Following completion of testing and/or repairs, all test results must be entered electronically by your plumber &/or certified tester at gethydrosoft.com. Test forms will no longer be accepted via mail, fax or email.

If you have any questions or require additional information, please contact HydroCorp at 1.800.690.6651 or visit their website at hydrocorpinc.com.

Sincerely,

[NAME]
[TITLE]



APPENDIX F – TEST FORM

Test Status Not Tested Passed Failed

Facility Name Address Address 2

City State Zip Code

Type: Size: Meter #: Manufacturer: Model:

Serial:3 Permit: Containment Isolation Fire Protection

Location Comments:

Shut Off Valve 1: Closed Leaked Shut Off Valve 2: Closed Leaked Line Pressure: Initial Test Date:

1st Check	2nd Check	Relief Valve	PVB/SVB Air Inlet	PVB/SVB Check Valve
<input type="checkbox"/> Closed <input type="checkbox"/> Leaked	<input type="checkbox"/> Closed <input type="checkbox"/> Leaked	<input type="checkbox"/> Opened <input type="checkbox"/> Did Not Open <input type="checkbox"/> Leaked	<input type="checkbox"/> Opened <input type="checkbox"/> Failed	<input type="checkbox"/> Held <input type="checkbox"/> Failed
PSID: <input type="text"/>	PSID: <input type="text"/>	PSID: <input type="text"/>	PSID: <input type="text"/>	PSID: <input type="text"/>

Tester/Repair Comments:

Tester Name: Testing Company:

Tester Cert #: Gauge Manufacturer: GaugeModel: Gauge Serial #: Calibration Date:

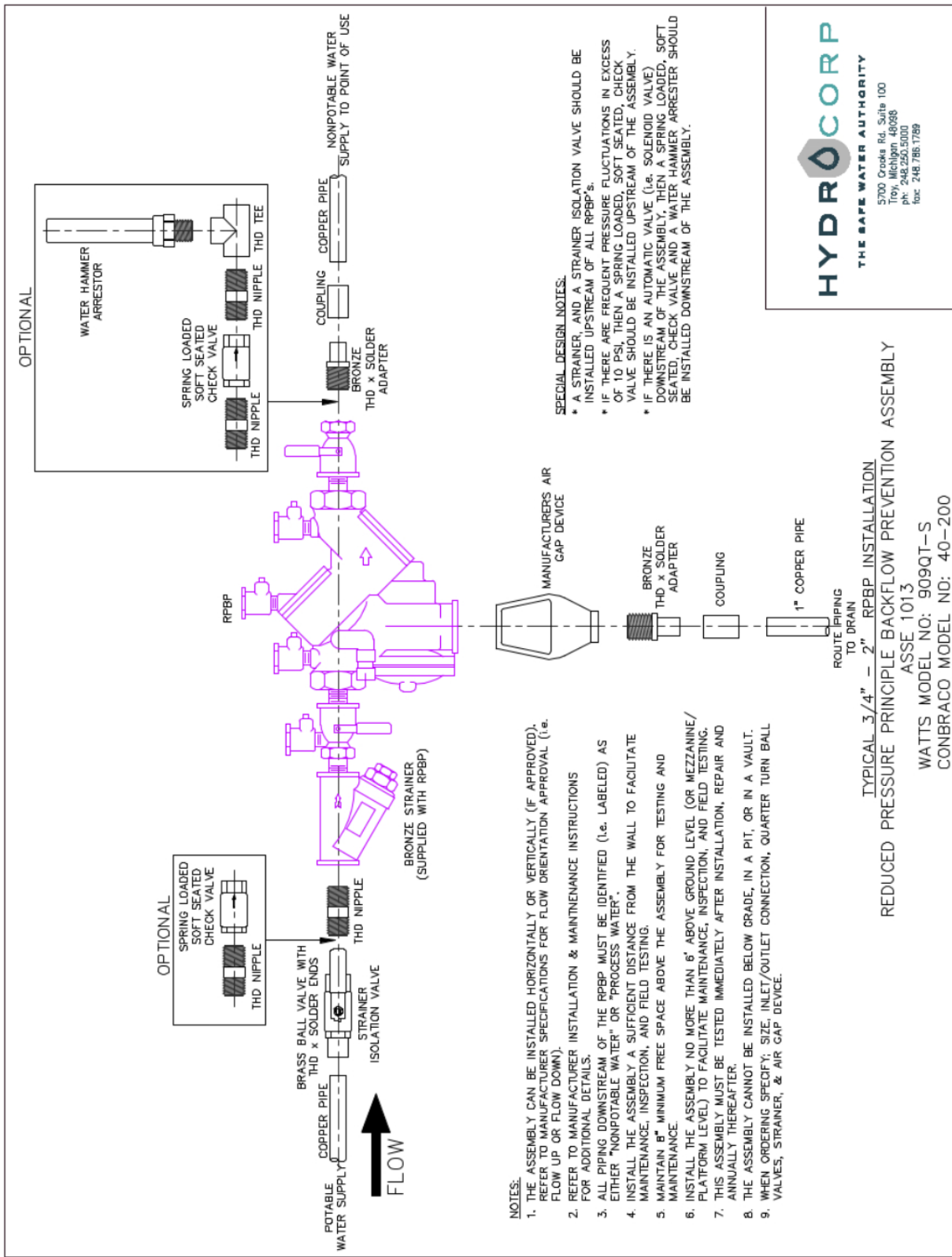
1st Check	2nd Check	Relief Valve	PVB/SVB Air Inlet	PVB/SVB Check Valve
<input type="checkbox"/> Closed <input type="checkbox"/> Leaked	<input type="checkbox"/> Closed <input type="checkbox"/> Leaked	<input type="checkbox"/> Opened <input type="checkbox"/> Did Not Open <input type="checkbox"/> Leaked	<input type="checkbox"/> Opened <input type="checkbox"/> Failed	<input type="checkbox"/> Held <input type="checkbox"/> Failed
PSID: <input type="text"/>	PSID: <input type="text"/>	PSID: <input type="text"/>	PSID: <input type="text"/>	PSID: <input type="text"/>

Final Test Date:

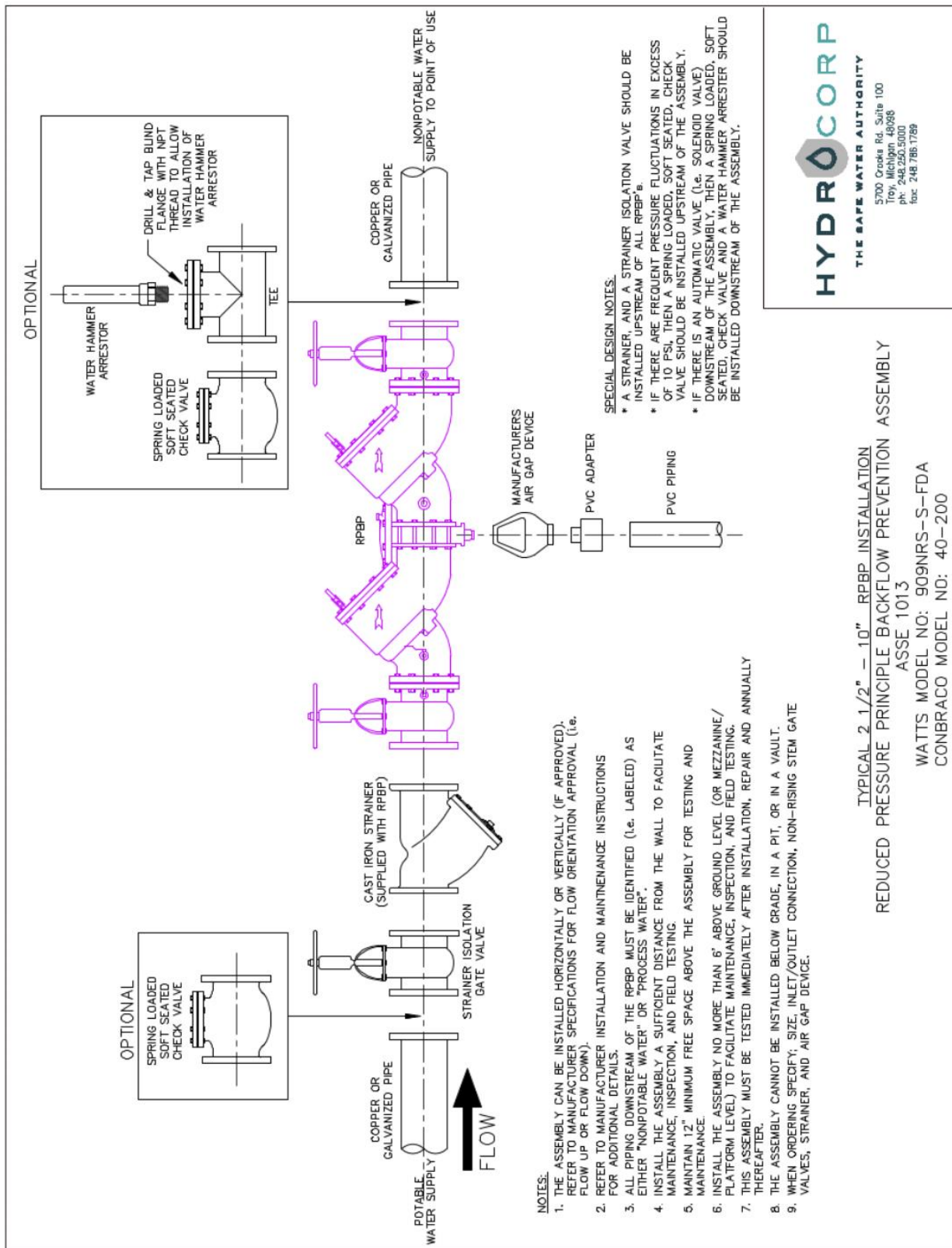


APPENDIX G – INSTALLATION SCHEMATICS

Drawings contained in this section are only “typical” installations for reference purposes. All new installations must be installed per code and manufacturer specifications.



dwg. name: PWA.dwg effective: 2/27/02



- NOTES:**
1. THE ASSEMBLY CAN BE INSTALLED HORIZONTALLY OR VERTICALLY (IF APPROVED). REFER TO MANUFACTURER SPECIFICATIONS FOR FLOW ORIENTATION APPROVAL (I.e. FLOW UP OR FLOW DOWN).
 2. REFER TO MANUFACTURER INSTALLATION AND MAINTENANCE INSTRUCTIONS FOR ADDITIONAL DETAILS.
 3. ALL PIPING DOWNSTREAM OF THE RPBP MUST BE IDENTIFIED (I.e. LABELED) AS EITHER "NONPOTABLE WATER" OR "PROCESS WATER".
 4. INSTALL THE ASSEMBLY A SUFFICIENT DISTANCE FROM THE WALL TO FACILITATE MAINTENANCE, INSPECTION, AND FIELD TESTING.
 5. MAINTAIN 12" MINIMUM FREE SPACE ABOVE THE ASSEMBLY FOR TESTING AND MAINTENANCE.
 6. INSTALL THE ASSEMBLY NO MORE THAN 6' ABOVE GROUND LEVEL (OR MEZZANINE/PLATFORM LEVEL) TO FACILITATE MAINTENANCE, INSPECTION, AND FIELD TESTING.
 7. THIS ASSEMBLY MUST BE TESTED IMMEDIATELY AFTER INSTALLATION, REPAIR AND ANNUALLY THEREAFTER.
 8. THE ASSEMBLY CANNOT BE INSTALLED BELOW GRADE, IN A PIT, OR IN A VAULT.
 9. WHEN ORDERING SPECIFY: SIZE, INLET/OUTLET CONNECTION, NON-RISING STEM GATE VALVES, STRAINER, AND AIR GAP DEVICE.

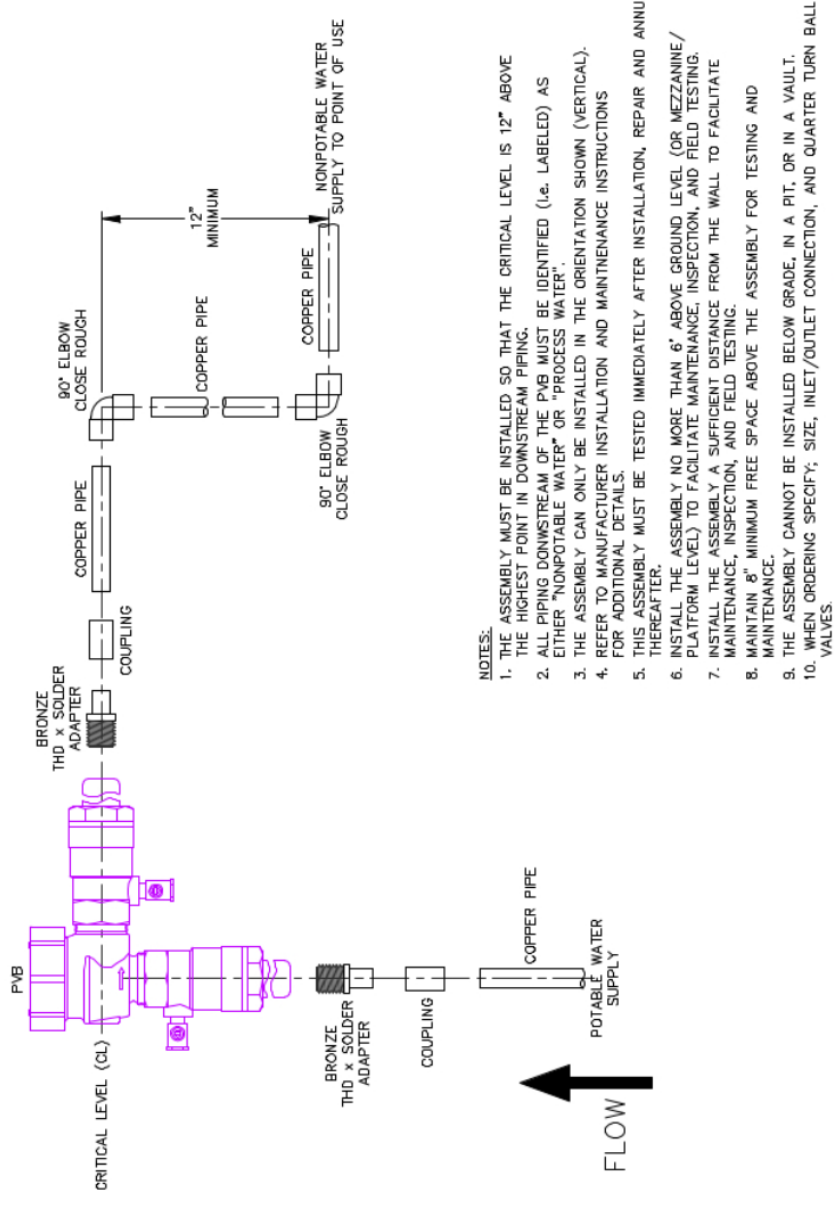
SPECIAL DESIGN NOTES:

- * A STRAINER, AND A STRAINER ISOLATION VALVE SHOULD BE INSTALLED UPSTREAM OF ALL RPBP's.
- * IF THERE ARE FREQUENT PRESSURE FLUCTUATIONS IN EXCESS OF 10 PSI THEN A SPRING LOADED, SOFT SEATED, CHECK VALVE SHOULD BE INSTALLED UPSTREAM OF THE ASSEMBLY.
- * IF THERE IS AN AUTOMATIC VALVE (I.e. SOLENOID VALVE) DOWNSTREAM OF THE ASSEMBLY, THEN A SPRING LOADED, SOFT SEATED, CHECK VALVE AND A WATER HAMMER ARRESTER SHOULD BE INSTALLED DOWNSTREAM OF THE ASSEMBLY.

HYDRORCORP
 THE SAFE WATER AUTHORITY
 5700 Crooks Rd, Suite 100
 Troy, Michigan 48068
 ph: 248.250.5000
 fax: 248.786.1789

TYPICAL 2 1/2" - 10" RPBP INSTALLATION
 REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY
 ASSE 1013
 WATTS MODEL NO: 909NRS-S-FDA
 CONBRACO MODEL NO: 40-200

des. name: PW10.dwg eff: date: 2/27/02

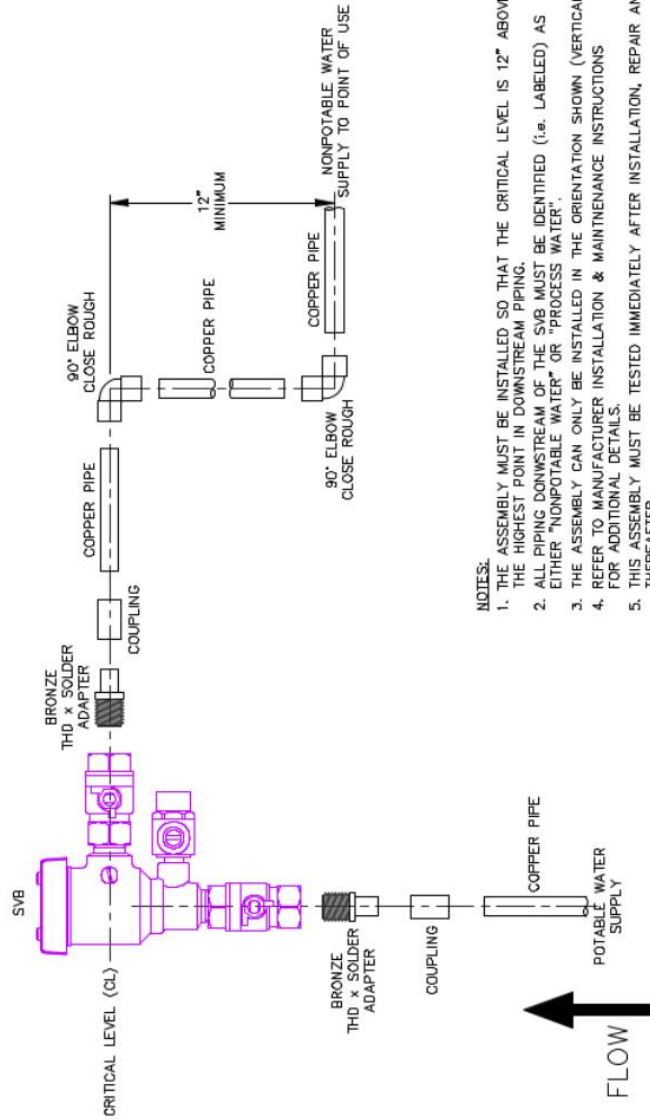


- NOTES:**
1. THE ASSEMBLY MUST BE INSTALLED SO THAT THE CRITICAL LEVEL IS 12" ABOVE THE HIGHEST POINT IN DOWNSTREAM PIPING.
 2. ALL PIPING DOWNSTREAM OF THE PVB MUST BE IDENTIFIED (i.e. LABELED) AS EITHER "NONPOTABLE WATER" OR "PROCESS WATER".
 3. THE ASSEMBLY CAN ONLY BE INSTALLED IN THE ORIENTATION SHOWN (VERTICAL). REFER TO MANUFACTURER INSTALLATION AND MAINTENANCE INSTRUCTIONS FOR ADDITIONAL DETAILS.
 4. THIS ASSEMBLY MUST BE TESTED IMMEDIATELY AFTER INSTALLATION, REPAIR AND ANNUALLY THEREAFTER.
 5. INSTALL THE ASSEMBLY NO MORE THAN 6' ABOVE GROUND LEVEL (OR MEZZANINE/PLATFORM LEVEL) TO FACILITATE MAINTENANCE, INSPECTION, AND FIELD TESTING.
 6. INSTALL THE ASSEMBLY A SUFFICIENT DISTANCE FROM THE WALL TO FACILITATE MAINTENANCE, INSPECTION, AND FIELD TESTING.
 7. MAINTAIN 8" MINIMUM FREE SPACE ABOVE THE ASSEMBLY FOR TESTING AND MAINTENANCE.
 8. THE ASSEMBLY CANNOT BE INSTALLED BELOW GRADE, IN A PIT, OR IN A VAULT.
 9. WHEN ORDERING SPECIFY: SIZE, INLET/OUTLET CONNECTION, AND QUARTER TURN BALL VALVES.

