City of Yakima

System Number 991509

Yakima County Washington

Appendices for

Water System Plan Update

June 2011

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Consulting Services

City of Yakima
2010 Water System Plan Update Appendix
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Appendix A

SEPA checklist

STATE ENVIRONMENTAL POLICY ACT (SEPA)
ENVIRONMENTAL CHECKLIST

EVALUATION FOR AGENCY USE ONLY

A. BACKGROUND

1. **Name of proposed project:**

City of Yakima Water System Plan Update

2. **Name of applicant:**

City of Yakima, Water/Irrigation Division.

Telephone:

(509) 575-6154

3. Address:

Water/Irrigation Division
2301 Fruitvale Boulevard
Yakima, WA 98902

Contact:

Mr. Dave Brown, Water/Irrigation Division Manager

Telephone:

(509) 575-6204

4. **Date checklist prepared:**

March 18, 2011.

5. **Agency requesting checklist:**

As the agency initiating this proposal, the City of Yakima is the lead agency and is requesting the checklist.

6. **Proposed timing or schedule (Including phasing, if applicable):**

The 2010 City of Yakima Water System Plan Update (Plan) evaluates the existing water system and projects future domestic, irrigation, and water supply needs in phases through the year 2030. Please refer to the schedule in Chapter 8 of the Plan for a description of the proposed capital improvement plan (CIP)

The Plan proposes phased implementation of a variety of physical projects and administrative programs that would address future demands for the supply, transmission, and operation of a potable water system within Yakima's water service area. The Plan recommends implementing modifications to supply, distribution, and storage facilities in the service area to ensure that projected

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and potential demands can be met. New water supply operations programs are also recommended. The Plan recommends increasing the supply capacity by installing new wells, constructing improvements to the WTP, constructing additional distribution lines within the City of Yakima maintenance of existing pressure reducing valves, and implementing annual operations programs for water conservation, leak detection, and corrosion control.

The physical projects mentioned above are elements of the City's recommended water system Capital Improvement Program (CIP). The proposed construction dates for the City's water system CIP projects are listed in Chapter 8 of the Plan. The Plan recommendations would be implemented in two phases: Phase I, a 6-year phase from 2011 to 2016, and Phase II, the remaining 14 years of the 20-year timeframe covered by this Plan. Population and water demand projections in this Plan were made for a 202-year planning horizon. Recommendations for the Phase II years of the 20-year planning horizon will be reviewed and modified as part of subsequent Plan updates.

The CIP projects listed in Chapter 8 of the Plan are subject to change, depending upon the rate, location, and nature of future development within the City and its service area and should not be construed as a commitment by the City to complete a project by a specific date. Actual project implementation will be based on subsequent environmental review, permits and approvals, available funding sources, and scheduling requirements.

7. **Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.**

This Water System Plan Update is in itself such a plan. The Plan is required to be updated every 6 years. Those CIP projects planned for implementation after the year 2016 will be part of the next Plan Update and specific impacts associated with these projects are not covered by this checklist. The appropriate level of environmental review consistent with SEPA requirements will be conducted for those projects in the future.

8. **List any environmental information (studies, reports, etc.) you know about that has been prepared, or will be prepared, directly related to this proposal.**

Please refer to the accompanying Water System Plan Update for a more complete discussion of recommended water system improvements. The SEPA process will be completed for the general impacts associated with this Plan and its projected changes to the City of Yakima's domestic water system. Specific projects to implement the Plan either not yet sited (e.g., wells, WTP modifications) and/or scheduled to occur after the year 2016 will remain subject

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to subsequent environmental review as required under SEPA.

9. **Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.**

Ongoing industrial, commercial, and residential development throughout the City of Yakima and its service area will continue during the life of this Plan. The City of Yakima has prepared an Urban Area Comprehensive Plan in conformance with the requirements of the Growth Management Act (GMA). Water demand forecasts incorporated into the Plan's analysis anticipate continued growth consistent with the City and region's growth management planning. However, there are no significant changes proposed for Yakima's urbanized area that would affect the Plan's growth projections.

10. **List any governmental approvals or permits that will be needed for your proposal, if known. Include Federal, State, City, County, and local districts or regional offices.**

a. SEPA -Department of Ecology

b. Plan approval- Department of Health

c. Water rights-Department of Ecology

d. Appropriate local permits for constructing water system improvements at the time such improvements are scheduled.

11. **Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (You may attach a page if this space is not adequate.)**

The Water System Plan Update analyzes the existing City of Yakima domestic water system including water supply, storage, distribution, and operations. The study has projected future water demands based on potential domestic needs.

Modifications to the existing domestic system are recommended to ensure that projected water demands can be met. Future decisions and political or legal actions (such as in regard to the City's water rights or irrigation conversion) could result in the need for a subsequent plan update or amendments to this plan.

The recommended water system improvements presented in this Plan relate to four aspects of the system: the supply program, storage and pump station facilities, distribution system, and system operations and management. Recommended improvements to the supply program include modification to the Naches River WTP required to improve operational efficiency and

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installation of new wells (Gardner Park and two future aquifer storage and recovery (ASR) wells) needed to meet anticipated future demands..

Recommended improvements to the storage facilities include automation of a new control valve at the North 40th Avenue (Level 2) pump station to improve utilization of the Level 2 reservoirs.

Recommended improvements to the domestic water distribution system include:

The following distribution projects, while not needed to correct any existing deficiencies, are included in the capital improvement program as part of the City's on-going efforts to maintain and upgrade the quality of the system to meet current and future needs.

Advanced Metering Infrastructure (AMI): This project would replace some existing water meters, upgrade other existing meters and install new infrastructure for an AMI system. The new AMI system will allow water meter reads to be transmitted to the utility billing system multiple times per day, eliminating the need for in the field manual meter reading. AMI will improve meter reading accuracy, billing accuracy, identify customer usage patterns, potential customer leaks and provide improved customer service. Components of the AMI system include new water meters, radio transmitters for existing water meters, structures for data collection units, and software. This project should begin in 2011.

Private Water Main Replacement Program**:** This on-going program replaces private mains less than 6-inch (in some cases 1-inch galvanized) and complete loops in the areas where these mains are replaced. This project improves domestic flows to current residential customers, provides fire protection in areas where no fire hydrants have previously existed and improves overall system performance and reliability by looping the new mains to existing mains.

Open Gear Valve Replacement: There are 16-inch and larger open gear gate valves throughout the water system that are fifty to seventy-five years old and are at the end of their useful life. Some valves are no longer operable and parts are not available for repair and maintenance of the valves. This project would systematically replace one to two valves each year until all have been replaced.

Recommendations to improve system operations programs include continuation of a corrosion control program, leak detection program, wellhead and watershed protection programs, groundwater monitoring program, and water conservation program.

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Refer to Chapter 8 of the Water System Plan update for a complete discussion of planned capital improvements

12. **Location of the proposal:**

The Water System Plan would be implemented throughout Yakima's water service area. The service area boundary is shown in Figure 1-6 in the Plan.

Recommended improvements are in Table 8-2 of the Plan. At this time, the exact locations of the proposed ASR wells, are not known. It is anticipated that these new facilities will be located at or near existing utility sites or on available vacant land within the City's jurisdiction.

B. ENVIRONMENTAL ELEMENTS

1. EARTH

a. General description of the site (underline one):
Flat, rolling hills, steep slopes, mountainous, other varies .

b. What is the steepest slope on the site (approximate percent slope)?

Does not apply

c. What general types of soils are found on the site (for example; clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.

The soils types vary throughout the approximately 19-square-mile service area.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

Does not apply

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

Some grading and filling would occur during pipeline replacement and other construction projects.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Because the proposed distribution mains would be located beneath relatively flat, already developed areas (e.g., paved roads), erosion from construction activities for these activities is expected to be low. Similarly, erosion is anticipated to be low at the WTP site as a result of improvements to be constructed within the existing facilities. Construction of the groundwater

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wells, could result in increased erosion, depending on the specific characteristics of sites selected for project implementation. No erosion impacts are expected from use of the water system improvements.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

The projects identified in the plan are not expected to result in any increase in the amount of impervious surfaces associated with the water system facilities.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

If required, erosion control measures at new construction sites would be based on applicable local and regional ordinances and/ or guidance manuals. General erosion and sediment control measures that could be implemented during site grading include spraying water or other dust control agents on graded areas to control dust, placing erosion control fences and/or straw bales at the toes of freshly graded slopes to reduce surface water velocity and offsite siltation, and revegetation of graded areas as soon as feasible after grading is complete.

2. AIR

a. What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities, if known.

Construction of the recommended facility improvements would slightly increase air emissions (i.e., dust and equipment exhaust) during construction by vehicle and wind erosion over exposed earth surfaces. Clearing and grading activities comprise a major source of these temporary construction emissions. The severity of construction emissions is extremely variable, and depends on wind speed, soil type, soil moisture, the type of construction activity, and acreage affected by construction activity.

b. Are there any off-site sources of emissions or odors that may affect your proposal? If so, generally describe.

Does not apply

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

Construction dust can be controlled by watering disturbed areas. Active construction areas will be watered whenever soil moisture conditions and weather conditions result in visible dust generation. Dust-producing activities will be suspended during period of high winds if dust control measures are unable to avoid visible dust plumes. All finished grades will be immediately treated with an appropriate soil binder.

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3. WATER

a. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

The WTP diverts water from the Naches River, a tributary to the Yakima River. The domestic water service area is bound on the East by the Yakima River and on the North by the Naches River. Several creeks and lakes lie within the area.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

No work is anticipated within 200 feet of either the Naches or Yakima Rivers.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

It is anticipated that new facilities would be sited to avoid direct impacts to surface water and wetlands. Potential impacts to surface water or wetlands associated with future facilities will be addressed under subsequent SEPA environmental review.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

The City currently diverts about 23 MGD at the treatment plant to meet peak demands. Additional groundwater rights would likely be needed by 2030.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

Portions of the service area are within the 100-year floodplain. The only known projects planned within a floodplain are the WTP improvements. Environmentally acceptable construction methods and protection features will be incorporated during planning and design of these facilities, most of which will be installed within existing structures or buildings. In addition, an existing dike separates WTP facilities from the Naches River, therefore, no significant impacts are anticipated from construction within this floodplain area. Any potential impacts associated with construction of other facilities within a floodplain will be addressed under separate SEPA reviews.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

No wastes would be discharged into the ground as a result of the proposed project.

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b. Ground:

1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

Historically, the City of Yakima has used groundwater only as an seasonal/emergency source of supply. The capacity of its existing emergency ground water sources totals 11.6 MGD. One existing groundwater right was the Ranney Well right. The original Ranney Well water right was for 5000 gpm and can be used year around. Of this 5000 gpm, 2000 gpm was transferred to the Kissel Park Well (one of the sseasonal/emergency wells). The remaining 3000 gpm has been transferred to the new Gardner Park Well.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

No waste material would be discharged into ground or surface waters as a result of the proposed project.

c. Water Runoff (including storm water):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will the water flow into other waters? If so, describe.

No increase in the amount of impervious surfaces or run-off are anticipated as a result of the improvements identified in the plan.

2) Could waste materials enter ground or surface waters? If so, generally describe.

No waste material would be discharged into ground or surface waters as a result of the proposed project.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

In addition to implementing a water conservation program, replacing obsolete and deteriorated water mains will also help to conserve water. Developing a leak detection program will also help protect impacts to groundwater supplies.

4. PLANTS

a. Check or underline types of vegetation found on the site:

__x__ *deciduous tree: alder, maple, aspen,* other (oak)

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__x__ *evergreen tree: fir, cedar,* pine, *other*
__x__ shrubs
__x__ grass
__x__ *pasture*
__x__ *crop or grain*
__x__ *wet soil plants: cattail, buttercup, bulrush, skunk cabbage, other*
__x__ *water plants: water lily, eelgrass, milfoil, other*
__x__ *other types of vegetation*

b. What kind and amount of vegetation will be removed or altered?

Slight amounts of vegetation could be disturbed during construction projects for new pipelines, as well as during construction of other recommended facilities (i.e., WTP improvements). In general, the proposed construction sites would be located in fairly developed urban settings, away from environmentally sensitive areas. Therefore, impacts to plants attributable to Plan implementation would be expected to be minor. Further environmental analysis under SEPA will be conducted to determine if any site-specific impacts would have to vegetation as a result of implementation of individual projects yet to be sited. See attached Supplement D.2 for additional discussion.

c. List threatened or endangered species known to be on or near the site.

See attached Supplement D.4.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

5. ANIMALS

See attached Supplement D.2.

a. Underline any birds and animals which have been observed on or near the site or are known to be on or near the site:

Birds: hawk, heron, eagle, songbirds, other.....
Mammals: deer, bear, elk, beaver, other...coyote, mice.....
fish: bass, salmon, steelhead, trout, herring, shellfish, other .....

b. List any threatened or endangered species known to be on or near the site.

See attached Supplement D.2.

c. Is the site part of a migration route? If so, explain.

See attached Supplement D.4.

d. Proposed measures to preserve or enhance wildlife, if any:

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See attached Supplement D.2.

6. ENERGY AND NATURAL RESOURCES

a. What kind of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

The City uses electric energy to run its pump stations, treatment facilities, and automated controls. Constructing a new supply well and WTP improvements, wi1l increase the amount of energy consumed. In addition, construction activities would require the use of gasoline for fuel. Also, see attached Supplement D.3.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

Does not apply.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

High-efficiency electric motors will be used at the new well and for WTP improvements. The Plan also includes implementation of leak detection, identification of additional water conservation measures.

7. ENVIRONMENTAL HEALTH

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

Does not apply.

1) Describe special emergency services that might be required?

Does not apply.

2) Proposed measures to reduce or control environmental health hazards, if any:

Recent improvements have eliminated the use of chlorine gas at the WTP and at the seasonal/emergency wells. On-site chlorine generation is used at the WTP and chlorine tablets are used at the wells.

b. NOISE

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Does not apply.

2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example: traffic, construction,

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operation, other)? Indicate what hour's noise would come from the site.

Short-term noise impacts would occur during construction hours. Operation of the new pump station would likely be located near existing facilities and/or in urbanized areas and would not significantly increase existing noise levels associated with traffic and/or facility operations. Also, see attached Supplement D.l.

3) Proposed measures to reduce or control noise impacts, if any:

Potential noise impacts would be considered in site selection and facility design as well as in future SEPA reviews. Noise generation would be subject to local and state regulations. If necessary, new facilities would be required to incorporate noise abatement devices to control noise emissions within regulated standards.

8. LAND AND SHORELINE USE

See attached Supplement D.5 for discussion of Items a through l below.

a. What is the current use of the site and adjacent properties?

b. Has the site been used for agriculture? If so, describe.

c. Describe any structures on the site.

d. Will any structures be demolished? If so, what?

e. What is the current zoning classification of the site?

f. What is the current comprehensive plan designation of the site?

g. If applicable, what is the current shoreline master program designation of the site?

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

i. Approximately how many people would reside or work in the completed project?

j. Approximately how many people would the completed project displace?

k. Proposed measures to avoid or reduce displacement impacts, if any:

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

9. HOUSING

a. Approximately how many units would be provided, if any? Indicate whether high,

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middle, or low-income housing.

No housing will be provided by the proposed projects or programs.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low income housing.

No housing will be eliminated by the proposed projects or programs.

c. Proposed measures to reduce or control housing impacts, if any:

Does not apply.

10. AESTHETICS

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

The tallest height of any new structures will be the well houses for the new wells. They will have a height of 12 to 14 feet and will also include a small antenna for the telemetry system. The exact height of the antenna has yet to be determined but would probably be 30 feet or less.

b. What views in the immediate vicinity would be altered or obstructed?

Proposed distribution mains and the groundwater well are subsurface facilities and would therefore not alter or obstruct any views. The new well houses would also likely be located in already developed, urbanized settings; therefore, it is not anticipated that these projects would alter or obstruct any scenic views. Future site-specific SEPA review for these proposed new facilities will address potential aesthetic impacts in more detail.

c. Proposed measures to reduce or control aesthetic impacts, if any:

The planning and design of projects recommended in the Plan would carefully consider aesthetic values. It is anticipated that new above-grade facilities (i.e., well houses) would likely be located in already developed, urbanized settings and therefore would not have a significant adverse aesthetic effect on local visual resources.

11 LIGHT AND GLARE

a. What types of light or glare will the proposal produce? What time of day would it mainly occur?

Operation of the new wells could introduce new sources of light into the vicinity of the project sites for these facilities, including night lighting.

b. Could light or glare from the finished project be a safety hazard of interfere with views?

It is anticipated that new above-grade facilities (i.e, well houses) would likely

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be located in urbanized areas already developed with structures and outdoor lighting. Any potential changes in the level, amount, or intensity of light and glare at the proposed project sites are not anticipated to result in a safety hazard or interfere with existing views. Future site-specific SEPA review for these proposed new facilities will address potential effects of light and glare in more detail.

c. What existing off-site sources of light or glare may affect your proposal?

Does not apply.

d. Proposed measures to reduce or control light and glare impacts, if any:

Future site-specific SEP A review for proposed new facilities will address mitigation measures to reduce or control light and glare impacts in more detail.

12. RECREATION

a. What designated and informal recreational opportunities are in the immediate vicinity?

The service area contains a large variety of recreational facilities and opportunities such as parks, rivers, and lakes.

b. Would the proposed project displace any existing recreational uses? If so, describe.

The proposed distribution mains and wells would not have any effects on recreational opportunities in the service area. Future site-specific SEPA review for implementation of the other proposed projects will provide information on potential impacts to recreational uses. It is anticipated that these projects would not have an adverse effect.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

Impacts to recreation would be reduced or controlled through the siting process for future planned projects.

13 HISTORIC AND CULTURAL PRESERVATION

a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

The proposed distribution mains and well houses would be constructed in areas previously disturbed, and therefore it is not anticipated that construction activities for these projects would adversely impact any places or objects listed on or proposed for preservation registers. Future site-specific SEP A review for implementation of the Plan's other proposed projects will provide information on potential impacts to these resources at or near project sites.

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b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

Does not apply.

c. Proposed measures to reduce or control impacts, if any:

Areas with known or potential landmarks or evidence of historic, archaeological, scientific, or cultural importance would be avoided for proposed projects, to the extent feasible, through the facility siting process. If new facilities cannot avoid affecting these re- sources, impacts will be mitigated, as necessary .In the event that archaeological or other important remains are uncovered during construction, work should be halted until a qualified archaeologist or other appropriate professional can visit the site to determine the significance of the find and conduct additional testing, if necessary.

14. TRANSPORTATION

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on-site plans, if any.

Local streets will be used to access sites during construction of the Plan's proposed projects. Many local streets will be temporarily disturbed during installation of distribution mains; during construction periods, traffic may need to be re-routed to avoid construction activities.

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

Does not apply.

c. How many parking spaces would the completed project have? How many would the project eliminate?

Minimal parking would be required at the well sites. It is anticipated that implementation of the Plan's recommended projects and programs would not result in the elimination of any parking spaces.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

The need for new public access as a result of this Plan is unlikely. The new wells, WTP improvements, and distribution lines will be constructed in an urbanized area serviced by existing roads. It is anticipated that no new roads or road improvements would be required to service the new wells. However, public roads may be temporarily blocked and traffic diverted during construction of the proposed distribution mains.

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e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

Does not apply.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

Operation and maintenance of the new wells would generate approximately one new vehicular trip per day per facility. Any potential adverse effects caused by these additional trips will be addressed under subsequent SEPA environmental review.

g. Proposed measures to reduce or control transportation impacts, if any:

The recommended projects would be planned and designed to reduce transportation impacts. A temporary traffic control plan would be developed and implemented during construction of the proposed distribution mains. This traffic control plan would identify hours of construction and include a temporary recirculation plan for rerouting traffic.

15. PUBLIC SERVICES

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

Does not apply.

b. Proposed measures to reduce or control direct impacts on public services, if any.

The Water System Plan Update includes many recommendations that will improve public services. The WTP and distribution improvements, and the development of new groundwater supplies will help ensure adequate supply of domestic water and fire protection. Development of leak detection, conservation, and on-going corrosion control programs will help ensure safe and efficient operation and use of local water supplies.

16. UTILITIES

a. Underline utilities currently available at the site:

electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

Does not apply.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity, which might be needed.

Electric service would be required for the proposed wells. An upgrade to the existing electrical service at the WTP is included in the proposed capital

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improvement plan in the WSP Update.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: _____
David Brown

Date Submitted: March 18, 2011

D. SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS
(do not use this sheet for project actions)
Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.
When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

The Water System Plan Update in itself would not have direct impacts on the physical environment. However, the activities that may result from implementation of the Plan could result in possible short-term construction impacts or long-term site specific impacts. Although some recommendations of the Plan involve legal, political, or managerial actions which would not directly affect the environment, construction projects or operational changes that are a result of those actions might.

The recommendations of the Plan do not suggest projects that would permanently or significantly increase discharges to water; discharge emissions to air; produce, store, or release toxic or hazardous substances; or produce significant amounts of noise. Air emissions (in the form of dust) and noise emissions would be generated during new facility construction. noise emissions.

Proposed measures to avoid or reduce such increases are:

Construction impacts can be reduced by watering and replanting disturbed areas and monitoring the hours of operation within sound-sensitive areas. The recommended facilities that are capable of producing noise would most likely be located adjacent to similar existing water utility facilities or in an urbanized area (e.g. , new wells).

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

Recommendations of the Plan would not be likely to affect plants, animals, fish, or marine life. The proposed distribution lines and contact basin building will be constructed in areas of previous disturbance. Further environmental analysis under SEPA will be conducted to determine if any site-specific impacts to these resources

would result from implementation of other individual construction projects.

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

The planning, design, and construction of facilities that have the potential for such impacts would incorporate features to reduce the likelihood of occurrence and significance.

3. How would the proposal be likely to deplete energy or natural resources?

Some of the recommended facilities would require electrical energy, such as the new pump station, supply wells, and reservoirs. However, this increase in energy demand would represent a small percentage of increase over that of the existing water system.

As the demand for treated domestic water increases, more water would be withdrawn from the surface water and groundwater sources.

Proposed measures to protect or conserve energy and natural resources are:

High-efficiency electric motors will be used at the new wells and for the WTP modifications. The Plan also includes on-going leak detection, water conservation, and corrosion control programs.

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

Construction of the modifications at the WTP would occur within the floodplain of the Naches River. However, there is an existing dike that separates WTP facilities from the Naches River. Other recommended facility improvements and additions would not likely affect sensitive areas. To the maximum extent feasible, facilities will be sited to avoid sensitive areas. Any potential impacts associated with facility construction and operation in these areas will be addressed as part of subsequent site-specific SEPA review for individual projects not yet sited.

Proposed measures to protect such resources or to avoid or reduce impacts are:

The planning and design of the WTP modifications would incorporate environmental protection features to reduce impacts associated with construction in the WTP floodplain area. Environmentally-acceptable construction methods would also be implemented to lessen potential impacts to shoreline areas.

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

The recommended improvements to the water system would most likely be located at or near existing water utility facilities, or in existing urbanized commercial/industrial

areas, thus reducing the likelihood of incompatible impacts on land use. Construction activities at the WTP would not alter the existing shoreline use at that site. It is anticipated that the projects recommended in the Plan would not displace any persons. In addition, projects that develop from implementation of this Plan would be done by existing City forces or by outside construction contracts.

Proposed measures to avoid or reduce shoreline and land use impacts are:

Emphasis to locate new facilities at or near existing water utility locations would help to avoid land use and shoreline use impacts. Although planning requirements of public utilities are less restrictive than non-public projects, implementation of Plan recommendations would be subject to local planning review for compliance with land use compatibility, including applicable local land use ordinances, zoning regulations, and other possible approvals.

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

It is unlikely that implementation of the Water System Plan Update would increase demands on transportation, public services, and utilities. However, the existing transportation system could be temporarily affected during construction of distribution lines; this construction activity may require rerouting traffic during pipeline installation in local roads.

Proposed measures to reduce or respond to such demand(s) are:

The Plan includes features that should have positive impacts on the quality and reliability of public services. The storage facilities improvements, WTP modifications, distribution improvements, and development of new groundwater supplies will improve fire protection services and the delivery of potable water in emergency situations.

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

The Water System Plan Update should not be in conflict with existing environmental laws or requirements. Implementation of recommendations within the Plan would be subject to specific environmental review as required under SEPA.

Appendix B

SEPA Declaration of Non-significance

DEPARTMENT OF COMMUNITY AND ECONOMIC DEVELOPMENT

Planning Division
129 North Second Street, 2nd Floor Yakima, Washington 98901
(509) 575-6183 • Fax (509) 575-6105
www.buildingyakima.com • www.ci.yakima.wa.us/services/planning/

NOTICE OF DECISION

Compliance with the Washington State Environmental Policy Act (SEPA)
June 17, 2011

On May 25, 2011 the City of Yakima, Washington issued a Notice of Application and Environmental Review regarding a SEPA review application submitted by City Water and Irrigation for their 2011 Water System Plan Update.

Parcel number: City-Wide
City File Number: SEPA #023-11

Following the required 20-day public comment period, and consideration of all comments received, the City of Yakima has issued the enclosed SEPA Threshold Decision. This decision may be appealed within 14 days from the date of mailing. Appeals must be in writing and on forms available from the City of Yakima Planning Division, 129 North 2nd Street, Yakima, Washington. A fee of $580.00 must accompany the Appeal Application.

For further information or assistance, you may wish to contact Joseph Calhoun, Assistant Planner at (509)575-6162, or email jcalhoun@ci.yakima.wa.us.

Bruce Benson
Acting Planning Manager

Notice of Decision Mailing Date: June 17, 2011

Enclosure: SEPA Determination of Nonsignificance

WASHINGTON STATE ENVIRONMENTAL POLICY ACT
DETERMINATION OF NONSIGNIFICANCE
CITY OF YAKIMA, WASHINGTON
June 17, 2011

PROJECT DESCRIPTION: The City of Yakima Department of Community & Economic Development has received an Environmental Review Application from the City Water and Irrigation Division for their 2011 Water System Plan Update.

PROPONENT:	Dave Brown, City of Yakima Water and Irrigation Division
LOCATION:	City of Yakima
LEAD AGENCY:	City of Yakima
FILE NUMBER:	SEPA #023-11

DETERMINATION: The City of Yakima, as lead agency for this proposal, after reviewing a completed environmental checklist and other information on file with the lead agency, has determined that the project will not have a probable significant adverse impact on the environment, and an environmental impact statement (EIS) will not be required under RCW § 43.21C.030(2)(c). The information relied upon in reaching this determination is available to the public upon request at the City of Yakima Planning Division.

CONTACT PERSON: Contact Joseph Calhoun, Assistant Planner at (509) 575-6162 for more information.

☐ There is no comment period for this DNS

☑ This DNS is issued after using the optional DNS process in WAC § 197-11-355. There is no further comment period on the DNS.

☐ This DNS is issued under WAC § 197-11-340(2); the lead agency will not act on this proposal for 20 days from the date below.

Responsible official:	Joan Davenport; Acting CED Director/SEPA Responsible Official
Phone:	(509) 575-6113
Address:	129 N 2nd Street, Yakima, WA 98901

Date: June 17, 2011 Signature: Joan Davenport

☑ You may appeal this determination to: Joan Davenport, Acting CED Director, at 129 N 2nd Street, Yakima, WA 98901.

No later than: July 1, 2011 by completing an appeal application form and payment of $580 appeal fee. You should be prepared to make specific factual objections. Contact the City of Yakima Planning Division to read or ask about the procedures for SEPA appeals.

DEPARTMENT OF COMMUNITY AND ECONOMIC DEVELOPMENT

Planning Division
129 North Second Street, 2nd Floor Yakima, Washington 98901
(509) 575-6183 • Fax (509) 575-6105
www.buildingyakima.com • www.ci.yakima.wa.us/services/planning/

May 20, 2011

City of Yakima Water and Irrigation
2301 Fruitvale Blvd
Yakima, WA 98902

Determination of Application Completeness for the following application: SEPA #023-11

Your application was initially submitted on May 20, 2011. The application has been determined to be complete for further processing on May 20, 2011. Continued processing of your request will include, but is not limited to, the following actions:

1. A Notice of Application is to be sent to all property owners within 300 feet of your site on May 25, 2011. This notice will include a 20-day public comment period for SEPA, as is required by the City of Yakima (YMC § 16.05.040), which will end on June 14, 2011.

2. Following the comment period, a SEPA Threshold Determination, which may include mitigation measures, will be issued and followed by a 14 day SEPA Appeal period, which will end on or about June 29, 2011.

3. The threshold determination will be final unless appealed.

You may contact me at (509) 575-6162 or jcalhoun@ci.yakima.wa.us if you have any questions regarding this application.

Sincerely,

Joseph Calhoun
Assistant Planner

Appendix C

Water Facilities Inventory(WFI)

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: 07/29/2010
Printed: 10/04/2010
WFI Printed For: Annual
Submission Reason: Source Update

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
99150 9	YAKIMA WATER DIVISION, CITY OF	YAKIMA	A	Comm

6. PRIMARY CONTACT NAME & MAILING ADDRESS

DAVID E. BROWN [WATER/IRRIGATION MGR]
2301 FRUITVALE BLVD
YAKIMA, WA 98902-1225

STREET ADDRESS IF DIFFERENT FROM ABOVE

ATTN
ADDRESS
CITY STATE ZIP

7. OWNER NAME & MAILING ADDRESS **8. Owner Number** 006797

YAKIMA, CITY OF
DAVID E. BROWN
2301 FRUITVALE BLVD
YAKIMA, WA 98902-1225

TITLE: WATER/IRRIGATION MG

STREET ADDRESS IF DIFFERENT FROM ABOVE

ATTN
ADDRESS
CITY STATE ZIP

9. 24 HOUR PRIMARY CONTACT INFORMATION		10. OWNER CONTACT INFORMATION	
Primary Contact Daytime Phone:	(509) 575-6204	Owner Daytime Phone:	(509) 575-6204
Primary Contact Mobile/Cell Phone:	(509) 901-4870	Owner Mobile/Cell Phone:	(509) 901-4870
Primary Contact Evening Phone:	(509) 966-4659	Owner Evening Phone:	(509) 966-4659
Fax: (509) 575-6187	E-mail: dbrown@ci.yakima.wa.us	Fax: (509) 575-6187	E-mail: dbrown@ci.yakima.wa.us

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
- [ ] Managed Only
- [ ] Owned Only

SMA NAME: _____ SMA Number: _____

12. WATER SYSTEM CHARACTERISTICS (mark ALL that apply)

- [x] Agricultural
- [x] Commercial / Business
- [x] Day Care
- [x] Food Service/Food Permit
- [x] 1,000 or more person event for 2 or more days per year
- [x] Hospital/Clinic
- [x] Industrial
- [x] Licensed Residential Facility
- [x] Lodging
- [x] 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)

32,000,000

--- SEE NEXT PAGE FOR A COMPLETE LIST OF SOURCES ---

WATER FACILITIES INVENTORY (WFI) FORM - Continued

1. SYSTEM ID NO.	2. SYSTEM NAME	3. COUNTY	4. GROUP	5. TYPE
99150 9	YAKIMA WATER DIVISION, CITY OF	YAKIMA	A	Comm

15	16	17	18										19			20	21						22	23	24				
	SOURCE NAME	INTERTIE	SOURCE CATEGORY										USE				TREATMENT						DEPTH		SOURCE LOCATION			
Source Number	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	INTERTIE SYSTEM ID NUMBER	WELL	WELL FIELD	WELL IN A WELL FIELD	SPRING	SPRING FIELD	SPRING IN SPRINGFIELD	SEA WATER	SURFACE WATER	RANNEY / INF. GALLERY	OTHER	PERMANENT	SEASONAL	EMERGENCY	SOURCE METERED	NONE	CHLORINATION	FILTRATION	FLUORIDATION	IRRADIATION (UV)	OTHER	DEPTH TO FIRST OPEN INTERVAL IN FEET	CAPACITY (GALLONS PER MINUTE)	1/4, 1/4 SECTION	SECTION NUMBER	TOWNSHIP	RANGE
S01	Naches River WTP									X			X			Y		X	X	X		X		17400	SW SW	13	14N	17E
S02	Airport Well		X											X		Y		X					943	2800	NW SE	35	13N	18E
S03	Kiwanis Park		X											X		Y		X					698	2300	SW NW	20	13N	19E
S05	InAct 11/02/2001 Wright Ave Well		X												X	Y		X					250	825	SE NE	14	13N	18E
S06	59700M/Nob Hill	59700 M													X		X							3000	SE SW	21	13N	18E
S07	59700M/Nob Hill	59700 M													X		X							1000	SE SW	22	13N	18E
S08	Kissel Well		X											X		Y		X					878	2900	NW NW	35	13N	18E
S09	59700M/Nob Hill	59700 M													X		X							2500	SW NW	03	12N	18E
S10	Pre-Active 05/01/2009 Gardner Well		X										X			Y	X						485	0	S E	36	13N	18E

WATER FACILITIES INVENTORY (WFI) FORM - Continued

1. SYSTEM ID NO.	2. SYSTEM NAME	3. COUNTY	4. GROUP	5. TYPE
99150 9	YAKIMA WATER DIVISION, CITY OF	YAKIMA	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	24952	Unspecified
A. Full Time Single Family Residences (Occupied 180 days or *more* per year)	14466		
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	1622		
B. Full Time Residential Units in the Apartments, Condos, Duplexes, Dorms that are occupied *more than* 180 days/year	10486		
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)	2	2	
B. Institutional, Commercial/Business, School, Day Care, Industrial Services, etc.	2304	2304	
28. TOTAL SERVICE CONNECTIONS		27258	

29. FULL-TIME RESIDENTIAL POPULATION

A. How many residents are served by this system 180 or *more* days per year? 65038

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
	70	70	70	70	70	70	70	70	70	70	70	70

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: _____

Appendix D

Water System Ordinance
(Ch. 7.68 of Municipal Code)

7.68.010 Rules established.

The following rules and regulations are hereby established for the management of the municipal water system of the city of Yakima. (Ord. B-606 § 4, 1944).

7.68.012 Definitions.

The definitions set forth in this subsection apply throughout this chapter.

(1) "Backflow" means the flow, other than the intended direction of flow, of any foreign liquids, gases, or substances into the distribution system of a public water supply.

(2) "Backflow prevention device" means a device to counteract backflow.

(3) "Contamination" means the entry into or presence in a public water supply of any substance which may be deleterious to health and/or quality of the water.

(4) "Cross-connection" means any physical arrangement whereby a public 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, wastewater, or other waste or liquids of unknown or unsafe quality which may be capable of imparting contamination to the public water supply as a result of backflow.

(5) "Manager" means the manager of the water/irrigation division of the city of Yakima, or his authorized agent.

(6) "Health officer" means the Yakima County district health officer, or his authorized agent.

(7) "Public water supply" means any system or water supply intended or used for human consumption or other domestic uses, including source, treatment storage, transmission and distribution facilities, where water is furnished to any collection or number of individuals, or is made available to the public for human consumption or domestic use.

(8) "Purveyor" means the city of Yakima or its authorized agent.

(9) "DOH" means the Secretary of Department of Health.

(10) "Unit of consumption (UOC)" means the basic unit of measure for water consumed, and shall contain one hundred cubic feet per unit.

(11) "Domestic service line" means the pipe from the water main to five feet beyond the meter set.

(12) "Fire service line" means the pipe from the water main to the property line. (Ord. 2006-07 § 30, 2006: Ord. 97-16 § 1, 1997).

7.68.015 Applications.

A. Water Service Installation. All applications for service installations for water service shall be made at the office of code administration on printed forms furnished by the water/irrigation division, and shall contain the name of the owner, an account number, and when possible a description of the property, lot, block, and addition, name of the street upon which the property fronts and the official street number assigned to the premises as shown by the records in the office of the city engineer, and the signature of the applicant agreeing to conform

to the rules and regulations of the water/irrigation division that may be established by the city as conditions for the use of water.

All applications for service installations shall be made by the owner of the property to be served, or by his duly authorized agent, and shall state the size of service connection required, and the applicant shall at the time of making application pay to the city treasurer the amount of the fees or deposit required for the installation of the service connection as hereinafter provided. (Ord. 2006-07 § 31, 2006: Ord. 97-16 § 2, 1997: Ord. 2904 § 1, 1985: Ord. 590 § 1, 1964: Ord. B-606 § 5, 1944).

7.68.035 Service pipes laid by water division.

The installation of service pipes extending from the main to the meter together with the necessary labor and materials for such construction shall be made by the water/irrigation division; provided, however, that at the discretion of the water/irrigation division manager, service pipes extending from the main to the meter may be installed by private contractors according to water/irrigation division approved plans and specifications; provided further, that all meters shall be furnished and installed by the water/irrigation division. The water/irrigation division shall be responsible for the operation and maintenance of the service line from the water main through the meter set to the outside of the water meter set. (Ord. 2010-02 § 1 (part), 2010: Ord. 2006-07 § 32, 2006: Ord. 97-16 § 4, 1997: Ord. 94-28 § 1, 1994: Ord. 93-22 § 1, 1993: Ord. B-606 § 9, 1944).

7.68.040 Installation of services.

(a) A separate meter and service connection shall be installed to serve each one-family dwelling unit, as defined in Title 15, Yakima Urban Area Zoning Ordinance, of the city of Yakima Municipal Code, supplied with domestic water service; provided, for each multiple dwelling (including duplexes or apartment houses), co-ops, condominiums, and similar dwelling unit complexes with common walls, under single or common ownership or management, may be served by either a single meter and service connection or multiple meters and service connections at the option of the owner or manager thereof, regardless of whether the dwelling units therein are individual consumers for the purpose of computing water service charges as provided by YMC 7.50.010(B).

(b) Mobile home parks may be served by either a single meter and service connection or multiple meters and service connections at the option of the owner or manager thereof, regardless of whether the dwelling units therein are individual consumers for the purpose of computing water service charges as provided by YMC 7.50.010(B), and shall comply with YMC 7.68.070.

(c) (1) In the event of the sale or other transfer of title of any one-family dwelling unit constituting a portion of a multiple dwelling, co-op, condominium, or other similar dwelling unit complex so that such sold or otherwise transferred dwelling unit is separately owned, a separate meter and service connection shall be installed to serve each such separately owned dwelling unit; provided, this subsection shall not apply to the sale of dwelling units within condominiums by unit number according to applicable laws.

(2) In the event a separate meter and service connection is required by this section, the city may discontinue water service to the premises which is required to be separately served until such separate meter and service connection is installed.

(d) After the applicant has complied with all the prescribed requirements relating to the application for service connections and has paid all charges, the city shall cause the property described to be connected with the municipal water system. Wherever practicable the service connection shall be made in the street in front of the property to be served. Each service shall consist of a tap and connection with the main pipe, a length of service pipe extending from the main to a curb cock and water meter situated outside of the traveled roadway adjacent to the property to be served, together with the necessary covers for meters and curb cock.

(e) The city shall have the right to install a single service pipe from the main to the property line, of sufficient size to supply two or more separate properties, and with individual curb cocks and meters for the separate properties. (Ord. 2006-07 § 33, 2006: Ord. 1556 § 1, 1973: Ord. B-606 § 10, 1944).

7.68.043 Service installation charges.

Applicants for new water service installations shall pay to the director of finance and budget or his/her designee the installation charges as provided below, which payment shall be made prior to such installation being commenced:

Three-quarter-inch service pipe with five-eighths-inch by three-quarter-inch or full three-quarter-inch meter	$1,285.00
One-inch service pipe with one-inch meter	$1,325.00

The installation charge for a new water service where a meter larger than one-inch diameter is to be installed or the service line is larger than one-inch shall be an amount adequate to pay all costs of materials, installation and surface restoration as computed by the water/irrigation manager or his/her designee. (Ord. 2007-67 § 1, 2007: Ord. 2006-07 § 34, 2006: Ord. 97-16 § 5, 1997: Ord. 3260 § 1, 1990: Ord. 2955 § 1, 1986: Ord. 2858 § 1, 1985: Ord. 2594 § 1, 1982: Ord. 1874 § 2, 1975: Ord. 1489 § 1, 1973: Ord. 982 § 4, 1967: Ord. B-2192, 1958: Ord. B-1462, 1953: Ord. B-606 § 11, 1944).

7.68.050 Change in location or size of service installation.

Any change made in a service installation, at the request of the property owner or water user, or made necessary due to any act of his, after such installation has once been made, whether such change involves a change in size of the pipe or meter, or both, or a change in the location or elevation thereof, shall be made solely at the expense of the applicant who shall pay the entire cost thereof in the same manner as provided in YMC 7.68.035 through 7.68.043. (Ord. B-606 § 12, 1944).

7.68.055 Connection of temporary services to new mains.

Where a main is installed in any street, properties on said street or within one-half block on side streets which are served through temporary services, private

mains, or mains in alleys or on private property, shall have their service pipes changed to connect with the new main, and the water/irrigation division shall without charge install a service from the new main to a meter which shall be installed in the street in front of the property and the property owner or water user shall reinstall his service pipe to connect with the meter. (Ord. 2006-07 § 35, 2006: Ord. 97-16 § 6, 1997: Ord. B-606 § 13, 1944).

7.68.065 Shut-off valve.

A special shut-off valve for a domestic service shall be installed on the pipe leading from the meter into each property served and no branch pipe, bibb or fixture of any kind shall be connected to the pipe between this valve and the meter. This valve shall be installed and maintained by the property owner or water user; it shall be for his use in making extensions and repairs of the plumbing upon the property, and it shall be accessible at all times and, where necessary, a suitable box and key shall be provided. In case the water is shut off from any service which is not provided with such a valve or with one which is not in good condition, the property owner or water user shall make arrangements to install, repair or replace such valve and the water shall not be turned on again until such valve has been installed, repaired or replaced. (Ord. 2006-07 § 36, 2006: Ord. B-606 § 15, 1944).

7.68.070 Cross-connection control.

A. Cross-Connections. No water service shall be installed or continued in use by the purveyor unless the water supply is protected by backflow prevention devices as may be required by this section. The installation or maintenance of a cross-connection which will endanger the water quality of the potable water supply of the city of Yakima shall be unlawful and is prohibited. Any such cross-connection now existing or hereafter installed is declared to be a public nuisance and the same shall be abated. The control or elimination of cross-connections shall be in accordance with this section, together with the latest addition of appropriate manuals of standard practice pertaining to cross-connection control approved by the Washington Department of Health (DOH). The manager shall have the authority to establish requirements more stringent than state regulations if he/she deems that the conditions so dictate. The city of Yakima as the purveyor adopted rules and regulations pursuant to YMC Chapter 11.44, the city plumbing code, which shall be used to carry out the provisions of this section.

B. Use of Backflow Prevention Devices.

(1) In the judgment of the purveyor and/or the building official, the backflow prevention devices shall be installed at the time the service connection is made to the premises or the materials used in connection with service connection or within any premises where the nature and extent of the activities, or the materials stored on the premises, would present an immediate and dangerous hazard to health and/or be deleterious to the quality of water should a cross-connection occur. In the judgment of the purveyor and/or the building official backflow prevention devices shall be required under the listed circumstances, even though such cross-connection does not exist at the time of installation, which include but are not limited to the following:

(a) Premises having an auxiliary water supply, unless the quality of the auxiliary supply is acceptable to the purveyor.

(b) Premises having internal cross-connections that are not correctable or intricate plumbing arrangements which make it impracticable to ascertain whether or not cross-connections exist.

(c) Premises where entry is restricted so that inspections for cross-connections cannot be made with sufficient frequency or at sufficiently short notice to assure that cross-connections do not exist.

