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Appendix A

Planning Consistency Checklists
Letter from Fire Department
Ordinances
City Council Meeting Minutes
Excerpts and Land Use Maps from Millwood Comprehensive Plan

Local Government Consistency Review Checklist

Water System Name: CITY OF MILLWOOD WATER DEPARTMENT PWS ID: 54850

Planning/Engineering Document Title: WATER SYSTEM PLAN (DRAFT) Plan Date: JUNE 15, 2011

Local Government with Jurisdiction: CITY OF MILLWOOD

WAC 246-290-108 Consistency with local plans and regulations:
Consistency with local plans and regulations applies to planning and engineering documents under WAC 246-290-106, 246-290-107, and 246-290-110(4)(b (ii).

1) Municipal water suppliers must include a consistency review and supporting documentation in its planning or engineering document describing how it has addressed consistency with **local plans and regulations**. This review must include specific elements of local plans and regulations, as they reasonably relate to water service as determined by Department of Health (DOH). Complete the table below and see instructions on back.

Local Government Consistency Statement	Page(s) in Planning Document	Yes – No – Not Applicable
a) The water system service area is consistent with the adopted land use and zoning within the applicable service area.		NA
b) The six-year growth projection used to forecast water demand is consistent with the adopted city/county's population growth projections. If a different growth projection is used, provide an explanation of the alternative growth projection and methodology.		NA
c) Applies to cities and towns that provide water service: All water service area policies of the city or town are consistent with the utility service extension ordinances of the city or town.		NA
d) Service area policies for new service connections are consistent with the adopted local plans and adopted development regulations of all jurisdictions with authority over the service area [City(ies), County(ies)].		NA
e) Other relevant elements related to water supply are addressed in the water system plan, if applicable; Coordinated Water System plans, Regional Wastewater plans, Groundwater Area Management plans, and Capital Facilities Element of Comprehensive plans.	Pages 12 & 13	Yes

I certify that the above statements are true to the best of my knowledge and that these specific elements are consistent with adopted local plans and development regulations.

Signature Date 11/9/11

Rob Lindsay, Water Resources Manager, Spokane County
Printed Name, Title, & Jurisdiction

Local Government Consistency Review Checklist

Water System Name: CITY OF MILLWOOD WATER DEPARTMENT PWS ID: 54850

Planning/Engineering Document Title: WATER SYSTEM PLAN Plan Date: JAN. 2, 2012

Local Government with Jurisdiction: CITY OF MILLWOOD

WAC 246-290-108 Consistency with local plans and regulations:
Consistency with local plans and regulations applies to planning and engineering documents under WAC 246-290-106, 246-290-107, and 246-290-110(4)(b (ii).

1) Municipal water suppliers must include a consistency review and supporting documentation in its planning or engineering document describing how it has addressed consistency with **local plans and regulations**. This review must include specific elements of local plans and regulations, as they reasonably relate to water service as determined by Department of Health (DOH). Complete the table below and see instructions on back.

Local Government Consistency Statement	Page(s) in Planning Document	Yes – No – Not Applicable
a) The water system service area is consistent with the adopted land use and zoning within the applicable service area.	p. 74 Figure 6.5	yes
b) The six-year growth projection used to forecast water demand is consistent with the adopted city/county's population growth projections. If a different growth projection is used, provide an explanation of the alternative growth projection and methodology.	p. 21 p. 75	yes
c) Applies to cities and towns that provide water service: All water service area policies of the city or town are consistent with the utility service extension ordinances of the city or town.	MMC 13.10.100	yes
d) Service area policies for new service connections are consistent with the adopted local plans and adopted development regulations of all jurisdictions with authority over the service area [City(ies), County(ies)].	MMC 13.10.090 – 110	yes
e) Other relevant elements related to water supply are addressed in the water system plan, if applicable; Coordinated Water System plans, Regional Wastewater plans, Groundwater Area Management plans, and Capital Facilities Element of Comprehensive plans.	Cap Fac chapter Fig. 10-6	yes

I certify that the above statements are true to the best of my knowledge and that these specific elements are consistent with adopted local plans and development regulations.

Cleve McCoul 12-22-2011
Signature Date

CLEVE MCCOUL, PUBLIC WORKS SUPERVISOR, CITY OF MILLWOOD
Printed Name, Title, & Jurisdiction
Thomas Richardson

SPOKANE VALLEY
FIRE DEPARTMENT

Est. 1940

Mike Thompson, Fire Chief
10319 E. Sprague Avenue
Spokane Valley, WA 99206
Phone (509) 928-1700
FAX (509) 892-4125
www.spokanevalleyfire.com

February 27, 2012

City of Millwood
9103 E. Frederick Ave.
Millwood, WA 99206

ATTN: Tom Richardson
RE: Fire Flow Storage

Dear Mr. Richardson:

After discussions and correspondence with your engineer, we approve of nesting the standby and fire suppression components of City of Millwood Water Department storage.

The Department's current maximum required fire flow design requirement is 3,500gpm. The following is provided for clarification of SVFD required fire flow rates and durations:

- Single Family Residential: 1,000 gpm/1hr
- Multi-Family Residential: 2,500gpm/2hr
- Commercial Areas: 3,000gpm/3hr
- Elementary School and Light Industrial: 3,500gpm/3hr

We understand that the City of Millwood is planning to install the necessary equipment to provide automatic power backup for the old park well. This work shall be done during this six year plan.

Please contact our office at (509) 928-1700 for further assistance.

Sincerely,

SPOKANE VALLEY FIRE DEPARTMENT

Kevin Miller
Fire Marshal

WATER SYSTEM REGULATIONS ORDINANCE

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TOWN OF MILLWOOD, WASHINGTON

ORDINANCE #323

AUGUST 5, 2002

AN ORDINANCE PROVIDING REGULATIONS FOR THE TOWN OF MILLWOOD WATER UTILITY AND WATER SYSTEM, REPEALING PRIOR ORDINANCES OR PORTIONS OF ORDINANCES IN CONFLICT HEREWITH

The Town Council of the Town of Millwood, Washington, does ordain as follows:

ARTICLE I. DEFINITIONS

Clerk-Treasurer - duly appointed Clerk-Treasurer of the Town of Millwood

Contractor - any person who is hired by a property owner, customer or Town for the construction of any water system pipelines, appurtenances or service facilities.

County - County of Spokane

Cross-connection - any physical arrangement whereby the Town's water supply is connected, directly or indirectly, with any other water supply system, sewer, drain, conduit, pool, storage reservoir, plumbing fixture, or other device which contains, or may contain, contaminated water, sewage, or other waste or liquid of unknown or unsafe quality which may be capable of imparting contamination to the Town's water supply as a result of backflow. Bypass arrangements, jumper connections, removable sections, swivel or change-over devices, and other temporary or permanent devices through which, or because of which, backflow could occur are considered to be cross-connections.

Curb Stop - the valve on a service line, owned and operated by the Town, usually located near the property line for Town control of the water service.

Customer - any person or entity who is partly or wholly responsible for the use, control, management and/or payment of any water service provided by the Town. The property owner, and for properties occupied by person(s) or entity(ies) other than or in addition to the property owner, both the occupant(s) and property owner shall be considered "customers", and the provisions of this ordinance, including enforcement thereof, shall apply to both the property, owner and occupant, jointly and severally.

Dwelling Unit - a place intended for the permanent or temporary residence of no more than one person or family.

Engineer - the Town's consulting engineer or the engineer's authorized representative.

Person - any individual, firm, company, association, society, corporation, LLC, partnership, group or any other entity.

Private Fire Protection System - any system, including valves, pipelines, hydrants, sprinklers and appurtenances located on private property, owned, operated and maintained by the property owner or customer, and designed primarily to provide fire protection for private property only.

Service Connection - the fittings, valves, pipes and appurtenances which constitute the physical attachment of other water service facilities to a water main.

Service Facilities - all service connections, pipelines, valves, meters, and appurtenances located on private or public property, owned by the Town, or by the property owner, which are designed and/or utilized for the purposes of delivering, controlling or measuring the water service from the water main to a customer.

Service Valve - any valve on a service line owned and operated by the Town, located in the Town right-of-way or easement, or near the property line, for Town control of the water service.

Service Vault - an underground concrete structure, usually located near the property line, which encloses service facilities.

Specifications - the adopted Town of Millwood Standard Specifications, which sets forth

the required products, materials, and methods of construction of all water system facilities, including service facilities, to be installed within the Town.

Superintendent - the person employed by the Town who is in charge of the operation,maintenance and inspection of the water system, or his/her authorized representative.

Town - Town of Millwood.

Water Main - any water transmission or distribution pipeline to which more than one service will be connected.

Water Service - same as Service Facilities

Water System - The Town of Millwood's water source, storage and/or distribution system consisting of well(s), storage facilities, pumping facilities, water mains, valves, hydrants and other appurtenances used to provide water service to customers.

Water System Plan - the adopted Water System Plan for the Town of Millwood, including all revisions and addenda thereto.

ARTICLE II. GENERAL PROVISIONS

SECTION 1. PURPOSE

The purpose of this Ordinance is to provide for the beneficial use of the Town's water facilities through regulation of water service construction and water use; to provide for equitable distribution of the costs of the Town's water facilities; and to provide procedures for complying with and enforcing the requirements contained herein.

SECTION 2. SCOPE

(a) The definitions of terms used in this ordinance are found in Article I. This ordinance provides for use of the Town water facilities, regulation of water service construction and connection, equitable distribution of costs, water system construction plans, issuance of water connection permits, minimum water service construction standards and conditions, and penalties and other procedures in cases of violation of this ordinance.

(b) This ordinance shall apply to the Town of Millwood and to persons outside the Town who are, by contract or agreement with the Town, customers of the Town's water facilities.

(c) For properties served by the Town's water system the property owner, or person(s) or entity(ies) other than or in addition to the property owner who occupy the property, shall be considered "customers", and the provisions of this ordinance, including enforcement thereof, shall apply to both the property owner and occupant, jointly and severally.

SECTION 3. ADMINISTRATION AND MODIFICATION OF REGULATIONS

(a) Except as otherwise provided herein, the Superintendent and/or Clerk-Treasurer shall administer, implement, and enforce the provisions of this ordinance.

(b) The Millwood Town Council shall have the authority to repeal, modify, or add requirements, regulations or rules to this ordinance at regular or special council meetings.

SECTION 4. RATES, FEES AND CHARGES

(a) All rates, fees and charges payable under the provisions of this ordinance shall be paid to the Town of Millwood. Such rates, fees and charges shall be set forth herein or as established in the most recent resolution or ordinance of the Town's water service rates and charges.

(b) All rates, fees, and charges collected under this ordinance (and the latest water service rates and charges resolution or ordinance) shall be used for the sole purpose of constructing, operating or maintaining the water facilities of the Town, or the retirement of debt incurred for same.

(c) All rates, fees and charges payable under the provisions of this ordinance are due and

payable on the receipt of notice of charges, or as specified in the Town's latest water service rates and charges resolution or ordinance. Unpaid amounts shall become delinquent and shall be subject to penalty and interest charges as outlined in this ordinance or the latest edition of the Town's water service rates and charges resolution or ordinance.

(d) All billings shall be mailed to the occupant, unless otherwise directed by the property owner. Failure to receive said bills shall not relieve any person liable from the obligation to pay the same, nor shall it relieve the property receiving service or capable of receiving service from such lien as the State Law provides may thereafter attach to said property. Any person who has the care, custody, control or management of any property or buildings, or who collects rent therefrom, shall for the purpose of this ordinance be deemed the agent of the owner of such property or building if such person is not the property owner, and the giving of all notices herein provided for to said agent shall be deemed proper notice to the property owner.

(e) All rates, fees, charges, fines or penalties resulting from this ordinance or the Town's latest water service rates and charges resolution or ordinance are deemed charges against the property served.

SECTION 5. VANDALISM

No person shall maliciously, willfully or intentionally break, damage, destroy, uncover, deface, or tamper with any pipe, structure, appurtenance, or equipment that is part of the Town's water facilities. Any person who violates this section shall be guilty of a misdemeanor and, upon conviction, is punishable by a fine not to exceed One Thousand Dollars ($1,000) or imprisonment in jail for not more than 90 days, or both, in addition to costs resulting from such damage.

SECTION 6. SEVERABILITY

A finding by any court or other jurisdiction that any part or provision of this ordinance is invalid shall not affect the validity of any other part or provision of this ordinance that can be implemented without the invalid parts or provisions.

SECTION 7. REPEAL PRIOR ORDINANCE

Any prior ordinances or portions of ordinances in conflict herewith are hereby repealed.

ARTICLE III. USE OF TOWN WATER FACILITIES

SECTION 1. CONNECTION TO WATER FACILITIES REQUIRED

(a) The owner of each lot or parcel of real property within the designated water service area of the Town of Millwood, upon which lot or parcel of real property there shall be situated any improvement, including a trailer or mobile home, designed to be utilized for human occupancy, employment, recreation, or other purpose or use, is hereby required, at such owner's expense, to install water facilities therein and to connect such facilities directly to the Town's water system. All connections to said water system shall be made in a manner complying with this ordinance. No other water system, private or public, such as wells or adjacent water systems, other than the Town's, shall be allowed to serve or be constructed upon such lot or parcel or improvement within the Town's service area.

SECTION 2. WATER SERVICE CONNECTION

(a) Water service connections to the Town's water system are not authorized unless approved by the Town in accordance with provisions of this ordinance.

(b) All connections to the Town's water system shall be planned, designed and constructed in

full compliance with the Town of Millwood Water System Plan, Specifications, this Ordinance, all other adopted regulations, policies and codes and the approved connection permit. All connections to the Town's water system shall be done at the property owner's expense.

SECTION 3. SERVICE AREA

The Town shall endeavor to give adequate service to all who request such service within the Town's designated service area. Note that the Town's corporate limits include areas served by Orchard Avenue Irrigation District and are not within the Town's designated service area. The boundaries and description of the Town's designated service area shall be made available to the public at Millwood Town Hall.

SECTION 4. FIRE HYDRANTS

Connection to and withdrawal of water from any fire hydrant owned by the Town shall only be with the permission of the Town as provided in its ordinance(s) regulation(s), policies or resolution(s) pertaining thereto. Connection to or withdrawal of water from a Town owned hydrant shall be a misdemeanor.

ARTICLE IV. WATER SERVICE LINES AND CONNECTIONS

SECTION 1. CONNECTION PERMIT AND INSPECTION REQUIRED

(a) Before any work is started for construction of a water service either on private property or within Town rights-of-way, application must be made to the Town for a connection permit. Applications for a permit shall be made by the owner of the property to be served, a licensed contractor for the property owner or the property owner's authorized agent. No work shall be allowed within any Town right-of-way or easement or on any Town water main, unless specifically described and authorized in the approved permit.

(b) In the case of water main installations, replacements or main extensions, no permit shall be issued for water service installation before the Town water main is accepted by the Town, unless otherwise specifically authorized by the Superintendent.

(c) All water service work requires inspection by the Superintendent, as specified in this ordinance.

SECTION 2. SPECIAL CONTRACTS - SERVICE AGREEMENTS

Certain types of customers or connections and certain individual customers or connections at the Town's discretion, shall require a Special Contract between the Town and the customer or property owner for connection or service. The following types of connections may require a Special Contract: water main extensions, Planned Unit Developments, fire protection services, residential or commercial developments, temporary water services, and standby water services.

The form and content of a Special Contract shall depend upon the nature of the proposed service, connection or facility, and upon related special conditions. Special Contracts for services, connections or facilities shall be prepared on an individual basis as deemed necessary by the Town.

SECTION 3. CONNECTION PERMIT - HOW OBTAINED

(a) In order to obtain a water service connection permit, a licensed contractor employed by the property owner to do the work or the owner of the property shall file an application in writing with the Clerk-Treasurer, stating:

1. Name of owner of property to be connected.
2. Service address and legal description of property or lot.

3. Number and type of buildings and improvements on the property.
4. Purposes for which service will be used.
5. Address to which bills are to be mailed.
6. Anticipated schedule of water service connection and construction, including meter installation.
7. Whether applicant is owner of the property or the owner's agent.
8. Agreement to abide by all Town Ordinances, Codes, Specifications, and Regulations.
9. For temporary services: dates service required, estimated gallons required.

(b) The application and permit shall specifically prohibit work within the Town rights-of-way or easements unless specifically described and authorized in the approved permit.

(c) Applicants for service involving main extensions, Planned Unit Developments, private fire protection systems and fire loops, multi-family residential buildings in excess of two dwelling units, industrial and commercial developments, all services larger than 2" in size, all services requiring cross-connection control devices, and any other service deemed necessary by the Town, may be required to supply the following information in addition to that specified in Section 3(a):

1. Plans and Specifications of the proposed service lines, appurtenances, water mains and service vaults.
2. Map or plat showing the location of the property and the number and type of services.
3. Fire flow requirements, if applicable.
4. Peak flow requirement in gallons per minute.
5. Average daily flow requirement.
6. Additional information, data and documentation required by Ordinance, specifications or necessary for the Town to determine the feasibility and prerequisites of providing the service requested.
7. As-Built plans shall be submitted to the Town after construction of the facilities, and approved by the Town prior to the Town starting water service to the facility.

(d) Upon approval of such plans and specifications as heretofore provided, the Clerk-Treasurer shall issue a permit as provided in this ordinance and it shall be unlawful for any person to alter the approved permit, plans and specifications or to do any other work than is provided for in the permit. The Superintendent or Clerk shall prepare and keep on file in the Town Hall all cards and records of buildings or facilities connected to the Town's water system showing the size of the lot, location of the building(s) or facilities, and the entire course of the water service line to the Town water system.

SECTION 4. ADDITIONAL WORK - NEW PERMIT REQUIRED

When a permit has been issued for a water service connection as herein provided, no additional work shall be performed without the approval of the Superintendent, and a new permit must be taken out covering all additional work.

SECTION 5. LIFE OF PERMIT

In the event work shall not be completed within one (1) year after being issued the permit, the permit becomes void and a new permit will be required. A new permit shall be taken out for which a permit fee shall be charged. No permit issued under the provisions of this ordinance shall be valid for a longer period than that specified in such permit, and in any case the permit shall expire on the date by which connection to the Town's water system is required.

SECTION 6. POSTING OF PERMIT

The permit required under the terms of this ordinance must at all times during the performance of the work and until completion thereof, be posted in some conspicuous place at the worksite.

SECTION 7. CONSTRUCTION, EXTENSION, MODIFICATION OR REPAIR OF WATER SERVICE LINES ON PRIVATE PROPERTY

It shall be unlawful for any person to construct, extend, modify, replace, repair or make connections to a water pipe on private property without obtaining a permit therefor as herein provided and submitting a scale drawing showing the location thereof as provided in Section 3 of this Article IV. The Clerk-Treasurer may issue such permit to the property owner or owner's agent of any property to construct, extend, modify, replace, repair, or make connections to water service pipe, lying inside of the private property line, provided that such property owner shall comply with all applicable provisions of this or any other applicable Town ordinance, resolution, regulation or policy, except the property owner need not employ a licensed contractor to do such work.

SECTION 8. REQUIREMENTS FOR CONTRACTORS AND PROPERTY OWNERS

(a) Except as provided in Article IV, Section 7 of this ordinance, any construction, extension, modification, replacement or repair of water service pipes within the Town shall be done only by a licensed contractor. Such contractor shall hold a valid State of Washington General Contractor's License, and shall carry a minimum of $100,000 public liability and $20,000 property damage insurance, or such insurance types and amounts required by the State for a General Contractor's License, whichever is greater.

(b) Prior to work in any Town right-of-way or easement or on the Town water system, in addition to the requirements of paragraph 8(b) above the contractor shall also procure and provide to the Town a blanket bond in a sum determined by the Town and shall provide a certificate of insurance in a form satisfactory to the Town in the amount specified in Paragraph (a) above. Such bond and insurance certificate shall certify that they will not be canceled without at least ten (10) days advance notice to the Town.. The insurance policy shall name the Town as an additional insured. The Town may require other or greater insurance requirements for specific work in a Town right-of-way or on the Town water system.

(c) Contractors and property owners performing water system work in the Town shall indemnify and hold the Town harmless and defend the Town from any and all claims arising against the Town as a result of the contractor's or property owner's work, including costs and reasonable attorney's fees.

SECTION 9. CONNECTION AND PERMIT COSTS

(a) The costs and expenses incidental to the water service installation on private property and connection to the Town's water facilities, whether such installation and connection is for a new service or for repair, maintenance or upsizing an existing service, shall be borne by the property owner. This includes the cost of the meter and all other appurtenances. The property owner shall indemnify and hold the Town harmless from any loss or damage including costs and reasonable attorney's fees that directly or indirectly may result from the installation of the private water service connection, including damage to Town facilities and improvements and injuries to others.

(b) Connection permit and inspection costs and any other applicable costs shall be as set forth in the Town's water service rates and charges resolution or ordinance. All charges shall be deposited with the Town prior to issuance of a connection permit.

SECTION 10. SEPARATE CONNECTIONS REQUIRED

A separate and independent water service connection to the Town's water main shall be provided for every building, except when one building stands at the rear of another on an interior lot and no private line is available or can be constructed to the rear building through an adjoining alley, courtyard or driveway. In such cases, the water service line serving the front building may be extended to the rear building; however, for purposes of water service rates and charges, each building shall be considered a separate customer. The number and location(s) of water meters shall be as required by the Town. See also Section 15 EASEMENTS.

SECTION 11. WATER FACILITY OWNERSHIP, OPERATION AND MAINTENANCE

(a) The Town shall own, operate and maintain all water pipelines, service lines, fire hydrants, valves and appurtenances located within Town rights-of-way, Town owned property, or on land for which a water utility easement has been granted to the Town. The Town may at its discretion determine which pipelines, valves and appurtenances are service facilities to be maintained by others.

(b) All service lines, vaults, valves, private fire protection systems, pipelines, and facilities except meters located on property not owned by the Town, or on property for which no utility easement is held by the Town, shall be owned and maintained by the property owner, except for those facilities owned by Orchard Avenue Irrigation District.

(c) All water meters, whether located on private property, in Town rights-of-way, or in water utility easements shall be owned and maintained by the Town. The protection of all meters, however, shall be the responsibility of the property owner on whose service line the meter exists. All meter repair and/or replacement due to an action or negligence of the customer or his agent, including freezing, or due to faulty customer installation of any water service line, valve, meter or facility, shall be made at the customer's expense either by the Town or at the Town's direction. All meter repair or replacement due to normal meter wear and operation shall be made by the Town at no additional charge to the customer.

(d) It shall be a violation of this Ordinance for any person not employed or specifically authorized by the Town to operate any valve or fire hydrant owned by the Town, or to tamper with any meter, curb stop or service valve, facility or equipment owned by the Town.

(e) The Town retains the right to inspect and/or test water service lines, meters, valves, plumbing, or facilities located on private property and owned by the customer. If upon written notification by the Town, necessary repairs or replacements of customer owned facilities are not completed within 72 hours, or as directed by the Town in the case of an emergency, the Town may make such repairs or replacements and charge the customer the cost thereof, or discontinue service until such repairs are made. If the cost of such repairs or replacements made by the Town is not remitted to the Town within 30 days after completion of the work, the water service will be discontinued to the customer until the specified remittance is made. The cost of turning off and turning on the water service will also be charged to the customer.

SECTION 12. EXISTING WATER SERVICE LINES

Existing water service lines may be used for connection to new buildings only when they are found, after examination and test by the Superintendent, to meet the requirements of this ordinance.

SECTION 13. WATER SERVICE DESIGN

The size, alignment, construction materials, trench excavation and backfill methods, pipe placement, jointing and testing methods used in the construction and installation of a water service line shall conform to the building and plumbing code, this ordinance and other applicable requirements of the Town. In the absence of code provisions or in amplification thereof, the materials and procedures set forth in appropriate specifications of the ASTM and American Water

Works Association (AWWA) shall apply. In case of a conflict, this ordinance and other Town requirements shall supersede other codes and specifications.

SECTION 14. DEMOLISHED OR REMOVED BUILDINGS

The property owner or his contractor engaged in demolishing or removing any structure connected to the Town's water system shall obtain a permit and notify the Town of such work and shall expose and cap the water service connection of each structure in accordance with the requirements of the Town and this ordinance. A Town Superintendent must observe such capping.

SECTION 15. EASEMENTS

When two or more structures on separate parcels are approved by the Town to be connected to a single water service, easements running with the land must be executed and recorded with Spokane County. The easements shall be approved as to form by the Town and shall provide that all properties involved shall have use of the water service and shall contain provisions for joint responsibility for costs of maintenance, repair and access, and shall contain a hold harmless clause for the Town, and shall be signed by the owners of the properties subject to the easement. This same easement requirement shall apply to separate parcels connecting to separate taps but utilizing a common trench. The requirements of this Section must be met prior to issuance of a connection permit.

SECTION 16. INSPECTIONS

(a) Two working days notice is required for scheduling inspections of water service installations, extensions, modifications, repairs, main line taps or capping pipes of demolished or removed buildings. At the scheduled time for the water service inspection, the contractor or property owner performing the work will be expected to have the work complete, pre-tested (see Section 19 below) and ready for inspection. If after scheduling an inspection, the contractor or property owner performing the work discovers that the job will not be complete and ready for inspection at the scheduled time, he/she shall call the Town a minimum of one hour prior to the scheduled inspection time to reschedule. Failure to do so will result in an automatic call-back fee, as specified in the Town's water service rates and charges resolution or ordinance. If a contractor or property owner performing the work needs a partial inspection, he/she must inform the Town of such when he/she calls to schedule. All re-inspections and/or call-back inspections to complete partial inspections will be charged a call-back fee and must be scheduled. If for any reason the job is not complete and ready or cannot be complete and ready for inspection during the scheduled allotted time for that inspection, and if the Superintendent cannot remain at the job site longer than the allotted time, a call-back fee will be charged. The Town reserves the right to set the time for inspections when conflicts arise. The contractor or his representative or the property owner performing the work must be on the job site at the time of inspection.

(b) Inspections will be made only during normal work days between 8:30 a.m. and 4:30 p.m.

SECTION 17. NOTICE OF DEFECTS

If the Superintendent finds the work or material used is not in accordance with the provisions of this ordinance, he/she shall notify the person doing the work and also the owner of the property by posting written notice upon the property, and such posted notice shall be all the notice that is required to be given of the defects in the work or material found in such inspection and a copy of such notice shall be kept on file in the Clerk-Treasurer's Office. If such defects are not corrected within thirty (30) days or as directed by the Town in the case of an emergency for such posted notice, the Superintendent, if in his opinion such defective work is detrimental to the Town's water system, may order or cause the said defects to be corrected and the actual cost of such correction

shall be chargeable to the property owner and shall be lien upon the property served by such water service line.

SECTION 18. INSPECTION BEFORE TRENCHES ARE FILLED

No trench shall be filled nor any water service line covered until the work from the place where the same connects with the Town's water main, or other outlet, to the point where it connects with the copper pipe, or other plumbing of the building or property to be connected, shall have been tested, inspected and approved by or under the direction of the Superintendent and until the same shall have been made in all respects to conform to the provisions of this ordinance and regulations pursuant thereto.

SECTION 19. TESTING

Water service lines shall be tested at or above system pressure and inspected for visible leakage before backfilling. The contractor or property owner shall make a preliminary test before calling for inspection so that the Superintendent can observe and approve the installation on one visit.

SECTION 20. EXCAVATION TO BE GUARDED

All excavations for purpose of water service installations within the limits of any street, alley, Town easement or other Town place shall be protected and guarded by fencing or covering, at all times, and by the display of proper signals and lights. If the Superintendent deems any such guards, fencing, or covering inadequate, the person making such excavation shall place necessary or additional guards, fencing or covering as the Superintendent may direct. In any case, the person or entity making the excavation shall be liable for injury to persons and for damage to property, including costs and reasonable attorney's fees, and shall indemnify and hold the Town harmless for same.

Persons conducting any part, or all of the operations connected with the work as set forth above, will be held responsible for any failure to respect, adhere to and comply with, all ordinances, resolutions and laws governing, controlling, or limiting in any way, the action of those engaged upon the work.

SECTION 21. SAFETY

The contractor or property owner performing the water service work shall comply with all applicable requirements of local, state or federal agencies relating to safety of excavations, the work site and the affected area, and shall be solely responsible for site safety, including safety of adjacent vehicular and pedestrian traffic. The Town will not inspect nor determine the adequacy of excavation or site safety, nor will the Town be responsible for enforcement of state or federal safety regulations applicable to the contractor's or property owner's work conditions.

SECTION 22. RESTORATION

(a) The contractor or property owner performing the water service work shall remove all debris and excess excavation material and shall promptly repair all damage within Town rights-of-way and thoroughfares as required by the Town.

