

Resolution for Amendment of the NRV Regional Water Authority Water Agreement and Support for Bond Financing by the Authority

The Committee will consider for approval a resolution approving the form of the Second Amended and Restated Water Agreement between the NRV Regional Water Authority and its members (the Towns of Blacksburg and Christiansburg, Montgomery County, Montgomery County Public Service Authority, and Virginia Tech) and supporting bond financing by the Authority to provide water main infrastructure improvements.

Resolution for Amendment of the NRV Regional Water Authority Water Agreement and Support for Bond Financing by the Authority

WHEREAS, on June 4, 2012, the Board of Visitors of Virginia Polytechnic Institute and State University adopted its resolution approving the terms of an Amended and Restated Water Agreement among Town of Blacksburg, Virginia, Town of Christiansburg, Virginia, Virginia Polytechnic Institute and State University, Montgomery County Public Service Authority, Montgomery County, Virginia and Blacksburg-Christiansburg V.P.I. Water Authority (to be renamed NRV Regional Water Authority) (the "Authority") dated as of June 18, 2013 (the "Water Agreement"); and

WHEREAS, the Authority, at its regular meeting held on July 2, 2019, approved a "Second Amended and Restated Water Agreement," a copy of which has been submitted to the Board of Visitors; and

WHEREAS, the Authority has received a commitment from the Virginia Resources Authority (the "VRA") committing to a loan from its Infrastructure and State Moral Obligation Revenue Bonds (Virginia Pooled Financing Program), Series 2019C (the "Related Series of VRA Bonds") to the Authority in the amount of up to \$10,595,000 plus capitalized interest for a period of up to 24 months (the "Bond Financing"); and

WHEREAS, the Bond Financing will be in a principal amount not to exceed \$10,595,000 plus capitalized interest for a period of up to 24 months, shall mature no later than October 1, 2049. and shall have a "true" interest cost not to exceed 4 % per year (the "Parameters"); and

WHEREAS, the Bond Financing will provide funds to finance the Authority's Plum Creek transmission main, consisting of 7,290 linear feet more or less of 20-inch diameter waterline and 5,920 linear feet more or less of 12-inch diameter water line and related improvements; its Plum Creek transmission main, consisting of 21,600 linear feet more or less of 20-inch diameter waterline and related improvements; and the Authority's Chrisman Mill pump station, consisting of three 2.9 MGD pumps, site work and all appurtenances and other improvements to the Authority's water system, including costs of issuance (the "Project"); and

WHEREAS, the Board of Visitors of Virginia Polytechnic Institute and State University has been asked by the VRA, along with all of the other parties to the Water Agreement, to adopt and provide a resolution affirming its support of the acquisition, construction, equipping, occupation, operation and use of the Project and the related Bond Financing by the Authority;

NOW, THEREFORE, BE IT RESOLVED, that the Virginia Tech Board of Visitors approves of the form of the “Second Amended and Restated Water Agreement” and that it affirms its support of the acquisition, construction, equipping, occupation, operation and use of the Project and the Bond Financing by the Authority within the Parameters; and **BE IT FURTHER RESOLVED**, that the Secretary of the Board of Visitors is authorized to certify a copy of the Water Agreement to the VRA; and

BE IT FURTHER RESOLVED, that this Resolution shall take effect immediately upon its adoption.

RECOMMENDATION:

That the above resolution amending the NRV Regional Water Authority Water Agreement and supporting bond financing by the Authority be approved.

August 26, 2019

SECOND AMENDED AND RESTATED WATER AGREEMENT

among

TOWN OF BLACKSBURG, VIRGINIA,

TOWN OF CHRISTIANSBURG, VIRGINIA,

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY,

MONTGOMERY COUNTY PUBLIC SERVICE AUTHORITY,

MONTGOMERY COUNTY, VIRGINIA

and

BLACKSBURG-CHRISTIANSBURG-V.P.I. WATER AUTHORITY

(TO BE RENAMED NRV REGIONAL WATER AUTHORITY)

Amended as of July 2, 2019~~Dated as of June 18, 2013~~

SECOND AMENDED AND RESTATED WATER AGREEMENT

THIS **SECOND** AMENDED AND RESTATED WATER AGREEMENT, amended ~~dated~~ as of July 2, 2019~~June 18, 2013~~ (the "Agreement"), is made among the **TOWN OF BLACKSBURG, VIRGINIA**, a political subdivision of the Commonwealth of Virginia ("Blacksburg"), the **TOWN OF CHRISTIANSBURG, VIRGINIA**, a political subdivision of the Commonwealth of Virginia ("Christiansburg"), **VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY**, a political subdivision of the Commonwealth of Virginia ("Virginia Tech"), **MONTGOMERY COUNTY, VIRGINIA**, a county of the Commonwealth of Virginia ("Montgomery County"), the **MONTGOMERY COUNTY PUBLIC SERVICE AUTHORITY** (the "MCPSA"), a water and sewer authority organized and existing under Chapter 51 of Title 15.2 of the Code of Virginia, 1950, as amended (the "Virginia Water and Waste Authorities Act") and the **BLACKSBURG-CHRISTIANSBURG-V.P.I. WATER AUTHORITY (TO BE RENAMED NRV REGIONAL WATER AUTHORITY)** (the "Authority"), a water authority organized and existing under Chapter 51 of Title 15.2 of the Code of Virginia, 1950, as amended (the "Virginia Water and Waste Authorities Act"), (Blacksburg, Christiansburg, Virginia Tech and Montgomery County being referred to herein from time to time as a "Member" or the "Members" or as "Public Body" or the "Public Bodies" and the Members or Public Bodies, the MCPSA and the Authority being referred to herein from time to time as a "Party" or as "the Parties");

WHEREAS, the Public Bodies have agreed to enter into a Joinder Agreement (the "Joinder Agreement") dated as of June 18, 2013 pursuant to which Montgomery County will become a member of the Authority; and,

WHEREAS, Blacksburg, Christiansburg and Virginia Tech have, since 1977, been parties to a Water Agreement which required the members of the Authority to purchase their water exclusively from the Authority; and,

WHEREAS, on entry as a member of the Authority, Montgomery County will purchase all of the water to be used and distributed by MCPSA (with the exception of the MCPSA's Continuing Well Systems and purchases from the City of Radford until the Transitional Projects are completed) from the Authority; and,

WHEREAS, the MCPSA agrees to purchase all of the water it intends to use and distribute to its customers (with the exception of the MCPSA's Continuing Well Systems and purchases from the City of Radford until the Transitional Projects are completed) from Montgomery County.

NOW THEREFORE, in consideration of the mutual promises and performances set forth herein and for the purpose of securing a safe and reliable source of water for the citizens and customers of the Parties, the Parties hereby agree to the following:

**ARTICLE I
TERM OF AGREEMENT**

Section 1.1. Definitions.

The following words and terms have the following meanings unless the context otherwise requires:

“Administratively Transitioned Water Systems” means the Belview, Elliston, Jennelle, Mudpike and Warm Hearth Water Systems, which are already connected to the Authority's Water System. The water supplied by these Systems will be immediately billed to Montgomery County by the Authority.

“Amended and Restated Water Agreement” means that Amended and Restated Water Agreement dated as of June 18, 2013 among the Parties.

“Authority” means the Blacksburg-Christiansburg-V.P.I. Water Authority (to be renamed NRV Regional Water Authority).

“Bethel Western Route Project” means that Water System improvement project identified in the Draper Aden Joinder Study – Phase II dated June 4, 2012, to be financed and completed by the MCPSA and given an Engineer’s Opinion of Probable Cost at Table 11 of \$413,127.

“Blacksburg” means the Town of Blacksburg, Virginia.

“Board” means the governing body of the Authority.

“Board member” or “Board Members” means the individual members of the Board. The term “Board Member” should not be confused with “Member.”

“Christiansburg” means the Town of Christiansburg, Virginia.

“Continuing Well Systems” means the well systems supplying the Riner and Woodview Water Systems, which the Parties agree may continue to be operated by the MCPSA.

“Distribution Line” means a water line designed only to provide water to users all along the length of the line and contained entirely within a Member’s distribution system. The Members’ Distribution Lines are shown generally on Exhibit B-1 and can also be seen in Exhibit B-2.

“Member” means the Members of the Authority, which are Blacksburg, Christiansburg and Virginia Tech prior to the approval of the application to the Virginia State Corporation Commission for the entry of Montgomery County as a Member, and will include Montgomery County after such approval. The term “Member” should not be confused with “Board Member.”

“Montgomery County” means Montgomery County, Virginia.

“MCPSA” means the Montgomery County Public Service Authority.