(d) Premises having a repeated history of cross-connections being established or re-established.

(e) Premises on which any substance is handled under pressure so as to permit entry into the public water supply, or where a cross-connection could reasonably be expected to occur. This shall include the handling of process waters and cooling waters.

(f) Premises where materials of toxic or hazardous nature are handled in such a way that if back siphonage should occur, a serious health hazard might result.

(g) The following types of facilities will fall into one of the above categories where a backflow prevention device is required to protect the public water supply. A backflow prevention device shall be installed at these facilities unless the purveyor and secretary determine that no hazard exists.

1. Hospitals, mortuaries, clinics;
2. Laboratories;
3. Metal plating industries;
4. Piers and docks;
5. Wastewater treatment plants;
6. Food or beverage processing plants;
7. Chemical plants using a water process;
8. Petroleum processing or storage plants;
9. Radioactive material processing plants or nuclear reactors;
10. Mobile home parks;
11. Others specified by the DOH.

(h) Other premises, as specified by the city plumbing code, YMC Chapter 11.44, where backflow prevention devices are required to protect the public water supply.

(i) Backflow prevention devices, except for devices used as premises isolation, shall be installed by the owner/contractor/developer and inspected by the water/irrigation division and code administration. Where backflow devices are used as premises isolation, all device and installation costs shall be borne by the owner/contractor/developer. At the discretion of the water/irrigation manager, the device may be installed by the water/irrigation division or the owner/contractor/developer and shall be inspected by the water/irrigation division and code administration.

(2) The type of protective device required shall depend on the degree of hazard which exists:

(a) An air gap separation or a reduced pressure principle backflow prevention assembly shall be installed where the public water supply may be contaminated with wastewater, industrial waste of a toxic nature, or other contaminant which could cause a high health hazard.

(b) In the case of a substance that does not constitute a high health hazard, a double check valve assembly, air gap separation, or a reduced pressure principle backflow prevention assembly shall be installed.

(3) Backflow prevention devices required by this section shall be installed at the meter, or at a location designated by the purveyor. The device shall be located so as to be readily accessible for maintenance and testing, and furthermore, where no part of the device will be submerged.

(4) Backflow prevention devices required by this section shall not be installed until approved by code administration and the water/irrigation division.

(5) The policies, procedures, and criteria for determining appropriate levels of protection shall be in accordance with the DOH and the “Accepted Procedure and Practice in Cross Connection Control Manual—Pacific Northwest Section—American Waterworks Association, Third Edition,” or any superseding edition and the city plumbing code, YMC Chapter 11.44.

(6) Any protective device required by this section shall be a model approved by the DOH. A double check valve assembly or a reduced pressure principle backflow prevention assembly will be approved if it has successfully passed performance tests of the University of Southern California Engineering Center or other testing laboratories satisfactory to the DOH and the manager. These devices shall be furnished and installed by and at the expense of the customer.

(7) Backflow prevention devices installed pursuant to this section, except atmospheric vacuum breakers, shall be inspected and tested annually or more often if necessary. Maintenance shall be at the customer’s expense. Whenever the devices are found to be defective, they shall be repaired, overhauled, or replaced at the customer’s expense. Inspections, tests, repairs, and records thereof shall be accomplished under the purveyor’s supervision by certified testers and the customer will be charged according to the following schedule of fees:

(a) For air gap separation inspection, fifteen dollars;

(b) For pressure atmospheric vacuum breaker test, fifteen dollars;

(c) For double check valve assembly test, twenty-five dollars;

(d) For reduced pressure backflow assembly test, twenty-five dollars.

(8) No underground sprinkling device will be installed without adequate backflow prevention devices at the point from which the water for irrigation is taken from the public water supply.

(9) Failure of the customer to cooperate in the installation, maintenance, testing or inspection of backflow prevention devices required by this section and Washington Administrative Code Chapter 246-290 shall be grounds for the termination of water service to the premises, or, in the alternative, the installation of an air gap separation at the customer’s expense.

C. Cross-Connection Inspection.

(1) No water shall be delivered to any structure hereafter built within the city of Yakima or within areas served by the city water until the same shall have been inspected by the code inspector and the water/irrigation division for possible cross-connections and been approved as being free of same.

(2) Any construction for industrial or other purposes which is classified as a hazardous facility pursuant to subsection (B)(1)(g) of this section, where it is reasonable to anticipate intermittent cross-connections, or as determined by the manager, shall be protected by the installation of one or more backflow prevention devices at the point of service from the public water supply or any other location designated by the purveyor.

(3) Inspections shall be made periodically of all buildings, structures, or improvements of any nature now receiving water through the city's system, for the purpose of ascertaining whether cross-connections exist. Such inspections shall be made by the purveyor.

D. Installation Permits. If cross-connection control devices are found to be necessary, the owner of the property served must apply to the city of Yakima code administration and planning manager for a plumbing installation permit.

E. Additional Remedies. In the event an improper cross-connection is not corrected within the time limit set by the manager, or, in the event the purveyor is refused access to any property for the purpose of determining whether or not cross-connections exist, delivery of water to the property shall cease until the deficiency is corrected to the purveyor's satisfaction. In addition, the purveyor may effect the necessary repairs or modifications at the expense of the property owner and refuse delivery of water to the property until the cost thereof shall have been paid. (Ord. 2010-02 § 1 (part), 2010: Ord. 2006-07 § 37, 2006: Ord. 97-16 § 8, 1997: Ord. 3078 § 2, 1988).

7.68.075 New connections—Plumbing regulations.

(a) Any person, firm or corporation desiring to be connected with the domestic water system and domestic water supply of the city of Yakima shall, before such connection may be made, first comply with all plumbing regulations of the city of Yakima, including those contained in Chapter 11.44, city plumbing code.

(b) Any such person, firm or corporation desiring to secure such services and to be hereafter connected with the domestic water supply system of the city of Yakima outside of the city limits of said city shall secure a permit as provided in Chapter 11.44, city plumbing code, and pay the inspection fees therein provided for and be subject to the inspection thereon provided for, the same as though said property were located within the city limits of the city of Yakima.

(c) No person, firm or corporation shall hereafter be connected with the domestic water supply or domestic water supply system of the city of Yakima until such person, firm or corporation has fully complied with all the provisions of this chapter, and it shall be unlawful for the water/irrigation division to give any such person, firm or corporation, water service from the domestic water supply system of said city of Yakima or to connect the plumbing of such person thereto, until this chapter shall have been complied. (Ord. 2006-07 § 38, 2006: Ord. 97-16 § 9, 1997: Ord. B-606 § 17; April 3, 1944).

7.68.080 Existing connection—Plumbing repairs or alteration.

No person, firm or corporation whose premises are now receiving water service from the domestic water supply, or domestic supply system, of the city of Yakima shall alter, repair or add to any plumbing at said premises, unless such additional alterations or repairs shall be performed in compliance with Chapter 11.44 of this code, and a permit therefor obtained and inspection fees paid to the office of code administration and planning; and in case of a violation of this section by any person, firm or corporation, it shall be the duty of the water/irrigation division of this city to immediately discontinue water service to the premises, until such violation shall have been removed as determined by the code administration and planning manager. (Ord. 2006-07 § 39, 2006: Ord. 97-16 § 10, 1997: Ord. B-606 § 18; April 3, 1944).

7.68.085 Kind of service pipe.

Service pipe and fittings for domestic and/or fire services shall be of brass, copper, cross-linked polyethylene tubing in sizes through two-inch, high density polyethylene SDR 9 may be used for service line sizes one-and-one-half- and two-inch and ductile iron pipe for diameters greater than two-inch. All materials used in service lines, except valves and similar devices, shall be of like material, except where otherwise approved by the manager. (Ord. 2006-07 § 40, 2006: Ord. 97-16 § 11, 1997: Ord. B-606 § 19; April 3, 1944).

7.68.090 Owners responsible for leakage, damage and repair.

Owners of services are responsible for all leaks or damages on account of leaks from privately owned services and privately owned mains leading from the city's mains to the premises served. This includes fire suppression services that were installed without a resilient seat gate valve with a standard valve box at the property/right-of-way line as required by YMC 7.68.275. (Ord. 2010-02 § 1 (part), 2010: Ord. B-606 § 20; April 3, 1944).

7.68.095 Ownership of extensions and service pipe.

The ownership of all main extensions, service pipes and appurtenant equipment maintained by the water/irrigation division shall be vested in the city of Yakima, and in no case shall the owner of any premises have the right to claim or reclaim any part thereof.

In case of privately owned mains and services and where there is no responsible organization or individuals as owners of such mains and services, work done as an accommodation shall not place ownership in the city of Yakima. (Ord. 2010-02 § 1 (part), 2010: Ord. 2006-07 § 41, 2006: Ord. 97-16 § 12, 1997: Ord. B-606 § 21; April 3, 1944).

7.68.203 Authority to impose conservation measures.

A. The city manager, upon a finding by the city council that an emergency situation exists which threatens to seriously disrupt or diminish the municipal water supply, may order and enforce restrictions on water use so as to distribute the available supply on a just and equitable basis to all customers, including residential, industrial, and commercial users.

B. Upon declaration of a water supply emergency, the city manager may direct that no water shall be used for outdoor uses including, but not limited to, irrigation of lawns, turf or use on other outdoor surfaces by any customer at any residence, apartment building, commercial building, or property or structure except at times and under conditions as specified by the city manager. Such conditions may include but are not limited to:

1. Alternate day limitations;
2. Time of day limitations;
3. Limitation of uses; and/or
4. Suspension of domestic water irrigation service. (Ord. 2005-16 § 1, 2005).

7.68.205 Waste.

It shall be unlawful for any person to waste water or allow it to be wasted by imperfect or leaking stops, valves, pipes, closets, faucets, or other fixtures, or to use water closets without self-closing valves, or to use water in violation of the city's ordinances regulating said use of water. The willful wasting of water shall be a misdemeanor; if such waste of water continues after receiving notice from the water/irrigation division to make repairs and to desist from the waste of water the water/irrigation division shall shut off the water supply from such premises until the necessary repairs have been made. (Ord. 2006-07 § 42, 2006: Ord. 97-16 § 14, 1997: Ord. B-606 § 23; April 3, 1944).

7.68.210 Frozen services.

All services and installations shall be placed at the depth required in YMC Chapter 11.44 in order to avoid all probability of freezing. The water division shall be responsible for all meters and frozen services owned by the city. Owners of property served shall be responsible for all other frozen services leading to and located on the premises served, and shall pay the cost of thawing of such privately owned pipes when necessary.

(a) All persons, firms or corporations engaging in the business of thawing frozen service installations shall comply with YMC Chapter 11.44.

(b) Any individual property owner desiring to thaw his own service connection where access thereto is had through any meter box shall, before commencing such operation, secure a permit from the city water division. Such permit shall be issued by the city water/irrigation division without charge. The individual property owner shall be responsible for the costs of repairing any and all damages to the city's facilities caused by the thawing operation.

(c) In addition to any other penalties prescribed for violation of any of the provisions of this chapter, in the event of the violation of either subsection a or b of this section, water service to the premises where any thawing operations are undertaken shall be discontinued immediately. (Ord. 2006-07 § 43, 2006: Ord. 97-16 § 15, 1997: Ord. B-101 § 1, 1949: Ord. B-606 § 24, 1944).

7.68.220 Interruption of service.

The water may at any time be shut off from the city's mains without notice, for the purpose of making repairs, extensions or any other necessary work, and persons having boilers supplied by direct pressure from the mains are cautioned

against danger of explosion or collapse. The city shall not be responsible for the safety of the boilers on the premises of any water consumer, nor will the city be responsible on account of the interruption in operating any hydraulically operated appliance or cooling device. (Ord. B-606 § 26, 1944).

7.68.230 Water meters.

All water meters installed by the water/irrigation division, or by the previous owners of the water system, shall be and remain the property of the city, and may be removed or replaced, or changed as to size and type by the water/irrigation division whenever deemed necessary by the division. (Ord. 2006-07 § 44, 2006: Ord. 97-16 § 17, 1997: Ord. B-606 § 27, 1944).

7.68.235 Repairing meters.

The water/irrigation division shall maintain and repair all meters when rendered unserviceable through fair wear and tear and shall renew them if necessary; provided, however, that where replacement, repairs or adjustments of any meter is rendered necessary by the act of neglect or carelessness of the owner or occupant of any premises, any expense caused the water/irrigation division thereby shall be charged against and collected from the water consumer, and water service may be discontinued until the cause is corrected and amount charged collected. (Ord. 2006-07 § 45, 2006: Ord. 97-16 § 18, 1997: Ord. B-606 § 29, 1944).

7.68.240 Testing and correcting meters.

When a consumer makes a complaint that the bill for any past service period has been excessive, the utility services division shall have such meter reread and the service inspected for leaks. If the consumer remains dissatisfied and desires that the meter be tested, upon written request, the water/irrigation division shall test the meter by means of a calibrated portable testing meter or a volume-measuring vessel, or shall replace the meter with a new or calibrated meter. The consumer shall, if he or she so desires, be present when such test or meter replacement is made.

In case a test should show an error of over five percent of the water consumed in favor of the water/irrigation division, a correctly registering meter will be installed and the bill will be adjusted accordingly, but such adjustment shall not extend back more than one service period plus one month from the date of the written request and the minimum charge shall not be affected. (Ord. 2006-07 § 46, 2006: Ord. 97-16 § 19, 1997: Ord. B-606 § 30, 1944).

7.68.250 Water services charges.

A. For calendar years 2009 and beyond, the charge for domestic water supplied within the city of Yakima shall consist of a ready-to-serve charge and a charge for water consumed, as follows:

Ready-to-Serve Charges per Two-Month Period

Meter size	2009 Jan. 1	2010 Jan. 1	2011 Jan. 1	2012 Jan. 1 and beyond
3/4" and smaller	$9.79	$10.42	$11.04	$12.00
1"	13.57	14.47	15.33	16.18
1-1/2"	22.94	24.52	25.95	27.33
2"	34.24	36.62	38.74	40.76
3"	60.60	64.89	68.62	72.12
4"	98.25	105.26	111.30	116.91
6"	192.31	206.09	217.90	228.79
8"	380.52	407.89	431.22	452.68
10"	568.68	609.62	644.47	676.50
12"	832.15	892.09	943.08	989.91

B. Charges for water consumed are as follows, expressed in rates per UOC, where “UOC” means unit of consumption and equals one hundred cubic feet of water:

Charge for Water Consumed per UOC

UOC	2009 Jan. 1	2010 Jan. 1	2011 Jan. 1	2012 Jan. 1 and beyond
0—250	$1.29	$1.36	$1.44	$1.51
Over 250	1.29	1.36	1.44	1.51

C. When the service is connected for thirty days or less—The minimum charge for domestic water for all meter sizes shall be the daily ready-to-serve charge multiplied by the number of days the service was connected plus the charge for three UOC at the rate above.

When water service is connected for more than thirty days—The minimum charge for domestic water for all meter sizes shall be the daily ready-to-serve charge multiplied by the number of days the service was connected plus the charge for six UOC at the rate above.

D. The daily ready-to-serve charge is calculated by dividing the two-month period ready-to-serve charge by sixty days.

E. All charges for water supplied outside the city shall be computed by multiplying the applicable rates set forth in subsections A through D of this section by one and one-half.

F. Home Kidney Dialysis. A residential customer who undergoes kidney dialysis at his or her home, or whose home is also the home of a different person who undergoes home kidney dialysis, shall not be required to pay utility charges for domestic water service or sewer service for the quantity of water that is necessary for the home dialysis. In order to be excused from utility charges

under this subsection, the residential customer must present to the director of finance and budget or their designee written documentation annually from a recognized kidney dialysis center certifying that the person requires dialysis and the quantity of water needed for that person's dialysis. (Ord. 2009-49 § 10, 2009: Ord. 2007-67 § 2, 2007: Ord. 2004-81 § 1, 2004: Ord. 2001-26 § 3, 2001: Ord. 97-16 § 21, 1997: Ord. 96-17 § 1, 1996; Ord. 93-32 § 1, 1993: Ord. 93-22 § 3, 1993; Ord. 3366 § 1, 1991; Ord. 2922 § 1, 1985: Ord. 2880 § 1, 1985: Ord. 2693 § 1, 1983: Ord. 2513 § 2, 1981: Ord. 2424 § 1, 1980: Ord. 1874 § 3, 1975: Ord. 1563 § 1, 1973: Ord. 1556 § 2, 1973: Ord. 982 § 5, 1967: Ord. 680, 1965: Ord. B-2026, 1957: Ord. B-606 § 32, 1944).

7.68.251 Bulk rate.

A. Commencing February 1, 2005, the charge for water supplied through fire hydrants, when the water is used by either the city or a private person for any use authorized by the water/irrigation division, shall be the same as the highest UOC charge set forth in YMC 7.68.250. No charge shall be made for water supplied through fire hydrants when the water is used for fire suppression or for maintenance and operation purposes by the city.

B. All water served through a fire hydrant shall comply with YMC 7.68.300.

C. Daily meter assembly use charge for temporary water service shall be four dollars for each day or portion thereof, when used for ten days or less. Assembly use charge for temporary water service for eleven days or more shall be forty dollars per month (eleven days to thirty days). The minimum meter assembly use charge shall be four dollars. (Ord. 2006-07 § 47, 2006: Ord. 2004-81 § 2, 2004: Ord. 2001-26 § 4, 2001: Ord. 97-16 § 22, 1997: Ord. 93-32 § 2, 1993: Ord. 2922 § 2, 1985: Ord. 2693 § 2, 1983: Ord. 2519 § 1, 1981: Ord. 2513 § 3, 1981: Ord. 1100 § 1, 1969).

7.68.260 Charges for premises supplied through more than one meter.

Where an individual consumer is supplied with water through more than one metered service, charges shall be computed separately for each individual meter. (Ord. B-606 § 35, 1944).

7.68.275 Fire services.

All fire service connections between water mains and property lines shall be installed and maintained by the water division at the expense of the owner or occupant of the premises served, and shall be the property of the city of Yakima.

At or before the time of making application for such services the applicant shall file an application with the code administration and planning division as required by Title 11 of the city of Yakima Municipal Code and comply with the IBC/IFC. Each single source fire protection system, and each fire service connection shall have a resilient seat gate valve with a standard valve box installed at the property/right-of-way line by the customer and maintained by the customer as well as backflow prevention as required in YMC 7.68.070.

The manager of the water division or a designee shall fix the charge to be made for the installation of such service taking into consideration length and size of pipe, condition of street and sidewalk, all relative to character of service, and

such charge shall be paid to the city by the applicant before such installation shall be made.

Fire service connections shall not be used for combined fire protection and commercial purposes where separate service connections can be installed. In no case shall any tap be made upon, or any tank be connected with, any pipe used for fire protection unless a water meter is installed.

The use of water through a fire service connection for any purpose other than the extinguishing of a fire on the premises is prohibited unless authorization has been granted by the water manager or a designee and a meter provided by the water division is installed to measure all water so used.

A single fire service connection shall not serve more than one parcel or lot nor serve more than one building on a single lot or parcel. (Ord. 2006-07 § 48, 2006: Ord. 97-16 § 26, 1997: Ord. 2520 § 1, 1981: Ord. 2427 § 1, 1980: Ord. 472, 1963: Ord. B-606 § 38, 1944).

7.68.280 Fire service inspection.

The water/irrigation division shall inspect all fire service connections with piping, valves and other appurtenances thereto, and the premises served thereby, at regular intervals and as often as found necessary. The inspector shall keep a record of all inspections made. Should an inspector find that water is used through a fire service for any purpose other than the extinguishing of fire upon the premises, the owner or occupant will be given notice to discontinue such use. If such use is not discontinued within ten days from such notice being given, water service to the premises shall be discontinued until such time as the owner or occupant complies with the requirement of such notice. No charge will be made for water used in extinguishing fire. (Ord. 2006-07 § 49, 2006: Ord. 982 § 8, 1967: Ord. 2026, 1957: Ord. B-606 § 39, 1944).

7.68.282 Fire service charges.

The bimonthly charge for each fire service shall be as follows:

A. Charges within the city of Yakima commencing February 1, 2008:

Size of Service	Feb. 1—Dec. 31, 2008	2009 Jan. 1	2010 Jan. 1	2011 Jan. 1	2012 Jan. 1 and beyond
2"	$5.76	$5.76	$5.76	$6.00	$6.00
3"	8.06	8.06	8.06	8.40	8.76
4"	14.10	14.88	15.72	16.60	17.54
6" including hydrant only	41.44	43.78	46.26	48.84	51.56
8"	88.26	93.24	98.50	104.00	109.82
10"	158.70	167.66	177.12	187.00	197.46
12"	256.48	270.96	286.26	302.30	319.12

B. Daily charge is calculated by dividing the bimonthly charge by sixty days.

C. Charges for fire services outside the city limits shall be computed by multiplying the applicable rate above by one and one-half.

D. The inside diameter of the pipe leading to a fire hydrant shall determine the service charge. Any fire hydrant installed and maintained by the city outside of city limits will be billed as a fire service, which charge shall be terminated at such time as the responsible consumer's property is annexed to the city. (Ord. 2009-49 § 11, 2009: Ord. 2007-67 § 3, 2007: Ord. 2004-81 § 4, 2004: Ord. 2001-26 § 7, 2001: Ord. 97-16 § 27, 1997: Ord. 93-32 § 5, 1993: Ord. 3366 § 4, 1991: Ord. 2922 § 5, 1985; Ord. 1874 § 4, 1975: Ord. 1556 § 5, 1973: Ord. 982 § 9, 1967).

7.68.290 Maintenance of fire hydrants.

The water/irrigation division shall install, maintain and keep in repair all public city fire hydrants. (Ord. 2006-07 § 50, 2006: Ord. 97-16 § 28, 1997: Ord. B-606 § 41, 1944).

7.68.295 Use of fire hydrant.

No person other than an employee of the Yakima water/irrigation division, fire department, street division, wastewater division or codes division who is engaged in fire fighting, sprinkling or washing the public streets, cleaning sewers or conducting fire flow tests shall operate fire hydrants or interfere in any way with the city water system without first obtaining a water meter and the authority to do so from the water/irrigation division. (Ord. 2006-07 § 51, 2006: Ord. 97-16 § 29, 1997: Ord. B-606 § 42, 1944).

7.68.300 Temporary domestic water service.

A. Conditions of Use. Temporary domestic water service through an existing fire hydrant or by means of other existing water lines will be furnished to a customer on the following conditions:

1. Application for such service shall be made in person to the water/irrigation division.

2. Water furnished through the temporary service shall be measured by a meter assembly, to be furnished by the city, for the use of which the customer shall pay to the city the amounts as prescribed in YMC 7.65.251.

3. The customer shall only connect to a hydrant prescribed on the application for service.

4. When the meter assembly is installed by city employees, the customer shall pay to the city the actual labor cost incurred by the city, based in the then applicable payroll charges, including overhead, for actual hours of labor involved, all as determined by the water/irrigation division of the city, with a minimum one-hour charge.

5. The customer shall pay the city the actual cost for equipment used in making such installation, based on the then current city rental rates for the actual hours of equipment usage, all as determined by the water/irrigation division of the city, with a minimum one-hour charge.

6. The customer shall pay for water furnished through a temporary service pursuant to YMC 7.68.251.

7. The customer shall return the water meter assembly in the same state of repair as when furnished to the customer by the city, or shall be responsible to the city for the actual cost of any meter assembly repair, or the actual total cost of the meter assembly in the event of its destruction.

8. The customer shall give notice to the Yakima fire department of the location of hydrants to be used for temporary service, and the duration of such use.

B. Billing. Bimonthly billings will be rendered by the city to temporary water use customers, for the applicable charges as specified in subsection A of this section and YMC 7.68.251, with payment due within the same time as other billings for city utility services; provided, if the temporary service is furnished for a period of time less than the two-month billing period, payment shall be due at the time such temporary service is discontinued and the meter assembly returned to the city.

C. Customer to Sign Agreement. Prior to the installation of the meter assembly by which a temporary water service will be furnished, the applicant for such service shall sign an agreement to comply with the provisions, terms and conditions of this section.

D. The provisions of this section do not require or authorize temporary domestic water service by or through any other than the water lines or fire hydrants existing at the time application for such service is made; and neither this section nor any agreement signed pursuant to it for temporary water service shall be construed to require the installation or extension by the city of any water line or facility to furnish temporary water service, either within or outside the corporate boundary of the city. (Ord. 2006-07 § 52, 2006: Ord. 2004-81 § 5, 2004: Ord. 2001-26 § 8, 2001: Ord. 97-16 § 30, 1997: Ord. 2537 § 1, 1981: Ord. B-606 § 43, 1944).

7.68.305 Abandoned services.

All service installations connected to the water system, that have been abandoned or that have not been used for three years or that for any reason have become useless for further service, shall be disconnected at the main by the water/irrigation division or by others in accordance with plans and specifications approved by the city engineer, and all pipe and appurtenances removed shall be the property of the city of Yakima. (Ord. 2006-07 § 53, 2006: Ord. 97-16 § 31, 1997: Ord. B-606 § 44, 1944).

7.68.310 Extensions of mains other than by city.

All extensions of water mains shall be made either by the water/irrigation division at the expense of the owners of the property to be served thereby, or by the owners of said property under the supervision of the city engineer and in accordance with the plans and specifications approved by the city engineer and in accordance with Title 12 of the Yakima Municipal Code. (Ord. 2006-07 § 54, 2006: Ord. 97-16 § 32, 1997: Ord. B-606 § 45, 1944).

7.68.315 Ownership and control of extensions of water mains.

Unless deeded to the city, all existing extensions of water mains and appurtenant equipment installed by persons, firms or corporations, other than the city, shall be and remain the property of such persons, firms, or corporations, and of their heirs, successors or assigns, and shall be maintained by them. Any repair or maintenance work done by the water division/irrigation as an accommodation shall not place ownership in the city. In case a property owner desires to have a water service and meter installed and to be supplied with water through such a privately owned main, a permit must first be obtained from whomever owns or maintains such water mains and such permit shall be filed with utility billing. In case such a permit cannot be obtained due to there being no recognized owner or authorized person, the applicant for service and meter installation and for water service shall be obligated to perform his part in maintaining the main and to having water service discontinued if the main is not properly maintained.

All installations of water main extensions, additions and replacements, and appurtenances thereto, outside of the city limits shall, when made in the manner stipulated in YMC 7.68.310, be and remain the property of the city of Yakima after all payments for installations have been made or satisfactorily provided for, and after such installations have been tested and accepted by the city engineer and after the persons or person responsible for the construction of the extensions have relinquished all right to or interest in the ownership of said extensions, such extensions shall be maintained by the city and operated by the water/irrigation division as part of the distribution system and the water/irrigation division shall exercise complete control over said extensions. Nothing in this section or YMC 7.68.310 shall be construed so as to effect the term of any written agreement or contract binding on the city of Yakima. (Ord. 2006-07 § 55, 2006: Ord. 97-16 § 33, 1997: Ord. B-606 § 46, 1944).

7.68.320 Street work.

All persons, contractors, corporations or any city department handling street work, such as grading, regrading, filling, trenching or paving, etc., shall give the water/irrigation division fourteen days' written notice in case it becomes necessary during the work to remove, displace or change any water mains, pipes, fittings, meters, gates or other waterworks' appurtenances that may interfere with the prosecution of such work, and failure to furnish said notice shall make the contractor, corporation or person, or other city department liable to the water/irrigation division in case damages should result from such failure. (Ord. 2006-07 § 56, 2006: Ord. 97-16 § 34, 1997: Ord. B-606 § 47, 1944).

7.68.325 Connection with conductors.

Any uninsulated conductor which may convey electric current shall not be connected with any pipe or equipment which connects to the city water distribution system, without the consent of the manager, all as provided in RCW Chapter 19.28. All such connections shall further comply with applicable electrical codes.

In case a city water pipe is found which conveys a noticeable amount of electric current, the manager shall immediately notify the owner of premises supplied by said pipe and the water supplied to said premises shall be

discontinued until the electric current is removed. (Ord. 2006-07 § 57, 2006: Ord. 97-16 § 35, 1997: Ord. B-606 § 48, 1944).

7.68.335 Penalties for violation.

Any person, firm, or corporation violating any of the provisions of this chapter shall, upon conviction thereof, be punished by a fine of not exceeding three hundred dollars or by imprisonment in the city jail for a period not exceeding ninety days, or by both such fine and imprisonment. (Ord. B-606 § 50, 1944).

Appendix E

Hydraulic Model Calibration Memorandum

CITY OF YAKIMA

WATER MASTER PLAN UPDATE

HYDRAULIC MODEL CALIBRATION MEMORANDUM

DRAFT No. 2

July 2010

AKEL
ENGINEERING GROUP, INC.

AKEL
ENGINEERING GROUP, INC.

Smart Planning Our Water Resources

July 26, 2010

Thomas Coleman P.E.
Consulting Services
105 South 3rd Street, Suite 207
Yakima, WA 98901-2827

Attention: Mr. Tom Coleman, P.E.
Project Manager

Subject: City of Yakima - Hydraulic Model Calibration

Dear Tom:

We are pleased to submit this memorandum for the City of Yakima Hydraulic Model Calibration.

The memorandum documents the hydraulic model update and calibration to extended period simulations (EPS). The memorandum also includes the calibration plan as well as exhibits to illustrate the calibration at each selected and monitored site and at existing reservoirs.

We extend our thanks to you, Dave Brown, Water/Irrigation Division Manager; Mike Shane, Water/irrigation Engineer; and other City staff whose courtesy and cooperation were valuable components in completing this effort and producing this memorandum.

Sincerely,

AKEL ENGINEERING GROUP, INC.

Tony Akel, P.E.
Principal

Enclosure: Report

City of Yakima
Hydraulic Model Calibration

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Appendices

1.0 BACKGROUND AND PURPOSE

The City of Yakima (City) is in the process of updating the Water System Master Plan for submittal to the Washington State Department of Health in 2010. The City's hydraulic model was developed and has been kept current by City staff using the EPANET software.

The project tasks included:

- Update the existing EPANET hydraulic model to reflect expansions, replacements and upgrades to the distribution system
- Calibrate the hydraulic model to Extended Period Simulations (EPS)
- Provide assistance in evaluating the existing distribution system for capacity deficiencies.

2.0 HYDRAULIC MODEL UPDATE

The model has been generally kept current and well maintained by staff from the Water Department. Using Geographic Information Systems (GIS), Akel Engineering Group (AEG) developed exhibits that were used for mapping the existing distribution system, as extracted from the hydraulic model, and for submittal to City staff for reviews.

Based on iterations of reviews and comments, the hydraulic model was updated as shown on the overall exhibit on **Figure 1**. More detailed exhibits of the distribution system were also developed and were included in **Appendix A**.

3.0 MODEL CALIBRATION

Calibration is intended to instill a level of confidence in the pressures and flows that are simulated, and it generally consists of comparing model predictions to field measured results, and making necessary adjustments. The existing hydraulic model was calibrated in the past, but City staff desire to confirm the integrity of the model to ascertain its accuracy, as it will be used for confirming the master plan recommendations.

3.1 Calibration Plan

A calibration plan was prepared for the hydraulic model and it consisted of identifying locations for installing temporary pressure loggers in the field. Each pressure logger was installed to monitor pressures for a period of one week.

A total of 9 monitoring sites, installed throughout the distribution system, provided representative pressure readings for the existing Low Pressure Zone, Medium Pressure Zone, and High Pressure Zone. The monitoring sites are documented on **Table 1** and shown on **Figure 2**. The table also identifies the size of the transmission main closest to the monitored site.

3.2 Field Flow Monitoring and SCADA

City staff used in-house pressure loggers that were installed between the period of May 7, 2010 and June 11, 2010, in accordance with the calibration plan. The pressure loggers measured at least seven days of pressure readings at each site.

One of the pressure loggers (P0-0), located in the Low Pressure Zone, remained stationary throughout the duration of the calibration plan to monitor overall pressures variations.

The loggers recorded a pressure reading at 5-minute intervals, and at the conclusion of the monitoring program, the data was downloaded and prepared for comparison with the model simulations. **Figure 3** is a composite graph that consolidates and summarizes the field measured pressures, from each designated site, throughout the duration of the monitoring period.

In addition to the field monitored pressure data, actual operational data recorded by the SCADA system, and coinciding with the flow monitoring period, was also extracted and used for calibration purposes. The SCADA information included storage reservoir levels for each existing reservoir and flows at booster stations.

3.3 EPS Calibration

Calibration can be performed for steady state conditions or for extended period simulations (EPS). In steady state calibration, the model is compared to field monitoring results consisting of a single value, such as a single hydrant test. EPS calibration consists of compared model predictions to diurnal operational changes in the water system.

Previous hydraulic model calibration efforts have used only the steady state method. The current hydraulic model calibration has been done using the EPS method.

The calibration process was iterative and resulted with satisfactory comparisons between the field measurements and the hydraulic model predictions at the 9 sites and at the storage reservoirs.

The calibration summary for average values is included on **Table 1**, while the detailed EPS results were graphically summarized, for each site, and are shown in **Figures 4** through **15**.

4.0 SUMMARY

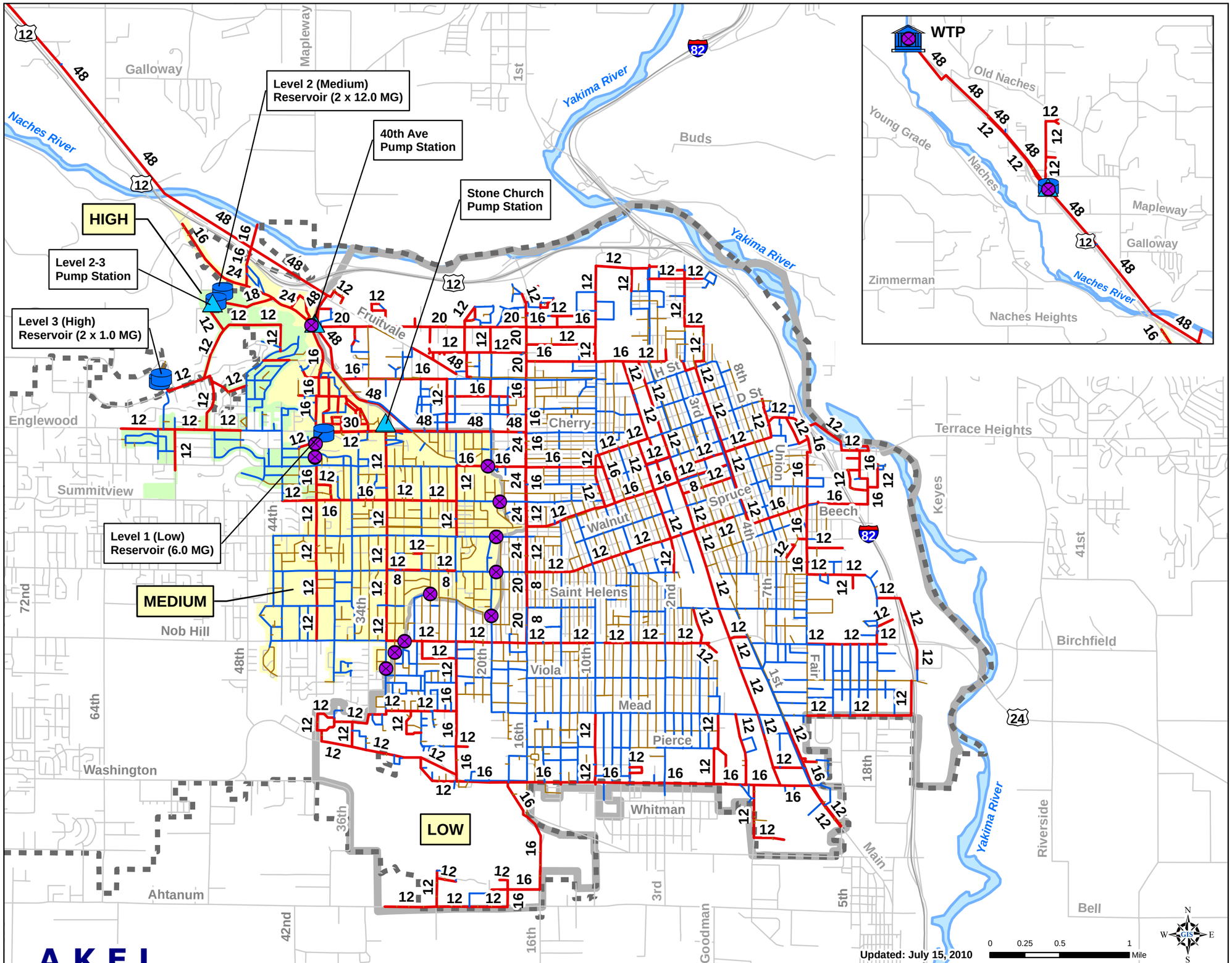
This memorandum documents the City's hydraulic model update and calibration to extended period simulation. The calibrated hydraulic model is considered benchmarked for further analysis

and evaluations of the distribution system. The model can be used for hydraulic analysis, water trace analysis, and water age analysis.

Hydraulic models are difficult to maintain and usually become less accurate as field conditions change over the years. This model update and calibration effort confirmed a high level of integrity in the existing hydraulic model.

City water department staff are commended for the high level of competence and diligence in maintaining the integrity of this valuable planning tool.

FIGURES



Legend

Existing

- WTP
- Tanks
- Pumps
- Valves

Pipes

- 6" or Less
- 8"
- 10" or Greater
- Highways
- Streets

Pressure Zones

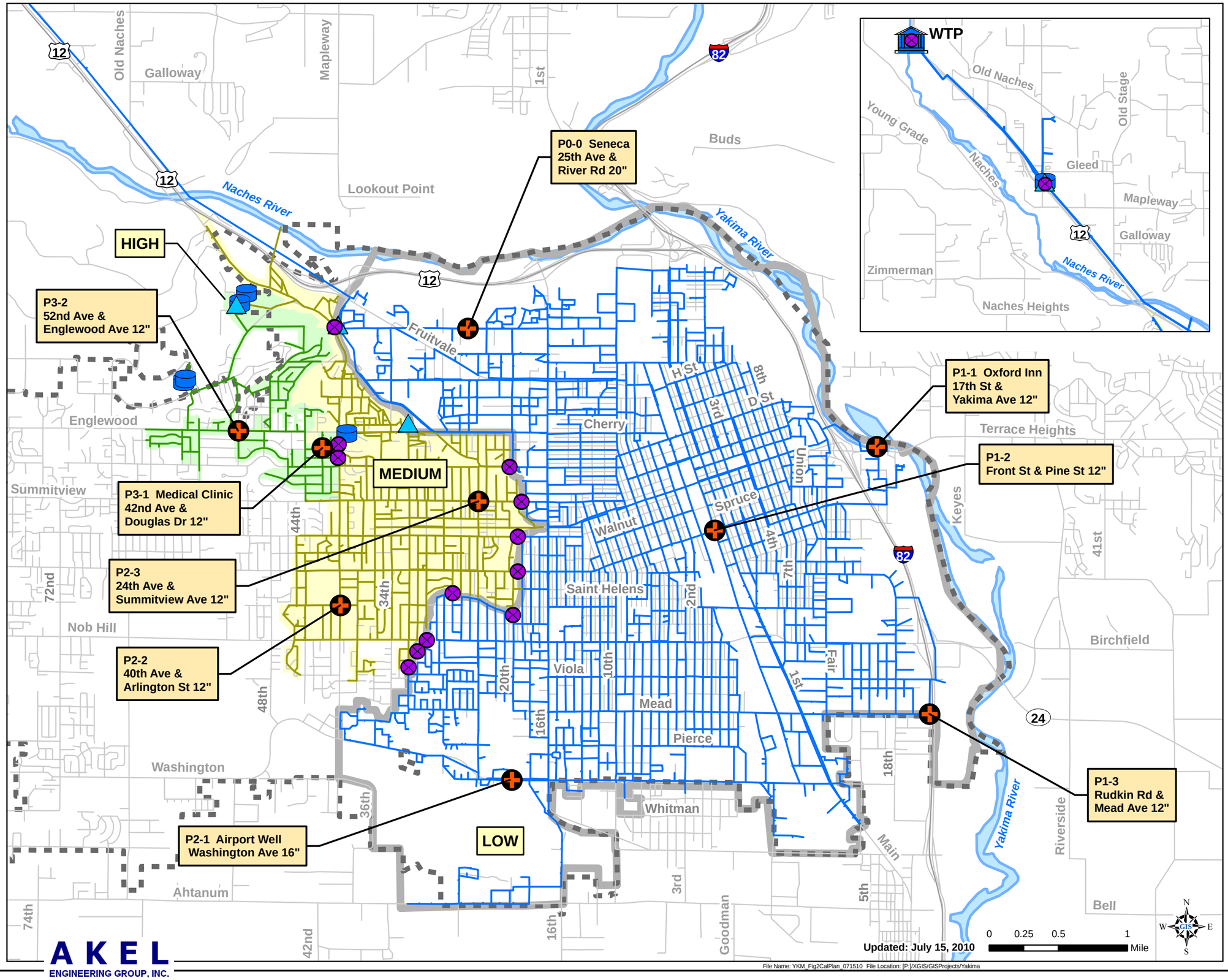
- High
- Medium
- Low
- Yakima City Limits
- Rivers

Figure 1
Existing Water System

Water Master Plan Update
City of Yakima

AKEL
ENGINEERING GROUP, INC.

File Name: YKM_Ex1ExistSystem_071510 File Location: [P:]/XGIS/GISProjects/Yakima



Updated: July 15, 2010

File Name: YKM_Fig2CalPlan_071510 File Location: [P:]/XGIS/GISProjects/Yakima

AKEL
ENGINEERING GROUP, INC.