(b) All work within the limits of any street or public place must be prosecuted to completion with due diligence and if any excavation is left open beyond a reasonable time, or if restoration is not made in accordance with Paragraph (a) above, in the opinion of the Superintendent, the Superintendent may cause the same to be rebuilt and the street or public place to be repaired and/or restored forthwith and any costs incurred in such work shall be charged to the contractor in charge of such work and to the owner of the property and the actual costs shall be due when billed and shall be a lien upon the property served by such water service line.

SECTION 23. OTHER UTILITIES

The contractor or property owner performing the excavation, installation, extension or repair of any water service pipe shall be responsible for contacting the "ONE CALL SYSTEM" prior to commencement of such work for location of utilities that may be affected by the planned water service work. Such notice shall be in compliance with state law.

SECTION 24. WATER SERVICE AND CONNECTION SPECIFICATIONS

(a) General: For services larger than 1", the size, location and configuration of all water service lines, valves, meters, and vaults shall be approved by the Town. Unless specified otherwise in a special contract or service agreement as provided in Section 2 herein, all commercial or industrial customers, single family and multi-family structures, including duplexes, shall have a single service connection, service line and meter for each structure. In the case of duplexes, a separate shut-off for each dwelling unit shall be installed adjacent to and on the customer side of the meter. Standard meter installation location shall be in meter boxes at the property line.

(b) Minimum Pipe Size: All water service pipes serving a single residential or duplex structure shall be a minimum of one inch in diameter, unless otherwise approved by the Superintendent. All other water service lines shall be determined or approved on a case by case basis by the Superintendent. "Diameter" shall mean "nominal diameter."

(c) Pipe Material: All new water service pipe 1½" in diameter and smaller shall be type K soft drawn copper tubing conforming to the applicable AWWA standard for copper water tube.

(d) Private Fire Protection: Fire protection requirements shall be approved by the appropriate agency prior to submission of plans to the Town. The size, location and configuration of all water service lines, valves, meters and vaults shall be as approved by the Town. There shall be no connection of any type for any other purpose made to the pipelines of any private fire protection system.

(e) Temporary Services: The size, location, and configuration of all temporary water service lines, valves and meters shall be as approved by the Town. Connections for temporary water service for construction purposes shall include a shut-off valve and check valve at the fire hydrant outlet.

(f) Main Extensions: All connections to existing Town water mains for the purpose of extending water service to an area presently not served, or to a residential, commercial or industrial development, shall be as designed or approved by the Town.

(g) Cross-Connection Control: Cross connection control devices shall be installed as provided in Article V, Section 3, of this Ordinance, and in full compliance with Town Specifications and Cross-Connection Control Regulation. Size, location and piping configuration of such devices shall be as designed or approved by the Town and appropriate authorities.

(h) Pipe Location and Cover: Water service pipes shall not be less than thirty (30) inches from any building. Water service pipe shall not be less than fifty-four (54) inches below road grade at the curb or edge of pavement, forty-eight (48) inches at the property line, and have at least forty-two (42) inches cover inside the property line.

(i) Pipe Bedding: All water service pipe shall be installed with clean sand, free of gravel, compacted under, around and above the pipe as specified by Town regulations.

(j) Additional Specifications and Details: All water service connections and materials shall be installed in conformance with additional and/or more detailed specifications, requirements, and regulations found in the Town's Water System Plan, or adopted otherwise by the Town.

(k) Testing and Inspection: Shall be as required elsewhere in this ordinance.

SECTION 25. WATER SAVER DEVICES REQUIRED

All structures constructed within the Town boundaries shall be required to install water saver toilets that use no more than 1.6 gallons per flush, and shall be American Standard, Kohler, Eljer, or approved equal; shall be required to install in all showers a device to restrict the flow of water to a maximum 2.5 gallons per minute; it is recommended to insulate all interior domestic water pipes with 1/2 inch thick for cold water and 3/4 inch thick for hot water, tubular high density closed cell pipe insulation; it is recommended to install all built-in dishwashers with metered fill devices which do not depend on time or pressure for operation.

All building permits will require acknowledgement by the building contractor, or property owner if there is no contractor, of these requirements. The Town superintendent shall be notified in advance of any installation which will be covered so that he/she may inspect the water conservation devices.

Failure to comply with these requirements shall be grounds for refusal of water service.

ARTICLE V. CONDITIONS OF WATER SERVICE

SECTION 1. METERS, METER READING

(a) A separate water meter and service line shall be required for each commercial or industrial customer, and each single family or multi-family structure. In the case of duplexes, a separate shut-off for each dwelling unit shall be installed adjacent to and on the customer side of the meter. Standard meter installation location shall be in meter boxes at the property line. The number, size and locations of service lines and meters shall be as required by the Town as it deems necessary, and as provided in this Ordinance. Ownership, repair, replacement and protection of water meters shall be as provided in Section 11 of Article IV. All meters shall fully comply with the Town specifications and this Ordinance.

(b) The Town shall read all water meters as it deems necessary, and as may be indicated in the Town's latest water service rates and charges resolution or ordinance.

(c) Upon reasonable notice to the customer, the Town may at any reasonable time inspect and/or test any meter located on private or public property. Any customer may request that the meter used to compute their water bill be inspected or tested by the Town for accuracy or proper operation. If such a meter test or inspection indicates that the customer's water bill has been based upon faulty meter recordings, the subsequent billing to the customer shall be adjusted to reflect the estimated or actual water used. Past billings, not to exceed six months, will be recalculated and the difference, whether in the Town's or the water customer's favor, will promptly be paid by the appropriate party. If a meter test or inspection made at the customer's request indicates an accurate meter, the customer shall pay the costs incurred by the Town for the test or inspection. Repair and replacement of water meters shall be as provided in Section 11 of Article IV.

SECTION 2. BILLING PRACTICES

The billing practices of the Town shall be in accordance to the Town of Millwood Resolution 81-18 and all subsequent amendments, or the Town's latest water service rates and charges resolution or ordinance.

SECTION 3. CROSS-CONNECTION CONTROL

The installation or maintenance of any cross connection is prohibited. Any such cross connection

now existing or hereafter installed is hereby declared unlawful and shall be abated immediately.

The control or elimination of cross connections shall be in accordance with all Washington State Department of Health regulations. The policies, procedures and criteria for determining appropriate levels of protection shall be in accordance with the Accepted Procedure and Practice in Cross Connection Control Manual - Pacific Northwest Section - American Water Works Association, Fourth Edition or any superseding edition.

Water service to any property shall be contingent upon the customer providing cross connection control in a manner approved by the Town of Millwood. Backflow devices required to be installed shall be a model approved by the state Department of Health.

Authorized employees or representatives of the Town of Millwood with proper identification shall have free access to all parts of a property or within buildings to which water is supplied for purposes of inspecting water service devices and appurtenances. Water service may be refused or terminated to any property for failure to allow necessary inspection. See also Article VI, Section 1.

No provision of this Ordinance, nor any inspection or approval by the Town, shall relieve the property owner and customer of the responsibility to design and construct all private water facilities and plumbing arrangements in full conformance with applicable health and plumbing codes, this ordinance and the referenced cross-connection control manual.

SECTION 4. NEGLIGENT USE, CONDITION OF CUSTOMER'S FACILITIES

All water customers served by the Town shall utilize the water served through their connections in a responsible and non-wasteful manner. If the Town deems that a customer is utilizing the water in an irresponsible or wasteful manner, the Town shall have the right to discontinue service at its discretion. Similarly, if the Town, through its inspections, tests, or records discover that a customer's water service pipelines, facilities or plumbing are in a deteriorated condition or are being managed or controlled improperly, and such condition or management is resulting in a demonstrable waste of water or deterioration of water quality, the Town shall have the right to require the remedy of such conditions, and to discontinue service until such remedies are made by the customer.

SECTION 5. COSTS OF DAMAGE

If any customer or customer's facilities causes a deposit, obstruction, damage or contamination to any of the Town's water system, the Superintendent shall cause the deposit or obstruction to be promptly removed or cause the damage or contamination to be promptly repaired or remediated. The cost for such work, including materials, labor, and supervision, shall be borne by the person causing such deposit, obstruction, damage, or contamination and may be collected and enforced as provided in Article VI hereof. This Section 5 shall not in any way restrict or limit other remedies available to the Town.

SECTION 6. INTERRUPTIONS OF SERVICE

(a) All water service by the Town is subject to temporary interruptions resulting from breakdowns of the Town's system or shutoffs required in connection with repairs to the Town's system or extensions thereof, or other necessary purposes. The Town does not guarantee a continuous supply of water in all events.

(b) The Town reserves the right, in times of emergency, to restrict water usage.

SECTION 7. TOWN LIABILITY

The Town shall not be held liable for injury or damage to any person or property by water delivered, or for failure to deliver water, through the Town's water system.

SECTION 8. SPECIAL AGREEMENTS

Nothing in this article shall be construed as preventing the Town, at its sole discretion, from entering into any special agreement or arrangement between the Town and any customer of the water system, whereby special water service conditions are accepted subject to any applicable payments or customer charges.

SECTION 9. CLASSIFICATION OF CUSTOMERS

The Town reserves the right to determine the type of customer receiving water service and to classify the type of customer in accordance with the categories specified in the adopted schedule of rates and charges. In defining the various classes of service, the Town may consider the difference in cost of service to the various customers, the location of various customers within the Town, the difference in cost of maintenance, operation and replacement of the various parts of the system, the different character of the service furnished various customers, capital contribution made to the system, including, but not limited to, assessments and any other matters which present a reasonable difference as a ground for distinction in arriving at a different class of service. The Superintendent shall determine the classification of customers. In the event there arises a dispute relative to the type of customer receiving water service and the applicable water service rate, the Superintendent's determination as to the type of customer shall be binding upon the customer receiving water service in the absence of manifest error. However, a customer disputing the classification shall have the right to appeal the determination of the Superintendent, and, after a hearing on the matter before the Town Council, the determination of the Town Council shall be binding on the customer in the absence of manifest error.

ARTICLE VI. ENFORCEMENT

SECTION 1. RIGHT OF ACCESS AND INSPECTION

(a) Duly authorized representatives of the Town may inspect the property or facilities of any customer (including facilities under construction) to ascertain compliance with these regulations. Owners or occupants of property connected to or in the process of connecting to the Town's water system shall allow ready access to properly identified representatives at all times when the Town reasonably suspects that a violation of these regulations may be occurring. Representatives shall be admitted to such parts of the property as they deem necessary to inspect, observe, measure, sample, and test

1. all plumbing and appurtenances
2. any other facilities required by the Town to be constructed, installed, or used;
3. any measurement, sampling, and testing facilities and procedures that have been required by the Town; and
4. such other facilities that the Town reasonably believes may be contributing to a violation of these regulations.

The Town may require payment by the customer to recover the added costs of inspection, testing or monitoring not covered by existing fees and charges. The Town, alone or in conjunction with other authorities, may conduct routine, periodic inspections of certain types of facilities. Restaurants, beauty salons, barber shops, laundromats, gas stations, and other entities that deal with chemical, cleaning or petroleum products are the more likely subjects of an inspection. Other commercial or industrial customers also may be so inspected as the Town deems appropriate.

(b) The Superintendent shall be permitted to enter all private property through which the Town holds an easement for the purposes of inspection, observation, measurement, sampling, repair, replacement and maintenance of any of the Town's water facilities within the easement. All entry and any subsequent work on the easement shall be done in full accordance with the terms of the easement pertaining to the private property involved.

(c) When a property owner or occupant, after receiving reasonable notice from the Town, refuses to permit Town personnel to enter or have access to property or facilities in accordance with this ordinance, the Town may give written notice of its intent to terminate water service to such customer, and terminate water service ten (10) days thereafter.

(d) In entering this ordinance, the Town shall perform a governmental function for the benefit of the Town. The Town shall not be liable for any loss or damage as a result of the performance of such governmental function.

SECTION 2. VIOLATIONS, REIMBURSEMENT OF TOWN COSTS

Failure to comply with any article, section, provision or portion thereof of this ordinance, with any permit or order issued thereunder, shall be sufficient cause for the Town to levy on and collect from each violator and/or customer any additional cost for expense, loss, or damage occasioned by such violation. Each day or portion thereof during which a violation continues shall constitute a separate violation. The violator and/or customer shall indemnify and hold harmless the Town from all injury or damage resulting from a violation of this ordinance including costs and reasonable attorney's fees of defending the same.

SECTION 3. ENFORCEMENT ACTIONS

(a) Except as provided in Article II Section 5 regarding vandalism, when the Town determines that a violation of this ordinance or any permit, or any damage to the Town water system is threatened or has occurred, one or more of the following actions may be taken:

1. The Town may issue an order to cease and desist any such violation and may direct the violator(s) as follows:

   (i) To comply either forthwith or in accordance with a time schedule set forth by the Town; or

   (ii) To take appropriate remedial preventive action in the event of a threatened violation.

2. The Town, at its sole discretion may take such remedial or preventative action as it deems appropriate with or without notice. The violator(s) and/or customer shall be responsible for all Town costs, which shall constitute a lien on the property.

3. The Town may require the violator and/or property owner in question to submit a detailed time schedule setting forth the specific proposed actions to prevent or correct a violation. The Town may issue an implementation schedule containing or modifying such specific actions and time schedule or requiring other actions within such time as the Town deems appropriate.

4. The Town may issue an order directing the violator and/or customer to pay to the Town penalties and costs in accordance with Section 2 above.

5. The Town may take direct enforcement action by filing suit either at law or equity in any court

of competent jurisdiction pursuant to general laws or any other applicable statute ordinance or regulation.

6. The Town may give written notice of intent to discontinue water service, and may discontinue water service thereafter.

7. The penalties, charges, rates, fees or costs assessed by the Town under this ordinance or any other ordinance, resolution or policy related to the Town's water system shall be a charge and lien upon the property in question and the Town may enforce said lien to the full extent allowed by law.

8. All reasonable costs and attorneys fees incurred by the Town in enforcing this ordinance or any other ordinance, resolution or policy related to its water system, or collecting any penalties, charges, rates, fees and costs shall be paid by the violator or customer in addition to such penalty, charges, rates, costs or fee.

9. Any other lawful remedy available to the Town.

PASSED BY THE COUNCIL OF THE TOWN OF MILLWOOD THIS 5TH DAY OF AUGUST, 2002

Jeanne Batson

JEANNE BATSON, MAYOR

Attest:

Eva L. Colomb

Eva L. Colomb, Clerk-Treasurer

1. CALL TO ORDER: The Regular Meeting of the Millwood City Council was called to order by Mayor Dan Mork at 7:00 p.m., December 5, 2011 at the Millwood City Hall. Council members present were: Glenn Bailey, Shaun Culler, Brian Ellingson, Kevin Freeman and Richard Schoen. Also present: Attorney Brian Werst, Public Works Supervisor Cleve McCoul, Treasurer Debbie Matkin, and City Clerk/City Planner Tom Richardson.

2. FLAG SALUTE: The Flag Salute was led by Mr. Mork.

3. INVOCATION: There was no invocation.

4. CONSENT AGENDA: Approval of Minutes of the Regular Meeting held November 7, 2011 and Special Meeting held November 23, 2011; November Payroll $43,013.00; November Claims $94,135.97; and Treasurer's Report for November, 2011. Council members received the November Claims Check Register, November Payroll Check Register, and a list of Claims to be paid December 5, 2011. Mr. Bailey moved to approve the Consent Agenda as presented; seconded by Mr. Ellingson. Motion carried.

5. PUBLIC COMMENTS: Shirene Young, Inland Empire Paper Company, thanked everyone for the successful the Christmas Tree Lighting event on Friday, December 2. They counted 421 people there. The mayor said it was a very nice event.

6. ADOPTION OF 2011 BUDGET AMENDMENT – ORDINANCE 423: Mr. Richardson said the proposed ordinance is the same as first presented at the November 7 meeting. Mr. Freeman asked if we will need to amend the budget again if we approve the Inland Asphalt change order. Ms. Matkin said yes, we would. Mr. Freeman moved to approve Ordinance 423. Motion seconded by Mr. Ellingson. There were five aye votes, no nays. Motion carried unanimously.

7. CHANGE ORDER NO. 1 – INLAND ASPHALT PAVING CONTRACT: Mayor Mork explained the reason for the increase in quantities as explained by Matt Gillis, the city's engineer. Mr. Schoen asked why the unit price for the asphalt is different than for the alternate even though they have the same pay item and description. Mayor Mork said he would contact Mr. Gillis and get a more detailed explanation of the charges. The matter was deferred to the next meeting.

8. PUBLIC HEARING – 2011 CAPITAL FACILITIES PLAN: Mayor Mork opened the hearing on the 2011 Capital Facilities plan at 7:10 p.m. Mr. Richardson explained that this is a closed record hearing on the Planning Commission's recommendation, as required by the municipal code. He presented the list of projects for the Capital Facilities chapter of the Comprehensive Plan. There were no public comments. The mayor closed the hearing at 7:18 p.m.

9. ADOPTION OF 2011 CAPITAL FACILITIES PLAN – ORDINANCE 424: Mr. Bailey moved to adopt Ordinance 424 approving the 2011 Capital Facilities Plan as presented. Motion seconded by Mr. Ellingson. Motion carried.

10. PUBLIC HEARING – 2012 BUDGET: The mayor opened the public hearing on the 2012 budget at 7:20 p.m. Debbie Matkin reviewed changes made since the last hearing. The natural gas tax has been added, and the liquor profits have been added back in. Benefit costs have been revised although there are still discussions going on regarding the coverage and costs. Code enforcement cost has been cut in half. Mayor Mork said there are some changes being worked on with the employee benefits which will change the final numbers in the budget. Mr. Freeman asked for clarification on the budget impact of Initiative 1183 relating to liquor tax and profits. Ms. Matkin said that the city will continue to receive liquor profits, but the governor is proposing that the state take away the liquor taxes effective July 1. Mr. Culler asked if there was anything coming out of the special legislative session currently underway. Mr. Werst said there was nothing yet. There was no comment from the public. The mayor closed the hearing at 7:25 p.m.

11. ADOPTION OF 2012 BUDGET: The mayor asked that the adoption of the budget be deferred to a special meeting which will be scheduled later this month.

12. NATURAL GAS UTILITY TAX – ORDINANCE 426: Mr. Werst explained the need for the proposed 2% utility tax on natural gas, and how it relates to the tax on brokered natural gas that the city adopted in 1991. Mr. Bailey asked how this would affect Inland Empire Paper. Mr. Werst said the mill is already paying the brokered gas tax, and therefore would not be affected by the utility tax. Mr. Schoen moved for adoption of Ordinance 426. Mr. Bailey seconded the motion. There were five aye votes, no nays. The motion carried unanimously.

13. PUBLIC HEARING – WATER UTILIZATION EFFICIENCY PLAN: Mayor Mork opened the hearing at 7:30 p.m. Mr. Richardson said that the public hearing on the Water System Plan and Water Utilization Efficiency Plan in June did not adequately document the goals and proposed measures for the WUE. A new hearing was scheduled for this evening to be certain that the hearing would meet the Department of Health's expectations. He presented the goals and four efficiency measures that are required for a system of our size. Mr. Freeman asked if the water reduction goal of 1% per year was consistent with the projected conservation noted in section 9.8. Mr. Richardson said he would ask the engineer to address this issue when he attends the January council meeting. There was no public comment. The mayor closed the hearing at 7:45 p.m.

14. IDENTIFYING 2012 PROPERTY TAX INCREASE -- RESOLUTION 11-15: Mr. Richardson said the council should adopt a resolution stating the amount of property tax increase, in order to protect the city's ability to recover the unused or "banked" tax authority in future years. The mayor noted that we adopt a similar resolution each year. Mr. Freeman moved to adopt Resolution 11-15. Mr. Bailey seconded. Motion carried.

15. BOUNDARY LINE ADJUSTMENT – VISTA AND BESSIE ROADS – RESOLUTION 11-16: Mr. Werst presented the resolution which he negotiated with Spokane County to move the city boundary from the center line to the west line of Vista Road between Courtland and Liberty, and the center line to the west line of Bessie Road from Grace to Buckeye. Mr. Schoen moved to approve Resolution 11-16. Mr. Ellingson seconded. Motion carried.

16. INTERLOCAL AGREEMENT FOR LAW ENFORCEMENT SERVICES – RESOLUTION 11-17. Mr. Werst presented the interlocal agreement with Spokane County for law enforcement services provided by the Sheriff which replaces an agreement made in 2006. This agreement will automatically renew each year unless terminated by either party. Since the last council meeting he and Mr. Richardson met with the Sheriff's office to go over the formula for calculating the Cost of Service. Mr. Werst asked the county to make several changes to address inconsistencies in the agreement but they declined. He said there will be notes made for the file to clarify some of these issues. Mr. Bailey moved to approve Resolution 11-17 authorizing the interlocal agreement. Mr. Schoen seconded. Motion carried.

17. DESIGNATION OF MAYOR PRO TEM: Mr. Mork designated Richard Schoen as the mayor pro tem for the period of January 1 through June 30, 2012.

18. FIRE DEPARTMENT REPORT – Battalion Chief Brian Foster-Dow reported that the district is planning to move into its new administrative building in March.

19. TEEN ADVISORY COUNCIL: TAC Chairperson Mark Norman said the teen council members are wrapping up a lot of their fall school activities and now have more time to devote to the council. They are working on a tree decorating contest.

20. MAINTENANCE REPORT: Mr. McCoul said the leaf pickup program ended on November 17 due to the snowfall. Trucks have been prepared for sanding, de-icing and snowplowing. He said that the November water sample was positive for coliform, which resulted in a two-week chlorination treatment starting on Nov 23. This happened last year also. Letters were mailed to all water customers. The coliform is probably the result of customer's improperly blowing out their irrigation systems. Mr. Bailey asked Cleve if we have a good list of irrigation systems in the system; he said yes, we do. Council members suggested that we educate our customers in the fall next year on the proper way to blow out their irrigation lines. He will re-test after the chlorination treatment is done. Matt Erhahl has obtained his Commercial Driver License so he will be able to help with plowing this year.

15. CLERK/PLANNING REPORT: Mr. Richardson said the new playground equipment is scheduled to be delivered this week. The Shoreline Master Plan's draft goals and policies document has been sent out for public comment.

13. LEGAL REPORT: Mr. Werst reported on the status of the county railroad property and the Union Pacific beautification lease agreement. Mr. Freeman suggested that if we are going to pay $1,000 for the lease we should get all the railroad property through Millwood included, not just the portion east of Argonne.

19. CORRESPONDENCE: Mayor Mork referred to the letter he put in the agenda packet from Linda Zertuche concerning the removal of the stop sign at the alley approaching Willow Rd between Buckeye and Trent. Mr. McCoul said he contacted the County's traffic planner who advised him that stop signs on alley approaches are not recommended by USDOT's Manual on Uniform Traffic Control Devices, so he removed the stop sign.

20. ANNOUNCEMENTS: The mayor announced the special council meeting on Saturday, December 10 at Ambrosia Bistro beginning at 6:30 p.m. for the council, commission members and staff. He said he would announce the special meeting for the budget when he has found an acceptable date. The January meeting will be on the 2nd.

21. COUNCIL COMMENTS: Mr. Freeman asked about the report that was handed out on the corridor safety project; Mr. Richardson said this is a fully grant-funded project administered by City of Spokane Valley at no cost to Millwood, which will replace the traffic signal controls. Mr. Richardson said he would be on the Valley-Millwood bike trail consultant selection committee which will be meeting next week; this is also a fully grant-funded design project administered by Spokane Valley. Mr. Schoen asked about the status of the animal control contract since the regional animal shelter proposal failed in the November election. The mayor said he would ask about it at the upcoming Northeast Mayor's meeting and about the regional solid waste proposal also.

22. PUBLIC COMMENTS: Bobbie Beese reminded the council that there are paved alleys in the blocks west of Argonne north of Euclid.

23. EXECUTIVE SESSION: None.

24. ADJOURNMENT: Mr. Freeman moved to adjourn. Mr. Culler seconded. Motion carried unanimously. Mayor Mork adjourned the meeting at 8:27 p.m.

Daniel N. Mork, Mayor

Attest:

Thomas G. Richardson, City Clerk

1. CALL TO ORDER: The Regular Meeting of the Millwood City Council was called to order by Mayor Dan Mork at 7:00 p.m., on Monday, January 2, 2012 at the Millwood City Hall. Council members present were: Glenn Bailey, Brian Ellingson, Kevin Freeman and Richard Schoen. Shaun Culler was excused. Also present: Attorney Brian Werst, and City Clerk/City Planner Tom Richardson.

2. FLAG SALUTE: The Flag Salute was led by Bobbie Beese.

3. INVOCATION: There was no invocation.

4. CONSENT AGENDA: Approval of Minutes of the Special Meeting held November 23, 2011; Regular Meeting held December 5, 2011, Special Meeting held December 10, 2011 and the Special Meeting held December 28, 2011; December Payroll $46,257.57; November Claims $47,275.60; and Treasurer's Report for December, 2011. Council members received the December Claims Check Register, December Payroll Check Register, and a list of Claims to be paid January 2, 2012. Mr. Bailey moved to approve the Consent Agenda as presented; seconded by Mr. Ellingson. Motion carried.

5. PUBLIC COMMENTS: June King, 3009 N. Stout, reported that someone is going door to door in her neighborhood asking for gas. The mayor said he had heard of a case of robbery involving door to door solicitation.

6. 2012 ANIMAL CONTROL SERVICES AGREEMENT: Mr. Richardson said the proposed SCRAPS agreement is essentially the same as for 2011. Mr. Schoen moved to approve Resolution No. 12-01approving the interlocal agreement with Spokane County. The motion was seconded by Mr. Freeman. Motion carried unanimously.

7. CHANGE ORDER NO. 1 – INLAND ASPHALT PAVING CONTRACT: Mayor Mork explained the reason for the increase in quantities as explained by Matt Gillis, the city's engineer for the project. Mr. Freeman moved to approve change order no. 1. The motion was seconded by Mr. Schoen. Motion carried unanimously.

8. APPROVAL OF WATER SYSTEM PLAN: Mr. Richardson pointed out the summary of changes made since the plan was originally presented in June. These are in response to comments submitted on the draft by Department of Health and Department of Ecology. The changes were not substantial. He also presented a spreadsheet showing a six-year financial plan which is required in the water system plan. It indicates the need for annual water rate increases of 4% to maintain the system's financial needs; he noted that the spreadsheet does not include capital outlays such as for the automatic transfer switch and building for the generator for the Old Park well. Mr. Freeman said he is interested in seeing better estimates for the cost of the project, since the estimate seems too high. Mr. Freeman moved to approve the Water System Plan. The motion was seconded by Mr. Ellingson. Motion carried unanimously.

9. SPOKANE TRANSIT AUTHORITY BOARD APPOINTMENTS – SMALL CITIES REPRESENTATIVE AND ALTERNATE: Mr. Ellingson moved to approve Resolution 12-02, designating Richard Schoen as Millwood's representative on the STA board, and designating Mike McKeehan from Cheney as Mr. Schoen's alternate. The motion was seconded by Mr. Bailey. Motion carried unanimously.

10. FIRE DEPARTMENT REPORT – No report.

11. TEEN ADVISORY COUNCIL: No report.

12. MAINTENANCE REPORT: Mayor Mork read Cleve McCoul's monthly report. Five water samples were taken this month because of the positive test last month; all five were good. Electric City installed lights in the Maintenance Building at a cost of $2,851.93; this cost is after Avista's energy conservation rebate of $900 is counted. We are also going to have them change out the outside lights at city hall. The Public Works crew has been painting the floors at the Maintenance Building and the Public Works office at the City Hall.

13. CLERK/PLANNING REPORT: Mr. Richardson said the Shoreline Master Plan's project is moving along and Ray is currently writing the regulation section of the plan. He noted that Debbie Matkin will be gone for at least a couple of weeks starting January 10 due to surgery.

14. LEGAL REPORT: Mr. Werst requested an executive session for matters related to litigation and acquisition of real estate. He said he is reviewing the Shoreline Master Plan work that has been completed so far, and commended Ray Oligher for doing a great job. He is working with the Youth Advisory Council on revisions in the ordinance creating the council.

15. CORRESPONDENCE: Mayor Mork reminded council members of the elected official's workshop this week and encouraged them to take advantage of other AWC training opportunities. He described issues that will be addressed in the upcoming legislative session.

