PLEDGE OF ALLEGIANCE

CONSENT AGENDA
1. Approval of Agenda 2/25/20
2. Approval of Minutes: 2/11/20 Commission Meeting
3. Ratification of Vouchers 2/18/20
4. [Hyperlink to Voucher Approval]
5. Systima Port of Skagit Project

AUDIENCE COMMENTS

OLD BUSINESS
6. Manager’s Report
7. Engineering Department Report

PUBLIC HEARING – Surplus Real Property

NEW BUSINESS
8. Surplus Real Property - Ranney Well and Sedro-Woolley Ballfields – Resolution No. 2273-20 and 2274-20 - Action
9. Cross Connection Control, Update to Water Policy Manual, Resolution No. 2275-20 - Action

INFORMATION
11. Judy Reservoir Data Report

COMMISSIONER COMMENTS

EXECUTIVE SESSION –
Litigation that the agency reasonably believes may be commenced by or against the agency, the governing body, or a member acting in an official capacity – per RCW 42.30.110(1)(i)(ii) – Approximately 10-20 minute duration

To consider the selection of a site or the acquisition of real estate by lease or purchase when public knowledge regarding such consideration would cause a likelihood of increased price – per RCW 42.30.110(1)(b) – Approximately 10-20 minute duration

ADJOURNMENT
MINUTES OF THE REGULAR MEETING OF THE COMMISSION
PUBLIC UTILITY DISTRICT NO. 1 OF SKAGIT COUNTY, WASHINGTON

February 11, 2020

The meeting was held in the Aqua Room of the utility located at 1415 Freeway Drive, Mount Vernon, Washington.

Commissioners Present: Eron Berg, President; Al Littlefield, Vice President; and Joe Lindquist, Secretary.

Staff Present: George Sidhu, Brian Henshaw, Jay Sedivy, Kevin Tate, Mark Handzlik, Sam Shipp, Ryan Anderson, Mark Semrau, Mike Fox, Sally Saxton, Mike Demers, Ben Hansen, Luis Gonzalez, Doug Streeter, Skagit PUD Attorney Peter Gilbert, Bill Trueman, and Deana Dean.

Other Parties Present: Judy Littlefield, Dale Ragan, Jenna Friebel, Andrew Entrikin, Lee Driftmier, and Les Walker. Others may have appeared but were not identified.

Commissioner Berg called the meeting to order at 4:30 p.m. and the Pledge of Allegiance followed.

CONSENT AGENDA
Commissioner Lindquist moved to approve the Consent Agenda for February 11, 2020 which was passed unanimously.

1. Approval of Agenda 2/11/20
2. Approval of Minutes: 1/21/20 Commission Work Session, 1/21/20 Commission Special Meeting, and 1/28/20 Commission Meeting
3. Ratification of Vouchers 2/4/20
4. Voucher Approval:
   2/11/20 – No. 2909: Accounts Payable Voucher No. 17617 – 17617 ($24,077.54).
   2/11/20 – No. 2910: Accounts Payable Voucher No. 17607 – 17616 ($15,635.10 and Accounts Payable Voucher No. 17618 – 17658 ($269,948.21) and Electronic Funds Transfer ($115,361.92).

SKAGITNET UPDATE
Andrew Entrikin, SkagitNet Manager, provided an update on grant funding, projects, and operations management. Commissioner questions followed.

AGRICULTURE IN SKAGIT COUNTY - PRESENTATION
Jenna Friebel, Executive Director of Skagit County Drainage and Irrigation Districts Consortium, reviewed, by PowerPoint presentation, the Skagit County Irrigation Water Supply. Highlights included an overview of the consortium, the role of irrigation districts, joint legislative task force update, specialty crop grant, specifics of the Comprehensive Irrigation District Management Plan, evaluation of agricultural water
supply, evaluation of soil moisture, infrastructure assessment and capital improvement plan. Commissioner questions were answered throughout the presentation.

4th QUARTER FINANCIALS
Finance Manager Brian Henshaw reviewed, by PowerPoint presentation, revenue and expenditures as of December 31, 2019. Commissioner questions and comments followed.

AUDIENCE COMMENTS
None.

OLD BUSINESS
5. Manager’s Report
General Manager George Sidhu provided an update which included:
- George presented at the Skagit County Commissioner’s meeting this morning which is available for viewing on TV21. He received good feedback and they had questions about the Little Mountain Road Project and water rights. Dates are scheduled in March for other presentations at the cities. Dates will be forwarded to the Board in the event they would like to attend.
- Public outreach for the Fidalgo Water System is scheduled for March 5th at 7:00 pm at the Dewey Beach Community Center. Notice of a potential quorum will be posted as Commissioner Littlefield will attend and Commissioner Berg would like to attend. Commissioner Lindquist will be out of town.
- George will not be going to Olympia this week as legislators are not available. An electronic update will be sent to the legislators with a copy sent to the Board. George will look into scheduling site visits with the legislators later in the summer.

6. Safety Department Report
Safety Coordinator Jay Sedivy provided an update, by PowerPoint presentation, on Safety & Risk. Highlights included projects and accomplishments, Washington Water Regional Resiliency Assessment Program Project, contracting safety, training tracking, site safety, and new IH instruments. Commissioner questions followed.

7. Document Management Update
George gave a brief update on where the District is with selection of the document management system. The District received three responses to the RFP which has been narrowed down to Cadence and CDI. On-site visits are scheduled for the first week in March so staff can review the product. A final selection will be recommended, and it is anticipated a request to move forward will be brought at the March 24th Board meeting.

8. Campus Feasibility Update
Capital Projects Manager Sam Shipp provided, by PowerPoint presentation, an update on campus options. Overview included the 2-story option at the current location, 1-story option at the current location, and a proposed site plan for E. Jones Road in
Sedro-Woolley. Cost comparisons were provided. Commissioner questions were answered by Sam, Architect Lee Driftmier, and Engineering Manager Mark Handzlik throughout the presentation. Brief discussion followed.

NEW BUSINESS
9. Micro Hydro Memorandum of Understanding
   Sam Shipp provided, by PowerPoint presentation, an overview of the proposed Micro Hydro project. Commissioner questions and comments followed.

   Commissioner Lindquist moved to authorize the General Manager to sign a Memorandum of Understanding (MOU) between Skagit PUD and InPipe Energy Inc. Further discussion was held. Commissioner Lindquist moved to amend the motion to authorize the General Manager to sign a Memorandum of Understanding (MOU) between Skagit PUD and InPipe Energy Inc. with modification – changing the term to 24 months and subject to review and approval by the District’s attorney - which was unanimously approved.

INFORMATION
10. Judy Reservoir Data Report

COMMISSIONER COMMENTS
Commissioners Lindquist, Littlefield, and Berg had nothing to report at this time.

EXECUTIVE SESSION
The executive session originally scheduled was stricken from the agenda.

Commissioner Berg announced the need for an executive session to consider the selection of a site or the acquisition of real estate by lease or purchase when public knowledge regarding such consideration would cause a likelihood of increased price – per RCW 42.30.110(1)(b) – lasting approximately 10 minutes. He stated there may be action following the executive session.

The Commission recessed at 6:08 p.m. and reconvened at 6:40 p.m. No further action was taken after the Executive Session.

ADJOURNMENT
With no further business to come before the Board, the meeting was adjourned at 6:40 p.m.

Respectfully submitted:

Deana Dean
Clerk of the Board
Agenda Item #3

As of FEBRUARY 18, 2020

We, the undersigned Board of Commissioners of Public Utility District No. 1 of Skagit County, Washington, do hereby certify that the merchandise and /or services hereinafter specified have been received and are hereby approved for payment in the amount of $735,463.80 this 18th day of February, 2020.

The total is comprised of the following:

Accounts Payable voucher No. from 17659 through 17715 in the amount of $474,160.76, Electronic Funds Transfer in the amount of $73,289.35. Payroll Electronic Funds Transfers and checks No. 030148 through 030232 in the amount of $188,013.69.

Attest:

______________________________
President

______________________________
Manager

______________________________
Vice - President

______________________________
Auditor

______________________________
Secretary

Date: 02/14/2020

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547,450.11
February 25, 2020

TO: George Sidhu, P.E., General Manager

FROM: Mark Handzlik, P.E., Engineering Manager

BY: Mike Demers, Engineering Technician

SUBJECT: System Development Fund Request, Systima Project, PN 3795 CO 5067

Requested Action:
Authorize the use of $26,000 from the System Development Fund to upsize a proposed waterline on Farm to Market Road from Bay View Road to Malloree Lane for the Systima Port of Skagit project.

Background:
The Port of Skagit (developer) is constructing a new waterline on their property to serve a proposed industrial development and they are being required to extend this waterline to connect to an existing waterline at the intersection of Farm to Market Road and Malloree Lane. The District’s Water Policy Manual and the development’s fire protection needs require that the new waterlines are a minimum of eight inches in diameter.

Upsizing the proposed waterline extension on Farm to Market Road to twelve inches in diameter will better serve the overall water system needs in this area. This pipe segment is a portion of a longer planned pipeline that will eventually connect to existing infrastructure south of the project area.

Using the District’s standard waterline upsizing agreement structure, the estimated cost to upsize the proposed waterline from eight to twelve inches is $26,000. The final amount based on actual quantities would be paid to the developer, following project acceptance by the Board of Commissioners.

Fiscal Impact:
$26,000 from the System Development Fund upon project completion. The use of these funds is consistent with their intended purpose.
WATER PIPELINE UPSIZING AGREEMENT

This Agreement is entered into between Public Utility District No. 1 of Skagit County, herein referred to as the “District” and Port of Skagit, herein referred to as the “Developer”.

The Developer is required to install a water pipeline south along Farm To Market Road, from Malloree Lane to Bay View Road for approximately 1,690 feet. This is located within Skagit County, Washington. District resolutions require the Developer to install a minimum of an eight (8) inch diameter pipe in Farm To Market Road, and this is sufficient to meet their requirements. The District, in its endeavors to properly grid the entire distribution area and to provide adequate flows, has determined that it is in the District's best interest to continue the twelve (12) inch pipe south in Farm To Market Road.

Therefore, the Developer shall be required to assume the cost of an eight (8) inch pipeline and the District agrees to pay the Developer the cost difference between the Developer's needs, eight (8) inch, and the District's needs, twelve (12) inch. Increasing water main sizes for needs of the District and payment for same by the District is authorized within District Resolution No. 1626-94, Paragraph 3.B.(2). The Developer shall install 12-inch pipe in Farm To Market Road, in accordance with the construction plans and specifications for such mains approved by the District, and in accordance with applicable terms of District Resolution No. 1626-94.

The District and the Developer hereby covenant that, following completion of the installation of the twelve (12) inch water main, the Developer shall complete a detailed materials list itemizing the quantities of pipe and appurtenances for a twelve (12) inch installation, and a similar eight (8) inch installation in the Farm To Market Road (12-inch) section of the project. The cost of oversizing will be the difference between the District's cost for twelve (12) inch materials and the District's cost for eight (8) inch materials in District stock, or the least of three quotations from material vendors for pipe and appurtenances from whom the District normally requests quotations. This Agreement recognizes the difference in cost for the eight (8) inch to twelve (12) inch oversizing to be the cost of pipe and appurtenances only. "Appurtenances" is defined as an item, which is incorporated with the water pipeline. This includes in-line valves and fittings. In the event that the parties fail to so agree upon the actual cost differential, the parties shall select a professional engineer acceptable to both parties, (or in the event that parties cannot agree on an engineer at the end of said seven (7) days, each party shall select an engineer of it's own choosing within the following five (5) days who, between themselves, shall select a third, independent engineer within the next following five (5) days, which third engineer alone shall act in the place of an engineer mutually acceptable to the parties) which engineer shall be directed to (a) review the plans, specifications, material quotations, and other relevant cost information supplied by the parties, and (b) render a prudent decision as to the cost differential, which decision shall be final and binding upon the parties. The Developer shall incur the cost of its selected professional engineer, and the District shall incur the cost of its selected professional engineer.