Legend

- Pressure Loggers

Existing

- WTP
- Tanks
- Pumps
- Valves

Pipes

- High
- Medium
- Low

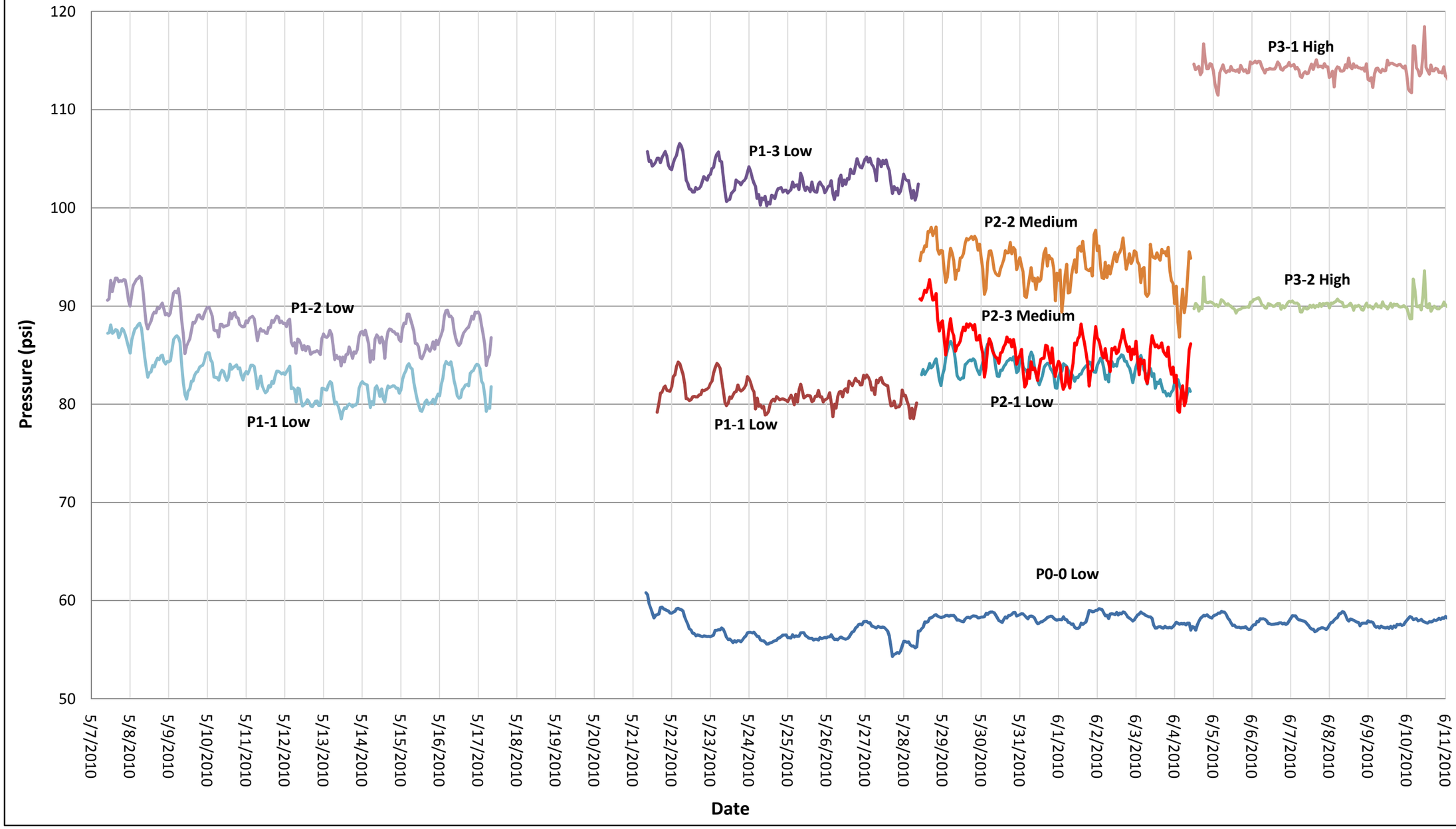
Pressure Zones

- High
- Medium
- Low
- Streets
- Highways
- Yakima City Limits
- Rivers

Location Number	Week	Description	Pipe Size (in)
P0-0	1-3	25th Ave & River Rd, Seneca	20
P1-1	1	17th St & Yakima Ave, Oxford Inn	12
P1-2	1	Front St & Pine St	12
P1-3	1	Rudkin Rd & Mead Ave	12
P2-1	2	Washington Ave, Airport Well	16
P2-2	2	40th Ave & Arlington St	12
P2-3	2	24th Ave & Summitview Ave	12
P3-1	3	42nd Ave & Douglas Dr, Med Clinic	12
P3-2	3	52nd Ave & Englewood Ave	12

Figure 2
Calibration Plan

Water Master Plan Update
City of Yakima



LEGEND

- P0-0, Seneca
- P1-1, Oxford Inn
- P1-3, Rudkin/Mead
- P2-1, Airport Well
- P2-2, 40th/Arlington
- P2-3, 24th/Summitview
- P3-1, Med. Clinic
- P3-2, 52nd/Englewood
- P1-1, Oxford Inn
- P1-2, Pine/Front

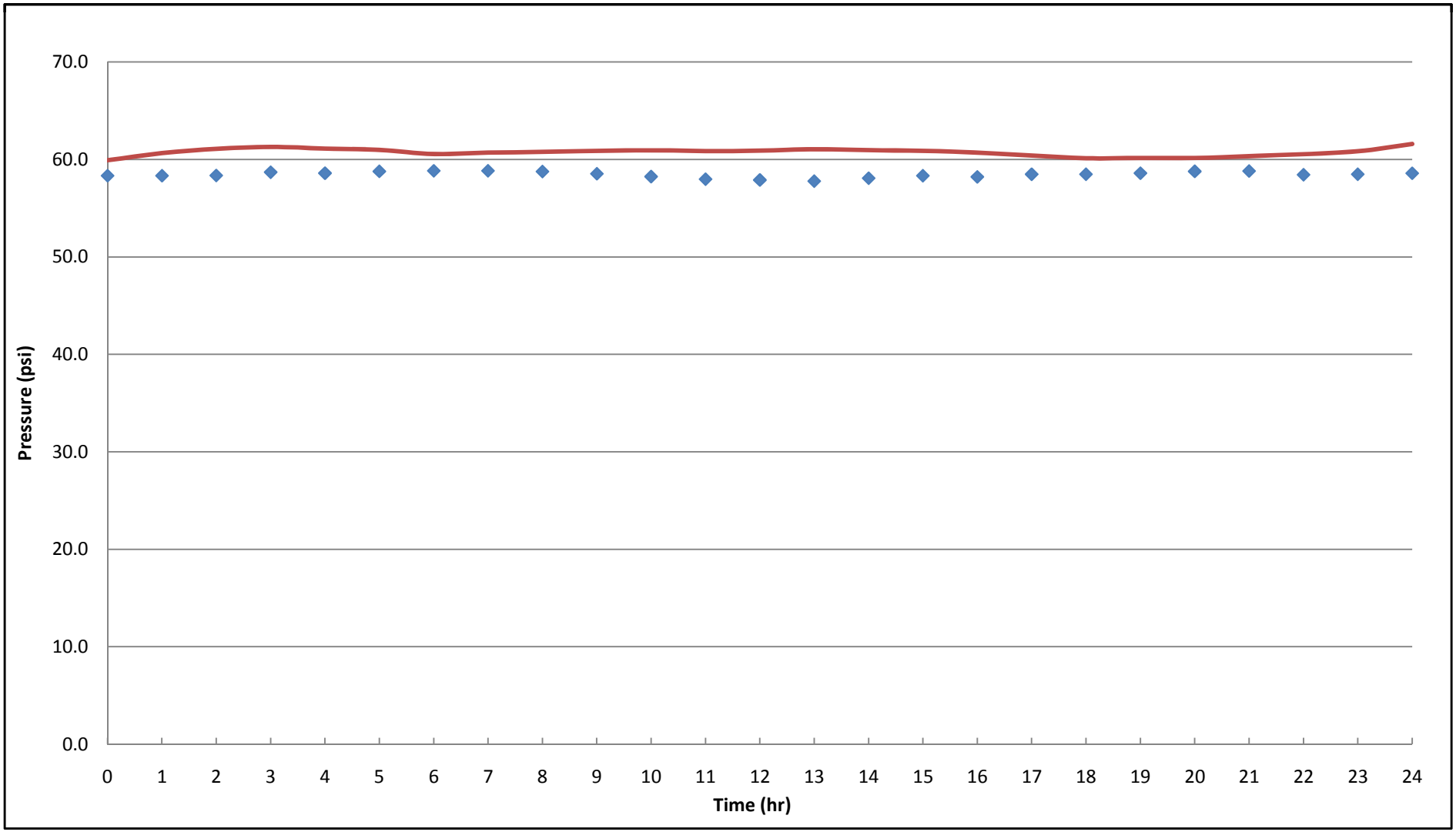
July 6, 2010

Figure 3

Pressure Loggers

Hydraulic Model Calibration
City of Yakima

AKEL ENGINEERING GROUP, INC.



LEGEND

- Pressure Logger
- Hydraulic Model

Field Monitoring Period
5/21/10 - 6/11/10
Calibration Graph Shows
5/30/10

Average Difference:
2.3 psi
3.9 %

Average Pressure:
Field: 58.5 psi
Model: 60.7 psi

July 1, 2010

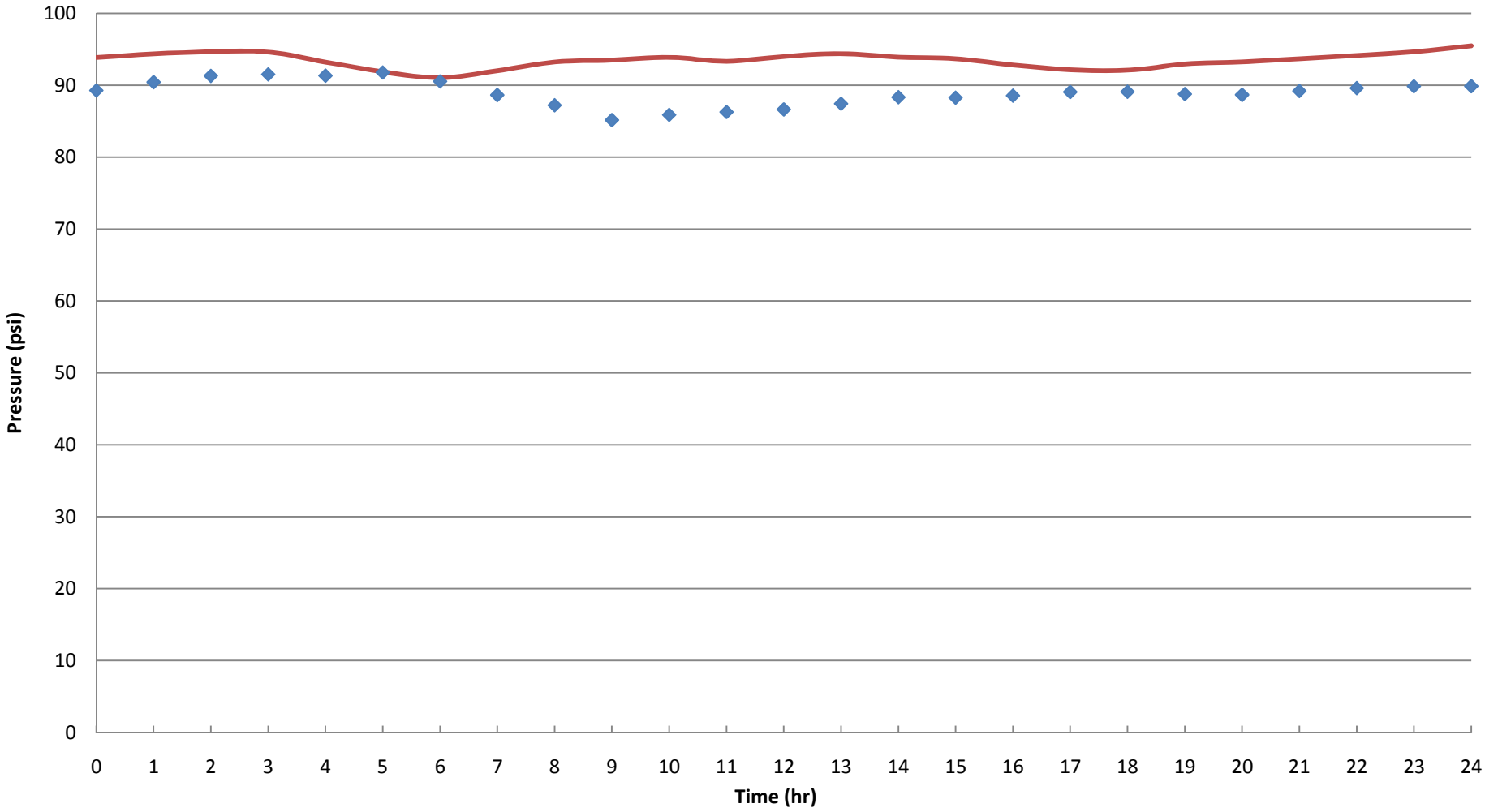
Figure 4

Calibration Results at P0-0, Seneca

Hydraulic Model Calibration

City of Yakima

AKEL ENGINEERING GROUP, INC.



LEGEND

- Pressure Logger
- Hydraulic Model

Field Monitoring Period
5/7/10 - 5/17/10,
5/21/10 - 5/28/10
Calibration Graph Shows
5/9/10

Average Difference:
4.6 psi
5.1 %

Average Pressure:
Field: 88.9 psi
Model: 93.5 psi

July 1, 2010

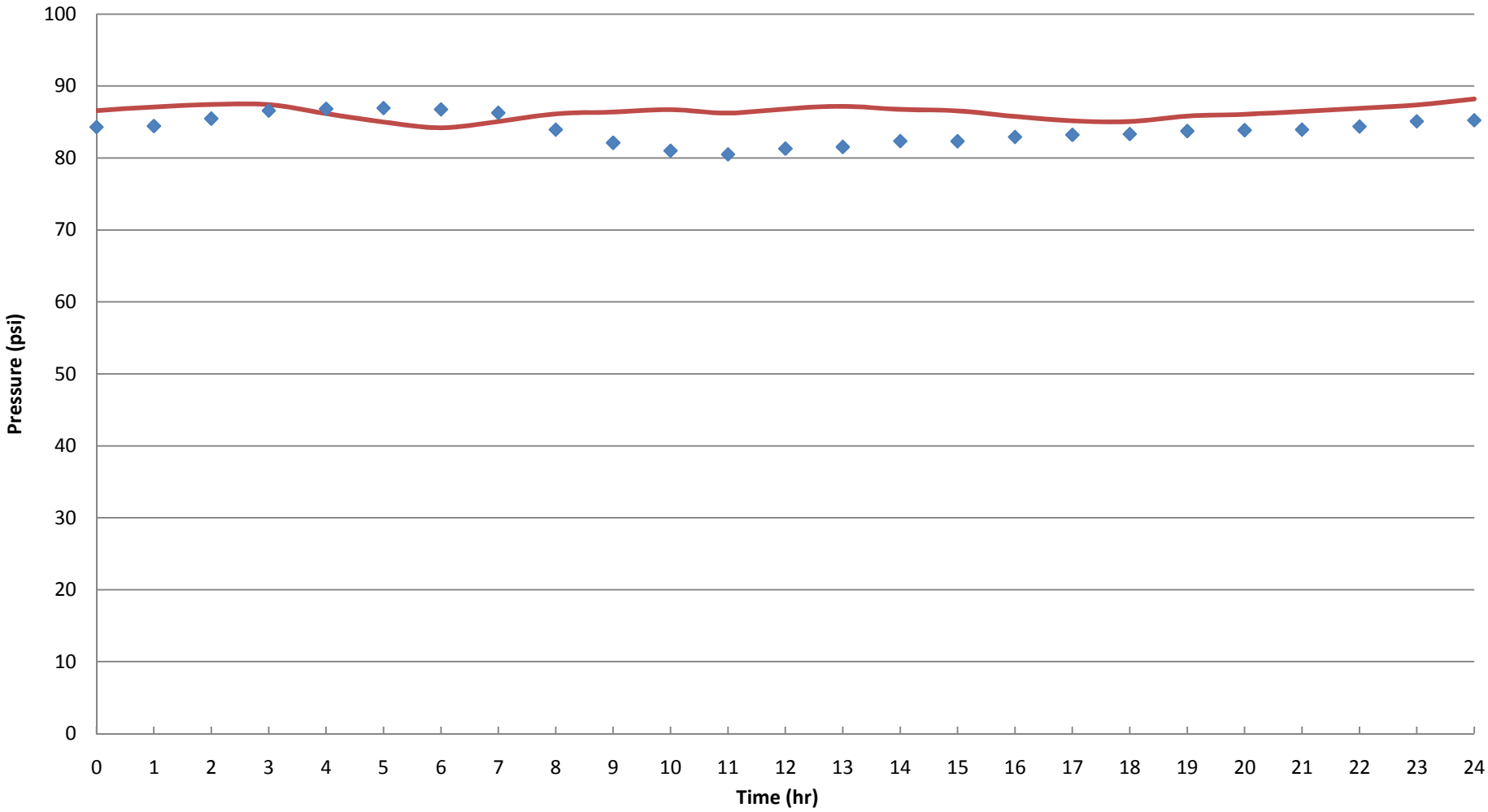
Figure 5

Calibration Results at P1-1, Oxford Inn

Hydraulic Model Calibration

City of Yakima

AKEL ENGINEERING GROUP, INC.



LEGEND

- Pressure Logger
- Hydraulic Model

Field Monitoring Period
5/7/10 - 5/17/10,
5/21/10 - 5/28/10
Calibration Graph Shows
5/23/10

Average Difference:
2.4 psi
2.9 %

Average Pressure:
Field: 84.0 psi
Model: 86.4 psi

July 1, 2010

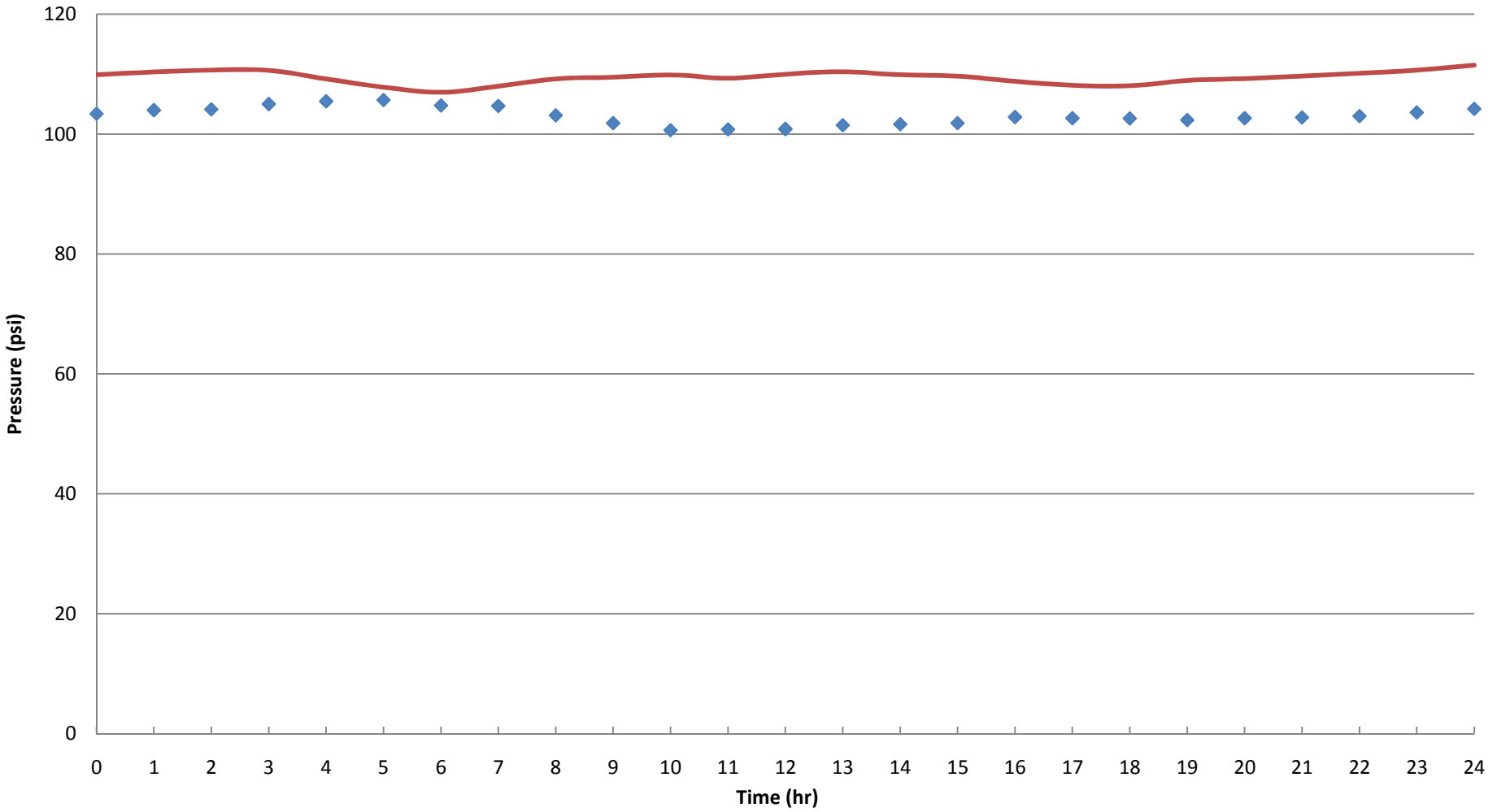
Figure 6

Calibration Results at P1-2, Pine/Front

Hydraulic Model Calibration

City of Yakima

AKEL ENGINEERING GROUP, INC.



LEGEND

- Pressure Logger
- Hydraulic Model

Field Monitoring Period
5/21/10 - 5/28/10
Calibration Graph Shows
5/23/10

Average Difference:
6.4 psi
6.3 %

Average Pressure:
Field: 103.0 psi
Model: 109.5 psi

July 1, 2010

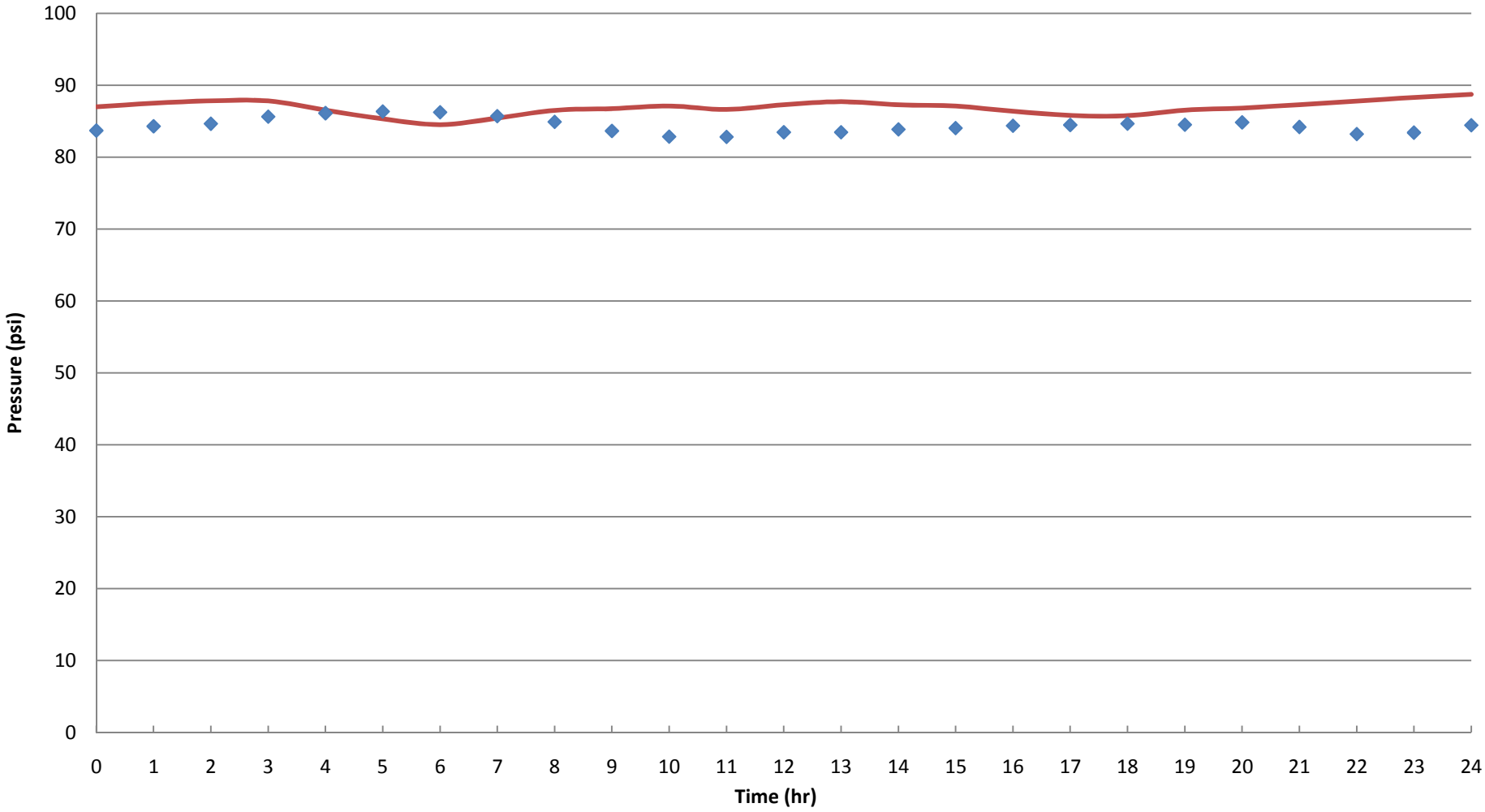
Figure 7

Calibration Results at P1-3, Rudkin/Mead

Hydraulic Model Calibration

City of Yakima

AKEL ENGINEERING GROUP, INC.



LEGEND

- Pressure Logger
- Hydraulic Model

Field Monitoring Period
5/28/10 - 6/4/10
Calibration Graph Shows
5/30/10

Average Difference:
2.5 psi
2.9 %

Average Pressure:
Field: 84.4 psi
Model: 86.9 psi

July 1, 2010

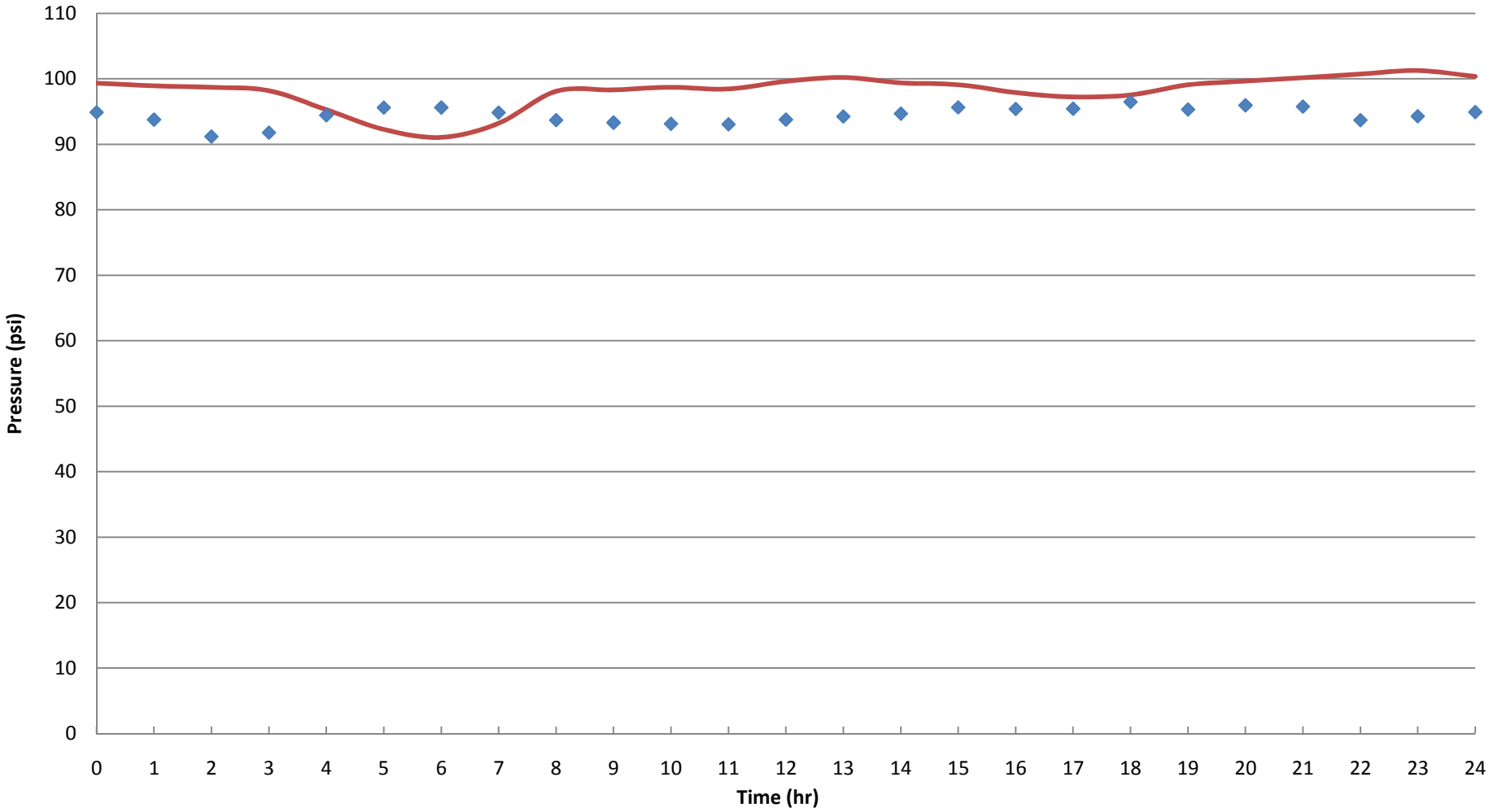
Figure 8

Calibration Results at P2-1, Airport Well

Hydraulic Model Calibration

City of Yakima

AKEL ENGINEERING GROUP, INC.



LEGEND

- Pressure Logger
- Hydraulic Model

Field Monitoring Period
5/28/10 - 6/4/10
Calibration Graph Shows
5/30/10

Average Difference:
3.7 psi
3.9 %

Average Pressure:
Field: 94.4 psi
Model: 98.1 psi

July 1, 2010

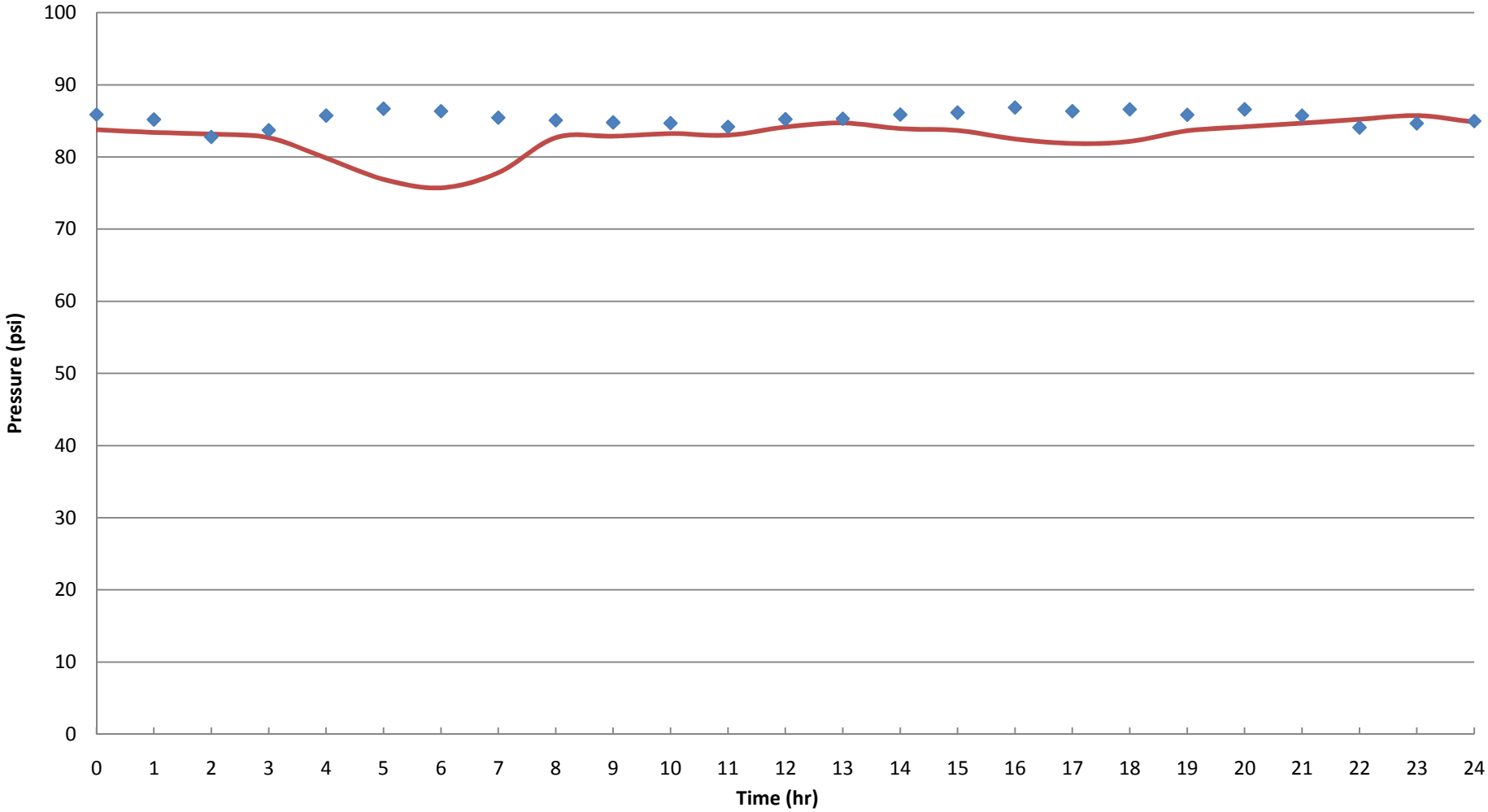
Figure 9

Calibration Results at P2-2, 40th/Arlington

Hydraulic Model Calibration

City of Yakima

AKEL ENGINEERING GROUP, INC.



LEGEND

- Pressure Logger
- Hydraulic Model

Field Monitoring Period
5/28/10 - 6/4/10
Calibration Graph Shows
5/30/10

Average Difference:
-2.7 psi
-3.2 %

Average Pressure:
Field: 85.4 psi
Model: 82.6 psi

July 1, 2010

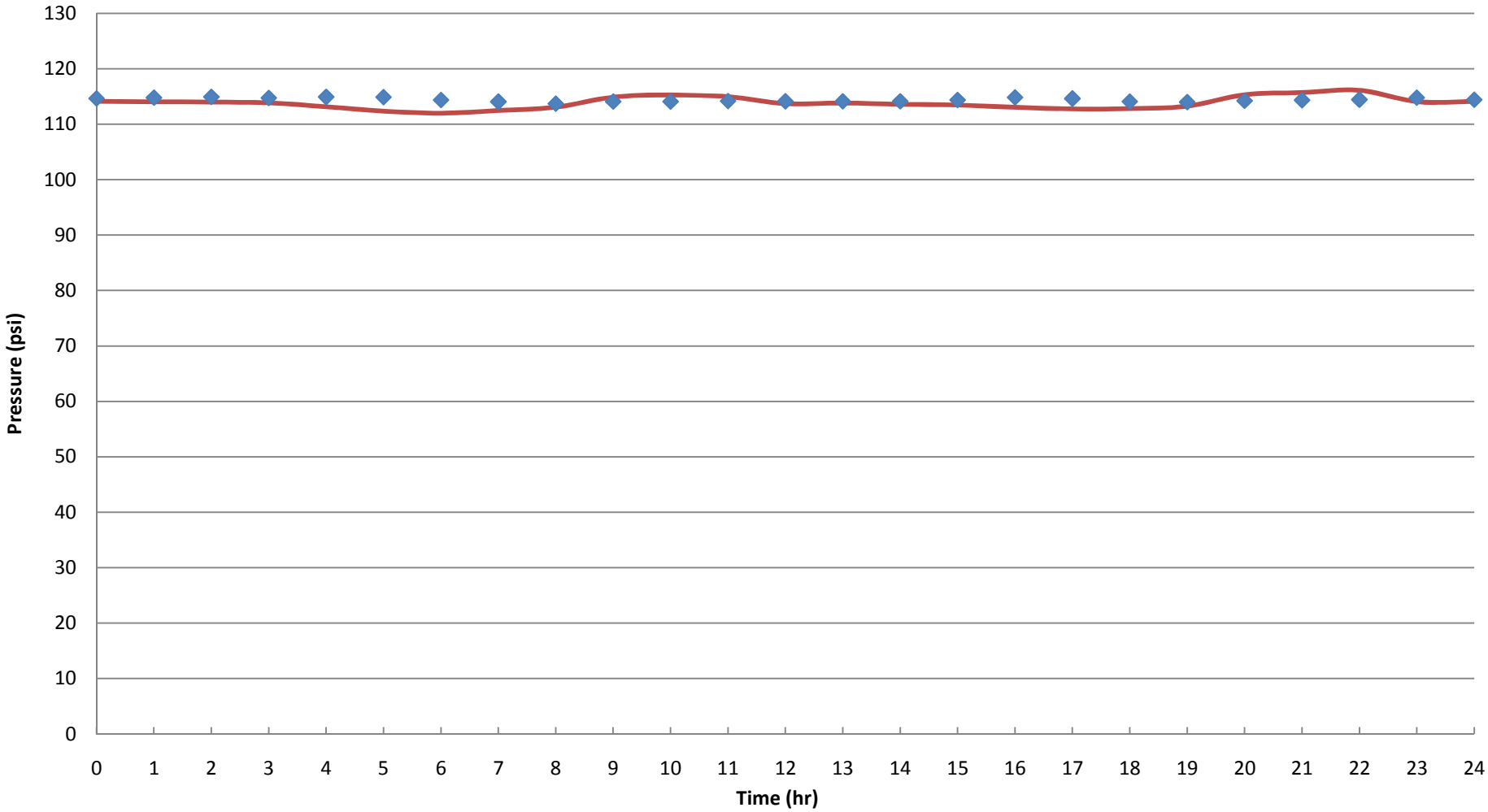
Figure 10

Calibration Results at P2-3, 24th/Summitview

Hydraulic Model Calibration

City of Yakima

AKEL ENGINEERING GROUP, INC.



LEGEND

- Pressure Logger
- Hydraulic Model

Field Monitoring Period
6/4/10 - 6/11/10
Calibration Graph Shows
6/6/10

Average Difference:
-0.6 psi
-0.5 %

Average Pressure:
Field: 114.4 psi
Model: 113.8 psi

July 1, 2010

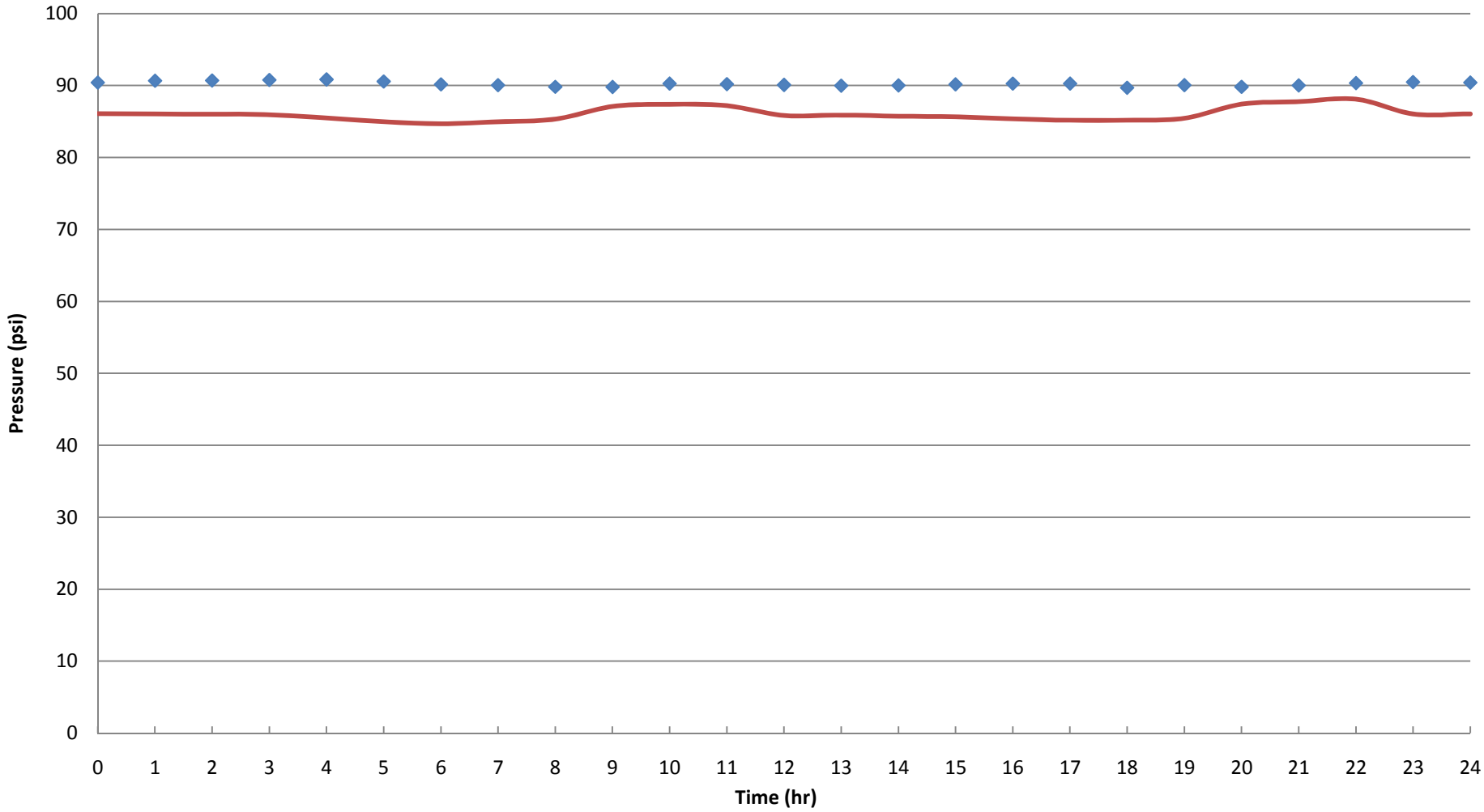
Figure 11

Calibration Results at P3-1 , 40th/Med. Clinic

Hydraulic Model Calibration

City of Yakima

AKEL ENGINEERING GROUP, INC.



LEGEND

- Pressure Logger
- Hydraulic Model

Field Monitoring Period
6/4/10 - 6/11/10
Calibration Graph Shows
6/6/10

Average Difference:
-4.2 psi
-4.6 %

Average Pressure:
Field: 90.2 psi
Model: 86.0 psi

July 1, 2010

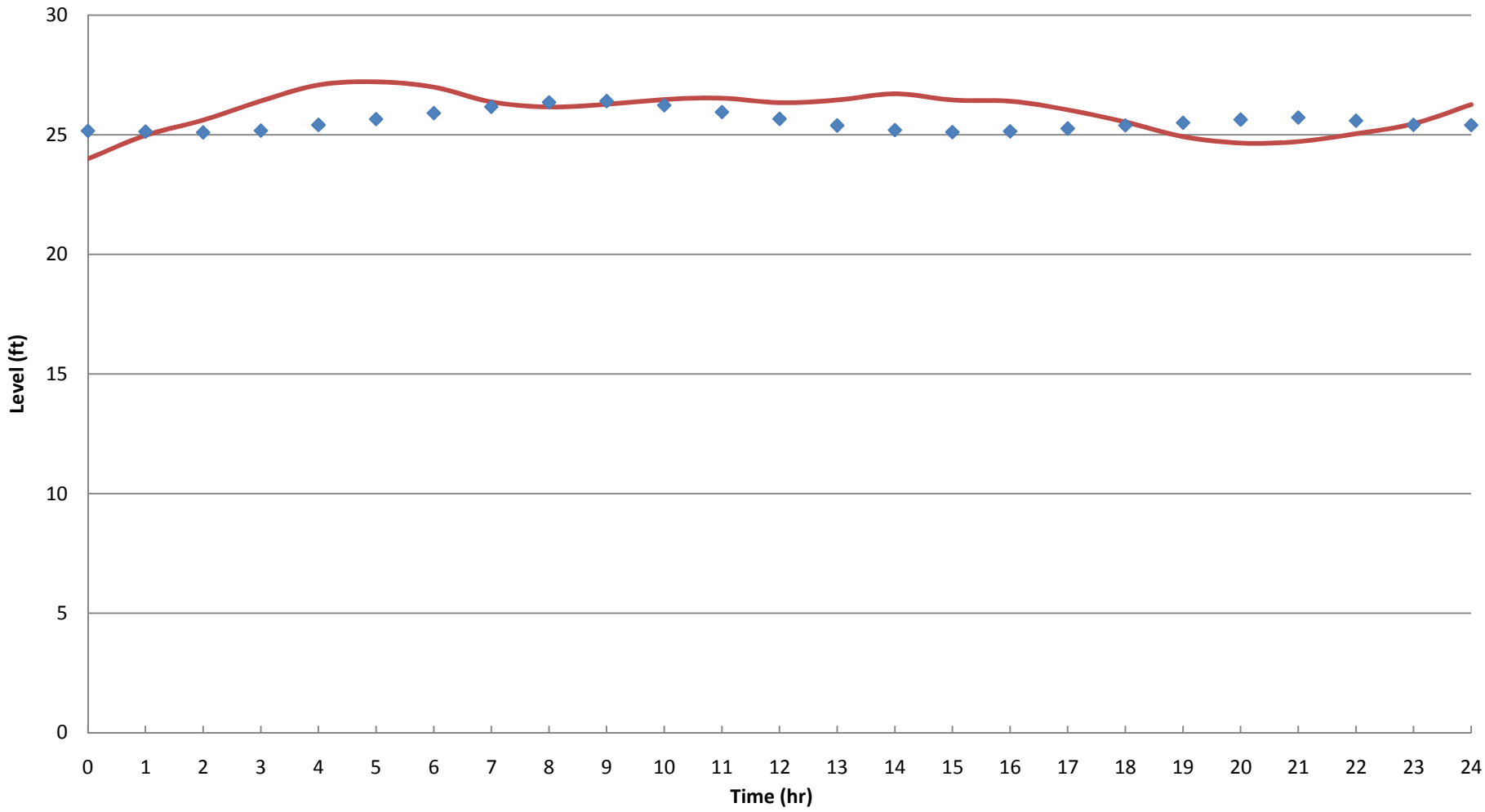
Figure 12

Calibration Results at P3-2, 52nd/Englewood

Hydraulic Model Calibration

City of Yakima

AKEL ENGINEERING GROUP, INC.