20. ANNOUNCEMENTS: The mayor reported on the December New East Mayor's Association meeting. His term as chair expired at the end of the year. Chewelah's mayor announced that the molybdenum mine would be re-opening which will create 150 well paid jobs. Also, the Stimson mill will be taken over by Boise Cascade which will retain a large number of jobs as well. He says the state-shared liquor revenues in 2012 are still uncertain. The mayor said he has a new employee benefit package and decisions on salary increases for 2012 which will be done soon; he will mail it out soon to council members. Employees will be paying more insurance coverage for spouses, and will pay more if they choose the premium plan. Mr. Freeman said Shaun Culler did the majority of the work on the benefits package and he did a great job. The mayor said the city is also instituting vision coverage and a flexible benefits plan for medical expenses.

21. COUNCIL COMMENTS: None.

22. PUBLIC COMMENTS: None.

The mayor called a brief recess at 7:35 p.m.

23. EXECUTIVE SESSION: The mayor reconvened the meeting in executive session at 7:36 p.m. for matters related to litigation or potential litigation, and acquisition of real estate, until 7:50 p.m. The executive session was extended for 10 minutes at 7:50 p.m. and for 5 minutes at 8:00 p.m.

The mayor opened the meeting in regular session at 8:05 p.m.

24. ADJOURNMENT: Mr. Bailey moved to adjourn. Mr. Ellingson seconded. Motion carried unanimously. Mayor Mork adjourned the meeting at 8:06 p.m.

Daniel N. Mork, Mayor

Attest:

Thomas G. Richardson, City Clerk

Source. Ground water from the Spokane Rathdrum Prairie Aquifer is the sole source of the City of Millwood's water supply. The City owns and operates three wells. Currently, Butler well is in operation. Butler well is located north of State Highway 290 Trent Road. New Park well is located at the west end of the Millwood municipal park north of Frederick Avenue. Old Park well is located in the park also; however, it is at the east end of the park. Old Park and New Park are used when demand is high. Water is pumped from these wells and distributed to customers through the municipal water system Technical information for all three wells is given in Table 9.1.

Table 9.1

Water Wells

Well	Date Drilled	Depth (ft)	Capacity (gpm)
Butler	1959	130	500
New Park	1981	197	2,200
Old Park	1928	112	1,200

Butler well, which draws from a depth of 130 feet, draws water from the expansive Spokane Rathdrum Prairie Aquifer which stretches from Idaho, west into Spokane County. This is the City's main source of water, and Old Park and New Park are used as backup for fire flow or high demand times of the year. The existing system allows the City to use its own water resources and provide its own water services without relying upon other systems.

Storage. The current water storage system is owned by the City. Water originating from all three wells is pumped and stored in a steel standpipe, located in the municipal park, for distribution throughout the City. The capacity of the water tower, which was constructed in 1969, is 800,000 gallons. The water stored in the water tower is used for emergency situations. The major project to improve the storage facility includes a new pump house, electrical and communication wiring to connect the backup generator and two booster pumps and an automatic transfer switch.

Treatment. The City does not treat its water supply.

Distribution. The current service area for the City consists of all parcels within the municipal boundaries, excluding those properties annexed in 1991 which are serviced by Orchard Avenue Irrigation. The existing water system is shown in Figure 9.1 with those areas serviced by Orchard Avenue shown in yellow. Distribution occurs through a series of water lines which extend outward from four pump houses and booster stations. The City maintains tie-ins with Orchard Avenue Irrigation District to the west and with Irvin Water District to the east. In 1999, the City installed a telemetry system or more efficiently manage the distribution of water and a generator to provide backup power to the system in the event of an electrical outage.

Consumption. The City's water system currently services 836 equivalent dwelling units. In 2008, the City's water consumption was approximated at 275 million gallons for the year. The average daily consumption for the year was approximately 754,000 gallons per day. Current monthly billing rates are: $14.70 for the first 4,000 cubic feet; over the first 4,000 cubic feet it is $0.20 per hundred cubic feet for residential, and $0.14 per hundred cubic feet for commercial, in addition to the base rate.

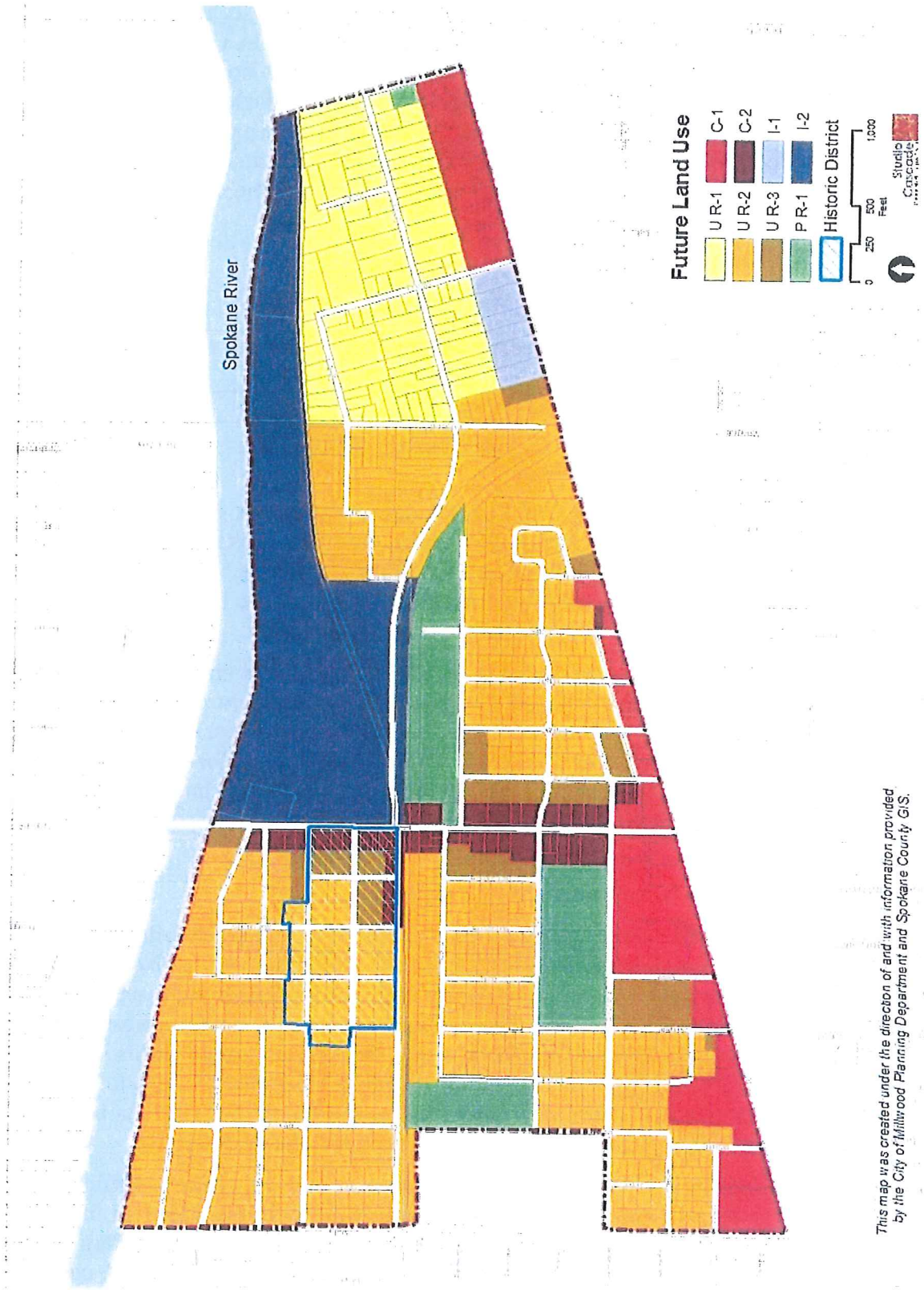


Figure 6.5 - City of Millwood Future Land Use Map

As Table 5.7 shows, the median house hold income for Millwood in 2000 was $34,565 per year. The Spokane County median household income was $37,308. Millwood's median household income was about eight percent less than Spokane County. Both Millwood and Spokane County are below the state median of $45,776 per year.

5.3 PROJECTIONS

5.3.1 Population

The population size in Millwood has been closely related to the aging of the population and family size. Millwood based its ten- and twenty-year forecasts on trend analysis. Criteria taken into consideration when calculating these forecasts include past population trends, residential building permits, sewer and water capacities, land quantity, fire protection, school trends, and regional housing goals. By looking at the possibilities and limitations of each of the criteria, the trend forecast was evaluated using situations specific to this community. The results of these forecasts calculations were populations of 1,766 for the year 2005, and 1,826 for the year 2015, adding 121 people to Millwood's 1995 population of 1,705 people. The trend analysis of this forecast may be referenced in appendix A. These forecasts were then submitted in 1996 to the Spokane County Growth Management Steering Committee who recommended a twenty-year (1705 + 172 = 1877). This population allocation was approved in 1997 by the Spokane County Board of County Commissioners. A population projection of 1,856 for the year 2020 was originally used in this planning document.

In 2006, the Spokane County Growth Management Steering Committee recommended and the Board of County Commissioners approved Resolution Number 6-0438 which allocated a population of 1,750 to the City of Millwood for 2026. Millwood considered these numbers along with historic growth and land use to confirm that official population allocation accurately represented the City.

Millwood only increased 20 people between 2000 and 2008 (0.9 percent) while the County grew 10.6 percent.

The trend shows that Millwood is adding less than two people per year which is lower than the 2006 allocation for 2030.

5.3.2 Forecast Method

To forecast or project a population for the City of Millwood is very difficult as the City can only "grow" by infill and redevelopment. Previous straight line projections predicted a population for 2015 of 1,826, and a population in 2020 of 1,856 persons which is what the Plan used for planning. Current predictions show a much lower population in 2030. The allocation of 1,750 may be high, but Millwood could reach the higher population with the densification policies recommended in this Plan, including accessory dwellings, multifamily zoning and mixed use development. The numbers have decreased by 76 which is insignificant when it comes to impact on land use and other analysis of this Plan.

* See attached note dated 12/22/2011. TR

Note to p.21 of Comp Plan *

The Comprehensive Plan contains data which was known prior to the beginning of the Water System Plan update. In particular, the Comp Plan uses data from 2001 for the number of water customers and consumption. The number of customers, average daily consumption by a residential customer (ERU), number of ERUs, and gallons produced and consumed have all been revised through the update of the Water System Plan. These numbers from the WSP are considered to be more accurate because they come from a new accounting system which is producing more accurate reports, and from a field audit of connections in 2011 to verify all services and meters. These numbers will be updated in the Comprehensive Plan during its next revision. The differences do not substantially affect the consistency between the documents.

	Comprehensive Plan	2011 Water System Plan
Population Projection	1,750 (2030)	1,770 (2030)
Population Served by MWD (2011)	-	1,544
Gallons Produced	275 million gal	256 million gal
Number of Single Family Residential Customers	619 (2001)	622 (2011)
Number of ERUs (excl. Distribution system Leakage)	826 (2001)	834 (2011)
Gallons per ERU	620 (2001)	502 (2011)

The Comp Plan still shows a fire insurance rating of 5.8. In 2011 the ratings bureau changed the rating to a 3. This improvement will also be included in the next revision of the Comprehensive Plan.

It should also be noted that the City's population estimate for the Comprehensive Plan was prepared before the results of the 2010 U.S. Census were available, which showed a population of 1,785. This has since been reduced by OFM for the April, 2010 estimate of 1,782.

Considering the closeness of the above numbers, we consider the Water System Plan to be consistent with the Millwood Comprehensive Plan.

Tom G. Richardson, City Planner

9.2.2 Ability to Meet Future Demand

Capacity. Based upon population projections, the population for the City of Millwood is expected to grow to 1,750 by the year 2030. Future water consumption can be calculated based upon 2001 consumption data. Since the City does not service the annexed parcels, they are not considered in the calculations. Approximate future consumption equals the 2001 water use, divided by the 2001 population, multiplied by the projected 2030 population.

$$(754{,}000 \div 1665) \times 1750 = 792{,}492 \text{ gallons per day}$$

In 2001, water consumption averaged approximately 620 gallons per day per single family residence, which makes up the standard "Equivalent Residential Unit." That year there were 619 single family residential ERUs, 36 ERUs for multifamily, and 171 ERUs for commercial/industrial, for a total of 826 ERUs.

Current maximum pumping capacity is greater than the projected average daily consumption demonstrating that the existing supply can potentially meet growth demands if the current capacity of the well is not significantly reduced.

The City's 2003 Water System Plan shows that there are no deficiencies in the system capacity.

Distribution. The existing distribution system was recently upgraded to increase fire flow and water pressure in certain areas. In 1990, the City's system was adequate to merit a 5.8 rating for fire insurance. The recent improvements may increase that rating. However, as growth occurs, it may be necessary to improve upon the existing system to maintain this rating. The following are the City's Water Utility Distribution goals and policies:

9.2.3 Goals and Policies

GOAL: To maintain the quality and quantity of water necessary to supply the current and projected population to continue the high quality of life.

POLICIES:

1. Replace the remaining old water distribution lines,
2. Construct a new cover structure to house the generator and Old Park well pump,
3. Complete the telemetry system to make the back-up generator and two booster pumps start-up computer controlled.

9.3 SEWER UTILITY

9.3.1 Existing Conditions

Collection System. The existing sewer system is presented in Figure 9.2. Currently, the City relies upon a combination gravity/pump driven sewer system which utilizes three major lifting pumps to move the flow through the system. The current sewer system services the entire City, excluding the process water of Inland Empire Paper Company (IEPC). The City provides domestic sewer service to IEPC and IEPC holds its own NPDES permit for process water treatment and discharge. The City's sewer collection system was completely rebuilt in a series of projects from 1990 to 1996.

Relevant municipal code sections related to water services

13.10.090 Connection to water facilities required. A. The owner of each lot or parcel of real property within the designated water service area of the city of Millwood, upon which lot or parcel of real property there shall be situated any improvement, including a trailer or mobile home, designed to be utilized for human occupancy, employment, recreation, or other purpose or use, is hereby required, at such owner's expense, to install water facilities therein and to connect such facilities directly to the city's water system. All connections to said water system shall be made in a manner complying with this chapter. No other water system, private or public, such as wells or adjacent water systems, other than the city's, shall be allowed to serve or be constructed upon such lot or parcel or improvement within the city's service area. (Ord. 323 Art. III § 1, 2002)

13.10.100 Water service connection.

A. Water service connections to the city's water system are not authorized unless approved by the city in accordance with provisions of this chapter.

B. All connections to the city's water system shall be planned, designed and constructed in full compliance with the city of Millwood water system plan, specifications, this chapter, all other adopted regulations, policies and codes and the approved connection permit. All connections to the city's water system shall be done at the property owner's expense. (Ord. 323 Art. III § 2, 2002)

13.10.110 Service area. The city shall endeavor to give adequate service to all who request such service within the city's designated service area. Note that the city's corporate limits include areas served by Orchard Avenue irrigation district and are not within the city's designated service area. The boundaries and description of the city's designated service area shall be made available to the public at Millwood city hall. (Ord. 323 Art. III § 3, 2002)

Bike Path on Empire	Long-Term (11-20 Years)	NA	NA
Pedestrian Streetscape Improvements on Argonne	Long-Term (11-20 Years)	NA	NA
Parking Lot Improvement South Side of Euclid at RR	Long-Term (11-20 Years)	$25,000	NA
Bike Path on Argonne, Empire to Bridge	Long-Term (11-20 Years)	$35,000	City, Grant

Source: Millwood, Washington 2010 Capital Facilities Project Proposals,

Source: Millwood, Washington 2009 Comprehensive Plan

Source: Millwood, Washington 2008 Argonne Road Corridor Study

Capital improvements for transportation are estimated at a cost of over six hundred thousand dollars. These projects are proposed through the twenty-year planning period as phased development. If all of the projects were to be completed many funding sources would need to be used. Local Improvement Districts (LIDs) could be identified and general tax sources could be used, however, in some cases not all areas would benefit. Grants and matching funds could be obtained through CDBG, Urban Arterial Trust Account funds, and ISTEA funds, if available.

Public Water The public water distribution system is currently serving the water needs of the City and it is expected that it can serve the needs of forecasted future development. The estimated total short-term cost for improvements to the Water System is $246,900. The Water Improvement Program for the next six years is shown in Table 10.6 below with short-, mid-, and long-term project costs addressed.

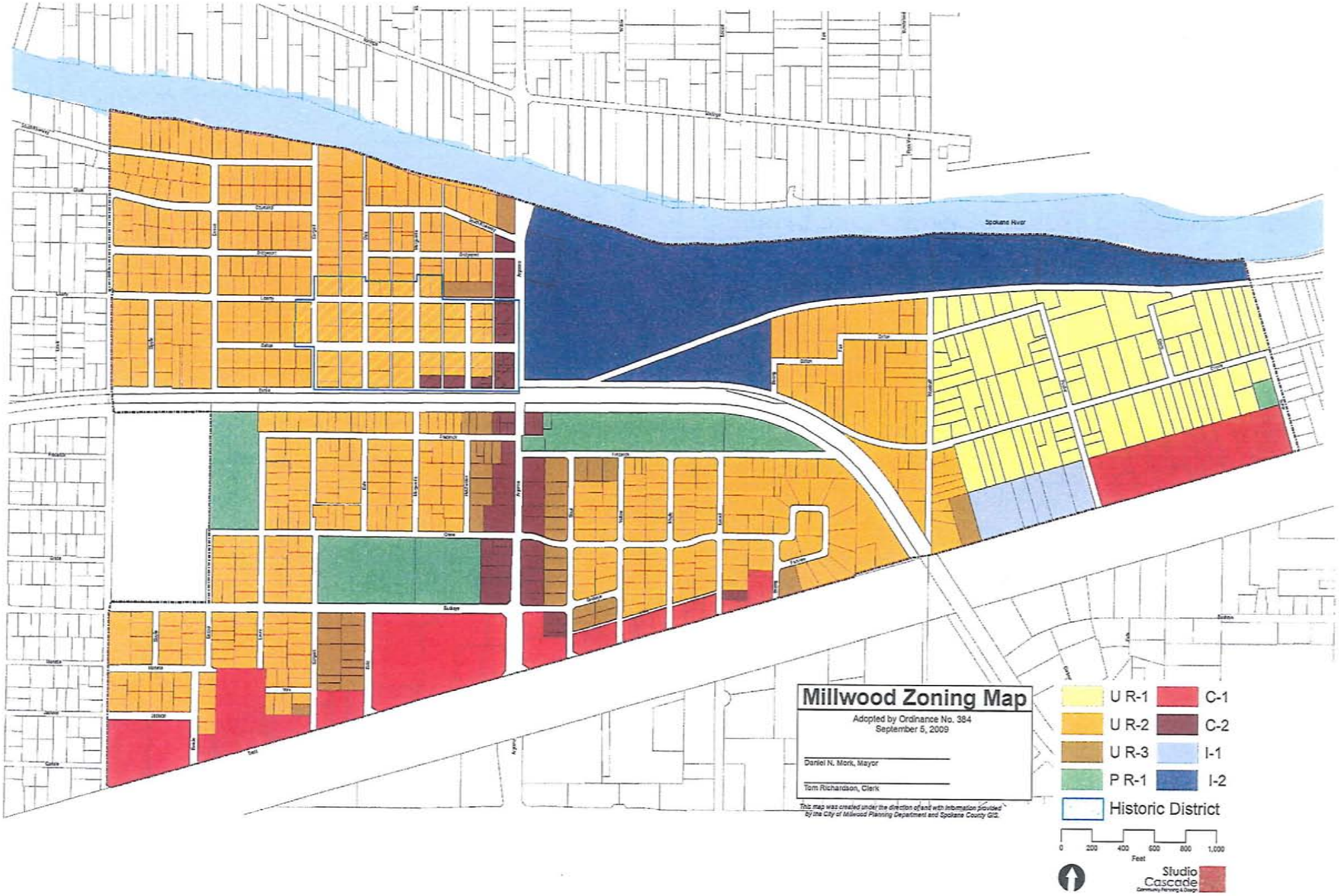
Table 10.6

Water Improvement Program

Project	Priority	Estimated Cost	Funding
Supply			
Expand Old Park Well Building and Backup Power	Short-Term (1-6 years)	$389,000	Water Fund
Booster Station			
Third Booster Pump	Short-Term (1-6 Years)	$50,000	Water Fund
Storage			
Exterior Standpipe Re-coating	Short-Term (1-6 Years)	$76,000	Water Fund

Distribution System	Short-Term (1-6 Years)		
Replace 4" Main on Trent from Laura to Dale	Short-Term (1-6 Years)	$133,808	Water Fund
Replace 4" Main on Frederick from Locust east to dead end	Short-Term (1-6 Years)	$111,507	Water Fund
Replace 8" Main on Marguerite from Buckeye to Grace	Short-Term (1-6 Years)	$89,205	Water Fund
Replace 8" Main on Liberty from Vista to Bessie	Short-Term (1-6 Years)	$122,657	Water Fund
Replace 6" Main on Buckeye from Laura to Bessie, on Bessie from Buckeye to Marietta, and Marietta from Bessie to Laura	Short-Term (1-6 Years)	$234,164	Water Fund
Replace 6" Main north of Empire between Fowler and Davis	Short-Term (1-6 Years)	$122,657	Water Fund
Replace 6" Main on Vista from Liberty to courtland	Long-Term (7-20 Years)	$122,657	Water Fund
Replace 8" Main on Laura from Grace to Frederick	Long-Term (7-20 Years)	$122,657	Water Fund
Replace 6" Main on Grace from Sargent to Laura	Long-Term (7-20 Years)	$66.906	Water Fund
Replace 6" Main on Buckeye from Laura to Stout	Long-Term (7-20 Years)	$379,134	Water Fund
Replace 6" Main on Dale south of Buckeye	Long-Term (7-20 Years)	$78,057	Water Fund
Replace 6" Main on Stout from Buckeye to Frederick	Long-Term (7-20 Years)	$189,567	Water Fund
Replace 8" Main in City Park from Stout to Locust	Long-Term (7-20 Years)	$178,416	Water Fund
Replace 4" Main in City Park from Stout to Maple	Long-Term (7-20 Years)	$122,657	Water Fund
Emergency Disinfection Equipment			
Add Chlorination to New Park and Butler Wells	Short-Term (1-6 Years)	$15,000	Water Fund

Source: Millwood, Washington 2011 Water System Plan


Spokane River
Millwood Zoning Map
Adopted by Ordinance No. 384
September 5, 2009
Daniel N. Mork, Mayor
Tom Richardson, Clerk
This map was created under the direction of and with information provided by the City of Millwood Planning Department and Spokane County GIS.
U R-1
U R-2
U R-3
P R-1
C-1
C-2
I-1
I-2
Historic District
0 200 400 600 800 1,000
Feet
Studio Cascade

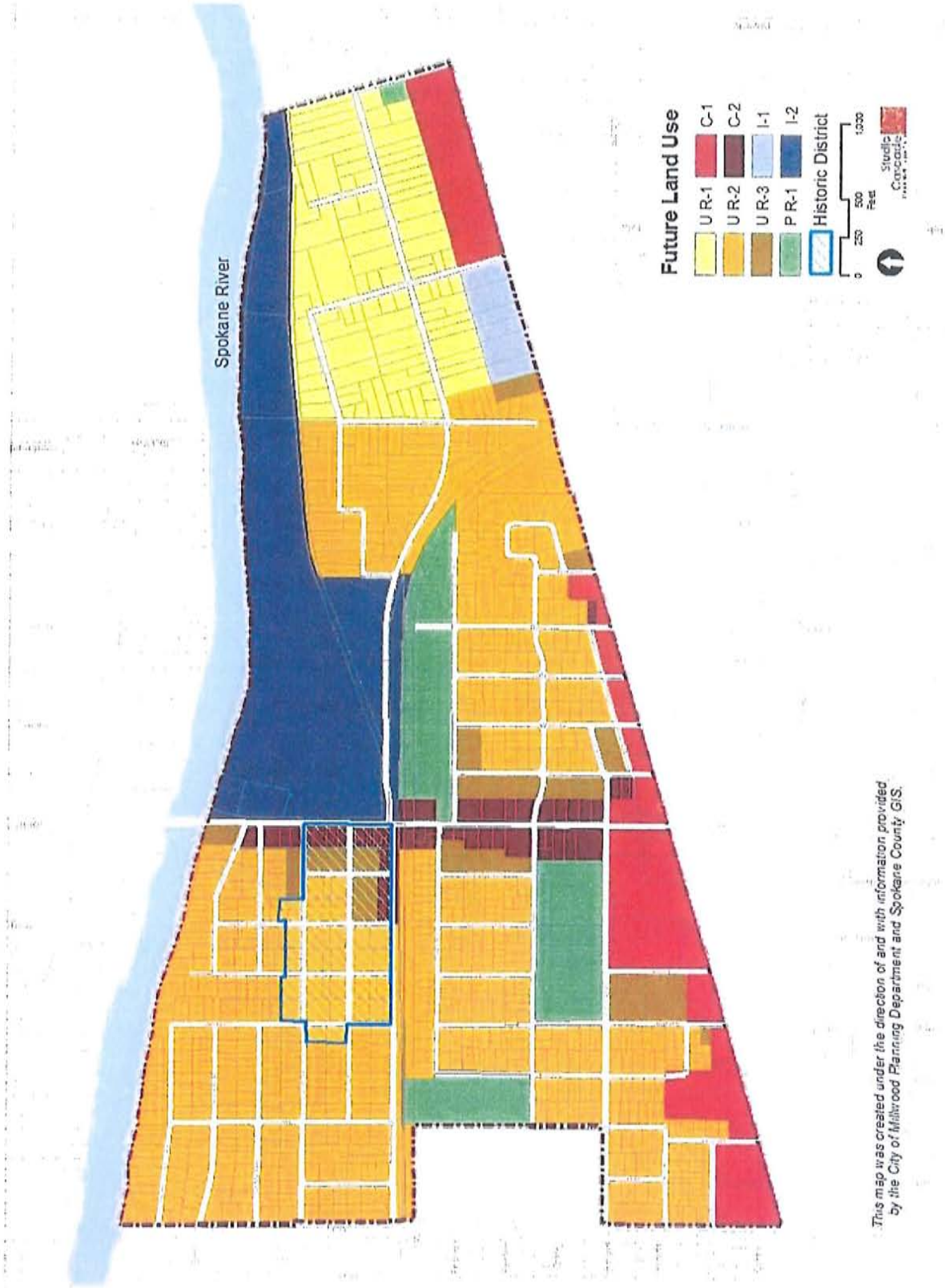


Figure 6.5 - City of Millwood Future Land Use Map

Appendix B

DOH Correspondence
DOH Water Facilities Inventory
DOH Water Quality Monitoring Report (WQMR)
Intertie Agreements
Service Area Agreement & Map

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
EASTERN DRINKING WATER REGIONAL OPERATIONS
16201 East Indiana Avenue, Suite 1500, Spokane Valley, Washington 99216-2830
TDD Relay 1-800-833-6388

VARELA & ASSOC
NOV 17 2011
RECEIVED

November 16, 2011

Cleve McCoul
Town of Millwood
9103 E Frederick
Spokane, WA 99206

Subject: Millwood, Town of; PWS #54850Q; Spokane County
Comprehensive Water System Plan Second Draft Extension Letter

Dear Mr. McCoul:

The Town of Millwood was under a Pre-plan Agreement, which was amended to state the Comprehensive Water System Plan for the Town of Millwood water system shall be submitted to the Department of Health (DOH) by June 15, 2011. The Town did submit the first draft of the Comprehensive Water System Plan in accordance with the amended agreement.

On September 14, 2011, DOH sent a comment letter regarding the Comprehensive Water System Plan, which stated second draft of the Comprehensive Water System Plan was due by December 6, 2011. We received a request for a revised schedule for submission of the second draft of the document.

Consider this letter an Agreement, between the Town of Millwood and the Department of Health, that the revised submittal date for the second draft Water System Plan is **April 30, 2012.**

A change of operating permit status from Green to Yellow would normally occur when a Water System Plan update becomes overdue. The six-year update for this water system plan was due September 9, 2009, however, because the Town of Millwood agreed to a Pre-plan Agreement and has requested submittal extensions in a timely manner, DOH's approval of this schedule will prevent an operating permit status change from Green to Yellow. **The operating permit will remain Green until April 30, 2012.** The Town of Millwood must submit the second draft of the Comprehensive Water System Plan by April 30, 2012, or the operating permit status will be changed to Yellow. In addition, after April 30, 2012, no further extensions will be issued.

Please contact me if I can be of any further assistance.