“MCPSA Water Systems” means the 10 water systems currently owned and operated by MCPSA, as described in detail on Exhibit A attached hereto.

“Obligation to Purchase” means the obligation of Montgomery County to purchase its membership interest in the Authority, the terms of which are described in Section 6.3.

“Prices Fork 16” Line Eastern Route Project” means that Water System improvement project identified in the Draper Aden Joinder Study – Phase II dated June 4, 2012, to be financed and completed by the Authority and given an Engineer’s Opinion of Probable Cost at Table 5 of \$1,678,940.

“Plum Creek 16” Line Eastern Route Project (Authority Section)” means that Water System improvement project identified in the Draper Aden Joinder Study – Phase II dated June 4, 2012, to be financed and completed by the Authority and given an Engineer’s Opinion of Probable Cost at Table 10 of \$3,228,800.

“Plum Creek 16” Line Eastern Route Project (MCPSA Section)” means that Water System improvement project identified in the Draper Aden Joinder Study – Phase II dated June 4, 2012, and to be financed and completed by the MCPSA and given an Engineer’s Opinion of Probable Cost at Table 10 of \$803,998.

“Receiving Member” means any Member that is receiving water from a Transmitting Member.

“Riner Water System Connection Project” means that Water System improvement project identified in the Draper Aden Joinder Study – Phase II dated June 4, 2012, and to be financed and completed by the MCPSA and given an Engineer’s Opinion of Probable Cost at Table 19 of \$1,294,186.

“Transitional Financing” means the borrowing by the Authority of an estimated \$4,907,740 and by the MCPSA of an estimated \$1,298,638 on the best terms available in the capital markets for the purpose of financing the Transitional Projects.

“Transitional Projects” means the Prices Fork 16” Line Eastern Route Project, the Plum Creek 16” Line Eastern Route Project (Authority and MCPSA Sections) and the Bethel Western as well as the Warm Hearth Connection Project.

“Transitional Project Schedule” means the schedule for the financing, bidding, letting and construction of the Transitional Projects on the following schedule:

Prices Fork 16” Line Eastern Route Project - 18 months
from the effective date of this Agreement;

Plum Creek 16” Line Eastern Route Project (Authority Section) - 36 months
from the effective date of this Agreement;

Plum Creek 16” Line Eastern Route Project (MCPSA Section) - 24 months
from the completion of the Plum Creek 16” Line Eastern Route Project (Authority Section);

Bethel Western Route Project - the later of 36
months from the effective date of this Agreement or 12 months after the completion of Plum Creek
16” Line Eastern Route Project (Authority Section);

Warm Hearth Connection Project - 12 months
from the effective date of this Agreement.

“Transitional Meter Settings” means those meter settings that the Parties have agreed to install prior to the effective date of this Agreement.

“Transitional Water Systems” means the Price’s Fork, Plum Creek, Bethel and Warm Hearth Water Systems, which will be the subject of the Transitional Financing and which will become integrated into the Water System in accordance with the Transitional Project Schedule.

“Transmission Line” means a water line, the main purpose of which is to transmit large quantities of water to Members for use in Members’ distribution system, although transmission

lines may have tap services for easy service to nearby customers. The Authority's Transmission Lines are shown on Exhibit B-2. All lines that are not designated as Transmission Lines on Exhibit B-1 or B-2 are Distribution Lines.

"Transmitting Member" means any Member that is transmitting water for use by another Member.

"Virginia Tech" means Virginia Polytechnic Institute and State University.

"Warm Hearth Connection Project" means that System improvement project identified in the Draper Aden Joinder Study – Phase II dated June 4, 2012, to be financed and completed by the MCPSA and given an Engineer's Opinion of Probable Cost at Table 15 of \$81,513.

"Water Agreement" means this Amended and Restated Water Agreement which the Parties, including the MCPSA, will execute and deliver on the effective date of the Joinder Agreement.

"Water System" means the Authority's existing water treatment plant and transmission system as it currently exists and may be further developed in the future.

"Wheelage" means the charges for transmission of water through a Member's distribution system to be delivered to another Member, calculated and administered in accordance with Section 5.5.

"Woodview Water System Connection Project" means that Water System improvement project identified in the Draper Aden Joinder Study – Phase II dated June 4, 2012, to be financed and completed by the MCPSA and given an Engineer's Opinion of Probable Cost at Table 17 of \$272,775.

Section 1.2. Effective Date.

This Agreement shall become effective and be in full force upon entry by Montgomery County as a member of the Authority, effective from the date of the approval by the Virginia State Corporation Commission of the Public Bodies' application for Montgomery County to become a member of the Authority. Once Montgomery County has been admitted to the Authority as a Member and the name of the Authority has been changed to NRV Regional Water Authority, the Authority shall re-execute this Agreement in its new name.

Section 1.3. Termination.

This Agreement shall continue in effect until terminated by the Authority or any Public Body. No such termination shall become effective until three years after written notice thereof shall have been given to each of the other Parties thereto in accordance with Section 7.7. Termination by one Public Body shall not terminate this Agreement as to any other Public Body.

**ARTICLE II
OPERATION AND MAINTENANCE OF WATER SYSTEM**

Section 2.1. Authority to Operate System.

The Authority shall operate and maintain its Water System in an efficient and economical manner, making all necessary and appropriate repairs, replacements and renewals, consistent with good business and operating practices as for comparable facilities and in accordance with applicable standards of the Commonwealth of Virginia and the United States Government and any agencies thereof.

**ARTICLE III
OBLIGATIONS OF AUTHORITY AND PUBLIC BODIES**

Section 3.1. Water Sales.

The Authority shall sell, and the Public Bodies shall purchase at the rates fixed by the Authority, water supplied by the Authority in the quantities, of the quality and under the terms and

conditions herein set forth. The MCPSA will purchase all of its water (with the exception of the Continuing Well Systems and purchases from the City of Radford until the Transitional Projects are completed) from Montgomery County.

Section 3.2. Water Purchases.

The Public Bodies shall purchase from the Authority their entire requirements of potable water for domestic use or for resale through their water distribution systems (or in the case of Montgomery County, the MCPSA's water distribution system (with the exception of the Continuing Well Systems and purchases from the City of Radford until the Transitional Projects are completed)), and the Authority shall sell and furnish to the Public Bodies their (and to Montgomery County, the MCPSA's) entire requirements of domestic potable water (with the exception of the Continuing Well Systems and purchases from the City of Radford until the Transitional Projects are completed). Except as expressly permitted by this Agreement, the Public Bodies and MCPSA shall not construct, acquire, utilize or in any other manner take potable water from any facility other than the Water System. The Authority shall not sell water to any person, firm or corporation other than the Public Bodies. If any Public Body or if the MCPSA desires to contract with any person, firm, corporation, Authority or other Public Body for the sale of water for resale in an amount in excess of five percent (5%) of the average daily volume of water sold to the Public Body by the Authority during the preceding calendar year, such sale must be approved by the Authority. At the request of two Public Bodies, the Authority will cause an engineering study to be made to determine the advisability of future sales for resale. In the event such study recommends against future sales for resale, the Authority may, after consultation with the Public Bodies, disapprove such sales regardless of whether or not such proposed sales are in excess of the aforesaid five percent (5%) limitation; provided, however, that contracts in effect at the time

such study was requested shall be honored and may be renewed for an amount not in excess of the amount contracted for at the time such study was requested. Conformed copies of any contract entered into by a Public Body with any person, firm, corporation, Authority or other Public Body shall be forwarded to the Authority immediately after execution.

Section 3.3. Connections; Metering.

The Authority shall permit the Public Bodies and the MCPSA to connect their water distribution systems with the Water System at points to be designated by the Authority. Once the Transitional Meter Settings have been installed and paid for by the Members as Agreed in Section 5.4, the Authority will operate and maintain master water meters at all points of connection both into and exiting from the Public Bodies and will pay for and install any new master meters that are needed in the Water System. The Authority will read such meters on a regular basis, apply the appropriate wheelage charges in accordance with Section 5.5, and promptly present accurate bills to the Public Bodies.

The Authority shall provide master meters to determine and record on a continuing basis the quantities of water delivered to each Public Body. Meters shall be tested by the Authority for accuracy not less than once every two (2) years. At the request of any Public Body or of the MCPSA, the Authority shall test any meter for accuracy at any time; provided, however, that should such meter prove to be accurate within a range of plus or minus two per cent (2%), the cost of the meter test shall be borne by the requesting Public Body or the MCPSA. In the event any meter shall fail to record correctly the volume of water used for any period of time, the Authority shall estimate such volume on the basis of a three (3) years' rolling average (or lesser time period if three (3) years' data is not available).