The District agrees to pay the Developer the difference in the cost of the 12-inch materials and 8-inch materials to be installed in the Farm To Market Road, south from Malloree Lane to Bay
View Road. The estimated District's cost for the materials is $25,246.45 (Twenty-Five Thousand Two Hundred Forty-Six Dollars & 45/100). The exact amount will be determined upon completion of installation and when exact quantities are known. The District payment will not be made until the project has been completed.

DEVELOPER:

01-13-2020
Date

[Signature]

Executive Director
Print Title

Patricia H. Botsford-Martin
Print Name

DISTRICT:

[Signature]

Date

George Sidhu, P.E., General Manager
February 25, 2020

TO: George Sidhu, P.E., General Manager

FROM: Mark Handzlik, P.E., Engineering Manager

BY: Wendy LaRocque, Environmental Compliance Coordinator

SUBJECT: Surplus Property Disposition – Ranney Well Property (P23933) and Sedro-Woolley Ball Fields Property (P76290)

Requested Action:
Surplus the Ranney Well Property (P23933) and the Sedro-Woolley Ball Fields Property (P76290) and approve Resolutions 2273-20 and 2274-20.

Background:
The Ranney Well Property (P23933) was purchased in 1951 as a location for a Ranney well (a horizontal water collector which uses lateral perforated pipes under the riverbed and a pump system) to draw water from the Skagit River (see attached map). The well was constructed in 1954 and abandoned in the 1981. The Ranney Well water right was transferred to the Skagit River Diversion in 2002 and the well was decommissioned in 2019.

The Sedro-Woolley Ball Fields Property (P76290) was obtained in 1953 when the District purchased property for a well by friendly condemnation (see attached map). The well was drilled in 1953. The well was abandoned in 1964 and the water right transferred to the Skagit River Diversion in 2002. The District intends to decommission the well in 2020.

These properties no longer possess an operational benefit.

Fiscal Impact:
None at this time.

Attached: Ranney Well Site Map
          Sedro Woolley Ballfields Site Map
RESOLUTION NO. 2273-20

A RESOLUTION OF THE COMMISSION OF PUBLIC UTILITY DISTRICT NO. 1 OF SKAGIT COUNTY, WASHINGTON, DECLARING CERTAIN PROPERTY (DISTRICT IDENTITY – RANNEY WELL PROPERTY) SURPLUS TO THE DISTRICT’S NEEDS IN THE OPERATION OF ITS WATER SYSTEM AND PROVIDING FOR TRANSFER OF THE SAME

WHEREAS, the Board of Commissioners of Public Utility District No. 1 of Skagit County, Washington, has determined that the District owns certain real property identified by the District as Ranney Well (P23933) which is unnecessary to the operation of the District’s business within the definitions and requirements of RCW 54.16.180, and;

WHEREAS, the Ranney Well was abandoned, the water right transferred to the Skagit River Diversion in 2002, and the well decommissioned in 2019, and;

WHEREAS, the District has determined that transferring the property to other local governmental entities relieves the District of maintenance costs and further liabilities related to ownership, and;

WHEREAS, necessary utility easements benefiting the District can be established prior to disposition of either property, and;

WHEREAS, the Board desires to transfer the same to another local government entity under RCW 39.33.010, 020, and 43.09.210, provided the entity agrees the property is for public use, is accepted “as-is,” and is used for a governmental purpose within Skagit County.

WHEREAS, pursuant to RCW 39.33.020, the Commission held a public hearing on this matter on February 25, 2020 at 4:30 p.m.

IT IS HEREBY RESOLVED and determined that the following described real estate is not necessary, material to, or useful in such operations of the District’s water system and should be transferred to another local government entity, to wit:

LEGAL DESCRIPTION OF RANNEY WELL, MOUNT VERNON PROPERTY
Property ID: P23933
Tax Account No: 340407-0-028-0008

(3.3800 Acres) That portion of Government Lot 5 in Section 7, Township 34 North, Range 4 East, W.M., described as follows: Beginning at a point on the South line of said Lot, 353.1 feet West of the Southeast corner thereof; thence North to the Skagit River; thence along the Skagit River North 73 1/2° West, 227.2 feet, more or less, to the Northeast corner of a tract conveyed to Clarence A. Hanson by Deed recorded under Auditor’s File No. 443524; thence South 725.34 feet, more or less, to the South line of said Government Lot 5; thence East to the point of beginning, EXCEPT County road, situate in the County of Skagit, State of Washington.

ADOPTED by the Commission of Public Utility District No. 1 of Skagit County, Washington, at a regular meeting held this 25th day of February, 2020.

Eron Berg, President
Al Littlefield, Vice President
ATTEST
Joe Lindquist, Secretary
RESOLUTION NO. 2274-20

A RESOLUTION OF THE COMMISSION OF PUBLIC UTILITY DISTRICT NO. 1 OF SKAGIT COUNTY, WASHINGTON, DECLARING CERTAIN PROPERTY (DISTRICT IDENTITY – SEDRO WOOLLEY BALLFIELDS PROPERTY) SURPLUS TO THE DISTRICT’S NEEDS IN THE OPERATION OF ITS WATER SYSTEM AND PROVIDING FOR TRANSFER OF THE SAME

WHEREAS, the Board of Commissioners of Public Utility District No. 1 of Skagit County, Washington, has determined that the District owns certain real property identified by the District as Sedro Woolley Ballfields (P76290) which is unnecessary to the operation of the District’s business within the definitions and requirements of RCW 54.16.180, and;

WHEREAS, the Sedro Woolley well was abandoned, the water right transferred to the Skagit River Diversion in 2002, and the well is scheduled for decommissioning in 2020, and;

WHEREAS, the District has determined that transferring the property to other local governmental entities relieves the District of maintenance costs and further liabilities related to ownership, and;

WHEREAS, necessary utility easements benefiting the District can be established prior to disposition of either property, and;

WHEREAS, the Board desires to transfer the same to another local government entity under RCW 39.33.010, 020, and 43.09.210, provided the entity agrees the property is for public use, is accepted “as-is,” and is used for a governmental purpose within Skagit County.

WHEREAS, pursuant to RCW 39.33.020, the Commission held a public hearing on this matter on February 25, 2020 at 4:30 p.m.

IT IS HEREBY RESOLVED and determined that the following described real estate is not necessary, material to, or useful in such operations of the District’s water system and should be transferred to another local government entity, to wit:

LEGAL DESCRIPTION OF BALLFIELDS, SEDRO WOOLLEY PROPERTY
Property ID: P76290
Tax Account No: 4152-121-030-0006
(3.29 Acres) Lots 1 through 30, inclusive, Block 121, "Plat of the Town of Sedro, Skagit County, W.T.", according to the plat thereof, recorded in Volume 1 of Plats, page 18, records of Skagit County, Washington.

TOGETHER WITH vacated alley adjacent thereto which attaches by operation of law, vacated by order filed in Commissioners File No. 9819.

ADOPTED by the Commission of Public Utility District No. 1 of Skagit County, Washington, at a regular meeting held this 25th day of February 2020.

Eron Berg, President

Al Littlefield, Vice President

ATTEST

Joe Lindquist, Secretary
Date: February 20, 2020

TO: George Sidhu, P.E., General Manager

FROM: Mark Handzlik, P.E., Engineering Manager

SUBJECT: Revisions to Water Policy Manual
Cross Connection Control

Requested Action:
Adopt Resolution 2275-20 relating to cross-connection control and authorize revisions to Section 2 and Appendix C of the Water Policy Manual, including creation of a new Appendix F, related to Cross Connection Control.

Background:
Over the last six months, the Commission has been considering changes to cross connection control policies. These proposed revisions include the creation of a “Cross Connection Control Program Manual” to better describe the District’s policies related to cross connection control. An initial draft was presented to the commission by staff during the August 29, 2019 regular meeting of the Commission. Subsequent commission workshops regarding cross-connection control requirements were held on November 19, 2019 and January 17, 2020. Following these discussions, the following changes to District policy are proposed related to cross connection control:

1. Revisions to Water Policy Manual Section 2.5.5 (Cross Connection Control), replacing previous language and referring to the new appendix containing the Cross Connection Control Program Manual.
2. Revisions to Water Policy Manual Section C.7 (Backflow Prevention) of Appendix C (Water System Design Criteria), referencing the new appendix containing the Cross Connection Control Program Manual.

Fiscal Impact:
Up to $50,000 in funds from the 2020 operating budget would be allocated towards reimbursements to customers in accordance with the incentive program described in the new Appendix F to the Water Policy Manual.
RESOLUTION NO. 2275-20

A RESOLUTION OF THE COMMISSION OF PUBLIC UTILITY DISTRICT NO. 1 OF SKAGIT COUNTY, WASHINGTON, ADOPTING POLICY AND PROCEDURE CONCERNING CROSS CONNECTION CONTROL

WHEREAS, Public Utility District No. 1 of Skagit County (District) is the water purveyor for the City of Mount Vernon, Burlington, Sedro-Woolley and the surrounding areas supplying potable water for human consumption, irrigation, and manufacturing, and

WHEREAS, it is a State Department of Health requirement that the District protect the potable water system from actual and potential contamination by objectionable and hazardous liquids, solids, and gasses; and

WHEREAS, the Commission previously adopted policies relating to Cross Connection Control through Resolution No. 1744-97; and

WHEREAS, the Commission desires to amend and enhance District policies relating to Cross Connection Control,

NOW, THEREFORE, BE IT RESOLVED that section 2.5.5 (Cross Connection Control) and section C.7 (Backflow Prevention) of Appendix C (Water System Design Criteria) of the District’s Water Policy Manual are revised as drafted and dated February 25, 2020; and

BE IT FURTHER RESOLVED that a new appendix is added to the District’s Water Policy Manual as Appendix F “Cross Connection Control Program Manual” as drafted and dated February 25, 2020; and

BE IT FURTHER RESOLVED that this resolution supersedes Resolution No. 1744-97.

ADOPTED by the Commission of Public Utility District No. 1 of Skagit County, Washington, at a regular open meeting held this 25th day of February 2020.

____________________________________
Eron Berg, President

____________________________________
Al Littlefield, Vice President

ATTEST

____________________________________
Joe Lindquist, Secretary
Should loss or damage occur to District property, the responsible party may be charged for repair or replacement cost, administrative time and expense, and estimated loss of unmetered water. However, if a District employee is at the site and approves the method and work, the charge to the Customer may be modified or waived.

2.5.4 Access to Premises (1744)

- The Customer is to provide District representatives with safe, clear access and entry to Customer premises for service related work. The District’s facilities must remain unobstructed and accessible at all reasonable times so the District may:
  - Install, inspect, maintain, or remove District equipment or plumbing.
  - Read, connect, disconnect, or inspect metering devices.
  - Inspect Customer owned cross-connection control devices.
  - Inspect all water facilities on the premises for cross-connections. At any time a cross-connection is discovered and it is not immediately remedied by the Customer, the District reserves the right to immediately terminate water service to the Customer until such cross-connection is removed or protected by an approved Backflow Prevention Assembly as required by the District. Such inspection shall not make the District responsible for guaranteeing the absence of cross-connections.

- For locked Customer premises where District equipment is located, the Customer will allow District access with its own lock and key.

- The Customer shall provide space and protection for District facilities on the Customer’s premises, including meters, touch pads on outside walls and other equipment installed by and belonging to the District.

- Although the Customer is responsible at all times for maintaining Customer-owned equipment, the District may inspect Customer equipment before or after service connection.

However, such inspection, or lack of inspection, shall not be construed as placing upon the District any responsibility for the condition, or maintenance of the Customer’s plumbing, nor does it guarantee the absence of cross-connections in the Customer’s service.

2.5.5 Cross Connection Control

Washington Administrative Code (WAC) 246-290-490 establishes the minimum requirements for how the District is to protect its public water systems are to be protected from contamination via cross-connections. The District’s Cross Connection Control Program Manual prescribes required cross-connection control measures and documents the District’s policies that meet or exceed the minimum
requirements for cross connection control. The District’s Cross Connection Control Program Manual is described in Appendix XF.

The District’s responsibilities include protecting the entire water system from actual and potential contamination. Present state and federal regulations require that there shall be no cross-connection between a system furnishing potable water and a system furnishing non-potable water. The Customer shall install cross-connection control assemblies when deemed necessary or when required by the District. The entire cost of the installation shall be the responsibility of the Customer, and any assemblies shall remain its ownership and its responsibility. District representatives may make inspection of such assemblies periodically. It shall be the Customer’s responsibility at all times to maintain its cross-connection control assemblies in a fully functioning condition. All Department of Health (DOH) requirements must be satisfied.