Sincerely,

Heather Cannon
Regional Planner
Office of Drinking Water
Division of Environmental Health

cc: Russell Mau, PE DOH
George Simon, DOH Compliance Manager
Andy O'Neill, RCAC
Ying Fu, Department of Ecology, Eastern Regional Office
Tom Richardson, Town of Millwood
Ben Varela, PE Varela & Associates

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
EASTERN DRINKING WATER REGIONAL OPERATIONS
16201 East Indiana Avenue, Suite 1500, Spokane Valley, Washington 99216-2830
TDD Relay 1-800-833-6388

September 14, 2011

Cleve McCoul
Town of Millwood
9103 E Frederick
Spokane, WA 99206

Subject: Millwood, Town of; PWS ID #54850Q; Spokane County
Water System Plan; DOH Project # 11-0611; **DOH Comments**

Dear Mr. McCoul:

Thank you for providing the draft Water System Plan (WSP) for the Town of Millwood water system received in this office on June 15, 2011. The following comments will need to be addressed before the Department of Health (DOH) can approve the document:

Chapter 2 – Description of the Water System

1. Provide a City zoning map and land use maps from the Millwood Comprehensive Plan.

2. Section 2.3.5: Do all connections have meters, including any parks or other City facilities? → NOT METERED

3. Section 2.3.6: Do the three interties have meters? NO

4. Section 2.4.1.2 (and Section 4.4.2), the system should be operated to limit using both booster pumps at the same time. What happens if one is broken or has to be taken out of service for maintenance? Section 4.4.2 indicates that various hydraulic conditions need to be met with one pump out of service. ONE ONLY ALL THE TIME

5. Please clarify information on Figure 1. On Page 8 it is called the Existing Water System map, on Page 12, it stated the map shows the land use designations from the City's land use plan, on Page 13 it states the map shows the Retail Service Area, on Page 18 it states the map shows the projected land use, and the Figure is titled "Current Land Used." Please clarify what Figure 1 represents, make corrections to the WSP, and title the figure appropriately.

6. Figures 1, 2 and 3 show the Millwood Existing Service Area, Retail Service Area, Future Service Area and Water Rights Place of Use Service Area (Service Area) located within the Orchard Avenue service area. Is the City of Millwood planning on taking over water

service within the Orchard Avenue service area? If not please correct these Figures. If the City wants to expand its service area, please contact the Office of Drinking Water prior to submitting the second draft.

7. Local government consistency from the City of Millwood and the Spokane County CWSP administrator are required for this Water System Plan. A checklist has been enclosed for your convenience. TOM

Chapter 3 – Planning Data

8. Table 3-5: Update totals at the bottom. It appears that the Subtotal for the Butler Well for 2008 is incorrect and affects the Average for Butler and then the "Total" line for both 2008 and Average.

9. Section 3.1.5: At the top of Page 18, update the Commercial "Average Annual Metered Use" from 38,864,876 to 39,939,276 to match Table 3-3 and the text on the bottom of Page 17. This results in 218 ERUs.

10. Section 3.1.5: At the top of Page 18, update the distribution system leakage (DSL) "Average Annual DSL" from 65,209,024 to 64,130,000 to match Table 3-2. This results in 350 ERUs.

11. Section 3.2.4, Table 3-7 (and Table 3-8): Multiplying 1190 equivalent residential units (ERU) (from Section 3.1.5) by 1.066 (for 6.6 percent growth to 2030) yields 1,268 ERUs, not 1,266.

12. Table 3-8: Update ADD to 502 gpd.

13. Sections 3.1 and 3.2: For ERU analysis, you have ignored the "Authorized Water Use" component (see Table 3-2), which is estimated as 33.41 million gallons per year. This water use should be assigned its own ERU value, like DSL, and projected into the future. For the Projected ERUs, you should consider decreasing DSL, and its respective ERUs, as you are planning to replace piping suspected of leaking. Water Use Efficiency (WUE) requires steps to find and eliminate leaks.

Chapter 4 – Design Standards

14. Section 4.4.2: Do the various hydraulic analyses consider one booster pump out of service.

15. Section 4.5.1: At top of Page 27, update text to indicate "20 psi" during "MDD and FF".

16. Section 4.5.2, on Page 28: How do the selected fire flows affect the City's WSRB rating? We would like to see a letter from the City or the local Fire Marshall agreeing with these values.

Chapter 5 – Existing System Analysis

17. Table 5-1 and Table 5-2: The values given for "Total Supply Capacity" (Table 5-1) and "Source Capacity" (Table 5-2) do not equal values given in Table 2-1 or Table 5-3.

18. Table 5-2: May need to update ADD, MDD and PHD for 20-year ERUs (see Comment regarding Table 3-8).

19. Table 5-2: Data show that Qi is exceeded for all scenarios.

20. Table 5-3: "Existing Consumption" values do not match Table 2-1 or Table 5-1.

21. Table 5-4: Cannot exceed water rights. The first bullet at the top of Page 34, needs to state that "Total Instantaneous" water rights are exceeded under both current and projected scenarios.

22. Per text on Page 35 following Table 5-5, provide data summaries that support that all constituents are within permissible levels.

23. Section 5.4.2: You need to consider one booster pump out of service.

24. Section 5.5.1: For "Dead Storage" on Page 37, confirm that one booster pump in operation can maintain proper pressures in the system with only 10 feet of storage in the standpipe reservoir.

25. Section 5.5.1, for "Equalization Storage" on Page 37: Update pump flow rates to be less than or equal to 4,000 gpm (= Qi). This does not change the result.

26. Section 5.5.2: You can only conclude that storage is not deficient, if the water system updates their operations to "Fill" at 87 feet. Under current operations, it is deficient.

27. Section 5.6: It would be helpful to provide a schematic that shows how the well pumps can feed the system and the standpipe reservoir, while simultaneously showing how the booster pumps are controlled, to prevent pumping into the standpipe reservoir.

28. Section 5.6: You need to analyze at least two conditions: 1) PHD and 2) MDD + FF. In both cases, only one booster pump should be in operation.

29. Section 5.6: Do the fire flow scenarios include "extended" simulations associated with fire flow durations given at the end of Section 4, with only one booster pump in operation? Under such conditions, can the system provide adequate pressure? At what level in the standpipe reservoir does the booster fail to provide adequate pressure (to establish the "true" Dead Storage)?

30. Section 5: You need to complete Worksheet 6-1 from the Water System Design Manual (WSDM).

31. The Department of Ecology issued a review letter for this WSP dated July 14, 2011. Please address any issues contained in the letter in the second draft submittal. In addition to existing and 20-year water right self assessments, complete and submit a six-year water right self assessment form in the second draft.

32. Please include a brief description on the Ground Water Rule's source monitoring requirements. Triggered source water monitoring is required when one of the system's routine distribution samples collected under the Total Coliform Rule is total coliform positive. Within 24 hours of notification of the total coliform positive result, the system must collect triggered source samples and have them tested for E. *coli*. Each source must be tested (prior to any treatment) that was in operation at the time the routine sample was collected.

Chapter 6 – Improvements

33. Section 6.3: The City does NOT have adequate water rights to meet Qi for existing and project needs, even when considered as an integrated water right.

34. Section 6.5: Update this section based on analyzing system capacities having only one booster pump in operation.

35. Table 6-4: Are these improvements all CI pipe? Please indicate.

Chapter 7 – Implementation

36. Table 7-1: Please indicate whether the pipe replacements that are in the "Distribution System" improvements that total $820,000 are CI pipe replacements.

Chapter 8 – System Finances

37. Provide a detailed, **balanced** water system budget for six consecutive fiscal years beginning with 2011 that clearly show all expenses, revenues, and reserve account balances. Is the system collecting enough revenue to support the system's expenses and fund reserve accounts? What must the water rates be to fund all expenses, including operation and maintenance, testing, debt service and reserve accounts? When will the necessary rates be adopted? APRIL OR MAY

Chapter 9 – Water Use Efficiency

38. Provide signed meeting minutes to document how the WUE goal(s) was established through a public process as required by WAC 246-290-830.

39. You must include each measure you select to implement in the budget. Please highlight the WUE expenses in the budget. $1000

40. Using existing information, describe the water supply characteristics and any foreseeable impact to the **resource (aquifer or surface water source).** How will your system's use of water from the **resource** now and in the future, affect the quantity and quality of that water? Include the name and location of each source, source description, production capacity, seasonal variations, water rights, and legal constraints.

41. According to information presented in the WSP, the City of Millwood does not currently have an inclining block rate. Evaluate the feasibility of adopting and implementing a rate structure that encourages water demand efficiency. Evaluate an inclining block rate or seasonal rates or both. Identify the pros and cons of the chosen rate structure for both your system and your customers.

Chapter 10 – Source Water Protection

42. Section 10.3: Provide the updated PCSI list. If not updated, provide the most recent list.

43. Section 10.4: Provide the property owner list. CLEVE SAJB

Chapter 11 – Operation and Maintenance

44. Table 11-1, "Main Break": Consider adding an action: provide direct line disinfection.

45. Table 11-1, "Backflow Incident": Consider adding actions: flush system and isolate affected piping.

46. Figure 2: Clearly show the other OAID intertie, and label it on the map. CLEVE

Appendices

Please provide the missing information from the following Appendices:

- Appendix A: Consistency Checklists, Letter from the Fire Department, City Council Meeting Minutes
- Appendix B: Water Quality Monitoring Report (WQMR)
- Appendix H: Water Use Efficiency Plan
- Appendix I: Capacity Analysis
- Appendix J: Water System Construction Standards

Other Comments

The water system must meet the consumer input process outlined in WAC 246-290-100(8). Please include a copy of the notification and signed meeting minutes as documentation of a consumer meeting discussing the WSP prior to WSP approval.

Provide notice to adjacent utilities that the water system plan is available for review; include a copy of the notice, list of systems notified, and any comment received in the second draft.

Prior to WSP approval by DOH, the governing body or elected governing board will need to officially approve the water system plan in accordance with WAC 246-290-100(8)(b). Please provide a copy of the signed minutes or resolution.

END OF COMMENTS

We hope that you have found these comments to be clear, constructive and helpful in the development of your final draft WSP. We ask that you submit **two copies** of the revised WSP on or before **December 6, 2011.** In order to expedite the review of your revised submittal, please complete the enclosed DOH Comment Response Form summarizing how each of the above comments was addressed in the revised WSP and where each response is located (i.e., page numbers, Appendices, etc.).

Regulations establishing a schedule for fees for review of planning, engineering and construction documents have been adopted (WAC 246-290-990). Please note that we have included an invoice for **$2,280.00** for the review of the Water System Plan Update. This fee covers our cost for review of the initial submittal, plus the review of one revised document. Please remit your complete payment in the form of a check or money order within thirty days of the date of this letter to: **DOH, Revenue Section, P.O. Box 1099, Olympia, WA 98507-1099.**

Thank you again for submitting your draft Water System Plan for our review. If you have any comments or questions concerning our review, please contact either of us at (509) 329-2116 or (509) 329-2121, respectively.

Sincerely,

Russell Mau, PhD, PE
Regional Engineer
Office of Drinking Water
Division of Environmental Health

Heather Cannon
Regional Planner
Office of Drinking Water
Division of Environmental Health

Enclosures: Invoice
Comment Response Form
Local Government Consistency Review Checklist
Department of Ecology letter

cc: Spokane Regional Health District
Spokane County Planning Department
Ying Fu, Department of Ecology, Eastern Regional Office
Mark Varela, PE, Varela & Associates, Inc

VARELA & ASSOC
JUN 22 2011
RECEIVED

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
EASTERN DRINKING WATER REGIONAL OPERATIONS
16201 East Indiana Avenue, Suite 1500, Spokane Valley, Washington 99216-2830
TDD Relay 1-800-833-6388

June 20, 2011

Cleve McCoul
Millwood, Town Of
9103 E Frederick
Spokane WA 99206

Subject: Millwood, Town Of; PWS ID# 54850Q; Spokane County
Water System Plan; DOH Project #11-0611

Dear Mr. Cleve McCoul:

The Water System Plan (WSP) for the above mentioned water system was received in this office on June 15, 2011, and is now in the review process. We wish to inform you that WAC 246-290-990 authorizes a fee to be charged for the review of water system plans, reports, and construction documents. A fee will be charged for the review and approval of your water system plan. You will receive an invoice for payment after our initial review of the plan. Payment is due at that time. A copy of the regulations and fee schedule is enclosed.

This project has been assigned the following unique project # 11-0611. **Please use this number on all future correspondence or submittals pertaining to this project.**

In accordance with SHB 2446, the Department of Health Office of Drinking Water will review and respond to your system's Water System Plan within 90 days unless a longer period of time is necessary to adequately review the WSP. If additional time is needed, the department will notify you.

If you have any questions, please contact me at (509) 329-2121.

Sincerely,

Diana Jacobson
for Heather Cannon
Regional Planner
Office of Drinking Water
Division of Environmental Health

Enclosure

cc: Spokane Regional Health District
Russell Mau, PE, Regional Engineer - DOH
Spokane County Planning Department
Ben Varela, PE-Varela And Associates
DOH Compliance Program Manager

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
EASTERN DRINKING WATER REGIONAL OPERATIONS
16201 East Indiana Avenue, Suite 1500, Spokane Valley, Washington 99216-2830
TDD Relay 1-800-833-6388

March 30, 2011

Cleve McCoul
Town of Millwood
9103 E Frederick
Spokane, WA 99206

Subject: Millwood, Town of; PWS #54850Q; Spokane County
Comprehensive Water System Plan Extension Letter

Dear Mr. McCoul:

We received a request for a revised schedule for submission of the Comprehensive Water System Plan for the Town of Millwood water system. The Town of Millwood is currently under a Pre-plan Agreement, which states the water system plan shall be submitted to the Department of Health (DOH) by April 15, 2011.

Consider this letter an Agreement, between the Town of Millwood and the Department of Health, that the new submittal date for the draft Water System Plan is **June 15, 2011.**

A change of operating permit status from Green to Yellow would normally occur when a Water System Plan update becomes overdue. The six-year update for this water system plan was due September 9, 2009, however, because the Town of Millwood has agreed to a Pre-plan Agreement and requested a submittal extension in a timely manner, DOH's approval of this schedule will prevent an operating permit status change from Green to Yellow. **The operating permits will remain Green until June 15, 2011.**

Please contact me if I can be of any further assistance.

Sincerely,

Heather Cannon
Regional Planner
Office of Drinking Water
Division of Environmental Health

cc: Ying Fu, Department of Ecology, Eastern Regional Office
Ben Varela, PE Varela & Associates
Russell Mau, PE DOH
Valori Adams, DOH Compliance Manager
George Simon, WFI Coordinator

WS ID	WS Name
54850	MILLWOOD, TOWN OF

Total WFI Printed: 1

RECEIVED

54850 Q

Water Quality Monitoring Report for the Year 2011

CITY OF MILLWOOD

System: MILLWOOD, TOWN OF | PWSID: 54850 Q | Report Date: 03/02/2011

Contact: CLEVE MCCOUL | Group: A - Comm | County: SPOKANE | Region: EASTERN

Part 1: List of Active Sources with Water Quality Monitoring Requirements

DOH Source#	Name	Type	Use	Susceptibility Rating
S01	Well (Park) - AHC937	Well	Permanent	~~Unknown~~ MODERATE
S02	Well Butler - AHC938	Well	Permanent	~~Unknown~~ MODERATE
S03	New Park Well 4 - AHC936	Well	Permanent	~~Unknown~~ MODERATE

Part 2: Sampling Schedule for the Year 2011

Coliform Sampling (Routine)	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	2	2	2	2	2	2	2	2	2	2	2	2

* Indicates the requirement is an exception from WAC 246-290.

- If the coliform (bacteriological) sampling schedule listed at the bottom of the current Water Facilities Inventory (WFI) form for your system is different from the schedule listed above, follow the schedule on the current WFI.
- Samples must be collected from representative points throughout the distribution system.
- Repeat samples are required following an unsatisfactory sample. In addition, collect a sample from each operating groundwater source.
- A minimum of 5 routine samples are required the month following one or more unsatisfactory samples in accordance with your system's Coliform Monitoring Plan.

Lead and Copper Distribution Sampling

- Lead and copper samples must be collected from indoor faucets within the distribution system after the water has sat unused in the pipes for at least 6 hours but no more than 12 hours.
- Sample faucets should be flushed with cold water the evening prior to collecting the sample.
- Part 2 indicates the month in which samples should be collected. Part 4 indicates the total number of sample required.
- If you are required to sample annually or once every 3 years, samples must be collected between June and September.

Chemical Sampling Requirements

- Source water chemical samples must be taken from a location as near to the source as possible, but after all treatment, and before entering the distribution system.
- Nitrate, nitrite and arsenic are included as part of a complete IOC.

Month	Source	Monitoring Requirement	Test Panel
January		*No source chemical sampling required this month*	
February		*No source chemical sampling required this month*	
March		*No source chemical sampling required this month*	
April		*No source chemical sampling required this month*	

Water Quality Monitoring Report for the Year 2011

Month	Source	Monitoring Requirement	Test Panel
May		*No source chemical sampling required this month*	
June		*No source chemical sampling required this month*	
July		*No source chemical sampling required this month*	
August		*No source chemical sampling required this month*	
September	S01	NITRATE	NITRATE
September	S02	NITRATE	NITRATE
September	S03	NITRATE	NITRATE
October		*No source chemical sampling required this month*	
November		*No source chemical sampling required this month*	
December		*No source chemical sampling required this month*	

Part 3: State Waivers

- Automatically granted to all sources based on DOH assessment of conditions within the state.
- No waiver application, or fee required.
- State waivers granted for the 2011 - 2013 compliance period are listed in Part 4.

Part 4: Water Quality Monitoring Frequency

- Although waivers may be granted for your system, there may be some monitoring required as a condition of the waiver your system was granted.

Monitoring Group	Test Panel	Sample Location	Schedule/Status
Asbestos	ASB	Distribution	State Waiver Thru Dec 2019
Bacteriological	Coli	Distribution	See routine sample schedule in part 2
Dioxin	Dioxin	All sources	State Waiver Thru Dec 2013
Endothall	Endo	All sources	State Waiver Thru Dec 2013
EDB and other soil fumigants	Fumigant	S01	State Waiver Thru Dec 2013
EDB and other soil fumigants	Fumigant	S02	State Waiver Thru Dec 2013
EDB and other soil fumigants	Fumigant	S03	State Waiver Thru Dec 2013
Glyphosphate	Glyphs	All sources	State Waiver Thru Dec 2013
Herbicides	Herbs	S01	1 sample between Jan 2011 - Dec 2013
Herbicides	Herbs	S02	1 sample between Jan 2011 - Dec 2013
Herbicides	Herbs	S03	1 sample between Jan 2011 - Dec 2013
Insecticides	Insect	S01	1 sample between Jan 2011 - Dec 2013
Insecticides	Insect	S02	1 sample between Jan 2011 - Dec 2013
Insecticides	Insect	S03	1 sample between Jan 2011 - Dec 2013
Inorganic Contaminants	IOC	S01	1 sample between Jan 2011 - Dec 2013

Water Quality Monitoring Report for the Year 2011

Monitoring Group	Test Panel	Sample Location	Schedule/Status
Inorganic Contaminants	IOC	S02	1 sample between Jan 2011 - Dec 2013
Inorganic Contaminants	IOC	S03	1 sample between Jan 2011 - Dec 2013
Lead/Copper *	LCR	Distribution	LCR 1 Set of 10 samples between Jan 2010 - Dec 2012
Nitrate *	NIT	S01	Collect 1 sample(s) every 1 year
Nitrate *	NIT	S02	Collect 1 sample(s) every 1 year
Nitrate *	NIT	S03	Collect 1 sample(s) every 1 year
General Pesticides	Pest1	S01	1 sample between Jan 2011 - Dec 2013
General Pesticides	Pest1	S02	1 sample between Jan 2011 - Dec 2013
General Pesticides	Pest1	S03	1 sample between Jan 2011 - Dec 2013
Diquat	Diquat	All sources	State Waiver Thru Dec 2013
Volatile Organic Contaminants	VOC	S01	1 sample between Jan 2011 - Dec 2013
Volatile Organic Contaminants	VOC	S02	1 sample between Jan 2011 - Dec 2013
Volatile Organic Contaminants	VOC	S03	1 sample between Jan 2011 - Dec 2013

** These contaminant monitoring groups do not have waiver options under the SDWA.*

Water Quality Monitoring Report for the Year 2011

Part 5: Regional Water Quality Monitoring Contact

Eastern Regional Office

For Further information call the Eastern Regional Office Bryony Stasney Phone: (509) 329-2132

For questions regarding Disinfection ByProducts (DBP) monitoring, contact: Russell Mau (509) 329-2123

Special Note

For Group A Community Systems Only: Your Consumer Confidence Report, summarizing the results of your 2010 water quality monitoring requirements is due before July 1, 2011. For further information visit www.doh.wa.gov/ehp/dw/Our_Main_Pages/consumer.htm or contact the CCR Coordinator at your Regional Office.

CLEVE MCCOUL
MILLWOOD, TOWN OF
9103 E FREDERICK
SPOKANE WA 99206

Washington State Department of Health
Division of Environmental Health
Office of Drinking Water

WATER FACILITIES INVENTORY (WFI) FORM

ONE FORM PER SYSTEM

Quarter: 1
Updated: 11/15/2011
Printed: 12/21/2011
WFI Printed For: On-Demand
Submission Reason: No Change

RETURN TO: Eastern Regional Office, 16201 E Indiana, Suite 1500, Spokane Valley, WA, 99216

1. SYSTEM ID NO	2. SYSTEM NAME	3. COUNTY	4. GROUP	5. TYPE
54850 Q	MILLWOOD, TOWN OF	SPOKANE	A	Comm

6. PRIMARY CONTACT NAME & MAILING ADDRESS	7. OWNER NAME & MAILING ADDRESS	8. Owner Number 003797
CLEVE MCCOUL [MANAGER] 9103 E FREDERICK SPOKANE, WA 99206	MILLWOOD, TOWN OF CLEVE MCCOUL 9103 E FREDERICK SPOKANE, WA 99206	TITLE: MANAGER
STREET ADDRESS IF DIFFERENT FROM ABOVE ATTN ADDRESS CITY STATE ZIP	STREET ADDRESS IF DIFFERENT FROM ATTN ADDRESS CITY STATE ZIP	

9. 24 HOUR PRIMARY CONTACT INFORMATION	10. OWNER CONTACT INFORMATION
Primary Contact Daytime Phone: (509) 924-0960	Owner Daytime Phone: (509) 924-0960
Primary Contact Mobile/Cell Phone: (509) 342-1499	Owner Mobile/Cell Phone: (509) 342-1500
Primary Contact Evening Phone: (xxx) xxx-xxxx	Owner Evening Phone: (xxx) xxx-xxxx
Fax:(509) 927-2867 | E-mail: Millwood_Water@comcast.net	Owner Fax Phone: | E-mail:

WAC 246-290-420(9) requires that water systems provide 24-hour contact information for emergencies.

11. SATELLITE MANAGEMENT AGENCY - SMA (check only one)

- [x] Not applicable (Skip to #12)
- [ ] Owned and Managed SMA NAME: _____ SMA Number:
- [ ] Managed Only
- [ ] Owned Only

12. WATER SYSTEM CHARACTERISTICS (mark all that apply)

- [ ] Agricultural
- [x] Commercial / Business
- [x] Day Care
- [x] Food Service/Food Permit
- [ ] 1,000 or more person event for 2 or more days per year
- [x] Hospital/Clinic
- [x] Industrial
- [ ] Licensed Residential Facility
- [ ] Lodging
- [ ] Recreational / RV Park
- [x] Residential
- [x] School
- [ ] Temporary Farm Worker
- [x] Other (church, fire station, etc.): _____

13. WATER SYSTEM OWNERSHIP (mark only one)

- [ ] Association
- [x] City / Town
- [ ] County
- [ ] Federal
- [ ] Investor
- [ ] Private
- [ ] Special District
- [ ] State

14. STORAGE CAPACITY (gallons): 800,000

15. Source Number	16. SOURCE NAME: LIST UTILITY'S NAME FOR SOURCE AND WELL TAG ID NUMBER. Example: WELL #1 XYZ456. IF SOURCE IS PURCHASED OR INTERTIED, LIST SELLER'S NAME Example: SEATTLE	17. INTERTIE: INTERTIE SYSTEM ID NUMBER	18. SOURCE CATEGORY: WELL	WELL FIELD	WELL NAVEL	SPRING	SPRING FIELD	SPRING IN	SEAWATER	SURFACE WATER	RANNEY/INF	OTHER	19. USE: PERMANENT	SEASONAL	EMERGENCY	20. SOURCE METERED	21. TREATMENT: NONE	CHLORINATION	FILTRATION	FLUORIDATION	IRRADIATION (UV)	OTHER	22. DEPTH: DEPTH TO FIRST OPEN INTERVAL IN FEET	23. CAPACITY (GALLONS PER MINUTE)	24. SOURCE LOCATION: 1/4 1/4 SECTION	SECTION NUMBER	TOWNSHIP	RANGE
S01	Well (Park) - AHC937		X										X			Y	X						56	1000	NW NW	08	25N	44E
S02	Well Butler - AHC938		X										X			Y	X						80	750	SE SE	05	25N	44E
S03	New Park Well 4 - AHC936		X										X			Y	X						175	2200	SE NW	08	25N	44E

WATER FACILITIES INVENTORY (WFI) FORM - Continued

1. SYSTEM ID	2. SYSTEM NAME	3. COUNTY	4. GROUP	5. TYPE
54850 Q	MILLWOOD, TOWN OF	SPOKANE	A	Comm

	ACTIVE SERVICE CONNECTIONS	DOH USE ONLY CALCULATED ACTIVE CONNECTIONS	DOH USE ONLY APPROVED CONNECTIONS
25. SINGLE FAMILY RESIDENCES (How many of the following do you have?)	0	774	Unspecified
A. Full Time Single Family Residences (Occupied 180 days or more per year)	661		
B. Part Time Single Family Residences (Occupied less than 180 days per year)	0		
26. MULTI-FAMILY RESIDENTIAL BUILDINGS (How many of the following do you have?)			
A. Apartment Buildings, condos, duplexes, barracks, dorms	29		
B. Full Time Residential Units in the Apartments, Condos, Duplexes, Dorms that are occupied more than 180 days/year	113		
C. Part Time Residential Units in the Apartments, Condos, Duplexes, Dorms that are occupied less than 180 days/year	0		
27. NON-RESIDENTIAL CONNECTIONS (How many of the following do you have?)			
A. Recreational Services and/or Transient Accommodations (Campsites, RV sites, hotel/motel/overnight units)	0	0	
B. Institutional, Commercial/Business, School, Day Care, Industrial Services, etc.	84	84	
28. TOTAL SERVICE CONNECTIONS		858	

29. FULL TIME RESIDENTIAL POPULATION

A. How many residents are served by this system 180 or more days per 1720

30. PART-TIME RESIDENTIAL POPULATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
A. How many part-time residents are present each month?												
B. How many days per month are they present?												

31. TEMPORARY & TRANSIENT USERS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
A. How many total visitors, attendees, travelers, campers, patients or customers have access to the water system each month?												
B. How many days per month is water accessible to the public?												

32. REGULAR NON-RESIDENTIAL USERS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
A. If you have schools, daycares, or businesses connected to your water system, how many students daycare children and/or employees are present each month?												
B. How many days per month are they present?												

33. ROUTINE COLIFORM SCHEDULE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	2	2	2	2	2	2	2	2	2	2	2	2

35. Reason for Submitting WFI

☐ Update - Change ☐ Update - No Change ☐ Inactivate ☐ Re-Activate ☐ Name Change ☐ New System ☐ Other _____

36. I certify that the information stated on this WFI form is correct to the best of my knowledge.

SIGNATURE: _____

DATE: _____

PRINT NAME: _____

TITLE: _____

INTERLOCAL AGREEMENT
FOR EMERGENCY WATER SERVICE

THIS INTERLOCAL AGREEMENT made and entered into by and between the Town of Millwood, a municipal corporation under the laws of the State of Washington, hereinafter referred to as Town, and Orchard Avenue Irrigation District No. 6, a municipal corporation, hereinafter referred to as District, and the Town and District hereinafter jointly referred to as the Parties.

WHEREAS RCW. 39.34 provides that public agencies like the Town and District may enter into agreements for their mutual advantage, and

WHEREAS the Town and District own and operate adjoining water services, and

WHEREAS for several years the Parties have discussed the benefits of an inter-connection between their respective systems in the event of an emergency, and

WHEREAS the Parties installed a connection between their respective systems at the intersection of Glass Ave (Courtland) and Vista Road in November, 1995, and

WHEREAS the Parties desire to enter into this Agreement establishing the rights and responsibilities of the Parties with regard to the inter-connection of their water systems,

NOW THEREFORE, for and in consideration of the mutual benefits to be derived herefrom the Parties agree as follows:

1. Should either Party's water system fail creating an emergency situation, then the Party whose system has failed may open the valve between the two systems and appropriate so much water as the other Party can provide without risk or damage to the providing Party's system. The Party whose system has failed shall make reasonable efforts under the circumstances to contact the authorized officer or agent of the other Party before opening the valve unless the emergency requires that the valve be opened before the other Party can be contacted, in which event the other Party shall be contacted as soon as possible after the valve is opened.