Section 3.4. Full Requirements; Member Capacity Issues

The Authority shall use its best efforts to furnish to the Public Bodies their full requirements of potable water; provided, however, that its obligations shall be limited to the amount of water available from the Water System. In the event an issue arises as to the capacity of the distribution system of a Transmitting Member to transmit water to a Receiving Member, and the installation of a larger capacity line is required, the Parties shall negotiate their respective proportionate contributions to such project.

Transmitting Members shall maintain their facilities in accordance with all applicable laws and regulations in order to facilitate the transmission of Authority water to Receiving Members. Transmitting Members agree to notify the Authority of any interruption of water supply to any point of connection to the Receiving Member's facilities as soon as possible but no later than four (4) hours after the Transmitting Member becomes aware of the interruption. The obligation of the Transmitting Member to wheel water is subject to and made contingent upon acts of God, explosions, breakage or other accident to machinery, pipelines, the binding order of any court or governmental authority, or any other act or occurrence not reasonably within the control of the Transmitting Member. Transmitting Members agree to use all reasonable efforts under the circumstances and not delay in repairing or replacing the water facilities necessary to enable Transmitting Members to wheel water.

Section 3.5. Limitation of Delivery of Water.

In the event that it should become necessary for the Authority to limit delivery of water to the Public Bodies, the amount of available water shall, if necessary, be prorated among them in the proportion that the volume of water sold to each Public Body during the preceding calendar year bears to the total volume of available water.

Section 3.6. Other Sources of Water.

In the event the Authority is unable to furnish all the water required by the Public Bodies, the Public Bodies shall have the right to procure water from any other available source until the Authority reasonably determines that it is able to furnish water sufficient to satisfy the requirements of the Public Bodies and the MCPSA and complying with all applicable laws and regulations.

Section 3.7. Water Quality.

All water sold by the Authority shall meet or exceed the requirements of the federal Safe Drinking Water Act as well as the standards of the State Health Department of the Commonwealth of Virginia or the standards of any other successor agency of the Commonwealth of Virginia. In the event the water sold by the Authority to the Members fails for any reason to meet the foregoing standards, the Authority will immediately correct the deficiency. In the event the Authority is unable to furnish water meeting the foregoing standards, the Public Bodies shall have the right to procure water from any other available source until the Authority determines that it is able to furnish water that does meet such standards.

Section 3.8. Legal Requirements.

The Authority, the MCPSA and each of the Public Bodies covenant and agree to observe all applicable administrative and technical requirements legally required by any authorized regulatory body.

Section 3.9. Prompt Payments.

Each of the Public Bodies covenants and agrees to pay promptly, when due, charges of the Authority as determined pursuant to Article IV and as are billed to it from time to time. However, the obligation of each Public Body to pay such charges shall be limited, as to Montgomery County, to the revenues received by it from the MCPSA in payment for water purchases, and as to the other Public Bodies, to revenues received by such Public Body from the charges to be paid by the users of its water distribution facilities which are served by the Water System and available to it for such purposes, including availability fees, connection fees, service fees or any other fees, and other system revenues. Notwithstanding the preceding sentence, the obligation of Virginia Tech to pay such charges shall be subject and limited to revenues appropriated by the General Assembly of Virginia for such purpose.

Section 3.10. Customer Rates.

Each of the Public Bodies and the MCPSA covenant and agree to fix, charge and collect from the users of its water distribution facilities charges sufficient to make the payments required of it under this Agreement. The Authority shall provide each Public Body and the MCPSA with timely information sufficient to enable such Public Body and MCPSA to establish rates sufficient to make such required payments.

Section 3.11. Additional Montgomery County Water Systems .

Should the MCPSA desire to acquire additional water systems in the future, and if such

would require the development of additional water sources, it shall apply to the Authority for an additional exception to this Agreement and such will involve consideration of a) the distance of the system from any Authority connection or member system connection, b) the expense of connection to the Authority or its member, c) the size of the system, and d) expense of having the system stand alone; provided, however, that the MCPSA will be free, on a temporary basis, to take over abandoned water systems for serious public health concerns until the Authority can supply water meeting the standards of Section 3.7 hereof or the MCPSA applies to the Authority for an exception.

Section 3.12. Maintenance and Repair .

The members and MCPSA have the obligation and responsibility to maintain and repair the distribution lines within their respective boundaries. The Authority has the obligation and responsibility to maintain and repair transmission lines. The members, MCPSA, and the Authority have the obligation and responsibility to maintain and repair their own pump stations and meters. The members and MCPSA have the obligation and responsibility to maintain and repair fire hydrants on transmission lines located within their boundaries and/or serving citizens of the member.

Section 3.13. Public Bodies to Assist the Authority.

Under the current membership, the Towns assist the Authority with line maintenance and have the right to charge the Authority for assistance provided. Virginia Tech has offered in the past to help with parts. While the MCPSA has limited ability to help with large scale repairs, it will offer parts and help with smaller projects. The Authority may contract with the Public Bodies to provide such other services as they deem appropriate for a reasonable fee. In addition to the terms of this section, the parties have entered into a mutual aid agreement regarding repairs.

Section 3.14 Storage.

The Parties agree to work toward an equitable balance of storage in their respective distribution systems, with a goal of not less than two (2) days' consumption storage for each distribution system.

Formatted: p13, Indent: First line: 0"

Section 3.15. Water Service Areas.

Attached to this Agreement as Exhibit D is a map indicating the various areas outside of the Christiansburg town boundary where Christiansburg ~~currently~~ exercises the authority to provide water service to customers as of the date of this agreement(the "Christiansburg Water Service Areas"). The Parties agree that the Christiansburg Water Service Areas will remain service areas of Christiansburg after the effective date of this Agreement and that the distribution systems (and the responsibility to operate and maintain the distribution systems) existing or to be established in the future in the Christiansburg Water Service Areas shall remain with Christiansburg. The Parties further agree that the affected members may amend and adopt a revised map of the Christiansburg Water Service Areas without any further action of the Authority. Customers in all other areas outside the Christiansburg Water Service Areas (with the exception of the customers of Blacksburg at the effective date of this Agreement) shall be served by the MCPSA, with the exception of well systems established primarily for other than domestic use.

Formatted: p13, Indent: First line: 0"

Formatted: Font: (Default) Times New Roman, Not Bold, No underline

ARTICLE IV

WARRANTIES AND REPRESENTATIONS

Section 4.1. Authority Relative to this Agreement.

The Parties warrant and represent that they each have the power and authority to execute and deliver this Agreement, to admit Montgomery County as a Member of the Authority, to carry out their duties and obligations under this Agreement and to consummate the transactions

contemplated hereby. Montgomery County warrants and represents that its Obligation to Purchase is valid and binding. The MCPSA warrants and represents that it is responsible for providing the necessary funds to Montgomery County to fully pay for Montgomery County's membership in the Authority and that the MCPSA has the valid and legally binding ability and obligation to do so. The execution and delivery of this Agreement by the Parties and the consummation by the Parties of the transactions contemplated hereby have been duly authorized by the Parties' governing bodies. No other proceedings on the part of the Parties are necessary to authorize this Agreement and the transactions contemplated herein.

Section 4.2. Non-Contravention.

The execution and delivery by the Parties of this Agreement does not, and the consummation of the transactions contemplated hereby will not, (i) violate or result in a breach of any provision of Blacksburg's, Christiansburg's or Virginia Tech's charters, (ii) violate or constitute a default under the terms, conditions or provisions of any note, bond, mortgage, lien, lease, agreement, license, indenture, instrument, or other instrument or obligation to which the Parties are a party or by which any of the Parties is bound, or (iii) violate any order, writ, injunction, arbitration award, judgment, decree, statute, rule or regulation applicable to the Parties.

Section 4.3. No Litigation.

There are no actions, suits, claims, investigations or proceedings (legal, administrative or arbitrative) pending, or to the best of Parties' knowledge, threatened, whether at law or in equity and whether civil or criminal in nature, before any court, arbitrator, or any governmental department, commission, agency or instrumentality which would have a material adverse affect upon: (i) any license, grant, assignment, franchise, right-of-way, easement, or right reasonably necessary for the ownership and operation of the Water System; or (ii) the ability of each Party to perform its obligations under this Agreement. Furthermore, there are no existing judgments, orders, or decrees of any such court, arbitrator, governmental department, commission, agency or other instrumentality which have or would have a material adverse effect as described in the preceding sentence.

Section 4.4. Consents and Approvals.

Other than as contemplated herein, no notice, consent, approval, waiver or other action of any kind is required to be obtained by the Parties by virtue of the execution hereof by the Parties or in connection with the consummation of any of the transactions contemplated herein.

