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McMinnville Water  
& Light  
Water Specifications  
&  
Design Criteria

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# 1 General Information

## 1.1 Purpose

This version of the *Water Specifications and Design Criteria* supersedes all previous McMinnville Water & Light (MW&L) versions.

It is strongly recommended that [MW&L Engineering Department \(503-472-6919\)](#) be consulted to resolve any questions concerning the construction requirements.

The purpose of this document is to provide the Customer, Developer, Contractor, and Engineer with conditions of service, specifications and standards for the construction and installation of MW&L's water system. This includes water system extensions or the replacement of existing mains, services, hydrants and associated appurtenances. Any deviation from the provisions of this document shall have written approval from MW&L.

All water system construction shall be inspected and approved by MW&L before the system is buried. Any portion of the extension that is buried prior to inspection shall be uncovered or it shall not be accepted. If any problems are discovered with workmanship, damage, and/or materials; potential solutions must be approved by MW&L. Approved methods of repair and/or replacement shall be inspected by MW&L.

The word "shall" indicates provisions that are mandatory.

When the phrase "consult MW&L" is used in this booklet it shall mean for each and every installation, not a single contact.

A current version of the MW&L Water Specification and Design Criteria, Approved Water Materials List, & Materials Variance Form, can be found online at [www.mc-power.com](http://www.mc-power.com).

## 1.2 Conflicts in Regulations

The requirements and guidelines within this document are issued with the intent of meeting with all applicable codes, ordinances, and tariffs. Should a conflict arise, the ordinance and tariff will supersede the provision of this document. The General Manager or designee of MW&L has the right to change any construction specification or design criteria as necessary.

## 1.3 Changes in Guidelines

The provisions of this document are subject to change without notice, as government codes, ordinances, and tariffs change. The Customer, Developer, Contractor, or Engineer is advised to consult with MW&L in case of doubt as to the applicability of any provision herein.



## 1.4 Application for Service

The Customer is advised that MW&L shall be provided, as early as possible, with information regarding service requirements. A [Commercial/Residential/Subdivision Service Design Application](#) and required processing fee will need to be completed prior to MW&L staff being able to work on the project.

Requests for service to commercial and industrial customers (General Service) require advance notice so that adequate planning for installation and delivery of material can be scheduled. The Customer should be aware that delivery of material is subject to vendor availability and is outside the control of MW&L.

All services require that the application be accompanied with an accurate, drawn to scale, plot plan. All service applications are required to show the preferred location of the service and the water meter on the plot plan as close to the nearest property line as possible. The request for service must provide all necessary information for sizing the water service for domestic, fire line, and irrigation service flow.

In addition, fire protection requirements are determined by the McMinnville Fire Department. This information can be gathered by contacting the [Fire Department \(503-434-7305\)](#) directly or through a [pre-application meeting](#) organized by the [City of McMinnville Community Development \(503-434-7314\)](#). Locations of fire hydrants and fire line services will be approved by MW&L.

To assure that no cross-connection potential exists, all general service applications must include a detailed set of plans for MW&L to review. Any required backflow prevention assembly shall be located directly behind the water meter or point of delivery. If this provision causes a conflict, MW&L will specify the location of the assembly.

General Service and Residential Service connections may require a **pressure reducing valve** on the service. Customers should contact the appropriate City/County Building Department for advice as to placement/location of the assembly.

Should the Customer or Contractor encounter conditions during construction that require changes in the service arrangements, MW&L shall be contacted so that satisfactory alternative arrangements can be made.

## 1.5 Provision of Service

MW&L Customer Policies, Local ordinances and State laws require that a permit procedure be followed as part of the provision of service. Customers are advised to contact MW&L, the City of McMinnville, and any appropriate jurisdiction to determine the necessary permit procedures.



## 1.6 Installation of Service Connections

Only authorized MW&L employees or contractors approved by MW&L shall make water service connections or disconnections of service from a MW&L water main. Approved contractors shall consult with MW&L prior to beginning work.

## 1.7 Operation of MW&L Valves

Only MW&L employees are authorized to operate MW&L valves. MW&L valves are defined as all public water system valves upstream or before the point of delivery.