2. Either Party who opens the valve shall be liable to reimburse the other Party within 30 days for the cost of providing water based on the increase in pumping expense to the Party supplying the water over the historical average of the expense to the providing Party during the same period of time and if it is not possible to calculate the expense, then a reasonable amount based on the estimated usage. If either Party contaminates or damages the system of the other Party, then the Party responsible for the contamination or damage shall pay the cost of correcting, removing and eliminating the contamination or damage incurred by the other

Party, whether forseen or unforseen, and indemnify and hold harmless the other Party for injury to persons or property resulting from such contamination or damage. In order to minimize the possibility of such contamination or damage, the parties agree as follows. All districts are required by the State to sample their water each month. Any detected contamination must be reported to other district(s) involved in the intertie at the time of detection and again when it is free of the contaminate or if chlorination is required, at the time chorination is discontinued. The district reporting contamination is subject to possible refusal of intertie usage during the period of contamination, by the uncontaminated district(s).

3. In the event that the providing Party can not meet or supply the demand of its' customers and the emergency needs of the other Party, then the providing Party shall first meet the needs of its' own customers and services. In the event that the providing Party is unable to provide the amount of water required by the other Party in an emergency situation, then the providing Party shall not be responsible to the Party needing water for any damages.

4. This Agreement shall remain in full force and effect until either Party gives the other Party at least 30 days written notice of their intention to withdraw from and terminate this Agreement. In the event this Agreement is terminated, the terminating Party shall disconnect the systems at its expense.

Dated this 9TH day of January 1997.

Town of Millwood

By: Jeanne Batson

(Town Seal)

Orchard Avenue Irrigation District No. 6

By: [illegible]

(District Seal)

INTERLOCAL AGREEMENT
FOR EMERGENCY WATER SERVICES

THIS INTERLOCAL AGREEMENT made and entered into by and between the Town of Millwood, a municipal corporation under the laws of the State of Washington, hereinafter referred to as Town, and Irvin Water district No. 6, hereinafter referred to as District, and the Town and District hereinafter jointly referred to as the Parties.

WHEREAS RCW 39.34 provides that public agencies like the Town and District may enter into agreements for their mutual advantage, and

WHEREAS for several years the Parties have discussed the benefits of an inter-connection between their respective systems in the event of an emergency, and

WHEREAS the Parties installed a connection between their respective systems at the intersection of Butler St. and Trent Ave in June, 1995, and

WHEREAS the Parties desire to enter into this Agreement establishing the rights and responsibilities of the Parties with regard to the inter-connection of their water systems,

NOW THEREFORE, for and in consideration of the mutual benefits to be derived herefrom the Parties agree as follows:

1. Should either Party's water system fail creating an emergency situation, then the Party whose system has failed may open the valve between the two systems and appropriate so much water as the other Party can provide without risk or damage to the providing Party's system. The Party whose system has failed shall make reasonable efforts under the circumstances to contact the authorized officer or agent of the other Party before opening the valve unless the emergency requires that the valve be opened before the other Party can be contacted, in which event the other Party shall be contacted as soon as possible after the valve is opened.

2. Either Party who opens the valve shall be liable to reimburse the other Party within 30 days for the cost of providing water based on the increase in pumping expense to the Party providing the water over the historical average of the expense to the providing Party during the same period of time and if it is not possible to calculate the expense then a reasonable amount based on the estimated usage. If either Party contaminates or damages the system of the other Party, then the Party responsible for the contamination or damage shall pay the cost of correcting, removing and eliminating the contamination or damage incurred by the other Party, whether foreseen or unforeseen, and indemnify and hold harmless the other Party for injury to persons or property resulting from such contamination or damage. In order to minimize the possibility of such contamination or damage, the parties agree as follows:

Both Parties shall sample their water each month. Any detected contamination must be reported to the other Party at the time of detection and again when it is free of the contaminate, or if chlorination is required, at the time chlorination is discontinued. The Party reporting contamination is subject to possible refusal of intertie usage during the periods of contamination.

3. In the event that the providing Party can not meet or supply the demand of its customers and the emergency needs of the other Party, then the providing Party shall first meet the needs of its own customers and services. In the event that the providing Party is unable to provide the amount of water required by the other Party in an emergency situation, then the providing Party shall not be responsible to the Party needing water for any damages.

4. This Agreement shall remain in full force and effect until either Party gives the other Party at least 30 days written notice of their intention to withdraw from and terminate this agreement. In the event this Agreement is terminated, the terminating Party shall disconnect the systems at its expense.

Dated this 2nd day of February, 1998.

TOWN OF MILLWOOD

By: Jeanne Batson
Mayor

Town Seal

IRVIN WATER DISTRICT #6

By
Commissioner

Commissioner

Commissioner

District Seal

WATER UTILITY SERVICE AREA AGREEMENT

SPOKANE COUNTY COORDINATED WATER SYSTEM PLAN

This Service Area Agreement, submitted by Town of Millwood confirms that the attached map, dated July 20, 1999, accurately identifies the service area that the water utility is willing and able to serve unless regulatory constraints do not enable the utility to do so.

The intent of this agreement is to define service areas in a manner which assures that time, effort, and money are best used by avoiding any unnecessary duplication of service. Spokane County and the Washington State Department of Health will recognize these boundaries as the exclusive service area of the undersigned utility, giving the utility right of first refusal for service.

As a condition of being granted this designated service area, the utility will be required to ensure that the same boundary is utilized for preparation of its individual water system plan. The utility agrees to adhere to the Service Area Boundary Amendment procedures specified in the Spokane County Coordinated Water System Plan (CWSP). The utility will also provide service in a manner consistent with its own individual water system plan and service policies. The utility also fully recognizes that this Service Area Agreement is developed in fulfillment of the Spokane County CWSP.

It is further agreed that neighboring utilities may provide water service to customers within the service area boundary of an adjacent utility only if a mutually acceptable agreement is developed to specify the conditions and term of such service. Existing service on boundary streets shall remain as connected unless transfer of service is agreed to by the neighboring utilities. Depth of service on boundary streets identified on the attached map shall be limited to one platted lot if the adjacent area is unclaimed.

The person signing below assures that he or she has been authorized to sign the Service Area Agreement on behalf of the utility. Attached is documentation verifying this authority.

Town of Millwood
Water Utility

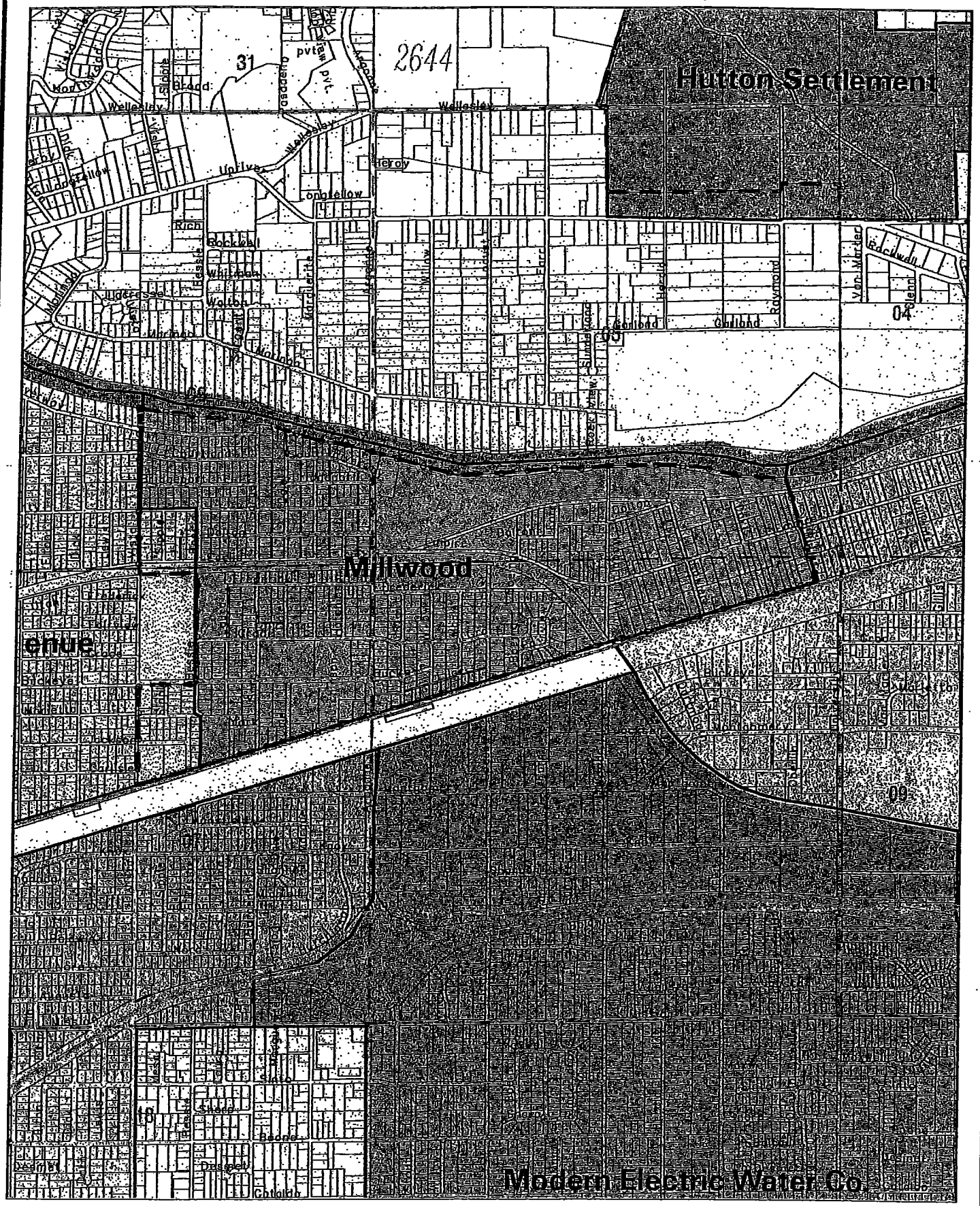
Joanne Batson
Authorized Representative

11/1/99
Date

Receipt Acknowledged By:

Bruce Rawle
Spokane County, Division of Utilities

11/24/99
Date



LEGEND

- WATER DISTRICT BOUNDARIES
- MUNICIPAL BOUNDARIES
- PARCEL BOUNDARIES
- SECTION BOUNDARIES
- INTERIM URBAN GROWTH AREA

Coordinated Water System Plan - Spokane County

DETAIL-60: TOWNSHIP(S) 2544

Notice: The information shown on this map is compiled from data maintained by Spokane County Public Works, Utility Div.

N

Produced by:
Spokane County Public Works
Utility Division

Date: July 20, 1999

Appendix C

DOE Comment Letter
Water Rights Certificates
Well Logs

COPY

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
4601 N Monroe Street • Spokane, Washington 99205-1295 • (509)329-3400

July 14, 2011

RECEIVED
JUL 15 2011
CITY OF MILLWOOD

Mr. Cleve McCoul
Town of Millwood
9103 East Frederick
Spokane, WA 99206

Dear Mr. McCoul:

Re: Town of Millwood; PWS ID # 54850Q; Whitman County
Water System Plan; DOH Project #11-0611

I have reviewed the above referenced document under the requirement of the *2007 Memorandum of Understanding* between Department of Health and Department of Ecology. Ecology's review is focused only on the water right and related issues affecting the submitted report.

Town of Millwood has five water right certificates: 1813-A, 2045-A, 3744-A, 4139-A and G3-26769. The water right status tables in the report (Table 5-3 and 5-4) listed only three water rights. However, all five copies of water right certificates are included in the Appendix C. I appreciate that. I have made the modified version for the water right status table which is attached with this letter for your reference. The system has adequate water rights to meet existing and projected 20-year water needs.

These are my comments at this time. Please don't hesitate to contact me should you have any questions regarding this letter. I can be reached at (509) 329-3451 or by email at yifu461@ecy.wa.gov.

Sincerely,

Ying Fu
Water Resources Program

YF: md
Enclosure

cc: Heather Cannon, DOH
Victoria Leuba. DOE/ERO/WR

City of Millwood Water System

Water Right(s) Status

Water Right Certificate, permit or Claim #	Name of Rightholder or Claimant	Priority Date	Source Name/ Number	Purpose of Use	Township; Range; and section		Water Right Quantity	
					Point of withdraw	Place of use	Qi (gpm)	Qa (AF/yr)
1813-A	Town of Millwood	3/24/1952	Old park well	Municipal supply	NW1/4NW1/4 Sec8; T25N;R44EWM	Area served by the Town of Millwood	1200	405
2045-A		4/22/1954	Hedman well contaminated (withdraw under existing wells)				500	supplemental
3744-A		1/26/1960			Grandview Acres of Sec.5; T25N; R44EWM		600	
4139-A		3/20/1959	Bulter well				500	800
G3-26769		1/14/1981	Park well		East W1/2 of Sec8;T25N;R44E WM		2200	3520
TOTAL							**5,000**	**4,725**

Water Right Quantity vs. Current Usage and Forecast Usage

Water right total	Total existing water rights		Current water usage (2010)		Forecast water usage 2016 (6 year demand)		Forecast water usage 2030 (20 year demand)	
	Qi(gpm)	Qa (AF/yr)	Qi	Qa	Qi	Qa	Qi	Qa
City of Millwood	5000	4725	4000	772			4000	824
Excess			1000	3953			1000	3901
Deficiency								

S. F. No. 7561—3-52—3M. 54100.

CERTIFICATE RECORD NO. 4 PAGE NO. 1813-A

STATE OF WASHINGTON, COUNTY OF Spokane

Old Park well

Certificate of Ground Water Right

Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the State Supervisor of Water Resources thereunder.

THIS IS TO CERTIFY *That* TOWN OF MILLWOOD, WASHINGTON, *has made proof* ~~xx~~ *to the satisfaction of the State Supervisor of Water Resources of Washington, of a right to the use of the ground waters of a* well *located within* the NW¼ of NW¼ of Sec. 8, Twp. 25 N., Rge. 44 E.W.M.

for the purpose of municipal supply *under and subject to provisions contained in Ground Water Permit No.* 2389 *issued by the State Supervisor of Water Resources and that said right to the use of said ground waters has been perfected in accordance with the laws of Washington, and is hereby confirmed by the State Supervisor of Water Resources of Washington and entered of record in Volume* 4 *at page* 1813-A; *that the right hereby confirmed dates from* March 24, 1952; *that the quantity of ground water under the right hereby confirmed for the purposes aforesaid, is limited to an amount actually beneficially used for said purposes, and shall not exceed* 1200 gallons per minute; 405 acre-feet per year to be used for municipal supply. ~~for irrigation of~~ ~~xxxxx~~

A description of the lands to which such ground water right is appurtenant, and the place where such water is put to beneficial use, is as follows:

Town of Millwood, Spokane County, Washington.

The right to the use of the ground water aforesaid hereby confirmed is restricted to the lands or place of use herein described, except as provided in Sections 6 and 7, Chapter 122, Laws of 1929.

WITNESS the seal and signature of the State Supervisor of Water Resources affixed this 26th *day of* April, 19 54.

Thos. J. Corthell

State Supervisor of Water Resources.

Report of Examination on Ground Water

Received date 3-24-52 Date of exam. 4-8-52 Appli. No. 2404

Name Town of Millwood Address

Type of works well Dimensions 16" x 130'

Progress of works Drilling under way.

Quantity ~~claimed or~~ applied for 1200 g.p.m. 1936 acre-feet per year

Legal sub. NW¼NW¼ Sec. 8 Twp. 25 N. Rge. 44 E. County Spokane

Use municipal supply

Irrigation-acreage: Present Planned Feasible

Municipal: Population 1800 as of 1954

Industrial

Time pump will be operated continuously

Other water rights appurtenant to this land None known

Proximity to existing works, springs, wells, or streams Inland Empire Paper Co. N. 800'

Spokane River N. 1200'.

Area Sub-area Zone

RECOMMENDATIONS

Approved for 1200 g.p.m. 405 acre-feet per year, subject to existing water rights. (1 acre-foot 325,850 gallons.)

The quantity recommended is based on a daily requirement of 200 gallons per person or a total of 405 acre-feet yearly for 1800 persons.

The applicant will furnish information to this office as to the size and type of equipment installed and the gallons per minute furnished.

The installation of an access port to well as described in attached Ground Water Bulletin No. 1, is recommended.

Drilling operations were going on at the time of examination, though the casing was only down about 40'. Permit should issue as recommended, subject to existing rights and provisions. The applicant's attention is drawn to the fact that should this withdrawal cause interference with well or wells within a ¼ mile radius the withdrawal rate may have to be reduced sufficient to prevent injurious affects to existing rights.

Signed this 12th day of August, 1952.

Fred D. Hahn
FRED D. HAHN
Engineer

20.00

update GW Cert. [redacted] #2045

Hedman well

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

AMENDED

CERTIFICATE OF CHANGE OF GROUND WATER CERTIFICATE NO. 2045-A

In accordance with the provisions of Chapter 263, Laws of Washington for 1945 and the regulations of the Department of Ecology.

THIS IS TO CERTIFY That the Town of Millwood, Washington has complied with all of the requirements of the Revised Code of Washington 90.44.100 and the regulations of the Department of Ecology, and is hereby granted the right to add one (1) additional point of withdrawal to Ground Water Certificate No. 2045-A.

That the use of such water is for a municipal supply for the community of Millwood in the amount of 500 gallons per minute, 640 acre feet per year.

That the present place of use is the Town of Millwood.

That the original point of withdrawal was located within Lot 8, Block 3, Hedman's Addition to the Town of Millwood in Sec. 7, T. 25 N., R. 44 E.W.M., Spokane County, Washington, and is now abandoned.

That the new point of withdrawal is a well located within the N½N½NW¼NW¼ of Sec. 8, T. 25 N., R. 44 E.W.M., Spokane County, Washington.

GIVEN UNDER MY HAND AND SEAL of this office at Spokane, Washington this 30th day of April, 1985.

ANDREA BEATTY RINIKER, Director
Department of Ecology

by _____
JOHN L. ARNQUIST, Regional Manager

RECORDED:

VOL. 1-3, PP. 423

CERTS. OF CHANGE

2045

[illegible]

CERTIFICATE RECORD NO. 5 PAGE NO. [illegible]

STATE OF WASHINGTON, COUNTY OF [illegible]

Certificate of Ground Water Right

Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the State Supervisor of Water Resources thereunder.

THIS IS TO CERTIFY THAT [illegible] TOWN OF MILLWOOD, WASHINGTON

[illegible], has made proof to the satisfaction of the State Supervisor of Water Resources of Washington, of a right to the use of the ground waters of a well

located within Lot 5, Block 3 of Baker's Addition to Town of Millwood, Sec. 7, Twp. 25 N., Rge. 44 E.W.M.

for the purpose of municipal supply

under and subject to provisions contained in Ground Water Permit No. [illegible] issued by the State Supervisor of Water Resources and that said right to the use of said ground waters has been perfected in accordance with the laws of Washington, and is hereby confirmed by the State Supervisor of Water Resources of Washington and entered of record in Volume 5 at page [illegible]

that the right hereby confirmed dates from [illegible]; that the quantity of ground water under the right hereby confirmed for the purposes aforesaid, is limited to an amount actually beneficially used for said purposes, and shall not exceed 500 gallons per minute; [illegible] gallons per year for municipal supply. [illegible]

A description of the lands to which such ground water right is appurtenant, and the place where such water is put to beneficial use, is as follows:

Town of Millwood, Spokane County, Washington.

[illegible] right to the use of the ground water aforesaid hereby confirmed is restricted to the lands or place of use herein described, except as provided in Sections 6 and 7, Chapter 122, Laws of 1929.

IN WITNESS the seal and signature of the State Supervisor of Water Resources affixed this 6th day of October, 19 [illegible]

M. Walker

State Supervisor of Water Resources.

ENGINEERING DATA

O.K. [illegible]

Report of Examination on Ground Water

Received date 4-22-54 Date of exam 5-18-54 Appli. No. 3593

Name Town of Millwood Address Millwood, Wash.

Type of works Well #2 Dimensions Dug well 6'x70' drilled an add. 50' with 18" dia. casing

Progress of works Complete and in use

Quantity ~~[illegible]~~ applied for 500 g.p.m. 800 acre-feet per year

Legal sub Lot 6/ Blk. 3 Hedman's Add. to Town of Millwood Sec 7 Twp. 25 N. Rge. 44 E. County Spokane

Use Municipal supply

Irrigation-acreage: Present Planned Feasible

Municipal: Population 1683 as of 1954

Industrial 2000 1960

Time pump will be operated Continuously

Other water rights appurtenant to this land G. W. Certificate #1813

Proximity to existing works, springs, wells, or streams

Area Sub-area Zone

RECOMMENDATIONS

Approved for 500 g.p.m. 640 acre-feet per year, subject to existing water rights. (1 acre-foot 325,850 gallons.)

The total annual withdrawal recommended above was calculated on the basis of an average of 400 g.p.m. being required continuously for the domestic requirements of this community. This figure represents the actual average demand found through service to the present population.

Since the Town of Millwood presently enjoys ground water Certificate #1813 for the withdrawal of 1000 g.p.m. and 405 acre-feet per year from well #1, this application should be approved subject to the following provision: "The total withdrawal authorized from well #2 shall be limited to 640 acre-feet per year, less any quantity available from well #1".

The installation of an access port to well as described in attached Ground Water Bulletin No. 1, is recommended.

Signed this 6th day of July, 1954.

Glen H. Fiedler

GLEN H. FIEDLER, Engineer
Division of Water Resources

20

S. F. No. 7362—5-60—3M: 62306.

CERTIFICATE RECORD NO. 9 PAGE NO. 4139-A

STATE OF WASHINGTON, COUNTY OF Spokane

Better Well

Certificate of Ground Water Right

Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the State Supervisor of Water Resources thereunder.

THIS IS TO CERTIFY *That* TOWN OF MILLWOOD, WASHINGTON

~~ojx~~, *has made proof to the satisfaction of the State Supervisor of Water Resources of Washington, of a right to the use of the ground waters of a* Well *located within* Lots 10, Block 9 of Grandview Acres Addition to Millwood *Sec.* 5, *Twp.* 25 *N., R.* 44 E. *W. M.,* *for the purpose of* municipal supply including fire protection *under and subject to provisions contained in Ground Water Permit No.* 5075 *issued by the State Supervisor of Water Resources and that said right to the use of said ground waters has been perfected in accordance with the laws of Washington, and is hereby confirmed by the State Supervisor of Water Resources of Washington and entered of record in Volume* 9 *at page* 4139-A; *that the right hereby confirmed dates from* March 20, 1959; *that the quantity of ground water under the right hereby confirmed for the purposes aforesaid, is limited to an amount actually beneficially used for said purposes, and shall not exceed* 500 gallons per minute; 800 acre-feet per year for municipal supply including fire protection.

Special provisions required by the Supervisor of Water Resources:

A description of the lands to which such ground water right is appurtenant:

Town of Millwood, Spokane County, Washington.

The right to the use of the ground water aforesaid hereby confirmed is restricted to the lands or place of use herein described, except as provided in Sections 6 and 7, Chapter 122, Laws of 1929.

WITNESS the seal and signature of the State Supervisor of Water Resources affixed this 21st *day of* February, 1962.

M G Welker

State Supervisor of Water Resources.

Report of Examination on Ground Water

Received date 3-20-59 Date of exam 4-29-59 Appl. No. 5174

Name Town of Millwood Address Town Hall, Millwood, Wash.

Type of works well Dimensions 16"x130'

Progress of works well drilled

Quantity applied for 500 g.p.m. 800 acre-feet per year

Legal sub Lot 10, Blk. 9 of Grandview Acres Add. to Millwood Sec. 5 Twp. 25 N. Rge. 44 E. County Spokane

Use municipal supply, including fire protection

Irrigation-acreage: Present Planned Feasible

Municipal: Population 2000 as of 1960

Industrial

Time pump will be operated continuously

Other water rights appurtenant to this land G. W. Cert. #1813 and 2045

Proximity to existing works, springs, wells, or streams none reported

Area Sub-area Zone

RECOMMENDATIONS

Approved for 500 g.p.m 800 acre-feet per year, subject to existing water rights. (1 acre-foot 325,850 gallons.)

The installation of an access port to well as described in attached Ground Water Bulletin No. 1 is recommended.

The applicant will furnish information to this office as to the size and type of equipment installed and the gallons per minute furnished. The size of hole openings and number of sprinklers, if such be the case, will give this information.

According to the estimated daily water requirement of 1,700,000 gallons per day, there is a need for 2068 acre-feet annually which includes a 10% increased use factor. The present rights allow a withdrawal of only 640 acre-feet and this coupled with the 800 acre-feet of the pending application would still leave a deficit of 628 acre-feet.

The applicant has been advised to file for 700 g.p.m. additional water from the Hedman Well (Cert.2045) and the deficit in acre-feet can also be taken up in the new filing.

Signed this 20th day of November, 1959.

EUGENE F. WALLACE, Geologist
Division of Water Resources

update
GW Cert.
Hedman well (2nd cert) # 3744

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

AMENDED

CERTIFICATE OF CHANGE OF GROUND WATER CERTIFICATE NO. 3744-A

In accordance with the provisions of Chapter 263, Laws of Washington for 1945 and the regulations of the Department of Ecology.

THIS IS TO CERTIFY That the Town of Millwood, Washington has complied with all of the requirements of the Revised Code of Washington 90.44.100 and the regulations of the Department of Ecology, and is hereby granted the right to add one (1) additional point of withdrawal to Ground Water Certificate No. 3744-A.

That the use of such water is for a municipal supply for the community of Millwood in the amount of 600 gallons per minute, 960 acre feet per year.

That the present place of use is the Town of Millwood.

That the original point of withdrawal was located within Lot 8, Block 3, Hedman's Addition to the Town of Millwood in Sec. 7, T. 25 N., R. 44 E.W.M., Spokane County, Washington, and is now abandoned.

That the new point of withdrawal is a well located within the N½N½NW¼NW¼ of Sec. 8, T. 25 N., R. 44 E.W.M., Spokane County, Washington.

GIVEN UNDER MY HAND AND SEAL of this office at Spokane, Washington this 30th day of April, 1985.

ANDREA BEATTY RINIKER, Director
Department of Ecology

by_____
JOHN L. ARNQUIST, Regional Manager

RECORDED:

VOL. 1-3, PP. 424

CERTS. OF CHANGE

Certificate Issued No. 8 Page No. 3744-A

State of Washington, County of Spokane

Certificate of Ground Water Right

Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the State Supervisor of Water Resources thereunder.

This is to Certify That TOWN OF MILLWOOD, WASHINGTON

, has made proof to the satisfaction of the State Supervisor of Water Resources of Washington, of a right to the use of the ground waters of a well

located within Lot 8, Block 3 of Hedman's Addition to the Town of Millwood

Sec. 7, Twp. 25 N., R. 44, W. W. M.,

for the purpose of municipal supply

under and subject to provisions contained in Ground Water Permit No. 5187 issued by the State Supervisor of Water Resources and that said right to the use of said ground waters has been perfected in accordance with the laws of Washington, and is hereby confirmed by the State Supervisor of Water Resources of Washington and entered of record in Volume 8 at page 3744-A; that the right hereby confirmed dates from January 26, 1960; that the quantity of ground water under the right hereby confirmed for the purposes aforesaid, is limited to an amount actually beneficially used for said purposes, and shall not exceed 600 gallons per minute; 960 acre-feet per year for municipal supply.

Special provisions required by the Supervisor of Water Resources: The total annual withdrawal under all rights is limited to 3068 acre-feet.

A description of the lands to which such ground water right is appurtenant:

Town of Millwood, Spokane County, Washington.

The right to the use of the ground water aforesaid hereby confirmed is restricted to the lands or place of use herein described, except as provided in Sections 6 and 7, Chapter 122, Laws of 1929.

WITNESS the seal and signature of the State Supervisor of Water Resources affixed this 26th day of October, 19 60.

State Supervisor of Water Resources.

ENGINEERING DATA

Report of Examination on Ground Water

Received date 1/26/60 Date of exam. 4/13/60 Appli. No. 5476

Name Town of Millwood Address Town Hall, Millwood, Washington

Type of works well Dimensions Dug well 6' to 70' depth. Drilled additional 50' with 18" diam. casing. Depth 120'.