Section 4.5. Licenses and Permits; Compliance with Laws.

The Authority has obtained and holds all licenses, certificates, permits, franchises, approvals and rights from appropriate federal, state or other public authorities required to own and operate the Water System and to conduct its business as such business is now being conducted and for the services it provides.

Section 4.6. No Violations of Law.

To the best of the Parties' knowledge, their participation in this Agreement does not cause a violation of any federal, state or local law, statute, rule, regulation or ordinance related to or in any way connected with matters contained in this Agreement.

**ARTICLE V
RATES AND CHARGES**

Section 5.1. Charges to Members.

The Authority shall fix and determine from time to time charges for water furnished by the Water System. Such charges shall be established by the Authority at such levels as may be necessary to provide funds, together with other available funds, sufficient at all times to pay:

- (a) the cost of maintaining, repairing and operating the Water System, including reserves for such purposes and for replacement and depreciation and necessary extensions;
- (b) the principal of, premium, if any, and interest on any indebtedness of the Authority as the same shall become due and reserves therefore; and,
- (c) a margin of safety for making such payments.

Section 5.2. Uniform Rate.

Each Public Body shall pay for all water furnished to it at the rate fixed by the Authority. In fixing such rate the Authority shall establish a uniform rate for all Public Bodies. Bills for water furnished will be calculated on calendar year quarters and shall be paid not later than thirty (30) days after receipt.

Section 5.3. Interest on Late Payments.

In the event that a Public Body shall fail to make such quarterly payment within the time specified in Section 5.2, interest on such amount shall accrue at the highest rate of interest payable by the Authority on any bonds then outstanding from the date such payment becomes due until paid in full. In the event the Authority has no bonds outstanding, interest shall be charged at the then applicable legal interest rate. The Authority may enforce payment by any remedy at law or in equity.

Section 5.4. Transitional Meter Settings.

The Parties, including the MCPSA on behalf of Montgomery County, have agreed to install and pay for the Transitional Meter Settings in accordance with the Water Meter Plan Spreadsheet attached to this Agreement as Exhibit E. In the event any Party has not installed and paid for the Transitional Meter Settings in accordance with the completion dates set out in the Water Meter Plan, the failure to do so for thirty (30) days after written notice given in accordance with Section 7.7 of this Agreement shall constitute a material breach of this Agreement.

Section 5.5. Wheelage.

Each Member of the Authority may charge a Wheelage Fee, which is not included in the wholesale water rate, for water transmitted and stored through a Transmitting Member's storage and distribution facilities and delivered to a Receiving Member of the Authority; provided,

however, that wherever in the Water System water is transmitted to such other Member through a two-way meter from another transmission source within the Water System, no Wheelage Fee shall be charged.

The Wheelage Fee is a percentage of the wholesale water rate charged to the Receiving Member and intended to compensate the Transmitting Member for the Receiving Member's beneficial use of the Transmitting Member's utility infrastructure and lost water expenses. The percentage is calculated in accordance with the formula attached to this Agreement as Exhibit C (the "Wheelage Formula"). The Wheelage Fee shall be recalculated in accordance with the Wheelage Formula on a five-year cycle, the first five year cycle ending June 30, 2016. The Wheelage Fee to be charged the MCPSA by the Town of Christiansburg shall be thirty-two percent (32%) of the Authority's wholesale water rate until June 30, 2016, at which time the Wheelage Fee shall be recalculated as set forth in the Wheelage Formula. Any other Transmitting Member entitled to charge a Wheelage Fee to a Receiving Member may do so in accordance with the Wheelage Formula at any time, such Wheelage Fee to be in effect for five years from the date of its implementation, and subject to recalculation on a five (5) year cycle. The Authority is authorized and requested, as part of the routine billing process, to calculate and charge the Wheeling Fee to the Receiving Member and to credit such amount to the Transmitting Member.

ARTICLE VI

OBLIGATIONS OF THE MCPSA

Section 6.1 Additional Water Sources.

MCPSA will not develop additional sources of water for distribution within Montgomery County. When any of its currently existing wells are replaced with Authority water such

wells shall be decommissioned and may be preserved by the MCPSA in a standby mode to promote the MCPSA's having an emergency water source.

Section 6.2. Montgomery County Public Service Authority.

The MCPSA will (1) continue to operate and maintain the distribution systems in Montgomery County and (2) purchase all of its water (with the exception of the Continuing Well Systems and continuing purchases from the City of Radford until the completion of the Transitional Water Systems) from Montgomery County. The MCPSA will not permit Montgomery County to subsidize any of the MCPSA's capital expenditures, operations, debt, or any other expense of the MCPSA.; provided, however, that Montgomery County may, on sixty (60) day's written notification to each of the Parties in accordance with Section 7.8, or in the case of an emergency, whatever notification is practical under the circumstances, make a loan to the MCPSA for the purpose of paying its obligations under Sections 5.2 and 6.3 of this Agreement.

Section 6.3 Purchase of Membership Interest by Montgomery County.

For admission as a member of the Authority, Montgomery County has agreed to purchase its membership interest for \$1,300,000 to be paid over forty (40) years at an interest rate of two percent (2.0%) per year, in annual installments of \$47,522.47 to be paid on July 1 of each year beginning July 1, 2013, and on each following July 1 until paid in full, which deferred purchase obligation may be prepaid at any time without penalty. The MCPSA agrees to provide in a timely manner all funds necessary to make these payments. In the event the MCPSA or Montgomery County should fail, after ninety (90) days, to make any payment required by this Section 6.3, the Authority may, singly or in combination, (1) impose a late charge of five percent (5%) of the payment, (2) charge interest on the late payment from its due date at the rate specified in Section 6.3, (3) accelerate the unpaid balance of Montgomery County's payment obligation and (4) in the

event of the Authority's determining to employ counsel, to require the Authority and the MCPSA to pay reasonable attorney's fees and costs. In addition, in the event of a default in payment hereunder, neither Montgomery County nor the MCPSA shall be permitted to purchase water from the Authority.

The MCPSA shall permit the Authority to connect a domestic wastewater connection (the "Domestic Connection") of the Authority's water treatment plant and other improvements to the MCPSA sewer system crossing the Authority's property at the corner of Walton Road and Prices Fork Road providing wastewater flow from the Authority's existing water treatment plant and office buildings. This connection must be made within ten (10) years of the effective date of this Agreement.

In addition, the MCPSA shall permit the Authority to construct a connection to the MCPSA's sewer system for wastewater discharge (the "Industrial Connection") from the Authority's plant plate and frame press of up to 24,000 gallons per day. Discharge shall be subject to the MCPSA's then current sewer use standards for Ph, Aluminum and other applicable contaminants, and must comply with the MCPSA's Industrial Discharge Program. The MCPSA may require the Authority, at the Authority's expense, to limit the rate of discharge through use of an equalization tank to that which the sewer system can accommodate and to limit the hours of discharge to off peak hours. This connection must be made within ten (10) years of the effective date of this Agreement, which time period may be extended for an additional five (5) years upon notice given the MCPSA by the Authority in accordance with Section 7.7 hereof within one hundred eighty (180) days of the end of the ten (10) year period.

Any future physical connection expenses for the two (2) connections described above and monthly service fees shall be paid by the Authority. Nothing herein is intended to create an

obligation for the MCPSA to physically connect to Authority facilities without reimbursement of expenses.

Section 6.4. Transmission and Distribution Lines.

The MCPSA will dedicate 23,200 linear feet of its 12” Prices Fork water main to the Authority to provide transmission of a redundant source of water. Transmission Lines will be financed, paid for, operated and maintained by the Authority and Distribution Lines will be financed, paid for, operated and maintained by the Member using them to distribute water to its customers.

Section 6.5. Termination of the MCPSA Water Contracts; Administrative Conversion of the Belview, Elliston, Jennelle, Mudpike and Warm Hearth Water Systems.

The MCPSA will immediately on the effective date of this Agreement terminate its water supply contract with the Radford Arsenal. Blacksburg, Christiansburg and the MCPSA will immediately on the effective date of this Agreement terminate their respective water supply contracts. Montgomery County will on the effective date of this Agreement immediately begin purchasing water from the Authority to supply the MCPSA with water for the Prices Fork, Belview, Elliston, Jennelle, Mudpike and Warm Hearth Water Systems.

Section 6.6. Financing and Construction of the Transitional Water Systems.