TYPICAL PVB INSTALLATION
 PRESSURE VACUUM BREAKER ASSEMBLY
 ASSE 1020
 WATTS MODEL NO: 800M4QT
 CONBRACO MODEL NO: 40-500

HYDROCORP
 THE SAFE WATER AUTHORITY
 5700 Credle Rd, Suite 100
 Troy, Michigan 48068
 ph: 248.250.5000
 fax: 248.786.1789

dwg. name: PVB.dwg effective: 2/27/02



NOTES:

1. THE ASSEMBLY MUST BE INSTALLED SO THAT THE CRITICAL LEVEL IS 12" ABOVE THE HIGHEST POINT IN DOWNSTREAM PIPING.
2. ALL PIPING DOWNSTREAM OF THE SVB MUST BE IDENTIFIED (i.e. LABELED) AS EITHER "NONPOTABLE WATER" OR "PROCESS WATER".
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4. REFER TO MANUFACTURER INSTALLATION & MAINTENANCE INSTRUCTIONS FOR ADDITIONAL DETAILS.
5. THIS ASSEMBLY MUST BE TESTED IMMEDIATELY AFTER INSTALLATION, REPAIR AND ANNUALLY THEREAFTER.
6. INSTALL THE ASSEMBLY NO MORE THAN 6' ABOVE GROUND LEVEL (OR MEZZANINE / PLATFORM LEVEL) TO FACILITATE MAINTENANCE, INSPECTION, AND FIELD TESTING.
7. INSTALL THE ASSEMBLY A SUFFICIENT DISTANCE FROM THE WALL TO FACILITATE MAINTENANCE, INSPECTION, AND FIELD TESTING.
8. MAINTAIN 8" MINIMUM FREE SPACE ABOVE THE ASSEMBLY FOR TESTING AND MAINTENANCE.
9. THE ASSEMBLY CANNOT BE INSTALLED BELOW GRADE, IN A PIT, OR IN A VAULT.
10. WHEN ORDERING SPECIFY; SIZE, INLET/OUTLET CONNECTION, AND QUARTER TURN BALL VALVES.

TYPICAL SVB INSTALLATION
 SPILL RESISTANT VACUUM BREAKER ASSEMBLY
 ASSE 1056
 WATTS MODEL NO: 008QT
 CONBRACO MODEL NO: N/A



5700 Crooks Rd. Suite 100
 Troy, Michigan 48068
 PH: 248.250.0000
 FAX: 248.786.1789

diag. name: PM4.dwg effective: 2/27/02

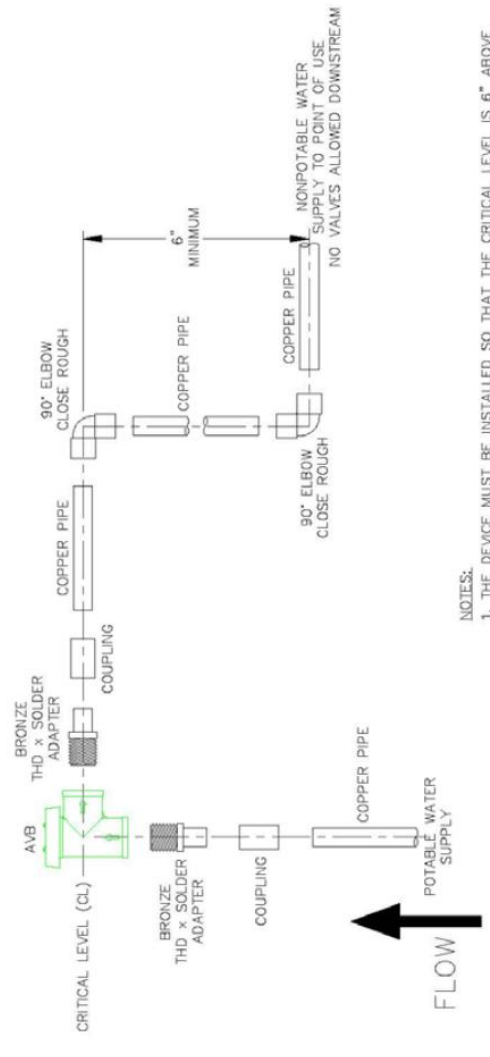


HYDR CORP

THE SAFE WATER AUTHORITY

5700 Crooks Rd, Suite 100
Troy, Michigan 48098
ph: 248.250.5000
fax: 248.786.1789

dwg. name: PW6.dwg effective: 2/27/02



- NOTES:
1. THE DEVICE MUST BE INSTALLED SO THAT THE CRITICAL LEVEL IS 6" ABOVE THE HIGHEST POINT IN DOWNSTREAM PIPING.
 2. NO VALVES ARE ALLOWED DOWNSTREAM OF THE AVB.
 3. ALL PIPING DOWNSTREAM OF THE AVB MUST BE IDENTIFIED (I.E. LABELED) AS EITHER "NONPOTABLE WATER" OR "PROCESS WATER".
 4. THE DEVICE CAN ONLY BE INSTALLED IN THE ORIENTATION SHOWN (VERTICAL). REFER TO MANUFACTURER INSTALLATION & MAINTENANCE INSTRUCTIONS FOR ADDITIONAL DETAILS.
 5. WHEN ORDERING SPECIFY: SIZE AND INLET/OUTLET CONNECTION.

TYPICAL AVB INSTALLATION
 ATMOSPHERIC VACUUM BREAKER
 ASSE 1001
 WATTS MODEL NO: 288A-C
 CONBRACO MODEL NO: 38-100

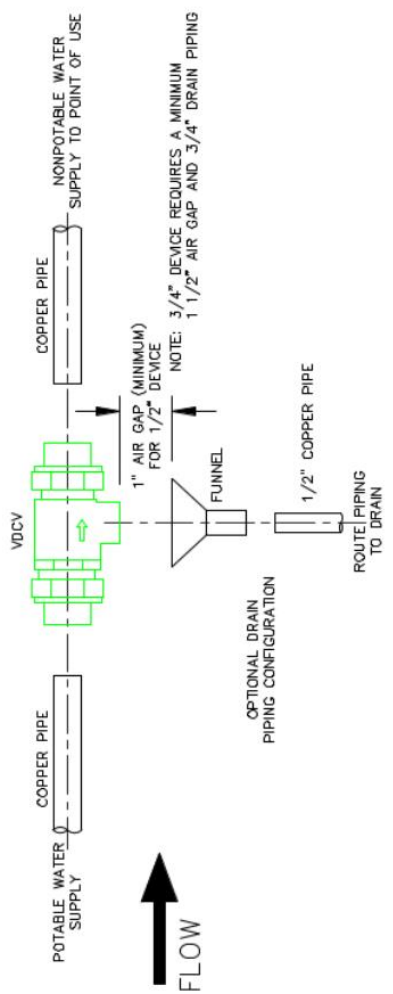


HYDRACORP

THE SAFE WATER AUTHORITY

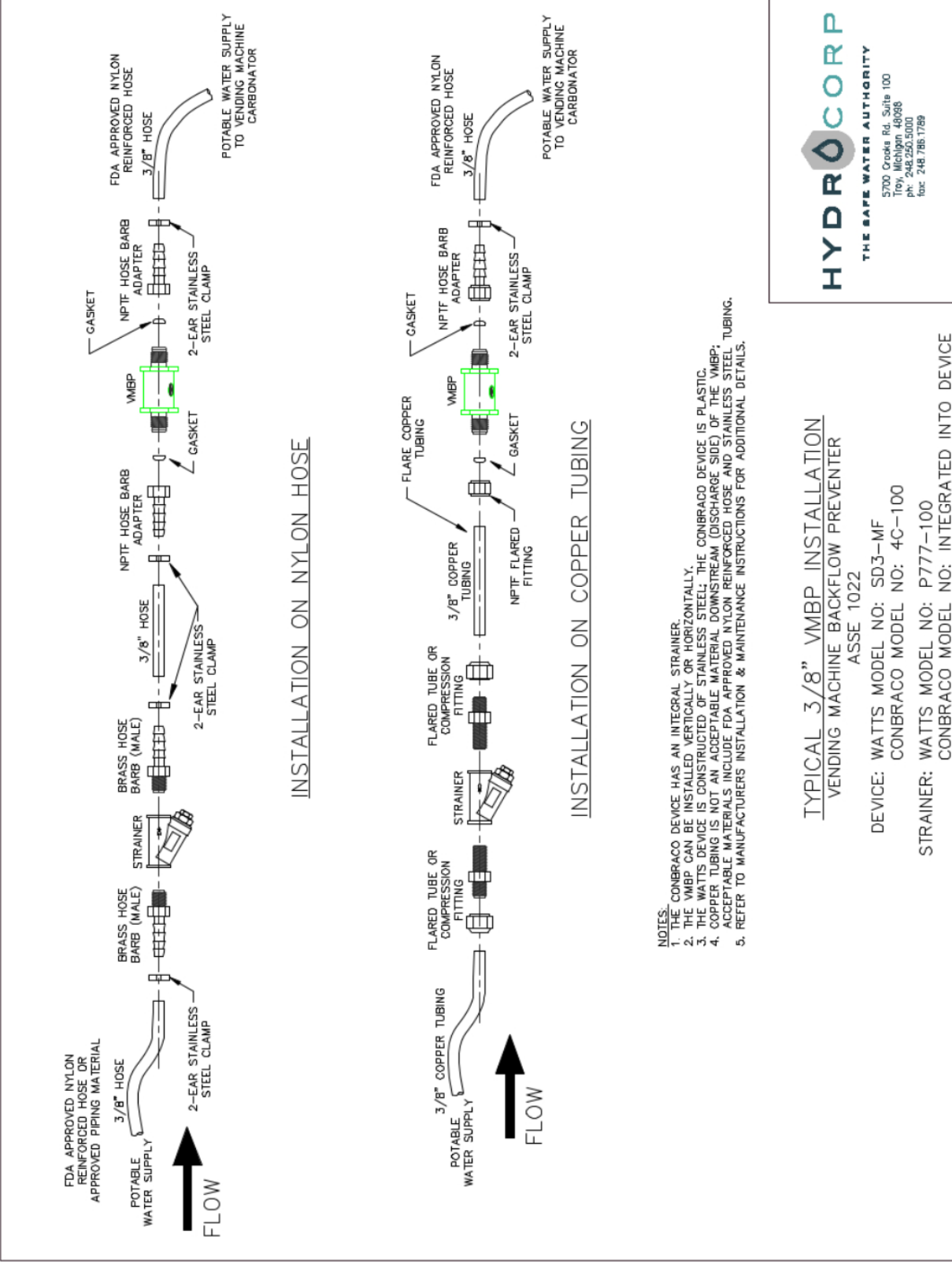
5700 Crooks Rd. Suite 100
Troy, Michigan 48068
ph: 248.250.5000
fax: 248.766.1789

dwg. name: PWS.dwg effective: 2/27/02



- NOTES:
1. THE VDCV CAN BE INSTALLED VERTICALLY OR HORIZONTALLY.
 2. ENSURE VENT FROM THE DEVICE IS ORIENTED IN THE DOWN POSITION.
 3. REFER TO MANUFACTURERS' INSTALLATION & MAINTENANCE INSTRUCTIONS FOR ADDITIONAL DETAILS.
 4. WHEN ORDERING SPECIFY: SIZE & INLET/OUTLET CONNECTION.

TYPICAL VDCV INSTALLATION
 VENTED DUAL CHECK VALVE
 ASSE 1012
 WATTS MODEL NO: 9D
 CONBRACO MODEL NO: 40-400



- NOTES:**
1. THE CONBRACO DEVICE HAS AN INTEGRAL STRAINER.
 2. THE VMBP CAN BE INSTALLED VERTICALLY OR HORIZONTALLY.
 3. THE WATTS DEVICE IS CONSTRUCTED OF STAINLESS STEEL; THE CONBRACO DEVICE IS PLASTIC.
 4. COPPER TUBING IS NOT AN ACCEPTABLE MATERIAL DOWNSTREAM (DISCHARGE SIDE) OF THE VMBP.
 5. ACCEPTABLE MATERIALS INCLUDE FDA APPROVED NYLON REINFORCED HOSE AND STAINLESS STEEL TUBING.
5. REFER TO MANUFACTURERS INSTALLATION & MAINTENANCE INSTRUCTIONS FOR ADDITIONAL DETAILS.

TYPICAL 3/8" VMBP INSTALLATION
VENDING MACHINE BACKFLOW PREVENTER
 ASSE 1022

DEVICE: WATTS MODEL NO: SD3-MF
 CONBRACO MODEL NO: 4C-100

STRAINER: WATTS MODEL NO: P777-100
 CONBRACO MODEL NO: INTEGRATED INTO DEVICE

HYDROCORP
 THE SAFE WATER AUTHORITY

5700 Crooke Rd. Suite 100
 Troy, MI 48068
 PH: 248.262.5000
 FAX: 248.786.1789

Set aside Category: 2%

Reporting Period: October 1, 2018 through March 31, 2019

Date Report Prepared: April 15, 2019

Prepared by: Richard Duncan Sr., DRWA

Project Description: Delaware Rural Water Association (DRWA), State Revolving Fund Technical Assistance

Set-Aside Project Goals from the 2018 application:

Delaware Rural Water Association (DRWA) will provide 75 technical assistance site visits to Community Water Systems (CWS) and Municipal Water Systems. Visits can include but not limited to, Technical, Financial and or Managerial Capacity Assistance; this program shall promote the DWSRF program and 1:1 application/process when help is requested. Activities may include community/civic association meetings and acting as a liaison between interested parties and stakeholders

SRF Systems that have received On-Site Technical Assistance and or On-Site Specialized Training this reporting period:

Jim Seabreeze	Town of Bethany Beach	Assist with new operator regulation on certifications
Brad Dorey	Sussex Shores Water Co.	Assist with new operator regulation on certifications
Kevin Williams using	City of Rehoboth	Cross Connection Control methods and SRF funds
Stacey Selby	Mallard Lakes	Utilizing SRF funding for process
Barry Price	Artesian Water	Cloudy water in distribution systems
Kevin Murray	Town of Selbyville	Interconnection issues in distribution system
Tom Troublefield	Stage Village	Prepping for Sanitary Survey
Rick Hudson	Town of Millsboro	CL2 pup issues effecting Dagsboro
John Hudson	Fish Hook MHP	Nitrate removal systems
Bill Bradley	Town of Georgetown	Intro to Cross Connection Control
Clarence Perkins	Town of Middletown	SRF Funding Needs

Carol Houck	Town of Delaware City	SRF Funding Needs
Jay Guyer	City of New Castle	Basic Electrical Training
Dustan Russum	Town of Frederica	SRF Funding Needs
Vaughan McCabe	City of Lewes	SRF Funding Needs
Rob Penman	Artesian Water	SRF Funding Needs
Kevin Williams	City of Rehoboth	SRF Funding Needs
Rob Foreman	Town of Bethany Beach	SRF Funding Needs
Kevin Murray	Town of Selbyville	Line locating training on MAB 51B
Devon Jackson	Hills MHP	Basic Operator Certification review
Cindi Brought	Town of Dagsboro	Distribution Flushing Programs
Jerome Reid	Town of Delmar	SRF Funding Needs
Jamie Smith	Town of Laurel	SRF Funding Needs
Jesse Savage	Town of Bridgeville	SRF Funding Needs
Rodger Breeding	Town of Greenwood	SRF Funding Needs
Mark Snyder	Mueller Co	Training on Hydrant O & M
Josh Smith	Town of Felton	Operator Certification assistance
Clarence Perkins	Town of Middletown	AMR'S for water revenue sources
Jeff Bross	WIAC	SRF Projects
Wayne Sears	City of Seaford	Workplace Safety training
Jesse Savage	Town of Bridgeville	SRF Program and system needs
Donnie Donovan	Town of Greenwood	I&I Funding for water losses

Priority Technical Assistance

DRWA will work closely with the Office of Drinking Water, Office of Engineering, and the DWSRF Program to identify system needs of Priority Technical Assistance under the ETT System. Systems may be defined as community, non-transient non-community, transient, and/or seasonal

The following systems have requested technical assistance by the program manager or the Office of Drinking Water they are Donovan's MHP, Layton's Riviera, Oak Grove MHP, Maranatha Court, all out of compliance with CCR'S and or Nitrates.