Progress of works Complete and operational

Quantity applied for 700 g.p.m. acre-feet per year

Legal sub. Lot 8, Block 3, Hedman's Add. Sec. 7 Twp. 25 N. Rge. 44 E. County Spokane

Use municipal supply

Irrigation-acreage: Present Planned Feasible

Municipal: Population 2000 as of 1965

Industrial

Time pump will be operated continuously

Other water rights appurtenant to this land see list below

Proximity to existing works, springs, wells, or streams

Area Sub-area Zone

RECOMMENDATIONS

Approved for 700 g.p.m. 1120 acre-feet per year, subject to existing water rights. (1 acre-foot 325,850 gallons.) The installation of an access port to well as described in attached Ground Water Bulletin No. 1 is recommended.

The water requirement of the Town of Millwood is based upon a daily demand of 1,700,000 gallons (Town of Millwood estimate) or 1880 acre-feet annually. A ten per cent allowance for growth would increase the estimated annual requirement to 2068 acre-feet (see letter of November 20, 1959— Eugene F. Wallace, Geologist, Division of Water Resources, to the Town of Millwood).

A list of permits and certificates of water rights held by the Town of Millwood follows:

G.W. Cert. #1813 (#1 Center) for 1200 gpm; 405 acre-feet/year

G.W. Cert. #2045 (Hedman well) for 500 gpm; 640 acre-feet/year (405 acre-feet/year-supplemental)

G.W. Permit #5075 (Granoview well) for 500 gpm; 800 acre-feet/year

In view of the facts that the Town of Millwood's estimated water requirement is 2068 acre-feet annually, and they now hold title to 1440 acre-feet/year as a primary right; permit shall issue, under this application for 700 gpm; 1120 acre-feet/year—628 acre-feet/year as a primary right to bring the total to 2068 acre-ft/yr. and 492 acre-feet/year as a supplemental right.

The approval of this application for permit will be subject to the provision that: "The total annual withdrawal under all rights will be limited to 2068 acre-feet."

$20.00

It should be noted that this filing represents the second appropriation from this well. Ground Water Certificate No. 2045 authorizes the withdrawal of 500 gallons per minute, and subject application is for the withdrawal of an additional 700 gallons per minute—a total of 1200 gallons per minute available from the Hedman well.

William R. Smith, Geologist

Signed this 22nd day of April, 1960
Division of Water Resources

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

New Park well

CERTIFICATE OF WATER RIGHT

☐ Surface Water (Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)

☒ Ground Water (Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
January 14, 1981	G3-26769	G3-26769P	G3-26769C

NAME
TOWN OF MILLWOOD

ADDRESS (STREET)	(CITY)	(STATE)	(ZIP CODE)
E. 9103 Frederick	Spokane	Washington	99206

This is to certify that the herein named applicant has made proof to the satisfaction of the Department of Ecology of a right to the use of the public waters of the State of Washington as herein defined, and under and specifically subject to the provisions contained in the Permit issued by the Department of Ecology, and that said right to the use of said waters has been perfected in accordance with the laws of the State of Washington, and is hereby confirmed by the Department of Ecology and entered of record as shown, but is limited to an amount actually beneficially used.

PUBLIC WATER TO BE APPROPRIATED

SOURCE
a well

TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE	MAXIMUM ACRE-FEET PER YEAR
	2200	3520

QUANTITY, TYPE OF USE, PERIOD OF USE
2200 gallons per minute, 3520 acre feet per year, continuously, for municipal supply.

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION—WITHDRAWAL
2500 feet north and 400 feet east from the W¼ corner of Sec. 8

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N.	RANGE, (E. OR W.) W.M.	W.R.I.A.	COUNTY
N½N½NW¼NW¼	8	25	44 E	57	Spokane

RECORDED PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

Area served by the Town of Millwood.

PROVISIONS

Total amount of water to be withdrawn under this certificate shall be 2200 gallons per minute, 3520 acre feet per year, LESS that amount of water withdrawn under Ground Water Certificate Nos. 2045-A together with Amended Certificate of Change No. 1-3-423 and 3744-A together with Amended Certificate of Change No. 1-3-424.

At such time that the Department of Ecology determines that regulation and management of the subject waters is necessary and in the public interest, an approved measuring device shall be installed and maintained in accordance with RCW 90.03.360 or WAC 508-64-020 through WAC 508-64-040.

The amount of water granted is a maximum limit that shall not be exceeded and the water user shall be entitled only to that amount of water within the specified limit that is beneficially used and required.

This authorization to make use of public waters of the state is subject to existing rights, including any existing rights held by the United States for the benefit of Indians under treaty or otherwise.

Maintenance of an access port as described in Ground Water Bulletin No. 1 is required. An airline and gage may be installed in addition to the access port.

All water wells constructed within the state shall meet the minimum standards for construction and maintenance as provided under RCW 18.104 (Washington Water Well Construction Act of 1971) and Chapter 173-160 WAC (Minimum Standards for Construction and Maintenance of Water Wells).

The right to the use of the water aforesaid hereby confirmed is restricted to the lands or place of use herein described, except as provided in RCW 90.03.380, 90.03.390, and 90.44.020.

This certificate of water right is specifically subject to relinquishment for nonuse of water as provided in RCW 90.14.180.

Given under my hand and the seal of this office at Spokane *Washington, this* 17th *day of* July, *19* 85

ANDREA BEATTY RINIKER, Director
Department of Ecology

ENGINEERING DATA
OK. HEF

by John L. Arnquist
JOHN L. ARNQUIST, Regional Manager

FOR COUNTY USE ONLY

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

REPORT OF EXAMINATION
TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON

[ ] Surface Water (Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)

[X] Ground Water (Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
January 14, 1981	G3-26769		

NAME
TOWN OF MILLWOOD

ADDRESS (STREET)	(CITY)	(STATE)	(ZIP CODE)
E. 9103 Frederick	Spokane	Washington	99206

PUBLIC WATERS TO BE APPROPRIATED

SOURCE
a well

TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE	MAXIMUM ACRE-FEET PER YEAR
	2200	3520

QUANTITY, TYPE OF USE, PERIOD OF USE
2200 gallons per minute, 3520 acre feet per year, continuously, for municipal supply.

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION—WITHDRAWAL
2500 feet north and 400 feet east from the ~~B.C.~~ corner of Sec. 8
co/ln BD

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N.	RANGE, (E. OR W.) W.M.	W.R.I.A.	COUNTY
N½N½NW¼NW¼	8	25	44 E.	57	Spokane

RECORDED PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

Area served by the Town of Millwood.

DESCRIPTION OF PROPOSED WORKS

Drilled well, pump, transmission and distribution system.

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE:	COMPLETE PROJECT BY THIS DATE:	WATER PUT TO FULL USE BY THIS DATE:
Started	October 1, 1984	October 1, 1985

REPORT

BACKGROUND

An application to appropriate public ground water was submitted by the Town of Millwood to the Department of Ecology on January 14, 1981. The application was accepted and assigned Ground Water Application No. G3-26769. The applicant proposes to withdraw water from a well in the amount of 2200 gallons per minute for a municipal supply. The proposed point of withdrawal is to be located within the N½N½NW¼NW¼ of Sec. 8, T. 25 N., R. 44 E.W.M.

A notice of application was duly published in accordance with RCW 90.03.280; no protests or objections were received.

This application is categorically exempt from the provisions of the State Environmental Policy Act (SEPA) of 1971, Chapter 43.21C RCW.

INVESTIGATION

A field investigation was conducted on January 12, 1982 by this writer with Dave South, Utilities Superintendent. The Town of Millwood is located in the Spokane Valley adjacent to the south bank of the Spokane River.

Following is a list of ground water certificates held by the Town of Millwood for municipal supply:

Ground Water Certificate No. 1813-A "Park" Well for 1200 GPM, 405 AF/YR
Ground Water Certificate No. 2045-A "Hedman" Well for 500 GPM, 640 AF/YR
(405 AF/YR - Supplemental)
Ground Water Certificate No. 3744-A "Hedman" Well for 600 GPM, 960 AF/YR
(332 AF/YR - Supplemental)
Ground Water Certificate No. 4139-A "Butler" Well for 500 GPM, 800 AF/YR

The proposed well was constructed between May and July, 1981 with department authorization because the "Hedman" well was contaminated. Certificates Nos. 2045-A and 3744-A are both the authority for withdrawal from the "Hedman" well. Change authorizations were issued to the town on December 3, 1983 to add the subject point of withdrawal to Ground Water Certificates No. 2045-A and 3744-A. A proof of appropriation examination of the project will be made prior to the issuance of Certificates of Change to the above rights. The town can withdraw up to 1100 gallons per minute, 1600 acre feet per year from this new well under existing rights.

The closest existing certificated well other than the town's is located approximately 300 yards north and it is operated by the Inland Empire Paper Company.

According to the water well report, the town's new well is 196 feet in depth by 12 inches in diameter. Casing is installed to 175 feet with a screen installed from 175 to 196 feet. The static water level was 51.85 feet below the top of the well as measured by this examiner.

Wells in this area penetrate the Spokane-Rathdrum Aquifer which was designated as a "Sole Source" of water supply for the Spokane-Coeur d'Alene area by the U.S. Environmental Protection Agency. The aquifer is composed predominantly of glacio-fluvial deposits. The deposits consist mostly of unconsolidated, poorly to moderately sorted sands and gravels with some beds of cobbles and boulders and a few scattered clay lenses. Total flow of the aquifer at the Idaho-Washington State line is estimated to be 970 cubic feet per second. The aquifer discharges to the Spokane River in the area of the proposed point of withdrawal. There is no expected interference with other wells in the area.

A review of the Abbreviated Water System Plan for the Town of Millwood by Larry A. Esvelt of Esvelt Environmental Engineering indicates that the town is not in conformance with its existing rights. Changes to all or some of the certificates need to be initiated by the Town of Millwood in order to follow the recommendations of the plan and to legalize what the town is actually doing. The department can not "reword" existing rights as suggested in the report, without proper application. It is recommended that the town contact this writer for further information.

The current maximum amount of public waters that the town can withdraw from four (4) wells is 2800 gallons per minute, 2068 acre feet per year and of this amount 1100 gallons per minute, 1600 acre feet per year can be taken from the subject well. Therefore, this application for 2200 gallons per minute will increase the town's instantaneous supply by 1100 gallons per minute and add 1920 acre feet per year for municipal supply.

The Department of Social and Health Services states in a letter of April 3, 1981, from George Schlender that they have no objections to the issuance of a permit under this application.

CONCLUSIONS AND RECOMMENDATIONS

It is the conclusion of this examiner that: public ground water is available for appropriation for a beneficial use; that a municipal supply is a beneficial use; that the appropriation of such water will not impair existing rights or be detrimental to the public welfare.

At 2200 gallons per minute, the total amount of water that can be pumped in one (1) year, is 3520 acre feet. Total existing rights will be for the withdrawal of 3900 gallons per minute from four (4) wells, unless the "Hedman" well is abandoned and then it will be from three (3) wells, in an annual amount of 3988 acre feet per year for municipal supply. These amounts are adequate for the current and projected requirements of the Town of Millwood.

It is recommended that this application for a public ground water permit be approved in the amount of 2200 gallons per minute, 3520 acre feet per year, for municipal supply, LESS that amount of water withdrawn under Ground Water Certificate Nos. 2045-A and 3744-A, subject to the following provisions:

"Total amount of water to be withdrawn under this permit shall be 2200 gallons per minute, 3520 acre feet per year, LESS that amount of water withdrawn under Ground Water Certificate Nos. 2045-A and 3744-A."

"At such time that the Department of Ecology determines that regulation and management of the subject waters is necessary and in the public interest, an approved measuring device shall be installed and maintained in accordance with RCW 90.03.360 or WAC 508-64-020 through WAC 508-64-040."

"The amount of water granted is a maximum limit that shall not be exceeded and the water user shall be entitled only to that amount of water within the specified limit that is beneficially used and required."

"This authorization to make use of public waters of the state is subject to existing rights, including any existing rights held by the United States for the benefit of Indians under treaty or otherwise."

"A certificate of water right will not be issued until a final examination is made."

"Installation and maintenance of an access port as described in Ground Water Bulletin No. 1 is required. An airline and gage may be installed in addition to the access port."

"All water wells constructed within the state shall meet the minimum standards for construction and maintenance as provided under RCW 18.104 (Washington Water Well Construction Act of 1971) and Chapter 173-160 WAC (Minimum Standards for Construction and Maintenance of Water Wells)."

"A well log of the completed well shall be submitted by the driller to the Department of Ecology within thirty (30) days of completion of this well. This well log shall be complete and all information concerning the static water level in the completed well in addition to any pump test data shall be submitted as it is obtained."

Signed at Spokane, Washington
this 27th day of April, 1983

/s/ Rynear R. Huffman, Jr. RH
RYNEAR R. HUFFMAN, JR.
Resource Management Division
Department of Ecology

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

AMENDED

CERTIFICATE OF CHANGE OF GROUND WATER CERTIFICATE NO. 2045-A

In accordance with the provisions of Chapter 263, Laws of Washington for 1945 and the regulations of the Department of Ecology.

THIS IS TO CERTIFY That the Town of Millwood, Washington has complied with all of the requirements of the Revised Code of Washington 90.44.100 and the regulations of the Department of Ecology, and is hereby granted the right to add one (1) additional point of withdrawal to Ground Water Certificate No. 2045-A.

That the use of such water is for a municipal supply for the community of Millwood in the amount of 500 gallons per minute, 640 acre feet per year.

That the present place of use is the Town of Millwood.

That the original point of withdrawal was located within Lot 8, Block 3, Hedman's Addition to the Town of Millwood in Sec. 7, T. 25 N., R. 44 E.W.M., Spokane County, Washington, and is now abandoned.

That the new point of withdrawal is a well located within the N½N½NW¼NW¼ of Sec. 8, T. 25 N., R. 44 E.W.M., Spokane County, Washington.

GIVEN UNDER MY HAND AND SEAL of this office at Spokane, Washington this 30th day of April, 1985.

ANDREA BEATTY RINIKER, Director
Department of Ecology

by John L. Arnquist
JOHN L. ARNQUIST, Regional Manager

RECORDED:

VOL. 1-3, PP. 423

CERTS. OF CHANGE

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

APPLICATION FOR CHANGE
REPORT OF EXAMINATION
TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON

☐ Surface Water (Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)

☒ Ground Water (Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
April 22, 1954	~~5476~~ 3593	3367	2045-A

NAME
TOWN OF MILLWOOD

ADDRESS (STREET)	(CITY)	(STATE)	(ZIP CODE)
E. 9103 Frederick	Spokane	Washington	99206

PUBLIC WATERS TO BE APPROPRIATED

SOURCE
Two (2) wells (an existing well and an additional well under this change)

TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE	MAXIMUM ACRE-FEET PER YEAR
	500	640

QUANTITY, TYPE OF USE, PERIOD OF USE
500 gallons per minute, 640 acre feet per year, continuously, for municipal supply.

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION—WITHDRAWAL
#1) Lot 8, Block 3, Hedman's Addition to the Town of Millwood in Sec. 7;

#2) (Additional Point of Withdrawal) 100 feet south and 500 feet east from the NW corner

of Sec. 8, within the N½N½NW¼NW¼

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N.	RANGE, E. OR W.) W.M.	W.R.I.A.	COUNTY
BOTH WITHIN	7 & 8	25	44 E.	57	Spokane

RECORDED PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

Town of Millwood, Spokane County, Washington.

DESCRIPTION OF PROPOSED WORKS

Drilled well, pump and transmission mainline.

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE:	COMPLETE PROJECT BY THIS DATE:	WATER PUT TO FULL USE BY THIS DATE:
Started	Completed	April 1, 1984

REPORT

BACKGROUND

An application for change to add an additional point of withdrawal was submitted by the Town of Millwood to the Department of Ecology on January 14, 1981. The application was accepted and processed. The proposed additional point of withdrawal is to be located in the N½N½NW¼NW¼ of Sec. 8, T. 25 N., R. 44 E.W.M.

A notice of application was duly published in accordance with RCW 90.03.280; no protests or objections were received.

This application for change is categorically exempt from the provisions of the State Environmental Policy Act (SEPA) of 1971, Chapter 43.21C RCW.

INVESTIGATION

A field examination was conducted by this writer on January 12, 1982 with Dave South. Ground Water Certificate No. 3744-A, which is applicable to the existing well is also being processed for the same change. The reports will issue simultaneously.

Water Right Certificate No. 2045-A is the authority for 500 gallons per minute, 640 acre feet per year for a municipal supply from a well.

The existing well (Hedman) is contaminated and as a consequence, the Town requests an additional point of withdrawal. They do not want to abandon the existing well. However, the Abbreviated Town of Millwood Water System Plan, dated April, 1982, by Esvelt Environmental Engineering, states an intent to abandon the Hedman well for municipal water, do to contamination. The report further states that the well may be used as an irrigation well for the West Valley School District, which is not within the authorized place of use under this certificate.

In order for the Town of Millwood to provide water from this well outside the corporate town limits, a change in the legal place of use is required. Therefore, an application for change or a new application for permit will be required when the town intends to provide water to the school.

The proposed well has been constructed at the location requested. It is 196 feet in depth by 18 inches in diameter. Casing is installed to 175 feet with a screen installed from 175 to 196 feet. The well penetrates the Spokane-Rathdrum Aquifer, which consists of unconsolidated sand and gravel.

The static water level was measured at 51.85 feet.

CONCLUSIONS AND RECOMMENDATIONS

The proposed additional point of withdrawal is in the same aquifer, will not enlarge the water right and will not be injurious or detrimental to existing rights.

It is the conclusion and recommendation of this examiner that an additional point of withdrawal be authorized under Ground Water Certificate No. 2045-A, subject to the following provisions:

"A proof of appropriation examination of your project will be made prior to the issuance of a Certificate of Change. If the municipal use of the original well is discontinued, the Certificate of Change shall authorize the substitute well only."

"Installation and maintenance of an access port as described in Ground Water Bulletin No. 1 is required. An airline and gage may be installed in addition to the access port."

"All water wells constructed within the state shall meet the minimum standards for construction and maintenance as provided under RCW 18.104 (Washington Water Well Construction Act of 1971) and Chapter 173-160 WAC (Minimum Standards for Construction and Maintenance of Water Wells)."

"A well log of the completed well shall be submitted by the driller to the Department of Ecology within thirty (30) days of completion of this well. This well log shall be complete and all information concerning the static water level in the completed well in addition to any pump test data shall be submitted as it is obtained." (Well log is on file with the department).

Signed at Spokane, Washington
this 3rd day of December, 1982

/s/ Rynear R. Huffman, Jr.
RYNEAR R. HUFFMAN, JR.
Resource Management Division
Department of Ecology

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

AMENDED

CERTIFICATE OF CHANGE OF GROUND WATER CERTIFICATE NO. 3744-A

In accordance with the provisions of Chapter 263, Laws of Washington for 1945 and the regulations of the Department of Ecology.

THIS IS TO CERTIFY That the Town of Millwood, Washington has complied with all of the requirements of the Revised Code of Washington 90.44.100 and the regulations of the Department of Ecology, and is hereby granted the right to add one (1) additional point of withdrawal to Ground Water Certificate No. 3744-A.

That the use of such water is for a municipal supply for the community of Millwood in the amount of 600 gallons per minute, 960 acre feet per year.

That the present place of use is the Town of Millwood.

That the original point of withdrawal was located within Lot 8, Block 3, Hedman's Addition to the Town of Millwood in Sec. 7, T. 25 N., R. 44 E.W.M., Spokane County, Washington, and is now abandoned.

That the new point of withdrawal is a well located within the N½N½NW¼NW¼ of Sec. 8, T. 25 N., R. 44 E.W.M., Spokane County, Washington.

GIVEN UNDER MY HAND AND SEAL of this office at Spokane, Washington this 30th day of April, 1985.

ANDREA BEATTY RINIKER, Director
Department of Ecology

by _____
JOHN L. ARNQUIST, Regional Manager

RECORDED:

VOL. 1-3, PP. 424

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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
APPLICATION FOR CHANGE

REPORT OF EXAMINATION
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☒ Ground Water (Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
January 26, 1960	5476	5187	3744-A

NAME
TOWN OF MILLWOOD

ADDRESS (STREET)	(CITY)	(STATE)	(ZIP CODE)
E. 9103 Frederick	Spokane	Washington	99206

PUBLIC WATERS TO BE APPROPRIATED

SOURCE
Two (2) wells (an existing well and an additional well under this change)

TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE	MAXIMUM ACRE-FEET PER YEAR
	600	960

QUANTITY, TYPE OF USE, PERIOD OF USE
600 gallons per minute, 960 acre feet per year, continuously, for municipal supply.

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION—WITHDRAWAL
#1) Lot 8, Block 3, Hedman's Addition to the Town of Millwood in Sec. 7;

#2) (Additional Point of Withdrawal) 100 feet south and 500 feet east from the NW corner of Sec. 8, within the N½N½NW¼NW¼;

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N.	RANGE, (E. OR W.) W.M.	W.R.I.A.	COUNTY
BOTH WITHIN	7 & 8	25	44 E.	57	Spokane

RECORDED PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

Town of Millwood, Spokane County, Washington.

DESCRIPTION OF PROPOSED WORKS

Additional drilled well, pump, transmission mainline.

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE:	COMPLETE PROJECT BY THIS DATE:	WATER PUT TO FULL USE BY THIS DATE:
Started	Completed	April 1, 1984

REPORT

BACKGROUND

An application for change to add an additional point of withdrawal was submitted by the Town of Millwood to the Department of Ecology on January 14, 1981. The application was accepted and processed. The proposed additional point of withdrawal is to be located in the N½N½NW¼NW¼ of Sec. 8, T. 25 N., R. 44 E.W.M.

A notice of application was duly published in accordance with RCW 90.03.280; no protests or objections were received.

This application for change is categorically exempt from the provisions of the State Environmental Policy Act (SEPA) of 1971, Chapter 43.21C RCW.

INVESTIGATION

A field examination was conducted by this writer on January 12, 1982 with Dave South. Ground Water Certificate No. 2045-A, which is applicable to the existing well is also being processed for the same change. The reports will issue simultaneously.

Water Right Certificate No. 3744-A is the authority for 600 gallons per minute, 960 acre feet per year for municipal supply from a well.

The existing well (Hedman) is contaminated and as a consequence, the Town requests an additional point of withdrawal. They do not want to abandon the existing well. However, the Abbreviated Town of Millwood Water System Plan, dated April, 1982, by Esvelt Environmental Engineering, states an intent to abandon the Hedman well for municipal water, do to contamination. The report further states that the well may be used as an irrigation well for the West Valley School District, which is not within the authorized place of use under this certificate.

In order for the Town of Millwood to provide water from this well outside the corporate town limits, a change in the legal place of use is required. Therefor., an application for change or a new application for a permit will be required when the town intends to provide water to the school.

The proposed well has been constructed at the location requested. It is 196 feet in depth by 18 inches in diameter. Casing is installed to 175 feet with a screen installed from 175 to 196 feet. The well penetrates the Spokane-Rathdrum Aquifer, which consists of unconsolidated sand and gravel.

The static water level was measured at 51.85 feet.

CONCLUSIONS AND RECOMMENDATIONS

The proposed additional point of withdrawal is in the same aquifer, will not enlarge the water right and will not be injurious or detrimental to existing rights.

It is the conclusion and recommendation of this examiner that an additional point of withdrawal be authorized under Ground Water Certificate No. 3744-A, subject to the following provisions:

"A proof of appropriation examination of your project will be made prior to the issuance of a Certificate of Change. If the municipal use of the original well is discontinued, the Certificate of Change shall authorize the substitute well only."

"Installation and maintenance of an access port as described in Ground Water Bulletin No. 1 is required. An airline and gage may be installed in addition to the access port."

"All water wells constructed within the state shall meet the minimum standards for construction and maintenance as provided under RCW 18.104 (Washington Water Well Construction Act of 1971) and Chapter 173-160 WAC (Minimum Standards for Construction and Maintenance of Water Wells)."

"A well log of the completed well shall be submitted by the driller to the Department of Ecology within thirty (30) days of completion of this well. This well log shall be complete and all information concerning the static water level in the completed well in addition to any pump test data shall be submitted as it is obtained." (Well log is on file with the department).

Signed at Spokane, Washington
this 3rd day of December, 1982

/s/ Rynear R. Huffman, Jr.
RYNEAR R. HUFFMAN, JR.
Resource Management Division
Department of Ecology

STATE OF WASHINGTON
DEPARTMENT OF CONSERVATION
AND DEVELOPMENT

WELL LOG

No. Appli. #2404
Cert. #1813-A

Date April 26, 1952

Record by Clyde W. Reeder Co., Inc.

Source Driller's Record

Location: State of WASHINGTON

County Spokane

Area

Map

"OLD PARK" WELL

NW ¼ NW ¼ sec. 8 T. 25 N., R. 44 E.

DIAGRAM OF SECTION

Drilling Co. Clyde W. Reeder Co., Inc.

Address 508 American Legion Bldg.; Spokane, Wn.

Method of Drilling drilled Date Apr. 26 1952

Owner Town of Millwood

Address Millwood, Washington

Land surface, datum ft. above / below

Correlation	Material	Thickness (feet)	Depth (feet)
	Gravel & sand	40	40
	Gravel & boulders (in water)	72	112
Pump Test:			
	Dim: 112' x 16"		
	SWL: 40'		
	Dd: 1'		
	Yield: 1100 g.p.m.		
	Casing: 16" diameter from 0 to 56'		
	16" perforated casing from 56' to 111'		
	Perf: 5 per ft. in row, 6 rows in casing		
	5/16" wide, 4" long, spaced on 4" centers		
	from 56' to 111'		

(Transcribe driller's terminology literally but paraphrase as necessary, in parentheses. If material water-bearing, so state and record static level if reported. Give depths in feet below land-surface datum unless otherwise indicated. Correlate with stratigraphic column, if feasible. Following log of materials, list all casings, perforations, screens, etc.)

Turn up

Sheet of sheets

STATE OF WASHINGTOI
DEPARTMENT OF CONSERVATION
AND DEVELOPMENT

WELL LOG

No. A.5174; C.4139-

Date 3-6, 1962

Record by well driller

Source driller's record

Location: State of WASHINGTON

County Spokane

Area

Map

¼ ¼ sec. 5 T. 25 N., R. 44 E. W.M.

Diagram of Section

Drilling Co. Spokane Drilling Co.

Address E.2504 Pacific Ave., Spokane

Method of Drilling Date 6-1959, 19

Owner Town of Millwod

Address E.9103 Frederick, Millwood

Land surface, datum ft above below

"BUTLER" WELL

CORRELATION	MATERIAL	THICKNESS (feet)	DEPTH (feet)
	Gravel, sand, clay	50	50
	Gravel, sand & boulders	80	130
	PUMP TEST:		
	Dim. 16"x130'		
	SWL: 70 ft. (6-59)		
	DD: 2 ft.		
	Yield: 850 g.p.m.		
	Water Temp. 53° F.		
	Full recovery 2 min.		
	CASING:		
	16" diam. steel from 0 to 130 ft.		
	PERFORATIONS:		
	6 rows 5/16"x4" on 4" centers from 80 to 130 ft.		

(Transcribe driller's terminology literally but paraphrase as necessary, in parentheses. If material water-bearing, so state and record static level if reported. Give depths in feet below land-surface datum unless otherwise indicated. Correlate with stratigraphic column, if feasible. Following log of materials, list all casings, perforations, screens, etc.)

Turn up

Sheet of sheets

e Original and First Copy with
epartment of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT
STATE OF WASHINGTON

Application No. "NEW PARK" WELL
Permit No. ....

(1) OWNER: Name Town of Millwood Address Millwood, Wa.

(2) LOCATION OF WELL: County Spokane — SE ¼ NW ¼ Sec. 8 T. 25 N., R. 44E W.M.

aring and distance from section or subdivision corner in the Millwood City Park

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒ Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one).... (4)
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☒ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 18 O.D. inches.
Drilled 196 ft. Depth of completed well 196 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 18 " Diam. from +2 ft. to 175 ft.
Threaded ☐ " Diam. from ft. to ft.
Welded ☒ " Diam. from ft. to ft.

Perforations: Yes ☐ No ☒
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☒ No ☐
Manufacturer's Name UOP Johnson
Type Stain less Steel Model No. 304
Diam. 18" Slot size .250 from 175 ft. to 196 ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☒ Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 30 ft.
Material used in seal cement
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level.... ft.
Static level 50 ft. below top of well Date 7/7/81
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? Jim Dishman
Yield: 1760 gal./min. with 3 ft. drawdown after ¼ hrs.
" 2240 " 5 " ½ "
" 2819 " 6 " ¾ "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
Instant					

8 hour test

Date of test 7/7/81
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water 52 Was a chemical analysis made? Yes ☒ No ☐

(10) WELL LOG: 100'S - 500'E of NW Cor.