## 1.8 Temporary Fire Hydrant Meter/Backflow Preventer

MW&L will allow temporary water service from fire hydrants provided an approved MW&L agreement is obtained for such service. Along with the MW&L agreement, MW&L will provide a Hydrant Meter Assembly (Meter, Stand, Backflow & Gate Valve) which must be used. Permittees shall pay the MW&L fee (see [Customer Policies](#)) before temporary use of a fire hydrant. All water used will be billed at the current rate.

The permittee assumes responsibility for any and all damage caused during the course of their using the temporary hydrant water service.

Anyone using a fire hydrant without an approved MW&L agreement shall be subject to any and all [legal remedies and penalties](#) as provided in the [MW&L Customer Policies](#).

## 1.9 Temporary Water Service

MW&L will provide temporary metered water service, provided the customer prepays all costs incurred for installation and removal of the service. Installation of these temporary water services shall be on a water main that is approved by MW&L. The customer will be billed at the current rate for water used.

## 1.10 Call Before You Dig

[Oregon State law OAR 952-001-0010-0090](#) requires the Contractor to call for underground utility locations at least two full working days (48 hours) prior to excavation (weekends and holidays are not included in the notification time.) The excavation should not be started until locations have been marked or the utilities have informed the Contractor that they have no facilities in the area. [Call "One Call" at 1-800-332-2344 or 811 to locate all underground utility lines.](#)





## 2 Service Standards

### 2.1 General

All material that is to be installed in the MW&L system shall be new unless specifically approved for reuse by MW&L. All material shall be clean and clear of debris. All pipe ends shall be capped or plugged per current ANSI/AWWA Standard C600 *Installation of Ductile-Iron Mains and Their Appurtenances* until final connection is made. MW&L reserves the right to approve or reject any material it determines to be unfit for placement into its system, or does not meet current MW&L specifications. See MW&L's [Approved Material List](#) for a current list of allowable materials.

### 2.2 Applicable Water System Installation Standards

Water system installations shall be in accordance with applicable provisions of the current [State of Oregon Administrative Rules for Public Water Systems, Chapter 333](#), the [American Water Works Standards](#), [American Public Works Association Standards](#) and [MW&L Water Specifications and Design Criteria](#).

### 2.3 Sizing and Location of Service Connections

Water meters shall be sized based on continuous flow rate gpm demand requirements. The standard location for water service connections are per MW&L's specifications ([SEE BOOKMARK: WATER SERVICES](#)). MW&L's standard is to provide one water service per single tax lot for residential properties. Duplex structures on a single tax lot may be served by two water services. If more than four water services are requested for a single tax lot, a master meter shall be installed. Commercial, industrial, and multi-family tax lots may be allowed additional services, subject to MW&L approval. Any deviation from these standards must receive prior approval from MW&L.

All water service connections shall be metered. All service lines up to and including the water meter, but not including the Backflow Protection Assembly, are owned and maintained by MW&L. MW&L considers the point of delivery after the water meter ([SEE BOOKMARK: DESIGN LAYOUT](#)).

For fire service lines, see Section 2.5.

### 2.4 Irrigation Service

Design of irrigation service shall include the appropriate backflow protection. Service, meter size and its location shall be approved by MW&L. The water irrigation system meter size shall not exceed the [AWWA continuous flow rate](#) for the water meter. Irrigation service shall be designed to limit dead line length.



## 2.5 Fire Line Service Connections

Customers that require fire line service connections shall provide MW&L with complete information from the Customer's engineer regarding the design requirements for the fire suppression system at the time of submitting the service design application. The data to be submitted shall include a detailed set of building plans. All fire lines that are not part of a metered water service must be installed with a leak detector meter on the double-check detector assembly (DCDA). This meter must come as part of the assembly from the factory. It must read in cubic feet. MW&L considers the point of delivery just upstream of the DCDA ([SEE BOOKMARK: DESIGN LAYOUT](#)). MW&L shall approve the final installation requirements.

## 2.6 Installation and Testing of Backflow Assemblies

Refer to the [MW&L Cross Connection Control Policy](#), [Water Specification Drawings](#), and [Approved Water Material List](#) for cross connection control requirements.

## 2.7 Trench Requirements

Trenches for water mains & services must have a minimum of 6 inches horizontal clearance from the edge of the pipe to the trench wall ([SEE BOOKMARK: TRENCH](#)).

Trench backfill within the public right-of-way shall meet or exceed the Permitting Agency standards for type and compaction effort.

