

VIRGINIA AMERICAN WATER

Application for Estimate

Part I - General Information:

1. This application must be filled out in its entirety and submitted along with three (3) copies of approved site plans showing the size and location of the proposed services and fire hydrants. At least one copy must be signed and sealed by a professional engineer licensed by the Commonwealth of Virginia
2. Domestic and irrigation water meters are provided free of charge. Based on information obtained from this form, VAW determines the size of the meter and reserves the right to determine the location for meter settings. Meters are typically placed outside the building near the street curb or property line.
3. If you have any questions please contact VAW at 703-706-3874 (Chris.Long@amwater.com)

Part II - Applicant Information: (Please attach the company W-9 form)

Applicant Name: _____ (a corporation of the state of _____)

(Property Owner, if different) _____

Phone#: _____ Fax#: _____ Email: _____

Address: _____

Applicant's Engineer: _____ **N/A**

Engineering Contact (name): _____ Phone#: _____

Email: _____ Fax#: _____

Address: _____

Primary Point of Contact (circle): Applicant, Engineer, Other: _____

Part III - Water Service Connections 1" and Larger:

N/A

Service Address: _____
Number of existing domestic services to be eradicated/demolished: _____

Service Size: _____

Estimated Average Flow Requirements: _____ GPM (1)

Estimated Peak Flow Requirements: _____ GPM (1)

Booster Pump Data: _____ GPM at _____ PSI Total Head. (2) N/A

Intended USE of the service: _____

(Example - residential, office, lawn irrigation, restaurant, nursing home)

Notes:

1. VAW does not guarantee the availability of the flow rates requested by the application.
2. If booster pump is used, include a copy of the design pump curve. Hydraulic pressure sustaining controls will be required to maintain a minimum 20 PSI suction pressure.

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3. Backflow protection may be required depending on the service and will be installed and maintained at the customer's expense in accordance with code and/or VAW requirements.

Part IV - Fire Service Connections:

N/A__

Service Address: _____

Service Size: _____ Number of existing fire services to be eradicated/demolished: _____

Needed Fire Flow Requirement: _____ GPM at _____ PSI Residual Pressure at the connection to the VAW main. (1)

Booster Pump Data: _____ GPM at _____ PSI Total Head. (2) **N/A__**

Indicate quantity required:

Sprinkler Heads - _____ Hose Closets - _____ Hydrants- _____

Notes:

1. VAW does not guarantee the availability of the flow rates requested by the application. Provide Needed Fire Flow (NFF) calculations supporting requirement. Subject to capacity of the water system, the maximum fire flow is 3,500 gpm. If NFF requirement is greater than 3500 gpm, on-site provisions will be required to support flows in excess of what is available from the water system.
2. If booster pump is used, include a copy of the design pump curve. Hydraulic pressure sustaining controls will be required to maintain a minimum 20 PSI suction pressure.
3. Backflow protection will be required on the fire service and must be installed and maintained at the customer's expense in accordance with code and/or VAW requirements.
4. The fire service must be a "dedicated" line for the extinguishment of fires only. If water is required for other purposes, application must be made for a separate service connected to VAW's main.

Part V - Water Main Extensions:

N/A__

Water Main Extension in the Existing Right-of-Way:

Street Name: _____ Cross Street _____

Pipe Length and Size: _____
(1843' of 12", 450' of 8" etc.)

Water Main Extension in a Proposed VAW Easement:

Development/Project Name: _____

Pipe Length and Size: _____
(1843' of 12", 450' of 8" etc.)

Length of existing water main to be eradicated/demolished (feet): _____

Type of development (circle): Residential, Commercial, Mixed Use, Industrial, Other _____

Domestic service requirements:

Service demand in GPM: Peak _____ Average _____ (1)

Number of proposed connections (or units):

Residential - _____

Commercial - _____

Industrial - _____

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Other (list) _____

Irrigation service requirements: N/A

Peak flow requested: _____ GPM (1)

Average flow requested: _____ GPM

Fire Protection Requirements: N/A

Needed Fire flow required: _____ GPM at _____ PSI residual (1)

Number of fire hydrants: _____

Are automatic sprinklers systems proposed: ___ yes ___ no

If yes, number of sprinklers: _____ & capacity in GPM: _____

Are fire pumps proposed: ___ yes ___ no (2)

If yes, number of pumps: _____ & capacity in GPM: _____

Are hose closets proposed: ___ yes ___ no

If yes, number of closets: _____ & capacity in GPM: _____

Notes:

1. VAW does not guarantee the availability of the flow rates requested by the application. Provide Needed Fire Flow (NFF) calculations supporting requirement. Subject to capacity of the water system, the maximum fire flow is 3,500 gpm. If NFF requirement is greater than 3500 gpm, on-site provisions will be required to support flows in excess of what is available from the water system.
2. If booster pump is used, include a copy of the design pump curve. Hydraulic pressure sustaining controls will be required to maintain a minimum 20 PSI suction pressure.
3. Backflow protection will be required on the fire service and must be installed and maintained at the customer's expense in accordance with code and/or VAW requirements.
4. The fire service must be a "dedicated" line for the extinguishment of fires only. If water is required for other purposes, application must be made for a separate service connected to VAW's main.

Water main installation within the Easement to be performed by: VAW or Developers Contractor

(Circle One)

Developers Contractor must be one from VAW's approved Contractor list.