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
top soil	0	1
coarse gravel (6" minus)	1	10
coarse gravel (4" minus	10	28
boulders	28	38
coarse gravel (3" minus)	38	40
boulders	40	43
gravel & boulders	43	50
coarse gravel / water	50	65
coarse gravel & sand *	65	86
coarse gravel *	86	103
large gravel & cobble stones (8 in. minus) *	103	128
sand, gravel & cobble stones (10" minus) *	128	139
tight gravel (1½" minus) *	139	154
loose gravel (1½" minus) *	154	158
gravel (6" minus) with silt *	158	171
sand & gravel (2" minus) loose *	171	193
coarse sand & gravel (1½" minus) *	193	196

* water

Work started May 19, 1981 Completed July 9, 1981

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME E. A. HOLMAN DRILLING CO. (Person, firm, or corporation) (Type or print)

Address 601 South Pines Rd., Spokane, Wa. 992

[Signed] [signature] (Well Driller)

License No. 0101 Date July 13, 1981

6/13/83 AM

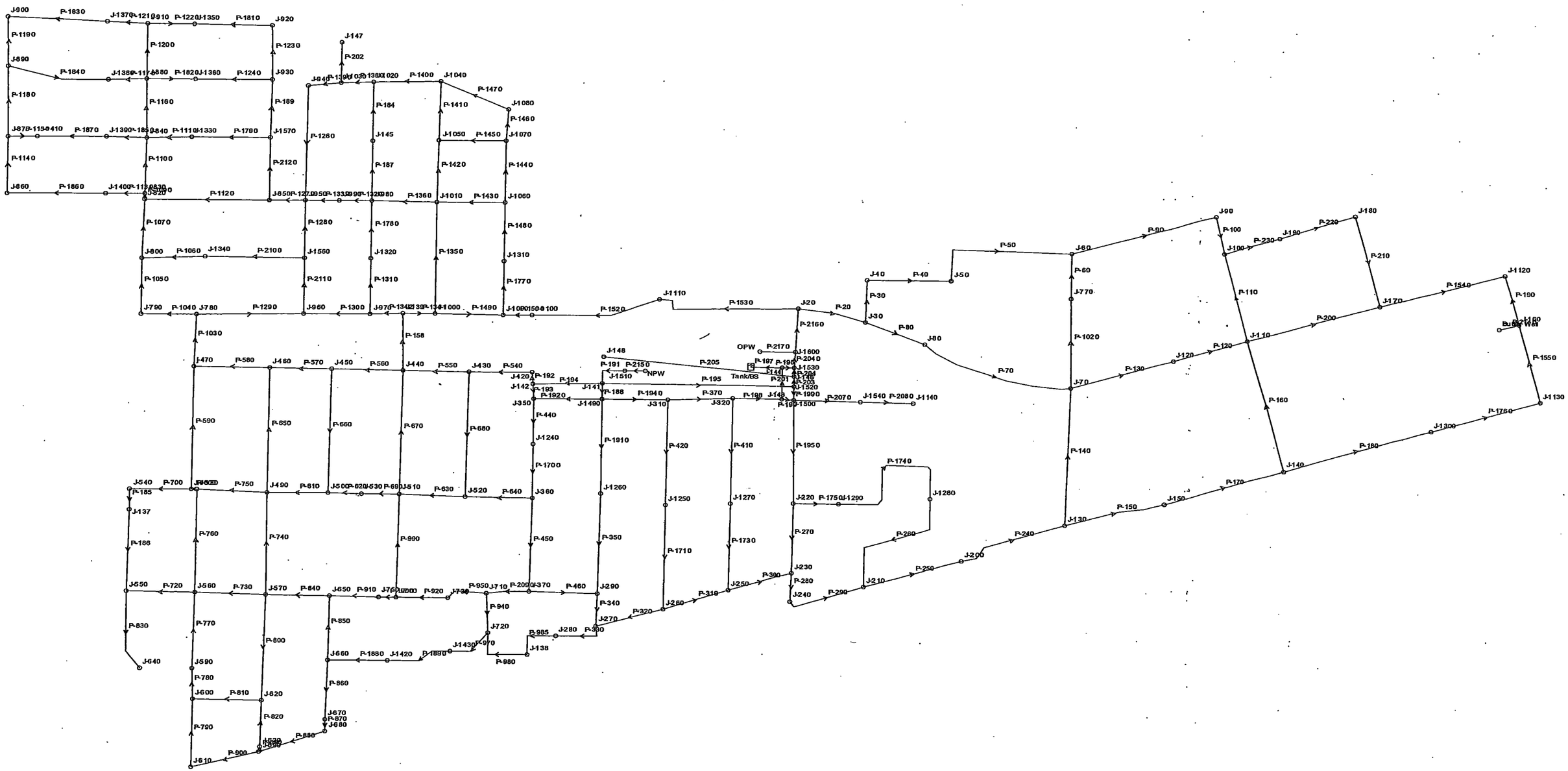
(USE ADDITIONAL SHEETS IF NECESSARY)

S. E. No. 2756—OS (Rev. 4-71)

Appendix D

Hydraulic Analysis Documentation

Scenario: Existing MDD



Title: Millwood Hydraulic Analysis
e:\...\wcd-hydro-analysis.wcd
04/29/02 03:00:45 PM

Varela & Associates
© Haestad Methods, Inc. 37 Brookside Road Waterbury, CT 06708 USA (203) 755-1666

Project Engineer: Dan Buller
WaterCAD v3.1 [071c]

Scenario: Existing MDD
Fire Flow Analysis
Fire Flow Report

COMMERCIAL NODES

Node Label	Total Needed Flow (gpm)	Available Fire Flow (gpm)	Residual Pressure (psi)	Calculated Minimum Zone Pressure (psi)	Minimum Zone Junction
J-690	2,001.72	2,301.89	20.00	39.12	J-630
J-610	2,001.72	2,428.53	20.00	32.96	J-600
J-1300	2,010.32	3,640.66	20.00	21.99	J-1130
J-240	2,003.44	4,000.00	20.00	41.29	J-180
J-250	2,013.76	4,000.00	20.00	45.30	J-180
J-360	2,013.76	4,000.00	20.00	46.86	J-180
J-510	2,017.82	4,000.00	20.00	46.53	J-180
J-310	2,014.62	4,000.00	20.00	47.23	J-180
J-1100	2,000.00	4,000.00	20.00	43.18	J-1090
J-320	2,015.48	4,000.00	20.00	47.29	J-180
J-1310	2,012.90	4,000.00	20.00	40.45	J-1060
J-270	2,005.16	4,000.00	20.00	46.31	J-280
J-200	2,001.72	4,000.00	20.00	35.49	J-180
J-1240	2,006.02	4,000.00	20.00	46.99	J-180
J-210	2,007.74	4,000.00	20.00	38.99	J-180
J-260	2,014.62	4,000.00	20.00	46.45	J-180
J-490	2,022.36	4,000.00	20.00	38.55	J-630
J-1010	2,016.34	4,000.00	20.00	36.50	J-1050
J-440	2,021.50	4,000.00	20.00	46.32	J-630
J-680	2,001.72	4,000.00	20.00	21.81	J-670
J-660	2,006.88	4,000.00	20.00	29.44	J-670
J-370	2,006.02	4,000.00	20.00	46.79	J-180
J-1070	2,007.74	4,000.00	20.00	32.76	J-1050
J-420	2,009.46	4,000.00	20.00	47.05	J-180
J-1060	2,012.90	4,000.00	20.00	37.62	J-1050
J-1430	2,000.00	4,000.00	20.00	39.01	J-670
J-130	2,014.62	4,000.00	20.00	31.61	J-180
J-1490	2,018.06	4,000.00	20.00	47.18	J-180
J-138	2,002.58	4,000.00	20.00	42.90	J-280
J-140	2,015.48	4,000.00	20.00	24.21	J-1300

Scenario: Existing MDD
Fire Flow Analysis
Fire Flow Report
ALL NODES

Node Label	Total Needed Flow (gpm)	Available Fire Flow (gpm)	Residual Pressure (psi)	Calculated Minimum Zone Pressure (psi)	Minimum Zone Junction
J-1140	1,004.30	441.15	20.00	41.43	J-1540
J-1540	1,006.02	598.80	20.00	20.56	J-1140
J-640	1,010.61	1,259.25	20.00	47.57	J-180
J-148	1,000.00	1,635.28	20.00	47.74	J-180
J-900	1,006.88	2,114.46	20.00	33.36	J-1370
J-190	1,001.72	2,115.07	20.00	35.80	J-180
J-890	1,009.46	2,228.41	20.00	38.55	J-1380
J-690	1,001.72	2,252.14	20.00	38.37	J-630
J-610	1,001.72	2,375.53	20.00	32.55	J-600
J-1350	1,010.32	2,386.02	20.00	34.23	J-920
J-920	1,007.74	2,445.37	20.00	29.34	J-1350
J-1260	1,016.34	2,483.98	20.00	47.08	J-180
J-1410	1,008.60	2,502.82	20.00	28.57	J-870
J-1360	1,012.04	2,517.33	20.00	33.29	J-930
J-1370	1,010.32	2,519.66	20.00	20.90	J-900
J-1380	1,010.32	2,521.38	20.00	29.61	J-890
J-1280	1,016.34	2,526.67	20.00	44.44	J-180
J-860	1,004.30	2,591.32	20.00	34.93	J-870
J-180	1,004.30	2,607.85	20.00	31.50	J-190
J-870	1,003.44	2,624.40	20.00	24.04	J-1410
J-1390	1,010.32	2,654.01	20.00	29.34	J-1410
J-930	1,011.18	2,705.90	20.00	28.52	J-920
J-1330	1,010.32	2,738.24	20.00	34.63	J-1570
J-600	1,006.88	2,744.01	20.00	20.00	J-610
J-590	1,008.60	2,778.34	20.00	25.93	J-610
J-910	1,010.32	2,791.23	20.00	20.00	J-1370
J-550	1,009.46	2,921.74	20.00	20.00	J-640
J-630	1,000.00	2,926.27	20.00	24.11	J-690
J-1570	1,006.02	3,009.03	20.00	27.03	J-930
J-1250	1,018.92	3,038.35	20.00	46.67	J-180
J-1340	1,011.18	3,046.02	20.00	45.82	J-860
J-1400	1,006.02	3,093.70	20.00	22.19	J-860
J-880	1,010.32	3,112.01	20.00	20.45	J-1370
J-1270	1,016.34	3,186.74	20.00	46.11	J-180
Butler Well	1,000.00	3,200.29	20.00	22.31	J-160
J-1290	1,010.32	3,283.87	20.00	41.59	J-1280
J-620	1,015.48	3,322.65	20.00	20.00	J-630
J-137	1,000.00	3,346.59	20.00	20.00	J-640
J-160	1,007.84	3,354.00	20.00	20.04	Butler We
J-1120	1,012.04	3,412.32	20.00	21.05	J-160
J-840	1,012.90	3,412.60	20.00	20.19	J-1390
J-540	1,010.22	3,421.71	20.00	21.43	J-640
J-1130	1,008.60	3,423.81	20.00	21.48	J-160
J-1320	1,006.88	3,497.12	20.00	42.28	J-980
J-750	1,011.49	3,507.31	20.00	40.43	J-700
J-90	1,007.74	3,544.84	20.00	25.57	J-100
J-1300	1,010.32	3,586.73	20.00	21.92	J-1130
J-850	1,011.18	3,608.29	20.00	27.26	J-1570
J-170	1,024.08	3,634.06	20.00	20.00	J-180
J-560	1,018.92	3,657.68	20.00	29.04	J-590
J-830	1,002.58	3,678.28	20.00	20.00	J-860

Scenario: Existing MDD
Fire Flow Analysis
Fire Flow Report

Node Label	Total Needed Flow (gpm)	Available Fire Flow (gpm)	Residual Pressure (psi)	Calculated Minimum Zone Pressure (psi)	Minimum Zone Junction
J-100	1,004.30	3,716.37	20.00	22.64	J-90
J-650	1,003.44	3,739.44	20.00	38.39	J-750
J-820	1,008.60	3,752.53	20.00	20.00	J-860
J-1050	1,012.90	3,766.68	20.00	38.16	J-1010
J-990	1,001.72	3,806.69	20.00	35.84	J-980
J-680	1,001.72	3,870.77	20.00	21.42	J-670
J-670	1,004.30	3,943.19	20.00	20.29	J-680
J-790	1,003.44	4,000.00	20.00	31.78	J-800
J-510	1,017.82	4,000.00	20.00	44.63	J-700
J-580	1,013.76	4,000.00	20.00	22.22	J-480
J-60	1,018.92	4,000.00	20.00	28.38	J-90
J-240	1,003.44	4,000.00	20.00	40.35	J-180
J-350	1,003.44	4,000.00	20.00	46.12	J-180
J-360	1,013.76	4,000.00	20.00	45.93	J-180
J-250	1,013.76	4,000.00	20.00	44.39	J-180
J-440	1,021.50	4,000.00	20.00	43.84	J-630
J-1500	1,009.46	4,000.00	20.00	46.24	J-180
NPW	1,000.00	4,000.00	20.00	46.20	J-180
J-1520	1,000.00	4,000.00	20.00	46.65	J-180
J-430	1,021.50	4,000.00	20.00	45.79	J-180
J-420	1,009.46	4,000.00	20.00	46.08	J-180
J-520	1,011.18	4,000.00	20.00	45.79	J-180
J-490	1,022.36	4,000.00	20.00	36.05	J-630
J-500	1,015.48	4,000.00	20.00	37.16	J-530
J-950	1,015.48	4,000.00	20.00	35.08	J-850
J-450	1,018.06	4,000.00	20.00	40.29	J-630
J-700	1,004.80	4,000.00	20.00	33.51	J-750
J-730	1,000.00	4,000.00	20.00	42.97	J-670
J-530	1,006.85	4,000.00	20.00	39.17	J-500
J-460	1,019.78	4,000.00	20.00	38.74	J-630
J-50	1,022.36	4,000.00	20.00	32.65	J-180
J-141	1,005.16	4,000.00	20.00	46.20	J-180
J-142	1,000.00	4,000.00	20.00	46.10	J-180
J-139	1,000.00	4,000.00	20.00	44.16	J-630
J-20	1,006.88	4,000.00	20.00	39.38	J-180
J-145	1,011.18	4,000.00	20.00	33.50	J-980
J-144	1,000.00	4,000.00	20.00	47.22	J-180
J-146	1,024.85	4,000.00	20.00	46.75	J-180
J-138	1,002.58	4,000.00	20.00	40.31	J-280
J-143	1,001.72	4,000.00	20.00	46.51	J-180
J-147	1,005.16	4,000.00	20.00	25.62	J-940
J-120	1,014.62	4,000.00	20.00	25.43	J-180
OPW	1,000.00	4,000.00	20.00	41.45	J-180
J-1110	1,068.80	4,000.00	20.00	42.59	J-180
J-1100	1,000.00	4,000.00	20.00	41.22	J-1090
J-1600	1,000.00	4,000.00	20.00	41.45	J-180
J-1530	1,000.00	4,000.00	20.00	46.74	J-180
J-80	1,012.04	4,000.00	20.00	33.27	J-180
J-30	1,002.58	4,000.00	20.00	34.80	J-180
J-1510	1,000.00	4,000.00	20.00	46.20	J-180
J-1560	1,012.04	4,000.00	20.00	37.24	J-950

Scenario: Existing MDD
Fire Flow Analysis
Fire Flow Report

Node Label	Total Needed Flow (gpm)	Available Fire Flow (gpm)	Residual Pressure (psi)	Calculated Minimum Zone Pressure (psi)	Minimum Zone Junction
J-770	1,008.60	4,000.00	20.00	29.25	J-180
J-150	1,006.88	4,000.00	20.00	27.59	J-160
J-40	1,008.60	4,000.00	20.00	33.39	J-180
J-1490	1,018.06	4,000.00	20.00	46.17	J-180
J-290	1,008.60	4,000.00	20.00	44.46	J-270
J-370	1,006.02	4,000.00	20.00	45.86	J-180
J-1240	1,006.02	4,000.00	20.00	46.03	J-180
J-270	1,005.16	4,000.00	20.00	43.73	J-280
J-320	1,015.48	4,000.00	20.00	46.32	J-180
J-230	1,012.04	4,000.00	20.00	41.19	J-180
J-260	1,014.62	4,000.00	20.00	45.52	J-180
J-310	1,014.62	4,000.00	20.00	46.23	J-180
J-710	1,000.00	4,000.00	20.00	41.47	J-720
J-1430	1,000.00	4,000.00	20.00	36.38	J-670
J-280	1,002.58	4,000.00	20.00	44.62	J-270
J-1420	1,000.00	4,000.00	20.00	31.25	J-670
J-570	1,014.62	4,000.00	20.00	26.69	J-630
J-660	1,006.88	4,000.00	20.00	26.82	J-670
J-480	1,005.16	4,000.00	20.00	22.20	J-580
J-780	1,005.16	4,000.00	20.00	37.49	J-790
J-800	1,005.16	4,000.00	20.00	25.69	J-860
j-470	1,009.46	4,000.00	20.00	39.42	J-630
J-720	1,001.72	4,000.00	20.00	40.14	J-670
J-1090	1,005.16	4,000.00	20.00	39.97	J-1310
J-1000	1,006.88	4,000.00	20.00	43.94	J-1310
J-1310	1,012.90	4,000.00	20.00	38.34	J-1060
J-1080	1,007.74	4,000.00	20.00	29.64	J-1050
J-1070	1,007.74	4,000.00	20.00	30.59	J-1050
J-1060	1,012.90	4,000.00	20.00	35.45	J-1050
J-140	1,015.48	4,000.00	20.00	23.32	J-1300
J-980	1,011.18	4,000.00	20.00	32.42	J-990
J-960	1,007.74	4,000.00	20.00	40.41	J-1560
J-970	1,002.58	4,000.00	20.00	42.05	J-1320
J-1010	1,016.34	4,000.00	20.00	34.33	J-1050
J-1040	1,012.90	4,000.00	20.00	30.60	J-1050
J-70	1,030.96	4,000.00	20.00	29.17	J-180
J-130	1,014.62	4,000.00	20.00	30.73	J-180
J-210	1,007.74	4,000.00	20.00	38.09	J-180
J-220	1,014.62	4,000.00	20.00	42.42	J-180
J-200	1,001.72	4,000.00	20.00	34.60	J-180
J-1020	1,010.32	4,000.00	20.00	29.81	J-940
J-1030	1,006.88	4,000.00	20.00	25.62	J-940
J-110	1,028.38	4,000.00	20.00	22.61	J-180
J-940	1,011.18	4,000.00	20.00	30.04	J-1030

Scenario: Existing PHD
Steady State Analysis
Junction Report

Node Label	Elevation (ft)	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)
J-180	1,994.80	Demand	7.22	Fixed	7.22	2,104.99	47.65
J-160	1,992.10	Demand	7.22	Fixed	7.22	2,104.99	48.82
Butler	1,992.00	Demand	0.00	Fixed	0.00	2,104.99	48.86
J-170	1,991.70	Demand	40.41	Fixed	40.41	2,104.99	48.99
J-1120	1,991.40	Demand	20.21	Fixed	20.21	2,104.99	49.12
J-190	1,989.70	Demand	2.89	Fixed	2.89	2,104.99	49.86
J-1130	1,989.50	Demand	14.43	Fixed	14.43	2,104.99	49.94
J-1300	1,987.80	Demand	17.32	Fixed	17.32	2,104.99	50.68
J-90	1,986.58	Demand	12.99	Fixed	12.99	2,105.01	51.21
J-100	1,986.30	Demand	7.22	Fixed	7.22	2,105.00	51.33
J-120	1,985.40	Demand	24.54	Fixed	24.54	2,105.02	51.73
J-110	1,978.30	Demand	47.63	Fixed	47.63	2,105.00	54.79
J-140	1,974.93	Demand	25.98	Fixed	25.98	2,105.01	56.25
J-60	1,974.30	Demand	31.75	Fixed	31.75	2,105.04	56.54
J-770	1,973.60	Demand	14.43	Fixed	14.43	2,105.04	56.84
J-690	1,969.40	Demand	2.89	Fixed	2.89	2,103.04	57.79
J-630	1,969.10	Demand	0.00	Fixed	0.00	2,103.04	57.92
J-670	1,970.00	Demand	7.22	Fixed	7.22	2,104.22	58.04
J-50	1,970.50	Demand	37.52	Fixed	37.52	2,105.09	58.20
J-680	1,969.40	Demand	2.89	Fixed	2.89	2,104.22	58.30
J-720	1,968.40	Demand	2.89	Fixed	2.89	2,104.41	58.82
J-70	1,969.00	Demand	51.96	Fixed	51.96	2,105.06	58.84
J-620	1,966.70	Demand	25.98	Fixed	25.98	2,103.03	58.95
J-610	1,966.50	Demand	2.89	Fixed	2.89	2,102.95	59.01
J-700	1,967.20	Demand	2.89	Fixed	2.89	2,103.82	59.08
J-750	1,966.60	Demand	0.00	Fixed	0.00	2,103.80	59.33
J-1430	1,966.90	Demand	0.00	Fixed	0.00	2,104.36	59.44
J-710	1,966.80	Demand	0.00	Fixed	0.00	2,104.42	59.51
J-270	1,966.90	Demand	8.66	Fixed	8.66	2,104.69	59.59
J-370	1,966.80	Demand	10.10	Fixed	10.10	2,104.63	59.60
J-280	1,966.70	Demand	4.33	Fixed	4.33	2,104.60	59.63
J-660	1,966.30	Demand	11.55	Fixed	11.55	2,104.23	59.64
J-1420	1,966.30	Demand	0.00	Fixed	0.00	2,104.29	59.67
J-730	1,966.30	Demand	0.00	Fixed	0.00	2,104.32	59.69
J-650	1,965.00	Demand	5.77	Fixed	5.77	2,103.76	60.00
J-290	1,965.40	Demand	14.43	Fixed	14.43	2,104.69	60.23
J-260	1,965.30	Demand	24.54	Fixed	24.54	2,104.89	60.36
J-40	1,965.17	Demand	14.43	Fixed	14.43	2,105.17	60.54
J-510	1,963.10	Demand	25.98	Fixed	25.98	2,103.74	60.82
J-360	1,964.00	Demand	23.09	Fixed	23.09	2,104.68	60.83
J-530	1,962.50	Demand	0.00	Fixed	0.00	2,103.27	60.88
J-520	1,963.40	Demand	18.76	Fixed	18.76	2,104.19	60.88
J-1240	1,963.00	Demand	10.10	Fixed	10.10	2,104.96	61.39
J-1260	1,962.40	Demand	27.42	Fixed	27.42	2,104.99	61.66
J-1250	1,962.30	Demand	31.75	Fixed	31.75	2,105.12	61.76
J-250	1,962.50	Demand	23.09	Fixed	23.09	2,105.33	61.77
J-600	1,960.00	Demand	11.55	Fixed	11.55	2,102.95	61.82
J-570	1,959.80	Demand	24.54	Fixed	24.54	2,103.05	61.95
J-590	1,959.00	Demand	14.43	Fixed	14.43	2,102.92	62.24
J-500	1,959.20	Demand	25.98	Fixed	25.98	2,103.17	62.26
J-240	1,961.40	Demand	5.77	Fixed	5.77	2,105.51	62.32

Scenario: Existing PHD
Steady State Analysis
Junction Report

Node Label	Elevation (ft)	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)
J-640	1,958.50	Demand	8.66	Fixed	8.66	2,102.84	62.42
J-230	1,961.00	Demand	20.21	Fixed	20.21	2,105.55	62.51
J-560	1,958.10	Demand	31.75	Fixed	31.75	2,102.88	62.61
J-490	1,958.00	Demand	37.52	Fixed	37.52	2,103.05	62.72
J-1270	1,960.30	Demand	27.42	Fixed	27.42	2,105.51	62.79
J-80	1,959.90	Demand	20.21	Fixed	20.21	2,105.16	62.82
J-150	1,959.00	Demand	11.55	Fixed	11.55	2,105.06	63.16
J-550	1,956.70	Demand	15.88	Fixed	15.88	2,102.84	63.20
J-210	1,959.00	Demand	12.99	Fixed	12.99	2,105.41	63.31
J-480	1,955.60	Demand	8.66	Fixed	8.66	2,102.85	63.67
J-220	1,958.50	Demand	24.54	Fixed	24.54	2,105.76	63.68
J-580	1,955.50	Demand	23.09	Fixed	23.09	2,102.85	63.72
J-30	1,957.80	Demand	4.33	Fixed	4.33	2,105.22	63.75
J-1290	1,958.00	Demand	17.32	Fixed	17.32	2,105.66	63.85
J-200	1,957.40	Demand	2.89	Fixed	2.89	2,105.27	63.94
J-540	1,954.80	Demand	7.22	Fixed	7.22	2,102.84	64.02
J-450	1,955.00	Demand	30.31	Fixed	30.31	2,103.17	64.08
J-460	1,954.62	Demand	33.19	Fixed	33.19	2,103.02	64.17
J-1490	1,956.50	Demand	30.31	Fixed	30.31	2,105.40	64.39
J-350	1,955.10	Demand	5.77	Fixed	5.77	2,105.21	64.91
J-470	1,952.50	Demand	15.88	Fixed	15.88	2,102.80	65.00
J-310	1,954.70	Demand	24.54	Fixed	24.54	2,105.63	65.27
J-420	1,953.10	Demand	15.88	Fixed	15.88	2,105.12	65.74
J-1280	1,953.40	Demand	27.42	Fixed	27.42	2,105.45	65.75
J-1050	1,949.70	Demand	21.65	Fixed	21.65	2,102.56	66.10
J-430	1,951.20	Demand	36.08	Fixed	36.08	2,104.19	66.16
J-780	1,949.60	Demand	8.66	Fixed	8.66	2,102.61	66.17
J-980	1,949.50	Demand	18.76	Fixed	18.76	2,102.53	66.17
J-1100	1,950.20	Demand	0.00	Fixed	0.00	2,103.24	66.18
J-950	1,949.20	Demand	25.98	Fixed	25.98	2,102.42	66.26
J-1310	1,949.60	Demand	21.65	Fixed	21.65	2,102.84	66.26
J-960	1,949.20	Demand	12.99	Fixed	12.99	2,102.61	66.34
J-790	1,948.70	Demand	5.77	Fixed	5.77	2,102.44	66.48
J-990	1,948.70	Demand	2.89	Fixed	2.89	2,102.48	66.50
J-139	1,949.20	Demand	0.00	Fixed	0.00	2,103.01	66.51
J-970	1,948.90	Demand	4.33	Fixed	4.33	2,102.80	66.55
J-1010	1,948.70	Demand	27.42	Fixed	27.42	2,102.62	66.56
J-320	1,952.00	Demand	25.98	Fixed	25.98	2,105.94	66.57
J-1000	1,948.90	Demand	11.55	Fixed	11.55	2,103.00	66.64
J-1090	1,948.60	Demand	8.66	Fixed	8.66	2,103.04	66.78
J-850	1,947.60	Demand	18.76	Fixed	18.76	2,102.13	66.82
J-440	1,948.90	Demand	36.08	Fixed	36.08	2,103.43	66.83
J-1110	1,948.90	Demand	30.02	Fixed	30.02	2,104.13	67.13
J-1500	1,951.00	Demand	15.88	Fixed	15.88	2,106.28	67.15
J-1570	1,946.30	Demand	10.10	Fixed	10.10	2,101.91	67.29
J-940	1,946.50	Demand	18.76	Fixed	18.76	2,102.44	67.43
J-1320	1,946.70	Demand	11.55	Fixed	11.55	2,102.64	67.44
J-930	1,945.70	Demand	18.76	Fixed	18.76	2,101.83	67.52
J-860	1,945.80	Demand	7.22	Fixed	7.22	2,101.95	67.53
J-1560	1,945.85	Demand	20.21	Fixed	20.21	2,102.47	67.73
J-1360	1,944.80	Demand	20.21	Fixed	20.21	2,101.83	67.90