All trenches shall be inspected by MW&L prior to backfill. If the trench is backfilled prior to MW&L's inspection, the Contractor shall open the trench at their expense or the water facilities shall not be accepted.

All water mains and services are required to have a minimum of 36 inches of cover measured from finished grade. Any deviations require MW&L approval ([SEE BOOKMARK: TRENCH](#)).

In new construction, all facilities at a grade below the water mains and services shall be completely backfilled and compacted prior to placement of water mains and services.

Contact MW&L in advance for separation requirements between MW&L facilities and other utilities. 3' horizontal and 1' vertical separation between new/existing water mains and other utilities is the typical minimum requirement ([SEE BOOKMARK: TRENCH](#)).



## 2.8 Standard Location of Water Mains

Within City of McMinnville public rights-of-way, MW&L has established a standard location for new installation of Water Mains ([SEE BOOKMARK: DESIGN LAYOUT/SWD](#)). Water Mains are to be normally located in the north and west sides of the street and 3 feet from the face of the curb or edge of the pavement if no curb exists. These installations will require permits from the appropriate permitting agency.

Water Mains located within MW&L approved easements shall be centered within the easement. The easement size and location is subject to approval of MW&L. See Section 3.2 of this document for conditions for placement of water mains within easements. When possible, MW&L water mains are to be installed within easements along State or County rights-of-way, not within the public rights-of-way.

## 2.9 Pressure Testing and Disinfection of Water Mains and Services

All pressure testing and disinfection shall be performed by MW&L.

All water mains and services shall successfully pass a hydrostatic pressure test in accordance with current *ANSI/AWWA Standard C600 Installation of Ductile-Iron Mains and Their Appurtenances* and shall be disinfected pursuant to *ANSI/AWWA Standard C651 Disinfecting Water Mains*, prior to acceptance and being placed into service. Prior to pressure testing, all appurtenances to the water system shall be in place and concrete thrust blocking shall have appropriate cure time.

The duration of the hydrostatic pressure test shall be for a minimum of 2 hours @ 150 psi with an allowable loss as determined by MW&L. Contractor to install/remove/plug chlorination tap. MW&L shall inspect the plug under system pressure ([SEE BOOKMARK: WATER SYSTEM MISC/CT](#)).

## 2.10 Furnishing and Installation of Fire Hydrants

Approved fire hydrants shall be furnished and installed in accordance with current City of McMinnville Fire Department requirements, all National Fire Protection (NFPA) Codes, and *MW&L Water Specifications* ([SEE BOOKMARK: FIRE HYDRANT](#)). See MW&L's [Approved Water Material List](#).

Fire hydrant density shall be in accordance with current City of McMinnville Fire Department Standards and shall conform to subdivision and roadway classifications.

Fire hydrants shall be located on the Water Main side of the street at property corners unless otherwise approved by MW&L. For clearance between the fire hydrant and any above grade objects ([SEE BOOKMARK: FIRE HYDRANT/FH-CLR](#)).





## **2.11 Customer Requested Relocation and/or Modification of Water Service**

At the request of the customer MW&L may, at its sole discretion, relocate, modify, or adjust the location of a water main, water service, water meter, or fire hydrant, provided the customer prepays MW&L for all costs to be incurred in the relocation. MW&L will not proceed without an approved permit for any work in the public right-of-way of jurisdiction and prepayment of the costs to perform the relocation/modification work. MW&L may at its sole discretion charge the customer for any additional costs incurred during the relocation/modification work.



### **3 Compliance with Service Rules and Installation Requirements**

#### **3.1 Failure to Comply**

Any Customer who refuses to comply with provisions of this document shall be subject to discontinuance of service and will be subject to payment of any and all applicable legal remedies and damages resulting from their failure to comply.

#### **3.2 Rights-of-Way and Easements**

The applicant for service shall provide MW&L with adequate public right-of-way permits and/or easements for the installation and maintenance of facilities meeting MW&L requirements. Easements must enable MW&L to have permanent access to its facilities.

For additional details see MW&L's [Surveyor's Requirements for MW&L Easements](#).



## 4 Material Standards

### 4.1 Approved Materials

MW&L reserves the right to require documentation that all materials meet MW&L requirements see MW&L's [Approved Water Materials List](#) for a current list of allowable materials. Any project constructed with materials not on the MW&L *Approved Water Materials List* will not be accepted. Requests for deviations from MW&L's approved materials can be made through MW&L's Water Standards Committee.