Please submit the name of the proposed Contractor for the extension of mains in the easement.

Company _____ Phone _____

Address _____

City, State, Zip _____

Name of contact person _____

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Part VI - Signature of Applicant:

Applicant's Signature: _____

Date: _____

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Applicant Checklist:

- Water service connection (1" or greater) only:**
 - Part II - Applicant Information completed.
 - Part III -Water Service Connection 1" and Larger completed
 - Flow requirements included.
 - Part VI - Applicant's Signature and Date.
 - Two copies of approved site plans enclosed.
 - Other

- Fire service Connections:**
 - Part II - Applicant Information completed.
 - Part IV - Fire service Connections completed.
 - Need Fire Flow calculations included.
 - Part VI - Applicant's Signature and Date.
 - Two copies of approved plans enclosed.
 - Other _____

- Water Main Extensions:**
 - Part II -Applicant Information completed.
 - Part V - Water Main Extensions completed.
 - Number of proposed connections included with projected demand.
 - Fire protection requirements included (include NFF calculations).
 - Part VI - Applicant's Signature and Date.
 - Two copies of approved site plans enclosed.
 - Other _____

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Project Approvals Checklist

Please indicate the required approvals and the status of each:

Local Planning Board	Required <input type="checkbox"/>	Pending <input type="checkbox"/>	Approved <input type="checkbox"/>	N/A <input type="checkbox"/>
Local Zoning Board	Required <input type="checkbox"/>	Pending <input type="checkbox"/>	Approved <input type="checkbox"/>	N/A <input type="checkbox"/>
Land Development (Site Plan)	Required <input type="checkbox"/>	Pending <input type="checkbox"/>	Approved <input type="checkbox"/>	N/A <input type="checkbox"/>
Code Enforcement	Required <input type="checkbox"/>	Pending <input type="checkbox"/>	Approved <input type="checkbox"/>	N/A <input type="checkbox"/>
Building Permit	Required <input type="checkbox"/>	Pending <input type="checkbox"/>	Approved <input type="checkbox"/>	N/A <input type="checkbox"/>
Local Sewer Agency	Required <input type="checkbox"/>	Pending <input type="checkbox"/>	Approved <input type="checkbox"/>	N/A <input type="checkbox"/>
Erosion & Sediment Control	Required <input type="checkbox"/>	Pending <input type="checkbox"/>	Approved <input type="checkbox"/>	N/A <input type="checkbox"/>
Fire Department	Required <input type="checkbox"/>	Pending <input type="checkbox"/>	Approved <input type="checkbox"/>	N/A <input type="checkbox"/>

Others:

_____	Required <input type="checkbox"/>	Pending <input type="checkbox"/>	Approved <input type="checkbox"/>	N/A <input type="checkbox"/>
_____	Required <input type="checkbox"/>	Pending <input type="checkbox"/>	Approved <input type="checkbox"/>	N/A <input type="checkbox"/>
_____	Required <input type="checkbox"/>	Pending <input type="checkbox"/>	Approved <input type="checkbox"/>	N/A <input type="checkbox"/>
_____	Required <input type="checkbox"/>	Pending <input type="checkbox"/>	Approved <input type="checkbox"/>	N/A <input type="checkbox"/>
_____	Required <input type="checkbox"/>	Pending <input type="checkbox"/>	Approved <input type="checkbox"/>	N/A <input type="checkbox"/>



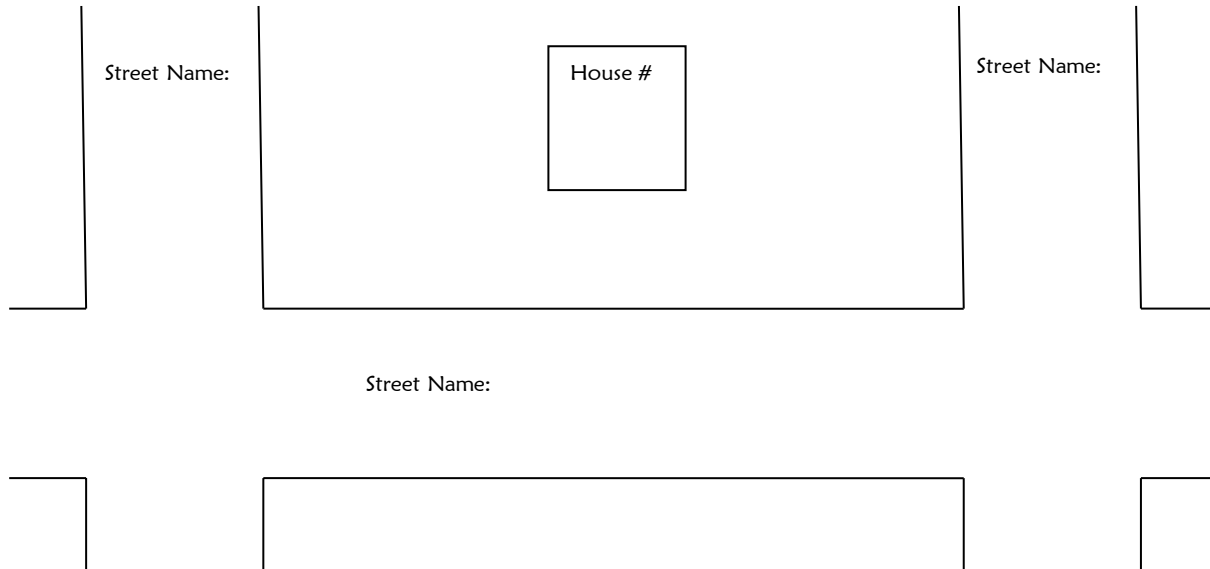
**VIRGINIA
AMERICAN WATER**

WE KEEP LIFE FLOWING™

SERVICE APPLICATION

BP#: _____ NSI#: _____ BP Name: _____

Please sketch your preferred service location on diagram below, if site plan is not attached.