The installation and maintenance of any cross-connection that could endanger any water supply of the District is prohibited. Existing or future water service to any premises will not be allowed to exist by the District if a cross connection control assembly required by the Department of Health or by the District is not documented in writing to be permanently installed, maintained, and tested annually. Water service will be discontinued to any consumer that refuses admittance of District personnel to their premises for the purpose of cross connection control. Water service will not be restored until such conditions or defects are documented to be correct. The Customer shall pay District expenses incurred to enforce these provisions before water service is restored. (1744-97)

The control or elimination of cross connections shall be in accordance with the provisions of the WAC 246-290-490 or subsequent updates. The policies, procedure, and criteria for determining appropriate levels of protections shall be in accordance with the accepted procedures and practices defined in Cross Connection Control Manual Pacific Northwest Section—American Waterworks Association, 6th Edition, or any superseding edition and Manual of Cross Connection Control—Foundation for Cross Connection Control and Hydraulic Research, University of Southern California, current edition. Policies will be interpreted and carried out by a State-certified cross connection control specialist or backflow assembly tester, whichever applies. All cross connection control assemblies must comply with State DOH requirements. (1744-97)

2.5.6 System Disturbances

Water service shall not be utilized in such a manner as to cause severe disturbances or pressure fluctuations to other Customers of the District. If any Customer uses equipment that is detrimental to the service of other Customers of the District, the District may require the Customer to install, at his own expense, equipment to control such disturbances or fluctuations.

2.5.7 Interruption of Service

- It is the District’s intent to provide adequate and continuous service with minimum interruption. However, the District:
C.4.6 Pressure Reducing Valves at Water Services (1626)

The Applicant may (PUD Note) install pressure-reducing valves on water services when static line pressures exceed 80 psi. At the Applicant’s request, the District will calculate or measure the water pressure at the Applicant’s point of delivery as an aid to determining whether a reducing valve is required. Pressure reducing valves, when required, shall be installed and maintained by the Applicant. Pressure reducing valves are not to be installed in the meter box. (1626)

C.5 Control Valve Stations

A control valve station (pressure reducing, pressure sustaining, etc.) shall be installed at the interface between pressure zones; the District shall select the final location of each control valve station. Control valves shall be sized based on anticipated fireflows at projected peak hour demand conditions. If the receiving pressure zone contains a storage reservoir, the control valve station shall contain a single control valve with slow-acting pilot; if the receiving pressure zone contains no storage reservoir, the control valve station shall contain duplex control valves (6x2, 8x3, etc.) and a pressure relief valve. Control valve stations shall normally be on a bypass to the main waterline, shall be located below grade in a concrete vault, and shall include a mainline meter. The pressure relief valve shall discharge visibly above grade to a catch basin or other appropriate structure and drain away to a non-environmentally sensitive area.

On high pressure transmission lines, a pressure and/or flow control valve, and a pressure relief valve for high volume connections, shall be installed between the transmission line and the customer’s water service/distribution line connection.

C.6 Mainline Meters

Mainline meters shall be located along transmission lines, between pressure zones, and at urban growth area boundaries to record the transfer of water between areas. Each mainline meter station shall normally be below grade in a concrete vault. The station shall include the meter and a test tee. The meter shall be located in-line, with uninterrupted flow upstream and downstream as recommended by the manufacturer, and shall be sized for maximum projected demands during the life of the meter. The mainline meter shall also, if required by the District, have a waterline bypass around the meter vault.

C.7 Backflow Prevention

The District is responsible for protecting its water systems from actual and potential contamination. Current State and federal laws prohibit any cross-connection, actual or potential, between a system furnishing potable water and a system furnishing non-potable water. The District’s Construction Department shall ensure the prevention of back flow using cross-connection control assemblies is in conjunction with Cross Connection requirements listed in Section 2.5.5. Cross-connection control Backflow protection assemblies shall be installed by the Applicant when required by the District and in accordance with the District’s Cross Connection Control Program Manual (See Appendix XF) or when required.
entire cost of the installation and testing shall be borne by the customer and shall remain the Applicant’s ownership and responsibility. Annual testing of such assemblies shall be made by a Washington State Certified Backflow Assembly Tester. The District shall receive the original test results document. Each customer shall maintain its cross connection control assembly(ies) in a fully functioning condition. All DOH and District conditions shall be satisfied as a condition of District water service.

C.8 Storage (Tanks)

The District’s goal is to provide standby storage in each local area of at least 800 gallons per service. This is equivalent to two days of peak residential use and four times the residential planning figure of 200 gpd. Storage shall include operational storage, equalization storage, standby storage and fire storage, as required, and shall be sized for the projected number of services in the water system, or area of the water system to be served by the storage, over the water system’s useful life. Each developer with a substantial project requiring new storage facilities as part of the project shall be responsible for the storage capacity for the project; the District may elect to increase the capacity of a new reservoir(s) and bear the incremental increase in cost. Each new storage reservoir shall incorporate the following essential design considerations:

1. Design each reservoir per the most current version of AWWA tank design standards (D-100, Welded Steel Tanks; D-103, Bolted Steel Tanks; D-110, Wire Wound Circular Prestressed-Concrete Water Tanks), using the pseudodynamic effective mass procedure. Cast-in-place concrete reservoirs shall be designed per ACI 318, Building Code Requirements for Reinforced Concrete and Circular Concrete Tanks without Prestressing, Portland Cement Association. All reservoirs shall be designed for wind speed of 120 mph, seismic zone 3, and roof live load of 125 psf. Design the reservoir foundation based on the recommendations of a geotechnical engineer, including soil bearing, drainage, settlement potential and stability of the soils under design seismic conditions.

2. Design each reservoir with adequate freeboard. Freeboard shall be measured from the high water level (top of the overflow pipe) to the top of the reservoir wall, and shall be sized to allow for sloshing of the reservoir in an overflow condition, including for water treatment plant clarifiers and filter units, to ensure that walls and roof structures will not be adversely affected during the design seismic event.

3. Measure reservoir capacity from the normal operating hi-pool level (a point 12-inches below the overflow elevation) to the low water level (at the top of the outlet pipe or silt stop, whichever is higher).

4. Cover each reservoir and fit with water-tight, insect proof hatch(es), manway(s) and atmospheric vent(s). Furnish each vent with woven stainless steel insect screen, minimum 24 ga., secured gap-free with stainless steel straps; roof slope shall be minimum 1/4-inch per foot.

5. Furnish each reservoir with lightning arrestor(s) and electrical grounding, as appropriate.
Appendix F
Cross-Connection Control Policy Manual

Skagit PUD
PUBLIC UTILITY DISTRICT

CROSS-CONNECTION CONTROL PROGRAM
MANUAL
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EXECUTIVE SUMMARY

—— Congress passed the “Safe Drinking Water Act” with the intent of protecting the public health and welfare of all public water supply users in the United States. The Environmental Protection Agency (EPA) interpreted this mandate to mean that certain contaminants should not be found in water “delivered to the free-flowing outlet of the ultimate user.” Thus, protection of the water system from these contaminants became the responsibility of the water purveyor.

—— The Public Utility District No. 1 of Skagit County (District) relies on a multiple barrier approach to protect the public water supply and, subsequently, public health. One of the most important aspects of the multiple barrier approach is an active and effective cross-connection control program. The greatest public health risk lies in the introduction of a contaminant into the public water supply system, as the water distribution system can provide the conduit for the spread of the contaminant to a large population. Once water leaves the control of the distribution system, the District must consider the possibility that the water could become contaminated. Accordingly, the District must consider the plumbing system of all customers to be a potential health hazard. The hazard, and the health risk, may vary from minor to severe.

—— Under certain hydraulic conditions, water can flow in the opposite direction from the intended direction of flow (“backflow”). Two conditions that can cause backflow are when pressure is reduced in a supply line or from a source of pressure on the customer side that exceeds the supply pressure. Reduced pressure can be caused from the opening of a fire hydrant or a break in the water main. Sources of pressure that can exceed the supply pressure include, but are not limited to, booster pumps, thermal expansion, and elevated piping. If a cross-connection exists, or is created, chemicals, gases, or substances other than potable water could be introduced into the distribution system.

—— There are numerous backflow incidents where cross-connections have been responsible for contaminating drinking water. The potable water supply piping often gets connected to piping carrying another fluid or gas, such as an air conditioner containing chemicals to kill algae. A garden hose submerged in a swimming pool, water trough for animals, a car’s radiator to flush out antifreeze, or attached to a fertilizer sprayer, could siphon contaminants back into the public water system. Other common cross-connections include irrigation systems, private wells, and water recirculating systems.

—— Inconsistent reporting and documentation procedures make it difficult to assess the full scope of contamination and outbreaks of illness due to backflow incidents. Around eighty incidents have been reported to Washington State Department of Health since 1996. One example is when an unprotected irrigation system with untreated water backflowed into the domestic water lines and caused eleven cases of giardiasis. Another example is when a city’s residents were without water for four days after herbicide 2,4-D was back-siphoned into the community’s water system.

—— Many of the District’s customers conduct activities that could contaminate the public water system if cross-connections and a backflow event occur. Examples include wastewater treatment plants, dairy farms, car washes, and food processing plants. The District has experienced dealt with a few minor backflow incidents of air being introduced into the distribution system. Irrigation systems are very
common and if not winterized properly can backflow air and any water that remains in the system. Compressed air is used to purge the system and if the correct valves are not closed to isolate the system backflow can occur. Another backflow incident happened at a hospital served by the District. A pump was installed to increase pressure in another building. Unknown to facility staff, the pump was repeatedly turning on and off, causing major water hammer. There was a backflow assembly installed but the water hammer was too powerful and happening too fast that the relief valve on the assembly could not keep up. Backflow occurred, but fortunately subsequent water quality samples tested taken were negative for contamination. Facility staff discovered the issue only because the assembly was releasing so much water. The pump is connected to everything downstream in the hospital and had potential to backflow something hazardous.

This Cross-Connection Control Program Manual (CCCPM) documents the District’s compliance with requirements of Washington State Department of Health (DOH) and Washington Administrative Code (WAC) to implement a cross-connection control program. The purpose of the program is to protect the public water system from contamination via cross-connections and therefore the health and safety of the District’s customers. The District often requires existing services to install a new backflow prevention assembly. These requirements can cause unexpected costs for the customer which leads to conflict and confusion.

The minimum required elements of a Cross-Connection Control Program are:

Element 1: Establishment of legal authority and program policies.

Element 2: Evaluation of premises for cross-connection hazards.

Element 3: Elimination and/or control of cross-connections.

Element 4: Provision of qualified personnel.

Element 5: Inspection and testing of backflow preventers

Element 6: Quality control of the testing process.

Element 7: Response to backflow incidents

Element 8: Public education about cross-connection control.

Element 9: Record keeping.
1. INTRODUCTION

Washington Administrative Code (WAC) 246-290-490 establishes the minimum requirements for how the District is to protect its public water systems from contamination via cross-connections. In accordance with these requirements, this Cross-Connection Control Program Manual (CCCPM) documents the District’s policies related to cross-connection control.

The CCCPM describes how the District administers the minimum requirements of WAC 246-290-490, and includes specific requirements, clarifications, and procedures that are not explicitly defined in the law. The CCCPM provides a clear and concise description of District policy in most circumstances. In rare circumstances, the District may refer to additional resources related to cross-connection control in the implementation of the CCCPM. If determined necessary by the District, the following resources may be used as a reference while administering this program:

- Washington Administrative Code (WAC)
- Department of Health Guidance Documents
- Tenth Edition (or any superseding edition) Manual of Cross-Connection Control, University of Southern California

The District’s responsibility for cross-connection control begins at the water supply source, includes all public water treatment, storage, and distribution facilities, and ends at the point of delivery to the customer’s water system. The point of delivery to the customer’s water system begins at the downstream end of the service connection. Most often this is the outlet of the water meter and is a valve in the case of a fire protection line service.