LEGEND

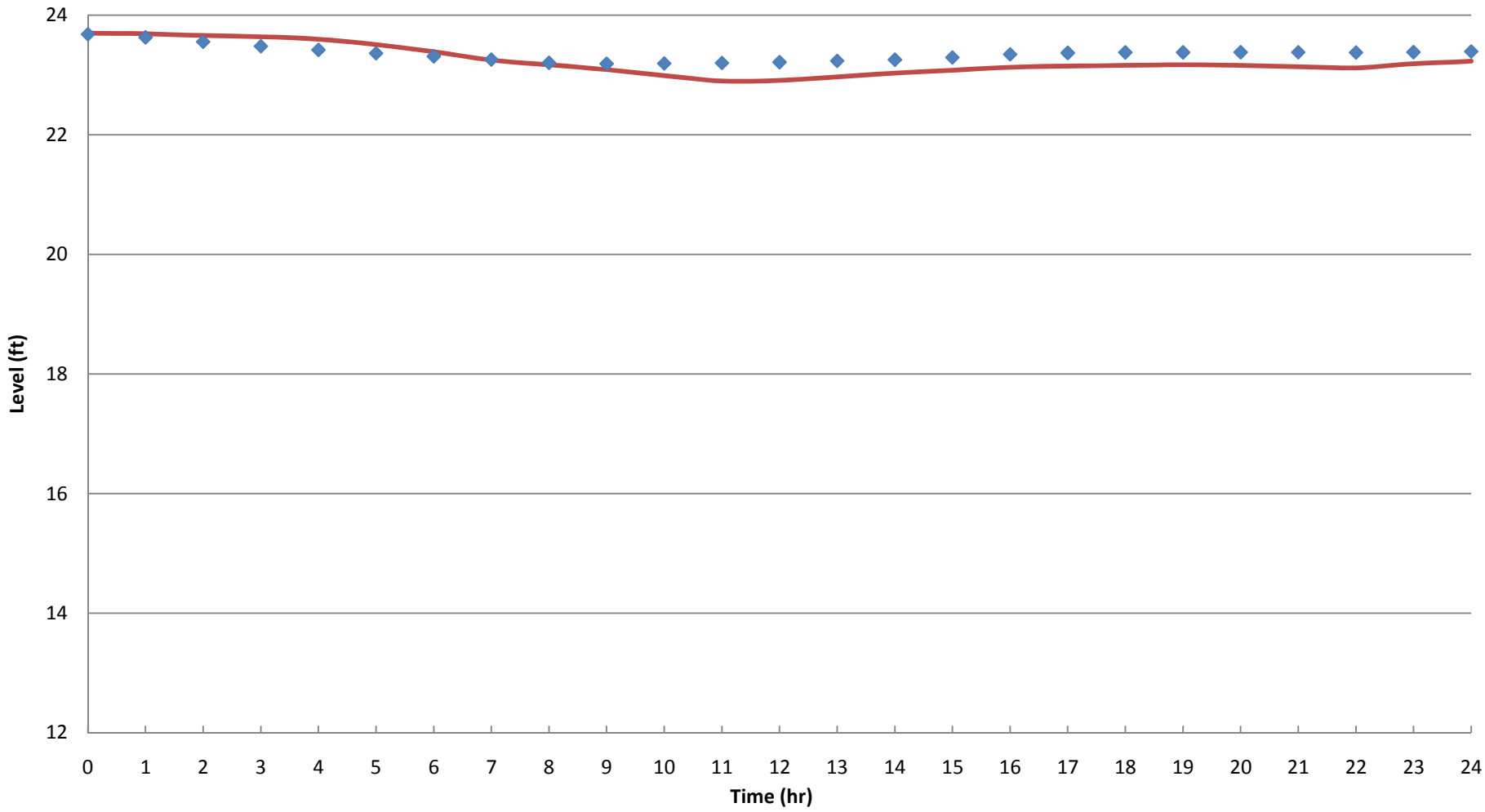
- Field Measured Data
- Hydraulic Model

Low (Level 1) Reservoir
6.0 MG

July 1, 2010

Figure 13
Calibration Results at Low Reservoir
Hydraulic Model Calibration
City of Yakima

AKEL ENGINEERING GROUP, INC.



LEGEND

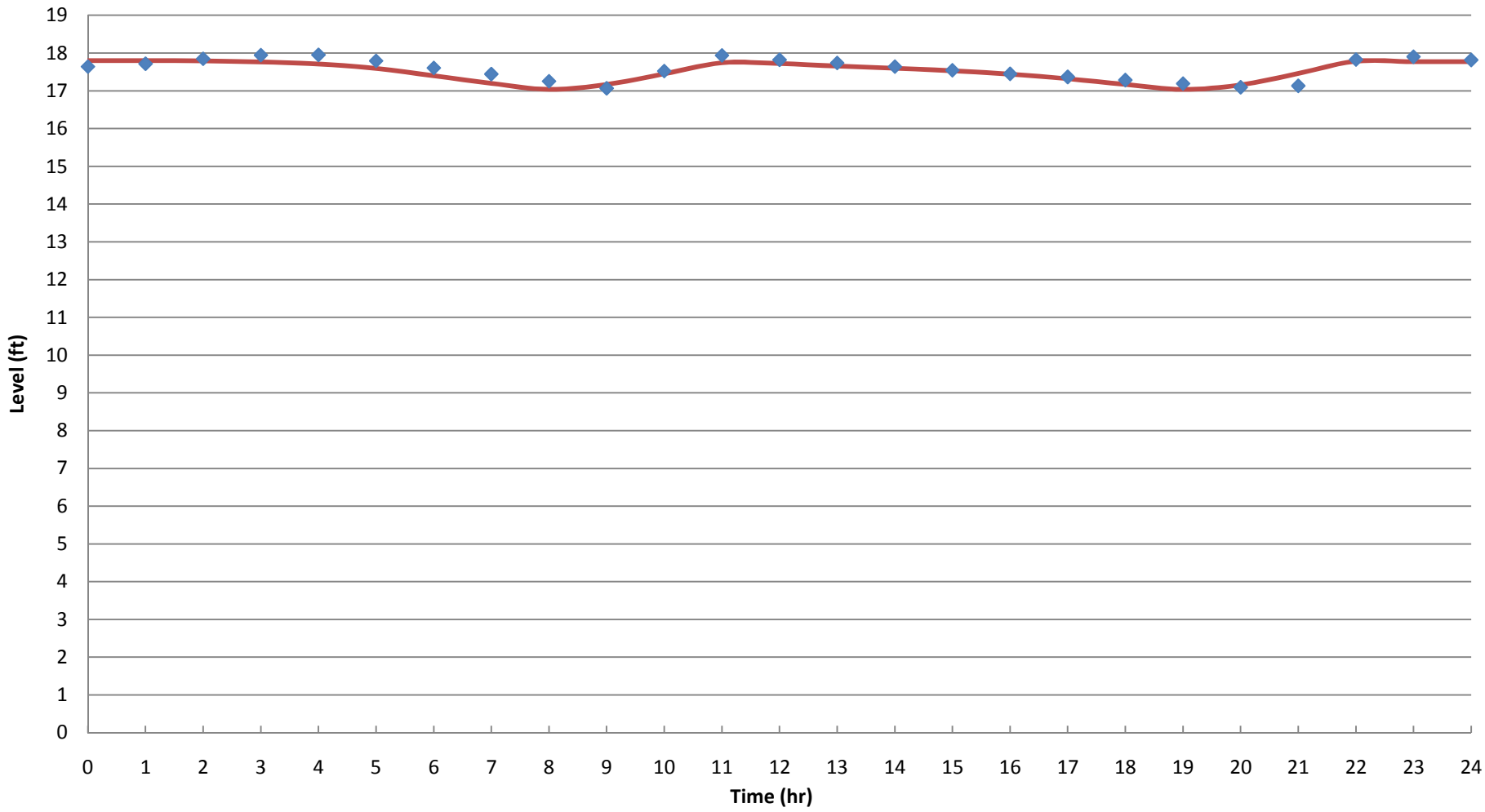
- Field Measured Data
- Hydraulic Model

Medium (Level 2) Reservoir
2 x 12.0 MG

July 1, 2010

Figure 14
Calibration Results at MediumReservoir
Hydraulic Model Calibration
City of Yakima

AKEL ENGINEERING GROUP, INC.



LEGEND

- Field Measured Data
- Hydraulic Model

High (Level 3) Reservoir
2 x 1.0 MG

July 1, 2010

Figure 15
Calibration Results at High Reservoir
Hydraulic Model Calibration
City of Yakima

AKEL ENGINEERING GROUP, INC.

TABLES

Table 1 Calibration Plan and Results

Water Master Plan Update

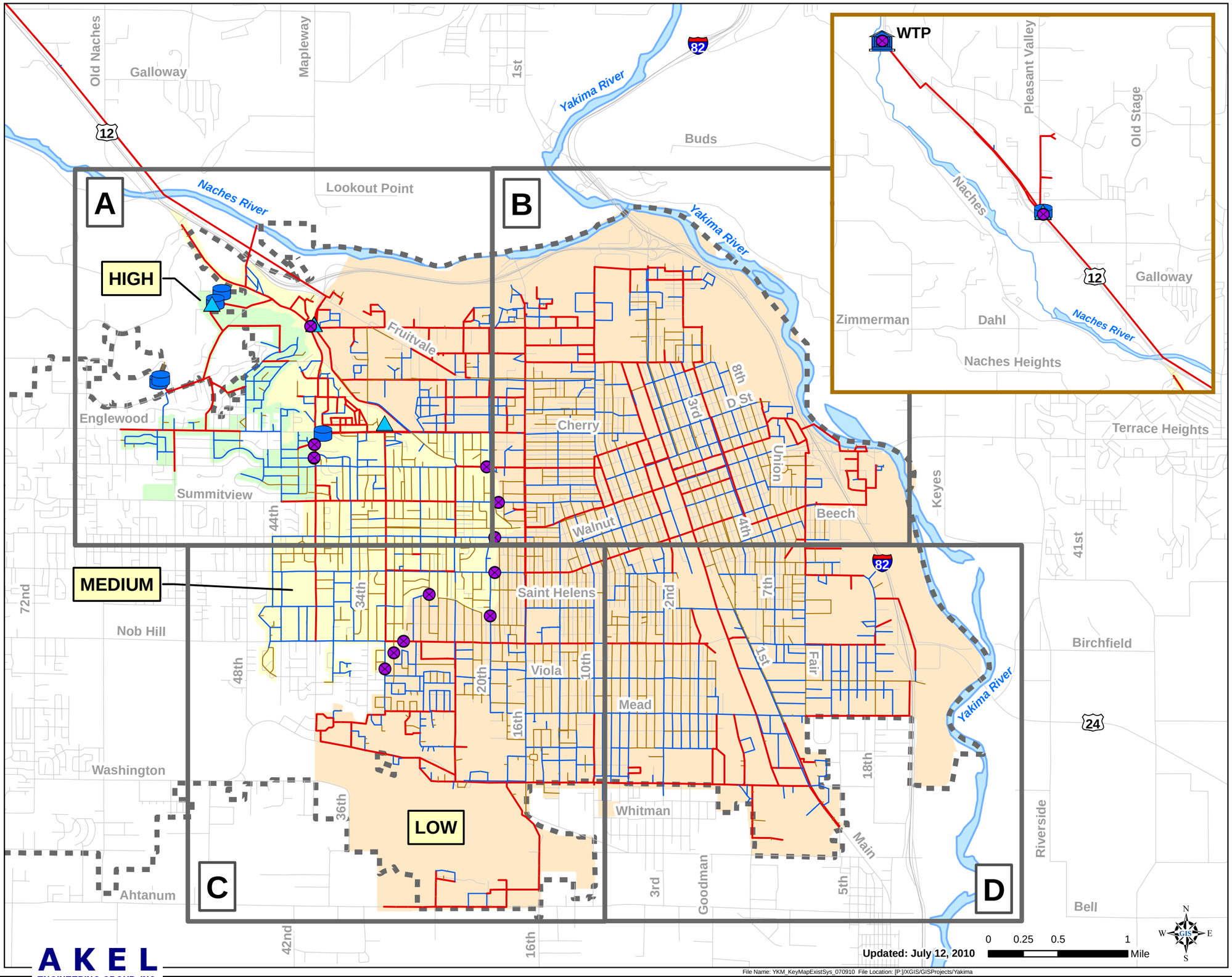
City of Yakima

Location No.	Location Description	Monitoring Week	Filed Monitoring Dates	Pipe Size	Average Field Pressure	Average Model Pressure	Calibration Results (Average Difference)		EPS Calirbation
				(in)	(psi)	(psi)	(psi)	(%)	
P0-0	25th Ave & River Rd, Seneca	1-3	5/21/10 - 6/11/10	20	58.5	60.7	2.3	3.9%	Figure 4
P1-1	17th St & Yakima Ave, Oxford Inn	1	5/7/10 - 5/17/10, 5/21/10 - 5/28/10	12	88.9	93.5	4.6	5.1%	Figure 5
P1-2	Front St & Pine St	1	5/7/10 - 5/17/10, 5/21/10 - 5/28/10	12	84	86.4	2.4	2.9%	Figure 6
P1-3	Rudkin Rd & Mead Ave	1	5/21/10 - 5/28/10	12	103	109.5	6.4	6.3%	Figure 7
P2-1	Washington Ave, Airport Well	2	5/28/10 - 6/4/10	16	84.4	56.9	2.5	2.9%	Figure 8
P2-2	40th Ave & Arlington St	2	5/28/10 - 6/4/110	12	94.4	98.1	3.7	3.9%	Figure 9
P2-3	24th Ave & Summitview Ave	2	5/28/10 - 6/4/110	12	85.4	82.6	-2.7	-3.2%	Figure 10
P3-1	42nd Ave & Douglas Dr, Med Clinic	3	6/4/10 - 6/11/10	12	114.4	113.8	-0.6	-0.5%	Figure 11
P3-2	52nd Ave & Englewood Ave	3	6/4/10 - 6/11/10	12	90.2	86	-4.2	-4.6%	Figure 12

7/14/2010

APPENDIX A

Hydraulic Model Detail Maps



Legend

Existing

- WTP
- Tanks
- Pumps
- Valves

Pipes

- 6" or Less
- 8"
- 10" or Greater

Pressure Zones

- High
- Medium
- Low

- Streets
- Highways
- Yakima City Limits
- Rivers

Hydraulic Model Key Map
Existing Water System

Water Master Plan Update
City of Yakima

AKEL
ENGINEERING GROUP, INC.

File Name: YKM_KeyMapExistSys_070910 File Location: [P:]/XGIS/GISProjects/Yakima

Level 2 (Medium)
Reservoir (2 x 12.0 MG)

Level 2-3
Pump Station

Level 1 (Low)
Reservoir (6.0 MG)

Level 3 (High)
Reservoir (2 x 1.0 MG)

40th Ave
Pump Station

Stone Church
Pump Station

Naches River

Lookout Point

Naches Heights

Englewood

Lincoln

Summitview

Chestnut

River

Fruitvale

Powerhouse

34th

52nd

44th

40th

32nd

26th

20th

66th

56th

Updated: July 15, 2010

0 0.125 0.25 0.5 Miles

N W GIS E S

File Name: YKM_DetailA_071510 File Location: [P:]/XGIS/GISProjects/Yakima

Legend

Existing

- WTP
- Tanks
- Pumps
- Valves

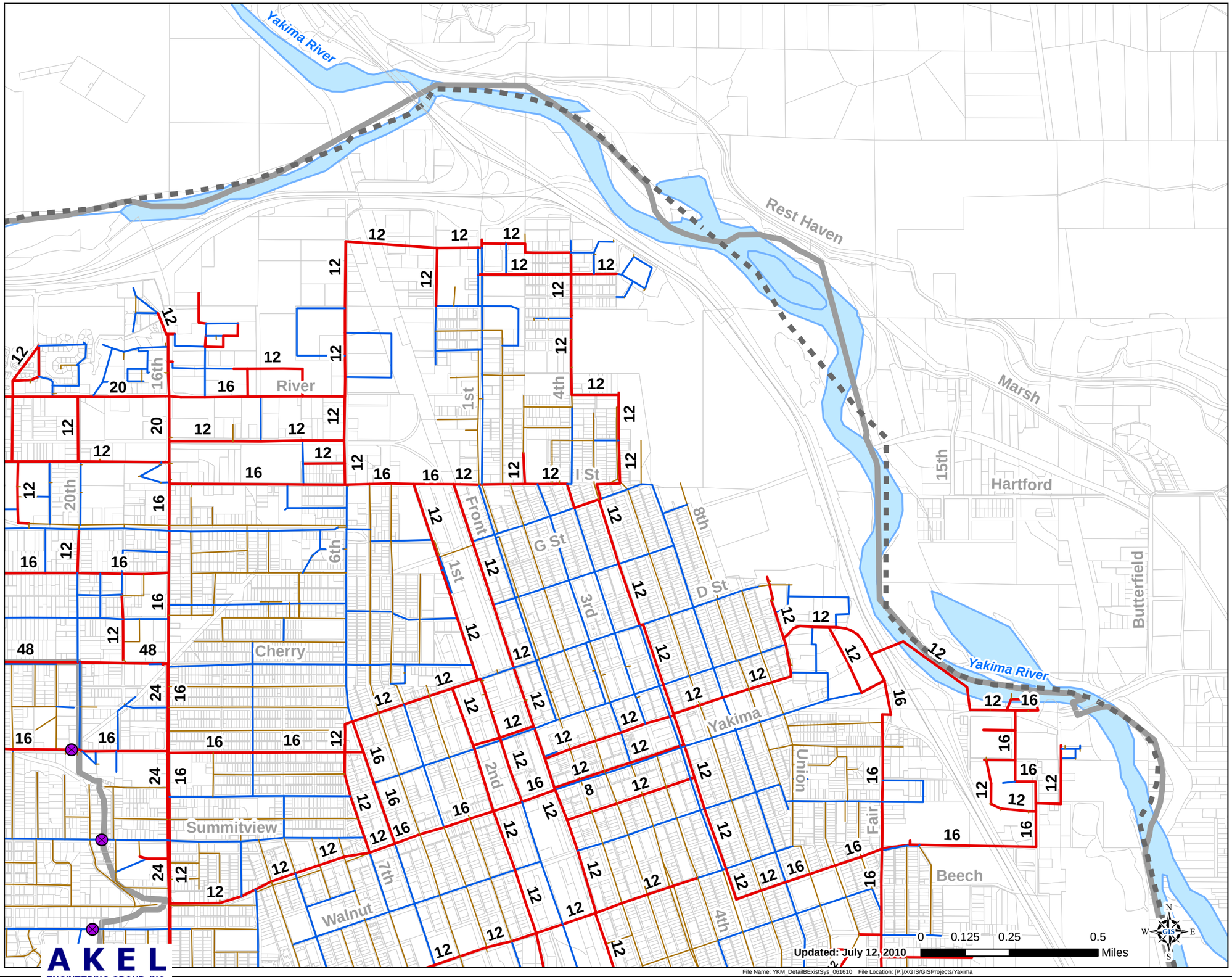
Pipes

- 6" or Less
- 8"
- 10" or Greater
- Pressure Zones
- Streets
- Highways
- Parcels
- Yakima City Limits
- Rivers

Hydraulic Model Detail A
Existing Water System

Water Master Plan Update
City of Yakima

AKEL
ENGINEERING GROUP, INC.



Legend

Existing

- WTP
- Tanks
- Pumps
- Valves

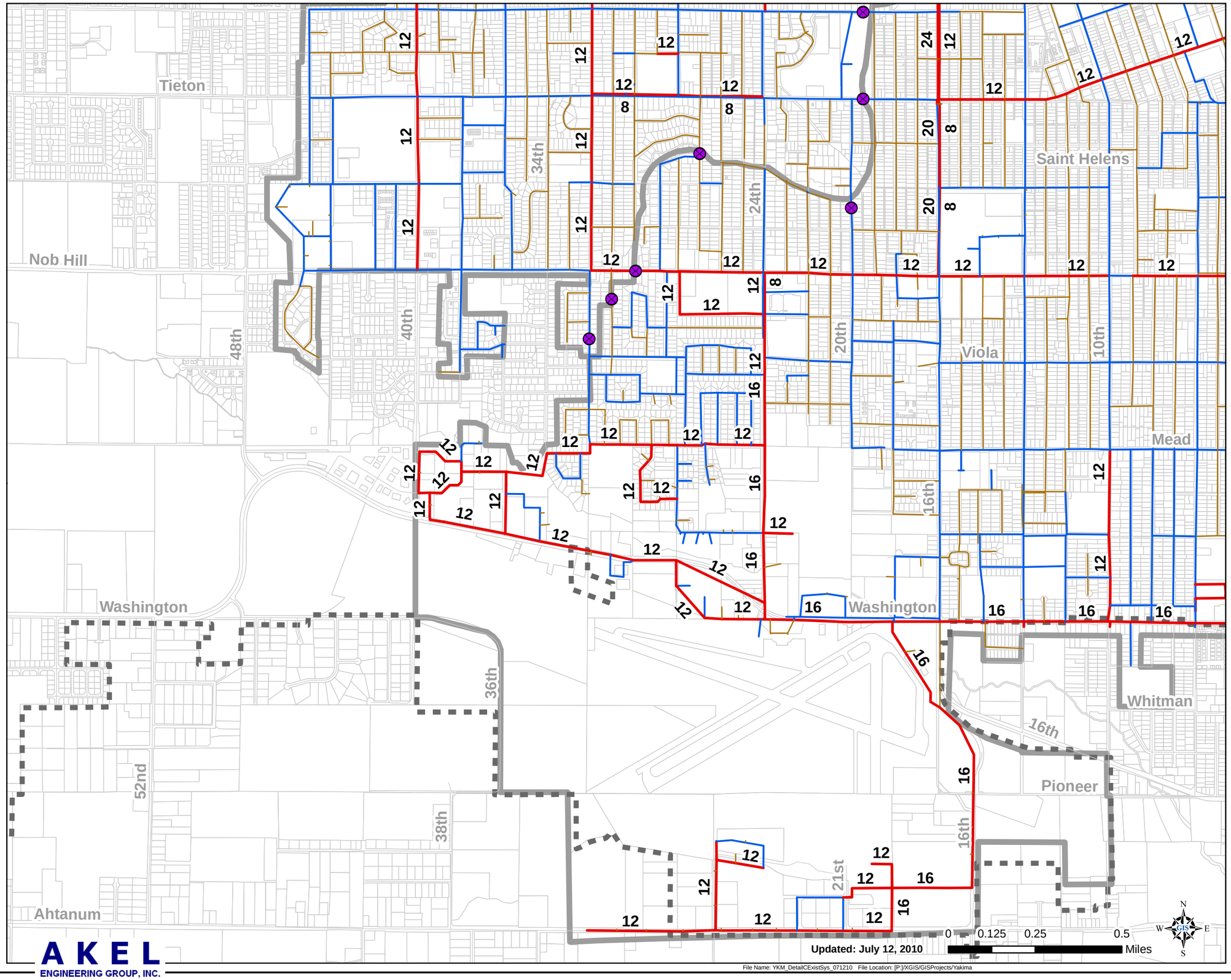
Pipes

- 6" or Less
- 8"
- 10" or Greater
- Pressure Zones
- Streets
- Highways
- Parcels
- Yakima City Limits
- Rivers

Hydraulic Model Detail B
Existing Water System

Water Master Plan Update
City of Yakima

AKEL
ENGINEERING GROUP, INC.



Legend

Existing

- WTP
- Tanks
- Pumps
- Valves

Pipes

- 6" or Less
- 8"
- 10" or Greater
- Pressure Zones
- Streets
- Highways
- Parcels
- Yakima City Limits
- Rivers

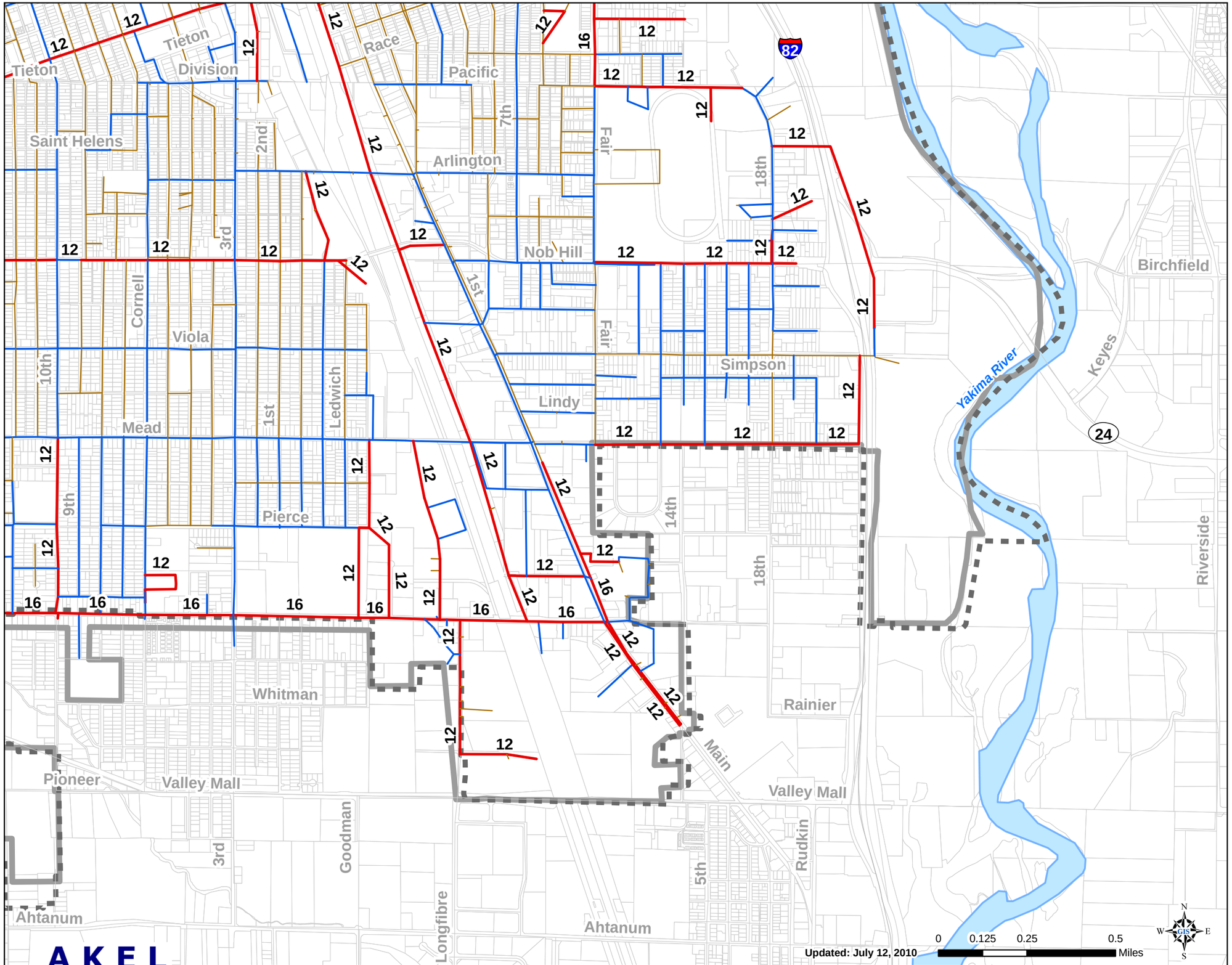
Hydraulic Model Detail C
Existing Water System

Water Master Plan Update
City of Yakima

Updated: July 12, 2010

AKEL ENGINEERING GROUP, INC.

File Name: YKM_DetailCExistSys_071210 File Location: [P:]/XGIS/GISProjects/Yakima



Legend

Existing

- WTP
- Tanks
- Pumps
- Valves

Pipes

- 6" or Less
- 8"
- 10" or Greater
- Pressure Zones
- Streets
- Highways
- Parcels
- Yakima City Limits
- Rivers

Hydraulic Model Detail D
Existing Water System

Water Master Plan Update
City of Yakima

Updated: July 12, 2010

AKEL
ENGINEERING GROUP, INC.

File Name: YKM_DetailDExistSys_071210 File Location: [P:]/XGIS/GISProjects/Yakima

Appendix F

MOAs between City of Yakima and Adjacent Purveyors

MEMORANDUM OF UNDERSTANDING
FOR THE EFFICIENT AND BEST USE OF WATER RESOURCES
FOR FUTURE DEVELOPMENT IN THE YAKIMA VALLEY

THIS MEMORANDUM OF UNDERSTANDING ("MOU") is entered into by and between the City of Yakima, Yakima County, Nob Hill Water Association, Yakima Valley Canal Company and the Yakima Tieton Irrigation District (collectively referred to hereinafter as the "Sponsors") for the purpose of insuring the cost effective and best use of water resources for future development in the Yakima Valley.

RECITALS AND FINDINGS

WHEREAS, water resources, both surface and ground water, are necessary to support future growth within the designated City of Yakima Urban Growth Boundary for the parties to this MOU and other local governments, private parties and citizens; and

WHEREAS, the Sponsors recognize that said water resources are valuable public resources that may need protection and preservation; and

WHEREAS, the Sponsors recognize that a cooperative effort is the most effective and efficient way to protect and preserve their respective water resources and address the long-term planning, design, maintenance, and operation of future development; and

WHEREAS, the Sponsors desire to utilize existing multiple water resources to help address public infrastructure needs within the City of Yakima Urban Growth Boundary through a coordinated effort among the State, local governments, and other interested parties; and

WHEREAS, the Sponsors desire to utilize water resources in a manner which will provide for continued growth that will meet the needs of the community consistent with adopted comprehensive plans,

NOW, THEREFORE, in consideration of the mutual agreements, covenants and promises contained herein, the Project Sponsors agree to the following terms and conditions:

AGREEMENT

1. DEFINITIONS

1.1 "Managers" means the representatives of the City of Yakima, Yakima County, Nob Hill Water Association, Yakima Valley Canal Company and the Yakima Tieton Irrigation District (the Sponsors).

1.2 "County" means Yakima County.

1.3 "City" means the City of Yakima.

1.4 "District" means Yakima Tieton Irrigation District.

1.5 "Company" means Yakima Valley Canal Company.

1.6 "Local Governments" means the county, cities, towns, irrigation districts and any other taxing authority.

1.7 "SEPA" means the State Environmental Policy Act as codified in RCW Chapter 43.21C.

1.8 'Comprehensive Plan' means the Yakima Urban Area Comprehensive Plan and the Yakima County Comprehensive *Plan 2015*.

2. DUTIES OF THE MANAGERS

The Managers, by consensus, shall:

2.1 Determine the irrigation water needs for a development.

2.2 Determine the water sources available for irrigation use.

2.3 Determine which water resource is best suited to provide the development's needs.

2.4 Determine the most cost effective method to deliver water to the development in consultation with the owner/developer and for the future users of the development.

2.5 Determine the scope of work to be conducted including the sequence of events necessary to deliver irrigation water.

2.6 Determine the feasibility of installing a separate irrigation delivery system.

3. COMPLIANCE

The Managers should make decisions for determinations made in Section 2 based upon applicable information in:

3.1 The Growth Management Act.

3.2 Adopted comprehensive plan goals and policies.

3.3 Adopted Development regulations.

3.4 Compliance with conditions contained in water rights determined to be used for landscape irrigation.

3.5 Company rules and or policies.

3.6 District rules and or policies.

3.7 Recommendations in the Watershed Management Plan, Yakima River Basin.

3.8 Recommendations in the Detailed Implementation Plan for the Watershed Management Plan, Yakima River Basin.

4. REPORTING REQUIREMENTS

The Managers should:

4.1 Insure findings are reported on any SEPA documents prepared for a development.

4.2 A copy of the findings shall be provided to the irrigation water provider.

4.3 A copy of the findings shall be provided to the local jurisdiction reviewing the development.

5. WITHDRAWAL AND TERMINATION OF M.O.U.

5.1 A Sponsor may withdraw from the process and terminate its relationship to this MOU at any time, with or without cause, by providing written notice in accordance with Section 10.2 to the designated agent of the other Sponsors.

6. PROTECTION OF EXISTING AUTHORITY

6.1 Nothing contained herein shall abrogate or abridge the authority and or responsibilities of any of the Sponsors.

7. EFFECTIVE DATE/TERM OF M.O.U.

7.1 This MOU shall be effective on the date when all Sponsors have signed and executed this MOU.

7.2 This MOU terminates when two or more Sponsors have withdrawn.

10. MISCELLANEOUS PROVISIONS, TERMS AND CONDITIONS

10.1 Drafting of Agreement.

All Sponsors have participated in the drafting of this MOU. As such, it is agreed by the Sponsors that the general contract rule of law that ambiguities in the contract language shall be construed against the drafter of a contract shall have no application to any legal proceeding, arbitration and/or action in which this MOU and its terms and conditions are being interpreted and/or enforced.

10.2 Notices.

Unless stated otherwise herein, all notices and demands shall be in writing and sent or hand delivered to the parties to their addresses as follows:

To the City:	David Brown Water/Irrigation Manager 2301 Fruitvale Blvd.. Yakima, WA 98902
To Yakima County:	Vern Redifer Director of Public Services 128 N. 2nd Street Yakima, WA 98901
To Nob Hill Water Association:	Zella West, Manager Nob Hill Water Association

6111 Tieton Dr.
Yakima, WA 98908

To Yakima Valley Canal Co: Dick Woodin, President
Yakima Valley Canal Company
1640 Garretson Lane
Yakima, WA 98908

To Yakima Tieton Irrigation Dist: Rick Dieker, Manager
Yakima Tieton Irrigation District
470 Camp 4 Road
Yakima, WA 98908

or to such other addresses as the parties may hereafter designate in writing. Such notices shall be deemed effective when mailed or hand delivered at the addresses specified above.

10.3 Integration and Amendment of MOU.

This written document constitutes the entire agreement between the Sponsors. There are no other oral or written agreements between the parties as to the subjects covered herein. This MOU may be amended at any time by a unanimous decision of the Managers. All such amendments must be in writing signed by the Managers. Amendments shall be numbered, filed in accordance with Section 11.6, and attached to the original MOU.

10.4 Filing with County Auditor and City Clerk.

The City shall file a copy of this Agreement with the Yakima County Auditor's Office (pursuant to RCW 39.34.040) and the Yakima City Clerk.

Approved as to form:

Date: 1-25-08

ATTEST:

1/29/08

Clerk of the Board Tiera L. Girard
Deputy Clerk of the Board

BOARD OF YAKIMA COUNTY COMMISSIONERS

Ronald Gamache, Chairman

Mike Leita, Member

Rand Elliott, Member

SEAL OF THE BOARD OF YAKIMA COUNTY COMMISSIONERS STATE OF WASHINGTON

NOB HILL WATER ASSOCIATION

Date: 2/14/08

Zella West, Manager

YAKIMA VALLEY CANAL COMPANY

Date: 4/2/2008

Dick, Woodin, President

YAKIMA TIETON IRRIGATION DISTRICT

February 12, 2008
Date:

Richard Dieker
Rick Dieker, Manager

COPY

RESOLUTION NO. D-5346

A RESOLUTION authorizing the City Manager and the City Clerk to execute a Water Service Agreement with the City of Union Gap.

WHEREAS, portions of the Yakima domestic water system are situated so as to be capable of affording domestic water service to property in some areas of Union Gap and adjacent to Union Gap which areas are not served by the Union Gap domestic water system, and the cities of Yakima and Union Gap desire to authorize connections to the City of Yakima domestic water system for service to such property, or portions thereof, and

WHEREAS, both Yakima and Union Gap are public agencies authorized by law to engage in furnishing domestic water service, and the Water Service Agreement is executed for the purpose of authorizing domestic water service to be furnished by the City of Yakima to property within certain areas of the City of Union Gap, to provide for connections to the Yakima domestic water system to serve such property (or portions thereof as water connections may be made from time to time), and to set forth the powers, rights, objectives and responsibilities of Yakima and Union Gap relating to such water service, all pursuant to and in accordance with RCW 39.34.080, now, therefore;

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF YAKIMA:

The City Manager and the City Clerk of the City of Yakima are hereby authorized and directed to execute the attached and incorporated Water Service Agreement City of Yakima - City of Union Gap.

ADOPTED BY THE CITY COUNCIL this 21st day of April, 1987.

S/ HENRY BEAUCHAMP
Mayor

ATTEST:

/S/ BARBARA J. TONEY
Acting City Clerk

WATERSER.RES/B7

WATER SERVICE AGREEMENT

CITY OF YAKIMA - CITY OF UNION GAP

THIS AGREEMENT, executed this 21 day of April, 1987, by and between the City of Yakima, Washington, hereinafter called Yakima, and the City of Union Gap, hereinafter called Union Gap;

WITNESSETH:

WHEREAS, portions of the Yakima domestic water system are situated so as to be capable of affording domestic water service to property in some areas of Union Gap and adjacent to Union Gap which areas are not served by the Union Gap domestic water system, and the parties desire to authorize connections to the Yakima domestic water system for service to such property, or portions thereof, and

WHEREAS, both Yakima and Union Gap are public agencies authorized by law to engage in furnishing domestic water service, and this agreement is executed for the purpose of authorizing domestic water service to be furnished by Yakima to property within certain areas of Union Gap, to provide for connections to the Yakima domestic water system to serve such property (or portions thereof as water connections may be made from time to time), and to set forth the powers, rights, objectives and responsibilities of Yakima and Union Gap relating to such water service, all pursuant to and in accordance with RCW 39.34.080, now, therefore;

The parties agree as follows:

Section 1. AUTHORIZATION TO FURNISH WATER SERVICE - AUTHORIZATION TO CONNECT TO WATER SYSTEM.

A. AUTHORIZATION TO FURNISH WATER SERVICE: Union Gap does hereby authorize Yakima to furnish domestic water service to certain property, to be determined as provided by this agreement, within the corporate boundaries and Utility Service Area of Union Gap and the Water Service Area of Union Gap

which areas are more economically served by Yakima, all in accordance with and subject to the provisions, terms and conditions of this agreement.

B. AUTHORIZATION TO CONNECT TO WATER SYSTEM: Yakima does hereby authorize the connection to the Yakima domestic water system of certain property, to be determined as provided by this agreement, within the Utility Service Area of Union Gap and the Water Service Area of Union Gap which areas could be more economically served by Yakima's domestic water system, all in accordance with the provisions, terms, and conditions of this agreement. The Utility Service Area of Union Gap shall include the corporate limits of Union Gap now and in the future and the area described in Exhibit 1 which is attached and incorporated herein. The Water Service Area of Union Gap shall be the area described in Exhibit 2 which is attached and incorporated herein.

Section 2. DETERMINATION OF PROPERTY TO BE SERVED.

Properties within the area described on Exhibit 2 shall be eligible to be afforded City of Yakima domestic water service pursuant to this agreement. In addition to the area depicted in Exhibit 2 the Union Gap City Supervisor and the Yakima City Manager may agree, from time to time, on additional properties within the Utility Service Area of Union Gap to which Yakima may furnish domestic water service where such properties are adjacent to Yakima's domestic water mains.

When water service is desired for property within Exhibit 1, the owner, developer, or other person shall be responsible for paying to the City of Yakima all fees and charges assessed by the City of Yakima Municipal Code for connection to the City of Yakima domestic water system. Property to be afforded such service shall be that which is economically feasible of being served by a portion of the Yakima domestic water system as it exists at the time such service is desired. No water connection within the area described in Exhibit 1 of the type contemplated by this agreement shall be made unless the City

Supervisor of Union Gap and the Yakima City Manager give their prior approval to such connection as conforming to the provisions and intent of this agreement.

Section 3. WATER SERVICE AREA BOUNDARY CHANGES.

Union Gap and Yakima acknowledge that the boundary of the Utility Service Area, depicted on Exhibit 1, is subject to review by the Yakima County Boundary Review Board which Board may approve, disapprove, or modify such boundaries. Union Gap and Yakima hereby agree that this agreement shall be void in the event that such Board or any other agency or board with authority over this agreement shall lawfully disapprove or modify the Utility Service Area depicted in Exhibit 1 or otherwise lawfully modify or disapprove of any other material provision of this agreement.

Section 4. CONNECTIONS AND METER INSTALLATIONS.

A. METER INSTALLATION: Connections and meter installations shall be made by the City of Yakima after the customer has first paid the appropriate permit fees and installation charges in accordance with this agreement. The connection shall be subject to inspection and approval for code compliance by Yakima and Union Gap code enforcement personnel in accordance with the Uniform Plumbing Code as adopted by the cities of Yakima and Union Gap, and ordinance policies of both cities in effect at the time the connection is made. Should there be a discrepancy between the two plumbing codes or city policies and ordinances the more restrictive provision shall apply.

B. MAINTENANCE OF FACILITIES: The City of Yakima shall own all meters, connections, water mains and other facilities and provide the necessary repair and maintenance for all facilities.

Section 5. COMPUTATION AND PAYMENT OF WATER SERVICE CHARGE.

A. TIME SCHEDULE: As part of its normal billing cycle, Yakima shall render to Union Gap an accounting for water service to all properties Yakima served the previous billing

period which are connected to a sewer main owned by Union Gap. Union Gap shall, on a continuing basis, furnish Yakima with a current list of all properties served by Union Gap sewer service and City of Yakima domestic water service.

B. CHARGES: All customer charges and fees for domestic water service shall be in accordance with and provided by the City of Yakima Municipal Code. Such charges shall be billed and collected by Yakima.

Section 6. COMPLIANCE WITH APPLICABLE LAWS.