Service Location Notes:

Developer Services - Process Guide

0.0 Preliminary Stage

0.1 Request for Service - The Developer shall submit a written request for water service. This request should be in conjunction with the municipal review process. The request should include:

- Name of the developer
- Location of the project, with map if available.
- Type of project (ex. domestic service, fire service, main extension, etc.)
- General characteristics of the project (ex. 25 home subdivision, condo complex, office building, industrial facility, etc.)
- Preliminary demand requirements

0.2 Service Area Determination - The Water Company will review the request for service and make a determination if the project is within the service area. If it is determined that the project is within one of our franchised service areas, a letter of confirmation will be sent. This confirmation letter does not guarantee supply or hydraulic capacity. The letter will also include:

- The name of the Water Company Project Manager
- Appropriate applications
- Guide for water main extensions (if applicable)
- Water main design requirements

0.3 Pre-Application Meeting - A pre-application meeting can be scheduled by the developer to review the requirements for completing the process. The pre-application meeting is not mandatory, but is recommended for large or complex projects or for developers who have not worked with the Water Company before.

0.4 Preliminary Capacity review - The current status of available sources of supply, water allocation and regulatory capacity for the system serving the proposed development should be reviewed at the pre-application meeting. Available capacity is only secured at the time when all agreements are finalized and fully executed (including payment from the developer). The Water Company does not reserve water capacity.

0.5 Design requirements - The Developer is responsible for the design of the water facilities required to service the proposed project and support the application. The Developer must retain a Professional Engineer licensed in the Commonwealth of Virginia to prepare the water system plans. The design

must meet all applicable Virginia Department of Health 12 VAC 56-590, Waterworks Regulations and Water Company Design Requirements and Specifications. Requirements for backflow protection must be in accordance with applicable building codes and/or water company requirements.

0.6 Permit requirements - Obtaining the required permits and approvals is a critical element for the successful completion of a project. The Developer is responsible for all required permits and approvals including all permit fees for the water mains and appurtenant facilities for the project. No construction activity should take place without evidence, provided by the Developer, that all permits and approvals have been secured.

1.0 Application Stage

1.1 Application for Estimate - An Application for Estimate must be completed and submitted for all projects including water services 1" and greater in size, fire services and water main extensions. The following information must be provided in the application:

- Part I - The application requires three (3) copies of approved site plans to be submitted with application.
- Part II - Applicant's information including name of Applicants Engineer.
- Part III - Section required for stand-alone requests for water services 1" or larger. Complete all applicable information, must include proposed service size and flow requirements.
- Part IV - Section required for stand-alone requests for fire service connections. Complete all applicable information, must include proposed service size and flow requirements.
- Part V - Section required for water main extension projects. Complete all applicable information, must include location of extension, type of development, number of connections (domestic, irrigation and fire service) and the water demand requirements for each.
- Part VI - Signature of applicant.
- Applicant Checklist - Complete checklist to ensure application is complete and required information is submitted.
- Project approvals checklist - Complete checklist to include applicable permits/approvals required for project.

1.2 Application completeness - If the application is not complete, the Water Company will notify the Developer (or their designated point of contact) outlining the deficiencies that need to be addressed. The application will not be processed, and the project will not proceed to the review stage until the application has been deemed to be complete.

1.3 Primary Point of Contact- The Water Company will assign a Project Manager to facilitate the review, agreement, and construction stages.

The Developer shall indicate the primary point of contact in Part II of the Application for Estimate.

1.4 Supporting Project Information - The following information should be submitted in support of the information contained in the application:

- Approved site plans stamped and sealed by a professional engineer.
- Basis for water demand estimates for domestic water usage.
- Basis of fire flow requirements, such as Needed Fire Flow calculations or documentation of municipal fire flow requirements.
- Information on proposed Easements
- List of permits required for project

1.5 Water Demand Estimates - The Applicant must provide estimates of water usage demand at the time of the application. The estimates must be based upon the following methods:

- Domestic system demands - Refer to Virginia Department of Health, Waterworks Regulations, 12 VAC 5-590-690, Capacity of Waterworks.
- Fire flow requirements - Consult with municipality or fire department for local fire flow requirements.

2.0 Technical Review

2.1 Compliance with Design Standards - The project plans will be reviewed for technical compliance with current regulations, Water Company design standards and specifications, company policies and general waterworks practices.

2.2 Supply Capacity - Project demands will be analyzed against available production, treatment, supply and water allocation capacity. The Water Company will send the Applicant a letter of intent to serve following capacity review approval.

2.3 Hydraulic Capacity-The project will be analyzed to determine if the plans meet the hydraulic requirements of the proposed development, including public and private fire protection needs.

2.4 Technical Deficiencies – If there are any technical deficiencies or issues with the plans, the Water Company will provide written comments. The plans must be revised as necessary until all comments are addressed.