The District is not responsible for eliminating or controlling cross-connections within the customer’s water system. Under chapter 19.27 RCW, the responsibility for cross-connection control within the consumer’s water system lies with the Authority Having Jurisdiction (AHJ) or Building Official. Based on these requirements, the District’s CCCPM is focused on protection of the public water system and is not intended to prevent cross-connections within the premises. The CCCPM will be provided to the applicable AHJ Authorities Having Jurisdiction within the District’s service area.

The District’s works to ensure that cross-connections between the distribution system and a customer’s premises are eliminated or controlled by the installation of an approved backflow preventer or approved air gap that is commensurate with the assessed degree of hazard. The CCCPM describes how the District will determine the required protection.

The customer is required to install, maintain, and test backflow protection assemblies (or approved air gaps) as determined by the District. The cost of assembly design, installation, maintenance, replacement, and testing are the responsibility of the customer. Backflow protection assemblies and approved air gaps are the property and responsibility of the customer. District representatives may make inspections of such equipment periodically.

Customers who fail to cooperate in the installation, maintenance, repair, inspection, or testing of backflow preventers or approved air gaps as required by the District, will not receive a water service or
will have service disconnected. Water service disconnection will occur as described in the enforcement section of the CCCPM.

2. DEFINITIONS:

**AGRICULTURAL (farms and dairies)** – specific land areas on which agricultural activities are conducted. Agricultural uses and practices include, but are not limited to: producing, breeding, or increasing agricultural products; rotating and changing agricultural crops; conducting agricultural operations; maintaining, repairing, and replacing agricultural equipment; maintaining, repairing, and replacing agricultural facilities.

**APPROVED AIR GAP (AG)** – a physical separation between the free-flowing end of a potable water supply pipeline and the overflow rim of an open or non-pressurized receiving vessel. To be approved the separation must be at least:

- Twice the diameter of the supply piping measured vertically from the overflow rim of the receiving vessel, and in no case be less than one inch, when unaffected by vertical surfaces (sidewalls);
- Three times the diameter of the supply piping if the horizontal distance between the supply pipe and a vertical surface (sidewall) is less than or equal to three times the diameter of the supply pipe. Or if the horizontal distance between the supply pipe and intersecting vertical surfaces (sidewalls) is less than or equal to four times the diameter of the supply pipe and in no case less than one and one-half inches.

**APPROVED BACKFLOW PREVENTION ASSEMBLY** – an RPBA, RPDA, DCVA, DCDA, of make, model, and size that is approved by the District. Assemblies must appear on the current approved backflow prevention assemblies list developed by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research.

**AUTHORITY HAVING JURISDICTION (AHJ)** – the local official, board, department, or agency authorized to administer and enforce the provisions of the plumbing codes as adopted under chapter 19.27 RCW. This includes the Building Official from the cities of Burlington, Mount Vernon, Sedro-Woolley and Skagit County.

**AUXILIARY WATER SUPPLY** – a water supply (other than the District’s water supply) on or available to the consumer’s premises. A well is an example of an auxiliary water supply.

**BACKFLOW** – the undesirable reversal of flow of water or other substances through a cross-connection into the District’s water system, or consumer’s potable water system.

**BACKFLOW ASSEMBLY TESTER (BAT)** – a person holding a valid BAT certificate issued under chapter 246-292 WAC.

**BACKFLOW PREVENTION DEVICE** – a backflow preventer that is not designed for in-line testing.

**BACKPRESSURE** – a pressure caused by a pump, elevated tank or piping, boiler, or other means, on the consumer's side of the service connection that is greater than the pressure provided by the public water system and which may cause backflow.

**BACKSIPHONAGE** – backflow due to a reduction in system pressure in the purveyor’s distribution system and/or consumer's water system.
CROSS-CONNECTION – any actual or potential physical connection between a public water system or the consumer's water system and any source of non-potable liquid, solid, or gas that could contaminate the potable water supply by backflow.

CROSS-CONNECTION CONTROL SPECIALIST (CCS) – a person holding a valid CCS certificate issued under chapter 246-292 WAC.

DEGREE OF HAZARD – the type of potential risk or hazard, such as pollution or contamination, that is determined through an evaluation of the conditions within a consumer’s water system.

DOUBLE CHECK DETECTOR ASSEMBLY (DCDA) – a backflow prevention assembly consisting of two approved double check valve assemblies, set in parallel, equipped with a meter on the bypass line to detect small amounts of water leakage or use.

DOUBLE CHECK VALVE ASSEMBLY (DCVA) – a backflow prevention assembly composed of two single, independently acting check valves, spring loaded to the closed position, and installed as a unit with, and between, two resilient seated shutoff valves and having four properly located resilient seated test cocks.

FACILITY SURVEY – an on-site review to assess the degree of hazard. A survey of the customer’s premises is not intended to be an inspection of the entire plumbing system; it allows a District cross-connection control specialist to determine the degree of hazard and commensurate backflow prevention requirements. The District may waive an on-site review depending on information received from the customer, or when related to proposed new service connections.

FIRE PROTECTION SERVICE CONNECTION – a water service for fire protection that is fitted with such fixtures only as are needed for fire protection and is entirely disconnected from those used for other purposes.

HIGH HEALTH HAZARD – Any physical, chemical, biological, or radiological substance that may enter the drinking water supply and impair the quality of the potable water and may result in injury, poisoning, or the spread of disease.

IN-PREMISES ISOLATION – the practice of installing backflow prevention assemblies, devices or methods at the point of hazard.

IRRIGATION SERVICE CONNECTION – a meter installed solely for the purpose of metering non-agricultural irrigation water to a customer’s premises.

LOW HEALTH HAZARD – those contaminants which, at the levels found in the water, could cause adverse aesthetic problems to the drinking water supply such as taste, odor and color of the water but do not present a danger to public health.

NON-POTABLE – any water, liquid, gas, or other substance that is not intended for human consumption.

NON-RESIDENTIAL SERVICE CONNECTION – all service connections that do not meet the definition of residential service connection, fire protection, or irrigation service connections.

POTABLE WATER – water which is safe for human consumption and free from harmful or objectionable materials that could cause injury, disease or harmful physiological effects.
PREMISES – any property where water service is provided, including all buildings, improvements, moveable and permanent structures.

PREMISES ISOLATION – a method of protecting a public water system by installation of approved air gaps or approved backflow prevention assemblies at or near the service connection, or alternative location acceptable to the purveyor, to isolate the consumer's water system from the purveyor's distribution system.

REDUCED PRESSURE BACKFLOW ASSEMBLY (RPBA) – a backflow prevention assembly composed of two independently acting check valves spring loaded to the closed position and an automatically opening differential relief valve located between the two check valves. Installed as a unit with, and between, two resilient seated shutoff valves and having four properly located resilient seated test cocks.

REDUCED PRESSURE DETECTOR ASSEMBLY (RPDA) – a backflow prevention assembly incorporated of two approved reduced pressure backflow assemblies, set in parallel, equipped with a meter on the bypass line to detect small amounts of water leakage or use.

RESIDENTIAL SERVICE CONNECTION – a meter serving a single-family dwelling or residential building that consist of three or less units. Meter may serve associated uses such as agricultural, home-based businesses, or approved accessory dwelling units (ADU).

SEVERE HEALTH HAZARD – a cross-connection which could impair the quality of potable water and create an immediate, severe health hazard through poisoning or spread of disease by contaminants from radioactive material processing plants, nuclear reactors, or wastewater treatments plants.

3. AUTHORITY HAVING JURISDICTION (AHJ)

Washington Administrative Code requires water purveyors and local administrative authorities to coordinate on cross connection issues. A successful Cross-Connection Control Program depends on cooperation and collaboration between the purveyor and AHJ authorities having jurisdiction. The local authorities in the District’s service area include the City of Burlington, City of Mount Vernon, City of Sedro-Woolley, and Skagit County.

The District’s responsibility for cross-connection control ends at the point of delivery to the consumer’s water system. The responsibility for cross-connection within the consumer’s water system lies with the AHJ authority having jurisdiction.

The District’s policy for non-residential connections is to implement a premises isolation program that protects the public water system, and the AHJ will establishes requirements for the customer’s premises in accordance with plumbing codes. The District will monitor backflow preventers that protect the public water system. When premises isolation is established at a service connection has been converted to premises isolation, the District will then only monitor the assembly(s) that isolates the public water system from the consumer’s water system. In these situations, the District will discontinue monitoring of other in-premises backflow preventers. For residential connections, the District will allow and monitor backflow protection at the point of hazard where allowed by this CCCPM.
The District will continue to strive for improved coordination and collaboration with the AHJs. The District relies on their communication from an applicable AHJ regarding about permit-driven activity to help in the identification of existing services which may require backflow protection. If the District is unable to obtain this information, future public record requests may be necessary.

4. PREMISES AND IN-PREMISES ISOLATION REQUIREMENTS CROSS-CONNECTION CONTROL PROGRAM REQUIREMENTS

The District implements a combination program that relies on both premises isolation and in-premises isolation for protection of the public water system. Customers shall comply with the minimum protection requirements specified in subsection (4)(A) and (4)(B) of this section. All other uses will require a facility survey, conducted by the District, to determine requirements for backflow protection.

A. PREMISES ISOLATION

The control or elimination of cross-connections shall be no less stringent than the following. Premises with activities or water uses that may create a potential or actual cross-connection require the premises owner to provide backflow prevention methods, as determined by the District, commensurate with the degree of hazard. The following list includes, but is not limited to, the type of premises, and/or the type of water use, at or within a premises, that require backflow prevention, and the District’s minimum allowable method for each.
### Table: Description of Hazard or Premises vs. Minimum Protection at Service Connection

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<thead>
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<td>Agricultural rate customers</td>
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</tr>
<tr>
<td>Survey access denied or restricted</td>
<td>RPBA</td>
</tr>
<tr>
<td>All other premises listed in Table 9 WAC-246-290-490</td>
<td>RPBA</td>
</tr>
</tbody>
</table>

*Backflow prevention not required on residential flow-through fire protection systems constructed entirely of approved potable water piping, materials and fixtures.
B. IN-PREMISES ISOLATION

Backflow protection is allowed at the point of hazard for residential hazards such as, but not limited to, the following:

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</tr>
</tbody>
</table>

5. FACILITY SURVEY SCHEDULE

A. The District will establish the priority of its facility surveys based on the degree of hazard and the minimum DOH requirements. Once the District is made aware of a service connection that does not have proper cross-connection control, priority of the enforcement process will be on those categorized as a higher risk by the District. The District shall ensure that the customer installs approved backflow preventers commensurate with the degree of hazard within 30-90 days of the District notifying the customer. The District reserves the right to deviate from this schedule. Once the District has completed a facility survey and determined the level of protection required, if any, the customer will be notified in writing of the requirements and schedule. Enforcement procedures for non-compliance with backflow prevention requirements are described in Section 7.

B. Facility surveys will occur as follows:

1. NEW SERVICE CONNECTION
   Upon application for water service, the District will interview the customer about the proposed use and determine the appropriate level of backflow prevention required. These requirements will be communicated to the customer prior to processing the application. The service shall not be activated until backflow protection requirements have been approved by the District. Temporary activation is allowed, to facilitate testing, but service will be disconnected if testing is not completed in a timely manner.

2. EXISTING SERVICE CONNECTION
The District may require a facility survey when made aware of proposed permit-driven activity or other similar communication from the AHJ, or when a customer inquiry to the District initiates an investigation. Proposed permit-driven activity includes, but is not limited to, new construction, remodeling, additions, revised plumbing, and land divisions or changes in use. Facility surveys may also be required if a customer is proposing changes to existing water services or new water system improvements at a Pre-Application/Pre-Development Meeting with the AHJ. Facility surveys shall assess both existing and proposed uses. The District does not otherwise proactively search for, or enforce, requirements for new backflow protection on existing service connections.

6. ANNUAL BACKFLOW PREVENTION ASSEMBLY TESTING

A. All backflow prevention assemblies will be tested upon installation, after repair, reinstallation or relocation, and annually thereafter. The District will notify customers annually by mail in the month prior to the month of their annual due date that an annual test of their backflow prevention assembly is required. The test must be completed, and the associated test report received by the District before the last day of their annual due date month of the same year. It is the customer’s responsibility to assure that the test report has been received by the District. The District will not acknowledge that a test has been completed until the test report has been received.