The MCPSA and the Authority will arrange for the Transitional Financing and will design and construct the Transitional Water Systems in accordance with the Transitional Financing Schedule and their respective obligations. The existing connections with the City of Radford and with the Radford Arsenal may be retained in the systems for redundancy (emergency usage) and will, after completion of the Transitional Water Systems, not be used for normal water service through the MCPSA’s distribution system or other Member systems. The MCPSA shall be

responsible for the completion of the Warm Hearth Connection Project and the Bethel Western Route Project in accordance with the Transitional Project Schedule. The Authority has included the cost of the Prices Fork 16" Line Eastern Route Project in its Capital Improvement Project List and has included the cost of the Plum Creek 16" Line Eastern Route Project (Authority Section) in its Capital Improvement Project List, and will complete the installation and construction of both projects. When the Authority has completed the Plum Creek 16" Line Eastern Route Project (Authority Section), the MCPSA will be obligated within two (2) years to complete the Plum Creek 16" Line Eastern Project (MCPSA Section).

~~**Section 6.7. Public Bodies to Assist the Authority.**~~

~~Under the current membership, the Towns assist the Authority with line maintenance and have the right to charge the Authority for assistance provided. Virginia Tech has offered in the past to help with parts. While the MCPSA has limited ability to help with large scale repairs, it will offer parts and help with smaller projects. The Authority may contract with the Public Bodies to provide such other services as they deem appropriate for a reasonable fee.~~

Section 6.7~~8~~. Woodview and Riner Water Systems.

The MCPSA will design, finance and construct the Woodview and Riner Water System Connections within twenty (20) years of the effective date of this Agreement.

~~**Section 6.9 — Storage.**~~

~~The Parties agree to work toward an equitable balance of storage in their respective distribution systems, with a goal of not less than two (2) days' consumption storage for each distribution system.~~

~~**Section 6.10. Water Service Areas.**~~

~~Attached to this Agreement as Exhibit D is a map indicating the various areas outside of the Christiansburg town boundary where Christiansburg currently exercises the authority to provide water service to customers (the "Christiansburg Water Service Areas"). The Parties agree that the Christiansburg Water Service Areas will remain service areas of Christiansburg after the effective date of this Agreement and that the distribution systems (and the responsibility to operate and maintain the distribution systems) existing or to be established in the future in the Christiansburg Water Service Areas shall remain with Christiansburg. Customers in all other areas outside the Christiansburg Water Service Areas (with the exception of the customers of Blacksburg at the effective date of this Agreement) shall be served by the MCPSA, with the exception of well systems established primarily for other than domestic use.~~

Section 6.811 County to Be Substituted for MCPSA.

In the event for any reason the MCPSA ceases to operate the water distribution system in Montgomery County, the County shall be obligated and entitled to perform and benefit from all of the obligations of the MCPSA contained in this Agreement.

**ARTICLE VII
MISCELLANEOUS**

Section 7.1. Power and Authority.

The Authority, the MCPSA and the Public Bodies each represent and warrant that they have full power and authority to enter into and perform this Agreement.

Section 7.2. Books and Records.

The Authority shall keep proper books and records in accordance with accepted accounting practices which shall be available for inspection at all reasonable times by the Public Bodies through their duly authorized agents. The Authority shall cause an annual audit of its books

and records to be made by an independent certified public accountant at the end of each fiscal year and a copy thereof to be filed promptly with the governing body of each Public Body.

Section 7.3. Agreement Binding.

This Agreement shall be binding upon, insure to the benefit of, and be enforceable by the Parties hereto and their respective successors and assigns.

Section 7.4. Laws.

This Agreement shall be subject to all applicable valid rules, regulations and laws of the United States of America, Commonwealth of Virginia, or any governmental body, agency or representative of either of them.

Section 7.5. Integration.

If any provision of this Agreement shall be held invalid or unenforceable by any court of competent jurisdiction, such holding shall not affect any other provision thereof.

Section 7.6. Counterparts.

This Agreement shall be executed in several counterparts, any of which shall be regarded for all purposes as one original.

Section 7.7. Notices.

Any and all notices herein provided for or relating to the transactions herein provided for will be in writing and will be deemed to have been sufficiently given to the Parties if delivered by hand or mailed, postage prepaid, by first class mail, addressed to:

Town of Blacksburg
300 South Main Street
Blacksburg, Virginia 24060
Attention: Town Manager

Town of Christiansburg
100 East Main Street
Christiansburg, Virginia 24073
Attention: Town Manager

Montgomery County, Virginia
755 Roanoke Street
Christiansburg, Virginia 24073-3181
Attention: County Administrator

Virginia Polytechnic Institute and State University
248 Burruss Hall
Blacksburg, Virginia 24060
Attention: ~~Sherwood G. Wilson~~, Vice President of ~~Business~~
~~Affairs~~Operations

NRV Regional Water Authority
~~P.O. Box 10006 (Blacksburg 24062-0006)~~
3515 Peppers Ferry Road
Radford, Virginia 24141
Attention: ~~Gerard W. Higgins, P.E.~~Executive Director

Montgomery County Public Service Authority
Montgomery County Government Center
755 Roanoke Street, Suite 21
Christiansburg, Virginia 24073-3185
Attention: ~~Robert C. Fronk, Executive~~MCPSA Director

Section 7.8 Further Assurances.

From time to time after the Closing, the Parties will execute such additional instruments of assignment and conveyance and other documents and take such other actions as may be necessary or appropriate to carry out the intent of this Agreement and to vest title or convey rights in and to the Water System in the Authority.

[SIGNATURE PAGES TO FOLLOW]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed and their seals to be affixed and attested by their duly authorized officers, all as of the date first above written.

TOWN OF BLACKSBURG, VIRGINIA

Mayor

(SEAL)

Attest:

Clerk

STATE OF VIRGINIA

CITY/COUNTY OF _____

The undersigned Notary Public in and for the jurisdiction aforesaid certifies that _____, Mayor and _____, Clerk respectively of the Town of Blacksburg, Virginia, are signed to the foregoing Amended and Restated Water Agreement bearing date as of the 18th day of June, 2013, acknowledged the same before me in my jurisdiction aforesaid.

Given under my hand this ____ day of June, 2013

My commission expires _____

My registration number _____

NOTARY PUBLIC

TOWN OF CHRISTIANSBURG,
VIRGINIA

Mayor

(SEAL)

Attest:

Clerk

STATE OF VIRGINIA

CITY/COUNTY OF _____

The undersigned Notary Public in and for the jurisdiction aforesaid certifies that _____, Mayor and _____, Clerk respectively of the Town of Christiansburg, Virginia, are signed to the foregoing Amended and Restated Water Agreement bearing date as of the 18th day of June, 2013, acknowledged the same before me in my jurisdiction aforesaid.

Given under my hand this ____ day of June , 2013

My commission expires _____

My registration number _____

NOTARY PUBLIC

MONTGOMERY COUNTY, VIRGINIA

Chair

(SEAL)

Attest:

Secretary

STATE OF VIRGINIA

CITY/COUNTY OF _____

The undersigned Notary Public in and for the jurisdiction aforesaid certifies that _____, Chair and _____, Secretary respectively of the Board of Supervisors of Montgomery County, Virginia, are signed to the foregoing Amended and Restated Water Agreement bearing date as of the 18th day of June, 2013, acknowledged the same before me in my jurisdiction aforesaid.

Given under my hand this ____ day of June, 2013

My commission expires _____

My registration number _____

NOTARY PUBLIC

MONTGOMERY COUNTY PUBLIC
SERVICE AUTHORITY

Executive Director

(SEAL)

Attest:

Secretary

STATE OF VIRGINIA

CITY/COUNTY OF _____

The undersigned Notary Public in and for the jurisdiction aforesaid certifies that _____, Executive Director and _____, Secretary respectively of Montgomery County Public Service Authority, are signed to the foregoing Amended and Restated Water Agreement bearing date as of the 18th day of June, 2013, acknowledged the same before me in my jurisdiction aforesaid.

Given under my hand this ____ day of June, 2013

My commission expires _____

My registration number _____

NOTARY PUBLIC

BLACKSBURG-CHRISTIANSBURG-
V.P.I. WATER AUTHORITY

Chair

(SEAL)

Attest:

Secretary

STATE OF VIRGINIA

CITY/COUNTY OF _____

The undersigned Notary Public in and for the jurisdiction aforesaid certifies that _____, Chair and _____, Secretary respectively of Blacksburg-Christiansburg-V.P.I. Water Authority, are signed to the foregoing Amended and Restated Water Agreement bearing date as of the 18th day of June, 2013, acknowledged the same before me in my jurisdiction aforesaid.