2.5 Approval of Plans - Once the plans have been approved they cannot be revised without approval of the water company and any other agencies having jurisdiction over the project.

2.6 Review of Permit Submittals - The Water Company will review the list of permits and permit status. This is for informational purposes only; the

Developer is responsible for identifying and obtaining the applicable permit approvals as required except that the Water Company will notify the Developer if a VDH permit is required

3.0 Agreement Stage

3.1 Cost Estimates - Once the final scope of the project has been defined, the Water Company will develop project cost estimates based on the final submitted plans that will serve as the basis for the Deposits that are required to the submitted with the final Agreements.

3.2 Proposal to Complete Work-A written proposal will be prepared by the Water Company summarizing the project costs and general terms of the project. The proposal must be signed and returned with the deposit for the estimated amount along with other applicable agreements as one complete package.

3.3 Agreements (required for main extensions)-The Water Company will prepare an agreement for the extension of water mains. The agreement will detail the terms of the project, including future refunds if applicable. The agreement must be signed and returned with the proposal. There are two common types of agreements:

- Extension Deposit Agreement - Used when the Water Company will install all of the facilities associated with the project.
- Acquisition Agreement- Used when the Developer or Developer's contractor proposes to construct the facilities. Note, that any wet connections made to existing Water Company facilities must be completed by the Water Company. See Developer Installation Requirements for more information.

3.4 Easement Agreements -Any facilities installed outside of the public right-of-way that will become property of the water company will require the Developer to enter into an easement agreement with the Water Company. The Water Company shall not be charged a fee for the Easements required to serve the proposed development. The Developer must provide a final metes and bounds description and survey plats for all required easements. The developer is required to record the easement and provide a copy of the recorded document to the water company prior to the start of construction.

3.5 Service Applications - Individual service applications are required for every proposed new domestic service connection. The appropriate amount of service applications will be provided with the Agreement package.

3.6 Special Connection Agreement - This Agreement is required for fire service connections and private fire hydrants and will be included in the Agreement package as necessary.

3.7 Agreement Package to be Sent to Developer - Based on scope of the project, the appropriate Agreements will be prepared and sent to the Developer for signature. The Agreement package will not be sent to the Developer until all required information is obtained from the Developer.

3.8 Executed Agreements - The Developer must fully execute all applicable agreements and return them to the Water Company with the required Deposit checks as one complete package.

3.9 Approved site plans -An Approved site plan shall be submitted to the Water Company with the final Lot and Block numbers and final street names and address numbers and should accompany the executed agreements.

3.10 Agreement Expiration - If the Developer fails to return the executed agreements within one year from the date that the Agreements were sent to the developer, the agreement shall be considered null and void. Cost estimates will be valid for a period of 60 days and may be revised accordingly if the agreements are not returned timely manner.

4.0 Construction Stage

4.1 Requirements to Begin Construction - The project will be released for construction only after all of the following conditions have been met:

- The Developer has provided to the Water Company valid copies of all permits.
- The Developer has returned all executed agreements.
- The Developer has paid all deposits in full.
- The Developer has provided the approved site plan identified in the Agreement stage.

4.2 Facilities Constructed by Water Company-The Water Company will begin construction after the following conditions have been met:

- The site work has been completed to a point where acceptable to the Water Company generally including, but not limited to: final street lines and grades are established to within 6 inches; curbing is installed; and sanitary sewer and storm sewers have been installed.
- The Developer has staked-out the pipe alignment and/or easements and provided all engineering data as required (i.e. cut and/or grade sheets) at no charge to the Water Company.

4.3 Facilities Constructed by Developer - Under no circumstances shall the Developer or Developers Contractors operate or modify any part of the existing water system. The Water Company must operate all existing valves, complete all required wet taps and coordinate and complete any required shut downs. See Developer Installation Requirements for further guidance.

4.4 Construction Meetings-The Developer and Water Company shall be available to attend periodic construction meetings as required.

4.5 Construction Inspection -The Water Company will provide construction inspection for the duration of the project to ensure the facilities are being installed in accordance with the approved plans and specifications.

4.6 Field Changes - Any changes to the approved plans during the construction phase must be properly documented and receive prior approval by the water company and other applicable agencies. Documentation should include revised plans and evidence of approvals. No changes to the project shall proceed without proper approvals.

4.7 Construction Completion - The construction of the water facilities will be considered complete when the following conditions are met:

- The new facilities have passed all pressure and leakage tests, witnessed by the Water Company.
- The new facilities have passed bacteriological and water quality testing. Samples will be collected and tested by the Water Company.
- Connections have been made to the Water Companies existing facilities by the Water Company.
- For facilities installed by the Developer, a complete set of as-built drawings has been submitted to the Water Company.
- For facilities installed by the Developer, the water company will issue a Letter of Acceptance of the facilities.

5.0 Project Close-out

5.1 Final Project Cost Reconciliation - When the project is complete, placed in-service and all project costs have been recorded, the Water Company will reconcile the final cost of the facilities against the original deposit paid by the Developer.

5.2 Reimbursements - If the final costs are less than the total funds deposited under the project, the difference will be reimbursed to the Developer in accordance with the terms and conditions of the Agreements.

5.3 Balance Due - If the final costs are greater than the total funds deposited for the project, the difference is due to the Water Company in accordance with the terms and conditions of the Agreements.