B. A Backflow Assembly Tester (BAT), holding a valid Washington State BAT certification is required to complete all testing of backflow prevention assemblies. Testers will be required to furnish a current Washington State Department of Health certification and a verification of test equipment calibration to the District, prior to the District’s acceptance of backflow prevention assembly test reports.

C. The customer will be responsible for the replacement or repair of the backflow prevention assembly if the assembly fails to test satisfactorily. The replacement, repair and successful testing shall be accomplished prior to the customer’s annual due date.

D. The District is transitioning to an online only backflow test entry system. Certified BAT Testers and testing companies will be required to submit test results online when the test entry system is fully operational.

7. ENFORCEMENT

A. General Enforcement

Existing or future water service to premises will not be allowed by the District to exist, or be “grandfathered” in by the District, if a backflow prevention assembly required by the District is not documented in writing to be permanently installed, maintained and tested annually.

Section 2.4.7 of the District’s Water Policy Manual describes the District’s authority to disconnect service when a customer fails to meet cross-connection control requirements. The
following circumstances may result in disconnection of water service:

- Refusal to install a backflow prevention assembly when required by the District.
- Failure to replace an improper type, and/or failure to replace or repair a defective or improperly installed backflow prevention assembly.
- Failure to have the backflow prevention assembly tested per District requirements.

Advanced notification will be provided prior to disconnection of the water service for non-compliance, unless the degree of hazard, or potential degree of hazard, is so severe that it could cause immediate contamination and/or health risk. All costs incurred enforcing the action shall be borne by the property’s responsible party.

The progressive enforcement process, as described below, details how the District will enforce non-compliance when new protection is required on existing services or when customers fail to comply with backflow assembly testing requirements.

Removal, replacement, or relocation of a backflow prevention assembly requires District approval and inspection, and may require a new facility survey. The removal of an assembly is not allowed until a facility survey is completed and a determination is made that the hazard is eliminated. If there are other assessed hazards at the time of the facility survey, a new assembly installation will be required commensurate with the degree of hazard.

B. Enforcement Process - New Installations on Existing Services

After a facility survey has been completed on an existing service, the required backflow prevention assemblies must be installed within ninety (90) days of the District notifying the customer. A reminder notice shall be mailed thirty (30) days prior to due date.

If requirements have not been satisfied by the due date, a past due notice will be mailed to the customer one (1) working day after the original due date, allowing the delinquent customer fifteen (15) additional calendar days to complete the installation.

If requirements have not been satisfied by the revised due date, a final notice shall be mailed to the customer notifying the customer that their water service will be disconnected if requirements are not completed. The final notice will provide (10) ten calendar days’ notice of the scheduled disconnection. Service may be disconnected at that time if the requirements are not satisfied.

The District reserves the right to deviate from this schedule. Before turn on/reconnection, the Customer will be advised of current charges for service turn on/reconnection. (See Appendix A, Table A-9 in the District’s Water Policy Manual).

C. Enforcement Process - Annual Testing

If the annual backflow assembly test has not been received by the customer’s established due date, a second notice will be mailed fifteen (15) days after the original due date. The second notice will state that the annual backflow assembly test is Past Due and must be completed and submitted within thirty (30) days.

If requirements have not been satisfied following the second notice and additional thirty-day period, a third notice will be mailed fifteen (15) days after second due date. The third notice will
state that testing must be completed and submitted within fifteen (15) days.

If requirements have not been satisfied by the revised due date, a final notice shall be mailed to the customer notifying the customer that their water service will be disconnected if requirements are not completed. The final notice will provide (10) ten calendar days' notice of the scheduled disconnection. Service may be disconnected at that time if requirements have not been satisfied.

The District reserves the right to deviate from this schedule. Before turn on/reconnection, the Customer will be advised of current charges for service turn on/reconnection. (See Appendix A, Table A-9 in the District’s Water Policy Manual).

D. Appeal Process

Any Customer or other person who believes he/she has been wrongfully treated by a decision of the District related to this CCCPM may request an appearance before the Commission in accordance with Section 2.8 (Dispute Resolution) of the District’s Water Policy Manual. The customer’s written notification to initiate the Dispute Resolution process must be received prior to the scheduled disconnection date to stay the scheduled disconnection.

Any customer who would like to dispute a decision related to this manual can request a meeting with District staff. If enforcement has begun, the customer shall submit a written appeal a minimum of five days before the scheduled disconnection. The District will extend the disconnection date for thirty days in order to pursue a resolution. If no resolution is achievable, the customer may request an appearance before Commission in accordance with the District’s Dispute Resolution process (Water Policy Manual, Section 2.8). The customer’s written notification to initiate the Dispute Resolution process must be received five days prior to the scheduled disconnection.

8. PROGRAM ADMINISTRATION

The District is responsible for the development and implementation of the Cross-Connection Control Program. The District employs multiple certified Cross-Connection Control Specialists in support of the Program. Program administration duties are the responsibility of the Engineering Department.

Public education will include periodic pamphlet distribution, newsletter columns, website updates and continued discussion with existing and new customers.

The District maintains all cross-connection control records. Technology is utilized to keep a master list of service connections where backflow preventers protect the public water system from contamination. Specialized tracking software programs keep inventory information on approved air gaps and backflow assemblies including, location, assembly description, assessed degree of hazard and history of inspections and testing.
9. BACKFLOW INCIDENT RESPONSE

In the event of a possible or suspected backflow incident, the following general steps will be taken:
10. CROSS-CONNECTION CONTROL INCENTIVE ASSISTANCE PROGRAM

Overview
Due to the long history of the District’s water systems, evolving regulations and practices related to cross-connection control, and changes to uses on a given property over time, the District may require an existing customer to install backflow preventers where they did not exist in the past. This requirement may be unexpected to the customer and can result in unanticipated costs.

The incentive assistance program described below works to provide financial assistance to a limited number of customers faced with the requirement to install backflow preventers at an existing water service location. Providing a level of financial assistance to customers in these situations can directly benefit the District’s efforts to protect the public water system. This assistance can result in reduced staff time enforcing cross-connection policy and may expedite the installation of backflow preventors at unprotected service locations. In this manner, the incentive assistance program is within the District’s public charge and mission to provide our customers with high-quality water services at an affordable price.

Funding levels for the assistance program shall be established by the Board of Commissioners during each annual budgeting process.

Application process
Existing customers that require cross-connection control for premises isolation (DCVA or RPBA) would be eligible to apply, except for the following customers who are not eligible for the incentive program:

- customers applying for or currently approved for the agricultural water rate
- customers and those requesting to upsize an existing water service.
- customers with a premises requiring new backflow protection for more than the initial 90-day period.

The District will consider applications on a “first come, first served” basis. When annual funding as detailed in the current District budget for a given year is fully allocated to approved applications, the District will cease approving allocations until the following year and pending budget approval. Application approval would be effective for six (6) months from the date of District approval notification to District approval of project completion (installation and testing).

Assistance details
A lump sum reimbursement would be provided by the District to the customer upon successful installation, successful testing of the new backflow prevention assembly, and submittal of required cost documentation.

Reimbursed costs shall be clearly associated with the basic scope of backflow prevention assembly installation as depicted on District standard details, excluding and will not include costs related to surface restoration, and electrical components, and non-contracted labor. A conceptual design or sketch of the proposed installation shall would be supplied by the customer with the application.

Reimbursements shall would be in accordance with the following table. Reimbursement “Not to Exceed” (NTE) amounts would be considered for revision each year as a part of the annual budgeted process.
2020 Cross-Connection Control Incentive Assistance Program funding limits:

<table>
<thead>
<tr>
<th>Cost type</th>
<th>DCVA Assembly</th>
<th>RPBA Assembly</th>
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<tr>
<td>Materials (customer provided receipt)</td>
<td>NTE $600</td>
<td>NTE $1,800</td>
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<tr>
<td>Subcontractor (customer provided receipt)</td>
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<td>NTE $500</td>
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<tr>
<td>Total</td>
<td>NTE $1,100</td>
<td>NTE $2,300</td>
</tr>
</tbody>
</table>

11. CROSS-CONNECTION CONTROL ENGINEERING STANDARD DETAILS
Agenda Item #9

PUD No. 1 of Skagit County Engineering Manager

APPROVED ON:  AUGUST 16, 2016

Standard Installation of Double Check Detector Assembly

**Materials:**
- Concrete Vault with Access Hatch Doors. H-20 Loading.
- Link Seal, (Typ.)
- Fire Department Connection Piping.
- Gravity Drain Line or Sump Pump Discharge Line.
- Restrained Flange Coupling Adapter.
- Check Valve.
- Gravity Drain or Sump & Pump.
- Isolation Valve Flange.
- Double Check Detector Assembly.
- Bypass Meter & Bypass DCVA.
- Concrete Thrust Restraining.
- PVC Support - Rust Resistant.
- Isolation Ball Valve.
- In Line Check Valve.
- 6" Compacted Class B Backfill Minimum (WSDOT)
- Flange Connection Poured in Concrete.
- Concrete Ballast.
- Geotextile Separation Fabric.
- OSHA Approved Ladder.

**General Notes:**
1. Backflow assembly must be selected from the current Washington State Approved List of Assemblies and installed in the manner which it is approved. No modification to assembly is allowed.
2. The DCVA is to be installed immediately downstream of the District's service connection, final location to be approved by the District.
3. Hatch lid drain channel to drain to daylight.
4. Engineer responsible to ensure adequate ballast is provided to prevent floating of vault.
5. Sump pump shall be wired per Washington State electrical code and electrical permit required. The discharge pipe shall be connected to the nearest approved on-site storm drainage structure.
6. Brass plugs to be installed in the test cocks. Test cocks must be installed facing up or to one side.
7. District to supply and install Badger Recordall bypass meter.
8. Customer responsible for Type III service fee to install Badger Recordall bypass meter.
9. Installation to be inspected by the District Inspector. If installation does not meet District requirements, corrections must be completed before customer may begin or continue water usage.
10. Owner responsible for initial (upon installation) and subsequent annual tests. Must be performed by a Washington State Certified Backflow Assembly Tester (will be available upon request).
11. The District requires copies of all test(s) of required backflow prevention assemblies before water usage may begin or continue.
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EXECUTIVE SUMMARY

Congress passed the “Safe Drinking Water Act” with the intent of protecting the public health and welfare of all public water supply users in the United States. The Environmental Protection Agency (EPA) interpreted this mandate to mean that certain contaminants should not be found in water “delivered to the free-flowing outlet of the ultimate user.” Thus, protection of the water system from these contaminants became the responsibility of the water purveyor.

The Public Utility District No. 1 of Skagit County (District) relies on a multiple barrier approach to protect the public water supply and, subsequently, public health. One of the most important aspects of the multiple barrier approach is an active and effective cross-connection control program. The greatest public health risk lies in the introduction of a contaminant into the public water supply system, as the water distribution system can provide the conduit for the spread of the contaminant to a large population. Once water leaves the control of the distribution system, the District must consider the possibility that the water could become contaminated. Accordingly, the District must consider the plumbing system of all customers to be a potential health hazard. The hazard, and the health risk, may vary from minor to severe.

Under certain hydraulic conditions, water can flow in the opposite direction from the intended direction of flow (“backflow”). Two conditions that can cause backflow are when pressure is reduced in a supply line or from a source of pressure on the customer side that exceeds the supply pressure. Reduced pressure can be caused from the opening of a fire hydrant or a break in the water main. Sources of pressure that can exceed the supply pressure include, but are not limited to, booster pumps, thermal expansion, and elevated piping. If a cross-connection exists, or is created, chemicals, gases, or substances other than potable water could be introduced into the distribution system.

There are numerous backflow incidents where cross-connections have been responsible for contaminating drinking water. The potable water supply piping often gets connected to piping carrying another fluid or gas, such as an air conditioner containing chemicals to kill algae. A garden hose submerged in a swimming pool, water trough for animals, a car’s radiator to flush out antifreeze, or attached to a fertilizer sprayer, could siphon contaminants back into the public water system. Other common cross-connections include irrigation systems, private wells, and water recirculating systems.