Given under my hand this ____ day of June, 2013

My commission expires _____

My registration number _____

NOTARY PUBLIC

VIRGINIA POLYTECHNIC INSTITUTE
AND STATE UNIVERSITY

Vice President for Administration

STATE OF VIRGINIA

CITY/COUNTY OF _____

The undersigned Notary Public in and for the jurisdiction aforesaid certifies that _____, Vice President for Administration of Virginia Polytechnic Institute and State University, is signed to the foregoing Amended and Restated Water Agreement bearing date as of the 18th day of June, 2013, acknowledged the same before me in my jurisdiction aforesaid.

Given under my hand this ____ day of June, 2013

My commission expires _____

My registration number _____

NOTARY PUBLIC

IN CONFIRMATION WHEREOF, the Authority has re-executed this Agreement this ___ day of _____, 2013.

NRV REGIONAL WATER AUTHORITY

Chair

(SEAL)

Attest:

Secretary

STATE OF VIRGINIA

CITY/COUNTY OF _____

The undersigned Notary Public in and for the jurisdiction aforesaid certifies that _____, Chair and _____, Secretary respectively of NRV Regional Water Authority, are signed to the foregoing Amended and Restated Water Agreement bearing date as of the 18th day of June, 2013, acknowledged the same before me in my jurisdiction aforesaid.

Given under my hand this ___ day of June, 2013

My commission expires _____

My registration number _____

NOTARY PUBLIC

Exhibit A Existing Water Systems of MCPA

Exhibit B NRV Regional Water Authority Water System and Meter Map dated January 20, 2017

~~Exhibit B 1 Existing Transmission and Distribution Systems and Changes Resulting from the Joinder~~

~~Exhibit B 2 Existing County Transmission and Distribution Systems~~

Exhibit C Wheelage Calculation Formula

Exhibit D Christiansburg Water Service Area

Exhibit E Water Meter Plan Spreadsheet

Formatted: Space After: 0 pt, Line spacing: single

Exhibit A

Existing Water Systems of the Montgomery County Public Service Authority

Belview Water System (34 customers @ 34,000 gpd) is located along VA Route 114 from near the Authority's Water Treatment Plant to Belview and is supplied through a number of master meter and individual meter connections to the Authority's 16-inch water transmission main.

Bethel Water System (94 customers @ 73,000 gpd) is located in the area of Exit 109 of Interstate 81 and is supplied by the City of Radford to the MCPSA through a master meter located on VA Route 177 (Tyler Road) near Rock Road.

Elliston Water System (862 customers @ 197,000 gpd) is located along US Route 460 several miles east to the Roanoke County line at Lafayette and is supplied by Christiansburg to the various communities along VA Route 460/11 (Roanoke Road) through a master meter located on Roanoke Road 0.5 mile east of the Christiansburg town limits.

Jennelle Road Water System (7 customers @ 2,000 gpd) is located near US Route 460 along the southern boundary of Blacksburg and is supplied by Blacksburg water through a 12-inch water line.

Mudpike Road Water System (85 customers @ 22,000 gpd) is located just west of Christiansburg along Mudpike Road and is supplied by Christiansburg to an area of Mud Pike Road through a master meter located on Mud Pike near the Heritage Place Subdivision.

Plum Creek Water System (436 customers @ 71,000 gpd) is located just east of Radford in the Plum Creek Community along US Route 11 and is supplied by the City of Radford through a master meter located on Rock Road at the city limits line.

Prices Fork Water System (629 customers @ 120,000 gpd) is located north of VA Route 114 and west of Blacksburg along Prices Fork Road and is supplied by the Radford Army Ammunition Plant (RAAP) through a master meter located at a pump station near Price's Fork Road.

Warm Hearth Water System (1 customer @ 45,000 gpd) is located near US Route 460 along the southern boundary of Blacksburg and is supplied by Blacksburg via a master meter (MCPSA

owned) located on Warm Hearth Drive near Mabry Lane.

Riner Water System (329 customers @ 52,000 gpd) is located in the Riner Community just south of Christiansburg and is supplied by three MCPSA wells.

Woodview Water System (25 customers @ 4,000 gpd) is located along Mudpike Road near Janna Road east of Christiansburg and is supplied by an MCPSA well located off Janna Road behind Beulah Lane.

Exhibit B-1

Existing Transmission and Distribution Systems and Changes Resulting from the Joinder