5.4 Final Memorandum - A final memorandum will be sent to the Developer summarizing the final project cost and the original estimated costs. For Extension Deposit and Acquisition Agreements, the Developer must

acknowledge receipt and sign-off on the final memorandum. Failure to sign-off or pay an outstanding balance will jeopardize future refunds.

6.0 Refund Stage

6.1 Main Extension Refunds - Projects involving main extensions may be eligible for refunds to the developer based upon the revenues generated from each bona fide customer obtaining water service from the project. The terms of the refunds are outlined in the extension deposit or acquisition agreement and shall be in accordance with the Rules and Regulations as approved by the State Corporation Commission.

VIRGINIA AMERICAN WATER
Alexandria and Prince William Districts
Approved Waterline Construction Contractor List

LEVEL 1	LEVEL 2	LEVEL 3
<p>E.E. Lyons Construction Company P.O. Box 498 Vienna, VA 22183 Phone: 703-759-2171</p> <p>J. D. Roy Excavating, Inc. 9701 Hornbaker Road Manassas, VA 20109 Phone: 703-330-8566</p> <p>JG Miller Construction, Inc. P.O. Box 220181 Chantilly, Virginia 20153 Phone: 703-631-9733</p> <p>LCS Site Services, LLC P.O. Box 5983 Springfield, VA 22150 Phone: 703-372-2461</p> <p>Patriot Development Corporation 44330 Mercure Circle, Suite 110 Dulles, VA 20166 Phone: 703-530-9070</p> <p>All Plumbing, Inc 921 North Jackson St Arlington, VA 22201 Phone: 703-525-7973</p>	<p>Flippo Construction Company, Inc. 3820 Penn-Belt Place Forestville, MD 20747 Phone: 301-967-6800</p> <p>R.G. Griffith, Inc 44209 Wade Drive Chantilly, Virginia 20152 Phone: 703-327-6374</p> <p>S. W. Rodgers, Inc. P.O. Box 398 Gainsville, Virginia 20156 Phone: 703-591-8400</p> <p>William B. Hopke, Inc P.O. Box 10400 Alexandria, Virginia 22310 Phone: 703-971-0404</p> <p>Total Development Solutions, LLC 8031 Industrial Park Court Bristow, VA 20136 Phone: 703-222-0497</p>	<p>Anchor Construction Corporation 2254 25th Place, NE Washington, DC 20018 Phone: 202-269-6694</p> <p>Garney Companies, Inc. 4515 Daly Drive, Suite K Chantilly, VA 20151 Phone: 703-794-6194</p> <p>J. Fletcher Creamer and Son, Inc. 6720 Ammendale Road, Beltsville, MD 20705 Beltsville, MD 20705 Phone: 301-931-7400</p> <p>Prince William Pipeline Corporation 13003 Occoquan Road Woodbridge, Virginia 22192 Phone: 703-690-1651</p> <p>Utilities Unlimited, LLC 12051 Tac Court Manassas, Virginia 20109 Phone: 703-393-2715</p> <p>William A. Hazel, Inc. 4305 Hazel Park Court Chantilly, Virginia 20151 Phone: 703-378-8300</p>
<p>Level 1 Contractors with Level 1 approval are limited to small projects involving no more than 2000' of main and less than 12" diameter pipe.</p>	<p>Level 2 Level 2 approval will allow contractors to work on projects with pipe diameters of 12" or less. Length of main is not limited.</p>	<p>Level 3 Level 3 approval must be obtained in order to do project work on transmission mains, 16" or larger, or projects determined by VAWC to be complex in nature.</p>