Inconsistent reporting and documentation procedures make it difficult to assess the full scope of contamination and outbreaks of illness due to backflow incidents. Around eighty incidents have been reported to Washington State Department of Health since 1996. One example is when an unprotected irrigation system with untreated water backflowed into the domestic water lines and caused eleven cases of giardiasis. Another example is when a city’s residents were without water for four days after herbicide 2,4-D was back-siphoned into the community’s water system.

Many of the District’s customers conduct activities that could contaminate the public water system if cross-connections and a backflow event occur. Examples include wastewater treatment plants, dairy farms, car washes, and food processing plants. The District has experienced a few minor backflow incidents of air being introduced into the distribution system. Irrigation systems are very common and if not winterized properly can backflow air and any water that remains in the system. Compressed air is used to purge the system and if the correct valves are not closed to isolate the system backflow can occur. Another backflow incident
happened at a hospital served by the District. A pump was installed to increase pressure in another building. Unknown to facility staff, the pump was repeatedly turning on and off, causing major water hammer. Backflow occurred, but fortunately subsequent water quality samples tested negative for contamination.

This Cross-Connection Control Program Manual (CCCPM) documents the District’s compliance with requirements of Washington State Department of Health (DOH) and Washington Administrative Code (WAC) to implement a cross-connection control program. The purpose of the program is to protect the public water system from contamination via cross-connections and therefore the health and safety of the District’s customers. The District often requires existing services to install a new backflow prevention assembly. These requirements can cause unexpected costs for the customer which leads to conflict and confusion.

The minimum required elements of a Cross-Connection Control Program are:

Element 1: Establishment of legal authority and program policies.
Element 2: Evaluation of premises for cross-connection hazards.
Element 3: Elimination and/or control of cross-connections.
Element 4: Provision of qualified personnel.
Element 5: Inspection and testing of backflow preventers
Element 6: Quality control of the testing process.
Element 7: Response to backflow incidents
Element 8: Public education about cross-connection control.
Element 9: Record keeping.

1. INTRODUCTION

Washington Administrative Code (WAC) 246-290-490 establishes the minimum requirements for how the District is to protect its public water systems from contamination via cross-connections. In accordance with these requirements, this Cross-Connection Control Program Manual (CCCPM) documents the District’s policies related to cross-connection control.

The CCCPM describes how the District administers the minimum requirements of WAC 246-290-490, and includes specific requirements, clarifications, and procedures that are not explicitly defined in the law. The CCCPM provides a clear and concise description of District policy in most circumstances. In rare circumstances, the District may refer to additional resources related to cross-connection control in the implementation of the CCCPM. If determined necessary by the District, the following resources may be used as a reference while administering this program:
The District’s responsibility for cross-connection control begins at the water supply source, includes all public water treatment, storage, and distribution facilities, and ends at the point of delivery to the customer’s water system. The point of delivery to the customer’s water system begins at the downstream end of the service connection. Most often this is the outlet of the water meter and is a valve in the case of a fire protection service.

The District is not responsible for eliminating or controlling cross-connections within the customer’s water system. Under chapter 19.27 RCW, the responsibility for cross-connection control within the consumer’s water system lies with the Authority Having Jurisdiction (AHJ) or Building Official. Based on these requirements, the District’s CCCPM is focused on protection of the public water system and is not intended to prevent cross-connections within the premises. The CCCPM will be provided to the applicable AHJ within the District’s service area.

The District works to ensure that cross-connections between the distribution system and a customer’s premises are eliminated or controlled by the installation of an approved backflow preventer or approved air gap that is commensurate with the assessed degree of hazard. The CCCPM describes how the District will determine the required protection.

The customer is required to install, maintain, and test backflow protection assemblies (or approved air gaps) as determined by the District. The cost of assembly design, installation, maintenance, replacement, and testing are the responsibility of the customer. Backflow protection assemblies and approved air gaps are the property and responsibility of the customer. District representatives may make inspections of such equipment periodically.

Customers who fail to cooperate in the installation, maintenance, repair, inspection, or testing of backflow preventers or approved air gaps as required by the District, will not receive a water service or will have service disconnected. Water service disconnection will occur as described in the enforcement section of the CCCPM.

2. DEFINITIONS

AGRICULTURAL (farms and dairies) – specific land areas on which agricultural activities are conducted. Agricultural uses and practices include, but are not limited to: producing, breeding, or increasing agricultural products; rotating and changing agricultural crops; conducting agricultural operations; maintaining, repairing, and replacing agricultural equipment; maintaining, repairing, and replacing agricultural facilities.

APPROVED AIR GAP (AG) – a physical separation between the free-flowing end of a potable water supply pipeline and the overflow rim of an open or non-pressurized receiving vessel. To be approved the separation must be at least:

- Twice the diameter of the supply piping measured vertically from the overflow rim of the receiving vessel, and in no case be less than one inch, when unaffected
by vertical surfaces (sidewalls);

- Three times the diameter of the supply piping if the horizontal distance between the supply pipe and a vertical surface (sidewall) is less than or equal to three times the diameter of the supply pipe. Or if the horizontal distance between the supply pipe and intersecting vertical surfaces (sidewalls) is less than or equal to four times the diameter of the supply pipe and in no case less than one and one-half inches.

**APPROVED BACKFLOW PREVENTION ASSEMBLY** – an RPBA, RPDA, DCVA, DCDA, of make, model, and size that is approved by the District. Assemblies must appear on the current approved backflow prevention assemblies list developed by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research.

**AUTHORITY HAVING JURISDICTION (AHJ)** – the local official, board, department, or agency authorized to administer and enforce the provisions of the plumbing codes as adopted under chapter 19.27 RCW. This includes the Building Official from the cities of Burlington, Mount Vernon, Sedro-Woolley and Skagit County.

**AUXILIARY WATER SUPPLY** – a water supply (other than the District’s water supply) on or available to the consumer's premises. A well is an example of an auxiliary water supply.

**BACKFLOW** – the undesirable reversal of flow of water or other substances through a cross-connection into the District’s water system, or consumer’s potable water system.

**BACKFLOW ASSEMBLY TESTER (BAT)** – a person holding a valid BAT certificate issued under chapter 246-292 WAC.

**BACKFLOW PREVENTION DEVICE** – a backflow preventer that is not designed for in-line testing.

**BACKPRESSURE** – a pressure caused by a pump, elevated tank or piping, boiler, or other means, on the consumer's side of the service connection that is greater than the pressure provided by the public water system and which may cause backflow.

**BACKSIPHONAGE** – backflow due to a reduction in system pressure in the purveyor’s distribution system and/or consumer's water system.

**CROSS-CONNECTION** – any actual or potential physical connection between a public water system or the consumer’s water system and any source of non-potable liquid, solid, or gas that could contaminate the potable water supply by backflow.

**CROSS-CONNECTION CONTROL SPECIALIST (CCS)** – a person holding a valid CCS certificate issued under chapter 246-292 WAC.

**DEGREE OF HAZARD** – the type of potential risk or hazard, such as pollution or contamination, that is determined through an evaluation of the conditions within a consumer’s water system.

**DOUBLE CHECK DETECTOR ASSEMBLY (DCDA)** – a backflow prevention assembly consisting of two approved double check valve assemblies, set in parallel, equipped with a meter on the bypass line to detect small amounts of water leakage or use.

**DOUBLE CHECK VALVE ASSEMBLY (DCVA)** – a backflow prevention assembly composed of two single, independently acting check valves, spring loaded to the closed
position, and installed as a unit with, and between, two resilient seated shutoff valves and having four properly located resilient seated test cocks.

**FACILITY SURVEY** – an on-site review to assess the degree of hazard. A survey of the customer’s premises is not intended to be an inspection of the entire plumbing system; it allows a District cross-connection control specialist to determine the degree of hazard and commensurate backflow prevention requirements. The District may waive an on-site review depending on information received from the customer, or when related to proposed new service connections.

**FIRE PROTECTION SERVICE CONNECTION** – a water service for fire protection that is fitted with such fixtures only as are needed for fire protection and is entirely disconnected from those used for other purposes.

**HIGH HEALTH HAZARD** – Any physical, chemical, biological, or radiological substance that may enter the drinking water supply and impair the quality of the potable water and may result in injury, poisoning, or the spread of disease.

**IN-PREMISES ISOLATION** – the practice of installing backflow prevention assemblies, devices or methods at the point of hazard.

**IRRIGATION SERVICE CONNECTION** – a meter installed solely for the purpose of metering non-agricultural irrigation water to a customer’s premises.

**LOW HEALTH HAZARD** – those contaminants which, at the levels found in the water, could cause adverse aesthetic problems to the drinking water supply such as taste, odor and color of the water but do not present a danger to public health.

**NON-POTABLE** – any water, liquid, gas, or other substance that is not intended for human consumption.

**NON-RESIDENTIAL SERVICE CONNECTION** – all service connections that do not meet the definition of residential, fire protection, or irrigation service connections.

**POTABLE WATER** – water which is safe for human consumption and free from harmful or objectionable materials that could cause injury, disease or harmful physiological effects.

**PREMISES** – any property where water service is provided, including all buildings, improvements, moveable and permanent structures.

**PREMISES ISOLATION** – a method of protecting a public water system by installation of approved air gaps or approved backflow prevention assemblies at or near the service connection, or alternative location acceptable to the purveyor, to isolate the consumer’s water system from the purveyor’s distribution system.

**REDUCED PRESSURE BACKFLOW ASSEMBLY (RPBA)** – a backflow prevention assembly composed of two independently acting check valves spring loaded to the closed position and an automatically opening differential relief valve located between the two check valves. Installed as a unit with, and between, two resilient seated shutoff valves and having four properly located resilient seated test cocks.

**REDUCED PRESSURE DETECTOR ASSEMBLY (RPDA)** – a backflow prevention assembly incorporated of two approved reduced pressure backflow assemblies, set in parallel, equipped with a meter on the bypass line to detect small amounts of water leakage.
or use.

**RESIDENTIAL SERVICE CONNECTION** – a meter serving a single-family dwelling or residential building that consist of three or less units. Meter may serve associated uses such as agricultural, home-based businesses, or approved accessory dwelling units (ADU).

**SEVERE HEALTH HAZARD** – a cross-connection which could impair the quality of potable water and create an immediate, severe health hazard through poisoning or spread of disease by contaminants from radioactive material processing plants, nuclear reactors, or wastewater treatments plants.

3. **AUTHORITY HAVING JURISDICTION (AHJ)**

Washington Administrative Code requires water purveyors and local administrative authorities to coordinate on cross connection issues. A successful Cross-Connection Control Program depends on cooperation and collaboration between the purveyor and AHJ. The local authorities in the District’s service area include the City of Burlington, City of Mount Vernon, City of Sedro-Woolley, and Skagit County.

The District's responsibility for cross-connection control ends at the point of delivery to the consumer’s water system. The responsibility for cross-connection within the consumer’s water system lies with the AHJ.

The District’s policy for non-residential connections is to implement a premises isolation program that protects the public water system, and the AHJ establishes requirements for the customer’s premises in accordance with plumbing codes. The District monitors backflow preventers that protect the public water system. When premises isolation is established at a service connection, the District will only monitor the assembly(s) that isolate the public water system from the consumer’s water system. In these situations, the District will discontinue monitoring of other in-premises backflow preventers. For residential connections, the District will allow and monitor backflow protection at the point of hazard where allowed by this CCCPM.

The District will continue to strive for improved coordination and collaboration with the AHJs. The District relies on communication from an applicable AHJ regarding permit-driven activity to help in the identification of existing services which may require backflow protection. If the District is unable to obtain this information, public record requests may be necessary.

4. **PREMISES AND IN-PREMISES ISOLATION REQUIREMENTS**

The District implements a combination program that relies on both premises isolation and in-premises isolation for protection of the public water system. Customers shall comply with the minimum protection requirements specified in subsection (4)(A) and (4)(B) of this section. All other uses will require a facility survey by the District to determine requirements for backflow protection.

**A. PREMISES ISOLATION**

The control or elimination of cross-connections shall be no less stringent than the following. Premises with activities or water uses that may create a potential or actual cross-connection require the premises owner to provide backflow prevention methods, as
determined by the District, commensurate with the degree of hazard. The following list includes, but is not limited to, the type of premises, and/or the type of water use, at or within a premise, that require backflow prevention, and the District’s minimum allowable method for each.