In addition to complying with Yakima and Union Gap City Code requirements mentioned in Section 4 of this agreement, applicants for and owners of property served with domestic water service pursuant to this agreement shall otherwise comply with all applicable ordinances and policies of the City of Yakima and the City of Union Gap, and with all applicable laws, rules, regulations and policies dealing with water delivery facilities of any governmental agency, as those ordinances, policies, laws, rules or regulations now exist and as they, or any of them, may be amended. Provided, however, that City of Yakima Outside Utility Agreements applicable to property served persuant to this agreement shall not bind such property to annexation by the City of Yakima.

Section 7. ACCESS TO RECORDS.

At all reasonable times, the Union Gap City Supervisor, or his designee, shall have access to and the right to examine and copy such records of Yakima as may be needed for the purpose of computing Union Gap's sewer service charge. Similarly the City Manager, or his designee, of Yakima shall have access to all pertinent records of the City of Union Gap.

Section 8. EFFECTIVE DATE--FILING OF AGREEMENT WITH WASHINGTON STATE OFFICE OF COMMUNITY DEVELOPMENT.

This agreement shall become effective on the _____ day of _____, 1987, or as soon thereafter as this agreement may legally become effective by virtue of the expiration of sixty days from the date of filing an executed copy of this

agreement with the Washington State Office of Community Development in accordance with RCW 39.34.050 and 39.34.120.

Section 9. DURATION OF AGREEMENT--TERMINATION.

This agreement is for an indefinite duration, and shall remain in effect until such time as either party gives six months written notice to the other party that the agreement is terminated.

Section 10. FILING OF AGREEMENT.

Executed copies of this agreement shall be filed with the City Clerk of Yakima, the City Clerk of Union Gap, the Yakima County Auditor, and the Secretary of State of the State of Washington prior to the effective date of this agreement, in accordance with RCW 39.34.040.

CITY OF YAKIMA, WASHINGTON,
a municipal corporation

By: _____
CITY MANAGER

Signed this 21st day of April, 1987.

ATTEST:

Barbara J. Toney
ACTING CITY CLERK

City Contract No. 87-19
Resolution No. D-5346

CITY OF UNION GAP, WASHINGTON,
a municipal corporation

By: John P. Hodkinson Jr.
MAYOR

Signed this 21 day of April, 1987.

ATTEST:

Regina Williams
City Clerk

EXHIBIT 1

Utility Boundary Of Service Area of Union Gap

The Southeast quarter, and all that part of the Southwest quarter of Section 36, Township 13 North, Range 18 East, W.M. lying northerly and easterly of the City of Yakima corporate limits as established on the date of execution of the attached agreement

and

All that part of the Southwest quarter of Section 31, Township 13 North, Range 19 East, W.M. lying west of the City of Yakima corporate limits as established on the date of execution of the attached agreement, and northerly and westerly of the Town of Union Gap corporate limits as established on the date of execution of the attached agreement.

and

All that part of Lot 2 of Section 1, Township 12 North, Range 18 East, W.M. lying west of the west line of South Third Avenue; and all of Lot 3, said Section 1; and all that part of Lot 4, said Section 1, lying east of the City of Yakima corporate limits as established on the date of execution of the attached agreement.

VICINITY MAP

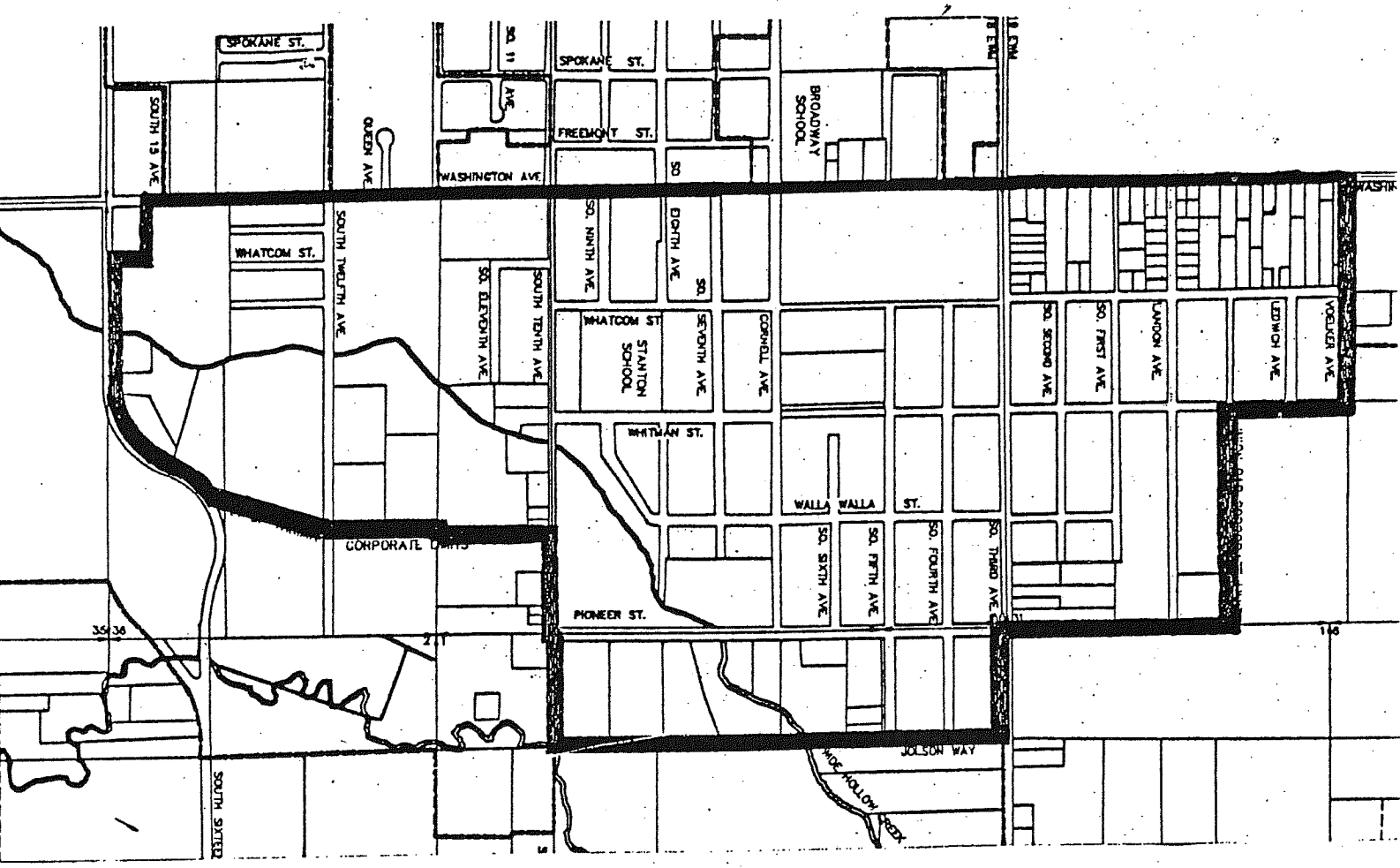
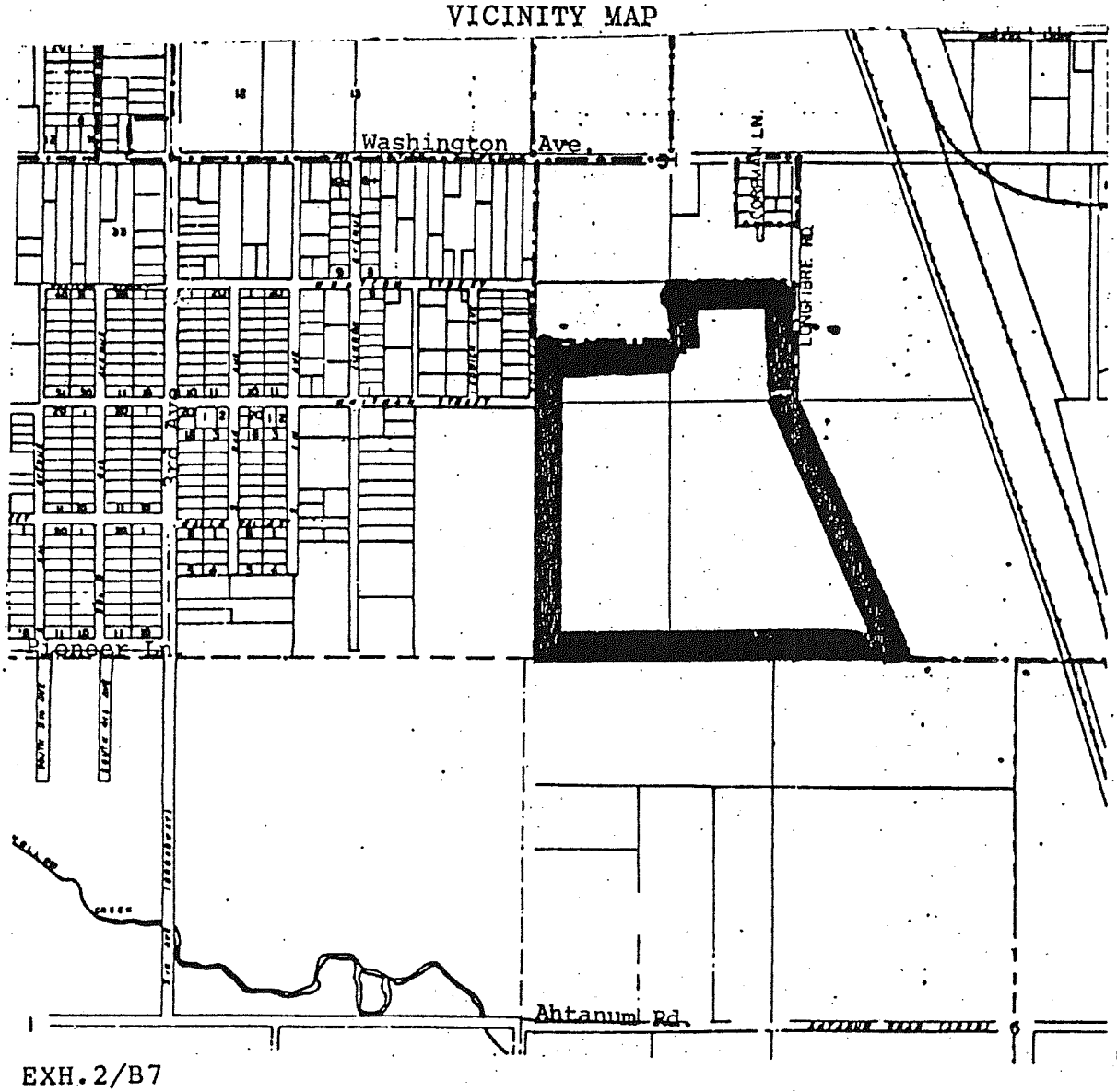


EXHIBIT 2

Boundary Of Water Service Area Of Union Gap

All that part of the south half of Section 31, Township 13 North, Range 19 East, W.M. lying within the corporate limits of the Town of Union Gap as now established on the date of execution of the attached agreement.
EXCEPT any part thereof lying west of the west line of the east half of the east half of the Southwest quarter of said Section 31.

VICINITY MAP



MEMORANDUM OF UNDERSTANDING

September 6, 2000

The purpose of this Memorandum of Understanding is to put in writing a verbal agreement and understanding between the City of Yakima Water/Irrigation Division and Nob Hill Water Association. This agreement is in regard to the service area boundary between the two domestic water systems and also the mutual aid arrangement between the two organizations involving water system interties.

The City has prepared a City of Yakima Information Services GIS map dated September 5, 2000 which delineates the existing boundary between the two systems. Much of the area on each side of the boundary is already developed so the boundary in this area will not change. In areas which are not completely developed the proposed boundary line has been located in a place which has been mutually agreed upon. However, this line may be changed by mutual written agreement if it appears to be in the best interest of the City, Nob Hill Water and their customer(s).

In line with the mutual aid situation the City and Nob Hill Water already have three interties between the two systems so that water can be transferred from one system to the other. This arrangement is for emergency purposes only and is not designed for normal operation of the systems. These interties have been used a few times in the past and have proven to be very beneficial. Consequently it appears to be in the best interests of both parties to continue this mutual-aid arrangement.

NOB HILL WATER ASSOCIATION

Preston L. Shepherd, P.E.
Manager

CITY OF YAKIMA

Dick Zais, City Manager

Appendix G

Water Use Efficiency Goals – Council Resolution

RESOLUTION NO. R-2008-11

A RESOLUTION Adopting the Water Use Efficiency Goals "Reduce Distribution System Loss to 10% or less by July 1, 2010" and "Maintain the current residential per capita use" and establishing water use efficiency measures consistent and compliant with the Water Use Efficiency program established by the Department of Health.

WHEREAS, in 2003, the Washington State Legislature passed Engrossed Second Substitute House Bill 1338, better known as the Municipal Water Law, to address the increasing demand on our state's water resources; and

WHEREAS, the law established that all municipal water suppliers must use water more efficiently in exchange for water right certainty and flexibility to help them meet future demand; and

WHEREAS, the Legislature directed the Department of Health to adopt an enforceable Water Use Efficiency program; and

WHEREAS, the Department of Health established the Water Use Efficiency program in WAC 246-290, which became effective on January 22,2007; and

WHEREAS, in WAC 246-290-830 (water use efficiency goal setting) the City of Yakima must set at least two (2) water use efficiency goals; and

WHEREAS, in WAC 246-290-810 (water use efficiency program) the City of Yakima must establish at least nine (9) water efficiency measures; and

WHEREAS, the water use efficiency goals and measures have been presented and discussed through a public process where public input has been accepted, now, therefore,

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF YAKIMA:

The City of Yakima adopts the following water use efficiency goals: (1) Reduce Distribution System Loss to 10% or less by July 1, 2010, and (2) Maintain the current residential per capita use; and establishes the water use efficiency measures as stated in the attached and incorporated "City of Yakima Water System Proposed Water Use Efficiency Goals and Measures".

ADOPTED BY THE CITY COUNCIL this 15th day of January 2008.

David Edler, Mayor

ATTEST:

City Clerk

COUNCIL ACTION ON
BUSINESS MEETING
JANUARY 15, 2008
COUNCIL CHAMBERS - CITY HALL

6:00 P.M. – PUBLIC SESSION

1. Roll Call

   Present:

Council:	Mayor Dave Edler, presiding, Assistant Mayor Micah Cawley, Council Members Kathy Coffey, Rick Ensey, Norm Johnson, Bill Lover and Neil McClure
Staff:	City Manager Zais, Senior Assistant City Attorney Harvey and City Clerk Moore

2. Invocation/Pledge of Allegiance
   Assistant Mayor Cawley gave an invocation and led the Pledge of Allegiance

3. Open Discussion for the Good of the Order
   A. Proclamations
      - Martin Luther King, Jr. Week
        Mayor Edler read a proclamation declaring the week of January 20-26, 2008 as Martin Luther King, Jr. Week. Reverend Trimble and Ester Huey accepted the proclamation and described various activities scheduled throughout the week.

   B. Special presentations / recognitions--None

   C. Status report on prior meeting's citizen service requests
      - Request for crosswalk at 16th Avenue and Hathaway--Tony Courcy
        Shelley Willson, Street and Traffic Operations Manager reviewed the history and project status of crosswalk enhancement at this location. She advised the project is listed on the City's Transportation Improvement Program, which is required for grant application processes. Staff is actively pursuing grant funding opportunities and coordinating with DSHS for potential improvements.

      - Sidewalk development standards at Fairfield Inn--Lynne Kittelson
        Bill Cook, Director of Community and Economic Development, advised that the parcels in front of the Fairfield Inn are vacant at this time. As those parcels are developed, they are required to comply with Title 12 to construct curb, gutters and sidewalks.

   D. Appointments to Boards and Commissions
      - Yakima Housing Authority Board

      ACTION: Mamie Perdue was reappointed to the Yakima Housing Authority Board. **VOTE:** Unanimous

      - Yakima Valley Conference of Governments

      ACTION: Council Member Johnson was selected for nomination to represent the City on the Executive Board. **VOTE:** Unanimous

4. Consent agenda
ACTION: Items 12C and 12D were removed from the consent agenda. The consent agenda was approved as read. **VOTE:** Unanimous

*A. Council Minutes -- None
*B. Council Committee Meeting Reports -- None

5. Audience Participation

- Reverend John Everhart was concerned about the lack of local individuals employed on projects awarded to outside contractors. He suggested the Council look for ways to employ more local people on projects.

- Lynne Kittelson asked the City to enforce the ordinance pertaining to snow removal on sidewalks in front of residences.

CITY MANAGER'S REPORTS

6. Consideration of a Resolution authorizing execution of a contract with Habitat for Humanity for the use of 2007 HOME funds for the purchase and preparation of lots for two new homes for low income persons

Mike Nixon, Executive Director for Habitat for Humanity, spoke about the project and described their program in Yakima.

Maud Scott talked about historic preservation and asked that Habitat for Humanity consider the historical influence in that area when designing the new homes.
ACTION: Resolution adopted. **RESOLUTION NO. R-2008-09. VOTE:** Unanimous

7. Consideration of a Resolution authorizing forgiveness of a lien to the Yakima County Coalition for the Homeless for property located at 604 and 606 Central Avenue and execution of a full reconveyance deed for the property.

Bill Cook, Director of Community and Economic Development, explained the background of the lien against the Coalition's property and their request to the City to forgive the loan, which would allow the final sale of the property.
ACTION: Resolution adopted. **RESOLUTION NO. R-2008-10.**
VOTE: Unanimous

8. Consideration of a Resolution adopting the water use efficiency goals and establishing water use efficiency measures consistent and compliant with the Water Use Efficiency program established by the Department of Health

Dave Brown, Water and Irrigation Manager, gave background of water rights to municipalities and the need to establish measures for efficient use of our water.
ACTION: Resolution adopted. **RESOLUTION NO. R-2008-11.**
VOTE: Unanimous

*9. Consideration of Resolutions authorizing execution of agreements with:

A. Hispanic Chamber of Commerce of Yakima County
ACTION: Resolution adopted. **RESOLUTION NO. R-2008-12**

B. Hearing Examiner and Hearing Examiner Pro Tem
ACTION: Resolution adopted. **RESOLUTION NO. R-2008-13**

*10. Consideration of a Resolution authorizing execution of an engineering and consulting services agreement with Huibregtse, Louman Associates, Inc. for services associated with the piping of the Fruitvale Canal from North 6th Avenue to "H" Street and North 9th Street
ACTION: Resolution adopted. **RESOLUTION NO. R-2008-14**

*11. Consideration of a Resolution authorizing execution of various contracts and agreements specifically for the 800Mhz rebanding project of the Public Works radio system
ACTION: Resolution adopted. **RESOLUTION NO. R-2008-15**

12. Consideration of Resolutions authorizing execution of agreements for the Public Works Department with:

*A. Yakima Valley Community College (YVCC) for Retired and Senior Volunteer Program (RSVP) support services
ACTION: Resolution adopted. **RESOLUTION NO. R-2008-16**

*B. Allied Arts Council of Yakima Valley for a visual and performing arts program for youth
ACTION: Resolution adopted. **RESOLUTION NO. R-2008-17**

C. Recreation and Conservation Office (RCO), formerly known as the Interagency Committee for Outdoor Recreation (IAC) for Upper Kiwanis Park redevelopment

Council Member Lover asked if the City had any flexibility in the development of the project, i.e. could we build only some of the items listed and include other items that were not listed. Denise Nichols, Parks and Recreation Manager, answered that at the time of our grant application, we had to list the amenities we planned to do. If we minimally modified those, it might be acceptable, but if we changed the recreational scope, we would have to petition again. Denise outlined the timeline for the project.
ACTION: Resolution adopted. **RESOLUTION NO. R-2008-18. VOTE:** Unanimous

D. Opportunities Industrialization Center (OIC) to amend the Southeast Community Center operating agreement

Denise Nichols explained the amendment to the 2004 contract with OIC. Council Member McClure was concerned with the terms of the agreement and the contract renewal process. Council Member Lover was concerned that OIC had not obtained alternate funding after three years of being funded by the City.
ACTION: Motion to amend the wording in paragraph 4, Term of Agreement, in the original contract so the option is given to the City rather than to the Operator. Motion failed 5-2. **VOTE:** McClure, Cawley, Coffey, Edler and Johnson voting

no. **ACTION:** Resolution adopted. **RESOLUTION NO. R-2008-19**. **VOTE:** Unanimous.

*13. Consideration of the Final Contract Payment for the Yakima Police and Legal Center laboratory remodel
ACTION: Standard Motion V-B to accept the project and approve final payment was approved.

*14. Consideration of the Final Contract Payment for the Capitol Theatre re-roofing project
ACTION: Standard Motion V-B to accept the project and approve final payment was approved.

*15. Set date of Public Hearing for February 19, 2008 at 7:00 p.m. regarding the City of Yakima's Critical Areas Ordinance update
ACTION: February 19, 2008 was set as the date of Public Hearing regarding the City of Yakima's Critical Areas Ordinance update

ORDINANCES

*16. Consideration of an Ordinance adopting RCW 46.61.668 prohibiting text messaging while driving and RCW 46.61.667 prohibiting cell phone use while driving
ACTION: Ordinance passed. **ORDINANCE NO. 2008-01**

17. Other Business

- The Yakima Citizens Special Elections Committee requested the Council to schedule a public hearing at its February 5, 2008 business meeting to obtain public input for the Yakima School District Maintenance and Operation Levy to be held on February 19, 2008.
  ACTION: Motion to schedule a public hearing on February 5, 2008 carried. **VOTE:** Unanimous

- Assistant Mayor Cawley made the following remarks:
  A. Requested the Codes division to enforce the ordinance that requires residents to have a visible house number on their homes.
  B. Thanked Gary Cullier for his service as the City's Hearing Examiner.
  C. Advised that the Harman Center board had extended an invitation to Council Members to visit their facility.

18. Adjournment
ACTION: Council adjourned at 8:00 p.m. to January 26, 2008 at 8:30 a.m. at the Yakima Convention Center for a Strategic Planning Workshop.

Appendix H

Coliform Monitoring Plan

CITY OF YAKIMA
DOMESTIC WATER
COLIFORM MONITORING PLAN
WAC 246-290-300 (3), (b), (i), (ii A, B,C)

SYSTEM INFORMATION

Water System Name:
City of Yakima

System Identification Number:
991509

Sources:

SO1 Naches River	17,360 GPM, Surface Water, Permanent Source SW 1/4 of SW 1/4 of Sec. 13, TWP 14N, R. 17E
SO2 Airport Well	2,700 GPM, 1,100 ft. Well, Seasonal Source NE ¼ of NW 1/4 of SE 1/4 of Sec. 35, TWP 13N, R. 18E
SO3 Kiwanis Well	2,350 GPM, 850 ft. Well, Seasonal Source SW 1/4 of NW 1/4 of Sec. 20, TWP 13N, R. 19E
SO4 Ranney Well	5,000 GPM, 20 ft. Collector, Out of Service
SO6 59700M/Nob Hill	3,000 GPM, Intertie, Emergency Source SE 1/4 of SW 1/4 of Sec. 21, TWP 13N, R. 18E
SO7 59700M/Nob Hill	1,000 GPM, Intertie, Emergency Source SE 1/4 of SW 1/4 of Sec. 20, TWP 13N, R. 18E
SO8 Kissel Well	2,900 GPM, 1,171 ft. Well, Seasonal Source NW 1/4 of NW 1/4 of Sec. 35, TWP 13N, R. 18E
SO9 59700M/Nob Hill	2,000 GPM, Intertie, Emergency Source SW 1/4 of NW 1/4 of Sec. 03, TWP 12N, R. 18E

Storage Reservoirs:

Low Level Pressure Zone	Six (6) Million Gallon, 40th Ave. and Englewood Ave.
Middle Level Pressure Zone	Two (2) Twelve (12) Million Gallon, Peck's Canyon and Reservoir Road
High Level Pressure Zone	Two (2) One (1) Million Gallon, No. 58th Ave. and Scenic Drive.

Booster Pump Stations:

Gleed Pump Station – Serves Gleed area

North 40th Ave. and River Road Pump Station – Serves middle level pressure zone

Stone Church Booster Pump Station – Serves middle level pressure zone

Reservoir Road Pump Station – Serves high level pressure zone

Pressure Reducing Stations

20th Ave. + Tieton Drive	6 inch PRV
19th Ave. + Chestnut Ave.	6 inch PRV
Park + Summitview Ave	6 inch PRV
20th Ave. + Lincoln Ave	8 inch PRV's (3)
20th Ave. + Bonnie Doone	6 inch PRV
30th Ave. + Nob Hill Blvd.	8 inch PRV
31st Ave. + Clinton Way	4 inch PRV
32nd Ave. + Viola Ave.	6 inch PRV
40th Ave pump house	8 and 12 inch PRV
40th Ave. + Richey Road	6 inch PRV
27th Ave. + Fraser Way	4 inch PRV
506 N. 40th Ave	8 inch PRV
Westpark + N. 41st Ave.	4 inch PRV

Treatment:

S01 Naches River Water Treatment Plant

Chlorination –	Disinfection, organics and color removal.
Hydraulic Mix -	Turbidity, organics and color removal.
Coagulation -	(Utilizing Aluminum Chlorohydrate and Cationic Polymer) Turbidity, organics and color removal.
Flocculation -	Turbidity, organics and color removal.
Sedimentation –	Turbidity, organics and color removal.
Filtration -	(Dual-media) Turbidity, organics and color removal.
Sodium Hydroxide –	Corrosion control
Hydrofluorosilicic Acid -	Fluoridation
Activated Carbon -	Organics, color and taste/odor removal.

SO2 Airport Well

Chlorination - Disinfection – Not to GWR compliance monitoring requirements. Subject to Triggered Source Monitoring upon BacT positive while running.

SO3 Kiwanis Well

Chlorination - Disinfection – Not to GWR compliance monitoring requirements. Subject to Triggered Source Monitoring upon BacT positive while running.

SO4 Ranney Well
Out of Service

SO6 Nob Hill Water Co. Intertie
Chlorinated

SO7 Nob Hill Water Co. Intertie
Chlorinated

SO8 Kissel Well
Chlorination - Disinfection – Not to GWR compliance monitoring requirements. Subject to Triggered Source Monitoring upon BacT positive while running.

SO9 Nob Hill Water Co. Intertie
Chlorinated

S10 Gardner Well
Chlorination- Disinfection – Complies with GWR and is subject to Compliance Monitoring requirements of 4-log virus removal (CT calc).

Population Served:

65,038

Number Service Connections:

27,258

Number Pressure Zones:

4

Approximate Percentages of Population Served per Pressure Zone:

	Percent
Low Level Zone	78.4
Middle Level Zone	18.5
High Level Zone	3.2
Gleed Area	<1

System Description:

The Yakima Water System is normally served by the Naches River source. Water leaving the treatment plant enters the low level zone and is used by the customers, while also entering the six (6) million gallon

reservoir or is pumped to the two (2) twelve (12) million gallon reservoirs or pumped directly into the middle level zone by the Stone Church Booster Pump Station. The two (2) twelve (12) million gallon reservoirs supply the middle level zone. Water is pumped from the two (2) twelve (12) million gallon reservoirs to the two (2) one (1) million gallon reservoirs. The one (1) million gallon reservoirs supply the high level zone. The Gleed area is served by a pump station that pumps from the transmission main running from the treatment plant to the distribution system.

The high and middle level zones and the middle and low level zones are separated by pressure reducing valves (PRV's) and closed valves. The PRV's only operate during an emergency and otherwise act as a closed valve.

The wells were designated "seasonal" by DOH in 2009, and are used in emergency (typically seasonal) situations to support the Naches River Water Treatment Plant as necessary.

Nob Hill Water Company intertie sources are used only in emergencies when the Naches River Water Treatment Plant and/or wells cannot supply the demand.

Sampling Information

Number Samples Required: Department of Health regulations require seventy (70) routine samples per month from the distribution system and seven (7) Naches River raw water coliform sample.

COLIFORM SAMPLING LOCATIONS AND ROTATION

Site	Customer	Location
X01	5th Avenue Deli	415 W. Walnut Ave.
X02	Golden Wheel	9 So. 1st Street
X03	Isaak's Furniture	1010 W. Nob Hill Blvd.
X04	Smitty's Conoco	304 W. Mead Ave.
X05	Mattress Outlet	2107 S. 1st Street
X06	Sub Shop of Yakima	109 Gateway Center
X07	Yakima Regional Hospital	110 So. 9th Ave.
X08	Yakima City Hall	129 No. 2nd Street
X09	Red Lobster Restaurant	905 No. 1st Street
X10	Stewart Subaru	506 Fruitvale Blvd.
X11	Holiday Inn Express	1001 E. "A" Street
X12	Chiro. Acupunc. Mass. Thr.	3802 W. Summitview Ave.
X13	Culligan Water Conditioning	617 Fruitval Blvd.
X14	Yakima Valley Endodontics	1020 So. 40th Ave. Ste H
X15	Yakima Med. Consul., Inc.	622 So. 36th Ave.
X16	Pro Golf Discount	2106 W. Nob Hill Blvd.
X17	Yakima Airport	2300 W. Washington Ave.
X18	Les Schwab Tire Store	702 E. Yakima Ave.
X19	Elliott Tire & Service Center	1 W. Lincoln Ave.
X20	Yak. Senior Citizen Center	602 No. 4th Street
X21	PepperTree Inn	1614 No. 1st Street
X22	Valley Imaging Partners	314 S 11th Ave.
X23	Yakima County Library	102 No. 3rd Street
X24	McDonald's	1600 E. Chestnut Ave. (Wal-Mart)

X25	City of Yakima Cable Comm.	124 So. 2nd Street
X26	901 Pasta	910 Summitview Ave.
X27	College Mart	1106 W. Nob Hill Blvd.
X28	Ding Ho Restaurant	16th Ave. & Washington Ave.
X29	Keeler's Home Nurs. Sup.	2001 W. Lincoln Ave.
X30	Orchard Park Apartments	620 N. 34th Ave.
X31	J.M. Perry Institute	2011 W. Washington Ave.
X32	Smitty's Café (conoco)	3508 Fruitvale Blvd.
X33	Salon Nouveau	40th Ave. & Summitview Ave.
X34	Rainford Lube and Oil	3310 W. Nob Hill Blvd.
X35	Albertson's Grocery Store	1610 W. Lincoln Ave.
X36	Jack Horner Electric	1212 No. 16th Ave.
X37	Fiddlesticks Store	1601 Summitview Ave.
X38	Yak. County Detent. Center	1728 Jerome Ave.
X39	Star Rentals	1601 S 1st Ave.
X40	Maid O'Clover Mini-Mart	1802 E. Nob Hill Blvd.
X41	Les Schwab Tire Center	2002 So. 1st. Street
X42	YMCA	5 No. Naches Ave.
X43	Carey Motors	3204 Fruitvale Blvd.
X44	Yak. County Fairgrd. Admin.	1301 So. 10th Street
X45	Papa John's	3502 Summitview Ave.
X46	Yakima Housing Authority	810 No. 6th Ave.
X47	Casa Mia Restaurant	3312 W. Nob Hill Blvd.
X48	Westside Medi-Center	4001 Tieton Drive
X49	Schaake Corp.	3901 Faurbanks
X50	Empire Foods	3361 Mapleway (Gleed)
X51	St. Paul School	1214 W. Chestnut Ave.
X52	Yakima Valley Credit Union	401 Tieton Dr.
X53	Yakima County Court House	128 No. 2nd Street
X54	Supercuts	110 No. Fair Ave. (Gateway Center)
X55	WA. State Liquor Store	101 No. Fair Ave. (Gateway Center)
X56	Bi-Mart Store	309 So. 5th Ave.
X57	Oil Can Henry's	2501 W Nob Hill
X58	Kimmel's Athletic Supply	2105 No. 22nd Ave. (Lincoln Center)
X59	Bi-Mart Store	1207 No. 40th Ave.
X60	Nendel's Inn	1104 No. 1st Street
X61	Econo Lodge	1405 No. 1st Street
X62	Susie's Dud's and Sud's Laundry	1025 No. 1st Street
X63	People for People	302 W. Lincoln Ave.
X64	McKinney's Auto Glass	221 So. 1st Street
X65	McDonalds	1305 So. 1st Street
X66	Bemis Appliance	1423 S. 1st Street
X67	Don Poncho	605 E. Nob Hill Blvd.
X68	Taco Bell	4001 Fruitvale Blvd.
X69	Catholic Credit Union	110 No. 5th Ave
X70	Picatti Brothers	105 So. 3rd Ave.

Site	**Customer**	**Location**
Z01	Yakima Co-Op	2202 So. 1st. Street
Z02	Taco Time Restaurant	1020 so. 16th Ave.
Z03	Safeway Grocery Store	24th Ave. & Nob Hill Blvd.
Z04	7-11 Mart	1601 Fruitvale Blvd.
Z05	Ambulance	4201 Summitview
Z06	Yakima Tennis Club	2505 Fruitvale Blvd.
Z07	7-11 Mart	1711 E. Nob Hill Blvd.
Z08	5th Ave. One Stop (Conoco)	701 No. 5th Ave.
Z09	Valley Lock and Key	402 So. 3rd Street

Z10	Sun Tower Apartments	6 No. 6th Street
Z11	Valiknaje-Moore-Shore	405 E. Lincoln Ave.
Z12	Bank of America	201 No. 40th ave.
Z13	Yakima Eye Care	506 N 40th Ave.
Z14	Maid O'Clover Mini-Mart	3602 Tieton Drive
Z15	Big Cheese Pizza	2204 W. Nob Hill Blvd.
Z16	Tom Tom Espresso	412 So. 40th Ave.
Z17	Valley Ford	910 So. 1st Street
Z18	7-11 Store	1512 Summitview Ave.
Z19	Lynch Distributing	106 W. Mead Ave.
Z20	Sunfair Chevrolet	1600 Terrace Heights Drive
Z21	7-11	810 E. Yakima Ave.
Z22	Howard Johnson	9 No. 9th Street
Z23	Vida Rug Gallery	113 E. Yakima Ave.
Z24	Clarion Hotel	1507 No. 1st Street
Z25	CINTAS	918 No. 5th Ave.
Z26	City of Yakima Shops	2301 Fruitvale Blvd.
Z27	ARCO Mini-Mart	No. 40th Ave. + Fruitvale Blvd.
Z28	Jackpot Food Mart	620 No. 16th Ave.
Z29	Hillcrest Salon	3504 Summitview Ave.
Z30	Comfort Suites	3702 Fruitvale Blvd.
Z31	Memorial Hospital	2811 Tieton Drive
Z32	Albertson's Store	401 So. 40th Ave.
Z33	Round Table Pizza	1300 No. 40th Ave. #109
Z34	Grainger	905 1/2 So. 1st Street
Z35	DSHS	1002 So. 16th Ave.
Z36	Valley Marine	1900 "A" Fruitvale Blvd.
Z37	Big "O" Tires	2601 W. Nob Hill Blvd.
Z38	Wray's Thriftway	301 W. Nob Hill Blvd.
Z39	First Presbyterian Church	9 So. 8th Ave.
Z40	Employment Security Office	306 Division
Z41	Sherwin Williams Paints	1230 So. 1st Street
Z42	Safeway Grocery Store	605 E. Mead Ave.
Z43	The Bindery	310 E. Chestnut Ave.
Z44	Wendy's	1001 No. 1st Street
Z45	ARCO Mini-Mart	1801 E. Nob Hill Blvd.
Z46	Hospital Business	Nob Hill & 38th
Z47	Ponderosa Retirement Center	3300 Englewood Ave.
Z48	Tieton Village Drugs	3708 Tieton Drive
Z49	St. Timothy's Epis. Church	4105 Richey Road
Z50	Suntides Market	11 Pence Road
Z51	Yakima OIC	815 Fruitvale Blvd.
Z52	Chevron Mini-Mart (Cruisin')	702 W. Yakima Ave.
Z53	McDonalds	1601 W. Lincoln Ave.
Z54	Big R	2112 S 1st St.
Z55	Taco Bell	2124 So. 1st Street
Z56	Gary's Fly Shop	423 W. Yakima Ave.
Z57	Cramer's	306 S.1st. Street
Z58	K's Coin Laundry	602 Fruitvale Blvd.
Z59	Figg's Eye Clinic	3909 Castlevale, #300
Z60	EDS	33 So. 2nd Ave.
Z61	KNDO	1608 So. 24th Ave.
Z62	Miner's	2415 So. 1st Street
Z63	Arby's	1227 So. 1st Street
Z64	Nails & Spa	1519 Summitview Ave.
Z65	Yakima Athletic Club	2501 Racquet Lane
Z66	Bruchi's	302 W. Nob Hill Ave.
Z67	Red Robin Rest.	2706 W. Nob Hill Blvd
Z68	Oil Can Henry's	3805 River Road

Z69	Pizza Hut	3915 Kern Road
Z70	Yakima Automotive	1 So. 12th Ave.

SAMPLING ROTATION (subject to modification as necessary by Cascade Analytical)

Month	First Week	Second Week	Third Week
January	X1 – X23	X24 – X46	X47 – X70
February	Z1 – Z23	Z24 – Z46	Z47 – Z70
March	X1 – X23	X24 – X46	X47 – X70
April	Z1 – Z23	Z24 – Z46	Z47 – Z70
May	X1 – X23	X24 – X46	X47 – X70
June	Z1 – Z23	Z24 – Z46	Z47 – Z70
July	X1 – X23	X24 – X46	X47 – X70
August	Z1 – Z23	Z24 – Z46	Z47 – Z70
September	X1 – X23	X24 – X46	X47 – X70
October	Z1 – Z23	Z24 – Z46	Z47 – Z70
November	X1 – X23	X24 – X46	X47 – X70
December	Z1 – Z23	Z24 – Z46	Z47 – Z70

ALTERNATE SAMPLE SITE LIST

Site	Customer	Location
L1	State Farm Insurance	1360 No. 16th Ave.
L2	Oil Can Henry's	2501 W. Nob Hill Blvd.
L3	Dairy Queen	15 So. 5th Ave.
L4	7-11 Mart	810 E. Yakima Ave.
L5	Star Rental	15 So. 5th Ave
M1	Fire Station #3 (City of Yakima)	511 N. 40th Ave.
M2	Vogue Cleaners	3804 Summitview Aave.
H1	Schuck's Auto Parts	14 West Park Center
H2	The Plaid Door	220 No. 40th Ave.
G1	"Apple Stop"	3112 Mapleway Road (Gleed)

In the event a routine sample cannot be collected at designated sites, a site from the alternate list above will be utilized.

L1 – L5	Low Level Zone Sites
M1 – M2	Middle Level Zone Sites
H1 – H2	High Level Zone Sites
G1	Gleed Area

The sample locations cover all areas of the City of Yakima Distribution System, including all sources when used or when a pressure reducing valve operates.

Monday and Tuesday shall be the normal collection days, allowing for repeat samples that may require sampling within the twenty four (24) hour time requirement. The fourth week of the month is reserved for make-up sampling should it be required.

REPEAT SAMPLING

When running the Naches River Water Treatment Plant:
For a positive coliform sample, three (3) repeat samples will be required. Every attempt will be made to collect the repeat sample within twenty four (24) hours of receiving the positive result. One repeat sample will be collected at the same site as the site with the positive coliform result. Collect one sample upstream and one sample downstream from the positive site. The up and downstream sites will be selected when repeat samples are required. Up and downstream sample sites are available for all routine sample sites.
When running the wells:
For a positive coliform sample, in addition to the above TCR required procedure, the well(s) in operation must be source sampled for E. coli within twenty-four (24) hours of notification. If found positive, EPA will provide guidance, including corrective measures, if necessary.

DOH Spokane contacts:

Mark Steward, Coliform Monitoring Program Specialist, (509) 329-2133.
Michael Wilson, P.E., Regional Engineer, (509) 329-2117.
Andres Cervantes, P.E., Regional Engineer, (509) 329-2120.

EPA Region 10 contact:

Margo Partridge, (360) 753-9459.

This Monitoring Plan will be updated and/or modified as relevant changes occur with the city system and DOH/EPA rules and regulations.

Appendix I

Inorganic Chemicals Monitoring Plan

CITY OF YAKIMA
DOMESTIC WATER
INORGANIC CHEMICALS MONITORING PLAN
WAC 246-290-300 (4), (f), (i A, B, C)

SYSTEM INFORMATION

Water System Name:
City of Yakima

System Identification Number:
991509

Sources:

SO1 Naches River	17,360 GPM, Surface Water, Permanent Source SW 1/4 of SW 1/4 of Sec. 13, TWP 14N, R. 17E
SO2 Airport Well	2,700 GPM, 1,100 ft. Well, Seasonal Source NE ¼ of NW 1/4 of SE 1/4 of Sec. 35, TWP 13N, R. 18E
SO3 Kiwanis Well	2,350 GPM, 850 ft. Well, Seasonal Source SW 1/4 of NW 1/4 of Sec. 20, TWP 13N, R. 19E
SO4 Ranney Well	5,000 GPM, 20 ft. Collector, Out of Service
SO6 59700M/Nob Hill	3,000 GPM, Intertie, Emergency Source SE 1/4 of SW 1/4 of Sec. 21, TWP 13N, R. 18E
SO7 59700M/Nob Hill	1,000 GPM, Intertie, Emergency Source SE 1/4 of SW 1/4 of Sec. 20, TWP 13N, R. 18E
SO8 Kissel Well	2,900 GPM, 1,171 ft. Well, Seasonal Source NW 1/4 of NW 1/4 of Sec. 35, TWP 13N, R. 18E
SO9 59700M/Nob Hill	2,000 GPM, Intertie, Emergency Source SW 1/4 of NW 1/4 of Sec. 03, TWP 12N, R. 18E

Storage Reservoirs:

Low Level Pressure Zone	Six (6) Million Gallon, 40th Ave. and Englewood Ave.
Middle Level Pressure Zone	Two (2) Twelve (12) Million Gallon, Peck's Canyon and Reservoir Road
High Level Pressure Zone	Two (2) One (1) Million Gallon, No. 58th Ave. and Scenic Drive.

Booster Pump Stations:

Gleed Pump Station – Serves Gleed area

North 40th Ave. and River Road Pump Station – Serves middle level pressure zone

Stone Church Booster Pump Station – Serves middle level pressure zone

Reservoir Road Pump Station – Serves high level pressure zone

Pressure Reducing Stations

20th Ave. + Tieton Drive	6 inch PRV
19th Ave. + Chestnut Ave.	6 inch PRV
Park + Summitview Ave	6 inch PRV
20th Ave. + Lincoln Ave	8 inch PRV's (3)
20th Ave. + Bonnie Doone	6 inch PRV
30th Ave. + Nob Hill Blvd.	8 inch PRV
31st Ave. + Clinton Way	4 inch PRV
32nd Ave. + Viola Ave.	6 inch PRV
40th Ave pump house	8 and 12 inch PRV
40th Ave. + Richey Road	6 inch PRV
27th Ave. + Fraser Way	4 inch PRV
506 N. 40th Ave	8 inch PRV
Westpark + N. 41st Ave.	4 inch PRV

Treatment:

S01 Naches River Water Treatment Plant

Chlorination –	Disinfection, organics and color removal.
Hydraulic Mix -	Turbidity, organics and color removal.
Coagulation -	(Utilizing Aluminum Chlorohydrate and Cationic Polymer) Turbidity, organics and color removal.
Flocculation -	Turbidity, organics and color removal.
Sedimentation –	Turbidity, organics and color removal.
Filtration -	(Dual-media) Turbidity, organics and color removal.
Sodium Hydroxide –	Corrosion control
Hydrofluorosilicic Acid -	Fluoridation
Activated Carbon -	Organics, color and taste/odor removal

SO2 Airport Well

Chlorination - Disinfection

SO3 Kiwanis Well

Chlorination - Disinfection

SO4 Ranney Well
Out of Service

SO6 Nob Hill Water Co. Intertie
Chlorinated

SO7 Nob Hill Water Co. Intertie
Chlorinated

SO8 Kissel Well
Chlorination - Disinfection

SO9 Nob Hill Water Co. Intertie
Chlorination

Population Served:
65,038

Number Service Connections:
27,258

Number Pressure Zones:
4

Approximate Percentages of Population Served per Pressure Zone:

	Percent
Low Level Zone	78.4
Middle Level Zone	18.5
High Level Zone	3.2
Gleed Area	<1

System Description:

The Yakima Water System is normally served by the Naches River source. Water leaving the treatment plant enters the low level zone and is used by the customers, while also entering the six (6) million gallon reservoir or is pumped to the two (2) twelve (12) million gallon reservoirs or pumped directly into the middle level zone by the Stone Church Booster Pump Station. The two (2) twelve (12) million gallon reservoirs supply the middle level zone. Water is pumped from the two (2) twelve (12) million gallon reservoirs to the two (2) one (1) million gallon reservoirs. The one (1) million gallon reservoirs supply the high level zone. The Gleed area

is served by a pump station that pumps from the transmission main running from the treatment plant to the distribution system.