<p>VIRGINIA- AMERICAN WATER COMPANY MATERIAL SPECIFICATIONS</p>	<p>Date: July 14, 2022</p>
<p>Item</p>	<p>Authorized Manufacturer</p>
<p>DUCTILE IRON PIPE (AWWA C151/A21.51)</p> <ul style="list-style-type: none"> • Double coated cement lining with paint seal coat • Tar coated on outside • Press-on joint (NO MJ PIPE) • Thickness Class 52 for 4"- 16" under normal laying conditions • All buried ductile iron pipe & fittings shall be polywrap encased. PolyWrap encasement (AWWA-C105), blue color, seamless 12mil thick high density cross laminated 	<ul style="list-style-type: none"> • United States Pipe and Foundry • Griffin Pipe Products, Inc. • American (ACI PCO) • McWane, Inc.
<p>DUCTILE IRON FITTINGS</p> <ul style="list-style-type: none"> • Compact Ductile Iron Fittings AWWA C153/A21.53 • Double thickness cement lining with paint seal coat • Tar coated on outside • 350 PSI working pressure • Mechanical joint (ALL MJ) 	<ul style="list-style-type: none"> • United States Pipe and Foundry • American (ACIPCO) • McWane, Inc.
<p>GATE VALVES 2"- 12" AWWA C509</p> <ul style="list-style-type: none"> • Resilient-seated • Iron body suitable for buried service, Epoxy coated AWWA C550 • 2" square operating nut • Open left • Non-rising stem with double O-Ring stem seal • 200 PSI working pressure and 400 PSI test pressure • 4"-12" valves: Mechanical joint • 2" valve: Screw Joint 	<ul style="list-style-type: none"> • Mueller Co. MJ Gave Valve: Muller #A2360 MJ Tapping Sleeve: Muller #H615 MJ Tapping Valve: Muller #T2360-16-LN
<p>BUTTERFLY VALVES 16"- 24" AWWA C504</p> <ul style="list-style-type: none"> • Rubber seated • Iron body suitable for buried service • Manual operator with 2" square operating nut • Class 150 • Mechanical joint 	<ul style="list-style-type: none"> • Henry Pratt Co. • Dezurik
<p>FTRE HYDRANTS AWWA C502</p> <ul style="list-style-type: none"> • Mueller Super Centurion 250 • 5 1/4" valve with 6" mechanical joint inlet • 4 1/2 feet bury • Two 2 1/2" nozzles with 7 1/2 threads per inch • Prince William County: One 4 1/2" pumper nozzle with National Standard threads • Alexandria City: One 4" pumper nozzle with National Standard threads • 1 1/2" pentagon operating nut, open left 	<ul style="list-style-type: none"> • Mueller Co. Dale City: Mueller #A423-500-087 Alexandria City: Mueller #A423-500-100
<p>VALVE BOXES</p> <ul style="list-style-type: none"> • Cast iron, slide type adjustment, with "WATER" on the lid • 5 1/4" x 60" two piece with flared base 	<p>Bingham & Taylor; Mueller Handley Ind; A.Y.McDo nald Quality Water Products; Clay & Bailey</p>
<p>WATER FACILITY MISCELLANEOUS MATERIALS</p> <ul style="list-style-type: none"> • Pennatex: food grade adhesive, either FORM-A-GASKET No.2 Sealant or Clear RTV Silicone Adhesive • Pipe Soap: Nontoxic vegetable soap, such as Tyton Joint Lubricant or Super Bell-Tite Lubricant • Chlorine tablets: Olin Pulsar CCH Tablets, 5G size, available chlorine - 65% (Calcium Hypochlorite) • Pipe Joint Compound: Nontoxic for water, Harvey's TFE Paste w/ Teflon or Rectorseal T Plus 2 • Asphalt Coating: Koppers #50 Coal Tar or Orion H5-2 by Triple G Coatings Inc. • Concrete: 3000 PSI @ 28 days ASTM C-94, Slump 3"- 5" • All copper tube shall be Type K. All copper and brass fittings shall be lead free. 	

DALE CITY SEWER PIPE (GRAVITY): refer to PWCSA Utility Standard Manual 2021 Edition: Chapter 5.5

- Pipe & fittings:
 - Polyvinyl Chloride (PVC) C-900: meet AWWA C-900
 - DR rating as table below.
 - All joints shall be standard "Push-on" joints.
 - No pipe deflection is permitted in the joints or pipe.
 - Joints meet ASTM D-3139
 - Elastomeric Seals (Gaskets) meet ASTM F477.

The Applicant shall not design sanitary sewer mains at depths greater than the depths shown in Table 5-3.

TABLE 5-3: Allowable Depth of Cover

Pipe Diameter	Depth (ft)	
	ANSI/AWWA C900 PVC ^a	
	DR25	DR14
8	18	25
10	18	25
12	18	25
14	18	25
15	—	—
16	18	25
18	18	25
20	18	25
21	—	—
24	18	—
27	—	—
30	18	—

Applicant shall provide design calculations for pipe designed at depths greater than values shown in this table.

- PVC Fittings
 - meet ASTM D1784 and AWWA C907
 - Polyvinyl Chloride (PVC) C-900: meet AWWA C-900
 - Class 150, White Color

Approved Manufacture:

- Harco

VAW (MAW) FIXTURE COUNT DATA SHEET

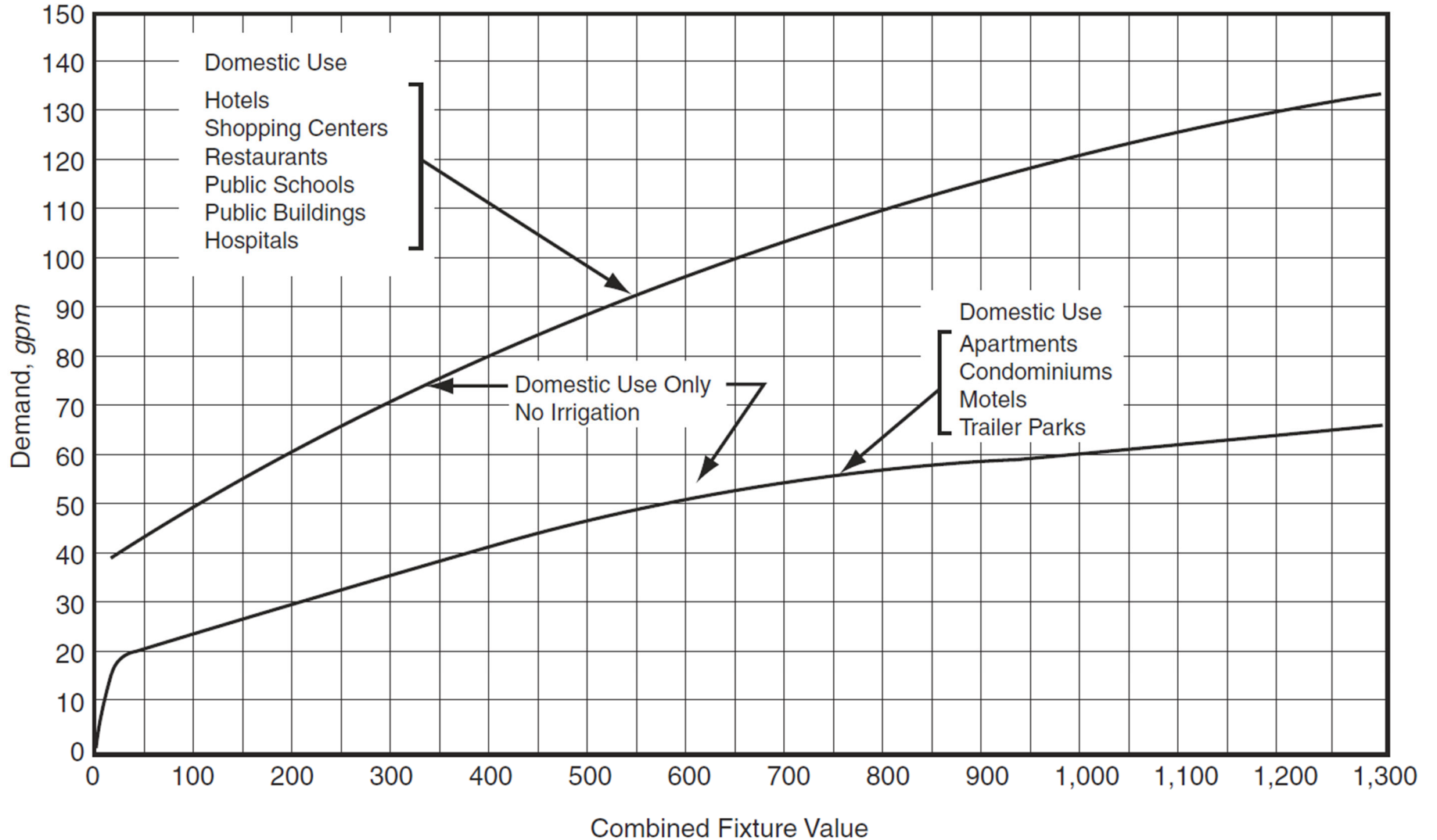
Service Address _____ Type of Occupancy: _____ Date: _____

Customer Name: _____ Phone # _____ Email _____

Fixture or Appliance	Fixture Quantity		Fixture Value @ 60psi <small>(Refer to AWWA M22, 2nd Edition, Table 4-2)</small>		TOTAL
Toilet- (Tank)		X	4	=	
Toilet- (Flush Valve)		X	35	=	
Urinal- Wall or Stall		X	16	=	
Urinal- Flush Valve		X	35	=	
Bidet		X	2	=	
Shower (single head)		X	2.5	=	
Faucet – Lavatory Sink		X	1.5	=	
Faucet – Kitchen Sink		X	2.2	=	
Faucet – Utility Sink		X	4	=	
Dishwasher		X	2	=	
Bathtub		X	8	=	
Clothes Washer		X	6	=	
Hose Bibs (w/ 50 ft. of hose) - 1/2"		X	5	=	
Hose Bibs (w/ 50 ft. of hose) - 5/8"		X	9	=	
Hose Bibs (w/ 50 ft. of hose) - 3/4"		X	12	=	
Bedpan Washer		X	10	=	
Dental Unit		X	2	=	
Drinking Fountain		X	2	=	
add other miscellaneous fixtures below (need to call out fixture value reference source)					
Fixture values reference source _____					
		X		=	
		X		=	
		X		=	
		X		=	
		X		=	
Combined Fixture Value Total					
Customer Peak Demand (from Figure 4-2 or 4-3) (Please highlight selected point at figure curve)					_____ gpm
Static Water Pressure at Meter Location _____ psi; Pressure Adjustment Factor (from Table 4-1)					(_____)
Adjusted Peak Demand (customer peak demand x Pressure adjustment factor)					_____ gpm
Irrigation Demand (GPM) occur simultaneously with normal water use					_____ gpm
Other fixed load water demand (GPM) for equipment runs simultaneously with normal water use					_____ gpm
Total Estimated Peak Demand					_____ gpm
(WATER COMPANY USE ONLY) Recommended Meter Size					_____ inches