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<thead>
<tr>
<th>Description of Hazard or Premises</th>
<th>Minimum Protection at Service Connection</th>
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<tr>
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<td>RPBA</td>
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<td>Agricultural rate customers</td>
<td>RPBA</td>
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<td>RPBA</td>
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<td>RPBA</td>
</tr>
<tr>
<td>Residential booster pump</td>
<td>DCVA</td>
</tr>
<tr>
<td>Residential sewage pump, lift station and/or grinder pump</td>
<td>RPBA</td>
</tr>
<tr>
<td>Solar heating system, heat exchangers</td>
<td>RPBA</td>
</tr>
<tr>
<td>Survey access denied or restricted</td>
<td>RPBA</td>
</tr>
<tr>
<td>All other premises listed in Table 9 WAC-246-290-490</td>
<td>RPBA</td>
</tr>
</tbody>
</table>

*Backflow prevention not required on residential flow-through fire protection systems constructed entirely of approved potable water piping, materials and fixtures.
**B. IN-PREMISES ISOLATION**

Backflow protection is allowed at the point of hazard for residential hazards such as, but not limited to, the following:

<table>
<thead>
<tr>
<th>Description of Fixture, Equipment, or Use of Water</th>
<th>Minimum Protection at Fixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dialysis equipment</td>
<td>RPBA</td>
</tr>
<tr>
<td>Recirculating pumps</td>
<td>RPBA</td>
</tr>
<tr>
<td>Swimming pool</td>
<td>AG, RPBA</td>
</tr>
<tr>
<td>Irrigation system without chemicals</td>
<td>DCVA</td>
</tr>
</tbody>
</table>

**5. FACILITY SURVEY SCHEDULE**

A. The District will establish the priority of its facility surveys based on the degree of hazard and the minimum DOH requirements. Once the District is made aware of a service connection that does not have proper cross-connection control, priority of the enforcement process will be on those categorized as a higher risk by the District. The District shall ensure that the customer installs approved backflow preventers commensurate with the degree of hazard within 30-90 days of the District notifying the customer. The District reserves the right to deviate from this schedule. Once the District has completed a facility survey and determined the level of protection required, if any, the customer will be notified in writing of the requirements and schedule. Enforcement procedures for non-compliance with backflow prevention requirements are described in Section 7.

B. Facility surveys will occur as follows:

1. **New Service Connection:**
   Upon application for water service, the District will interview the customer about the proposed use and determine the appropriate level of backflow prevention required. These requirements will be communicated to the customer prior to processing the application. The service shall not be activated until backflow protection requirements have been approved by the District. Temporary activation is allowed to facilitate testing, but service will be disconnected if testing is not completed in a timely manner.

2. **Existing Service Connection:**
   The District may require a facility survey when made aware of proposed permit-driven activity or other similar communication from the AHJ, or when a customer inquiry to the District initiates an investigation. Proposed permit-driven activity includes, but is not limited to, new construction, remodeling, additions, revised plumbing, and land divisions or changes in use. Facility surveys may also be required if a customer is proposing changes to existing water services or new water system improvements at a Pre-Application/Pre-Development Meeting with the AHJ.
Facility surveys shall assess both existing and proposed uses. The District does not otherwise proactively search for, or enforce, requirements for new backflow protection on existing service connections.

6. ANNUAL BACKFLOW PREVENTION ASSEMBLY TESTING

A. All backflow prevention assemblies will be tested upon installation, after repair, reinstallation or relocation, and annually thereafter. The District will notify customers annually by mail in the month prior to the month of their annual due date that an annual test of their backflow prevention assembly is required. The test must be completed, and the associated test report received by the District before the last day of their annual due date month of the same year. It is the customer’s responsibility to assure that the test report has been received by the District. The District will not acknowledge that a test has been completed until the test report has been received.

B. A Backflow Assembly Tester (BAT), holding a valid Washington State BAT certification is required to complete all testing of backflow prevention assemblies. Testers will be required to furnish a current Washington State Department of Health certification and a verification of test equipment calibration to the District, prior to the District’s acceptance of backflow prevention assembly test reports.

C. The customer will be responsible for the replacement or repair of the backflow prevention assembly if the assembly fails to test satisfactorily. The replacement, repair and successful testing shall be accomplished prior to the customer’s annual due date.

D. The District is transitioning to an online only backflow test entry system. Certified testers and testing companies will be required to submit test results online when the test entry system is fully operational.

7. ENFORCEMENT

A. General Enforcement

Existing or future water service to a premises will not be allowed by the District, or be “grandfathered”, if a backflow prevention assembly required by the District is not documented in writing to be permanently installed, maintained and tested annually.

Section 2.4.7 of the District’s Water Policy Manual describes the District’s authority to disconnect service when a customer fails to meet cross-connection control requirements. The following circumstances may result in disconnection of water service:

- Refusal to install a backflow prevention assembly when required by the District.
- Failure to replace an improper type, and/or failure to replace or repair a defective or improperly installed backflow prevention assembly.
- Failure to have the backflow prevention assembly tested per District requirements.

Advanced notification will be provided prior to disconnection of the water service for non-compliance, unless the degree of hazard, or potential degree of hazard, is so severe that it could cause immediate contamination and/or health risk. All costs incurred enforcing the action shall be borne by the property’s responsible party.
The progressive enforcement process, as described below, details how the District will enforce non-compliance when new protection is required on existing services or when customers fail to comply with backflow assembly testing requirements.

Removal, replacement, or relocation of a backflow prevention assembly requires District approval and inspection, and may require a new facility survey. The removal of an assembly is not allowed until a facility survey is completed and a determination is made that the hazard is eliminated. If there are other assessed hazards at the time of the facility survey, a new assembly installation will be required commensurate with the degree of hazard.

B. Enforcement Process - New Installations on Existing Services

After a facility survey has been completed on an existing service, the required backflow prevention assemblies must be installed within ninety (90) days of the District notifying the customer. A reminder notice shall be mailed thirty (30) days prior to due date.

If requirements have not been satisfied by the due date, a past due notice will be mailed to the customer one (1) working day after the original due date, allowing the delinquent customer fifteen (15) additional calendar days to complete the installation.

If requirements have not been satisfied by the revised due date, a final notice shall be mailed to the customer notifying the customer that their water service will be disconnected if requirements are not completed. The final notice will provide (10) ten calendar days’ notice of the scheduled disconnection. Service may be disconnected at that time if the requirements are not satisfied.

The District reserves the right to deviate from this schedule. Before turn on/reconnection, the Customer will be advised of current charges for service turn on/reconnection. (See Appendix A, Table A-9 in the District’s Water Policy Manual).

C. Enforcement Process - Annual Testing

If the annual backflow assembly test has not been received by the customer’s established due date, a second notice will be mailed fifteen (15) days after the original due date. The second notice will state that the annual backflow assembly test is Past Due and must be completed and submitted within thirty (30) days.

If requirements have not been satisfied following the second notice and additional thirty-day period, a third notice will be mailed fifteen (15) days after second due date. The third notice will state that testing must be completed and submitted within fifteen (15) days.

If requirements have not been satisfied by the revised due date, a final notice shall be mailed to the customer notifying the customer that their water service will be disconnected if requirements are not completed. The final notice will provide (10) ten calendar days’ notice of the scheduled disconnection. Service may be disconnected at that time if requirements have not been satisfied.

The District reserves the right to deviate from this schedule. Before turn on/reconnection, the Customer will be advised of current charges for service turn on/reconnection. (See Appendix A, Table A-9 in the District’s Water Policy Manual).
D. Appeal Process
Any Customer or other person who believes he/she has been wrongfully treated by a decision of the District related to this CCCPM may request an appearance before the Commission in accordance with Section 2.8 (Dispute Resolution) of the District’s Water Policy Manual. The customer’s written notification to initiate the Dispute Resolution process must be received prior to the scheduled disconnection date to stay the scheduled disconnection.

8. PROGRAM ADMINISTRATION

The District is responsible for the development and implementation of the Cross-Connection Control Program. The District employs multiple certified Cross-Connection Control Specialists in support of the Program. Program administration duties are the responsibility of the Engineering Department.

Public education will include periodic pamphlet distribution, newsletter columns, website updates and continued discussion with existing and new customers.

The District maintains cross-connection control records. Technology is utilized to keep a master list of service connections where backflow preventers protect the public water system from contamination. Specialized tracking software programs keep inventory information on approved air gaps and backflow assemblies including, location, assembly description, assessed degree of hazard and history of inspections and testing.
9. BACKFLOW INCIDENT RESPONSE

In the event of a possible or suspected backflow incident, the following general steps will be taken:

1. **Complaint/Notification Received**
2. **Knowledgeable Field Staff Dispatched to Scene**
3. **Identify and Isolate Contaminant**
4. **Notify Affected Customers**
5. **Collect Water Quality Samples for On-site and Lab Analysis**
6. **Notify Administrative Authorities**
7. **Take Corrective Action to Restore Water Quality**
8. **Collect Follow-up Samples**
9. **Complete a Backflow Incident Response Form and Submit to Regulatory Agency**

* Determine if Public Notification Required
  * Building Official
  * Plumbing Official
  * Health Department(s)
  * Flushing
  * Disinfection
  * Main Replacement
10. INCENTIVE PROGRAM

Overview
Due to the long history of the District’s water systems, evolving regulations and practices related to cross-connection control, and changes to uses on a given property over time, the District may require an existing customer to install backflow preventers where they did not exist in the past. This requirement may be unexpected to the customer and can result in unanticipated costs.

The incentive program described below works to provide financial assistance to a limited number of customers faced with the requirement to install backflow preventers at an existing water service location. Providing a level of financial assistance to customers in these situations can directly benefit the District’s efforts to protect the public water system. This assistance can result in reduced staff time enforcing cross-connection policy and may expedite the installation of backflow preventers at unprotected service locations. In this manner, the incentive program is within the District’s public charge and mission to provide our customers with high-quality water services at an affordable price.

Funding levels for the assistance program shall be established by the Board of Commissioners during each annual budgeting process.

Application process
Existing customers that require cross-connection control for premises isolation (DCVA or RPBA) would be eligible to apply, except for the following customers who are not eligible for the incentive program:

- customers applying for or currently approved for the agricultural water rate
- customers requesting to upsize an existing water service
- customers with a premises requiring new backflow protection for more than the initial 90-day period.

The District will consider applications on a “first come, first served” basis. When annual funding as detailed in the current District budget for a given year is fully allocated to approved applications, the District will cease approving allocations until the following year and pending budget approval. Application approval would be effective for six (6) months from the date of District approval notification to District approval of project completion (installation and testing).