The high and middle level zones and the middle and low level zones are separated by pressure reducing valves (PRV's) and closed valves. The PRV's only operate during an emergency and otherwise act as a closed valve.

The wells were designated "seasonal" by DOH in 2009, and are used in emergency (typically seasonal) situations to support the Naches River Water Treatment Plant as necessary.

Nob Hill Water Company intertie sources are used only in emergencies when the Naches River Water Treatment Plant and/or wells cannot supply the demand.

Sampling Information

Number Samples Required:

WTP:
Department of Health regulations require one (1) sample collected annually for complete inorganic chemicals and physical characteristics. Sample location is from a point representative of the source, after treatment, and prior to entry to the distribution system.

Wells:
Department of Health regulations require one (1) sample collected per SMF period (every three (3) years) for complete inorganic chemicals and physical characteristics. Sample location is from a point representative of the source, after treatment, and prior to the first customer.

Sample Location Point:

City of Yakima Naches River Water Treatment Plant, 6390 U.S. Hwy. 12, Yakima, Washington, laboratory, finished water sample tap.
City of Yakima wellhouses, respectively, flush lines at CL-17's.

INORGANIC CHEMICALS ANALYZED

EPA Regulated Primary Chemicals
EPA Regulated Secondary Chemicals
State Regulated, Including Physical Characteristics

*Asbestos – Asbestos is sampled and analyzed every nine (9) years, two (2) samples are required, one (1) sample from the distribution system and one (1) sample from the source water, S01, Naches River.
**Lead and Copper are sampled as directed by DOH. Sampling sites for Lead and Copper are located in the distribution system at targeted sample tap locations. Lead and Copper are paired samples. Currently the City of Yakima samples at thirty (30) sites throughout our system. June – September 2006 is our next Lead and Copper sampling period.

CURRENT LEAD AND COPPER SAMPLING SITES

2300 River Road #7	2300 River Road #21	1416 Hamilton Ave.
4305 Garden Park Way	2905 McKinley Ave.	1402 So. 25th Ave.
2300 River Road #9	1403 So. 25th Ave.	1404 Hamilton Ave.
701 No. 42nd Ave.	1111 – A So. 22nd Ave.	2300 River Road #14
2300 River Road #22	2300 River Road #24	1113 – A So. 22nd Ave.
2300 River Road #13	3803 W. Walnut Ave.	2300 River Road #26
704 No. 47th Ave.	1420 So. 25th Ave.	1408 Hamilton Ave.
1423 Hamilton Ave.	1405 Hamilton Ave.	1417 Hamilton Ave.
611 No. 43rd Ave.	1421 So. 25th Ave.	421 No. 30th Ave.
2606 King Court	305 No. 37th Ave.	1414 Hamilton Ave.

DOH Spokane contacts:

Michael Wilson, P.E., Regional Engineer, (509) 329-2117.
Andres Cervantes, P.E., Regional Engineer, (509) 329-2120.
Source Water Quality Program Manager, (509) 329-2132

This Monitoring Plan will be updated and/or modified as relevant changes occur with the city system and DOH/EPA rules and regulations.

Appendix J

Organic Chemicals Monitoring Plan

CITY OF YAKIMA
DOMESTIC WATER
ORGANIC CHEMICALS MONITORING PLAN
(VOC's & SOC's)
WAC 246-290-300 (7), (e) (i) (ii A, B, C)

SYSTEM INFORMATION

Water System Name:
City of Yakima

System Identification Number:
991509

Sources:

SO1 Naches River	17,360 GPM, Surface Water, Permanent Source SW 1/4 of SW 1/4 of Sec. 13, TWP 14N, R. 17E
SO2 Airport Well	2,700 GPM, 1,100 ft. Well, Seasonal Source NE ¼ of NW 1/4 of SE 1/4 of Sec. 35, TWP 13N, R. 18E
SO3 Kiwanis Well	2,350 GPM, 850 ft. Well, Seasonal Source SW 1/4 of NW 1/4 of Sec. 20, TWP 13N, R. 19E
SO4 Ranney Well	5,000 GPM, 20 ft. Collector, Out of Service
SO6 59700M/Nob Hill	3,000 GPM, Intertie, Emergency Source SE 1/4 of SW 1/4 of Sec. 21, TWP 13N, R. 18E
SO7 59700M/Nob Hill	1,000 GPM, Intertie, Emergency Source SE 1/4 of SW 1/4 of Sec. 20, TWP 13N, R. 18E
SO8 Kissel Well	2,900 GPM, 1,171 ft. Well, Seasonal Source NW 1/4 of NW 1/4 of Sec. 35, TWP 13N, R. 18E
SO9 59700M/Nob Hill	2,000 GPM, Intertie, Emergency Source SW 1/4 of NW 1/4 of Sec. 03, TWP 12N, R. 18E

Storage Reservoirs:

Low Level Pressure Zone	Six (6) Million Gallon, 40th Ave. and Englewood Ave.
Middle Level Pressure Zone	Two (2) Twelve (12) Million Gallon, Peck's Canyon and Reservoir Road
High Level Pressure Zone	Two (2) One (1) Million Gallon, No. 58th Ave. and Scenic Drive.

Booster Pump Stations:

Gleed Pump Station – Serves Gleed area

North 40th Ave. and River Road Pump Station – Serves middle level pressure zone

Stone Church Booster Pump Station – Serves middle level pressure zone

Reservoir Road Pump Station – Serves high level pressure zone

Pressure Reducing Stations

20th Ave. + Tieton Drive	6 inch PRV
19th Ave. + Chestnut Ave.	6 inch PRV
Park + Summitview Ave	6 inch PRV
20th Ave. + Lincoln Ave	8 inch PRV's (3)
20th Ave. + Bonnie Doone	6 inch PRV
30th Ave. + Nob Hill Blvd.	8 inch PRV
31st Ave. + Clinton Way	4 inch PRV
32nd Ave. + Viola Ave.	6 inch PRV
40th Ave pump house.	8 and 12 inch PRV
40th Ave. + Richey Road	6 inch PRV
27th Ave. + Fraser Way	4 inch PRV
506 N. 40th Ave	8 inch PRV
Westpark + N. 41st Ave.	4 inch PRV

Treatment:

S01 Naches River Water Treatment Plant

Chlorination –	Disinfection, organics and color removal.
Hydraulic Mix -	Turbidity, organics and color removal.
Coagulation -	(Utilizing Aluminum Chlorohydrate and Cationic Polymer) Turbidity, organics and color removal.
Flocculation -	Turbidity, organics and color removal.
Sedimentation –	Turbidity, organics and color removal.
Filtration -	(Dual-media) Turbidity, organics and color removal.
Sodium Hydroxide –	Corrosion control
Hydrofluorosilicic Acid -	Fluoridation
Activated Carbon -	Organics, color and taste/odor removal.

SO2 Airport Well

Chlorination -	Disinfection

SO3 Kiwanis Well
Chlorination - Disinfection

SO4 Ranney Well
Out of Service

SO6 Nob Hill Water Co. Intertie
Chlorinated

SO7 Nob Hill Water Co. Intertie
Chlorinated

SO8 Kissel Well
Chlorination - Disinfection

SO9 Nob Hill Water Co. Intertie
Chlorinated

Population Served:
65,038

Number Service Connections:
27,258

Number Pressure Zones:
4

Approximate Percentages of Population Served per Pressure Zone:

	Percent
Low Level Zone	78.4
Middle Level Zone	18.5
High Level Zone	3.2
Gleed Area	<1

System Description:

The Yakima Water System is normally served by the Naches River source. Water leaving the treatment plant enters the low level zone and is used by the customers, while also entering the six (6) million gallon reservoir or is pumped to the two (2) twelve (12) million gallon reservoirs or pumped directly into the middle level zone by the Stone Church Booster Pump Station. The two (2) twelve (12) million gallon reservoirs supply the middle level zone. Water is pumped from the two (2) twelve (12) million gallon reservoirs to the two (2) one (1) million gallon reservoirs. The one (1) million gallon reservoirs supply the

high level zone. The Gleed area is served by a pump station that pumps from the transmission main running from the treatment plant to the distribution system.

The high and middle level zones and the middle and low level zones are separated by pressure reducing valves (PRV's) and closed valves. The PRV's only operate during an emergency and otherwise act as a closed valve.

The wells were designated "seasonal" by DOH in 2009, and are used in emergency (typically seasonal) situations to support the Naches River Water Treatment Plant as necessary.

Nob Hill Water Company intertie sources are used only in emergencies when the Naches River Water Treatment Plant and/or wells cannot supply the demand.

Sampling Information

Number Samples Required: Department of Health regulations require one (1) sample collected annually for Volatile Organic Contaminants. Synthetic Organic Contaminants, including Herbicides, General Pesticides and Insecticides require two (2) samples collected every 3 years. EDB and other soil fumigants, dioxin, Endothall, Diquat and Glyphosphate are state waivered through 12/2010, for all sources. Sample location is from a point representative of the source, after treatment, and prior to entry to the distribution system.

Sample Location Points:

SO1	City of Yakima Naches River Water Treatment Plant, 6390 U.S. Hwy. 12, Yakima, Washington, laboratory, finished water sample tap.
SO2	Airport Well, 2012 W. Washington Ave., CL-17 flush line.
SO3	Kiwanis Well, Maple and Fair Ave., CL-17 flush line.
SO8	Kissel Well, 32nd and Mead Aves., CL-17 flush line.

ORGANIC CHEMICALS ANALYZED

Volatile Organic Chemicals (VOC's) -	EPA Regulated EPA Unregulate State Unregulated
Synthetic Organic Chemicals (SOC's) -	EPA Regulated EPA Unregulated State Unregulated
(Incorporated within the SOC's analyzed are Herbicides, General Pesticides, Insecticides, EDB, Other Soil Fumigants,	

Dioxin, Endothall, Diquat and Glyphos-
phate.)

DOH Spokane contacts:

Source Water Quality Monitoring Specialist, (509) 329-2132
Michael Wilson, P.E., Regional Engineer, (509) 329-2117
Andres Cervantes, P.E., Regional Engineer, (509) 329-2120

This Monitoring Plan will be updated and/or modified as relevant changes occur with the city system and DOH/EPA rules and regulations.

Appendix K

Radionuclides Monitoring Plan

CITY OF YAKIMA
DOMESTIC WATER
RADIONUCLIDES MONITORING PLAN
WAC 246-290-300 (9), (a i,ii,iii), (b i, ii)

SYSTEM INFORMATION

Water System Name:
City of Yakima

System Identification Number:
991509

Sources:

SO1 Naches River	17,360 GPM, Surface Water, Permanent Source SW 1/4 of SW 1/4 of Sec. 13, TWP 14N, R. 17E
SO2 Airport Well	2,700 GPM, 1,100 ft. Well, Seasonal Source NE ¼ of NW 1/4 of SE 1/4 of Sec. 35, TWP 13N, R. 18E
SO3 Kiwanis Well	2,350 GPM, 850 ft. Well, Seasonal Source SW 1/4 of NW 1/4 of Sec. 20, TWP 13N, R. 19E
SO4 Ranney Well	5,000 GPM, 20 ft. Collector, Out of Service
SO6 59700M/Nob Hill	3,000 GPM, Intertie, Emergency Source SE 1/4 of SW 1/4 of Sec. 21, TWP 13N, R. 18E
SO7 59700M/Nob Hill	1,000 GPM, Intertie, Emergency Source SE 1/4 of SW 1/4 of Sec. 20, TWP 13N, R. 18E
SO8 Kissel Well	2,900 GPM, 1,171 ft. Well, Seasonal Source NW 1/4 of NW 1/4 of Sec. 35, TWP 13N, R. 18E
SO9 59700M/Nob Hill	2,000 GPM, Intertie, Emergency Source SW 1/4 of NW 1/4 of Sec. 03, TWP 12N, R. 18E

Storage Reservoirs:

Low Level Pressure Zone	Six (6) Million Gallon, 40th Ave. and Englewood Ave.
Middle Level Pressure Zone	Two (2) Twelve (12) Million Gallon, Peck's Canyon and Reservoir Road
High Level Pressure Zone	Two (2) One (1) Million Gallon, No. 58th Ave. and Scenic Drive.

Booster Pump Stations:

Gleed Pump Station – Serves Gleed area

North 40th Ave. and River Road Pump Station – Serves middle level pressure zone

Stone Church Booster Pump Station – Serves middle level pressure zone

Reservoir Road Pump Station – Serves high level pressure zone

Pressure Reducing Stations

20th Ave. + Tieton Drive	6 inch PRV
19th Ave. + Chestnut Ave.	6 inch PRV
Park + Summitview Ave	6 inch PRV
20th Ave. + Lincoln Ave	8 inch PRV's (3)
20th Ave. + Bonnie Doone	6 inch PRV
30th Ave. + Nob Hill Blvd.	8 inch PRV
31st Ave. + Clinton Way	4 inch PRV
32nd Ave. + Viola Ave.	6 inch PRV
40th Ave pump house .	8 and 12 inch PRV
40th Ave. + Richey Road	6 inch PRV
27th Ave. + Fraser Way	4 inch PRV
506 N. 40th Ave	8 inch PRV
Westpark + N. 41st Ave.	4 inch PRV

Treatment:

S01 Naches River Water Treatment Plant

Chlorination –	Disinfection, organics and color removal.
Hydraulic Mix -	Turbidity, organics and color removal.
Coagulation -	(Utilizing Aluminum Chlorohydrate and Cationic Polymer) Turbidity, organics and color removal.
Flocculation -	Turbidity, organics and color removal.
Sedimentation –	Turbidity, organics and color removal.
Filtration -	(Dual-media) Turbidity, organics and color removal.
Sodium Hydroxide –	Corrosion control
Hydrofluorosilicic Acid -	Fluoridation
Activated Carbon -	Organics, color and taste/odor removal.

SO2 Airport Well

Chlorination -	Disinfection

SO3 Kiwanis Well
Chlorination - Disinfection

SO4 Ranney Well
Out of Service

SO6 Nob Hill Water Co. Intertie
Chlorinated

SO7 Nob Hill Water Co. Intertie
Chlorinated

SO8 Kissel Well
Chlorination - Disinfection

SO9 Nob Hill Water Co. Intertie
Chlorinated

Population Served:
65,038

Number Service Connections:
27,258

Number Pressure Zones:
4

Approximate Percentages of Population Served per Pressure Zone:

	Percent
Low Level Zone	78.4
Middle Level Zone	18.5
High Level Zone	3.2
Gleed Area	<1

System Description:

The Yakima Water System is normally served by the Naches River source. Water leaving the treatment plant enters the low level zone and is used by the customers, while also entering the six (6) million gallon reservoir or is pumped to the two (2) twelve (12) million gallon reservoirs or pumped directly into the middle level zone by the Stone Church Booster Pump Station. The two (2) twelve (12) million gallon reservoirs supply the middle level zone. Water is pumped from the two (2) twelve (12) million gallon reservoirs to the two (2) one (1) million gallon reservoirs. The one (1) million gallon reservoirs supply the

high level zone. The Gleed area is served by a pump station that pumps from the transmission main running from the treatment plant to the distribution system.

The high and middle level zones and the middle and low level zones are separated by pressure reducing valves (PRV's) and closed valves. The PRV's only operate during an emergency and otherwise act as a closed valve.

The wells were designated "seasonal" by DOH in 2009, and are used in emergency (typically seasonal) situations to support the Naches River Water Treatment Plant as necessary.

Nob Hill Water Company intertie sources are used only in emergencies when the Naches River Water Treatment Plant and/or wells cannot supply the demand.

Sampling Information

Number Samples Required: Department of Health regulations require one (1) sample collected every three years for Radionuclides from the source, SO1, Naches River.
The wells require sampling two (2) times every three (3) years.

Sample Location Point:

SO1	City of Yakima Naches River Water Treatment Plant, 6390 U.S. Hwy. 12, Yakima, Washington, laboratory, finished water sample tap.
SO2	Airport Well, 2012 W. Washington Ave., CL-17 flush line.
SO3	Kiwanis Well, Maple and Fair Ave., CL-17 flush line.
SO8	Kissel Well, 32nd and Mead Aves., CL-17 flush line.

RADIONUCLIDE ANALYZED

Gross Alfa Particle Activity (excluding uranium)

DOH Spokane contacts:

Source Water Quality Monitoring Specialist, (509) 329-2132
Michael Wilson, P.E., Regional Engineer, (509) 329-2117
Andres Cervantes, P.E., Regional Engineer, (509) 329-2120

This Monitoring Plan will be updated and/or modified as relevant changes occur with the city system and DOH/EPA rules and regulations.

Appendix L

Stage 1 Disinfectant/Disinfection By-Products Monitoring Plan

CITY OF YAKIMA
DOMESTIC WATER
STAGE 1 DISINFECTANTS/DISINFECTION BYPRODUCTS MONITORING PLAN
WAC 246-290-300 (6), (a i,ii,iii), (b) (c)

SYSTEM INFORMATION

Water System Name:
City of Yakima

System Identification Number:
991509

Sources:

SO1 Naches River	17,360 GPM, Surface Water, Permanent Source SW 1/4 of SW 1/4 of Sec. 13, TWP 14N, R. 17E
SO2 Airport Well	2,700 GPM, 1,100 ft. Well, Seasonal Source NE ¼ of NW 1/4 of SE 1/4 of Sec. 35, TWP 13N, R. 18E
SO3 Kiwanis Well	2,350 GPM, 850 ft. Well, Seasonal Source SW 1/4 of NW 1/4 of Sec. 20, TWP 13N, R. 19E
SO4 Ranney Well	5,000 GPM, 20 ft. Collector, Out of Service
SO6 59700M/Nob Hill	3,000 GPM, Intertie, Emergency Source SE 1/4 of SW 1/4 of Sec. 21, TWP 13N, R. 18E
SO7 59700M/Nob Hill	1,000 GPM, Intertie, Emergency Source SE 1/4 of SW 1/4 of Sec. 20, TWP 13N, R. 18E
SO8 Kissel Well	2,900 GPM, 1,171 ft. Well, Seasonal Source NW 1/4 of NW 1/4 of Sec. 35, TWP 13N, R. 18E
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Storage Reservoirs:

Low Level Pressure Zone	Six (6) Million Gallon, 40th Ave. and Englewood Ave.
Middle Level Pressure Zone	Two (2) Twelve (12) Million Gallon, Peck's Canyon and Reservoir Road
High Level Pressure Zone	Two (2) One (1) Million Gallon, No. 58th Ave. and Scenic Drive.

Booster Pump Stations:

Gleed Pump Station – Serves Gleed area

North 40th Ave. and River Road Pump Station – Serves middle level pressure zone

Stone Church Booster Pump Station – Serves middle level pressure zone

Reservoir Road Pump Station – Serves high level pressure zone

Pressure Reducing Stations

20th Ave. + Tieton Drive	6 inch PRV
19th Ave. + Chestnut Ave.	6 inch PRV
Park + Summitview Ave	6 inch PRV
20th Ave. + Lincoln Ave	8 inch PRV's (3)
20th Ave. + Bonnie Doone	6 inch PRV
30th Ave. + Nob Hill Blvd.	8 inch PRV
31st Ave. + Clinton Way	4 inch PRV
32nd Ave. + Viola Ave.	6 inch PRV
40th Ave pump station.	8 and 12 inch PRV
40th Ave. + Richey Road	6 inch PRV
27th Ave. + Fraser Way	4 inch PRV
506 N. 40th Ave	8 inch PRV
Westpark + N. 41st Ave.	4 inch PRV

Treatment:

S01 Naches River Water Treatment Plant

Chlorination –	Disinfection, organics and color removal.
Hydraulic Mix -	Turbidity, organics and color removal.
Coagulation -	(Utilizing Aluminum Chlorohydrate and Cationic Polymer) Turbidity, organics and color removal.
Flocculation -	Turbidity, organics and color removal.
Sedimentation –	Turbidity, organics and color removal.
Filtration -	(Dual-media) Turbidity, organics and color removal.
Sodium Hydroxide –	Corrosion control
Hydrofluorosilicic Acid -	Fluoridation
Activated Carbon -	Organics, color and taste/odor removal.

SO2 Airport Well

Chlorination -	Disinfection

SO3 Kiwanis

WellChlorination - Disinfection

SO4 Ranney Well
Out of Service

SO6 Nob Hill Water Co. Intertie
Chlorinated

SO7 Nob Hill Water Co. Intertie
Chlorinated

SO8 Kissel Well
Chlorination - Disinfection

SO9 Nob Hill Water Co. Intertie
Chlorinated

Population Served:
65,038

Number Service Connections:
27,258

Number Pressure Zones:
4

Approximate Percentages of Population Served per Pressure Zone:

	Percent
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Middle Level Zone	18.5
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Gleed Area	<1

System Description:

The Yakima Water System is normally served by the Naches River source. Water leaving the treatment plant enters the low level zone and is used by the customers, while also entering the six (6) million gallon reservoir or is pumped to the two (2) twelve (12) million gallon reservoirs or pumped directly into the middle level zone by the Stone Church Booster Pump Station. The two (2) twelve (12) million gallon reservoirs supply the middle level zone. Water is pumped from the two (2) twelve (12) million gallon reservoirs to the two (2) one (1) million gallon reservoirs. The one (1) million gallon reservoirs supply the high level zone. The Gleed area is served by a pump station which pumps from the transmission main running from the treatment plant to the distribution system.

The high and middle level zones and the middle and low level zones are separated by pressure reducing valves (PRV's) and closed valves. The PRV's only operate during an emergency and otherwise act as a closed valve.

The wells were designated "seasonal" by DOH in 2009, and are used in emergency (typically seasonal) situations to support the Naches River Water Treatment Plant as necessary.

Nob Hill Water Company intertie sources are used only in emergencies when the Naches River Water Treatment Plant and/or wells cannot supply the demand.

Sampling Information:

Number Samples Required: Department of Health regulations require four (4) samples collected every quarter for Total Trihalomethanes (TTHM). Sample locations are from four separate sites within the distribution system, which are representative of the entire system, with one of the samples taken at the extreme end of the distribution system. Haloacetic Acids Five (HAA5) requires four (4) samples collected every quarter. Sample locations are from four separate sites within the distribution system, which are representative of the entire system, with one of the samples taken at the extreme end of the distribution system. The Total Trihalomethanes (TTHM) and Haloacetic Acids Five (HAA5) are sampled at the same locations at the same time. Paired with the HAA5 and TTHM, two (2) Total Organic Carbon (TOC) samples are taken.

Sampling for TOC is performed on a monthly basis, one (1) sample is collected from the raw water with a total alkalinity test performed and the second sample is collected after filtration prior to effluent chlorination. (The WWTP is considered the extreme end of the city's distribution system.)

` Chlorine Residuals are sampled jointly with coliform samples at seventy (70) separate distribution sites on a monthly basis. There are a total of 140 coliform sample sites that are rotated, seventy each, every other month. These sites are representative of the entire distribution system.

Sample Location Point: TTHM's and HAA5 are sampled at Reservoir Road Pump Station, 32nd Ave. and Mead Ave., 129 No. 2nd Street and WWTP Laboratory.

TOC are sampled at the Water Treatment Plant (WTP) Laboratory, one at the raw water sample line and the other at the individual filters effluent sample line. Raw Alkalinity is sampled at the WTP lab at the same time as the TOC's.

COLIFORM SAMPLING LOCATIONS AND ROTATION

Site	Customer	Location
X01	5th Avenue Deli	415 W. Walnut Ave.
X02	Golden Wheel	9 So. 1st Street
X03	Isaak's Furniture	1010 W. Nob Hill Blvd.
X04	Smitty's Conoco	304 W. Mead Ave.
X05	Mattress Outlet	2107 S. 1st Street

X06	Sub Shop of Yakima	109 Gateway Center
X07	Yakima Regional Hospital	110 So. 9th Ave.
X08	Yakima City Hall	129 No. 2nd Street
X09	Red Lobster Restaurant	905 No. 1st Street
X10	Stewart Subaru	506 Fruitvale Blvd.
X11	Holiday Inn Express	1001 E. "A" Street
X12	Chiro. Acupunc. Mass. Thr.	3802 W. Summitview Ave.
X13	Culligan Water Conditioning	617 Fruitval Blvd.
X14	Yakima Valley Endodontics	1020 So. 40th Ave. Ste H
X15	Yakima Med. Consul., Inc.	622 So. 36th Ave.
X16	Pro Golf Discount	2106 W. Nob Hill Blvd.
X17	Yakima Airport	2300 W. Washington Ave.
X18	Les Schwab Tire Store	702 E. Yakima Ave.
X19	Elliott Tire & Service Center	1 W. Lincoln Ave.
X20	Yak. Senior Citizen Center	602 No. 4th Street
X21	PepperTree Inn	1614 No. 1st Street
X22	Valley Imaging Partners	314 S 11th Ave.
X23	Yakima County Library	102 No. 3rd Street
X24	McDonald's	1600 E. Chestnut Ave. (Wal-Mart)
X25	City of Yakima Cable Comm.	124 So. 2nd Street
X26	901 Pasta	910 Summitview Ave.
X27	College Mart	1106 W. Nob Hill Blvd.
X28	Ding Ho Restaurant	16th Ave. & Washington Ave.
X29	Keeler's Home Nurs. Sup.	2001 W. Lincoln Ave.
X30	Orchard Park Apartments	620 N. 34th Ave.
X31	J.M. Perry Institute	2011 W. Washington Ave.
X32	Smitty's Café (conoco)	3508 Fruitvale Blvd.
X33	Salon Nouveau	40th Ave. & Summitview Ave.
X34	Rainford Lube and Oil	3310 W. Nob Hill Blvd.
X35	Albertson's Grocery Store	1610 W. Lincoln Ave.
X36	Jack Horner Electric	1212 No. 16th Ave.
X37	Fiddlesticks Store	1601 Summitview Ave.
X38	Yak. County Detent. Center	1728 Jerome Ave.
X39	Star Rentals	1601 S 1st Ave.
X40	Maid O'Clover Mini-Mart	1802 E. Nob Hill Blvd.
X41	Les Schwab Tire Center	2002 So. 1st. Street
X42	YMCA	5 No. Naches Ave.
X43	Carey Motors	3204 Fruitvale Blvd.
X44	Yak. County Fairgrd. Admin.	1301 So. 10th Street
X45	Papa John's	3502 Summitview Ave.
X46	Yakima Housing Authority	810 No. 6th Ave.
X47	Casa Mia Restaurant	3312 W. Nob Hill Blvd.
X48	Westside Medi-Center	4001 Tieton Drive
X49	Schaake Corp.	3901 Faurbanks
X50	Empire Foods	3361 Mapleway (Gleed)
X51	St. Paul School	1214 W. Chestnut Ave.
X52	Yakima Valley Credit Union	401 Tieton Dr.
X53	Yakima County Court House	128 No. 2nd Street
X54	Supercuts	110 No. Fair Ave. (Gateway Center)
X55	WA. State Liquor Store	101 No. Fair Ave. (Gateway Center)
X56	Bi-Mart Store	309 So. 5th Ave.
X57	Oil Can Henry's	2501 W Nob Hill
X58	Kimmel's Athletic Supply	2105 No. 22nd Ave. (Lincoln Center)
X59	Bi-Mart Store	1207 No. 40th Ave.
X60	Nendel's Inn	1104 No. 1st Street
X61	Econo Lodge	1405 No. 1st Street
X62	Susie's Dud's and Sud's Laundry	1025 No. 1st Street
X63	People for People	302 W. Lincoln Ave.
X64	McKinney's Auto Glass	221 So. 1st Street

X65	McDonalds	1305 So. 1st Street
X66	Bemis Appliance	1423 S. 1st Street
X67	Don Poncho	605 E. Nob Hill Blvd.
X68	Taco Bell	4001 Fruitvale Blvd.
X69	Catholic Credit Union	110 No. 5th Ave
X70	Picatti Brothers	105 So. 3rd Ave.

Site	**Customer**	**Location**
Z01	Yakima Co-Op	2202 So. 1st. Street
Z02	Taco Time Restaurant	1020 so. 16th Ave.
Z03	Safeway Grocery Store	24th Ave. & Nob Hill Blvd.
Z04	7-11 Mart	1601 Fruitvale Blvd.
Z05	Ambulance	4201 Summitview
Z06	Yakima Tennis Club	2505 Fruitvale Blvd.
Z07	7-11 Mart	1711 E. Nob Hill Blvd.
Z08	5th Ave. One Stop (Conoco)	701 No. 5th Ave.
Z09	Valley Lock and Key	402 So. 3rd Street
Z10	Sun Tower Apartments	6 No. 6th Street
Z11	Valiknaje-Moore-Shore	405 E. Lincoln Ave.
Z12	Bank of America	201 No. 40th ave.
Z13	Yakima Eye Care	506 N 40th Ave.
Z14	Maid O'Clover Mini-Mart	3602 Tieton Drive
Z15	Big Cheese Pizza	2204 W. Nob Hill Blvd.
Z16	Tom Tom Espresso	412 So. 40th Ave.
Z17	Valley Ford	910 So. 1st Street
Z18	7-11 Store	1512 Summitview Ave.
Z19	Lynch Distributing	106 W. Mead Ave.
Z20	Sunfair Chevrolet	1600 Terrace Heights Drive
Z21	7-11	810 E. Yakima Ave.
Z22	Howard Johnson	9 No. 9th Street
Z23	Vida Rug Gallery	113 E. Yakima Ave.
Z24	Clarion Hotel	1507 No. 1st Street
Z25	CINTAS	918 No. 5th Ave.
Z26	City of Yakima Shops	2301 Fruitvale Blvd.
Z27	ARCO Mini-Mart	No. 40th Ave. + Fruitvale Blvd.
Z28	Jackpot Food Mart	620 No. 16th Ave.
Z29	Hillcrest Salon	3504 Summitview Ave.
Z30	Comfort Suites	3702 Fruitvale Blvd.
Z31	Memorial Hospital	2811 Tieton Drive
Z32	Albertson's Store	401 So. 40th Ave.
Z33	Round Table Pizza	1300 No. 40th Ave. #109
Z34	Grainger	905 1/2 So. 1st Street
Z35	DSHS	1002 So. 16th Ave.
Z36	Valley Marine	1900 "A" Fruitvale Blvd.
Z37	Big "O" Tires	2601 W. Nob Hill Blvd.
Z38	Wray's Thriftway	301 W. Nob Hill Blvd.
Z39	First Presbyterian Church	9 So. 8th Ave.
Z40	Employment Security Office	306 Division
Z41	Sherwin Williams Paints	1230 So. 1st Street
Z42	Safeway Grocery Store	605 E. Mead Ave.
Z43	The Bindery	310 E. Chestnut Ave.
Z44	Wendy's	1001 No. 1st Street
Z45	ARCO Mini-Mart	1801 E. Nob Hill Blvd.
Z46	Hospital Business	Nob Hill & 38th
Z47	Ponderosa Retirement Center	3300 Englewood Ave.
Z48	Tieton Village Drugs	3708 Tieton Drive
Z49	St. Timothy's Epis. Church	4105 Richey Road

Z50	Suntides Market	11 Pence Road
Z51	Yakima OIC	815 Fruitvale Blvd.
Z52	Chevron Mini-Mart (Cruisin')	702 W. Yakima Ave.
Z53	McDonalds	1601 W. Lincoln Ave.
Z54	Big R	2112 S 1st St.
Z55	Taco Bell	2124 So. 1st Street
Z56	Gary's Fly Shop	423 W. Yakima Ave.
Z57	Cramer's	306 S.1st. Street
Z58	K's Coin Laundry	602 Fruitvale Blvd.
Z59	Figg's Eye Clinic	3909 Castlevale, #300
Z60	EDS	33 So. 2nd Ave.
Z61	KNDO	1608 So. 24th Ave.
Z62	Miner's	2415 So. 1st Street
Z63	Arby's	1227 So. 1st Street
Z64	Nails & Spa	1519 Summitview Ave.
Z65	Yakima Athletic Club	2501 Racquet Lane
Z66	Bruchi's	302 W. Nob Hill Ave.
Z67	Red Robin Rest.	2706 W. Nob Hill Blvd
Z68	Oil Can Henry's	3805 River Road
Z69	Pizza Hut	3915 Kern Road
Z70	Yakima Automotive	1 So. 12th Ave.

Chemicals Analyzed

Total Trihalomethanes (TTHM)
Haloacetic Acids 5 (HAA5)
Total Organic Carbon (TOC)
Total Alkalinity
Chlorine Residual

Compliance Calculations

Chemical	How Compliance is Calculated
TTHM and HAA5	Running annual average, computed quarterly, of quarterly averages of all samples collected. a. If our annual average of quarterly averages covering any consecutive 4-quarter period exceeds the MCL, then our system is in violation. b. Our system will notify the public and report to the state if we are in violation. c. If our annual average exceeds the MCL, (our system is on reduce monitoring for TTHM), we will revert to routine system monitoring immediately.
Chlorine (Residual)	Running annual average, computed quarterly, of quarterly averages of all samples collected. a. If our annual average of quarterly averages covering any consecutive 4-quarter period exceeds the MRDL, then our system is in violation.

b. Our system will notify the public and report to the state if we are in violation.

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DOH Spokane contacts:

Source Water Quality Monitoring Specialist, (509) 329-2132
Michael Wilson, P.E., Regional Engineer, (509) 329-2117
Andres Cervantes, P.E., Regional Engineer, (509) 329-2120

This Monitoring Plan will be updated and/or modified as relevant changes occur with the city system and DOH/EPA rules and regulations.

Appendix M

Turbidity/Free Chlorine Residual/pH Monitoring Plan

CITY OF YAKIMA
DOMESTIC WATER
TURBIDITY/FREE CHLORINE RESIDUAL/pH MONITORING PLAN

SYSTEM INFORMATION

Water System Name:
City of Yakima

System Identification Number:
991509

Sources:

SO1 Naches River	17,360 GPM, Surface Water, Permanent Source SW 1/4 of SW 1/4 of Sec. 13, TWP 14N, R. 17E
SO2 Airport Well	2,700 GPM, 1,100 ft. Well, Seasonal Source NE ¼ of NW 1/4 of SE 1/4 of Sec. 35, TWP 13N, R. 18E
SO3 Kiwanis Well	2,350 GPM, 850 ft. Well, Seasonal Source SW 1/4 of NW 1/4 of Sec. 20, TWP 13N, R. 19E
SO4 Ranney Well	5,000 GPM, 20 ft. Collector, Out of Service
SO6 59700M/Nob Hill	3,000 GPM, Intertie, Emergency Source SE 1/4 of SW 1/4 of Sec. 21, TWP 13N, R. 18E
SO7 59700M/Nob Hill	1,000 GPM, Intertie, Emergency Source SE 1/4 of SW 1/4 of Sec. 20, TWP 13N, R. 18E
SO8 Kissel Well	2,900 GPM, 1,171 ft. Well, Seasonal Source NW 1/4 of NW 1/4 of Sec. 35, TWP 13N, R. 18E
SO9 59700M/Nob Hill	2,000 GPM, Intertie, Emergency Source SW 1/4 of NW 1/4 of Sec. 03, TWP 12N, R. 18E

Storage Reservoirs:

Low Level Pressure Zone	Six (6) Million Gallon, 40th Ave. and Englewood Ave.
Middle Level Pressure Zone	Two (2) Twelve (12) Million Gallon, Peck's Canyon and Reservoir Road
High Level Pressure Zone	Two (2) One (1) Million Gallon, No. 58th Ave. and Scenic Drive.

Booster Pump Stations:

Gleed Pump Station – Serves Gleed area

North 40th Ave. and River Road Pump Station – Serves middle level pressure zone

Stone Church Booster Pump Station – Serves middle level pressure zone

Reservoir Road Pump Station – Serves high level pressure zone

Pressure Reducing Stations

20th Ave. + Tieton Drive	6 inch PRV
19th Ave. + Chestnut Ave.	6 inch PRV
Park + Summitview Ave	6 inch PRV
20th Ave. + Lincoln Ave	8 inch PRV's (3)
20th Ave. + Bonnie Doone	6 inch PRV
30th Ave. + Nob Hill Blvd.	8 inch PRV
31st Ave. + Clinton Way	4 inch PRV
32nd Ave. + Viola Ave.	6 inch PRV
40th Ave. pump station.	12 inch PRV
40th Ave. + Richey Road	6 inch PRV
27th Ave. + Fraser Way	4 inch PRV
506 N. 40th Ave	8 inch PRV
Westpark + N. 41st Ave.	4 inch PRV

Treatment:

S01 Naches River Water Treatment Plant

Chlorination –	Disinfection, organics and color removal.
Hydraulic Mix -	Turbidity, organics and color removal.
Coagulation -	(Utilizing Aluminum Chlorohydrate and Cationic Polymer) Turbidity, organics and color removal.
Flocculation -	Turbidity, organics and color removal.
Sedimentation –	Turbidity, organics and color removal.
Filtration -	(Dual-media) Turbidity, organics and color removal.
Sodium Hydroxide –	Corrosion control
Hydrofluorosilicic Acid -	Fluoridation
Activated Carbon -	Organics, color and taste/odor removal.

SO2 Airport Well

Chlorination -	Disinfection

SO3 Kiwanis Well
Chlorination - Disinfection

SO4 Ranney Well
Out of Service

SO6 Nob Hill Water Co. Intertie
Chlorinated

SO7 Nob Hill Water Co. Intertie
Chlorinated

SO8 Kissel Well
Chlorination - Disinfection

SO9 Nob Hill Water Co. Intertie
Chlorinated

Population Served:
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Number Service Connections:
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high level zone. The Gleed area is served by a pump station that pumps from the transmission main running from the treatment plant to the distribution system.

The high and middle level zones and the middle and low level zones are separated by pressure reducing valves (PRV's) and closed valves. The PRV's only operate during an emergency and otherwise act as a closed valve.

The wells were designated "seasonal" by DOH in 2009, and are used in emergency (typically seasonal) situations to support the Naches River Water Treatment Plant as necessary.

Nob Hill Water Company intertie sources are used only in emergencies when the Naches River Water Treatment Plant and/or wells cannot supply the demand.

Sampling Information

Continuous Monitoring: The Naches River Water Treatment Plant (NRWTP) continuously monitors each individual filter effluent for turbidity; and the combined plant effluent for turbidity, free chlorine residual, pH, and fluoride.
Free chlorine residual is continuously monitored at five sites within the distribution system; in addition, pH and fluoride are continuously monitored at one distribution site.

Daily/Weekly Monitoring: Daily free chlorine residuals are monitored at five distribution sites.
Total Alkalinity and Calcium Hardness is monitored weekly at the NRWTP.

Sample Location Points: City of Yakima Naches River Water Treatment Plant
3211 Mapleway Road, Gleed, Washington
1310 City Reservoir Road, Yakima
2301 Fruitvale Boulevard, Yakima
129 No. 2nd Street, Yakima
2220 E. Viola, Yakima
2007 W. Washington Avenue, Yakima
1103 E. Maple Street, Yakima
32nd at Mead Ave.

WATER QUALITY PARAMETERS ANALYZED

Turbidity
CT Value
Free Chlorine Residual
pH
Fluoride
Alkalinity
Calcium Hardness

DOH Spokane contacts:

Source Water Quality Monitoring Specialist, (509) 329-2132
Michael Wilson, P.E., Regional Engineer, (509) 329-2117
Andres Cervantes, P.E., Regional Engineer, (509) 329-2120

This Monitoring Plan will be updated and/or modified as relevant changes occur with the city system and DOH/EPA rules and regulations.

Appendix N

Cross Connection Control Annual Report

Washington State Department of Health

Office of Drinking Water

Cross-Connection Control Program Summary Report For 2009

Describe the characteristics of the PWS's CCC Program at the end of 2010. Complete this form only if PWS had written CCC program plan, policies or procedures at end of 2010.

Part 1: Public Water System (PWS) Identification

PWS ID: 99150	PWS Name: YAKIMA WATER DIVISION, CITY OF	County: YAKIMA

Part 2: Cross-Connection Control (CCC) Program Characteristics

A. Type of Program Currently Implemented

Type of Program	Check One
Premises isolation only.	☐
Combination program: reliance on both premises isolation and in-premises protection.	☐
In transition from a combination program to a premises isolation only program.	☑

B. Coordination with Authority Having Jurisdiction (AHJ) on Cross-Connection Issues

Indicate the status of coordination with AHJs in your service area. The AHJ is the entity that enforces the Uniform Plumbing Code. ***Check one box in each of last 3 columns for each AHJ in your service area.***

AHJ No.	Name of AHJ (e.g., the City or County Building Department)	PWS Currently:		AHJ Declined to Coordinate
		Coordinates with AHJ	Has Written Agreement with AHJ	
1	City of Yakima	Y ☑ N ☐	Y ☑ N ☐	Y ☐ N ☑
2		Y ☐ N ☐	Y ☐ N ☐	Y ☐ N ☐
3		Y ☐ N ☐	Y ☐ N ☐	Y ☐ N ☐
4		Y ☐ N ☐	Y ☐ N ☐	Y ☐ N ☐
5		Y ☐ N ☐	Y ☐ N ☐	Y ☐ N ☐

[1] If more than 5 AHJs, attach separate sheet giving the above information.

C. Corrective or Enforcement Actions Available to the Purveyor

Type of Corrective Action	Indicate Whether Available	Most Often Used (Check One)
Denial or discontinuance of water service.	Y ☑ N ☐	☑
Purveyor installs backflow preventer and bills customer.	Y ☑ N ☐	☐
Assessment of fines (in addition to elimination or control of cross-connection).	Y ☑ N ☐	☐
Other corrective actions (describe):	Y ☐ N ☐	☐

D. CCC Program Responsibilities

Do not include enforcement action related procedures or circumstances.

CCC Program Activity	Responsible Party (Check one per row)	
	Customer	Purveyor
Hazard Evaluation by DOH-certified CCS	☐	☑
Backflow preventer (BP) ownership	☑	☐
BP installation	☑	☐
BP ***initial*** inspection (for proper installation - all BPs)	☐	☑
BP ***initial*** test (for testable assemblies)	☐	☑
BP ***annual*** inspection (Air Gaps and AVBs)	☐	☑
BP ***annual*** test (for testable assemblies)	☑	☐
BP maintenance and repair	☑	☐

E. Backflow Protection for Fire Protection Systems

Please remember to enter number of days allowed if you require retrofitting.