### 4.2 Standard Water Mains

The standard minimum size of new water main installations or replacements is 8 inch diameter. MW&L may approve mains smaller than 8-inch diameter if the water demand warrants a smaller size. MW&L may require mains larger than 8-inch diameter depending on project demand and Master Plan requirements. Hydrants require a minimum main size of 6 inches.

MW&L has established that the standard water distribution pipe material shall be Ductile Iron Pipe. See MW&L's [Approved Water Material List](#) for a current list of allowable materials.

All 4" or larger pipe shall be Class 52 or greater Ductile Iron, cement mortar lined, Tyton or Fastite joint and manufactured in North America. All Ductile Iron Pipe must meet or exceed ANSI/AWWA Standards including *AWWA C151 Ductile-Iron Pipe*, *AWWA C104 Cement-Mortar Lining for Ductile Iron Pipe*, and *AWWA C111 Rubber-Gasket Joints for Ductile Iron Pipe*.

### 4.3 Cathodic Protection

MW&L may require cathodic protection for installations where substantial corrosion may occur and will notify the customer during the plan review. The Developer, the Developer's Engineer, or the Customer shall provide the cathodic protection design for review and approval by MW&L.



## 5 Glossary

**AWWA** – American Water Works Association (<http://awwa.org>).

**AWWA Standards** – As used herein refers to the most current edition of the published American Water Works Association Standards (<http://awwa.org>).

**Backflow** – The flow of water or other liquids, mixtures, or substances into the distributing pipes of a potable supply of water from any sources other than its intended source, and is caused by backsiphonage or backpressure.

**Backflow Prevention Assemblies** – Assemblies such as an air gap, reduced pressure backflow assembly, double check valve assembly, pressure vacuum breaker, or an atmospheric vacuum breaker. All backflow prevention assemblies must meet the degree of hazard with each particular installation.

**Bore-Sighted Drain to Daylight** – Unrestricted straight-line opening in an enclosure that vents to grade, and is sized and constructed to adequately drain the full flow discharge from a reduced pressure principle backflow prevention assembly thus preventing any potential for submersion of the assembly.

**Consult** – The party must contact MW&L for each and every installation.

**Contractor** – The party doing the utility work whether it be the actual owner or a person, firm or corporation working for the owner.

**Cross-Connection** – Any connection to the potable water system that is connected to a potential non-potable water source.

**Customer** – Individual, partnership, corporation, firm, or governmental agency supplied with water service by McMinnville Water & Light.

**Developer** – An individual, partnership, or corporation, etc., requesting service to a specified parcel of land.

**Engineer** – Engineer registered as a professional engineer, in the appropriate discipline, under the laws of the State of Oregon to design and administer the construction of the Improvements, including preparing plans, specifications, and inspecting and controlling the quality of the work described herein.

**General Service** – Service that is not residential or farm service in nature.

**Irrigation Service** – A service that is solely for the purpose of irrigation of landscape or other uses, approved by the City of McMinnville and MW&L.



**MW&L** – As used herein shall mean McMinnville Water & Light.

**Permitting Agency** – Agency authorized to grant permits to work or occupy within their right of way

**Point of Delivery** – Is the end of MW&L ownership and maintenance responsibility. The MW&L Point of Delivery shall be:

- Water Services: At the customer side of the meter box.
- Firelines: At the MW&L side of the backflow assembly vault ([SEE BOOKMARK: DESIGN LAYOUT](#)). In cases where a backflow assembly is allowed within a structure the point of delivery shall be 5-feet outside of the structure.

**Potable Water** – Water that meets all the drinking water requirements of the State of Oregon and the Federal Drinking Water Standards.

**Public Water System** – A water system owned and operated by MW&L for the provision of supplying water to its customers, and as defined by current [Oregon Revised Statutes 333](#).

**Residential Service** – Those services that are not general service in nature.

**Shall** – Indicates provisions that are mandatory.

**Water Main** – Pipes four inches and above used for the distribution of water that may be placed in the public right-of-way, or utility easement.

**Water Main Extension** – An extension of a public water system from an existing, approved water main.

**Water Meter** – Instrument used for measuring the quantity of water delivered to the customer.

**Water Service Connection** – That portion of the water service extending from the main up to and including the meter box.