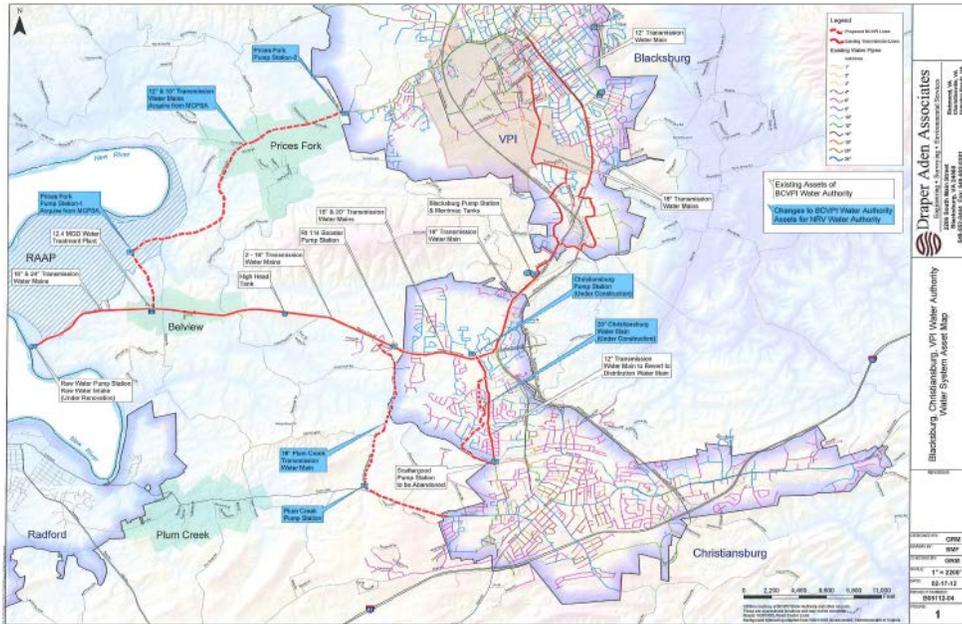


Exhibit B

NRV Regional Water Authority Water System and Meter Map dated January 20, 2017

Formatted: Centered

Field Code Changed

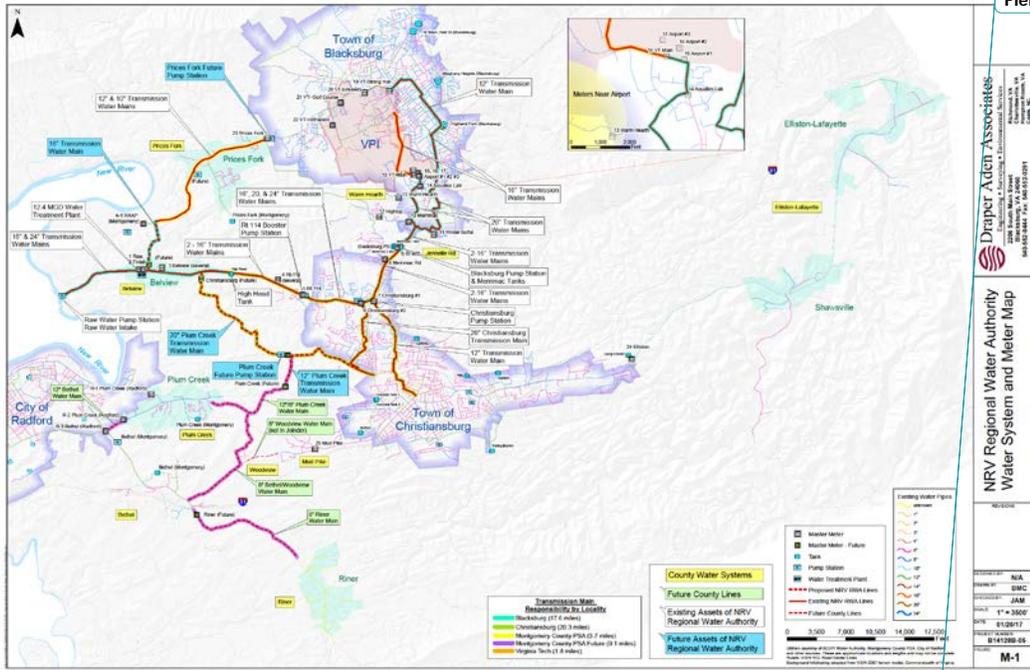
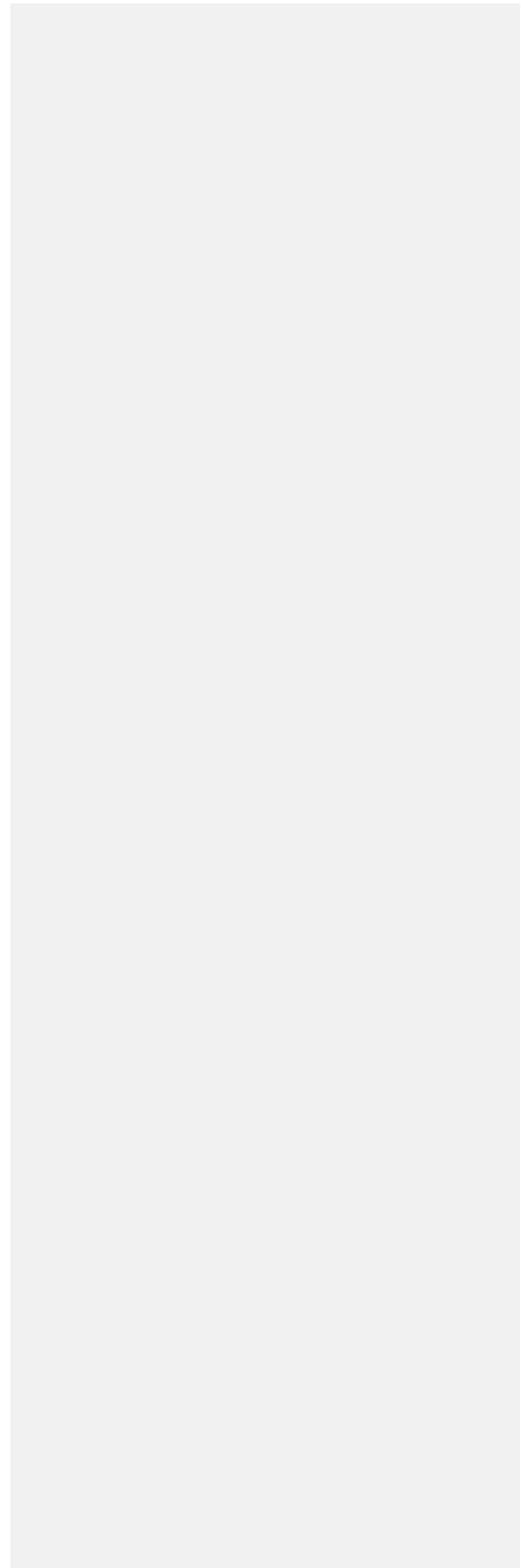


Exhibit C

Wheelage Calculation Formula

STEP 1				
Annual Total Operations & Maintenance (O&M) Cost				
Source: End-of-year audit report				
Available: January 1st for prior budget year				
Item	FY 09	FY 10	FY 11	3 YR AVG
Personnel services	\$458,717.00	\$468,555.00	\$454,598.00	\$460,623.33
Fringe benefits - insurance	\$77,921.00	\$73,414.00	\$69,801.00	\$73,712.00
Utilities; Fuel, Electric, Telephone	\$26,996.00	\$28,408.00	\$27,006.00	\$27,470.00
Repairs & maintenance	\$84,498.00	\$115,720.00	\$96,786.00	\$99,001.33
Depreciation & Amortization; Storage, Distribution / Transmission, Equip.	\$313,855.00	\$332,147.00	\$340,940.00	\$328,980.67
Materials & Supplies	\$103,345.00	\$105,504.00	\$153,964.00	\$120,937.67
General & Administrative	\$32,227.00	\$57,039.00	\$67,990.00	\$52,418.67
Bond payments- interest	\$0.00	\$0.00	\$0.00	\$0.00
Totals	\$1,097,559.00	\$1,180,787.00	\$1,211,085.00	\$1,163,143.67
STEP 2				
Annual O&M Cost Per Foot of Waterline				
Total System Length	795,042 feet			
Average O&M Cost per Foot	\$1.46 per foot			
Average O&M Cost per Foot = 3 Year Average Total O&M Cost / Total System Length				
\$1,163,144 / 795,042 ft. = \$1.46 per ft.				
STEP 3				
O&M Cost for Dedicated Water Main				
Waterline Size	Shawsville/Elliston Service Area	Mudpike Service Area		
6"	0 feet	5,644 feet		
8"	14,004 feet	1,261 feet		
10"	10,049 feet	0 feet		
12"	6,181 feet	9,709 feet		
16"	5,062 feet	0 feet		
Total Length	35,296 feet	16,614 feet		
Annual O&M Cost for Dedicated Water Main	\$51,637.92	\$24,306.22		
Annual O&M Cost for Dedicated Water Main = Average O&M Cost per Foot * Total Length of Dedicated Water Main				
\$1.46 per ft. * 35,296 ft. = \$51,637.92 \$1.46 per ft. * 16,614 ft. = \$24,306.22				

|



STEP 4			
O&M Cost per 1000 Gallons			
	<u>Shawsville/Elliston Service Area</u>	<u>Mudpike Service Area</u>	
Average Daily Pump Station Run Time	10.5 hours run / day	11.5 hours run / day	
Pumping Rate	700 gpm	1,400 gpm	
Daily Volume Pumped	441,000 gallons	966,000 gallons	
Annual Volume Pumped	160,965,000 gallons	352,590,000 gallons	
O&M Cost per 1000 Gallons Pumped	\$0.32 per 1,000 gallons	\$0.07 per 1,000 gallons	
Daily Volume Pumped = Daily Pump Station Run Time * Pumping Rate per Minute * 60 Minutes per Hour			
	10.5 hrs. run per day * 700 gpm * 60 min/hr. = 441,000 gpd	11.5 hrs. run per day * 1,400 gpm * 60 min/hr. = 966,000 gpd	
Annual Volume Pumped = Daily Volume Pumped * 365 Days per Year			
	441,000 gal * 365 days = 160,965,000 gal per year	966,000 gal * 365 days = 352,590,000 gal per year	
O&M Cost per 1,000 Gallons Pumped = Annual O&M Cost for Dedicated Water Main / (Annual Volume Pumped / 1000)			
	\$51,637.92 / (160,965,000 gal / 1,000) = \$0.32 per 1,000 gal	\$24,306.22 / (352,590,000 gal / 1,000) = \$0.07 per 1,000 gal	
STEP 5			
Lost Water Charge			
Assumed Water Loss	15 Percent		
	<u>Shawsville/Elliston Service Area</u>	<u>Mudpike Service Area</u>	
Annual Volume Pumped	160,965,000 gallons	352,590,000 gallons	
Annual Lost Water	24,144,750 gallons	52,888,500 gallons	
Value of Lost Water	\$40,563.18	\$88,852.68	
Distributed Cost per 1000 gallons	\$0.25	\$0.25	
Annual Lost Water = Assumed Loss Percentage * Annual Volume Pumped / 100			
	.15 * 160,965,000 gal = 24,144,750 gal	.15 * 352,590,000 gal = 52,888,500 gal	
Value of Lost Water = Annual Lost Water * Wholesale Water Rate			
	24,144,750 gal * \$1.68 per 1,000 gal / 1000 = \$40,563.18	52,888,500 gal * \$1.68 per 1,000 gal / 1000 = \$88,852.68	
Distributed Cost per 1,000 Gallons = Value of Lost Water / Annual Volume Pumped * 1,000			
	\$40,563.18 / (160,965,000 gal / 1,000) = \$0.25 per 1,000 gal	\$88,852.68 / (352,590,000 gal / 1,000) = \$0.25 per 1,000 gal	
STEP 6			
Calculated Wheeling Fee			
	<u>Shawsville/Elliston Service Area</u>	<u>Mudpike Service Area</u>	
O&M Cost	\$0.32 per 1,000 gallons	\$0.07 per 1,000 gallons	
Lost Water Charge	\$0.25 per 1,000 gallons	\$0.25 per 1,000 gallons	
Total	\$0.57 per 1,000 gallons	\$0.32 per 1,000 gallons	
Wholesale Rate	\$1.68 per 1,000 gallons	\$1.68 per 1,000 gallons	
Wheeling Fee	\$0.57 per 1,000 gallons	\$0.32 per 1,000 gallons	
Total Rate	\$2.25 per 1,000 gallons	\$2.00 per 1,000 gallons	
Percentage	34.10%	19.10%	
Percentage = Wheeling Fee / Wholesale Rate * 100			
	\$0.57 per 1,000 gal / \$1.68 per 1,000 gal * 100 = 34.10%	\$0.32 per 1,000 gal / \$1.68 per 1,000 gal * 100 = 19.10%	
STEP 7			
Weighted Average Wheeling Fee			
	<u>Shawsville/Elliston Service Area</u>	<u>Mudpike Service Area</u>	
2011 Usage	97,424 thousand gallons	8,978 thousand gallons	
Wheeling Fee	\$0.57 per 1,000 gallons	\$0.32 per 1,000 gallons	
Weighted Average	\$0.55		
Percentage	32.73%		
(% Rounded Down to Whole #) 32% = \$0.54			
Weighted Average = (S/E Annual Usage * S/E Wheeling Fee + MP Annual Usage * MP Wheeling Fee) / (S/E Annual Usage + MP Annual Usage)			
(97,424 thousand gal * \$0.57 per 1,000 gal + 8,978 thousand gal * \$0.32 per 1,000 gal) / (97,424 thousand gal + 8,978 thousand gal) = \$0.55 per 1,000 gal			
Percentage = Weighted Average / Wholesale Rate * 100			
\$0.55 per 1,000 gal / \$1.68 per 1,000 gal * 100 = 32.73%			