PWS coordinates with ***AHJ*** on CCC issues for fire protection systems(FPS).	Y ☑ N ☐ N/A ☐
PWS coordinates with ***local Fire Marshal*** on CCC issues for FPS.	Y ☑ N ☐ N/A ☐
PWS ensures backflow prevention is installed before serving ***new*** connections with FPS.	Y ☑ N ☐
PWS requires retrofits to ***high***-hazard FPS.	Y ☐ No. of days allowed: 0 N ☑ N/A ☐
PWS requires retrofits to ***low***-hazard FPS.	Y ☐ No. of days allowed: 0 N ☑ N/A ☐

F. Backflow Protection for Irrigation Systems

Minimum level of backflow prevention required on irrigation systems ***without*** chemical addition.	Not Addressed ☐ AVB ☑ PV/SVBA ☐ DCVA ☐ RPBA ☐
PWS currently inspects AVBs upon ***initial*** installation.	Y ☑ N ☐ N/A ☐
PWS currently inspects AVBs upon repair, reinstallation or relocation.	Y ☑ N ☐ N/A ☐

G. Used Water

PWS prohibits, by ordinance, rules, policy or agreement, the intentional return of used water (e.g. for heating or cooling) into the distribution system.	Y ☑ N ☐
If not prohibited at present, date plan to prohibit use.	N/A ☑
Current number of service connections returning used water to distribution system.	0

H. Backflow Protection for Auxiliary Water Supplies[1] NOT Interconnected with PWS

Indicate the minimum backflow preventer and type of protection required for service connections having unapproved auxiliary water supplies when they are NOT interconnected to the PWS. Check one box per row.

Existing service connections.	None ☐ DCVA ☐ RPBA ☑ AG ☐
Type of protection required.	None ☐ In-premises protection ☐ Premises isolation ☑

New service connections.	None ☐ DCVA ☐ RPBA ☑ AG ☐
Type of protection required.	None ☐ In-premises protection ☐ Premises isolation ☑

[1] An auxiliary water supply is any water supply on or available to customer's premises in addition to the purveyor's potable water supply.

I. Backflow Protection for Tanker Trucks and Temporary Water Connections

Minimum level of backflow protection (installed on or associated with the truck) required for tanker trucks taking water from PWS.	AG ☑ DCVA ☐ RPBA ☐ Not Specified ☐ Tanker trucks not allowed ☐
PWS requires tanker trucks to obtain water at designated filling sites each equipped with permanently installed backflow preventer(s).	Y ☐ (Min. protection: DCVA ☐ RPBA ☐) N ☑ N/A ☐ No sites provided ☐
PWS currently accepts tanker trucks approved by other PWSs without further inspection or testing.	Y ☐ N ☑ N/A ☐
Minimum level of backflow protection required for temporary water connections (e.g. for construction sites).	AG ☐ DCVA ☐ RPBA ☐ Not specified ☑ Temp. connections not allowed ☐
PWS requires testing each time the temporary connection backflow preventer is relocated.	Y ☐ N ☑ N/A ☐ (Temp. connections not allowed)
PWS provides approved backflow preventer for temporary connections.	Y ☑ N ☐ N/A ☐ (Temp. connections not allowed)

J. Backflow Protection for Non-Residential Connections

For each category shown, indicate whether PWS has non-residential connections of that type and the **minimum** level of ***premises isolation*** backflow protection required (whether or not PWS currently has that type of customer).

Type of Connection	PWS has Customers of this Type	Minimum Premises Isolation Backflow Protection Required
Commercial	Y ☑ N ☐	Not Required ☐ DCVA ☑ RPBA ☐
Industrial	Y ☑ N ☐	Not Required ☐ DCVA ☑ RPBA ☐
Institutional	Y ☑ N ☐	Not Required ☐ DCVA ☑ RPBA ☐

K. Backflow Protection for Wholesale Customers

Indicate whether the PWS requires backflow protection at interties with wholesale customers (other PWSs).

Type of Intertie	PWS has (plans to have) Customers of this Type	Backflow Protection Required
Existing	Y ☑ N ☐	Not specified / Not required ☑ Always required ☐ Required only if purchaser's CCC program is inadequate ☐ Minimum required (if applicable): DCVA ☐ RPBA ☐
New	Y ☐ N ☑	Not specified / Not required ☐ Always Required ☐ Required only if purchaser's CCC program is inadequate ☐ Minimum required (if applicable): DCVA ☐ RPBA ☐

L. Exceptions to Mandatory Premise Isolation

PWS's written CCC Program Plan *allows* system to grant Exceptions to mandatory premises isolation per WAC 246-290-490(4)(b(iii).	Y ☐ N ☐ Doesn't Address ☐
PWS currently grants new Exceptions.	Y ☐ N ☐
PWS granted Exceptions in previous reporting years.	Y ☐ N ☐

Page 3

Part 3: CCC Program Record-Keeping and Inventory

Indicate the type or name of computer software used by the PWS to track CCC records.

Cross-Track (BMI) ☐	BPMS ☐	XC2 (Engsoft) ☐	Tokay ☑	Other commercial CCC software (specify) ☐
Custom developed for or by PWS[1] ☐	Other non-CCC software (e.g. Excel) ☐	None Used ☐		

[1] Do not include commercial CCC software customized for PWS. If PWS uses customized commercial software, check the box for the appropriate commercial software name.

Part 4: Comments and Clarifications

Enter comments or clarifications to any of the information provided in this report.

Part No.	Date Added	Comment
Pt 2E	5/18/09	PWS does not require retrofit of FPS at this time unless changes or upgrades are made to the facility.
General	5/18/09	PWS is trying to move toward a premise isolation program only.

Part 5: CCC Program Summary Completion Information

I certify that the information provided in this CCC Program Summary is complete and accurate to the best of my knowledge.		
CCC Program Mgr. Name[1]: James Dean		Title: Water Dist. Supervisor
Signature:		Date: 04/16/2010
Phone: (509) 575-6196	E-mail*: jdean@ci.yakima.wa.us	
I certify that the information provided in this report accurately represents the status and description of this water system's CCC Program.		
PWS Mgr/Owner Name[2]: David Brown		Title: Water / Irrigation Division Manager
Signature:	Op. Cert. No.: 3441	Date: 04/16/2010

*Required Field. For security reasons, an e-mail address must be provided. DOH will e-mail you to confirm any changes made to your data

1 The CCC Program Manager is generally the CCS responsible for developing and implementing the PWS's CCC program.

2 The person that the CCC Program Manager reports to or other manager having direct responsibility and/or oversight of the CCC program. This person doesn't need to be in charge of the entire water system.

Washington State Department of Health

Office of Drinking Water

Severe Health Hazard Facility for 2009 Annual Summary Report

PWS ID: 99150	PWS Name: YAKIMA WATER DIVISION, CITY OF	County: YAKIMA

Part 1: Backflow Protection Status

Describe the backflow protection status at the end of 2010 for each *wastewater treatment plant and nuclear facility* your system serves.

Facility Index # 1 **Facility Name, Physical Address, and NPDES Permit Number**		**Status of Backflow Protection at End of 2010 (check one box per row)**							
		Premises Isolation RP *and* In-plant Air Gap (s)	**Premises Isolation RP but *No* In-Plant Air Gap(s)**	**Premises Isolation Air Gap**	**Fixture Protection Only**	**No Protection At All**	**Unknown**	**Exception Granted**	**Other (explain in Comment Section)**
Name	Yakima wwtp								
Address	2220 e viola ave								
City	yakima,	○	◉	○	○	○	○	○	○
Zip	98901								
NPDES Permit#	WA0024023D								
Facility Type									
Comment									

I certify that the information provided in this CCC Activities Report is complete and accurate to the best of my knowledge.		
CCC Program Mgr. Name[1]: James Dean		Title: Water Dist. Supervisor
Signature:		Date: 04/16/2010
Phone: (509) 575-6196	E-mail: jdean@ci.yakima.wa.us	
I have reviewed this report and certify that the information provided is complete and accurate to the best of my knowledge.		
PWS Mgr./Owner Name[2]: David Brown		Title: Water / Irrigation Division Manager
Signature:	Op. Cert. No.: 3441	Date: 04/16/2010

[1] CCC Program Manager is generally the CCS who is responsible for development and implementation of the PWS's CCC Program.

[2] The person that the CCC Program Manager reports to or other manager having direct responsibility and/or oversight of the CCC program.

Washington State Department of Health

Office of Drinking Water

Public Water System Cross-Connection Control Activities Annual Summary Report for Year 2009

Part 1: Public Water System (PWS) and Cross-Connection Control Specialist (CCS) Information

PWS ID: 99150	PWS Name: YAKIMA WATER DIVISION, CITY OF	County: YAKIMA
Provide name and Cert No. of CCS who develops and implements your CCC program		
CCS Name (last, first & mi): Dean, James		CCS Phone: (509) 575-6196
CCS Cert No.: 7731	BAT Cert. No. (if applicable):	
CCS is (check one):	PWS owner or employee ☑	On contract to PWS ☐ Volunteer or other ☐

Part 2: Status of Cross-Connection Control (CCC) Program at end of 2009

PWS has(check one box in each column below):	
A written CCC program plan Y ☑ N ☐	CCC implementation activities Y ☑ N ☐

(Written program may be a separate document, or part of water system plan or small water system management program).

Provide information regarding PWS's specific CCC Program Elements

Program Element Number	Description of Element [See WAC 246-290-490(3)]	This Program Element is Currently:	
		Included in Written Program	Being Implemented or Is Completed
1	Legal Authority Established	Y ☑ N ☐	Y ☑ N ☐
2	Hazard Evaluation Procedures and Schedules	Y ☑ N ☐	Y ☑ N ☐
3	CCC Procedures and Schedules	Y ☑ N ☐	Y ☑ N ☐
4	Certified CCS Provided	Y ☑ N ☐	Y ☑ N ☐
5	Backflow Preventer Inspection and Testing	Y ☑ N ☐	Y ☑ N ☐
6	Testing Quality Control Assurance Program	Y ☑ N ☐	Y ☑ N ☐
7	Backflow Incident Response Procedures	Y ☑ N ☐	Y ☑ N ☐
8	Public Education Program	Y ☑ N ☐	Y ☑ N ☐
9	CCC Records	Y ☑ N ☐	Y ☑ N ☐
10	Reclaimed Water Permit	Y ☐ N ☐ N/A ☑	Y ☐ N ☐ N/A ☑

Part 3A: System Characteristics at End of 2009

Indicate the number of connections of each type that the PWS serves (whether or not they are protected by backflow preventers). **Estimate if necessary.**

Type of Service Connection	Number
Residential (As defined by PWS)	16295
All Other (Include dedicated fire sprinkler and irrigation lines and PWS-owned facilities such as water and wastewater treatment plants and pumping stations, parks, piers and docks.)	2830
Total Number of Connections	19125

Part 3B: Cross-Connection Control for High-Hazard Premises or Systems Served by the PWS

If PWS does not serve any high-hazard premises or systems, check here ☐ and go to Part 4.

- Complete all cells. Enter zero (0) in cells if PWS does not serve such premises.
- Estimate number of connections served if necessary (OK to use phone book).
- Hazard evaluations do not need to be done to complete this table.

Type of High-Hazard Premises or Systems [WAC 246-290-490(4)(b)]	Number of Connections at end of 12/31/2009			
	A. Being Served Water by PWS[1]	B. With Premises Isolation by AG/RP	C. With Column B AG Inspected or RP Tested [2]	D. Granted Exception from Mandatory Premises Isolation
Agricultural (farms and dairies)	2	0	0	0
Beverage bottling plants (including breweries)	0	0	0	0
Car washes	15	15	12	0
Chemical plants	1	1	1	0
Commercial laundries and dry cleaners	12	11	9	0
Both reclaimed water and potable water provided	0	0	0	0
Film processing facilities	0	0	0	0
Dedicated fire protection systems with chemical addition or using unapproved auxiliary supplies	0	0	0	0
Food processing plants (including canneries, slaughter houses, rendering plants)	3	3	3	0
Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	59	54	52	0
Separate irrigation systems using purveyor's water supply and chemical addition[4]	0	0	0	0
Laboratories	0	0	0	0
Metal plating industries	0	0	0	0
Petroleum processing or storage plants	0	0	0	0
Piers and docks	0	0	0	0
Radioactive material processing plants or nuclear reactors	0	0	0	0
Survey access denied or restricted	0	0	0	0
Wastewater lift/pump stations (non-residential only)	2	2	2	0
Wastewater treatment plants	4	4	4	0
Unapproved auxiliary water supply interconnected with potable water supply	6	4	4	0
Tall Building over 30'	14	5	4	0
Totals	118	99	91	0

[1]Count multiple connections or parallel installations as ***separate*** connections.

[2]Count only those connections with AG or RPBA installed for premises isolation. Don't include connections with in-premises protection only, or connections with DCVA/DCDAs installed for premises isolation.

[3]Count only those connections whose premises isolation preventers were inspected (AG) or tested (RPBA) during #session.FormYear#.

[4]For example, dedicated lines to irrigation systems in parks, playgrounds, golf courses, cemeteries, estates, etc.

[5]Premises with hazardous materials or processes (requiring isolation by AG or RPBA) such as: aircraft and automotive manufacturers, pulp and paper mills, metal manufacturers, military bases, and wholesale customers that pose a high hazard to the PWS. May be grouped together in categories, e.g.: other manufacturing or other commercial. If needed, attach additional sheet giving same information as requested in table.

Part 3C: Cross-Connection Control for Medical Category High-Hazard Premises Served by the PWS

If PWS does not serve any medical type premises, check here ☐ and go to Part 4.

- Complete all cells. Enter zero (0) in cells if PWS does not serve such premises.
- Estimate number of connections served if necessary (OK to use phone book).
- Hazard evaluations do not need to be done to complete this table.

Type of High-Hazard Premises or Systems [WAC 246-290-490(4)(b)]	Number of Connections at end of 12/31/2009			
	A. Being Served Water by PWS[1]	B. With Premises Isolation by AG/RP	C. With Column B AG Inspected or RP Tested[2]	D. Granted Exception from Mandatory Premises Isolation
Hospitals				
Hospitals (include psychiatric hospitals and alcohol and drug treatment centers)	7	7	7	0
Facilities for Treatment and Care of Patients Not Located in Hospitals Counted Above				
Same day surgery centers	2	2	2	0
Out-patient clinics and offices	14	13	13	0
Alternative health out-patient clinics and offices	1	1	1	0
Psychiatric out-patient clinics and offices	0	0	0	0
Chiropractors	0	0	0	0
Hospice care centers	0	0	0	0
Childbirth centers	0	0	0	0
Kidney dialysis centers	1	1	0	0
Blood centers	1	1	1	0
Dental clinics and offices	8	7	7	0
Facilities for Housing Patients				
Nursing homes	8	8	8	0
Boarding homes	1	0	0	0
Residential treatment centers	0	0	0	0
Other Medical-Related Facilities				
Mortuaries	3	3	3	0
Morgues and autopsy facilities (not in hospitals)	1	1	1	0
Veterinarian offices, clinics and hospitals	0	0	0	0
All other (describe in Part 6: Comments on page 6)	12	10	9	0
Totals	59	54	52	0

[1]Count multiple connections or parallel installations as ***separate*** connections.

[2]Count only those connections with AG or RPBA installed for premises isolation. Don't include connections with in-premises protection only, or connections with DCVA/DCDAs installed for premises isolation.

[3]Count only those connections whose premises isolation preventers were inspected (AG) or tested (RPBA) during 2009.

Part 4: Backflow Preventer Inventory and Testing Data During Year 2009

- Complete all cells. Enter zero (0) if there are no backflow preventers in that category.
- Count only the backflow preventers that the PWS relies upon for protection of the distribution system. If your records do not distinguish between premises isolation and in-premises protection preventers, enter all data in Premises Isolation section and check the box.
- Count AVBs on irrigation systems only. **If you do not track AVBs, enter "UNK".**
- Count multiple tests or failures for any particular backflow preventer as one test or failure for that backflow preventer.
- Multiple Service or Parallel Connections: Count each assembly separately.
- Assemblies on Dedicated Fire or Irrigation Lines: Count as Premises Isolation Assemblies.

If PWS does not track AVBs Check here: ☐

	Backflow Preventer Category and Testing/Inspection Information	Air Gap	RPBA	RPDA	DCVA	DCDA	PVBA	SVBA	AVB
Premises Isolation, including preventers isolating PWS-owned facilities. ***If In-Premises Protection preventers are also included, check here.*** ☑									
Rows 1-3 pertain ONLY to Premises Isolation preventers in service at beginning of 2009									
1	In service on 1/1/2009	0	143	0	408	29	0	0	0
2	Inspected and/or Tested in 2009[1]	0	132	0	391	29	0	0	0
3	Failed Inspection or Test in 2009	0	12	0	16	0	0	0	0
Rows 4 - 6 pertain ONLY to NEW Premises Isolation preventers installed during 2009									
4	New preventers installed in 2009[2]	0	12	1	18	2	0	0	0
5	Inspected and/or Tested in 2009[1]	0	12	1	18	2	0	0	0
6	Failed inspection or test in 2009[3]	0	0	0	2	0	0	0	0
7	Preventers taken out of service in 2009[3]	0	1	0	2	0	0	0	0
Premises Isolation Total at end of 2009[4]		0	154	1	424	31	0	0	0
In-Premises Protection (Fixture Protection or Area Isolation), including preventers within PWS-owned facilities.									
Rows 8 - 10 pertain ONLY to In-Premises Protection Preventers in service at beginning of 2009									
8	In service on 1/1/2009	26	401	0	1585	6	112	3	8
9	Inspected and/or Tested in 2009[1]	1	335	0	1385	6	87	3	0
10	Failed Inspection or Test in 2009	0	15	0	51	0	5	0	0
Rows 11 - 13 pertain ONLY to NEW In-Premises Protection Preventers installed during 2009									
11	New preventers installed in 2009[2]	1	12	0	15	0	1	2	0
12	Inspected and/or Tested in 2009[1]	0	12	0	14	0	1	2	0
13	Failed inspection or test in 2009	0	1	0	0	0	0	0	0
14	Preventers taken out of service in 2009[3]	1	23	0	18	0	6	0	0
In-Premises Protection Total at end of 2009[4]		26	390	0	1582	6	107	5	8
Grand Total at end of 2009		26	544	1	2006	37	107	5	8

[1]Initial and/or routine annual inspection (for proper installation and approval status) and/or test (for testable assemblies only using DOH/USC test procedures).Includes preventers installed on connections where backflow prevention was not previously required and any preventers that replaced those in service at beginning of 2009. Replacement preventers may be of a different type than the original.

[2]Includes preventers installed on connections where backflow prevention was not previously required and any preventers that replaced those in service at the beginning of 2009. Replacement preventers may be of a different type than the original.

[3]New or existing preventers taken out of service, whether or not they were replaced by the same type or different type of preventer.

[4]Total at end of 2009 should be equal to the number of preventers in service at beginning of 2009 plus those installed during 2009 minus the number of preventers taken out of service during 2009.

Part 4B: Other Implementation Activities in 2009

Complete all cells. Enter zero (0) if not applicable.

Activity or Condition	Number
New service connections evaluated for cross-connection hazards to PWS in 2009.	68
New service connections requiring backflow protection to protect PWS.[1]	15
Existing service connections evaluated for cross-connection hazards to PWS in 2009.	38
Existing service connections requiring backflow protection to protect PWS.[1,2]	10
Exceptions granted to high-hazard premises per WAC 246-290-490(4)(b) in 2009.[3]	1
CCC enforcement actions taken by PWS during 2009.[4]	0

[1]Include services where either premises isolation or in-premises preventers were required to protect the PWS.

[2]Include existing services that need new, additional or higher level backflow prevention.

[3]A DOH Exceptions to Hazard Premises Form *must* be attached for each exception granted during the year.

[4]"Enforcement actions" mean actions taken by the PWS (such as water shut-off, PWS installation of backflow preventer) when the customer fails to comply with PWS's CCC requirements.

Part 5: Backflow Incidents and "Off-Normal" Events in 2009

	Backflow Incidents, Risk Factors and Indicators during 2009	Number (Enter 0 if none)	Check if Data Not Available
Backflow Incidents during 2009			
1	Backflow incidents that contaminated the PWS[5].	0	☐
2	Backflow incidents that contaminated the customer's drinking water system ***only***[5].	0	☐
Risk Factors for Backflow during 2009			
3	Distribution main breaks per 100 miles of pipe.	5.34	☐
4	Low pressure events (<20 psi in PWS distribution system).	16	☐
5	Water outage events.	16	☐
Indicators of Possible Backflow during 2009			
6	Total health-related complaints received by PWS.[6]	0	☐
7	Received during BWA or PN events.[7]	0	☐
8	Received during low pressure or water outage events.	0	☐
9	Total aesthetic complaints (color, taste, odor, air in lines, etc.).	19	☐
10	Received during BWA or PN events.[7]	0	☐
11	Number of these complaints received during low pressure or water outages events.	7	☐

[5]Complete and submit a Backflow Incident Report form for each known backflow incident.

[6]Such as stomach ache, headache, vomiting, diarrhea, skin rashes, etc.

[7]"**BWA**" means ***Boil Water Advisory*** and "**PN**" means ***Public Notification*** for water quality reasons.

Part 6: Comments and Clarifications

Enter comments or clarifications to any of the information included in this report. Note for on-screen completion: Comments will not "word wrap" from one line to the next. Press to continue on new line. Maximum length of each comment is 255 characters, including spaces.

Part No.	Date Added	Comment
Pt 3C	12/1/08	(2) HOSPITALS WITH (3) CONNECTIONS , INCLUDING (1) FIRE LINE @ EACH HOSPITAL PROTECTED BY DCVA ASSEMBLY. ONE CONNECTION IS TO ALCOHOL TREATMENT CENTER WITH NO HAZARD. 4-23-08
Pt 3C	12/1/08	THE HOSPITAL CATEGORY HAS BEEN REVISED TO EXCLUDE 2 FIRE LINES AS PER DOH DIRECTION. 12-01-2008
Pt 3C	5/16/09	We serve 2 hospitals each with 3 connections and 1 fire line. Each connection is protected by an RP
Gener	5/16/09	All info for parts 3B, 3C & 4A were gathered from new Tokay Cross Connection Software. We converted to tokay Software in December of 2008 and not all the data of devices tested in 2008 is accurate because most devices were tested before data conversion to Tokay system took place.
Pt 3C	5/16/09	All other category includes medical facilities with premise isolation that do not fit into one of the high hazzard medical catagories.
Gener	5/16/09	In parts 3B & 3C new tokay software does not reflect or pick up service connections on high hazzard or medical facilities that do not have premise isolation.

Part 7: Report Completion Information

I certify that the information provided in this CCC Activities Report is complete and accurate to the best of my knowledge.		
CCC Program Mgr. Name[1]: James Dean		Title: Water Dist. Supervisor
Signature:		Date: 04/16/2010
Phone: (509) 575-6196	E-mail: jdean@ci.yakima.wa.us	
I have reviewed this report and certify that the information provided is complete and accurate to the best of my knowledge.		
PWS Mgr./Owner Name[2]: David Brown		Title: Water / Irrigation Division Manager
Signature:	Op. Cert. No.: 3441	Date: 04/16/2010

[1] CCC Program Manager is generally the CCS who is responsible for development and implementation of the PWS's CCC Program.

[2] The person that the CCC Program Manager reports to or other manager having direct responsibility and/or oversight of the CCC program.

Appendix O

Development Standards

CITY OF YAKIMA

DEVELOPMENT STANDARDS

Ordinance No.
2001-13

MUNICIPAL CODE, TITLE 12
ADOPTED BY YAKIMA CITY COUNCIL

April 3, 2001

CITY OF YAKIMA
DEPARTMENT OF COMMUNITY &
ECONOMIC DEVELOPMENT
ENGINEERING DIVISION
129 N. 2nd Street
Yakima, WA. 98901

Ph: (509) 575-6111
Fax: (509) 575-6105

CITY OF YAKIMA

DEVELOPMENT STANDARDS

Ordinance No.
2001-13

MUNICIPAL CODE, TITLE 12
ADOPTED BY YAKIMA CITY COUNCIL

April 3, 2001

CITY OF YAKIMA
DEPARTMENT OF COMMUNITY &
ECONOMIC DEVELOPMENT
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Title 12 DEVELOPMENT STANDARDS

Chapter 12.01
CONSTRUCTION OF PUBLIC WORKS IMPROVEMENTS

Sections:

12.01.010 Purpose.
The purpose of this chapter is to establish requirements and standards for the design and construction of public works improvements in conjunction with subdivision, development, or redevelopment of real property, and to establish fees for the city engineer's review of design documents for and inspection of public works improvements. (Ord. 2001-13 § 1, 2001: Ord. 95-6 § 2, 1995).

12.01.020 Applicability—Compliance.
(1) Any person or entity which undertakes to construct any public works improvement in the city of Yakima, including, without limitation, applicants who are granted a permit or approval that is conditioned on or otherwise requires construction of public works improvements in the city of Yakima, shall comply with the provisions of this chapter.

(2) Repairs and/or minor alterations to existing curbs or gutters, sidewalks, street pavement, driveway approaches, and alleys are regulated by Title 8 of this code and are excepted from the requirements of this chapter. (Ord. 95-6 § 3, 1995).

12.01.030 Design documents.
(1) Design documents for design and construction of public works improvements shall, without limitation, include plan drawings and profile drawings, engineering calculations, and specifications. Design documents shall be submitted by the applicant to the city engineer before any construction is started. The city engineer may require the applicant to submit multiple sets of design documents. All drawings shall be of sufficient clarity and detail to indicate the location, nature, and extent of the public works improvements. Design documents shall show in detail that construction work and public works improvements shall conform to applicable laws and regulations including this title. Plans shall be drawn on substantial velum or mylar capable of reproduction on standard engineering reproduction equipment and shall conform to engineering standards satisfactory to the city engineer. Applicants may request to submit design documents on computer media compatible with the city engineer's data processing system.

(2) Design documents shall be prepared by a civil engineer licensed by the state of Washington. The city engineer may waive preparation by a licensed civil engineer if the nature of the work contemplated is such that preparation by a licensed civil engineer is not necessary to obtain compliance with applicable laws and regulations including this title. Submittal of appropriate design documents shall not be waived. (Ord. 2001-13 § 2, 2001: Ord. 95-6 § 4, 1995).

12.01.040 Review process.

(1) The city engineer shall review design documents for public works improvements. No public works improvements may be constructed before appropriate fees are paid and the city engineer has provided written approval of the pertinent design documents. If the city engineer determines that proposed public works improvements and the related design documents conform to applicable requirements including this chapter, then the city engineer shall mark the original design documents "Approved" and affix his/her signature thereto, and these actions shall constitute written approval.

(2) Proposals will ordinarily be reviewed and inspected in the order they are submitted to the city engineer. An. applicant may request expedited review or inspection; however, an applicant shall have no right to such expedited review or inspection. The city engineer may determine the terms and conditions of such expedited review or inspection, including, without limitation, compensation for city employee overtime work.

(3) Public works improvements described by approved design documents must be constructed in conformity with the approved design documents and may not be changed, modified or altered without written approval of the city engineer.

(4) The applicant shall, during construction, maintain a neatly marked, full-sized set of record drawings showing the layout and final location of all public works improvements involved in new construction. Prior to final acceptance by the city of Yakima of public works improvements, reproducible record drawings prepared by the civil engineer of record and clearly identified as record drawings shall be delivered to the city engineer for acceptance.

(5) The applicant shall submit for written approval by the city engineer a detailed summary of the construction cost of approved public works improvements, which may include the contractor's bid, the engineer's estimate, or other items which may assist the city engineer to determine the cost of construction.

(6) The applicant shall, upon the city engineer's written approval of completed public works improvements, transfer ownership of such public works improvements to the city of Yakima.

(7) Final acceptance by the city of Yakima of the actual public works improvements shall not occur before the applicant has satisfied all applicable requirements, including, without limitation, those of this chapter. (Ord. 2001-13 § 3, 2001: Ord. 95-6 § 5, 1995).

12.01.050 Procedures manual for construction of public improvements.

(1) The city engineer shall establish and maintain a manual describing procedures for the city engineer's review, permitting and inspection of public improvements constructed by private parties. This manual shall include a schedule of fees for such review, permitting and inspection approved by the city council.

(2) All public improvements financed by owner/developer private contracts shall comply with this procedures manual.

(3) The procedures specified in the procedures manual shall apply to public improvements within a subdivision or planned development or other new development or redevelopment. (Ord. 2001-13 § 4, 2001).

12.01.060 Phased improvements.

(1) The city engineer may determine that actual construction of specified improvements is not immediately useful and may be deferred until a period of time has passed, a development milestone has been reached, or some other event makes actual construction of such specified improvement useful. The person or entity responsible for actual construction of such specified improvements may enter into a written agreement with the city engineer to complete such specified improvements at some later time when, in the judgment of the city engineer, actual construction of such specified improvements will become useful.

(2) Improvements the city engineer determines will be useful immediately must be constructed as part of the initial phase of a project or development and may not be included in the written agreement allowing specified improvements to be constructed at some later time, and shall be constructed prior to final approval of the initial phase of the proposed development. (Ord. 2001-13 § 6, 2001).

12.01.070 Severability.

If any section, subsection, paragraph, sentence, clause or phrase of this title is declared invalid or unconstitutional for any reason, such decision shall not affect the validity of the remaining portions of this title. (Ord. 2001-13 § 7, 2001: Ord. 95-6 § 7, 1995).

Chapter 12.02
PUBLIC UTILITY EASEMENTS

Sections:

12.02.010 Establishment of easements.
Public utility easements shall be established for the location of new and proposed public utility lines serving new land divisions and land development. Public utility easements shall also be established across the front of new lots and redeveloped lots to provide future utility access as determined necessary by the city engineer. Public utility easements shall be dedicated (granted) at the time that subdivision and/or land use approval is granted. (Ord. 2001-13 § 8, 2001: Ord. 98-64 § 1 (part), 1998).

12.02.020 Easement location and width.
Eight-foot-wide utility easements shall be dedicated along the front of each lot in subdivisions and short subdivisions. Easements for new and/or future utility lines shall be a minimum of eight feet in width, or twice the buried depth of the utility, whichever is greater. (Ord. 2001-13 § 9, 2001: Ord. 98-64 § 1 (part), 1998).

12.02.030 Easement pattern.
Utility easements shall be continuous and aligned from block to block within a subdivision and with easements in adjoining subdivisions to facilitate the extension of public utilities. (Ord. 98-64 § 1 (part), 1998).

12.02.040 Drainage easements.
Drainage easements shall be provided to protect natural watercourses, drainage ways, and stream channels and to accommodate drainage facilities. Alignment and width of drainage easements shall be determined by the city engineer. (Ord. 98-64 § 1 (part), 1998).

12.02.050 Other facilities.

Easements for unusual facilities such as high-voltage electrical transmission lines, higher-capacity natural gas transmission lines, and other private facilities may be provided at the direction of the city engineer. (Ord. 2001-13 § 10, 2001: Ord. 98-64 § 1 (part), 1998).

12.02.060 Design approval and adjustment.

The engineering design of easements is subject to approval by the city engineer. The city engineer may, in his/her discretion, adjust these standards as necessary to facilitate establishment of easements. (Ord. 2001-13 § 12, 2001).

Chapter 12.03
SEWER

Sections:

12.03.010 Sewer service required.
All new lots and development shall be served by a sanitary sewer line located adjacent to the lot or development site. (Ord. 98-64 § 1 (part), 1998).

12.03.020 Sewer line extensions.
Sewer lines shall be extended to the point where the adjoining property owner's responsibility for further extension begins. This typically requires extension across the street or easement frontage of the developing property. In some cases it will require dedication of an easement and a line extension across the property or extension along two or more sides of the developing property. Extensions will be consistent with and implement the city's adopted sewer comprehensive plan. (Ord. 98-64 § 1 (part), 1998).

12.03.030 Sewer line location.
Sewer lines shall be located in streets to serve abutting properties. When necessary, sewer lines may be located within public easements. Sewer mains located in streets will be offset from the street centerline by six feet and manholes shall not be located within a vehicle tire path. Sewer lines located in easements shall generally be located in the center of the easement, but may, with the approval of the city engineer, be offset to accommodate the installation of other utilities or to satisfy special circumstances. (Ord. 2001-13 § 13, 2001: Ord. 98-64 § 1 (part), 1998).

12.03.040 Minimum line size.
The minimum size for public sewer lines is eight inches in diameter. (Ord. 98-64 § 1 (part), 1998).

12.03.050 Line termination.
Sewer lines shall be terminated with a flush-end (clean-out) or a manhole as directed by the city engineer. Manholes will generally be used when extension of the sewer line is anticipated and manhole spacing will be appropriate for the future. (Ord. 98-64 § 1 (part), 1998).

12.03.060 Manholes required.
Manholes shall be installed at intervals of no greater than three hundred fifty feet and at all vertical and horizontal angle points. (Ord. 2001-13 § 14, 2001: Ord. 98-64 § 1 (part), 1998).

12.03.070 Side sewer service.
Each building containing sanitary facilities shall be served by a separate private side sewer line from a public main. Branched side sewers serving multiple buildings and properties shall not be permitted. Single side sewers serving multi-unit buildings are permitted. (Ord. 2001-13 § 15, 2001: Ord. 98-64 § 1 (part), 1998).

12.03.080 Side sewer maximum length.
The maximum side sewer length within public right-of-way shall be one hundred feet unless otherwise approved by the city engineer. (Ord. 2001-13 § 16, 2001: Ord. 98-64 § 1 (part), 1998).

12.03.090 Gravity flow required.
Sewer lines shall be designed for gravity flow operation. Lift stations and force mains (pressurized lines) shall be limited to those locations and circumstances where they are consistent with the comprehensive sewer plan and are the preferable short-term solution to service of the development site and other properties in the vicinity. (Ord. 2001-13 § 17, 2001: Ord. 98-64 § 1 (part), 1998).

12.03.100 Design approval and adjustment.
The engineering design of sewer facilities is subject to approval by the city engineer. The city engineer may, in his discretion, adjust these standards as necessary to facilitate installation of sewer facilities, in cooperation with the wastewater division manager. (Ord. 2001-13 § 18, 2001: Ord. 98-64 § 1 (part), 1998).

Chapter 12.04
WATER

Sections:

12.04.010 Service required.

All new lots and development shall be served by a public water supply line maintained by the city of Yakima, Nob Hill Water Company, or other water purveyor, and located adjacent to the lot or development site. The water line shall be capable of providing sufficient flow and pressure to satisfy the fire flow and domestic service requirements of the proposed lots and development as approved by the city engineer in cooperation with the code administration manager and water irrigation division manager. (Ord. 2001-13 § 20, 2001: Ord. 98-64 § 1 (part), 1998).

12.04.020 Water line extension required.

Water lines shall be extended to the point where the adjoining property owner's responsibility for further extension begins. This typically requires extension across the street or easement frontage of the developing property. In some cases it will require dedication of an easement and a line extension across the property or extension along two or more sides of the developing property. Extensions will be consistent with and implement the city's adopted water comprehensive plan. (Ord. 98-64 § 1 (part), 1998).

12.04.030 Looping required.

All water lines shall be looped. Temporary dead-end water lines may be permitted based upon an agreement between the developer and the city with provisions for timely completion of looping. (Ord. 98-64 § 1 (part), 1998).

12.04.040 Minimum size and material standards.

New water lines in the city of Yakima water system shall be constructed of Class 52 ductile iron and shall be a minimum of eight inches in diameter. Improvements and additions to the Nob Hill Water Company system shall conform to the requirements of Nob Hill Water Company. (Ord. 98-64 § 1 (part), 1998).

12.04.050 Design approval and adjustment.

The design of water lines and appurtenances is subject to approval by the city engineer. The city engineer may, in cooperation with the water/irrigation division manager in his/her discretion, adjust these standards as necessary to facilitate installation of water lines and appurtenances. (Ord. 2001-13 § 21, 2001: Ord. 98-64 § 1 (part), 1998).

12.04.060 Replacement of wooden mains.

(1) When development or construction activities cause an existing wooden water main to be covered by impervious surfacing, or to be exposed for other construction activities, the wooden main shall be replaced.

(2) When replacement of existing wooden water mains is required, the replacement material shall be PVC pipe, class 200, or cement lined ductile iron pipe, class 50.

(3) The replacement pipe shall be the same diameter as the existing pipe.

(4) The City shall supply the pipe and fittings. The developer shall excavate and install the replacement pipe. The city shall supply the labor to connect the replacement pipe to the existing system.

(5) The replacement main may be relocated in compliance with the water/irrigation division standards and requirements as approved by the city engineer.

(6) When existing irrigation water mains are available to a site development or redevelopment, the irrigation mains should be extended to serve the development. (Ord. 2001-13 § 22, 2001).

Chapter 12.05
SIDEWALKS

Sections:

12.05.010 Sidewalk installation required.

Sidewalks shall be installed along both sides of all new, improved, and reconstructed streets. Projects which repair small portions of or maintain existing street shall not be considered “improvement” for the purpose of this section and shall not trigger the requirements of this section. Sidewalks shall also be installed across the frontage of all newly developed or redeveloped lots where feasible. (Ord. 2001-13 § 23, 2001: Ord. 98-64 § 1 (part), 1998).

12.05.020 Sidewalk location, thickness and width.

Sidewalks shall be located in the street right-of-way or, when necessary, in a public easement. They shall be constructed of cement concrete and be a minimum of four inches thick. Sidewalks at driveway approaches shall be a minimum of six inches thick. Sidewalks which are in need of

repair or replacement may be reconstructed at their existing width. Otherwise, minimum sidewalk width for all new development shall be:

A.	Residential streets	5 feet
B.	Arterial and collector streets	7 feet
C.	Central business district streets	12 feet

On arterial and collector streets five feet of sidewalk may be allowed with two feet of buffer such as planter strip. (Ord. 2001-13 § 24, 2001: Ord. 98-64 § 1 (part), 1998).

12.05.030 Obstructions.

The full width of sidewalks shall be maintained free of any obstructions such as utility poles, meters, or manholes where feasible. (Ord. 2001-13 § 25, 2001).

12.05.040 Design approval and adjustment.

The design of sidewalks and appurtenances is subject to approval of the city engineer. The city engineer may, in cooperation with the streets manager, adjust these standards as necessary to facilitate installation of sidewalks and appurtenances. (Ord. 2001-13 § 26, 2001).

Chapter 12.06
STREETS

Sections:

12.06.010 Street types, functional classification.

Map V-1, functional classification of the Yakima urban area comprehensive plan, designates principal arterial, minor arterial and collector streets and establishes their functional classification. All other streets are classified as local residential access. (Ord. 2001-13 § 27, 2001: Ord. 98-64 § 1 (part), 1998).

12.06.020 Right-of-way and pavement width standards.

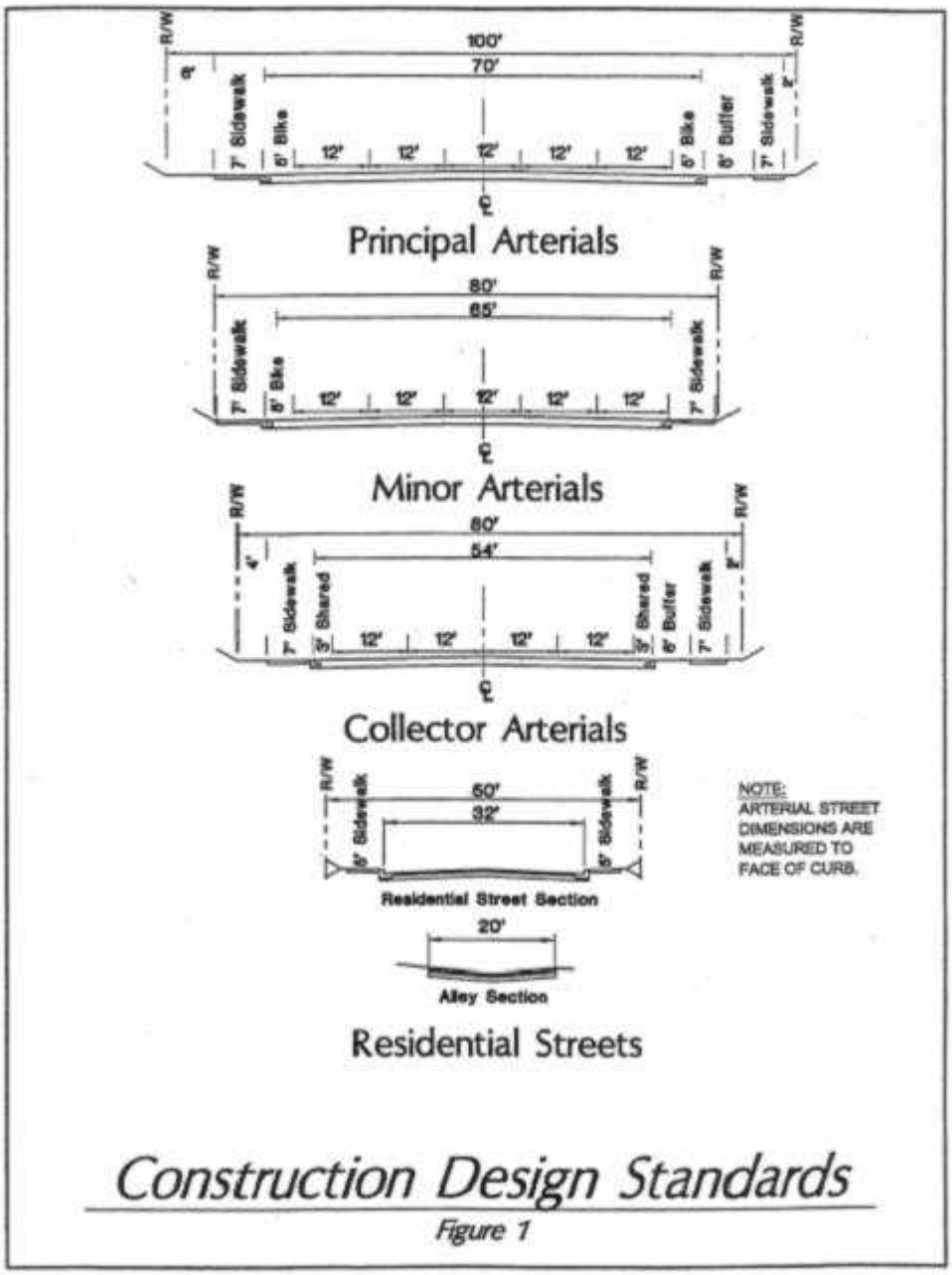
Right-of-way shall be dedicated and street surfacing provided in accordance with the following:

	Right-of-Way (feet)	Pavement Width (feet)
Principal arterial	100	70
Minor arterial	80	65
Collector arterial	80	54
Neighborhood collector	60	40
Residential access	50	32
Alley ways	20	20

(Ord. 2001-13 § 28, 2001: Ord. 98-64 § 1 (part), 1998).

12.06.030 Design standards, adjustment of standards.

The preferred construction design standards for each class of street are depicted in Figure 1. Final design of street improvements is subject to approval by the city engineer. The city engineer, at his discretion, is authorized to adjust these standards as necessary to facilitate the construction of new streets and improvement of existing streets. Projects which repair small portions of or maintain existing streets shall not be considered “improvements” for the purposes of this section (Ord. 2001-13 § 30, 2001: Ord. 98-64 § 1 (part), 1998).



12.06.040 Bicycle and pedestrian facilities.

Bicycle lanes and pedestrian sidewalks shall be provided along all new or reconstructed arterial and collector arterial streets, where feasible. (Ord. 2001-13 § 31, 2001: Ord. 98-64 § 1 (part), 1998).