Assistance details
A lump sum reimbursement would be provided by the District to the customer upon successful installation, successful testing of the new backflow prevention assembly, and submittal of required cost documentation. Reimbursed costs shall be clearly associated with the basic scope of backflow prevention assembly installation as depicted on District standard details, excluding costs related to surface restoration, electrical components, and non-contracted labor. A conceptual design or sketch of the proposed installation shall be supplied by the customer with the application. Reimbursements shall be in accordance with the following table. Reimbursement “Not to Exceed” (NTE) amounts would be considered for revision each year as a part of the annual budgeted process.
2020 Cross-Connection Control Incentive Program funding limits:

<table>
<thead>
<tr>
<th>Cost type</th>
<th>DCVA Assembly</th>
<th>RPBA Assembly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials (customer provided receipt)</td>
<td>NTE $600</td>
<td>NTE $1,800</td>
</tr>
<tr>
<td>Subcontractor (customer provided receipt)</td>
<td>NTE $500</td>
<td>NTE $500</td>
</tr>
<tr>
<td>Total</td>
<td>NTE $1,100</td>
<td>NTE $2,300</td>
</tr>
</tbody>
</table>
11. ENGINEERING STANDARD DETAILS

Agenda Item #9

GENERAL NOTES:
1. BACKFLOW ASSEMBLY MUST BE SELECTED FROM THE CURRENT WASHINGTON STATE APPROVED LIST OF ASSEMBLIES AND INSTALLED IN THE MANNER WHICH IT IS APPROVED. NO MODIFICATION TO ASSEMBLY IS ALLOWED.
2. THE DCD A IS TO BE INSTALLED IMEDIATELY DOWNSTREAM OF THE DISTRICT'S SERVICE CONNECTION. FINAL LOCATION TO BE APPROVED BY THE DISTRICT.
3. HATCH LID DRAIN CHANNEL TO DRAIN TO DAVILIGHT.
4. ENGINEER RESPONSIBLE TO ENSURE ADEQUATE BALLAST IS PROVIDED TO PREVENT FLOATING OF VAULT.
5. SUMP PUMP SHALL BE WIRING PER WASHINGTON STATE ELECTRICAL CODE AND ELECTRICAL PERMIT REQUIRED. THE DISCHARGE PIPE SHALL BE CONNECTED TO THE NEAREST APPROVED ON-SITE STORM DRAINAGE STRUCTURE.
6. BRASS PLUGS TO BE INSTALLED IN THE TEST COCKS. TEST COCKS MUST BE INSTALLED FACINGS UP OR TO ONE SIDE.
7. DISTRICT TO SUPPLY AND INSTALL BADGER RECORD-ALL BY-PASS METER.
8. OWNER RESPONSIBLE FOR TYPE III SERVICE FEE TO INSTALL BADGER RECORD-ALL BY-PASS METER.
9. INSTALLATION TO BE INSPECTED BY THE DISTRICT INSPECTOR. IF INSTALLATION DOES NOT MEET DISTRICT REQUIREMENTS, CORRECTIONS MUST BE COMPLETED BEFORE CUSTOMER MAY BEGIN OR CONTINUE WATER USAGE.
10. CUSTOMER RESPONSIBLE FOR INITIAL (UPON INSTALLATION) AND SUBSEQUENT ANNUAL TESTS. MUST BE PERFORMED BY A WASHINGTON STATE CERTIFIED BACKFLOW PREVENTION ASSEMBLY TESTER (LIST AVAILABLE UPON REQUEST).
11. THE DISTRICT REQUIRES DATES OF ALL TESTING OF REQUIRED BACKFLOW PREVENTION ASSEMBLIES BEFORE WATER USAGE MAY BEGIN OR CONTINUE.

PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER

APPROVED ON: AUGUST 16, 2016

SCALE: N.T.S.
DATE: 7/19/18
REVISION: 8/17/19
DRAWN BY: J.L.
APPROVED BY: Q.G.

STANDARD INSTALLATION OF DOUBLE CHECK DETECTOR ASSEMBLY

STANDARD WDCDA-1
STANDARD INSTALLATION OF DOUBLE CHECK DETECTOR ASSEMBLY

VAULT INFORMATION

<table>
<thead>
<tr>
<th>DCCA SIZE</th>
<th>OLD GATLLE VAULT NO.</th>
<th>DOOR MODEL NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4&quot;</td>
<td>6704-WA</td>
<td>6704-Q-0332P</td>
</tr>
<tr>
<td>6&quot;</td>
<td>6706-WA</td>
<td>6706-Q-0332P</td>
</tr>
<tr>
<td>8&quot;</td>
<td>5106-WA</td>
<td>5106-Q-0332P</td>
</tr>
<tr>
<td>10&quot;</td>
<td>5108-WA</td>
<td>5108-Q-0332P</td>
</tr>
</tbody>
</table>

CONCRETE VAULT WITH ACCESS HATCH DOORS, H-20 LOAD. 
LINK SEAL, (TYP.)
FIRE DEPARTMENT CONNECTION PIPING
GRAYWORTH DRAIN LINE OR SUMP PUMP DISCHARGE LINE,
RESTRAINED FLANGE COUPLING ADAPTER,
CHECK VALVE,
GRAYWORTH DRAIN OR SUMP & PUMP,
ISOLATION VALVE PVC,
DOUBLE CHECK DETECTOR ASSEMBLY,
BYPASS METER & Bypass DCCA,
CONCRETE THROTTLE RESTRANING
PIPE SUPPORT + RUST RESISTANT,
ISOLATION BALL VALVE,
IN-LINE CHECK VALVE,
8" COMPACTED CLCASS B BACKFILL MINIMUM (WDDOT)
FLUSH CONNECTION BURIED IN CONCRETE,
CONCRETE BALLAST,
GEO TEC TIL SEPARATION FABRIC,
OSHA APPROVED LADDER,

GENERAL NOTES:
1. BACKFLOW ASSEMBLY MUST BE SELECTED FROM THE CURRENT WASHINGTON
STATE APPROVED LIST OF ASSEMBLIES AND INSTALLED IN THE MANNER WHICH IT
IS APPROVED, NO MODIFICATION TO ASSEMBLY IS ALLOWED.
2. THE DCCA IS TO BE INSTALLED IMMEDIATELY DOWNSTREAM OF THE DISTRICT'S
SERVICE CONNECTION FINAL LOCATION TO BE APPROVED BY THE DISTRICT,
3. HATCH-LID DRAIN TO CHANNEL TO DRAIN TO DAYLIGHT.
4. ENGINEER RESPONSIBLE TO ENSURE ADEQUATE BALLAST IS PROVIDED TO
PREVENT FLOATING OF VAULT,
5. SUMP PUMP SHALL BE WIRE PER WASHINGTON STATE ELECTRICAL CODE AND
ELECTRICAL PERMIT REQUIRED, THE DISCHARGE PIPE SHALL BE CONNECTED TO
THE NEAREST APPROVED ON-SITE STORM DRAINAGE STRUCTURE,
6. BRASS PLUGS TO BE INSTALLED IN THE TEST COCKS, TEST COCKS MUST BE
INSTALLED FACING UP OR TO ONE SIDE.
7. DISTRICT TO SUPPLY AND INSTALL BAGGER RECORDWALL Bypass METER,
8. CUSTOMER RESPONSIBLE FOR TYPE III SERVICE FEE TO INSTALL BAGGER
RECORDWALL BYPASS METER,
9. INSTALLATION TO BE INSPECTED BY THE DISTRICT INSPECTOR IF INSTALLATION
DOES NOT MEET DISTRICT REQUIREMENTS, CORRECTIONS MUST BE COMPLETED
BEFORE CUSTOMER MAY BEGIN OR CONTINUE WATER USAGE,
10. OWNER RESPONSIBLE FOR INITIAL (ON) INSTALLATION AND SUBSEQUENT
ANNUAL TESTS, MUST BE PERFORMED BY A WASHINGTON STATE CERTIFIED
BACKFLOW ASSEMBLY TESTER (LIST AVAILABLE UPON REQUEST).
11. THE DISTRICT REQUIRES COPIES OF ALL TEST(S) OF REQUIRED BACKFLOW
PREVENTION ASSEMBLIES BEFORE WATER USAGE MAY BEGIN OR CONTINUE.

PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER

APPROVED ON: AUGUST 16, 2016

STANDARD

STANDARD INSTALLATION OF DOUBLE CHECK DETECTOR ASSEMBLY

WDCDA-1

SCALE N.T.S.
DATE: 7/18/16
REVISED: 8/17/16
DRAWN BY: JLB
APPROVED BY: GJS
## PUBLIC UTILITY DISTRICT NO. 1 OF SKAGIT COUNTY
### JANUARY 2020

<table>
<thead>
<tr>
<th></th>
<th>2019 YTD</th>
<th>2020 YTD</th>
<th>Percent Change</th>
<th>Revised Budget</th>
<th>Budget to Actual %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Beginning Reserves</strong></td>
<td>$18,493,545</td>
<td>$18,574,263</td>
<td>0%</td>
<td>$13,047,383</td>
<td></td>
</tr>
<tr>
<td><strong>Revenues</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential &amp; Multi-family</td>
<td>1,197,210</td>
<td>1,271,967</td>
<td>6%</td>
<td>1,322,946</td>
<td>96%</td>
</tr>
<tr>
<td>Commercial, Industrial &amp; Farm</td>
<td>397,668</td>
<td>429,859</td>
<td>8%</td>
<td>435,522</td>
<td>99%</td>
</tr>
<tr>
<td>Grants &amp; Loans</td>
<td>(a) 602,950</td>
<td>-</td>
<td></td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Work &amp; Service Orders</td>
<td>51,136</td>
<td>27,810</td>
<td>-46%</td>
<td>58,810</td>
<td>47%</td>
</tr>
<tr>
<td>System Development Fees</td>
<td>122,305</td>
<td>87,677</td>
<td>-28%</td>
<td>114,460</td>
<td>77%</td>
</tr>
<tr>
<td><strong>Total Revenues</strong></td>
<td>2,476,747</td>
<td>1,926,766</td>
<td>-22%</td>
<td>2,028,325</td>
<td>95%</td>
</tr>
<tr>
<td><strong>Operating Expenses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salary/Wages/Benefits</td>
<td>682,194</td>
<td>765,099</td>
<td>12%</td>
<td>877,760</td>
<td>87%</td>
</tr>
<tr>
<td>WTP - Water, Power, Chemicals (b)</td>
<td>26</td>
<td>10,558</td>
<td></td>
<td>107,563</td>
<td>10%</td>
</tr>
<tr>
<td>Repairs &amp; Maintenance &amp; Fleet</td>
<td>148,838</td>
<td>214,033</td>
<td>44%</td>
<td>117,284</td>
<td>182%</td>
</tr>
<tr>
<td>Technology/SCADA/Support</td>
<td>74,584</td>
<td>112,838</td>
<td>51%</td>
<td>55,317</td>
<td>204%</td>
</tr>
<tr>
<td>Utility &amp; Other Taxes</td>
<td>85,300</td>
<td>90,174</td>
<td>6%</td>
<td>95,559</td>
<td>94%</td>
</tr>
<tr>
<td>Goods &amp; Services</td>
<td>68,257</td>
<td>93,748</td>
<td>37%</td>
<td>522,117</td>
<td>18%</td>
</tr>
<tr>
<td><strong>Total Operating Expenses</strong></td>
<td>1,059,201</td>
<td>1,286,450</td>
<td>21%</td>
<td>1,775,600</td>
<td>72%</td>
</tr>
<tr>
<td><strong>Capital &amp; Debt Expenses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital Outlay</td>
<td>141,186</td>
<td>101,698</td>
<td>-28%</td>
<td>1,333,333</td>
<td>8%</td>
</tr>
<tr>
<td>Debt (Principal &amp; Interest) (c)</td>
<td>277,911</td>
<td>261,646</td>
<td>-6%</td>
<td>261,646</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Total Capital &amp; Debt Service</strong></td>
<td>419,097</td>
<td>363,344</td>
<td>-13%</td>
<td>1,594,979</td>
<td>23%</td>
</tr>
<tr>
<td><strong>Total Expenses</strong></td>
<td>1,478,297</td>
<td>1,649,793</td>
<td>12%</td>
<td>3,370,579</td>
<td>49%</td>
</tr>
<tr>
<td>Revenue Fund</td>
<td>7,400,449</td>
<td>10,357,143</td>
<td>40%</td>
<td>4,000,000</td>
<td>259%</td>
</tr>
<tr>
<td>Construction Fund (d)</td>
<td>4,589,450</td>
<td></td>
<td></td>
<td>3,494,695</td>
<td>73%</td>
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<tr>
<td>System Development Fees</td>
<td>3,634,481</td>
<td>5,306,598</td>
<td>46%</td>
<td>5,562,664</td>
<td>95%</td>
</tr>
<tr>
<td>Bond &amp; Debt Reserve</td>
<td>2,806,041</td>
<td>2,549,142</td>
<td>-9%</td>
<td>3,494,695</td>
<td>73%</td>
</tr>
<tr>
<td><strong>Ending Estimated Reserves</strong></td>
<td>$18,430,421</td>
<td>$18,212,883</td>
<td>-1%</td>
<td>$13,057,359</td>
<td>139%</td>
</tr>
</tbody>
</table>

Services Added YTD: 23 (a) revenue higher in 2019 due to grant
(b) chemicals purchased for WTP
(c) 1/12th of debt service
(d) new funding reimburses for construction expenses
2020 Judy Reservoir Inflows & Outflows

February 17 Elevation: 459.1
February 10 Elevation: 459.91
Change in Elevation: -0.81
Spillway elevation: 465.10'
Stream Inflow YTD: 470.18 MG
Pumped from river YTD: 0.87 MG