Scenario: Existing PHD
Steady State Analysis
Junction Report

Node Label	Elevation (ft)	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)
J-1340	1,945.20	Demand	18.76	Fixed	18.76	2,102.32	67.94
J-1400	1,944.60	Demand	10.10	Fixed	10.10	2,102.00	68.06
J-1390	1,944.10	Demand	17.32	Fixed	17.32	2,101.88	68.23
NPW	1,947.60	Demand	0.00	Fixed	0.00	2,105.40	68.24
J-800	1,944.40	Demand	8.66	Fixed	8.66	2,102.28	68.27
J-1510	1,947.50	Demand	0.00	Fixed	0.00	2,105.40	68.28
J-830	1,944.10	Demand	4.33	Fixed	4.33	2,102.02	68.29
J-820	1,944.10	Demand	14.43	Fixed	14.43	2,102.05	68.30
J-130	1,947.00	Demand	24.54	Fixed	24.54	2,105.11	68.37
J-880	1,943.70	Demand	17.32	Fixed	17.32	2,101.83	68.38
J-1410	1,943.60	Demand	14.43	Fixed	14.43	2,101.88	68.44
J-1370	1,943.30	Demand	17.32	Fixed	17.32	2,101.80	68.54
J-1060	1,944.00	Demand	21.65	Fixed	21.65	2,102.66	68.61
J-870	1,943.20	Demand	5.77	Fixed	5.77	2,101.88	68.62
J-20	1,946.70	Demand	11.55	Fixed	11.55	2,105.39	68.62
J-910	1,943.10	Demand	17.32	Fixed	17.32	2,101.81	68.63
J-840	1,943.10	Demand	21.65	Fixed	21.65	2,101.90	68.67
J-1350	1,942.60	Demand	17.32	Fixed	17.32	2,101.81	68.85
J-890	1,942.60	Demand	15.88	Fixed	15.88	2,101.83	68.86
J-1330	1,942.50	Demand	17.32	Fixed	17.32	2,101.90	68.93
J-1520	1,946.80	Demand	0.00	Fixed	0.00	2,106.32	68.98
J-1380	1,942.20	Demand	17.32	Fixed	17.32	2,101.83	69.03
OPW	1,945.60	Demand	0.00	Fixed	0.00	2,105.82	69.28
J-900	1,941.30	Demand	11.55	Fixed	11.55	2,101.80	69.41
J-1600	1,944.80	Demand	0.00	Fixed	0.00	2,105.82	69.63
J-1530	1,945.30	Demand	0.00	Fixed	0.00	2,106.58	69.74
J-1540	1,943.80	Demand	10.10	Fixed	10.10	2,106.12	70.19
J-1140	1,942.50	Demand	7.22	Fixed	7.22	2,106.10	70.75
J-1030	1,936.70	Demand	11.55	Fixed	11.55	2,102.45	71.68
J-1070	1,935.50	Demand	12.99	Fixed	12.99	2,102.58	72.25
J-920	1,934.70	Demand	12.99	Fixed	12.99	2,101.81	72.26
J-1020	1,932.20	Demand	17.32	Fixed	17.32	2,102.47	73.63
J-1040	1,931.10	Demand	21.65	Fixed	21.65	2,102.52	74.13
J-1080	1,929.40	Demand	12.99	Fixed	12.99	2,102.55	74.88

Scenario: Future MDD
Fire Flow Analysis
Fire Flow Report

COMMERCIAL NODES

Node Label	Total Needed Flow (gpm)	Available Fire Flow (gpm)	Residual Pressure (psi)	Calculated Minimum Zone Pressure (psi)	Minimum Zone Junction
J-690	2,002.15	2,217.93	20.00	37.82	J-630
J-610	2,002.15	2,336.00	20.00	32.25	J-600
J-1300	2,012.90	3,525.82	20.00	21.82	J-1130
J-240	2,004.30	4,000.00	20.00	39.55	J-180
J-250	2,017.20	4,000.00	20.00	43.84	J-180
J-360	2,017.20	4,000.00	20.00	45.52	J-180
J-510	2,022.27	4,000.00	20.00	43.48	J-700
J-310	2,018.28	4,000.00	20.00	45.88	J-180
J-1100	2,000.00	4,000.00	20.00	39.64	J-1090
J-320	2,019.35	4,000.00	20.00	45.98	J-180
J-1310	2,016.13	4,000.00	20.00	36.57	J-1060
J-270	2,006.45	4,000.00	20.00	43.04	J-280
J-200	2,002.15	4,000.00	20.00	33.70	J-180
J-1240	2,007.53	4,000.00	20.00	45.63	J-180
J-210	2,009.68	4,000.00	20.00	37.24	J-180
J-260	2,018.28	4,000.00	20.00	45.09	J-180
J-490	2,027.95	4,000.00	20.00	34.49	J-630
J-1010	2,020.43	4,000.00	20.00	32.50	J-1050
J-440	2,026.88	4,000.00	20.00	42.42	J-630
J-680	2,002.15	3,815.67	20.00	21.38	J-670
J-660	2,008.60	4,000.00	20.00	25.83	J-670
J-370	2,007.53	4,000.00	20.00	45.45	J-180
J-1070	2,009.68	4,000.00	20.00	28.70	J-1050
J-420	2,011.83	4,000.00	20.00	45.69	J-180
J-1060	2,016.13	4,000.00	20.00	33.60	J-1050
J-1430	2,000.00	4,000.00	20.00	35.44	J-670
J-130	2,018.28	4,000.00	20.00	29.79	J-180
J-1490	2,022.58	4,000.00	20.00	45.80	J-180
J-138	2,003.23	4,000.00	20.00	39.58	J-280
J-140	2,019.35	4,000.00	20.00	22.34	J-1300

Scenario: Future MDD
Fire Flow Analysis
Fire Flow Report

ALL NODES

Node Label	Total Needed Flow (gpm)	Available Fire Flow (gpm)	Residual Pressure (psi)	Calculated Minimum Zone Pressure (psi)	Minimum Zone Junction
J-1140	1,005.38	438.79	20.00	41.32	J-1540
J-1540	1,007.53	595.58	20.00	20.56	J-1140
J-640	1,013.27	1,242.78	20.00	47.30	J-180
J-148	1,000.00	1,635.15	20.00	47.49	J-180
J-900	1,008.60	2,071.72	20.00	32.86	J-1370
J-190	1,002.15	2,088.75	20.00	35.38	J-180
J-890	1,011.83	2,182.93	20.00	37.87	J-1380
J-690	1,002.15	2,217.93	20.00	37.82	J-630
J-1350	1,012.90	2,333.47	20.00	33.82	J-920
J-610	1,002.15	2,336.01	20.00	32.25	J-600
J-920	1,009.68	2,394.76	20.00	28.85	J-1350
J-1410	1,010.75	2,448.41	20.00	28.25	J-870
J-1360	1,015.05	2,459.83	20.00	32.74	J-930
J-1370	1,012.90	2,461.48	20.00	20.90	J-900
J-1380	1,012.90	2,465.23	20.00	29.23	J-890
J-1280	1,020.43	2,510.76	20.00	43.92	J-180
J-860	1,005.38	2,535.11	20.00	34.34	J-870
J-870	1,004.30	2,566.01	20.00	23.86	J-1410
J-180	1,005.38	2,567.29	20.00	31.25	J-190
J-1390	1,012.90	2,593.75	20.00	28.96	J-1410
J-930	1,013.98	2,641.11	20.00	28.30	J-1360
J-1330	1,012.90	2,676.54	20.00	34.01	J-1570
J-600	1,008.60	2,693.75	20.00	20.00	J-610
J-1260	1,020.43	2,704.53	20.00	46.63	J-180
J-910	1,012.90	2,722.56	20.00	20.00	J-1370
J-590	1,010.75	2,730.39	20.00	25.66	J-610
J-550	1,011.83	2,866.03	20.00	20.00	J-640
J-630	1,000.00	2,871.48	20.00	23.99	J-690
J-1570	1,007.53	2,935.65	20.00	26.65	J-930
J-1340	1,013.98	2,985.25	20.00	44.76	J-860
J-1250	1,023.65	3,015.24	20.00	46.34	J-180
J-1400	1,007.53	3,019.63	20.00	22.06	J-860
J-880	1,012.90	3,031.03	20.00	20.42	J-1370
Butler Well	1,000.00	3,145.36	20.00	22.24	J-160
J-1270	1,020.43	3,167.44	20.00	45.72	J-180
J-620	1,019.35	3,254.17	20.00	20.00	J-630
J-1290	1,012.90	3,262.91	20.00	41.31	J-1280
J-137	1,000.00	3,276.96	20.00	20.00	J-640
J-160	1,009.80	3,294.49	20.00	20.04	Butler We
J-840	1,016.13	3,322.14	20.00	20.14	J-1390
J-1120	1,015.05	3,351.67	20.00	21.00	J-160
J-540	1,012.77	3,353.18	20.00	21.30	J-640
J-1130	1,010.75	3,364.99	20.00	21.39	J-160
J-1320	1,008.60	3,429.67	20.00	41.41	J-980
J-750	1,014.36	3,453.57	20.00	39.88	J-700
J-90	1,009.68	3,489.14	20.00	25.40	J-100
J-850	1,013.98	3,517.88	20.00	26.79	J-1570
J-1300	1,012.90	3,525.80	20.00	21.82	J-1130
J-170	1,030.10	3,563.89	20.00	20.00	J-180
J-830	1,003.23	3,577.83	20.00	20.00	J-860
J-560	1,023.65	3,581.33	20.00	28.71	J-590

Scenario: Future MDD
Fire Flow Analysis
Fire Flow Report

Node Label	Total Needed Flow (gpm)	Available Fire Flow (gpm)	Residual Pressure (psi)	Calculated Minimum Zone Pressure (psi)	Minimum Zone Junction
J-820	1,010.75	3,649.54	20.00	20.00	J-860
J-100	1,005.38	3,655.81	20.00	22.56	J-90
J-650	1,004.30	3,680.66	20.00	37.87	J-750
J-1050	1,016.13	3,684.24	20.00	37.52	J-1010
J-990	1,002.15	3,722.59	20.00	35.22	J-980
J-680	1,002.15	3,815.66	20.00	21.38	J-670
J-670	1,005.38	3,886.15	20.00	20.29	J-680
J-940	1,013.98	3,967.13	20.00	28.71	J-1030
J-580	1,017.20	3,979.40	20.00	20.90	J-480
J-480	1,006.45	3,990.39	20.00	20.67	J-580
J-120	1,018.28	4,000.00	20.00	24.46	J-180
J-310	1,018.28	4,000.00	20.00	45.88	J-180
J-200	1,002.15	4,000.00	20.00	33.70	J-180
J-220	1,018.28	4,000.00	20.00	41.73	J-180
J-260	1,018.28	4,000.00	20.00	45.09	J-180
J-290	1,010.75	4,000.00	20.00	43.87	J-270
J-270	1,006.45	4,000.00	20.00	43.04	J-280
J-450	1,022.58	4,000.00	20.00	38.78	J-630
J-1090	1,006.45	4,000.00	20.00	38.33	J-1310
J-130	1,018.28	4,000.00	20.00	29.79	J-180
J-770	1,010.75	4,000.00	20.00	28.34	J-180
J-40	1,010.75	4,000.00	20.00	32.56	J-180
J-1490	1,022.58	4,000.00	20.00	45.80	J-180
J-780	1,006.45	4,000.00	20.00	35.60	J-790
J-141	1,006.45	4,000.00	20.00	45.83	J-180
J-147	1,006.45	4,000.00	20.00	23.68	J-940
J-720	1,002.15	4,000.00	20.00	39.21	J-670
J-143	1,002.15	4,000.00	20.00	46.20	J-180
J-570	1,018.28	4,000.00	20.00	25.13	J-630
J-800	1,006.45	4,000.00	20.00	23.41	J-860
J-440	1,026.88	4,000.00	20.00	42.42	J-630
J-430	1,026.88	4,000.00	20.00	45.36	J-180
J-146	1,031.07	4,000.00	20.00	46.43	J-180
J-138	1,003.23	4,000.00	20.00	39.58	J-280
J-1500	1,011.83	4,000.00	20.00	45.89	J-180
J-420	1,011.83	4,000.00	20.00	45.69	J-180
J-730	1,000.00	4,000.00	20.00	42.04	J-670
J-20	1,008.60	4,000.00	20.00	38.63	J-180
J-50	1,027.95	4,000.00	20.00	31.80	J-180
J-700	1,006.00	4,000.00	20.00	32.35	J-750
J-520	1,013.98	4,000.00	20.00	45.36	J-180
J-510	1,022.27	4,000.00	20.00	43.48	J-700
J-530	1,008.56	4,000.00	20.00	37.70	J-500
J-240	1,004.30	4,000.00	20.00	39.55	J-180
J-30	1,003.23	4,000.00	20.00	33.95	J-180
J-150	1,008.60	4,000.00	20.00	26.61	J-160
J-80	1,015.05	4,000.00	20.00	32.41	J-180
J-142	1,000.00	4,000.00	20.00	45.72	J-180
J-139	1,000.00	4,000.00	20.00	42.78	J-630
J-145	1,013.98	4,000.00	20.00	31.64	J-980
J-1510	1,000.00	4,000.00	20.00	45.83	J-180

Scenario: Future MDD
Fire Flow Analysis
Fire Flow Report

Node Label	Total Needed Flow (gpm)	Available Fire Flow (gpm)	Residual Pressure (psi)	Calculated Minimum Zone Pressure (psi)	Minimum Zone Junction
J-1560	1,015.05	4,000.00	20.00	35.30	J-950
J-1100	1,000.00	4,000.00	20.00	39.64	J-1090
J-1530	1,000.00	4,000.00	20.00	46.45	J-180
NPW	1,000.00	4,000.00	20.00	45.83	J-180
J-1520	1,000.00	4,000.00	20.00	46.33	J-180
J-1600	1,000.00	4,000.00	20.00	40.77	J-180
J-144	1,000.00	4,000.00	20.00	46.95	J-180
J-1110	1,086.00	4,000.00	20.00	41.99	J-180
OPW	1,000.00	4,000.00	20.00	40.77	J-180
J-320	1,019.35	4,000.00	20.00	45.98	J-180
J-250	1,017.20	4,000.00	20.00	43.84	J-180
J-230	1,015.05	4,000.00	20.00	40.42	J-180
J-350	1,004.30	4,000.00	20.00	45.74	J-180
J-70	1,038.70	4,000.00	20.00	28.25	J-180
J-110	1,035.48	4,000.00	20.00	21.63	J-180
J-140	1,019.35	4,000.00	20.00	22.34	J-1300
J-210	1,009.68	4,000.00	20.00	37.24	J-180
J-280	1,003.23	4,000.00	20.00	43.98	J-270
J-710	1,000.00	4,000.00	20.00	40.60	J-720
J-660	1,008.60	4,000.00	20.00	25.83	J-670
J-1420	1,000.00	4,000.00	20.00	30.28	J-670
J-1430	1,000.00	4,000.00	20.00	35.44	J-670
J-370	1,007.53	4,000.00	20.00	45.45	J-180
J-470	1,011.83	4,000.00	20.00	37.92	J-630
J-790	1,004.30	4,000.00	20.00	29.68	J-800
J-1240	1,007.53	4,000.00	20.00	45.63	J-180
J-360	1,017.20	4,000.00	20.00	45.52	J-180
J-60	1,023.65	4,000.00	20.00	27.45	J-90
J-970	1,003.23	4,000.00	20.00	40.30	J-1320
J-980	1,013.98	4,000.00	20.00	30.54	J-990
J-1010	1,020.43	4,000.00	20.00	32.50	J-1050
J-960	1,009.68	4,000.00	20.00	38.56	J-1560
J-490	1,027.95	4,000.00	20.00	34.49	J-630
J-500	1,019.35	4,000.00	20.00	35.74	J-530
J-950	1,019.35	4,000.00	20.00	33.02	J-850
J-1020	1,012.90	4,000.00	20.00	27.87	J-940
J-1040	1,016.13	4,000.00	20.00	28.73	J-1050
J-1030	1,008.60	4,000.00	20.00	23.68	J-940
J-1080	1,009.68	4,000.00	20.00	27.76	J-1050
J-1000	1,008.60	4,000.00	20.00	42.30	J-1310
J-1310	1,016.13	4,000.00	20.00	36.57	J-1060
J-1070	1,009.68	4,000.00	20.00	28.70	J-1050
J-1060	1,016.13	4,000.00	20.00	33.60	J-1050
J-460	1,024.73	4,000.00	20.00	37.22	J-630

Scenario: Future PHD
Steady State Analysis
Junction Report

Node Label	Elevation (ft)	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)
J-180	1,994.80	Demand	9.02	Fixed	9.02	2,103.96	47.20
J-160	1,992.10	Demand	9.02	Fixed	9.02	2,103.96	48.37
Butler	1,992.00	Demand	0.00	Fixed	0.00	2,103.96	48.41
J-170	1,991.70	Demand	50.51	Fixed	50.51	2,103.96	48.54
J-1120	1,991.40	Demand	25.26	Fixed	25.26	2,103.96	48.67
J-190	1,989.70	Demand	3.61	Fixed	3.61	2,103.97	49.41
J-1130	1,989.50	Demand	18.04	Fixed	18.04	2,103.96	49.50
J-1300	1,987.80	Demand	21.65	Fixed	21.65	2,103.97	50.24
J-90	1,986.58	Demand	16.24	Fixed	16.24	2,103.99	50.77
J-100	1,986.30	Demand	9.02	Fixed	9.02	2,103.98	50.89
J-120	1,985.40	Demand	30.67	Fixed	30.67	2,104.01	51.29
J-110	1,978.30	Demand	59.53	Fixed	59.53	2,103.98	54.35
J-140	1,974.93	Demand	32.47	Fixed	32.47	2,104.00	55.81
J-60	1,974.30	Demand	39.69	Fixed	39.69	2,104.03	56.10
J-770	1,973.60	Demand	18.04	Fixed	18.04	2,104.04	56.41
J-690	1,969.40	Demand	3.61	Fixed	3.61	2,101.02	56.92
J-630	1,969.10	Demand	0.00	Fixed	0.00	2,101.02	57.05
J-670	1,970.00	Demand	9.02	Fixed	9.02	2,102.79	57.42
J-680	1,969.40	Demand	3.61	Fixed	3.61	2,102.79	57.68
J-50	1,970.50	Demand	46.91	Fixed	46.91	2,104.11	57.78
J-620	1,966.70	Demand	32.47	Fixed	32.47	2,101.00	58.08
J-610	1,966.50	Demand	3.61	Fixed	3.61	2,100.88	58.11
J-720	1,968.40	Demand	3.61	Fixed	3.61	2,103.09	58.25
J-700	1,967.20	Demand	3.61	Fixed	3.61	2,102.19	58.37
J-70	1,969.00	Demand	64.95	Fixed	64.95	2,104.07	58.41
J-750	1,966.60	Demand	0.00	Fixed	0.00	2,102.17	58.62
J-1430	1,966.90	Demand	0.00	Fixed	0.00	2,103.02	58.86
J-710	1,966.80	Demand	0.00	Fixed	0.00	2,103.10	58.94
J-660	1,966.30	Demand	14.43	Fixed	14.43	2,102.81	59.03
J-1420	1,966.30	Demand	0.00	Fixed	0.00	2,102.91	59.07
J-270	1,966.90	Demand	10.82	Fixed	10.82	2,103.51	59.08
J-370	1,966.80	Demand	12.63	Fixed	12.63	2,103.42	59.08
J-730	1,966.30	Demand	0.00	Fixed	0.00	2,102.95	59.09
J-280	1,966.70	Demand	5.41	Fixed	5.41	2,103.37	59.10
J-650	1,965.00	Demand	7.22	Fixed	7.22	2,102.10	59.29
J-290	1,965.40	Demand	18.04	Fixed	18.04	2,103.51	59.72
J-260	1,965.30	Demand	30.67	Fixed	30.67	2,103.81	59.90
J-530	1,962.50	Demand	0.00	Fixed	0.00	2,101.37	60.05
J-510	1,963.10	Demand	32.47	Fixed	32.47	2,102.07	60.09
J-40	1,965.17	Demand	18.04	Fixed	18.04	2,104.23	60.13
J-520	1,963.40	Demand	23.45	Fixed	23.45	2,102.76	60.26
J-360	1,964.00	Demand	28.86	Fixed	28.86	2,103.49	60.32
J-600	1,960.00	Demand	14.43	Fixed	14.43	2,100.88	60.92
J-1240	1,963.00	Demand	12.63	Fixed	12.63	2,103.92	60.94
J-570	1,959.80	Demand	30.67	Fixed	30.67	2,101.03	61.07
J-1260	1,962.40	Demand	34.28	Fixed	34.28	2,103.96	61.21
J-590	1,959.00	Demand	18.04	Fixed	18.04	2,100.83	61.33
J-1250	1,962.30	Demand	39.69	Fixed	39.69	2,104.17	61.35
J-250	1,962.50	Demand	28.86	Fixed	28.86	2,104.48	61.40
J-500	1,959.20	Demand	32.47	Fixed	32.47	2,101.22	61.41
J-640	1,958.50	Demand	10.82	Fixed	10.82	2,100.71	61.50

Scenario: Future PHD
Steady State Analysis
Junction Report

Node Label	Elevation (ft)	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)
J-560	1,958.10	Demand	39.69	Fixed	39.69	2,100.78	61.70
J-490	1,958.00	Demand	46.91	Fixed	46.91	2,101.03	61.85
J-240	1,961.40	Demand	7.22	Fixed	7.22	2,104.75	61.99
J-230	1,961.00	Demand	25.26	Fixed	25.26	2,104.81	62.19
J-550	1,956.70	Demand	19.84	Fixed	19.84	2,100.72	62.28
J-80	1,959.90	Demand	25.26	Fixed	25.26	2,104.23	62.41
J-1270	1,960.30	Demand	34.28	Fixed	34.28	2,104.74	62.46
J-150	1,959.00	Demand	14.43	Fixed	14.43	2,104.07	62.73
J-480	1,955.60	Demand	10.82	Fixed	10.82	2,100.72	62.76
J-580	1,955.50	Demand	28.86	Fixed	28.86	2,100.73	62.80
J-210	1,959.00	Demand	16.24	Fixed	16.24	2,104.59	62.96
J-540	1,954.80	Demand	9.02	Fixed	9.02	2,100.72	63.10
J-450	1,955.00	Demand	37.88	Fixed	37.88	2,101.22	63.23
J-460	1,954.62	Demand	41.49	Fixed	41.49	2,100.98	63.29
J-30	1,957.80	Demand	5.41	Fixed	5.41	2,104.31	63.36
J-220	1,958.50	Demand	30.67	Fixed	30.67	2,105.13	63.41
J-1290	1,958.00	Demand	21.65	Fixed	21.65	2,104.97	63.55
J-200	1,957.40	Demand	3.61	Fixed	3.61	2,104.38	63.56
J-1490	1,956.50	Demand	37.88	Fixed	37.88	2,104.58	64.04
j-470	1,952.50	Demand	19.84	Fixed	19.84	2,100.66	64.07
J-350	1,955.10	Demand	7.22	Fixed	7.22	2,104.30	64.52
J-310	1,954.70	Demand	30.67	Fixed	30.67	2,104.93	64.97
J-1050	1,949.70	Demand	27.06	Fixed	27.06	2,100.29	65.12
J-980	1,949.50	Demand	23.45	Fixed	23.45	2,100.24	65.19
J-780	1,949.60	Demand	10.82	Fixed	10.82	2,100.37	65.20
J-950	1,949.20	Demand	32.47	Fixed	32.47	2,100.09	65.25
J-420	1,953.10	Demand	19.84	Fixed	19.84	2,104.15	65.32
J-1310	1,949.60	Demand	27.06	Fixed	27.06	2,100.71	65.34
J-1100	1,950.20	Demand	0.00	Fixed	0.00	2,101.32	65.35
J-960	1,949.20	Demand	16.24	Fixed	16.24	2,100.37	65.37
J-1280	1,953.40	Demand	34.28	Fixed	34.28	2,104.65	65.41
J-790	1,948.70	Demand	7.22	Fixed	7.22	2,100.11	65.47
J-990	1,948.70	Demand	3.61	Fixed	3.61	2,100.16	65.50
J-430	1,951.20	Demand	45.10	Fixed	45.10	2,102.76	65.54
J-1010	1,948.70	Demand	34.28	Fixed	34.28	2,100.37	65.59
J-970	1,948.90	Demand	5.41	Fixed	5.41	2,100.65	65.62
J-139	1,949.20	Demand	0.00	Fixed	0.00	2,100.97	65.63
J-850	1,947.60	Demand	23.45	Fixed	23.45	2,099.64	65.75
J-1000	1,948.90	Demand	14.43	Fixed	14.43	2,100.96	65.76
J-1090	1,948.60	Demand	10.82	Fixed	10.82	2,101.01	65.91
J-440	1,948.90	Demand	45.10	Fixed	45.10	2,101.61	66.04
J-1570	1,946.30	Demand	12.63	Fixed	12.63	2,099.32	66.17
J-320	1,952.00	Demand	32.47	Fixed	32.47	2,105.39	66.33
J-930	1,945.70	Demand	23.45	Fixed	23.45	2,099.19	66.37
J-860	1,945.80	Demand	9.02	Fixed	9.02	2,099.37	66.41
J-940	1,946.50	Demand	23.45	Fixed	23.45	2,100.11	66.43
J-1320	1,946.70	Demand	14.43	Fixed	14.43	2,100.42	66.47
J-1110	1,948.90	Demand	37.52	Fixed	37.52	2,102.67	66.49
J-1560	1,945.85	Demand	25.26	Fixed	25.26	2,100.15	66.73
J-1360	1,944.80	Demand	25.26	Fixed	25.26	2,099.18	66.76
J-1340	1,945.20	Demand	23.45	Fixed	23.45	2,099.93	66.91

Scenario: Future PHD
Steady State Analysis
Junction Report

Node Label	Elevation (ft)	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)
J-1400	1,944.60	Demand	12.63	Fixed	12.63	2,099.44	66.96
J-1500	1,951.00	Demand	19.84	Fixed	19.84	2,105.92	66.99
J-1390	1,944.10	Demand	21.65	Fixed	21.65	2,099.26	67.10
J-830	1,944.10	Demand	5.41	Fixed	5.41	2,099.48	67.19
J-820	1,944.10	Demand	18.04	Fixed	18.04	2,099.52	67.21
J-800	1,944.40	Demand	10.82	Fixed	10.82	2,099.86	67.23
J-880	1,943.70	Demand	21.65	Fixed	21.65	2,099.19	67.24
J-1410	1,943.60	Demand	18.04	Fixed	18.04	2,099.26	67.31
J-1370	1,943.30	Demand	21.65	Fixed	21.65	2,099.15	67.39
J-910	1,943.10	Demand	21.65	Fixed	21.65	2,099.16	67.48
J-870	1,943.20	Demand	7.22	Fixed	7.22	2,099.26	67.48
J-840	1,943.10	Demand	27.06	Fixed	27.06	2,099.29	67.54
J-1060	1,944.00	Demand	27.06	Fixed	27.06	2,100.44	67.65
J-1350	1,942.60	Demand	21.65	Fixed	21.65	2,099.15	67.70
J-890	1,942.60	Demand	19.84	Fixed	19.84	2,099.19	67.71
J-1330	1,942.50	Demand	21.65	Fixed	21.65	2,099.29	67.80
J-1380	1,942.20	Demand	21.65	Fixed	21.65	2,099.18	67.89
NPW	1,947.60	Demand	0.00	Fixed	0.00	2,104.59	67.89
J-1510	1,947.50	Demand	0.00	Fixed	0.00	2,104.59	67.93
J-130	1,947.00	Demand	30.67	Fixed	30.67	2,104.15	67.96
J-900	1,941.30	Demand	14.43	Fixed	14.43	2,099.15	68.26
J-20	1,946.70	Demand	14.43	Fixed	14.43	2,104.57	68.27
J-1520	1,946.80	Demand	0.00	Fixed	0.00	2,105.97	68.83
OPW	1,945.60	Demand	0.00	Fixed	0.00	2,105.21	69.02
J-1600	1,944.80	Demand	0.00	Fixed	0.00	2,105.21	69.37
J-1530	1,945.30	Demand	0.00	Fixed	0.00	2,106.37	69.65
J-1540	1,943.80	Demand	12.63	Fixed	12.63	2,105.68	70.00
J-1140	1,942.50	Demand	9.02	Fixed	9.02	2,105.64	70.55
J-1030	1,936.70	Demand	14.43	Fixed	14.43	2,100.13	70.67
J-920	1,934.70	Demand	16.24	Fixed	16.24	2,099.16	71.12
J-1070	1,935.50	Demand	16.24	Fixed	16.24	2,100.32	71.27
J-1020	1,932.20	Demand	21.65	Fixed	21.65	2,100.16	72.63
J-1040	1,931.10	Demand	27.06	Fixed	27.06	2,100.23	73.14
J-1080	1,929.40	Demand	16.24	Fixed	16.24	2,100.28	73.90