VAW FIXTURE COUNT DATA SHEET

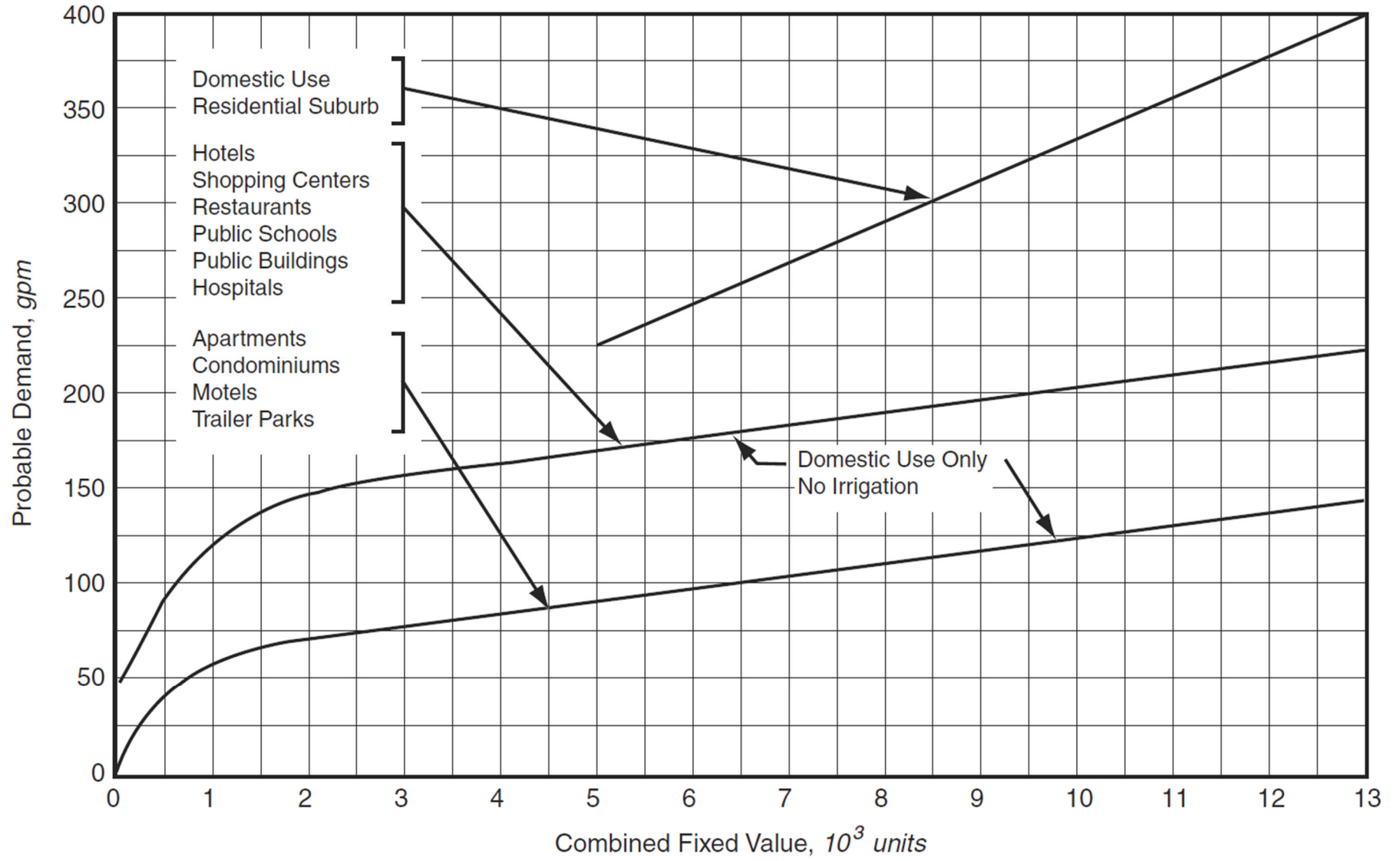
Figure 4-2: Water-flow demand per fixture value – Low Range
 Refer to AWWA Manual M22 (2nd Edition)



VAW FIXTURE COUNT DATA SHEET

Figure 4-3: Water-flow demand per fixture value – High Range

Refer to AWWA Manual M22 (2nd Edition)



VAW FIXTURE COUNT DATA SHEET

(refer to AWWA M22 second edition)

Table 4-1 Pressure adjustment factors*

Working Pressure at Meter Discharge (<i>psi</i>)	Average Flow from 50 ft of ⁵ / ₈ -in. Hose and Sprinkler (<i>gpm</i>)	Pressure Adjustment Factor
35	6.7	0.74
40	7.2	0.80
50	8.1	0.90
60	9.0	1.00
70	9.8	1.09
80	10.5	1.17
90	11.2	1.25
100	12.1	1.34

*derived from Table 4-1 and 4-2 of Manual M22 (1975).

NOTE: To convert psi to kPa: $\text{psi} \times 6.89476$; to convert gpm to m³/hr: $\text{gpm} \times 0.227$.

Table 4-2 Suggested fixture values based on 60 psi (414 kPa)

Fixture or Appliance	Suggested Fixture Value, <i>gpm</i>
Toilet (tank)	4
Toilet (flush valve)	35
Urinal (wall or stall)	16
Urinal (flush valve)	35
Bidet	2
Shower (single head)	2.5
Faucet (lavatory)	1.5
Faucet (kitchen sink)	2.2
Faucet (utility sink)	4
Dishwasher	2
Bathtub	8
Clothes washer	6
Hose connections (with 50 ft of hose)	
¹ / ₂ in. (13 mm)	5
⁵ / ₈ in. (16 mm)	9
³ / ₄ in. (19 mm)	12
Miscellaneous	
Bedpan washers	10
Drinking fountains	2
Dental units	2

NOTE: To convert gpm to m³/hr: $\text{gpm} \times 0.227$.

VAW FIXTURE COUNT DATA SHEET

VAW Recommended Meter Size Selection Table

Total Estimated Peak Demand (GPM)	Minimum Meter Size (refer to AWWA M22 2nd Edition Table 6-1)	Minimum service line size (from Street main to meter yoke)
0-20	5/8"	3/4" copper pipe
21-30	3/4"	1" copper pipe
31-50	1"	1" copper pipe
51-100	1.5"	2" copper pipe
101-160	2"	2" copper pipe
161-360	Duplex-2"	4" ductile iron pipe
361-600	4"	4" ductile iron pipe