Mobile On-Site Training Assistance, DRWA will deploy upon request, the mobile on-site training unit to demonstrate specific compliance needs to SRF systems, Such assistance could include SRF Funding opportunities, Public Awareness of Drinking Water Standards, Contamination Prevention, Water Treatment Process, Dealing with unregulated contaminants also Understanding Operation and Maintenance Issues along with Testing Methods used to meet Safe Drinking Water Act (SDWA) compliance and public health benefits, DRWA will have available SRF Application materials to the systems attending specific functions or events

We currently shall be hosting the Onsite Mobile Trailer at several event from May through October

Shortfalls or Delayed Achievements: None

Barriers: None

Resolutions: None

DWSRF Program Set-Aside Report

Reporting Period October 1, 2018 – March 31, 2019

Report Prepared by: Hilary Valentine, Department Chair

Date Report Prepared: May 13, 2019

Report Provided to EPA by: Jacquelyn Park, DWSRF Set Aside Program Manager

Date Report Submitted to EPA: May 14, 2019

Set aside Category: 2%

Reporting Period: October 1, 2018 through March 31, 2019

Date Report Prepared: May 13, 2019

Prepared by: Hilary Valentine, Department Chair

Project Description: Delaware Technical Community College, Environmental Training Center (ETC), Administrative Services for Water Operators Training Program

Set-Aside Project Goals from the 2018 application:

Administrative salary funding's will be utilized for the following: to plan operations; recruit and interview prospective students; counsel students regarding course schedules; work with industry leaders to offer courses that meet the needs of our operators, identify new courses needed, assist with tutoring needs; development of job building skills, assist with employment opportunities, market program and courses to industry via varying methods. In addition, staff will assist with registering students, and report and track the funding for students enrolled in this program.

- *Develop and improve training programs*

Four new courses were offered including: basic instrumentation and controls, math review for water/wastewater operator's online course, ensuring a sustainable future, and chemistry basics for water/wastewater operators.

The ETC continues to expand its adjuncts by including more professionals from the field who can bring more hands on technical instruction to the classroom.

The ETC continues to monitor student course evaluations to ensure the students are receiving the information necessary for their occupational fields. Staff members also evaluate the instructors to determine if changes in the curriculum are needed and if hands-on demonstrations/training tools would improve the effectiveness of the course.

In May, the ETC will be scheduling their advisory board meeting to discuss needs in training for the upcoming year.

- *Provide approximately 100 training events a year that have been approved for water operators*

The ETC offered 69 courses that were approved for licensed operator training.

- *Market the program to Delaware water operators annually*

The ETC advertises in regional magazines, local papers, conferences, through fliers, and email blasts to inform students of technical training opportunities. Papers and magazines include: Ecoletter, Chesapeake Magazine, the Guide, Facebook, and targeted fliers.

Addresses and Emails are updated in our tracking systems every time a student enrolls in a class. Additional addresses are obtained through the state agencies as well as member lists from like organizations.

ETC staff also participated in the NAWC conference which looked at operator needs. Staff are also in steering groups for EPSCOR and the EPA assisting with research on workforce needs.

- *Assist in placing new water operators in jobs for the Delaware Drinking Water Industry*
Staff is available for resume building and job interview skills. Staff also keep a jobs bulletin board up to date in which students have access to. Staff also email those students enrolled in job search emails on jobs that have come open.

Shortfalls or Delayed Achievements: None

Barriers: None

Resolutions: None

Set aside Category: 2%

Reporting Period: October 1, 2018 through March 31, 2019

Date Report Prepared: May 13, 2019

Prepared by: Hilary Valentine, Department Chair

Project Description: Delaware Technical Community College, Environmental Training Center (ETC), Technical Training of Delaware Water Operators

Set-Aside Project Goals from the 2018 application:

The DTCC ETC will provide tuition assistance for continuing education for approximately 100 Operators-In-Training and licensed water operators of small public water supply systems (non-profit) that include DTCC's 2019-11, 2019-12, 2019-13 and 2020-11 semesters, and free training to ODW professionals

One hundred seventy (170) licensed operator seats were trained for continuing education.

Provide tuition assistance for the Base Level Water Operators Course to approximately 30 new operators that include DTCC's 2019-11, 2019-12, 2019-13 and 2020-11 semesters

Twenty-one students enrolled in the base level water operator's course.

Provide 15 of the 30 new operators with a basic math course

Students declined the in house math assessment and it was determined that the math course was not needed.

Recruit students through advertisement in the local press to enter a drinking water training program

Advertisements for the program were conducted in the Guide magazine, Cape Gazette, through Del Tech iconcontact emails, course announcements, and fliers. Many of our students come to us via the Guide advertisement and/or word of mouth.

Tuition assistance will be provided for up to 2 students per semester to cover the cost of selected courses for over a one-year period to include DTCC's 2019-11, 2019-12, 2019-13 and 2020-11 semesters. Unemployed, underemployed and new hires for any system will be eligible for this program

No students received tuition assistance for this period. Staff interviewed numerous students but the students only wanted to commit to the Base Level Course and not any additional courses.

Shortfalls or Delayed Achievements: None

Barriers: None

Resolutions: None

DWSRF Set-Aside Reports

October 1, 2018 – March 31, 2019

10%

DNREC – UIC

DPHL – Public Health Laboratory

DTCC – Drinking Water Examinations

ODW – Operator Certification & PWSS

DWSRF Program Set-Aside Report

Reporting Period October 1, 2018 – March 31, 2019

Report Prepared by: Ping Wang, Program Manager, Groundwater Discharges Section

Date Report Prepared: April 11, 2019

Report Provided to EPA by: Jacquelyn Park, DWSRF Set Aside Program Manager

Date Report Submitted to EPA: May 14, 2019

Set aside Category: 10%

Reporting Period: October 1, 2018 through March 31, 2019

Date Report Prepared: April 11, 2019

Prepared by: Ping Wang, Program Manager, Groundwater Discharges Section (GWDS)

Project Description: Department of Natural Resources Environmental Control, Underground Injection Control (UIC)

Set-Aside Project Goals from the 2018 application:

Review 20 Large OWTDS's permit applications

Reviewed 11 Large OWTDS applications in the reporting period.

Inspect 250 OWTDS's and UIC facilities

A total of 99 inspections were conducted in this reporting period (activities during cold seasons are usually less than the warm seasons)

Perform 40 recon inspections to identify and close (if found) automotive floor drains, large capacity cesspools, and industrial discharges with direct discharges to groundwater (if existing)

Three UIC inspections were conducted during this report period. There were fewer UIC inspections during the cold and wet season (October- March). The GWDS will reach the annual inspection goal of 40 by the end of the next report period. There has already been an increase in recon and UIC inspections in April.

Identify water treatment facilities that discharge brine backwash to the subsurface soils and determine their impact to groundwater

On-going discussions continue as to when these permitting requirements will be incorporated into a future regulation amendment.

Promulgate Delaware's Underground Injection Control revised Regulations

Promulgated Delaware's UIC Regulations on June 11, 2018

Provide public outreach to educate the regulated community and public on the revised Underground Injection Control regulations once promulgated

The GWDS staff participated in numerous public events and the revised UIC regulations was one of the topics discussed.

Participate in Public outreach and educational events

The GWDS staff participated in numerous public events, including the annual Delaware On-Site Wastewater Recycling Association's (DOWRA) Conference, Coast Day, and Delaware Rural Water Association's Conference.

Participate in the development of a pollution control strategy for the Chesapeake Bay Watershed

Two GWDS staff members continued to be actively involved in developing a pollution control

strategy for the Chesapeake Bay Watershed.

Shortfalls or Delayed Achievements: *None*

Barriers: *None*

Resolutions: *None*

DWSRF Program Set-Aside Report

Reporting Period October 1, 2018 – March 31, 2019

Report Prepared by: Clover Carlisle, Analytical Chemist IV/Laboratory Manager

Date Report Prepared: April 12, 2019

Report Provided to EPA by: Jacquelyn Park, DWSRF Set Aside Program Manager

Date Report Submitted to EPA: May 14, 2019

Set aside Category: 10%

Reporting Period: October 1, 2018 through March 31, 2019

Date Report Prepared: April 12, 2019

Prepared by: Clover Carlisle, Analytical Chemist IV/Laboratory Manager

Project Description: Division of Public Health Laboratory (DPHL). The primary responsibilities of the Laboratory, regarding the safe drinking water act, is to ensure the safety of drinking water sources in order to protect public health through the prevention of water borne diseases and contaminants.

Set-Aside Project Goals from the 2018 application:

Purchase a GC/MS to analyze drinking water samples for the presence of pesticides
DPHL is researching to make a decision for the best instrument to move forward with purchase of the GC/MS.

Purchase a bench top lab hood and automated extractor for the extraction process for pesticide samples

In process of investigating what automated extractor is best for EPA method 525.3 w

Purchase supplies and reagents to support testing for the presence of Legionella in water samples

Supplies and reagents for Legionella testing have been purchased. Legionella proficiently testing was completed and passed on February 20, 2019.

Purchase supplies and reagents to maintain higher levels of operational efficiencies and cost effectiveness

Supplies and reagents continue to be purchased to maintain higher levels of operational efficiencies and cost effectiveness

Cross train for continuity of operations in the event of emergency situations including flooding and other weather related events

In the event of emergency situations, including flooding and other weather related events, the DPHL would send testing to a laboratory that was certified to perform testing on drinking water samples.

Train staff on SDWIS utilization as required

Training took place on SDWIS utilization as required. Laboratory sample results are being uploaded to SDWIS on a daily basis.

Complete the annual EPA inspection to maintain certification for drinking water testing
Annual EPA inspection is set to take place on May 6th, 7th, and 8th, 2019.

Continue to provide certification of drinking water testing laboratories within Delaware
DPHL continues to provide certification of drinking water testing laboratories within Delaware.

Amount of laboratory tests that were performed from October 1, 2018 to March 31, 2019:

- Samples for chemical analysis 1865
- Samples for bacteriological 2949
- Tests reported 39504

Shortfalls or Delayed Achievements: None

Barriers: None

Resolutions: None

DWSRF Program Set-Aside Report

Reporting Period October 1, 2018 – March 31, 2019

Report Prepared by: Hilary Valentine, Department Chair

Date Report Prepared: May 13, 2019

Report Provided to EPA by: Jacquelyn Park, DWSRF Set Aside Program Manager

Date Report Submitted to EPA: May 14, 2019

Set aside Category: 10%

Reporting Period: October 1, 2018 through March 31, 2019

Date Report Prepared: May 13, 2019

Prepared by: Hilary Valentine, Department Chair

Project Description: Delaware Technical Community College (DTCC), Environmental Training Center (ETC), Drinking Water Operator Examinations

Set-Aside Project Goals from the 2018 application:

Provide provisions and proctoring Operator examinations given twice each year

On January 8, 2018, fifty-three Water Operator Certification Examinations were given at the Delaware Technical Community College, Terry Campus. The exams were graded and analyzed. All results were submitted to the ODW.

Shortfalls or Delayed Achievements: None

Barriers: None

Resolutions: None

DWSRF Program Set-Aside Report

Reporting Period October 1, 2018 – March 31, 2019

Report Prepared by: Keith Mensch, Program Administrator

Date Report Prepared: April 16, 2019

Report Provided to EPA by: Jacquelyn Park, DWSRF Set Aside Program Manager

Date Report Submitted to EPA: May 14, 2019

Set aside Category: 10%

Reporting Period: October 1, 2018 through March 31, 2019

Date Report Prepared: April 16, 2019

Prepared by: Keith Mensch, Program Administrator

Project Description: **Project Description:** Office of Drinking Water (ODW), Operator Certification Program

Set-Aside Project Goals from the 2018 application:

Monitor, track, and report water operator licensures

The number of licensed water operators in Delaware continues to be robust at 454 licensed operators, which is up from the 418 reported previously. Delaware has experienced an influx of new operators during the reporting period.

Report communication to operators

ODW continues to produce and distribute a monthly email to water operators and other members of the drinking water community that communicates upcoming training, water operator licensing news, and current and emerging drinking water issues.

Provide water operator licenses renewals

ODW continues to renew operator licenses as renewal requests are received. ODW processed and issued 63 water operator license renewals during the reporting period.

Coordinate with DTCC to provide provisions and proctoring for Drinking Water Operator examinations

Drinking water examinations are offered every six months. ODW continues to work with DTCC on examination reviews, preparatory classes, and proctoring exams. Drinking water-related operator exams were administered to 53 individuals during the reporting period.

Enhance communication actions such as participating in state-wide conferences and alerting operators about educational opportunities through the ODW newsletter

ODW regularly participates in two state-wide conferences each year, the DRWA Annual Conference in February and the DRWA Water Expo in September. Both of these conferences are attended by 300-400 attendees each year. Additionally, ODW works with education providers in providing water system contact information for mailings about upcoming education opportunities.

Ensure public water systems that are required to have an operator do so either by directly employing an operator or by contracting with an operator

ODW's Capacity Development Program has been working in collaboration with the PWSS Program on identifying water systems without a licensed operator and working with those systems to find an operator for them. Additionally, ODW is conducting enforcement activities

on these systems. During the reporting period, nine public water systems obtained licensed water operators who were out of compliance for the requirement to have an operator:

Center for the Creative Arts	Hartly Elementary School
Mt. Pleasant Trailer Park	Bethany Crest, LLC
Lotus Blossom Learning Center	Little Scholars Center I
Crossroads Christian Church Academy	County Seat Gardens
RHST, LLC	

Ensure all operators have the proper endorsements for the water systems they operate
ODW conducts sanitary surveys on all public water systems every three years. During these surveys, treatment plant and operator information is reviewed for adequacy of water operator endorsements. Operators without the appropriate endorsements are required to obtain them via the sanitary survey enforcement process. During the reporting period, 34 individuals obtained endorsements for their water operator license.

Maintain operator database

Data management has been challenging as the existing operator certification database is nearly 20 years old and organizational policies governing databases are not conducive to effective and efficient data management of a database of that age. Steps have been taken to make the operator certification database management more efficient. Operator Certification program personnel now have indirect administrator access to the database, allowing for updates and improvements.

Shortfalls or Delayed Achievements: None

Barriers: None

Resolutions: None

Set aside Category: 10%

Reporting Period: October 1, 2018 through March 31, 2019

Date Report Prepared: April 18, 2019

Prepared by: Kevin Cottman, Environmental Health Specialist III

Project Description: Office of Drinking Water (ODW), Public Water System Supervision (PWSS) Program

Set-Aside Project Goals from the 2018 application:

Monitor, track, and report compliance for approximately 500 Public Water Systems

All public water systems (PWSs), currently 483, are monitored in accordance with the Safe Drinking Water Act and Delaware regulations. Compliance is determined monthly and ODW submits the Fed Rep report quarterly to EPA.

Work with EPA towards finalized implementation of Lab-To-State

ODW has fully implemented Lab-to-State with the Delaware Division of Public Health Laboratory. Minor post-implementation errors have been corrected and the implementation is considered complete and functional.

Continue to utilize the new EPA reporting under Enforcement Response Policy and ETT

ODW consults quarterly with EPA Enforcement staff on the ETT list to prioritize systems for which formal enforcement action should be taken. Nine PWSs (Holiday Pines, Sussex Manor MHP, Holiday Estates, Maranatha Court, Countryside Hamlet, Crossroads Christian Church Academy, Layton's Riviera, Pine Haven MHP and Campsite System #2, and Delaware State Fire School) were identified as having ETT scores greater than 10. The PWSS Program has been actively engaged in ensuring these systems return to compliance. Enforcement actions have been taken as applicable, including the issuance of violations.

The Lead and Copper Rule (LCR) Program has engaged the PWSs (Holiday Pines, Sussex Manor MHP, Holiday Estates, Maranatha Court, Countryside Hamlet, and Crossroads Christian Church Academy) included on the ETT list for LCR violations, and has ensured they have returned to compliance. Three systems (Sussex Manor MHP, Pine Haven MHP and Campsite System #2, and Delaware State Fire School) have returned to compliance by maintaining compliance sample results below the Maximum Contaminant Level.

Six PWSs (Holiday Pines, Sussex Manor MHP, Holiday Estates, Maranatha Court, Countryside Hamlet, and Layton's Riviera) in violation for Consumer Confidence Rule (CCR) have been referred to the DRWA. DRWA will create the CCR report, which will return these systems to compliance.

Four PWSs (Holiday Pines, Holiday Estates, Crossroads Christian Church Academy, and Layton's Riviera) are in violation for not having a water operator. Crossroads Christian Church Academy has returned to compliance by obtaining a licensed water operator.

Work with the Bureau of Public Health Informatics to post all relevant lead and copper information and sample results per EPA guidance and Delaware law

The Bureau of Public Health Informatics continues to maintain SDWIS and the publicly accessible Drinking Water Watch website to ensure the all the lead and copper sample results are available to the public. Sample results for all compliance sampling, including lead and copper, are available to the public through Delaware Drinking Water Watch.