STEP 7			
Weighted Average Wheeling Fee			
	<u>Shawsville/Elliston Service Area</u>	<u>Mudpike Service Area</u>	
2011 Usage	97,424 thousand gallons	8,978 thousand gallons	
Wheeling Fee	\$0.57 per 1,000 gallons	\$0.32 per 1,000 gallons	
Weighted Average	\$0.55		
Percentage	32.73%		
(% Rounded Down to Whole #)	32% = \$0.54		
Weighted Average = (S/E Annual Usage * S/E Wheeling Fee + MP Annual Usage * MP Wheeling Fee) / (S/E Annual Usage + MP Annual Usage)			
(97,424 thousand gal * \$0.57 per 1,000 gal + 8,978 thousand gal * \$0.32 per 1,000 gal) / (97,424 thousand gal + 8,978 thousand gal) = \$0.55 per 1,000 gal			
Percentage = Weighted Average / Wholesale Rate * 100			
\$0.55 per 1,000 gal / \$1.68 per 1,000 gal * 100 = 32.73%			

Exhibit E

Water Meter Plan Spreadsheet

BCVH Water Authority
Montgomery County Joinder Study
Water Meter Plan
Updated June 8, 2012

Cell Ref No.	A	B	C	D	E	F	G	H	I	J	K	L	M	
Cell Ref No.	Meter/Description (MCP/MS/WT/MS)	Location	Watermain System	Downstream System	Current Owner (if Existing)	Relocation Required?	New Owner and Meterowner	Pager & Cost	Reading Respons	Reading Frequency*	Report Frequency to BCVH*	Meter Type	Timing Required	
1	Bellevue (General Service Meters)	VA Route 114	BCVH	MCP/MS	Blackburg	No	County	County Purchase	County/MCP/MS	Monthly	Quarterly	One Way	Date of Agreement	
2	Christiansburg Out of Town Customers (General Service Meters)	VA Route 114	BCVH	Christiansburg	Christiansburg	No	Christiansburg	\$0	Christiansburg	Monthly	Quarterly	One Way	N/A	
3	Christiansburg Wheeling Meter (Ethan System)	US Route 11 - Camp Christie Ethan Service Area Limits	Christiansburg	MCP/MS	Christiansburg	Yes	BCVH	County At Cost	BCVH	Monthly	Monthly	One Way	Date of Agreement	
4	Christiansburg - Rt 400 Area Merriam Wheeling Meter	Merriam Road at Vaughan Drive	Christiansburg	MCP/MS	Christiansburg	No	BCVH	\$0	BCVH	Monthly	Quarterly	One Way (Not in Service)	Date of Agreement	
5	Blackburg Out of Town Customers 400 (General Service Meters)	US Route 400	Blackburg	Blackburg	Blackburg	No	Blackburg	\$0	Blackburg	Monthly	Quarterly	One Way	N/A	
6	Merriam - Blackburg Wheeling Meter	Hightop Road	Blackburg	MCP/MS or MCP/MS	Blackburg	Yes	BCVH	County At Cost	BCVH	Monthly	Quarterly	Change 2 One Ways to 1 Two Way	Date of Agreement	
7	Prices Fork - RAAP Meter (RAAP Service - as needed)	RAAP	MCP/MS	RAAP	RAAP	No	MCP/MS	RAAP	MCP/MS	Monthly	NA	One Way - Change	At time of RAAP Agreement	
8	Plum Creek Route 13 Standby Radford Master Meter	Route 11 Plum Creek	Radford	MCP/MS	Radford	Removal	Radford	\$0	Radford	NA	NA	One Way - Standby Only	Approx 2016	
9	Plum Creek Auburn Ave Standby Radford Master Meter	Auburn Ave Plum Creek	Radford	MCP/MS	Radford	Removal	Radford	\$0	Radford	NA	NA	One Way - Standby Only	Approx 2016	
10	Bethel Tyler Road Standby Radford Master Meter	Tyler Rd Bethel	Radford	MCP/MS	Radford	Removal	Radford	\$0	Radford	NA	NA	One Way - Standby Only	Approx 2016	
11	Warm Heath - Blackburg Wheeling Meter	Mobby Lane	Blackburg	MCP/MS	Blackburg	No	BCVH	County At Cost	BCVH	Monthly	Monthly	Change to Two Way	Approx 2013	
12	Jennells - Blackburg Wheeling Meter	Yellow Sulphur Road	BCVH	Blackburg and MCP/MS	Blackburg	No	BCVH	\$0	BCVH	Monthly	Monthly	One Way	N/A	
13	Madoka - Christiansburg Modoka Wheeling Meter	Madoka Road	Christiansburg	MCP/MS	Christiansburg	No	BCVH	\$0	BCVH	Monthly	Monthly	One Way	N/A	
14	Blackburg - VT Small Meters To Be Retained	Green, Walnut, Clay Southgate	NA	NA	Blackburg	Removal	NA	Blackburg	NA	NA	NA	NA	Summer 2013	
15	Blackburg - VT Wheeling Meter	Turner St	Blackburg or VT	VT or Blackburg	BCVH	No	BCVH	\$0	BCVH	Monthly	Quarterly	Two Way	N/A	
16	Blackburg - VT Wheeling Meter	Prices Fork at Bypass	Blackburg or VT	VT or Blackburg	BCVH	No	BCVH	\$0	BCVH	Monthly	Quarterly	Two Way	N/A	
17	Blackburg - VT Wheeling Meter	Plantation Road	Blackburg or VT	VT or Blackburg	BCVH	No	BCVH	VT and Team	BCVH	Monthly	Quarterly	Change to Two Way	Date of Agreement	
18	Blackburg - VT Campus Wheeling Meter	Prices Fork at West Campus Drive	Blackburg or VT	VT or Blackburg	BCVH	Yes	BCVH	VT	BCVH	Monthly	Quarterly	replace Meter to go to Two Way	Date of Agreement	
19	Blackburg VT Airport Wheeling Meter	VT Airport	Blackburg	VT	BCVH	No	BCVH	\$0	BCVH	Monthly	Monthly	One Way	N/A	
20	NEW METERS													
21	Prices Fork Master Meter	Prices Fork at Route 114	BCVH	Prices Fork	NA	NA	BCVH	BCVH	BCVH	Monthly	Monthly	One Way	Approx 2013	
22	Prices Fork Wheeling Meter	Prices Fork at Merriam	MCP/MS or MCP/MS	Blackburg or Blackburg	NA	NA	BCVH	County	BCVH	Monthly	Monthly	Two Way	Approx 2013	
23	Plum Creek Master Meter	Route 11 at Bartinglers Mtn	BCVH	MCP/MS	NA	NA	BCVH	BCVH	BCVH	Monthly	Monthly	One Way	Approx 2016	
24	Christiansburg Master Meter at Radford Road	Route 11 near Silver Lake	BCVH	Christiansburg	NA	NA	BCVH	BCVH	BCVH	Monthly	Monthly	Two Way	Approx 2016	
25	Tech Center Drive	Tech Center Road	Blackburg or Blackburg	VT or Blackburg	NA	NA	BCVH	VT and Team	BCVH	Monthly	Monthly	Two Way	Summer 2013	
26	FUTURE METERS													
27	Christiansburg Wheeling Meter - Riner System	Route 8 at Christiansburg Service Area Limits	Christiansburg	MCP/MS	NA	NA	BCVH	BCVH	BCVH	Monthly	Monthly	One Way	Approx 2023	

* but should be read by BCVH (Web based)

Note: 2-way meters technology does not exist for Web based readings.