Shortfalls or Delayed Achievements: None

Barriers: None

Resolutions: None

DWSRF Set-Aside Reports

October 1, 2018 – March 31, 2019

15%

DNREC – SWP

DRWA – GIS, Fluoride Training and
Certification, & Utility
Management Scholarship

DTCC – Course Development & Purchase
Automated Training Devices

Kash Srinivasan Group, LLC –Sustainability
1:1 Assistance

ODW – Capacity Development Program

DWSRF Program Set-Aside Report

Reporting Period October 1, 2018 – March 31, 2019

Report Prepared by: Matthew T. Grabowski, Environmental Program Manager II
Douglas E. Rambo, P.G., Hydrologist IV
Samantha Smith, Hydrologist II

Date Report Prepared: April 17, 2019

Report Provided to EPA by: Jacquelyn Park, DWSRF Set-Aside Program Manager

Date Report Submitted to EPA: May 14, 2019

Set-Aside Category: 15%

Reporting Period: October 1, 2018 through March 31, 2019

Date Report Prepared: April 17, 2019

Prepared by: Matthew T. Grabowski, DNREC, Source Water Assessment and Protection Program
Douglas E. Rambo, P.G., DNREC, Source Water Assessment and Protection Program
Samantha Smith, DNREC, Source Water Assessment and Protection Program

Project Description: Delaware Department of Natural Resources and Environmental Control, Source Water Assessment and Protection Program (SWAPP)

Set-Aside Project Goals from the 2018 application:

I. SOURCE WATER ASSESSMENT, CHARACTERIZATION AND MONITORING

Final Source Water Assessments Distributed:

City of Lewes BPW	Town of Blades
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Draft Source Water Assessments Prepared:

Stargate Pizza Restaurant	TUI Indian River Acres
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Source Water Assessments Started:

Hedgerow Hollow	Town of Georgetown	Rehoboth Beach Community
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II. PUBLIC AVAILABILITY AND PUBLIC PARTICIPATION

Web Postings: During this period the following source water assessments were posted on the Delaware Source Water Protection Program (SWAPP) website (<http://delawaresourcewater.org>)

City of Lewes BPW (*)	Town of Blades (*)
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(Entries marked with a "*" are reassessments)

Well Head Protection Area Project (WHPA): The SWAPP provides regularly updated well head protection area GIS layers on DE First Map (<https://firstmap.delaware.gov/>)

WHPA Added to DE First Map:

City of Lewes BPW (*)

WHPA Removed from DE First Map:

No WHPA were removed from the DE First Map during the reporting period.

Source Water CTAC – Source Water Assessment Plan Subcommittee

The Source Water Assessment Plan Subcommittee of the Citizen & Technical Advisory Committee (CTAC) continued to meet and work on the updating of the 1999 State of Delaware Source Water Assessment Plan.

DNREC SWAPP held public meetings related to the update of the Source Water Assessment Plan on the following dates:

November 29, 2018
January 31, 2019
February 28, 2019
March 28, 2019

Agendas and minutes of the public meetings (with the exception of the March 28, 2019 meeting) are available from the State of Delaware meeting calendar:

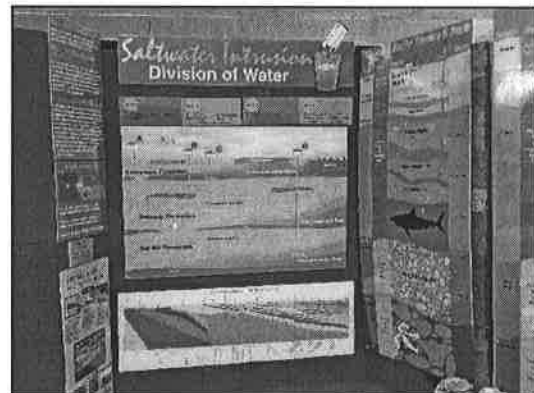
<https://publicmeetings.delaware.gov/Search?q=&AnyAll=Any&AgencyID=177>

Coast Day (October 7, 2018)

The SWAPP participated with the Well Permitting Branch and the Groundwater Protection Branch at the University of Delaware Sea Grant Program's Coast Day event on October 7th, 2018. Coast Day showcases how University of Delaware scientists, staff, and students are improving our understanding of ocean environments and serve coastal communities. Coast Day attendees can interact with researchers, tour ships, try hands-on activities, and attend presentations on a range of topics.

Delaware Rural Water Association Technical Conference (February 27th & 28th 2019)

The DNREC SWAPP joined the DNREC Groundwater Protection Branch and Well Permitting Branch in staffing a booth at the Delaware Rural Water Association's Annual Technical Conference. The theme of the booth was Saltwater Intrusion of Coastal Wells along with the Rocks, Minerals, and Fossils of the Eastern United States. The conference was attended by over 400 water and wastewater operators, water system owners, local government officials, regulators, and consultants.



III. PRIORITIZATION OF STATE SW PROTECTION ACTIVITIES

The DNREC SWAPP coordinates with DHSS Office of Drinking Water (ODW) to reconcile and correct ODW SDWIS well locations with SWAP database locations.

The DNREC SWAPP coordinates with the DNREC Division of Waste and Hazardous Substances (Site investigation and Restoration Section and Tank Management Section) when groundwater quality concerns arise around proposed and existing wells.

On December 5, 2018 a DNREC SWAPP Hydrologist attended a meeting of the State of Delaware Pest Advisory Committee to discuss the potential for having golf courses added as a discrete contaminant layer for future source water assessments.

Freedom of Information Act (FOIA) and Data Requests:

A SWAPP Hydrologist responded to 12 FOIA requests for public well related information during this time period.

Routine well permit FOIA request received by the Water Supply Section

Month	FOIA Request Received
October 2018	29
November 2018	31
December 2018	30
January 2019	20
February 2019	10
March 2019	22
Total October – March	142

IV. INTEGRATION OF SWAPP WITH OTHER STATE, FEDERAL, AND LOCAL PROGRAMS

Work with local and national organizations to protect source water:

The DE SWAPP continues to be active on the Association of State Drinking Water Administrators (ASDWA) Special Committee on Source Water and Climate Change as well as the joint ASDWA – Ground Water Protection Council (GWPC) Committee on Source Water Protection.

During this period the DNREC SWAPP met multiple times with the Kent County Department of Planning to discuss and review versions of a proposed Excellent Groundwater Recharge Area Protection Ordinance.

On December 12, 2018 a DNREC Hydrologist presented a paper on “The Unintended Risks to Underground Sources of Drinking Water from Stormwater Infiltration Practices” at the 2018 American Geophysical Union (AGU) Annual Meeting in Washington, D.C. This session was held in the AGU’s new GeoHealth unit and was convened by the Office of Groundwater and Drinking Water at U.S. EPA Headquarters.

In February 2019 a SWAPP Hydrologist coordinated comments from various DNREC sections related to the development of a publication titled “Best Management Practices for Delaware Golf Courses” written by golf course superintendents in the state of Delaware, the Eastern Shore Association of Golf Course Superintendents, and scientists at the University of Delaware. The SWAPP commented on Water Supply, Water Use, and wellhead protection for golf courses that have their own public water systems.

In January 2019, the DNREC SWAPP began planning a meeting of the EPA Region 3 Source Water Assessment and Protection Programs to be held in June 2019.

Local Ordinances

On January 30, 2019, SWAPP staff met with the Kent County Department of Land Use and a group of private stakeholders to discuss a proposed ordinance for protecting Excellent Ground Water Recharge Areas as required under Delaware Law. The County provided a draft version for the SWAPP and others in attendance to review and discuss. The mutually agreed upon draft document is currently moving through the Kent County Levy Court adoption process.

Work With Authorities That Regulate Contamination Sources To Ensure Public Water Protection Compliance.

DNREC SWAPP continues to work with investigators from the Delaware Geological Survey (DGS) on the evaluation of the aquifers east of the City of Dover. The SWAPP has provided well information to assist the DGS in developing a groundwater flow model for the area, which includes the City of Dover’s Long Point Road wellfield. Over-pumping of the surficial aquifer in this area is a cause for concern for two primary reasons: 1) the risk for saltwater intrusion from saline tidal creeks and marshes on the east, north, and south; and, 2) drawdown could reduce the transmissivity of the aquifer and decrease well yields.

During the reporting period, the DNREC SWAPP continued to coordinate with the DNREC Wetlands and Subaqueous Lands Section on monitoring the impacts of land-based dredge spoil disposal and groundwater quality near potable wells.

During the reporting period, the DNREC SWAPP coordinated with the DNREC Stormwater Program to provide comments on small lots and stormwater infiltration facilities with public wells onsite or nearby.

During the reporting period, the DNREC SWAPP coordinated with the Well Permitting Branch to provide comments on public well applications that cannot meet the required isolation distance from potential sources of contamination.

The DNREC SWAPP continues to coordinate with the DNREC Tank Management Section on issues related to the siting and installation of new underground storage tanks systems. The DNREC SWAPP assisted the DNREC Tank Management Section with New UST Facility Reviews for the following sites:

Royal Farms #349 – New Castle
WAWA #876 – Camden
Costco – Christiana
WAWA #870 – Red Lion

During the reporting period, the DNREC SWAPP coordinated with the Well Permitting Branch to provide comments on public well applications that cannot meet the required isolation distance from potential sources of contamination.

Training & Webinars

- 10/3/18 EQUIS Live demonstration
- 10/25/18 FEMA Flood Risk Mapping Training
- 1/22/19 8-Hour HAZWOPER Refresher Training
- 2/13/19 Webinar: Professional Geologist Licensure (American Geosciences Inst.)
- 2/18/19 TRELLO Training
- 3/14/19 Webinar: Telling Your Geoscience Story Using ESRI Storymaps
- 3/19/19 Attended High Accuracy GPS Field Data Collection with Collector for ArcGIS – Workshop
- 3/20/19 Webinar: Challenges of PFAS in Groundwater (Regenesis)

V. MOTIVATING LOCAL SWP ACTIVITIES

Track and report PLUS request – Reviewed

SWAPP Management or Staff Attended PTAC & PLUS meetings during the following months:

Meeting	Oct. 2018	Nov. 2018	Dec. 2018	Jan 2019	Feb. 2019	March 2019
PTAC						
PLUS						X

The following projects were reviewed by the DNREC SWAPP:

Developments: (14)

Smyrna School District	Lewes Waterfront Preserve
LIDL - Bear	Middletown Veterinary Hospital
Bay Forest Club	Meredith Middle School
Nassau Property	Chase Oaks
Reed Property	Village of College Park
Zwaanendale Farm	Laurel Plaza
Log Cabin Hill Farm	Eagle Hunt

Comprehensive Plans: (11)

City of Newark	Town of Georgetown
Town of Greenwood	Town of Millsboro
Town of Ocean View	Cheswold

Lewes	Hartly
Federica	Camden
Dover	

VI. MANAGING INFORMATION

Mentoring: Just prior to the start of the reporting period a Hydrologist IV within the DNREC SWAPP retired leaving a vacancy within the Program. During the reporting period the vacant position was posted and hired as a Hydrologist II. Staff hydrologist within the SWAPP continue to mentor the recently hired Hydrologist as well as a Hydrologist II in the Water Allocations Branch with GIS, local geologic information/resources, and other Source Water Program matters.

Maintenance: SWAPP Hydrologist have started a critical review of the data within the SWAP database looking for missing and outdated data. Missing data is being added to the system via field collection and coordination with the Office of Drinking Water.

Shortfalls or Delayed Achievements: None

Barriers: The SWAPP is continuing to evaluate a means to better obtain more current raw water quality data from DHSS Office of Drinking Water or the water providers. For some systems, the available raw water data is years old and, as such, is affecting the quality of the Source Water Assessment reports generated by the SWAPP. The SWAPP has participated in multiple conversations and meetings with the DNREC Environmental Lab Section and DHSS Office of Drinking Water regarding this subject matter.

Resolutions: None

DWSRF Program Set-Aside Report

Reporting Period October 1, 2018 – March 31, 2019

Report Prepared by: Richard Duncan Sr., DRWA

Date Report Prepared: April 10, 2019

Report Provided to EPA by: Jacquelyn Park, DWSRF Set Aside Program Manager

Date Report Submitted to EPA: May 14, 2019

Set aside Category: 15%

Reporting Period: October 1, 2018 through March 31, 2019

Date Report Prepared: April 10, 2019

Prepared by: Richard A Duncan Sr., DRWA

Project Description: Delaware Rural Water Association (DRWA), Geographical Information Systems Survey (GIS)

Set-Aside Project Goals from the 2018 application:

GIS Technical Assistance

Two very small municipalities (population under 500), five non-municipal communities, and at least three seasonal water systems will be provided with 1:1 GIS technical assistance. The information collected shall be used when systems conduct future Asset Management Program.

The following systems are under the <500 population and have been completed or being conducted during this quarter additional systems are currently being request such as the municipalities from ODW

Love Creek Park	Lake Forest MHP
Sand Hill Acres	Sandhill MHP
Laurel Villages	Holly Hills Estates
Pleasant Acres	Pinewood Acres
Layton's Riviera	Stage Village
Homestead Park	

Shortfalls or Delayed Achievements: None

Barriers: None

Resolutions: None

Set aside Category: 15%

Reporting Period: October 1, 2018 through March 31, 2019

Date Report Prepared: April 10, 2019

Prepared by: Richard Duncan Sr., DRWA

Project Description: Delaware Rural Water Association (DRWA), Fluoride Training and Certification for Small Systems and Local Officials Training on Accountability in Water Facilities (FTAW)

Set-Aside Project Goals from the 2018 application:

DRWA shall conduct four specialized fluoride training classes for water operators in training and current water operators in need of refresher training. The objectives will include the right to know, safety, installations, sampling procedures at small system treatment facilities, and testing

DRWA conducted two of the four required specialized training classes (February 5 and March 5) in Fluoridation using the CDC course materials. During the training operators were provided technical information that will enable them to improve the operation and maintenance of their water fluoridation facilities.

The fluoridation of public water supplies requires strict control of dosage rates for maximum dental health benefits.

A new training simulator LMI Fluoride Saturator has been purchased to demonstrate operational installations and will demo how the clean and fill saturators.

DRWA is currently assisting the Town of Frederica whom is experiencing residual issues, DRWA is conducting research on the use of liquid vs the saturator type to see if there is a difference in % of solutions.

DRWA shall conduct four Local Officials training classes at specific locations. This will allow the city/town officials to gain a better understanding of what the managers and water operators face on a daily routine. Training will include such topics as State Revolving Fund programs, state and federal regulations effecting today's water systems, basic water treatment operations and maintenance, and lessons learned from Asset Management

DRWA conducted one Local Officials class, at the Annual Conference the topics were Workforce Development Apprenticeship for Water Specialist and rate study. Another Locals Officials training has been scheduled from May thru June, classes pertain to SRF Funding, to Treatment System Compliance, to new and updated State and Federal Regulation.

Shortfalls or Delayed Achievements: None

Barriers: None

Resolutions: None

Set aside Category: 15%

Reporting Period: October 1, 2018 through March 31, 2019

Date Report Prepared: April 17, 2019

Prepared by: Richard A Duncan Sr., DRWA

Project Description: Delaware Rural Water Association (DRWA), Water Utility Management Scholarship (UMS)

Set-Aside Project Goals from the 2018 application:

The water industry is a very complex industry, Economics, increased complexity in regulatory requirements and a changing society are crafting the water systems of tomorrow. As our industry changes, there is a strong need to recognize the individuals who provide leadership to the industry and create a standard for the future. At the same time, the industry needs new ways to educate, train, and empower industry professionals to meet these new standards.

DRWA will offer four scholarships. This course is an intense, two-day event that covers technical, financial, and managerial aspects of running a water utility. Students are tested, scored, and must receive a passing grade to receive their certificate.

Two from the City of Dover and two from the City of Rehoboth Beach have signed up and test will be given next quarter.

DRWA shall solicit all municipalities in Delaware through the website, mailings, site visits, etc. and offer four scholarships to attend the Utility Management Certification Course.

DRWA is having trouble with system are not responding to these classes our staff continue to struggle getting attendees but, will continue to promote and possible have ODW direct managers toward this type of training.

Shortfalls or Delayed Achievements: None

Barriers: None

Resolutions: None

DWSRF Program Set-Aside Report

Reporting Period October 1, 2018 – March 31, 2019

Report Prepared by: Hilary Valentine, Department Chair

Date Report Prepared: May 13, 2019

Report Provided to EPA by: Jacquelyn Park, DWSRF Set Aside Program Manager

Date Report Submitted to EPA: May 14, 2019

Set aside Category: 15%

Reporting Period: October 1, 2018 through March 31, 2019

Date Report Prepared: May 13, 2019

Prepared by: Hilary Valentine, Department Chair

Project Description: Delaware Technical Community College, Environmental Training Center (ETC), Course Development for Delaware Water Operators

Set-Aside Project Goals from the 2018 application:

Online Course Development

The ETC shall to revise the Pumps, Motors, and Controls Online Course to reflect changes in technology

An adjunct has been identified to revise the above Pumps, Motors, and Controls Online course. A contract will be prepared to start the work in June with a completion date of August 2019.

Make the Filtration and Chemical Feed Certification Examination available in an online format

The Filtration exam has been completed in an online format. The chemical feed exam will be inputted in our new online platform starting June 4. The exam will be completed by the end of July.

Revise the Base Level and Distribution Certification Examinations to reflect any changes and/or needs after becoming active

Both exams have been completed.

PILOT Online Distribution Certification Exam

The Base Level and Distribution exams have been reviewed by the board and are anticipating them being piloted at the June exam. The above exams will be completed by the end of July and should go live in January.

Shortfalls or Delayed Achievements: None

Barriers: None

Resolutions: None

Set aside Category: 15%

Reporting Period: October 1, 2018 through March 31, 2019

Date Report Prepared: May 13, 2019

Prepared by: Hilary Valentine, Department Chair

Project Description: Delaware Technical Community College, Environmental Training Center (ETC), Purchase Automated Training Devices

Set-Aside Project Goals from the 2018 application:

The ETC shall research, assess and purchase training equipment, textbooks, curriculum and/or software pertaining to water quality control and processes to enhance classroom instruction and improve field skills

The ETC purchased a new lap top to assist with technical training course simulations and online development.

Shortfalls or Delayed Achievements: None

Barriers: None

Resolutions: None

DWSRF Program Set-Aside Report

Reporting Period October 1, 2018 – March 31, 2019

Report Prepared by: Kash Srinivasan

Date Report Prepared: April 2019

Report Provided to EPA by: Jacquelyn Park, DWSRF Set Aside Program Manager

Date Report Submitted to EPA: May 14, 2019

Set aside Category: 15%

Reporting Period: October 1, 2018 through March 31, 2019

Date Report Prepared: April 2019

Prepared by: Kash Srinivasan

Project Description: Kash Srinivasan Group, 1:1 Sustainability Assistance Program

Set-Aside Project Goals from the 2018 application:

1:1 Sustainably Assistance Program

See Attached Report

Shortfalls or Delayed Achievements: None

Barriers: None

Resolutions: None

1:1 SUSTAINABILITY ASSISTANCE PROGRAM

DPH Contract #18-344



April 2019



*Kash Srinivasan Group
LLC*

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UNC Financial Tools and Sustainability Report

This report provides an update on work completed to date under the Sustainability 1:1 Phase II project. The contract amount is \$48,000. The total billing through March 31, 2019 is estimated at \$37,200.

The table on the next page provides a summary of the work completed since the project was initiated in February of 2018. Since the status update provided in October 2018, no additional work has been performed on UNC tools development. DPH added Magnolia to the sustainability assessment list, however, the consultant for the town has indicated that audited financials are unavailable.

Owing to initial expressed reluctance to commit the resources need for the rate analysis, work on the City of Milford was conducted using published financial information and correspondence with their Engineer on water system assets. A meeting was held with the Financial staff on October 9, 2018 to review the data needs for setting up the Rate Analysis tool. Subsequent to the meeting, the City decided to not move forward with tool development.

Newark and Wilmington use a rate consultant for the development of their water/sewer rates. The Financial assessments for these cities was conducted using the Financial health Checkup tool only and published financial data. Staff engineers cooperated in the development of the asset tabulations.

A new Finance Manager came on board with Delaware City in October 2018. The financial tools developed for the City were reviewed with this individual.

Blades: The development of financial tools for town remains an open item pending completion of a financial audit.

Raw Water Sharing project: In addition to the standard content, the Sustainability Report prepared for Wilmington includes a discussion of a preliminary proposal to consider an ambitious program for the shared use of Wilmington's Hoopes Reservoir. Hoopes is a pumped storage reservoir. The primary water source is the Brandywine River. The City and Suez (Delaware operations) have long-standing water supply interconnection agreements and the proposed project is an extension of this relationship. The project proposes to establish a secure connection between Hoopes Reservoir and the Suez surface water treatment plant at Stanton to enhance regional drought proofing and also provides a hedge against contamination events in the Red Clay and White Clay Creeks, the primary water sources for Suez Delaware. The project could also potentially establish a means of transferring water from the Red and White Clay to Hoopes during high flow periods.

Consultant has participated in additional meetings on this matter since the October report.

SRF Affordability approach: A discussions of affordability issues were included in prior work efforts (Needs Assessments, Phase I and II). DPH requested that the consultant develop a presentation on the topic for an upcoming WIAC meeting.

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TABLE: Status of work completed since initiation

Municipality	Initial	Supplemental	Comments
Blades			Waiting on 2016 Audit and billing info; set up draft tools; set up draft report contents
Delaware City		X	Tools and report updated to FY 2017
Delmar		X	Tools and report updated to FY 2017
Georgetown		X	Tools and report updated to FY 2017
Laurel		X	Tools and report updated to FY 2017; original report remains in draft awaiting asset data
Millsboro	X		Tools and Report (initial) for FY 2017
Milton	X		Tools for FY 2016; Draft report awaiting data confirmation
Selbyville	X		Tools and Report (initial) for FY 2017
Smyrna	X		Tools and Report (initial) for FY 2017
Milford	X		FHC tool, Rate Analysis based on prior history only, Report based on these findings. Town has decided to terminate UNC Rate tool development - resource limitations
Wilmington	X		FHC tool, Rate Analysis not performed; City uses a rate consultant; Report based on these findings. Continued discussion of proposed Raw Water sharing project
Newark	X		FHC tool, Rate Analysis based on prior history only, Report based on these findings.

Background Information

The financial planning tools utilized in the project were created by the University of North Carolina through a grant from EPA. The two tools are:

- **Financial Health Checkup Tool:** This tool uses information from the audited financials of the government entity and generates a set of financial health metrics that identify areas of strength and weakness in the town's finances.
- **Rate Analysis Tool:** this tool utilizes rate and billing revenue information together with the debt service and operating expense information from the latest audit to generate projections of revenues, expenses and fund balances for a 5 to 20 year period. The tool can be utilized to conduct "what-if" scenarios on rate modifications to accommodate planned or needed infrastructure investments to identify timing and extent of rate modifications needed.

In addition to the tools, a report is developed for each town/city expressly targeted to the town/city manager that highlights management aspects of the utility that are important to sustainability of the utility service. The report includes:

- A description of the service area, including income demographics
- The water assets used by the system to deliver services and the approximate replacement value of these assets
- A brief discussion of the status of asset management efforts
- A summary review of the key findings of the financial tools
- Current methods used and recommendations on building stakeholder support
- Long-range capital planning efforts related to the utility
- A general statement on source water assessments, water quality and climate change impacts
- Cyber security efforts if any
- Summary information in ISO programs (ISO 140001 and 50001) that the town/city could consider adopting to foster a culture of sustainability

As noted in the table, some of the reports developed remain in draft form, awaiting input from the towns. Completed (including draft) reports have been separately provided to DPH.

DWSRF Program Set-Aside Report

Reporting Period October 1, 2018 – March 31, 2019

Report Prepared by: Ashley Kunder, Capacity Development Program Manager

Date Report Prepared: April 17, 2019

Report Provided to EPA by: Jacquelyn Park, DWSRF Set Aside Program Manager

Date Report Submitted to EPA: May 14, 2019

Set aside Category: 15%

Reporting Period: October 1, 2018 through March 31, 2019

Date Report Prepared: April 17, 2019

Prepared by: Ashley Kunder, Capacity Development Program Manager

Project Description: Office of Drinking Water (ODW), Capacity Development Program, New Systems

Set-Aside Project Goals from the 2018 application:

Provide assistance to all new drinking water systems to ensure that before water is available for consumption, the water system owner/operator has demonstrated technical, managerial, and financial (TMF) capacity, and that the water meets all applicable SDWA requirements

Three new public water systems (PWSs) were evaluated and granted approvals to operate by the Capacity Development Program in this reporting period. They are:

- Akridge Scout Reservation (TNCWS)
- First United Pentecostal Church (NTNCWS)
- White Clay Creek State Park System 3 (TNCWS)

The TMF capacity and water quality of each individual system was reviewed by the Capacity Development Program prior to them being granted approval to operate as a PWS in the State of Delaware.

Monitor, assist, and track assistance for new public water systems in Lead and Copper Rule compliance, schedules, and reporting

The Capacity Development Program monitors the compliance status of all new PWSs for a period of three years from the point of them being granted approval to operate as a PWS in the State of Delaware. All new PWSs are provided technical and managerial guidance in regards to the Lead and Copper Rule (LCR) prior to them receiving the approval to operate. New systems are routinely monitored by the Lead and Copper Rule Manager. This includes compliance, schedules, and reporting. New PWSs (if any) identified as non-compliers with the LCR are provided assistance to bring them back to compliance as soon as possible.

Report the name of new water systems or applications evaluated for the Semi-Annual DWSRF Set-Aside reports

Three new PWSs were evaluated and granted approvals to operate by the Capacity Development Program in this reporting period. They are:

- Akridge Scout Reservation (TNCWS)
- First United Pentecostal Church (NTNCWS)
- White Clay Creek State Park System 3 (TNCWS)

Shortfalls or Delayed Achievements: None

Barriers: None

Resolutions: None

Set aside Category: 15%

Reporting Period: October 1, 2018 through March 31, 2019

Date Report Prepared: April 17, 2019

Prepared by: Ashley Kunder, Capacity Development Program Manager

Project Description: Office of Drinking Water (ODW), Capacity Development Program, Existing Systems

Set-Aside Project Goals from the 2018 application:

Assist systems high on the ETT to compliance

Nine systems have an ETT score of 11 and greater (six Community Water System (CWS), one NTNC and two TNCWSs). CWSs that had Lead and Copper Rule (LCR) violations were provided technical and managerial assistance via the LCR program. CWSs and NTNCWS that were operating without the services of a Delaware Licensed Water Operator were provided guidance to assist them with hiring/training someone to be their water operator. CWSs that were routine non-compliers with the CCR rule were identified and a list of these systems was provided to DRWA and SERCAP. DRWA is currently working with these systems to bring them back to compliance.

Provide assistance to public water systems that are in need

- Dover Air Park CWS is a system identified by the Capacity Development Program as a system that needs assistance to update its aging and unconventional distribution system. They were recommended to the low income initiative working group as a system that may qualify for state funding assistance that should help reduce the number of water main breaks that this system routinely faces.
- Bethany Crest CWS had ongoing monitoring violations with the Lead and Copper Rule. The Lead and Copper Rule Manager provided this them with technical and managerial assistance. This system is now back in compliance with the LCR as at December 2018.
- Lighthouse Point Community Center NTNCWS had a monitoring violation for failure to perform lead and copper testing during the January to June 2018 monitoring period. The Capacity Development Team assisted the owners to ensure that they collected samples during the July to December 2018 monitoring period. This PWS is now back in compliance with the LCR as at October 2018.

Provide training for public water systems operators on Lead and Copper Rule compliance

LCR compliance training was provided to nine Delaware Certified Water Operators who attended the SERCAP training held at Tidewater's offices in Dover.

Evaluate and report the technical, managerial, and financial capacities of at least one third of Delaware's water systems

The Capacity Development Program evaluated one-third of Delaware's existing PWSs and reported their TMF capacities in the Capacity Development Annual Implementation Report to the EPA. This report was submitted to the EPA on November 30, 2018. The EPA has

determined that Delaware's Capacity Development Program continues to meet the requirements of Sections 1420(a) and (c) of the SDWA.

Monitor and assist public water systems in Lead and Copper Rule compliance, schedules, and reporting

Technical assistance provided to various PWSs included detailed reminder letters, following up when delivery certification forms are not returned to avoid reporting violations, promptly returning phone calls when water operators are facilitating sampling to avoid mistakes made in the field, and aiding in the communication between systems and the lab to resolve any possible issues.

A comprehensive lead sampling plan audit is currently underway at ODW. PWSs that have outdated plans in our records or no plans in our records have been contacted to ensure that they prepare and submit a current lead and copper sampling plan. Technical assistance has been provided to PWS contacts who are working on preparing these plans. This audit is still in progress.

Track and report PWS appearing on ETT report with scores between 5 and 10 referred to DRWA for assistance to achieve compliance with SDWA

Further to an audit of recent ETT reports from the EPA, 24 PWSs were referred to DRWA and SERCAP in March 2019.

An additional seven PWSs were referred to both technical service providers as they were identified as long-term violators under the CCR rule.

Shortfalls or Delayed Achievements: None

Barriers: None

Resolutions: None

APPENDIX E
PUBLIC WORKSHOP

Delaware Clean Water State Revolving Fund 2018 Project Priority List and Intended Use Plan



April 18, 2018

Draft 2018 Project Priority List (PPL) and Intended Use Plan (IUP)

2018 PPL Process and Ranking

Project Notice-of-Intent (NOI) Solicitation:

- CWSRF and DWSRF Workshop – January 3, 2018
- Due Date for NOIs – February 28, 2018

Clean Water State Revolving Fund (CWSRF)

- 14 - Project NOIs Received for Wastewater, Stormwater, and Green Projects Totaling \$59.7 million

CWSRF Set Asides:

- \$1.5 million – Non Point Source Projects (Septic Systems, Poultry & Dairy BMPs)
- \$5.0 million – Land Conservation Loan Program
- No Limit – Water Quality Improvement Loan Program

Draft CWSRF 2018 PPL/IUP

Total Priority Points available:

- I. Water Quality Protection: 0-45 points (0-10 bonus)
- II. Targeted Water Bodies: 0-20 points
- III. Clean Water Priorities: 0-20 points
- IV. Strategies for State Policies and Spending: 0-10 points
- V. Green Project Reserve: 0-10 points
- VI. Sustainability: 0-30 points
- VII. Land Conservation Sponsorship: 0 points (10 bonus)
- VIII. Borrower Type: 0-10 points
- Total Priority Score: 0-145 points (0-20 bonus)

Draft CWSRF 2018 PPL/IUP

- Water Quality Protection (45) – Points given based on pounds of Nitrogen (N) and Phosphorus (P) removed from environment. Also, points given to NPS BMPs based on published efficiencies to include N, P, and sediments and points for removal of toxics
- Targeted Waterbodies (20) – Points given for projects which implement TMDL or watershed management plan
- Clean Water Facilities Priorities (20)
 - All septic elimination projects receive 15 points
 - I&I projects receive 15 points
 - Surface water management projects receive 15-20 points
 - Toxics removal project receive 15-20 points
 - All other water quality projects receive 10 points

Draft CWSRF 2018 PPL/IUP

- State Strategies for Policies and Spending – Up to 10 points based on location of project.
- Green Project Reserve – 10 points for projects that meet the EPA criteria for Green Infrastructure, Water Efficiency, Energy Efficiency, or Environmentally Innovative
- Sustainability – Up to 30 points for projects/system that has asset management plan, full cost pricing and/or climate change adaption or resiliency
- Land Conservation Sponsorship – 10 point bonus for applications sponsoring conservation easement, ecological or watershed restoration project
- Borrower type – Projects receive up to 10 points based on borrower type

Draft 2018 Project Priority List

Rank	Year	Priority Points	Applicant / Project Title / Contact	Community/County/Population	Waterbody / NPDES	WPCRF Loan Requested
1	2018	N/A	State of Delaware Non-Point Source Water Pollution Control Loan Program Jessica Velazquez DNREC/EF Loan Mgmt. Officer	Statewide Statewide 897,934	Statewide Non Point Source	\$1,500,000
2	2018	N/A	Land Conservation Loan Program Terry Deputy DNREC/EF Administrator	Statewide Statewide 897,934	Statewide Land Conservation Loan Program	\$5,000,000
3	2018	N/A	Water Quality Improvement Loan Sponsorship Program Terry Deputy DNREC/EF Administrator	Statewide Statewide 897,934	Statewide Water Quality Improvement Loan Sponsorship Program	Unlimited
4	2018	115.0	City of New Castle Delaware Street Green Street Renovation William J. Barthel City Administrator	City of New Castle New Castle 5,285	Delaware Bay & Estuary - NPDES DE 0051071 (New Castle is Co-permittee)	\$367,500
5	2018	96.0	Mill 6 Redevelopment, LLC Mill 6 Drake Cattermole Manager Mill 6 Redevelopment.	Mill 6 Redevelopment, LLC New Castle 0	Piedmont - Red Clay Creek N/A	\$2,900,000
6	2018	96.0	Mill 6 Redevelopment, LLC Mills Edge Drake Cattermole Manager Mill 6 Redevelopment.	Mill 6 Redevelopment, LLC New Castle 0	Piedmont - Red Clay Creek N/A	\$2,400,000
7	2018	96.0	Quarry Walk, LLC Quarry Walk Drake Cattermole Manager Quarry Walk, LLC	Quarry Walk, LLC New Castle 0	Piedmont - Red Clay Creek N/A	\$4,450,000
8	2018	80.3	Sussex County Land Conservation and Water Quality Proposal Hans Medlarz, P.E. County Engineer	Sussex County Sussex 0	Inland Bays - Rehoboth Bay N/A	\$5,745,000
9	2018	70.1	Sussex County Joy Beach John J. Ashman Director of Utility Planning	Sussex County Council Sussex 462	Inland Bays - Rehoboth Bay WPCC-3042C-90 (Spray Irrigation)	\$6,500,000

Draft 2018 Project Priority List

Rank	Year	Priority Points	Applicant / Project Title / Contact	Community/County/Population	Waterbody / NPDES	WPCRF Loan Requested
			City of Lewes Board of Public Works Donovan Smith Mobile Home Park Sewer Extension Darrin Gordon General Manager	City of Lewes Board of Public Sussex 400	Delaware Bay & Estuary - WW NPDES Discharge Permit DE 0021512	\$925,000
10	2018	70.1	Sussex County Council Western Sussex John Ashman Director of Utility Planning	Sussex County Council Sussex 7,000	Chesapeake Bay - Nanticoke NPDES DE0020265	\$13,068,454
			Sussex County Council Mullberry Knoll John Ashman Director of Utility Planning	Sussex County Council Sussex 238	Inland Bays - Rehoboth Bay WPCC-3042C-90 (Spray Irrigation)	\$4,800,000
			Sussex County Council Oak Acres John Ashman Director of Utility Planning	Sussex County Council Sussex 150	Inland Bays - Little Assawoman NPDES-005-0008	\$2,580,000
13	2018	61.7	Sussex County Council Mallard Creek John Ashman Director of Utility Planning	Sussex County Council Sussex 113	Inland Bays - Little Assawoman NPDES-005-0008	\$2,280,000
			Sussex County Council Tanglewood John Ashman Director of Utility Planning	Sussex County Council Sussex 49	NPDES-005-0008	\$840,000
19	2018	60.5	Sussex County Council Joy Beach Expansion of the Angola Neck Sanitary Sewer John J. Ashman Director of Utility Planning	Sussex County Council Sussex 630	Inland Bays - Rehoboth Bay WPCC-3042C-90 (Spray Irrigation)	\$4,500,000
			Sussex County Council Tanglewood John Ashman Director of Utility Planning	Sussex County Council Sussex 49	Inland Bays - Little Assawoman NPDES-005-0008	\$840,000
15	2018	61.0	City of Newark Sanitary Sewer System Study and Rehabilitation Tim Filasky, P.E. Public Works Director	City of Newark New Castle 30,000	Delaware Bay & Estuary - NPDES DE 0051071 (New Castle is Co-permittee)	\$3,900,000
16	2018	60.0	Sussex County Council Branch, Autumn & Tucks Road - Long Neck John J. Ashman Director of Utility Planning	Sussex County Council Sussex 340	Inland Bays - Indian River Bay WPCC-3042C-90 (Spray Irrigation)	\$3,600,000
17	2018	58.0			Total (NOIs)	\$59,695,954

Draft 2018 Intended Use Plan

WPCRF Program Goals

Short Term Goals

- To enter into **binding commitments for projects that will proceed to construction** or award of construction **contracts within eight (8) quarters** of the CWSRF FY 2018 Federal Capitalization Grant award.
- To **maintain a CWSRF program "PACE" that exceeds 95 percent utilization** of available funds for project binding loan commitments.
- To **expand the loan portfolio of the WPCRF to include innovative uses** such as loans for land conservation, stormwater, water conservation, energy efficiency, as well as green and sustainable water infrastructure projects consistent with CWSRF program rules, requirements, and regulations.
- To **continue the collaboration between DNREC and DHSS** relative to the operation of the CWSRF and DWSRF programs. These efforts will focus on adding increased program value to applicants and borrowers, such as:
 - Combined CWSRF and DWSRF Semi-Annual Workshops
 - Online CWSRF and DWSRF document submittal capability
 - Offer of Planning and Design Loans for Projects that are not Ready to Proceed
 - Combined CWSRF and DWSRF Loan Closings (where applicable)
 - Eliminate need for Interim Construction Project Financing from other funding sources
 - Process Loan Reimbursement Requests within 30 days or less

Draft 2018 Intended Use Plan

Short Term Goals

- To **analyze financial leveraging** as a tool that may be needed to help meet the growing demand for loans provided by the WPCRF.
- To **comply with all federal capitalization grant and project reporting** requirements.

Long Term Goals

- To **ensure the long-term viability** of the WPCRF program, while providing necessary **project subsidization when needed**.
- To optimize the WPCRF program to **address changing loan demand for Non-Point Source** concerns and other difficult-to-finance water quality improvement issues.
- To **identify and fund** projects associated with the Water Resources Reform and Development Act (WRRDA) – **Expanded Project Eligibilities** to include Sediment and Stormwater, Nutrient Management, and Waterbody Restoration BMPs
- To periodically **evaluate additional funding opportunities** to meet emerging water quality and public health needs.

Draft 2018 Intended Use Plan

Fund Sources, Uses, and Program Requirements

<u>Sources:</u>	<u>FFY 2018</u>	<u>FFY 2012</u>
Federal Capitalization Grant	\$ 8,340,500	\$27,050,176
State Match – 20%	<u>\$ 1,668,100</u>	<u>\$ 5,410,035</u>
Total Sources	\$10,008,600	\$32,460,211

<u>Uses:</u>		
Program Loans	\$10,008,600	\$31,378,204
WPCRF Cap Grant Admin (4%)		\$ 1,082,007
WPCRF Administration (1/5 of 1%)	\$ 578,243	

<u>Requirement:</u>		
10% Principal Loan Forgiveness(min)	\$ 834,050	
10% Green Project Reserve	\$ 834,050	
30% Principal Loan Forgiveness (max.)	\$ 2,502,150	

Draft 2018 Intended Use Plan

Project Requirements

- Must Be on CWSRF PPL
- Davis-Bacon Wage Rates
- State Wage Rates
- Iron and Steel Federal Requirements

Project Selection Process

- Fiscal 2018 PPL – Project Rankings
- Projects Ready to Proceed in 2018 (Loan Applications/NOI by February 28, 2018)
- Project Loan Applications Previously Submitted

Draft 2018 Intended Use Plan

<u>Applicant / Project Name</u>	<u>Project Cost</u>	<u>CWSRF</u>
Sussex County		
• Land Conservation and Water Quality Project – Special Solicitation	\$ 9,500,000	\$ 5,745,000
• Western Sussex Sewer District – FY17 PPL	\$13,068,454	\$13,068,454
• Joy Beach	\$ 6,500,000	\$ 6,500,000
• Branch, Autumn, and Tucks Road	\$ 3,600,000	\$ 3,600,000
• Mulberry Knoll	\$ 4,800,000	\$ 4,800,000
• Oak Acres	\$ 2,580,000	\$ 2,580,000
• Mallard Creek	\$ 2,280,000	\$ 2,280,000
• Tanglewood	\$ 840,000	\$ 840,000
Kent County Levy Court		
• Air System (Blower) Optimization Project- FY16 PPL	\$ 4,513,700	\$ 1,354,110
• US Route 13 Forcemain Rehabilitation – FY17 PPL	\$ 6,004,800	\$ 2,423,800
City of Dover		
• Walker Woods Pump Station Replacement – FY16 PPL	\$ 476,000	\$ 476,000
• Delaware Tech Pump Station Replacement – FY16 PPL	\$ 450,000	\$ 450,000
• Silver Lake Pump Station Replacement – FY16 PPL	\$ 462,000	\$ 462,000
• Tar Ditch Interceptor – FY16 PPL	\$ 250,000	\$ 250,000

Draft 2018 Intended Use Plan

<u>Applicant / Project Name</u>	<u>Project Cost</u>	<u>CWSRF</u>
City of Newark		
• Western Area Drainage Ditch Flood Mitigation – FY15 PPL	\$ 9,600,000	\$ 9,000,000
• Sanitary Sewer System Study and Rehabilitation	\$ 3,900,000	\$ 3,900,000
City of Wilmington		
• Shallcross Avenue Sewer Separation	\$ 1,404,960	\$ 1,206,460
New Castle County		
• Hunter's Ridge – FY16 PPL	\$ 350,000	\$ 350,000
• Perch Creek Pond #1 – FY16 PPL	\$ 265,000	\$ 265,000
• Morningside Pond – FY16 PPL	\$ 250,000	\$ 250,000
• Muddy 6 Sanitary Sewer Capacity Improvement – FY16 PPL	\$ 1,703,000	\$ 1,703,000
• Hockessin Greene – FY17 PPL	\$ 372,000	\$ 350,000
• Woodside Court – FY17 PPL	\$ 436,150	\$ 400,000
• Mill Creek Sanitary Sewer Point Repair Project – FY17 PPL	\$ 1,850,000	\$ 1,675,885
• 2016 Sanitary Sewer Rehabilitation Project – FY17 PPL	\$ 849,469	\$ 782,469
• Mt. Pleasant Interceptor – FY17 PPL	\$ 5,384,000	\$ 5,384,000

Draft 2018 Intended Use Plan

<u>Applicant / Project Name</u>	<u>Project Cost</u>	<u>CWSRF</u>
Town of Smyrna		
• South Main Street Utility Replacement Project – FY17 PPL	\$ 1,705,275	\$ 1,705,275
Fort DuPont Redevelopment Preservation Corporation		
• Canal District and Officers Row Stormwater Improvements – FY17 PPL	\$ 927,000	\$ 927,000
• Canal District and Officers Row Sewer Improvements – FY17 PPL	\$ 520,000	\$ 520,000
• Flood Proofing Improvements – FY17 PPL	\$ 2,180,000	\$ 2,180,000
City of Lewes Board of Public Works		
• Abbott Park Sewer Improvements – FY17 PPL	\$ 164,000	\$ 164,000
• Donovan Smith Mobile	\$ 950,000	\$ 925,000
Delaware City		
• Washington Street Flood Mitigation - FY17 PPL	\$ 790,000	\$ 790,000
DNREC, Division of Watershed Stewardship		
• Middle Island Dredge Replacement Site – FY17 PPL	\$ 4,000,000	\$ 4,000,000
City of New Castle		
• Delaware Street Green Street Renovation	\$ 367,500	\$ 367,500

Draft 2018 Intended Use Plan

<u>Applicant / Project Name</u>	<u>Project Cost</u>	<u>CWSRF</u>
Mill 6 Redevelopment, LLC		
• Mill 6	\$ 11,900,000	\$ 2,900,000
• Mills Edge	\$ 9,200,000	\$ 2,400,000
Quarry Walk, LLC		
• Quarry Walk	\$ 16,650,000	\$ 4,450,000
Sub-Total Wastewater Projects	<u>\$131,043,308</u>	<u>\$91,424,253</u>
Green Project Reserve (GPR) Projects Selected for Funding		
<u>Applicant / Project Name</u>	<u>Project Cost</u>	<u>CWSRF</u>
City of Wilmington		
• Wilmington Wetlands Park	\$25,347,500	\$15,107,399
• 15th and Walnut CSO Separation, Green Infrastructure Installation, and Bicycle Pump Track	\$ 820,000	\$ 700,000
Sub-Total GPR Project Funding	<u>\$ 26,167,500</u>	<u>\$15,507,399</u>
Total Municipal Wastewater & GPR Project Funding	<u>\$157,210,808</u>	<u>\$107,231,652</u>

Draft 2018 Intended Use Plan

Non-Federal Administrative Account (NFAA)

- NFAA Required to be included in IUP
- Funded from 1%+ Administrative Fee on Municipal Loans
- Current Uses:
 - Supplement CWSRF Program Administrative Allowance
 - Contractual Support in the Water Holding Tank Enforcement Program
 - Six (6) Water Quality Related Positions within DNREC
 - Septic Extended Funding Option Loan Program
 - Community Water Quality Improvement Grants
 - Wastewater Matching Planning Grants
 - Surface Water Matching Planning Grants
 - Stormwater Position
 - Asset Management Plan Development Incentives
 - Project Planning Advances
- WIAC will review the NFAA Annually to Ensure Sustainability

	Actuals			Projected		
	FY15 Actual	FY16 Actual	FY17 Actual	FY18 Projected	FY19 Projected	FY20 Projected
1. Revenue Sources						
Total Annual Revenues	\$1,945,013	\$1,872,746	\$2,365,209	\$2,416,782	\$2,529,418	\$2,642,406
2. Administrative Expenses and Uses						
Total Administrative Expenses and Uses	\$925,481	\$630,782	\$1,025,000	\$996,000	\$1,071,000	\$1,094,000
Total Administrative Obligations To Be Paid	\$170,133	\$72,322	\$100,000	\$100,000	\$100,000	\$100,000
3. CWSRF State Match						
A. CWSRF State Match	\$0	\$0	\$578,000	\$0	\$0	\$0
4. Additional Program Expenses						
Total Additional Program Expenses	\$2,066,005	\$2,010,549	\$1,720,177	\$2,695,000	\$1,856,000	\$1,479,000
Total End of FY Program Obligations	\$607,022	\$1,207,195	\$1,814,911	\$1,632,000	\$1,387,000	\$2,033,000
Total Combined Annual Expenses and Uses	\$2,991,486	\$2,641,331	\$2,745,177	\$3,691,000	\$2,927,000	\$2,573,000
5. Total CWSRF NFAA Expenses						
CWSRF NFAA Expenses	\$2,991,486	\$2,641,331	\$3,323,177	\$3,691,000	\$2,927,000	\$2,573,000
Total CWSRF NFAA End of FY Obligations	\$777,155	\$1,279,517	\$1,914,911	\$1,732,000	\$1,487,000	\$2,133,000
6. Annual Fund Growth (Decrease)	(\$1,046,473)	(\$768,585)	(\$957,968)	(\$1,274,218)	(\$397,582)	\$69,406
7. Balances						
End of FY Available Fund Balance	\$5,980,106	\$4,709,159	\$3,115,797	\$2,024,000	\$1,871,000	\$1,294,000
End of FY Accounting Fund Balance	\$6,757,261	\$5,988,676	\$5,030,708	\$3,756,000	\$3,358,000	\$3,427,000
8. Grant Programs	Historical Annual Grant/Program Allocations			Projected Annual Grant/Program Allocations		
Total Proposed Grant Program Uses			\$2,450,000	\$2,002,000	\$1,150,000	\$759,000
Total Grant Program Obligations	\$1,610,217	\$2,052,983	\$1,814,911	\$1,632,000	\$1,387,000	\$2,033,000

2018 DWSRF Project Priority List (PPL) and Intended Use Plan (IUP)

April 18, 2018



Delaware Health and Social Services
Division of Public Health
Drinking Water State Revolving Fund

Funding as of 4/9/18 (For planning purposes only)

DWSRF Allotment: \$11,359,000

Additional (but with no guidance)

- +\$300M DWSRF Additional Funding
- +\$20M Small and Disadvantaged Community Grants
- +\$20M Lead Testing in Schools and Child Care Grants
- +\$10M Reducing Lead in Drinking Water Grants



2018 Ready to Proceed PPL

Year	Applicant	Project Title	Project Description	County	Population	DWSRF Loan Requested	Anticipated Subsidy*
2018	Town of Blades	PFOA&PFOS Removal	Installation of GAC treatment to remove PFOA&PFOS and providing public water to contaminated private wells	Sussex	1,200	\$3,304,506	
2017	Town of Laurel	Phase 3 Transite Water Main Replacement	Replacement of transite (asbestos) distribution throughout town	Sussex	3,668	\$1,594,460	
2017	Town of Laurel	W 7th Street Distribution System Improvements	Replacement of undersized and antiquated water mains along W 7th St	Sussex	3,668	\$500,000	

2018 Ready to Proceed PPL

2017	Sussex County	Winding Creek Village	Establishment of a water district	Sussex	300	\$2,000,000	
2018	Tidewater Utilities	Town of Cheswold	Distribution expansion to include Old Town Cheswold and private wells	Kent	TBD	\$325,000	
2018	City of Wilmington	Water Distribution Mains	Main upgrades throughout the City	New Castle	99,000	\$5,000,000	
2018	City of Milford	Lead Service Line Replacement	Main upgrades focusing on lead service line replacement	Kent/Sussex	11,394	\$900,000	
2018	Town of Smyrna	N Main St Utility Replacement	Main upgrades focusing on lead service line replacement	Kent	11,400	\$1,520,000	

2018 Ready to Proceed PPL

2018	City of Newark	South Wellfield Water Treatment Plant Upgrades	Upgrades to existing water treatment plant	New Castle	30,897	\$3,000,000	
2018	City of Newark	Water Tank Maintenance	Rehabilitation of storage tanks throughout the City, including lead paint removal	New Castle	30,897	\$2,250,000	
2018	City of Newark	Water Main Replacement	Main upgrades including lining and replacement throughout the City	New Castle	30,897	\$4,000,000	
2018	City of Newark	Laird Tract Well Field Restoration	Construction of new supply configuration to restore Laird Tract wells	New Castle	30,897	\$1,925,000	
2018	City of Newark	SCADA System	Development of SCADA system	New Castle	30,897	\$555,000	
							\$486,291
Frankford							
Total						\$26,873,966	\$486,291

2018 Intended Use Plan Projects

- Grant total \$11,359,000
- 14 projects
- 9 borrowers
- \$26,873,996 total
 - \$ 7,837,710 federal
 - \$ 2,271,800 state match

EPA Requires:

- **20% Additional Subsidies = \$2,271,800**



2018 Intended Use Plan 2% Set-Aside

\$227,180

Delaware Rural Water Association
\$113,590 on-site technical assistance

Delaware Technical and Community College
\$113,590 Operator education



2018 Intended Use Plan 4% Set-Aside

\$454,360

Fully funds 2
DHSS administrative positions
and 1.5 DNREC EF positions



2018 Intended Use Plan 10% Set-Aside

\$1,135,900

DHSS Public Water Supply Supervision Program

- \$735,900
- 4.60 FTEs

DNREC Underground Injection Control Program

- \$400,000
- 3.35 FTEs



2018 Intended Use Plan 15% Set-Aside

\$1,703,850

DHSS Capacity Development Program

- \$1,103,850
- 4.60 FTEs
- DRWA/DTCC Contracts
- Sustainability and Cyber Security Contracts

DNREC Source Water Program

- \$600,000
- 3.35 FTEs



2018 Intended Use Plan Non Fed Admin

DHSS DPH Laboratory Expenses
\$400,000

Asset Management Grants
\$500,000

Matching Planning Grants
\$300,000



CWSRF & DWSRF PPL/IUP

- WIAC Member Comments
- Individuals Requesting to Speak
- Public Record will remain open until May 21st to receive additional public comments
- CWSRF Written Public Comments should be directed to:

Carla Cassell-Carter
DNREC Environmental Finance
97 Commerce Way, Suite 106
Dover, Delaware 19904
Carla.Carter@State.DE.US

- DWSRF Written Public Comments should be directed to:

Heather Warren
DHSS Division of Public Health
417 Federal Street
Dover, DE 19901
Heather.Warren@State.DE.US

Delaware Water Infrastructure Advisory Council



April 18, 2018

WIAC – Informational

- **New WIAC Member Introductions and Welcome**
- **Final CWSRF and DWSRF FFY 2018 Summary of Federal Omnibus Bill (grant applications to be submitted)**

\$ 8,340,500 CWSRF Federal Cap Grant

\$ 1,668,100* Required CWSRF 20% State Match

\$10,008,600

*Increase in Federal Cap Grant will require additional \$268,100 State Match

\$11,359,000 DWSRF Federal Cap Grant

\$ 2,271,800* Required DWSRF 20% State Match

\$13,360,800

*Increase in Federal Cap Grant will require additional \$501,800 State Match

Delaware Water Infrastructure Advisory Council New Business

- CWSRF and DWSRF 2018 PPL/IUP
- Proposed Projects Review
- Planning Grant Requests





Delaware Water Infrastructure Advisory Council

WIAC Vote to Approve the Draft 2018 CWSRF and DWSRF
PPLs and IUPs, subject to no adverse public comments
received by May 21, 2018



City of Harrington Sanitary Sewer Capacity Improvements Supplemental Funding

Supplemental Funding Request

- On February 17, 2016, the Water Infrastructure Advisory Council reviewed, approved, and recommended that the Delaware Water Pollution Control Revolving Fund (WPCRF) issue a binding commitment for \$1,462,925 to the City of Harrington for the proposed project.
- On September 20, 2017, the City received three (3) bids with the lowest, responsive and responsible bid from A-DEL Construction (A-DEL) for \$1,763,455 which was significantly higher than the loan. The City performed a value engineering study and made a second solicitation.
- On March 22, 2018, the City received three (3) bids, with the lowest, responsive and responsible bid from A-DEL for \$1,425,491.50. The increased cost of construction is \$235,000. The City is requesting supplemental funding of \$198,805 from the WPCRF.

<u>Project Budget</u>	Original	Supplemental
a. Administration	\$16,800	
i. Land, Right of Way	\$8,400	
ii. Legal	\$8,400	
b. Engineering	\$152,000	\$152,000
i. Basic	\$67,600	\$67,600
ii. Project Inspection	\$84,400	\$84,400
c. Construction	\$1,125,325	\$1,425,492
i. Construction	\$1,125,325	\$1,425,492
d. Contingencies	\$168,800	\$120,433
Total	<u>\$1,462,925</u>	<u>\$1,697,925</u>
Difference		\$235,000

Funding Analysis

The USDA funding has changed from the original presentation. The grant amount has increased from \$306,120 to \$417,000 and the loan amount has been reduced to \$776,000.

The CWSRF principal loan forgiveness with the supplemental funding request of \$198,805 has increased to \$504,925.

This funding package allows the City to finance the increased cost associated with the project of \$235,000 while meeting the approved project borrowing capacity.

<u>Source of Funds</u>	Original	Supplemental
Supplemental Funding Request		\$198,805
CWSRF Principal Forgiveness	\$306,120	\$306,120
USDA Grant Amount	\$306,120	\$417,000
USDA Loan Amount	<u>\$850,685</u>	<u>\$776,000</u>
CWSRF Loan	<u>\$1,462,925</u>	<u>\$1,697,925</u>

City of Harrington Sanitary Sewer Capacity Improvements Supplemental Funding

Affordability Analysis Summary

The annual cost for wastewater service is estimated at \$832 per Equivalent Dwelling Unit (EDU). This represents 1.85% of Median Household Income (MHI). The new funding package for this project reduces the annual cost per EDU by \$2. The funding for this project is heavily subsidized in the form of grants, principal forgiveness and a forty year loan term in order to lower the cost per household.

Supplemental Affordability Analysis	Sanitary Sewer Capacity Improvement	Supplemental Sanitary Sewer Capacity Improvement
Project Cost	\$1,462,925	\$1,697,925
Supplemental Principal Forgiveness		\$198,805
USDA Grant	\$306,120	\$417,000
CWSRF Principal Forgiveness	\$306,120	\$306,120
USDA Loan	\$850,685	\$776,000
CWSRF Refi Loan Amount		
Interest Rate	2.5%	2.5%
Loan Terms Years	40	40
Annual Debt Service, New Project	\$33,888	\$30,924
Existing O,M&R	\$1,066,733	\$1,066,733
Existing Debt Service		
Existing Debt Service	\$390,495	\$390,495
Annual Facilities Cost Wastewater	\$1,491,116	\$1,488,152
Residential Share at 75%	\$1,118,337	\$1,116,114
Total Estimated Annual Charge Per EDU	\$832	\$830
EDU's	1344	1344
Median Household Income	\$44,974	\$44,974
% of MHI Wastewater	1.85%	1.85%
Drinking Water		
Annual Facilities Cost Drinking Water	\$477,588	\$477,588
Residential Share at 75%	\$358,191	\$358,191
Cost per EDU	\$266.51	\$266.51
% of MHI Drinking Water	0.59%	0.59%
Combined Wastewater & Drinking Water % of MHI	2.44%	2.44%

**City of Harrington
Sanitary Sewer Capacity Improvements
Supplemental Funding**

Terms

The loan is to be a General Obligation Bond secured by the full faith and credit and taxing power of the City.

The City will be required to pay 2% interest semi-annually during project construction. The CWSRF Supplemental Principal Forgiveness up to \$198,805 will be applied to the CWSRF loan at project completion.

Recommendation

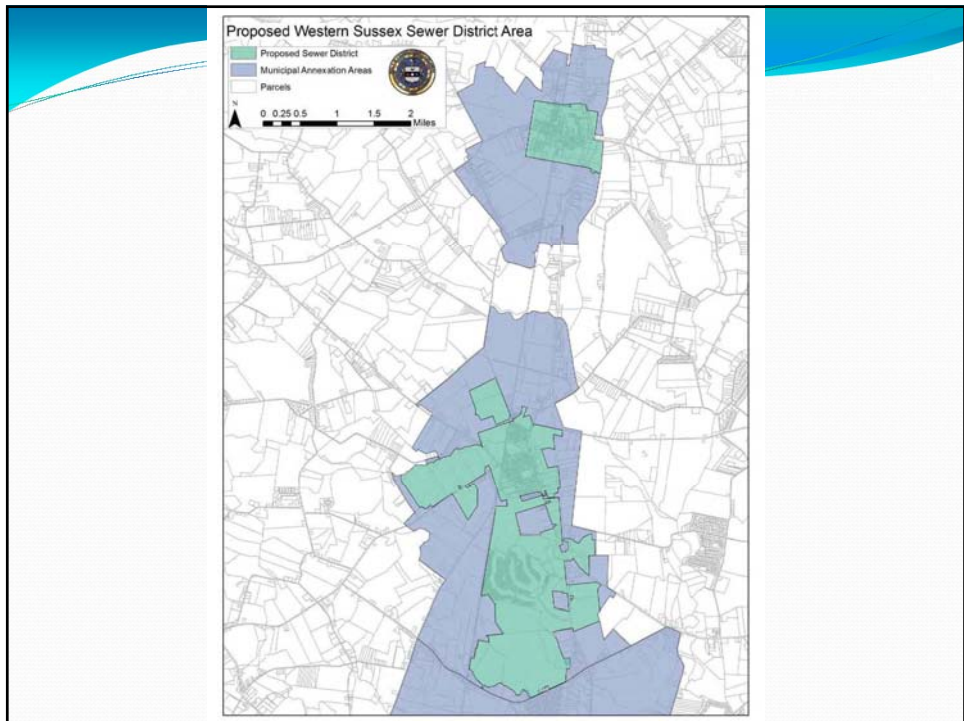
Environmental Finance, recommends Council approval and recommendation of a binding commitment to the City of Harrington for a \$198,805, 2% interest loan from the Water Pollution Control Revolving Fund for the increased cost associated with the Sanitary Sewer Improvement Project. Interest only will be payable during construction in semi-annual installments. Upon project completion, the principal balance of the loan will be forgiven up to \$198,805.

**Sussex County Council
Western Sussex Sewer District**

Project Description

The Town of Bridgeville owns and operates a sanitary sewer system and wastewater treatment facility that serves the Towns of Bridgeville and Greenwood. In May of 2016, the Town of Bridgeville signed an Administrative Order of Consent with the U.S. EPA mandating sanitary system improvements on tight timelines estimated at 15.85 million dollars. Bridgeville and Greenwood determined that paying for these improvements was financially unfeasible. As a potential solution to this problem, the Western Sussex Sewer District project was developed.

The project proposes to transfer the sewer flows from Bridgeville and Greenwood to the existing City of Seaford sewer system and wastewater treatment facility. The wastewater will be transferred utilizing existing and proposed infrastructure to be owned and maintained by Sussex County. This sewer system will serve what will be known as the Western Sussex Sewer District.



Sussex County Council Western Sussex Sewer District

Project Conditions

- A growth assumption of 2.3% system wide will allow Sussex County to accommodate the anticipated straight-line growth in the Western Sussex Sewer District area and any district expansions consistent with the anticipated zoning classifications outlined in the respective municipal comprehensive plans.
- Notwithstanding any expansion requirements outlined in the Delaware or County codes, Sussex County agrees to a condition in the SRF Financing Agreement setting aside no less than 200 EDUs in the Western Sussex transmission system on a first come first serve basis for underserved communities.
- The City of Seaford wastewater treatment facility has sufficient capacity to handle the proposed sewer district and the expected growth outlined above.

Sussex County Council Western Sussex Sewer District

Environmental Review

After a review of the Environmental Information Document, it was established that a Public Notification of the Finding of No Significant Impact (FONSI) would be necessary. The legal notice was published on April 18, 2018. After a 30 day comment period, the FONSI will be processed upon completion of the environmental cross-cutter coordination.

Project Schedule

Construction Start: July 2019

Construction Complete: November 2020

Sussex County Council Western Sussex Sewer District

Project Budget

a. Administration	<u>\$80,000</u>
i. Land, Right of Way	\$54,000
ii. Legal	\$26,000
b. Engineering	<u>\$1,568,178</u>
i. Basic	\$1,568,178
c. Construction	<u>\$10,049,490</u>
i. Construction	\$10,049,490
d. Other	<u>\$30,000</u>
e. Contingencies	<u>\$1,340,786</u>
Total	<u>\$13,068,454</u>

Sussex County Council Western Sussex Sewer District

Project Budget	\$13,068,454
Bridgeville Debt Refinanced (Balance as of 4-11-2018)	\$3,566,293
Total CWSRF Loan Amount	<u>\$16,634,747</u>
Principal Forgiveness at Project Completion	\$3,200,000
<u>Loan Amount at Project Completion</u>	<u>\$13,434,747</u>

Sussex County Council Western Sussex Sewer District

Affordability Summary - User Rates

The annual cost for wastewater service is estimated at \$605 per Equivalent Dwelling Unit (EDU). This represents 1.50% of Median Household Income (MHI). When the utility provides only wastewater service the affordability standard is 1.5% of MHI. The funding for this project is heavily subsidized in the form of principal forgiveness in the amount of \$3,200,000 and a 30-year term in order to lower the cost per household.

Affordability Analysis

Project Budget	\$13,068,454
Bridgeville Debt Refinanced (Balance as of 4-11-2018)	\$3,566,293
Total CWSRF Loan Amount	<u>\$16,634,747</u>
Principle Forgiveness at Project Completion	\$3,200,000
Loan Amount at Project Completion	<u>\$13,434,747</u>
<u>Wastewater</u>	
Interest Rate	2.529%
Loan Terms (years)	30
Annual Debt Service for Proposed Project	\$641,680
Total Facility Cost	<u>\$641,680</u>
Residential Share at 81%	<u>\$519,761</u>
Estimated Wastewater EDUs @ Project Completion	1,715
Total Debt Service Per EDU	\$303
O,M & R Cost, New Facility, Include in Service Charge	\$558,063
Estimated Service Charge Per EDU @ Project Completion	\$302
Total Estimated Annual Charge Per EDU	<u>\$605</u>
Weighted Median Household Income	\$40,432
% of MHI	<u>1.50%</u>

Sussex County Council Western Sussex Sewer District

Terms of Funding

- The loan is to be secured by a General Obligation Bond backed by the full faith and credit and taxing power of the County.
- The Interest Rate will be 2.529% for a term of 30 years.
- Interest only will be payable during construction in semi-annual installments.
- Principal forgiveness up to \$3,200,000 will be applied to the loan at project completion.
- Upon project completion principal and interest payments shall be paid semi-annually in an amount sufficient to amortize the outstanding principal balance over the 30-year term.

Sussex County Council Western Sussex Sewer District

Recommendation

Environmental Finance recommends Council approval and recommendation of a binding commitment to Sussex County Council for a 30-year loan of \$16,634,748 at 2.529% interest from the Water Pollution Control Revolving Fund. Interest only will be payable during construction in semi-annual installments. Upon project completion, up to \$3,200,000 in principal forgiveness of the outstanding balance will be applied. The remaining balance shall be paid semi-annually in an amount sufficient to amortize the outstanding principal balance over the 30-year term.

Should the County sell any of the assets previously owned by Bridgeville, the proceeds will be used to pay down the loan principal. The County has provided assurances that the Western Sussex Sewer District will reserve capacity for future growth and/or annexation by Bridgeville and Greenwood consistent with their respective comprehensive plans. Notwithstanding any expansion requirements outlined in Delaware Code or County Code, Sussex County has also agreed to a condition in the associated SRF Financing Agreement to set aside no less than 200 EDUs in the Western Sussex transmission system for underserved communities on a first-come, first-serve basis.

City of Lewes Board of Public Works Abbott Park Water & Sewer Improvements

Project Description

The Lewes Board of Public Works is requesting a total of \$164,000 to install 680 feet of 8-inch gravity sewer, 750 feet of 6-inch house lateral piping, 6 manholes and 3 terminal main cleanouts to serve 20 existing mobile homes. The existing sewer system is aging and located haphazardly out of the roadway, in narrow spaces between units and under existing mobile homes. The proposed improvements will allow for greater accessibility for future maintenance.

Environmental Review

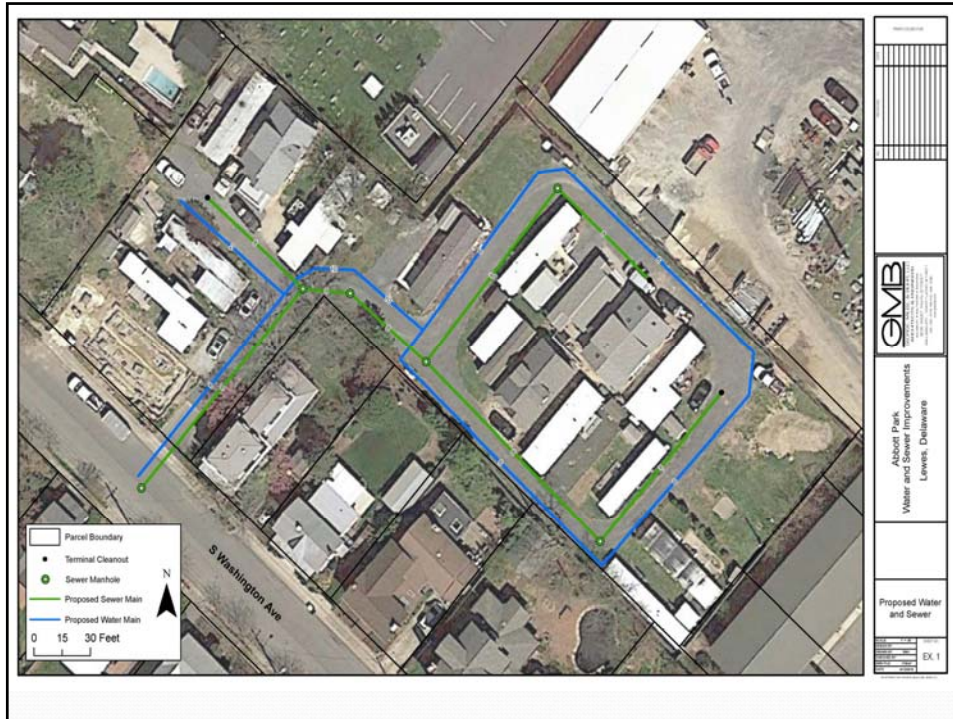
A review of the loan application, PER and EID revealed that no environmental impacts are anticipated from the proposed project. Therefore, the project qualifies for a categorical exclusion.

Project Schedule

Start of Construction – August 2018

Completion of Construction – December 2018





City of Lewes Board of Public Works Abbott Park Water & Sewer Improvements

Project Budget

a. Administration		\$2,000
i. Land, Right of Way		\$0
ii. Legal		\$2,000
b. Engineering		\$27,000
i. Basic		\$5,000
ii. Project Inspection		\$14,500
iii. Other (Construction Administration)		\$7,500
c. Construction		\$130,000
i. Construction		\$130,000
d. Contingencies		\$5,000
Total		\$164,000

**City of Lewes Board of Public Works
Abbott Park Water & Sewer Improvements**

Project Funding

CWSRF Loan Amount	\$164,000
Principal Loan Forgiveness at Project Completion	\$140,000
CWSRF Loan	<u>\$24,000</u>
Total	<u>\$164,000</u>

**City of Lewes Board of Public Works
Abbott Park Water & Sewer Improvements**

Affordability Summary

With principal forgiveness of \$140,000 the user rate is estimated at \$879 per EDU for wastewater, which is 1.57% of MHI. When a utility provides both wastewater and drinking water services, the overall cost per EDU should not exceed 2% of MHI in order to be deemed affordable. The proposed project has a combined user rate of 2.0% for both wastewater and drinking water. Thus, the project is considered affordable.

Affordability Analysis	
Project Cost	\$164,000
Principal Forgiveness	\$140,000
CWSRF Loan Amount	\$24,000
Interest Rate	2.300%
Loan Terms Years	20
Annual Debt Service, New Facility	\$1,504
Total Cost New Facility	\$1,504
New Facility Cost per EDU	\$75
Yearly Consumption Based on Gallons	\$204
Ready to Serve Yearly Cost	\$600
Total Estimated Annual Charge Per EDU	\$879
EDU's	20
Median Household Income	\$56,058
% of MHI	1.57%
<u>Drinking Water</u>	
Yearly Consumption Based on Gallons	\$52
Ready to Serve Yearly Cost	\$192
Total Estimated Annual Charge Per EDU	\$244
Drinking Water % of MHI	0.44%
<u>Combined Wastewater & Drinking Water % of MHI</u>	2.00%

City of Lewes Board of Public Works
Abbott Park Water & Sewer Improvements

Terms

- The loan will be secured by the full faith, credit and the taxing power of the City.
- The Interest Rate will be 2.30% for a term of 20 years.
- Interest only will be payable during construction in semi-annual installments.
- Upon project completion, up to \$140,000 of principal forgiveness will be applied and principal and interest payments shall be paid semi-annually in an amount sufficient to amortize the outstanding principal balance over the 20-year term.

**City of Lewes Board of Public Works
Abbott Park Water & Sewer Improvements**

Recommendation

Environment Finance, recommends Council approval and recommendation of a binding commitment to the Board of Public Works of the City of Lewes for a \$164,000, 2.300% interest loan from the Water Pollution Control Revolving Fund for the Abbott Park Sewer Improvements. Interest only will be payable during construction in semi-annual installments. Upon project completion up to \$140,000 of the outstanding principal balance will be provided. The remaining balance shall be paid semi-annually in an amount sufficient to amortize the outstanding principal balance over the 20-year term.

**City of Lewes Board of Public Works
Abbott Park Water & Sewer Improvements**

Purpose and Need

Currently, Abbott Mobile Home Cooperative is served by an aging water system that has services located under mobile homes and through narrow spaces between homes. The new system will improve access to the system and upgrade the fire protection for the area.

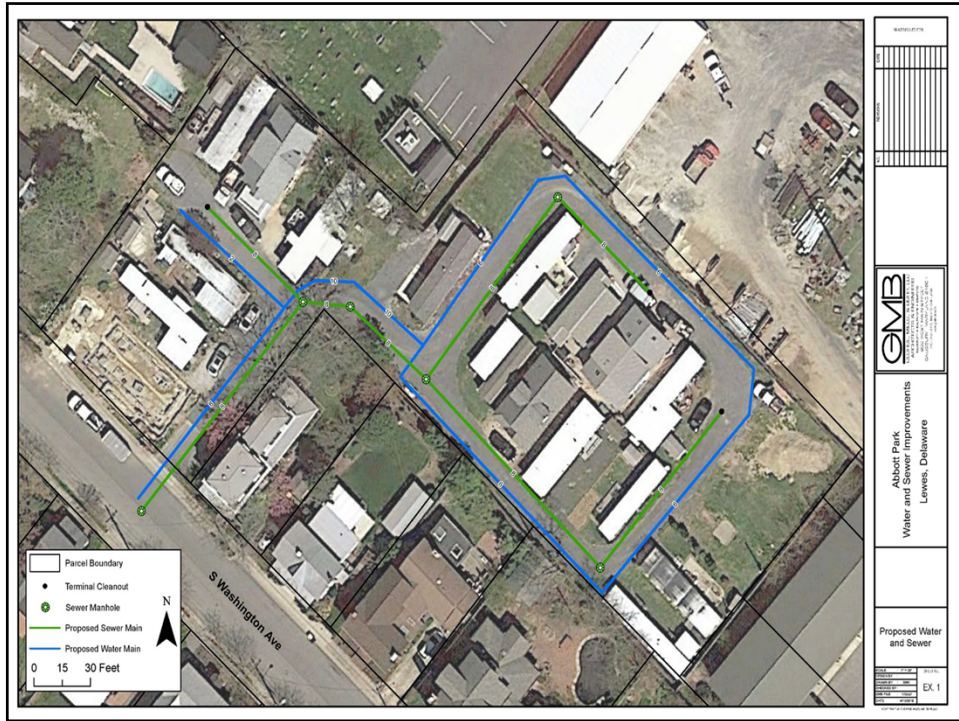
Environmental Review

Office of Engineering review of the Environmental Information Document and the environmental checklist, found that there would be no adverse impact due to this project. A Categorical Exclusion has been issued per the State Environmental Review Procedures.

Capacity Development Review

Based on the review of the technical, managerial, and financial capacities, the Capacity Development Program recommends approval of the loan.





City of Lewes Board of Public Works Abbott Park Water & Sewer Improvements

Project Description

- The project will install approximately 200 feet of 10-inch main, 540 feet of 6-inch main, and 70 feet of 2-inch water main, service lines, valves, and fire hydrants in the residential community of Abbotts Park.

Public Health Benefits

- Reduced potential for system contamination
- Provide reliable water service to community
- Provide better access to the water system for repairs
- Provide fire suppression to community



Project Costs/Budget

<u>Administration</u>	\$ 2,000.00
<u>Engineering</u>	\$ 27,000.00
<u>Construction</u>	\$ 172,000.00
<u>Contingencies</u>	\$ 5,000.00
Total Cost of Project	\$ 206,000.00

Construction Dates

Start Date: August 2018

End Date: March 2019



**City of Lewes Board of Public Works
Abbott Park Water & Sewer Improvements**

Loan Terms:

- The proposed loan will be secured by a General Obligation Bond Pledge of the City of Lewes Board of Public Works with full faith and credit.
- During construction, semi-annual installments of 2.300% interest-only payments will be made.
- At completion, principal forgiveness up to \$206,000 of the outstanding principal balance will be provided.



Affordability Analysis	Abbott Park	Abbott Park*
Total Cost of the New Facility	\$0	\$0
New Facility Debt Service	\$12,908	\$0
New Facility Cost per EDU	\$645	\$0
Yearly Consumption Based on Gallons	\$52	\$52
Ready to Serve Yearly Cost	\$192	\$192
Total Estimated Annual Charge Per EDU	\$889	\$244
EDU's	20	20
Median Household Income	\$56,058	\$56,058
% of MHI	1.59%	0.44%
<u>Wastewater</u>		
Total Cost New & Existing Facility	1,504	1,504
New Facility Cost per EDU	75	75
Yearly Consumption Based on Gallons	\$204	\$204
Ready to Serve Yearly Cost	\$600	\$600
Total Estimated Annual Charge Per EDU	\$879	\$879
Wastewater % of MHI	1.57%	1.57%
<u>Combined Wastewater & Drinking Water % of MHI</u>	3.16%	2.0%
*Assumes 100% Principal Forgiveness		

City of Lewes Board of Public Works Abbott Park Water & Sewer Improvements

Recommendation

Environmental Finance and the DHSS, Division of Public Health recommend Council's approval of a DWSRF Binding Loan Commitment in the amount of \$206,000 to the City of Lewes Board of Public Works for the Abbott Park Water Improvements. The City will be required to pay 2.30% interest semi-annually during project construction. Upon completion, principal forgiveness up to \$206,000 of the outstanding principal balance will be provided.



Town of Milton Shipbuilders Well & Treatment Facility

Purpose and Need-Shipbuilders

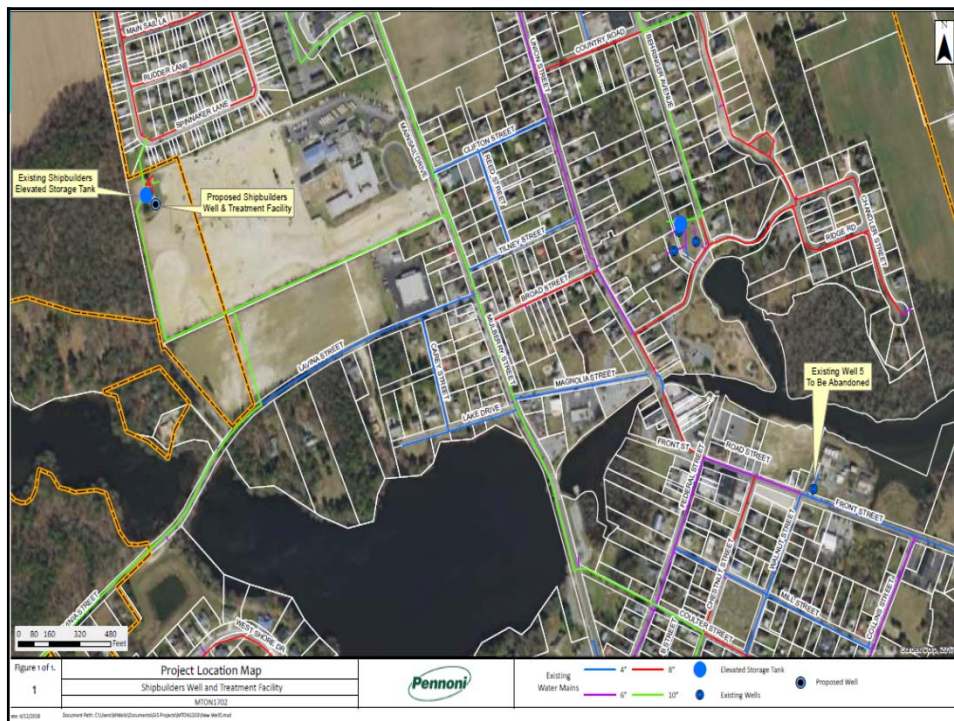
The project will provide water supply redundancy, protect the Town of Milton from loss of supply due to flood events, and allow for continuity of supply, should its largest source of supply fail for any reason.

Environmental Review

Office of Engineering review of the Environmental Information Document and the environmental checklist, found that there would be no adverse impact due to this project. A Categorical Exclusion has been issued per the State Environmental Review Procedures.

Capacity Development Review

Based on the review of the technical, managerial, and financial capacities, the Capacity Development Program recommends approval of the loan.



Town of Milton Shipbuilders Well & Treatment Facility

Project Description-Shipbuilders

The project involves the installation of a new production well, a small treatment building, and treatment and flow monitoring equipment needed for the proposed facility. The existing well (Well No. 5) is currently located in a flood prone area. The addition of a new well and treatment facility at the Shipbuilders location will be in an upland area and will not be subject potential flooding, or at worse case, total loss due to a catastrophic storm event.

Public Health Benefits

- Reduced potential for system contamination
- Provide redundancy for water supply



Project Costs/Budget

<u>Administration</u>	\$ 5,000.00
<u>Engineering</u>	\$ 64,000.00
<u>Construction</u>	\$ 391,000.00
<u>Contingencies</u>	\$ 40,000.00
Total Cost of Project	\$ 500,000.00

Construction Dates

Start Date: July 2018

End Date: December 2018



Town of Milton Shipbuilders Well & Treatment Facility

Loan Terms:

- The proposed loan will be secured by a General Obligation Bond Pledge of the Town of Milton with full faith and credit.
- 2% interest, 20-year term
- During construction semi-annual installments of 2% interest-only payments will be made.
- At completion, principal and interest payments will be paid semi-annually.



Town of Milton Wagamons Water Main Extension

Purpose and Need-Wagamons

This project provides a redundant means of supplying the southern side of Milton with drinking water. This project will also improve fire protection flow availability on the southern side of town.

Environmental Review

Office of Engineering review of the Environmental Information Document and the environmental checklist, found that there would be no adverse impact due to this project. A Categorical Exclusion has been issued per the State Environmental Review Procedures.

Capacity Development Review

Based on the review of the technical, managerial, and financial capacities, the Capacity Development Program recommends approval of the loan.





Town of Milton Wagamons Water Main Extension

Project Description-Wagamons

The project will provide redundancy and water system resiliency, and requires the installation of 1,623 linear feet of 10-inch water main..

Public Health Benefits

- Reduced potential for system contamination
- Provide redundancy for southern section water services
- Provide improved fire suppression to southern side of town



Project Costs/Budget

<u>Administration</u>	\$ 5,000.00
<u>Engineering</u>	\$ 28,000.00
<u>Construction</u>	\$ 344,645.00
<u>Contingencies</u>	\$ 17,355.00
Total Cost of Project	\$ 395,000.00

Construction Dates

Start Date: June 2018
End Date: October 2018



**Town of Milton
Wagamons Water Main Extension**

Loan Terms:

- The proposed loan will be secured by a General Obligation Bond Pledge of the Town of Milton with full faith and credit.
- 2% interest, 20 year term
- During construction semi-annual installments of 2% interest only payments will be made.
- At completion, principal and interest payments will be paid semi-annually.



Town of Milton			
	Shipbuilders	Wagamons	Total Combined Shipbuilders & Wagamons
<u>Affordability Analysis</u>			
Annual Debt Service, New Facility	\$30,456	\$24,060	\$54,516
Existing Debt Service	\$48,615	\$48,615	\$48,615
Existing O,M & R	\$631,385	\$631,385	\$631,385
O,M & R Cost, New	\$30,000	\$0	\$30,000
Total Cost New Facility	<u>\$740,456</u>	<u>\$704,060</u>	<u>\$764,516</u>
Residential Share at 85%	<u>\$629,388</u>	<u>\$598,451</u>	<u>\$649,839</u>
EDU's	1470	1470	1470
Project Cost per EDU	\$428	\$407	\$442
Total Estimated Annual Charge Per EDU	<u>\$428</u>	<u>\$407</u>	<u>\$442</u>
Median Household Income	\$48,194	\$48,194	\$48,194
% of MHI	<u>0.89%</u>	<u>0.84%</u>	<u>0.92%</u>

**Town of Milton
Shipbuilders Well & Treatment Facility
&
Wagamons Water Main Extension**

Recommendation

Environmental Finance and the DHSS, Division of Public Health recommend Council's approval of a DWSRF Binding Loan Commitment in the amount of \$500,000 and \$395,000 to the Town of Milton for the Shipbuilders Well and Treatment Facility project and the Wagamons Water Main Extension project, respectively. The town will be required to pay 2% interest semi-annually during project construction, for each loan. Upon completion of both projects, principal and interest payments will be paid semi-annually in an amount sufficient to amortize the outstanding principal balances over the 20-year term.



Surface Water Matching Planning Grants Award Recommendations (March 2018 submittal)

- A press release was issued on March 6, 2018.
- Grant proposals were due on March 28, 2018.
- A review and ranking of the grant proposals was held on April 3, 2018.
- After a detailed review and ranking all grant applications were considered eligible and acceptable.
- The following grants recommendations are offered to the Water Infrastructure Advisory Council for approval.

Grant Applicant Project	Final Ranking	Final Score	Project Cost	Recommended Grant Award	Note
<p style="text-align: center;">City of Seaford</p> <p style="text-align: center;">MS4 Program Development Inventory and Mapping</p> <p>Inventory and mapping of existing 28+ outfalls along with storm drains, manholes, catch basins/inlets. A database of assets will be developed in GIS format and will provide a master plan of the City's stormwater inventory.</p>	1	90.35	\$100,000	\$50,000	This project will locate potential green infrastructure retrofit locations as part of the mapping and will include examination of the feasibility of the future retrofits.
<p style="text-align: center;">Town of Fenwick Island</p> <p style="text-align: center;">Southwest Fenwick Commercial Area Water Quality Improvement</p> <p>This project utilizes green infrastructure to minimize nutrients and pollutant run-off to the Inland Bays while also addressing the issues of age and deterioration of existing infrastructure which is contributing to town wide drainage issues. The Town requires engineering services for the design of rain gardens, floating wetlands, two storm drainage retrofits, and associated stormwater connections along W. Maryland Avenue and W. Delaware Avenue.</p>	2	85.85	\$36,000	\$18,000	In its current condition, this series of pipes does not provide proper stormwater conveyance and during storm events, allows sediment laden water and street runoff to discharge directly to the canal with no pretreatment, as well as street flooding.


Grant Applicant Project	Final Ranking	Final Score	Project Cost	Recommended Grant Award	Note
<p>Town of South Bethany</p> <p>Planning Studies and Feasibility Analysis of the South Bethany Canals</p> <p>Planning studies and feasibility analysis to mitigate high concentrations of nitrogen and phosphorous in the South Bethany canals to help in the restoration of the canals to their original fishable and swimmable condition.</p>	3	78.15	\$50,000	\$25,000	Studies will utilize bathymetric and subbottom acoustic survey, along with sediment core sampling and analysis, to guide the selection of the best remediation approach.
Totals			\$186,000	\$93,000	(\$270,500 FY)
Percent of Allocation (\$325K)				28.6%	
Percent of Allocation Remaining (\$54,500)				16.7%	

Delaware

Water Infrastructure Advisory Council

Administrator Reports

- Project Status Report
- Financial Reports
- Subcommittee Reports



Project Updates

- **New Castle County - Christina River Force Main Emergency Repair**
 - Contract awarded & contractor mobilized
 - Construction – 20% complete

- **Millsboro – Pumping Station No. 2 Replacement**
 - Design completed and bid
 - Contractor selected and contract to be awarded this month

- **Sussex County – North Expansion of Angola SSD**
 - Construction – 43.6% complete

- **Sussex County – Route 54 Expansion of Fenwick Island SSD**
 - Construction – 40.6% complete

- **Rehoboth Beach – Pump Station, Force Main & Ocean Outfall**
 - Permit modifications received from all agencies
 - Construction expected to be completed by May 2018

CWSRF February 2018 Cash Flow Summary (*restated)

in millions

Federal Capitalization Grants (1990 – Present)	\$	212
State Match (1990 – Present)	\$	39
DWSRF Transfer	\$	32
Total Capitalization	\$	283
Plus: Loan P/I Repayments & Interest on Investments	\$	184
Less: Loan Disbursements, Principal Forgiveness, & Administration	\$	- 346*
Available Funds for Loans as of February 12, 2018	\$	121
Plus: Near-Term Loan Repayments	\$	10
Less: Undisbursed Near-Term Loans Payable	\$	- 81
Less: DWSRF Transfer (\$31.5)	\$	As Needed
Uncommitted Fund Balance	\$	50
Less: Loan Application Pending Approval/Settlement ⁽¹⁾	\$	-41
Est. Balance Available for Loans as of June 30, 2018	\$	9

CWSRF March 2018 Cash Flow Summary

in millions

Federal Capitalization Grants (1990 – Present)	\$	212
State Match (1990 – Present)	\$	39
DWSRF Transfer	\$	32
Total Capitalization	\$	283
Plus: Loan P/I Repayments & Interest on Investments	\$	188
Less: Loan Disbursements, Principal Forgiveness, & Administration	\$	- 369
Available Funds for Loans as of March 31, 2018	\$	102
Plus: Near-Term Loan Repayments & Interest on Investments (FY18 4Q)	\$	9
Less: Near-Term Undisbursed Loans Payable (FY18 4Q)	\$	- 40
Less: DWSRF Transfer (\$31.5)	\$	As Needed
Uncommitted Fund Balance	\$	71
Less: Loan Application <u>Pending</u> Approval/Settlement ⁽¹⁾	\$	- 54
Est. Balance Available for Loans as of June 30, 2018	\$	17

DWSRF March 2018 Cash Flow Summary

in millions

Federal Capitalization Grants Less Set Aside Expenses (1997 – Present)	\$	154
State Match (1997 – Present)	\$	37
CWSRF Transfer	\$	-32
Total Capitalization	\$	159
Plus: Loan P/I Repayments & Interest on Investments	\$	60
Less: Loan Disbursements	\$	-173
Available Funds for Loans as of March 31, 2018	\$	46
Plus: Near-Term Loan Repayments (FY18 4Q)	\$	3
DWSRF Transfer (\$31.5)	\$	As Needed
Less: Undisbursed Near-Term Loans Payable (FY18 4Q)	\$	-7
Current Uncommitted Fund Balance	\$	42
Less: Loan Application <u>Pending</u> Approval and/or Settlement	\$	-20
Est. Balance Available for Loans as of June 30, 2018	\$	22

Delaware Clean Water and Drinking Water Projected Balances Available for Loans

Actual/Projected (in millions)	CWSRF	DWSRF
March 31, 2018	\$102.073	\$45.967
June 30, 2018	\$38.324	\$42.127
June 30, 2019	\$17.267	\$51.141
June 30, 2020	\$5.476	\$42.541
June 30, 2021	\$8.320	\$35.938

Note: Management has established a \$5 Million dollar capital reserve for the Fund. This reserve represents 24 months of operations should there be no new Federal Grant funds.

Delaware Water Infrastructure Advisory Council

Subcommittee Reports

- ✓ Wastewater
- ✓ Surface Water Management
- ✓ Finance
- ✓ Drinking Water

Public Comment

Good Of The Council

Next Meeting Date

Wednesday, June 20, 2018