12.06.050 Cul-de-sac streets.

Cul-de-sacs shall be constructed within a street right-of-way eighty feet in diameter and have an improved diameter of sixty-five feet. The maximum length of a cul-de-sac street shall be six hundred feet measured along the street centerline from the nearest street intersection to the center of the cul-de-sac. (Ord. 98-64 § 1 (part), 1998).

12.06.060 Pattern.

A. Street pattern shall provide for the continuation or appropriate projection of existing and new streets.

B. Residential streets shall be planned to discourage their use by nonlocal traffic.

C. Right-of-way boundaries at intersections of access streets shall be rounded with a minimum radius by the city engineer to be necessary. When determined necessary by the city engineer, the boundary line intersection shall be truncated with a chord having a nominal deflecting angle of forty-five degrees.

D. Streets shall be designed to intersect as nearly as possible at right angles and in no case shall streets intersect at an angle of less than eighty degrees.

E. Local access streets with centerlines offset less than one hundred eighty feet shall not be allowed.

F. Temporary dead-end streets shall be provided with a temporary cul-de-sac at the closed end and the design shall provide for continuation of the full right-of-way width to the property boundary.

G. Alleys, if used, shall be centered on the rear lot lines and shall serve only as secondary access to lots. Dead end alleys are not permitted.

H. The hearing examiner and city council may, upon recommendation from the city engineer, require such other design standards as deemed appropriate to ensure a safe and efficient street system. (Ord. 2001-13 § 32, 2001; Ord. 98-64 § 1 (part), 1998)

12.06.070 Provision of street curbing.

Barrier curbs shall be installed along all public access streets. Rolled mountable curbs may be permitted along residential access streets. Curb design shall be consistent with the standards of the city engineer. (Ord. 2001-13 § 33, 2001: Ord. 98-64 § 1 (part), 1998).

12.06.080 Street lighting.

A street light shall be installed at each street intersection and at mid block if the block exceeds five hundred feet in length. Street lights shall meet the design and placement standards of the city engineer. Lighting improvements shall become the property of the city of Yakima upon installation and will thereafter be maintained by the city. (Ord. 98-64 § 1 (part), 1998).

12.06.090 Private access streets.

Private streets may be used as sole access to new lots and development and for internal circulation within manufactured home parks and residential planned developments.

Private streets shall be constructed in conformance with following standards:

Potential Density	Easement Width	Engineered Street Plans	Surface Width	Surface Type
3	30	No	20	Paved
8	40	No	24	Paved
16	50	Yes	30	Paved

Private streets shall be constructed with curbs, sidewalks, and street lighting and shall otherwise conform to the standards for public streets. Private streets shall provide cul-de-sac/hammer head turnaround to accommodate emergency and refuse collection vehicles (Ord. 2001-13 § 34, 2001: Ord. 98-64 § 1 (part), 1998).

Chapter 12.07
TRAFFIC STUDIES

Sections:

12.07.010 When required.

In order to provide sufficient information to assess a development impact on the transportation system and level of traffic service, the city engineer may require a traffic study to be completed at the developer's expense. This decision will be based upon the size of the development proposal, existing roadway condition, traffic volumes, accident history, expressed community concern, and other factors relating to transportation. (Ord. 98-64 § 1 (part), 1998).

12.07.020 Professional qualifications.

Traffic studies shall be conducted under the direction of a civil engineer or civil engineering firm licensed in the State of Washington and possessing special training and experience in traffic engineering and, preferably, with membership in the Institute of Transportation Engineers (ITE). (Ord. 98-64 § 1 (part), 1998).

12.07.030 Scope of study.

The level of detail and scope of the traffic study may vary with the size, complexity and location of the proposed development. A traffic study shall be a thorough review of the immediate and long-range effects of the proposed development on the transportation system. Guidelines for traffic studies shall be published and available from the city engineer. (Ord. 98-64 § 1 (part), 1998).

Chapter 12.08
TRANSPORTATION CAPACITY MANAGEMENT

Sections:

12.08.010 Intent.

The city of Yakima is required by the State Growth Management Act, Chapter 36.70A RCW, to ensure that proposed development not be approved unless transportation improvements or strategies to accommodate the impacts of such development are established concurrently with any proposed development that would otherwise reduce the level of service of a transportation facility below the standards adopted in the transportation element of the city's comprehensive plan. The intent of this chapter is to establish a transportation capacity management system to ensure that transportation facilities and services needed to maintain adopted minimum comprehensive plan level of service standards are available concurrently with, or within a reasonable time after, new development, occupancy, or use. This chapter implements the goals, policies and implementation strategies of the capital facilities plan element of the Yakima urban area comprehensive plan. (Ord. 2000-5 § 1 (part), 2000: Ord. 98-68 § 1 (part), 1998).

12.08.020 Definitions.

A. "Applicant" means a person or entity that has submitted a complete application for a development or building permit.

B. "Available transportation capacity" means currently unused transportation capacity within a transportation facility.

C. "Concurrency" means that adequate transportation facilities are available when the impacts of development occur or a financing plan is adopted which will fund required improvements within six years.

D. "Development permit" means any land use or development approval which may be granted by the city of Yakima.

E. Level of Service Standards. The "level of service standards" used in transportation capacity tests are those standards specified in the current adopted or transportation element of the capital facilities program.

F. "Planned capacity" means transportation capacity for a transportation facility that is not yet available, but for which the necessary facility construction, expansion or modification project is included in the current adopted capital facilities plan and scheduled to be completed within six years.

G. “Transportation capacity” means the volume of transportation activity (motor vehicles/lane/unit time) that can be reasonably and safely accommodated by a transportation facility, as stated in the transportation plan, final report, dated February 1998 (or as revised, supplemented, or replaced), which is appended to the capital facilities element of the comprehensive plan. For the purposes of this chapter, transportation capacity shall be measured as eight hundred vehicles per lane during peak hour, pursuant to city council Ordinance 2000-4.

H. “Transportation capacity test” means the comparison of the transportation capacity required by proposed development and the available capacity, including planned capacity.

I. “Transportation facility” means the classified streets identified in the capital facilities element of the comprehensive plan. (Ord. 2000-5 § 1(part), 2000: Ord. 98-68 § 1 (part), 1998).

12.08.030 Transportation capacity test.

A. Application. The city’s review of all applications for development permits and for building permits for projects not exempted by Section 12.08.040 shall include a transportation capacity test conducted by the city traffic engineer.

B. Procedures. The transportation capacity test will be performed by the city traffic engineer in conjunction with review of proposed development projects and building permit applications. The department of community and economic development shall notify the applicant of the test results.

1. If the unused capacity of transportation facilities affected by a project is equal to or greater than the capacity required by the project, the transportation capacity test is passed.

2. If the unused capacity of transportation facilities affected by a project is less than the capacity required by the project, the transportation capacity test is not passed. The project may not be approved unless transportation improvements or strategies to provide capacity required by the project are established concurrently with the project.

3. In the event a proposed project does not pass the transportation capacity test, the applicant may:

a. Modify the application to reduce the transportation capacity required by the project;

b. Demonstrate to the city’s satisfaction that the project will require less transportation capacity than would normally be required by similar projects and that, therefore, unused transportation capacity is adequate;

c. Propose transportation improvements or strategies to provide the capacity required by the project development.

C. Test. Proposed developments that would reduce the level of service below the minimum level of service standard cannot be approved. For transportation facilities, available and planned transportation capacity will be used in conducting the transportation capacity test. The city will maintain administrative policies which describe the methodology for calculating the capacity analysis. Such policies shall be available for public information at the time of application.

D. Fees. A fee of two hundred fifty dollars shall be paid for each transportation capacity test, except that this fee shall be waived for one subsequent test within six months of a test for which the fee was paid. (Ord. 2000-5 § 1 (part), 2000: Ord. 98-68 § 1 (part), 1998).

12.08.040 Exemptions.

A. No Significant Impact. Development permits for projects which, as determined by the city traffic engineer, create less than ten p.m. peak hour trips, as estimated using the Institute of Transportation Engineers Trip Generation Manual, 6th Edition (or more recent) on any transportation facility are exempt from the requirements of this chapter. A list of exemption threshold will be maintained as part of the administrative policies.

B. The director of community and economic development, with the recommendation of the city traffic engineer, shall be responsible for determining other types of development to be included under this exemption.

C. Building Permit Applications Filed Before Effective Date of the Ordinance Codified in this Chapter. Complete building permit applications submitted before the effective date of said ordinance are exempt from the requirements of this chapter.

D. Single-Family Homes. Single-family homes on lots platted before the effective date of said ordinance are exempt from the requirements of this chapter.

E. Accessory Dwelling Units. All accessory dwelling units, as defined in this code, are exempt from the requirements of this chapter.

F. Accounting for Capacity. The transportation capacity for development permits exempted under subsections C and D of this section shall be taken into account. Traffic counts shall be maintained and regularly updated by the city of Yakima and used for monitoring purposes. (Ord. 2000-5 § 1 (part), 2000: Ord. 98-68 § 1 (part), 1998).

12.08.050 Administrative reconsideration.

The applicant may request administrative reconsideration of the results of the transportation capacity test within fifteen days of the notification of the test results by filing with the department of community and economic development a formal request for reconsideration specifying the grounds thereof, using forms authorized by the department of community and economic development. Each such request for administrative reconsideration shall be accompanied by a fee of one hundred dollars. Upon filing of such request, the director of community and economic development shall notify the city traffic engineer of such request. The city traffic engineer shall reconsider the test results and issue a determination either upholding the original determination or amending it. (Ord. 2000-5 § 1 (part), 2000: Ord. 98-68 § 1 (part), 1998).

12.08.060 Appeal to the city council.

The applicant may appeal the results of the transportation capacity test within fifteen days after the city traffic engineer issues notice of decision on a request for administrative reconsideration by filing with the department of community and economic development a formal appeal of the transportation capacity test specifying the grounds thereof, using forms authorized by the department of community and economic development. Each such appeal to the city council shall be accompanied by a fee of one hundred fifty dollars. Upon filing of such appeal, the department of community and economic development shall notify the city clerk of such appeal. The city council shall review the test results and issue a determination either upholding the original determination or amending it. (Ord. 2000-5 § 1 (part), 2000: Ord. 98-68 § 1 (part), 1998).

Appendix P

Water System Specifications and Details

SPECIFICATIONS

FOR

PRIVATE CONSTRUCTION OF PUBLIC WATER MAINS

FOR

CITY OF YAKIMA

1999

The latest edition of the Standard Specifications for Road, Bridge, and Municipal Construction prepared by the Washington State Department of Transportation and the Washington State Chapter of the American Public Works Association and all currant applicable amendments is, by this supplemented hereinafter. Each section of the Standard Specifications shall be considered as much a part of these Specifications as if they were actually set forth herein.

NOTE: Division 1 of the APWA Supplement of the WSDOT/APWA Standard Specifications shall take precedence over these sections of Division 1 to which they apply.

All sections of the Standard Specifications shall apply to this project as appropriate, except as modified by these Special Provisions.

All measurement and payment sections within the Standard Specifications are deleted for privately funded construction projects. The Developer shall be responsible for payment of all costs for the project and for procuring a qualified contractor.

2-07 WATERING

2-07.3 Construction Requirements

Add the following new section.

2-07.3(A) Water Supplied From Hydrants

The Contractor shall secure permission from and comply with all requirements of the water utility before obtaining water from fire hydrants. The Contractor shall notify the Engineer as soon as permission has been granted.

The contractor shall use hydrant wrenches only to open hydrants. The hydrant valve must be open full, since a partially opened valve causes damage. A metered hydrant connection furnished by the water utility shall be used as an auxiliary valve on the outlet line for control purposes. Fire hydrant valves must be closed slowly to avoid a surge in the system, which creates undue pressure on water lines. The Contractor shall carefully note the importance of following these directions.

If a hydrant is damaged, the Contractor shall immediately notify the water utility so that the damage can be repaired as quickly as possible.

Upon completing the use of the hydrants, the Contractor shall notify the water utility so that the hydrants may be inspected for possible damage. The Contractor will repair any damage resulting from the use of the hydrants by the Contractor, to the satisfaction of the water utility.

The Contractor shall furnish all equipment and tools, except the metered hydrant connection, that may be necessary to meet the requirements of the water distribution agency pertaining to hydrant use.

Any violation of these requirements may result in fines and damage costs resulting from the malfunctioning of damaged fire hydrants, in the event of fire.

The Contractor shall convey the water from the nearest convenient hydrant or other source at his own expense.

5-04 ASPHALT CONCRETE PAVEMENT

5-04.3(7)A Mix Design

Delete reference to Section 9-03.8(6)A

5-04.3(10)B Control

This section is revised to read:

For asphalt concrete Classes A, B, E, F and G, where paving is in traffic lanes, including lanes for ramps, truck climbing, weaving speed changes and left turn channelization and the specified compacted course thickness is greater than 0.10 foot, the acceptable level of compaction shall be a minimum of 91 percent of the maximum density as determined by WSDOT 705/AASHTO T209. The level of compaction attained will be determined as the average of not less that 5 nuclear density gauge tests taken on the day the mix is placed (after completion of the finish rolling) at randomly selected locations within each lot. The quantity represented by each lot will be no greater than a single day's production or approximately 400 tons, whichever is less.

Control lots not meeting the minimum density standard shall be removed and replaced with satisfactory material.

Cores may be used as an alternative to the nuclear density gauge tests. When cores are taken by the Engineer at the request of the contractor, the request shall be made by noon of the first working day following placement of the mix. The Engineer shall be reimbursed for the coring expense at the rate of $75 per core when the core indicates the acceptance level of compaction within a lot has not been achieved.

At the start of paving, if requested by the Contractor, a compaction test section shall be constructed as directed by the Engineer to determine the compatibility of the mix design. Compatibility shall be based on the ability of the mix to attain the specified minimum density (91 percent of the maximum density determined by WSDOT Test Method 705/AASHTO t209). Following determination of compatibility, the Contractor is responsible for the control of the compaction effort. If the Contractor does not request a test section, the mix will be considered compatible.

Asphalt Concrete Classes A, B, E, F and G constructed under conditions other than listed above shall be compacted on the basis of a test point evaluation of the compaction train. The test point evaluation shall be performed in accordance with instructions from the Engineer. The number of passes with an approved compaction train, required to attain the maximum test point density, shall be used on all subsequent paving.

The Contractor shall provide adequate platforms to enable samples to be obtained without the Engineer entering the hauling vehicle.

Acceptance testing for compliance of asphalt content will use the Nuclear Asphalt Gauge procedure: WSDOT Test Method 722-T Acceptance testing for compliance of gradation will use the Quick Determination of Aggregate Gradation Using Alternative Solvent Procedure: WSDOT Test Method 723-T.

Asphalt Concrete Class D and pre-leveling mix shall be compacted to the satisfaction of the Engineer.

In addition to randomly selected locations for the tests of the control lot, the Engineer reserves the right to test any area which appears defective and to require the further compaction of areas that fall below acceptable density readings. These additional tests shall not impact the compaction evaluation of the entire control lot.

5-04.3(13) Surface Smoothness

Add to last paragraph:

This work consists of adjusting utility structures to finished grade. The contractor shall furnish and install new castings on existing public utility structures and monument cases that are being adjusted.

Utility Castings shall not be adjusted until the contractor completes the pavement, at which time the center of each structure shall be located from references previously established.

The asphalt concrete pavement shall be cut and removed to a neat circle, the diameter of which shall be equal to the outside diameter of the frame plus 2 feet. The new frame shall be placed on cement concrete blocks or adjustment rings and wedged up to the desired grade. The base materials shall be removed and class 3000 cement concrete shall be placed within the entire volume of the excavation up to, but not to exceed 1 ½ inches below the finished pavement surface.

The concrete, the edges of the asphalt concrete pavement, and the outer edge of the casting shall be painted with hot asphalt cement. Class G asphalt concrete shall then be placed and compacted with hand tampers and a patching roller.

The completed patch shall match the existing paved surface for texture, density and uniformity of grade. The joint between the patch and the existing pavement shall be painted with hot asphalt cement or asphalt emulsion and shall immediately covered with dry sand before the asphalt cement solidifies.

5-04.3(17) Paving under Traffic

Revise the last sentence to read:

All costs in connection with performing the work in accordance with these requirements, including the cost of temporary pavement marking, shall be borne by the contractor or developer.

5-04.5(1) Quality Assurance Price Adjustment

This section is deleted for private construction projects.

5-04.5(1)A Price Adjustment for Quality of AC Mix

This section is deleted for private construction projects.

5-04.(1)B Price Adjustments for Quality AC Compaction

This section is deleted for private construction projects.

7-09 PIPE AND FITTINGS FOR WATER MAINS

7-09.2 Materials

This section is revised to read:

Ductile Iron Pipe: Ductile iron pipe shall conform with the requirements of SECTION 9-30.1(1) of the Standard Specifications except that it shall be Special Thickness Class 52 with cement mortar lining complying with ANSI/AWWA C105/A21.50, C151/A21.51 and C104/A21.4, most current editions. Joints shall be rubber gasket push-on type (Tyton Joint), conforming to ANSI/AWWA CIII/A21.11, most current edition.

Fittings for Ductile Iron Pipe: Fittings shall be mechanical joint in accordance with Section 9-30.2(1) of the standard specifications. Fittings shall have cement mortar lining and be in accordance with ANSI/AWWA C104/A21.4 and C110/A21.10, most current edition.

Connection Couplings: Couplings for DI pipe, either transition or straight couplings shall be compression type flexible couplings conforming to SECTION 9-30.2(7) of the Standard Specifications and ANSI/AWWA C219, most current edition

7-10 TRENCH EXCAVATION, BEDDING, AND BACKFILL FOR WATER MAINS

7-10. 1(1)D Backfill materials

Add the following:

Imported select backfill as directed by the Engineer shall be crushed gravel, placed and compacted in layers as directed by the Engineer. The crushed gravel backfill shall conform to crushed surfacing top course meeting the requirements of SECTION 9-03.9(3).

7-10.2 Materials

Delete entire section and replace with:

Bedding..... 9-03.15
Imported Select Backfill ..... 9-03.9(3) Top Course

7-10.3(5) Grade and Alignment

Change depth of cover in the first sentence of second paragraph to 4.5 feet.

7-10.3(9) Bedding the Pipe

Revise the first sentence to read:

Bedding material for ductile iron pipe may be select native granular material free from wood waste, organic material, and other extraneous or objectionable materials and shall have a maximum dimension of 2 inches.

7-10.3(10) Backfilling Trenches

Add the following:

Street crossing trenches and other locations as directed by the Engineer shall be backfilled for the full depth of the trench with Crushed Surfacing Top Course meeting the requirements of SECTION 9-03.9(3).

7-10.3(11) Compaction of Backfill

Delete the first paragraph and add the following:

Mechanical compaction shall be required for all trenches. Water settling may be substituted for mechanical compaction at the discretion of the Engineer. The Contractor is hereby cautioned that time extensions shall not be granted

due to unstable trench backfill conditions caused by excessive water settling. The Contractor shall be responsible for correcting such conditions caused by construction activities.

The density of the compacted material shall be at least 95% of the maximum density as determined by ASTM D 698 Tests (Standard Proctor). Placement of courses of aggregate shall not proceed until density requirements have been met.

The first 500 feet of trench backfill operations shall be considered a test section for the Contractor to demonstrate his backfilling and compaction techniques. The Contractor shall notify the Engineer at least 3 working days prior to beginning trench excavation and backfill operations and the Engineer will arrange for in-place density tests to be taken on the completed test section in accordance with the above requirements. No further trenching will be allowed until the specified density is achieved in the test section. Passing in-place density tests in the test section will not relieve the Contractor from achieving the specified densities throughout the project.

7-11 PIPE INSTALLATION FOR WATER MAINS

7-11.3(9)A Connection to Existing Mains

Add the following:

The Water/Irrigation Division shall furnish and install new tapping sleeves and valves to existing mains up to and including 12 inch. Costs including materials and labor, as determined by the Customer Services Manager, shall be paid at the Customer Services Office, City Hall, 129 N. 2nd St. Yakima, WA. 98901, before the work is scheduled. The Contractor shall notify the Water Division at least fourteen (14) calendar days prior to the start of construction. Should the Water/Irrigation Division be unable to install the tap, at the discretion of the Water/Irrigation Division, the tap may be installed by a contractor familiar with tapping domestic water mains. The tapping sleeve shall be epoxy coated and the tapping valve shall be resilient seat. All taps greater than 12 inch, shall be preformed by a contractor familiar with tapping domestic water mains and approved by the Water/Irrigation Division.

Mechanical joints at all fittings and valves shall be connected with a ROMAC "Grip Ring", or an approved equivalent. Concrete thrust blocking in lieu of the Grip Ring may be installed as shown on the Standard Details.

7-11.3(11) Hydrostatic Pressure Test

The first sentence shall be replaced with the following:

All water mains and appurtenances shall be tested under a hydrostatic pressure of 180 psi.

7-11.3(12)N Final Flushing and Testing

This section is supplemented with the following:

The Developer will pay for costs for bacteriological testing. City Engineering Inspector with a Contractor Representative will collect bacteriological tests.

7-11.3(12)P Work by City Water/Irrigation Division Personnel (New Section)

The Contractor shall notify the City Water/Irrigation Division 48 hours prior to the beginning and completion of the water main construction. The City Water/Irrigation Division will open and close all existing valves upon notification from the Contractor.

7-12 VALVES FOR WATER MAINS

7-12.2 Materials

The second paragraph is supplemented with the following:

The approved resilient seated gate valve manufacturers are:
Clow / M & H and Mueller.

The approved butterfly valve manufacturers are:
Pratt, Mueller and M & H.

Valve Boxes: The top section of the valve boxes shall be Rich Model 940-B, or equal, 18 inches high. The bottom section shall be a Rich Model R-36, or equal, 36 inches high. Extension section shall be Rich Model 044, or equal, 12 inches high.

7-12.3 Construction Details

Add the following:

Valves: Upon completion of all work in connection with this Contract, all valves involved in this work shall be opened and the Engineer so notified.

Valve Boxes: Valve boxes should be set to position during backfilling operations so they will be in a vertically centered alignment to the valve operating stem. The top of the box will be at final grade.

7-14 HYDRANTS

7-14.2 Materials

This Section is revised to read.

The City of Yakima will accept hydrants of the following manufacturers:

Mueller Model A 423,
Super Centurion 200
M & H 929

The Contractor may purchase hydrants from the City of Yakima.

Hydrants shall meet all provisions of the City of Yakima Municipal Code 10.10.050, which by this reference is made a part of these Special Provisions. A copy of this code is attached.

7-14.3(1) Setting Hydrants

This section is supplemented with the following:

The hydrant shall be set to the correct elevation on a concrete block base 12" x 12" x 6" thick, which has been placed on undisturbed earth. Around the base of the hydrant, the Contractor shall place 0.25 C.Y. of drain rock ranging in size from 3/4-inch to 1½-inch, said drain rock being for the purpose of allowing free drainage of the hydrant.

7-14.3(2) Hydrant Connections

This section is revised to read:

Hydrants shall be connected to the main with 6-inch ductile iron pipe unless otherwise specified. Each hydrant lateral shall include an auxiliary resilient seat gate valve and valve box located 2.5 feet from the main.

7-14.3(2)A Hydrant Restraint

This section is modified as follows:

Delete second sentence.

7-15.3 Construction Details

Revise this Section as follows:

Change the minimum of depth of cover in the first sentence of the second paragraph to 4.5 feet.

Add the following paragraphs:

Where service connections are shown on the Plans to include a meter setter and box, the Contractor shall install the meter setter assembly and a box flush to the surrounding grade and in accordance with details shown on the City of Yakima Standard Detail. The meter setter shall always be placed within public right of way. Typically, the meter setter box shall be 2 feet inside the street right of way line, unless fencing or other obstacles dictate a different location. The Contractor shall make every effort to keep the meter setter location uniform. The service line shall be extended beyond the meter location to a point on adjacent property 5 feet outside of the meter box.

Before backfilling the meter setter, a 1-inch diameter PVC pipe blank shall be installed in the meter location. The PVC pipe blank shall be 7-3/4 inches long. The in leg and out leg of the meter setter at the meter location shall be maintained at the same height as indicated on the standard detail. Contractor may contact the City of Yakima Water/Irrigation Division to obtain a pattern for assembling a jig that maintains the correct height of meter setter when backfilling. The PVC pipe blank and the meter setter jig shall be removed after backfilling is completed. A 1 ½" thick piece of extruded polystyrene insulation board cut to fit snugly inside of the meter tile shall be placed over the meter setter.

Where service connections are shown on the Plans to have no meter setter and box, the Contractor shall terminate the service connection with a curb stop at the location of the future meter, and shall mark that point by a 5-foot steel fence post set in the ground as shown on the City of Yakima Standard Detail.

9-03 AGGREGATES

9-03.8(3)C Gradation – Recycled Asphalt Pavement and Mineral Aggregate

Delete the reference to Section 9-03.8(6)A in the second paragraph.

All hydrants shall be connected to the water main, auxiliary valve and hydrant with ROMAC "Grip Ring" with accessory pack per manufactures printed specifications and instructions, or approved equivalent.

7-15 SERVICE CONNECTIONS

7-15.1 General

This Section is revised to read:

This work consists of installing the service connections from the water main to the vicinity of the customer's future meter location. The work includes making a service tap to the water main, ¾" and 1" taps to be "direct tap" and 1 ½" and larger use tapping saddles, installing service line, corporation stop and curb stop valves, and (where indicated on the Plans) installing meter setter assembly and stubbing the service line 5 feet beyond the meter setter.

7-15.2 MATERIALS

Section 7-15.2 of the Standard Specifications shall be revised as follows:

Saddle: As per Section 9-30.6(1).

Corporation Stop: Ford Ball Valve corporation stops, with pack joints, or equivalent.

Curb Stop: Ford Ball Valve Curb Stop, with pack joints, or equivalent.

Water Meter Box: 18 inch diameter, Schedule 80 P.I.P. x 3-feet long. Standard City of Yakima lid and frame.

Service Line: Per Section 9-30.6(3)A or Crosslinked Polyethylene Tubing, ASTM 877-89, Wirsbo-Pex or approved equivalent with 16 gauge insulated solid copper tracing wire strapped to tubing and connected to corporation cock and new meter set.

Water Meter Setters: See City of Yakima Standard Detail.

Compression Fitting: Per Section 9-30.6(4).

Water Meters: All water meters to be supplied and installed by the City of Yakima.

9-03.8(6) Proportions of Materials

Add the following paragraph:

For the determination of a Project Mix Design, the Contractor shall submit to the Engineer's representative, samples of the various aggregates to be used along with the gradation data showing stockpile averages and variation of the aggregate produced along with proposed combining ratios and average gradation of the completed mix. The initial asphalt content shall be determined by the Engineer from the aggregates and data provided.

9-30 WATER DISTRIBUTION MATERIALS

9-30.1 Pipe

9-30.1(1) Ductile Iron Pipe

The last sentence of paragraph 1 is replaced with the following:

Ductile iron pipe shall be Special Thickness Class 52 with cement mortar lining complying with ANSI/AWWA C105/A21.50, C151/A21.51 and C104/A21.4 most current editions.

9-30.3 Valves

9-30.3(1) Gate Valves

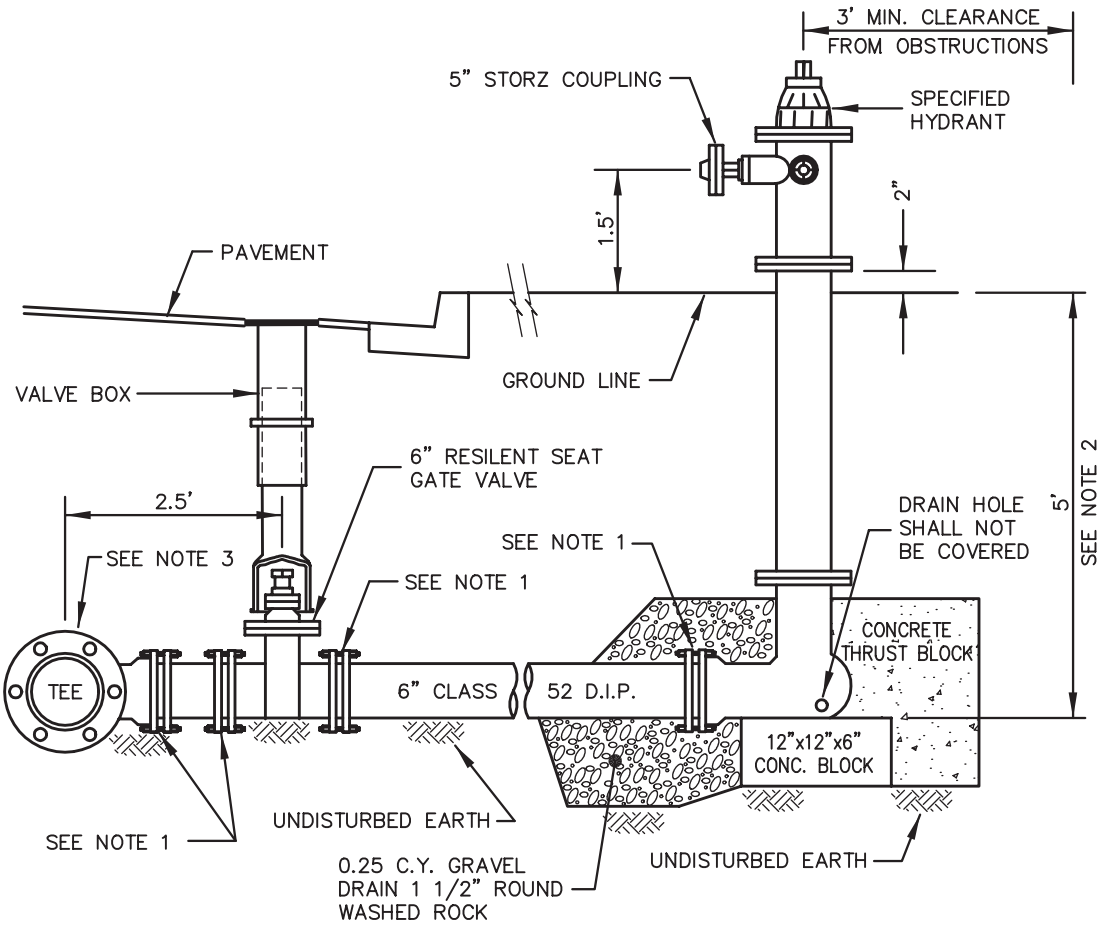
This section is replaced by the following:

Gate valves, sized 3-inch through 8-inch, shall be resilient seated gate valves conforming to ANSI/AWWA C 509 latest edition. The valves shall have mechanical joint connections including accessories, or flanged connections, as noted on the Plans.

9.30.3(3) Butterfly Valves

This section is modified as follows:

All valves 12 inch and over shall be butterfly valves conforming to ANSI/AWWA C504, latest edition, except tapping valves.



NOTES

1. ROMAC "GRIP RING" MECHANICAL JOINT ACCESSORY KITS SHALL BE USED ON ALL MECHANICAL JOINT CONNECTIONS FROM TEE TO HYDRANT.
2. MINIMUM HYDRANT DEPTH IS 5 FEET. THIS DISTANCE MAY INCREASE WHEN HYDRANTS ARE INSTALLED ON DISTRIBUTION MAIN SIZES LARGER THAN 6 INCHES IN DIAMETER.
3. CONNECTION TO WATER MAIN CAN ALSO BE MADE WITH TAPPING VALVE AND SLEEVE. (NOT SHOWN)

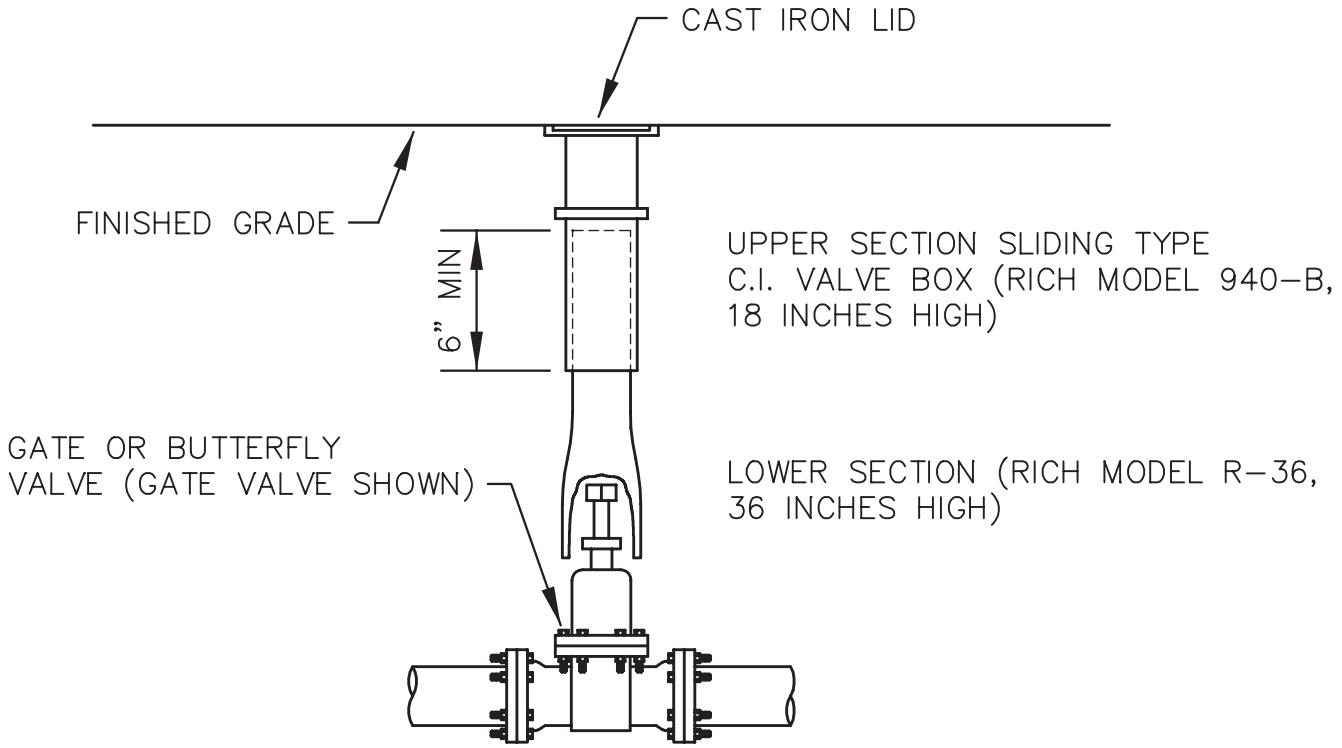
W1
NTS

HYDRANT ASSEMBLY

City of Yakima – Engineering Division

APPROVED: 7.9.99

CITY OF YAKIMA - STANDARD DETAIL	HYDRANT ASSEMBLY	W1



NOTES

1. PROVIDE EXTENSION PIECE WHERE REQUIRED FOR VALVE BOX. (RICH MODEL 044, 12 INCHES HIGH)

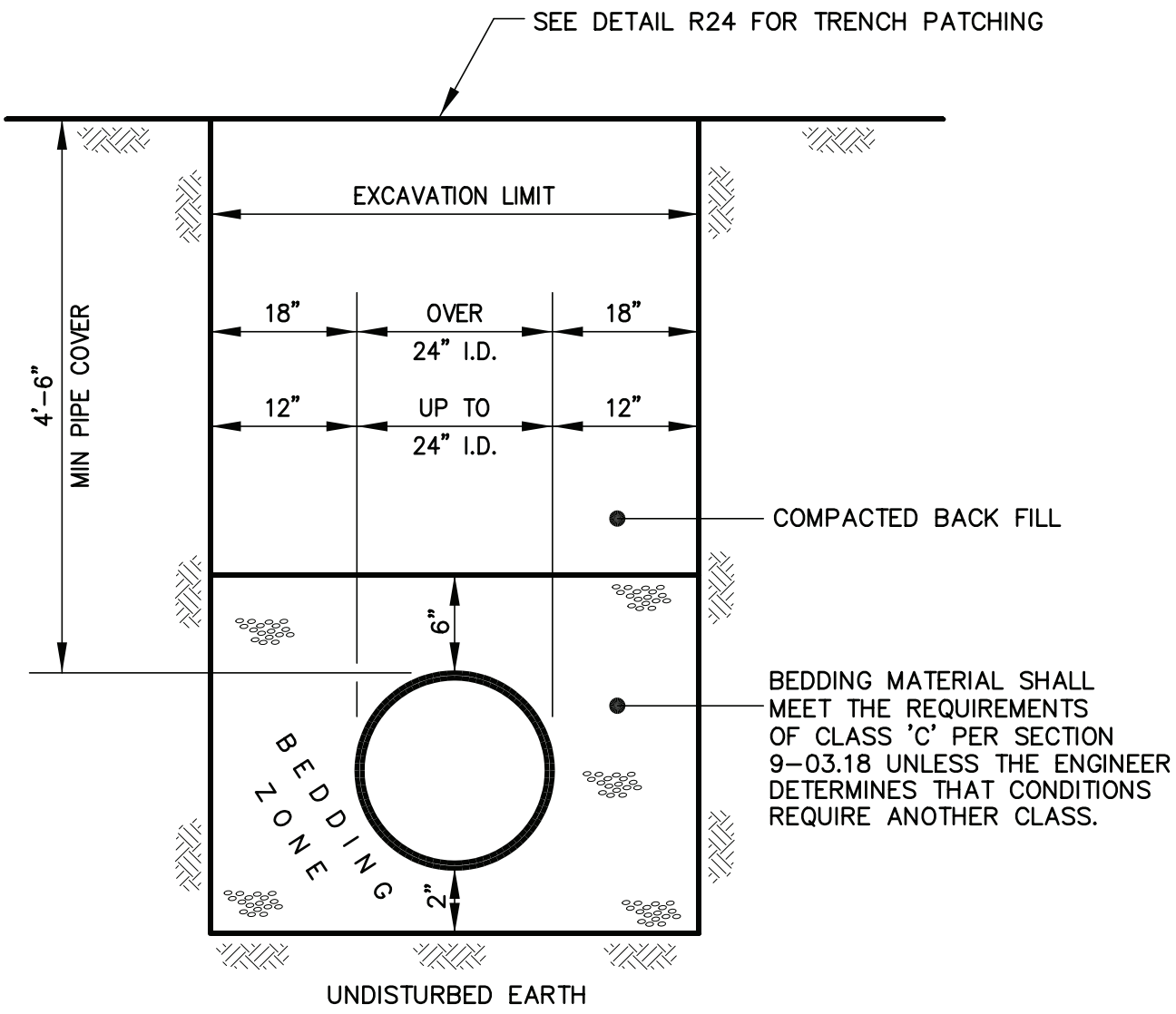
2. VALVE SIZE AND ENDS AS SPECIFIED OR INDICATED ON THE PLANS.

W2
NTS

WATER VALVE BOX

City of Yakima – Engineering Division

APPROVED: 7.9.99



NOTES

1. ACTUAL SLOPE OF TRENCH SIDES TO BE DETERMINED BY THE CONTRACTOR TO FIT THE METHOD OF CONSTRUCTION AND ALL SAFETY REQUIREMENTS.

2. MECHANICAL COMPACTION SHALL BE REQUIRED FOR ALL TRENCHES.

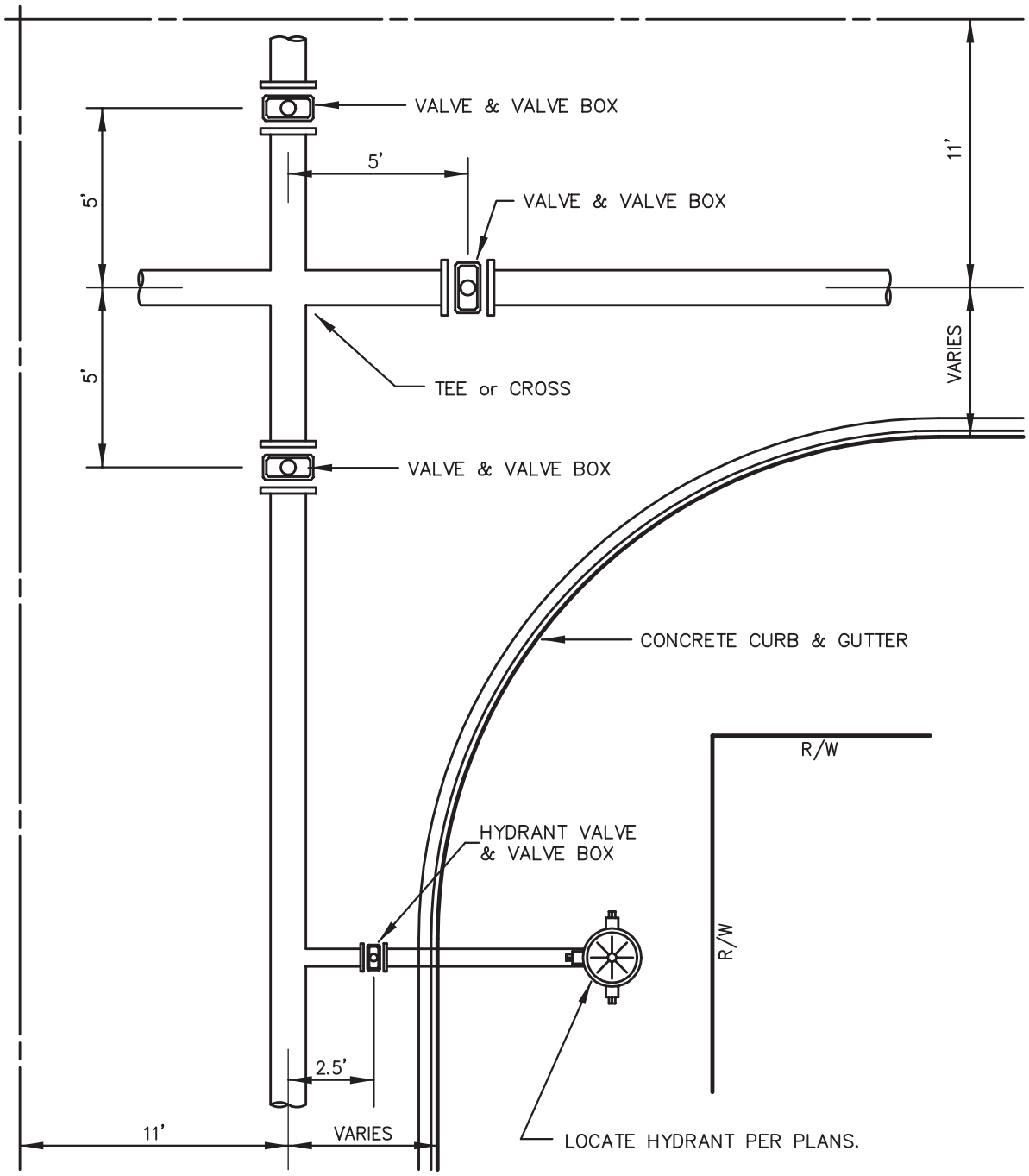
W3 / NTS

TYPICAL TRENCH SECTION

City of Yakima – Engineering Division

APPROVED: 4-18-02

CITY OF YAKIMA - STANDARD DETAIL	TYPICAL TRENCH SECTION	W3



NOTE

1. INFORMATION AS TO TYPE OF FITTINGS, PIPE ETC... HAVE BEEN PURPOSELY REMOVED TO CLARIFY THE LOCATION OF WATER RELATED STRUCTURES. SEE INDIVIDUAL DETAILS FOR ADDITIONAL INFORMATION.

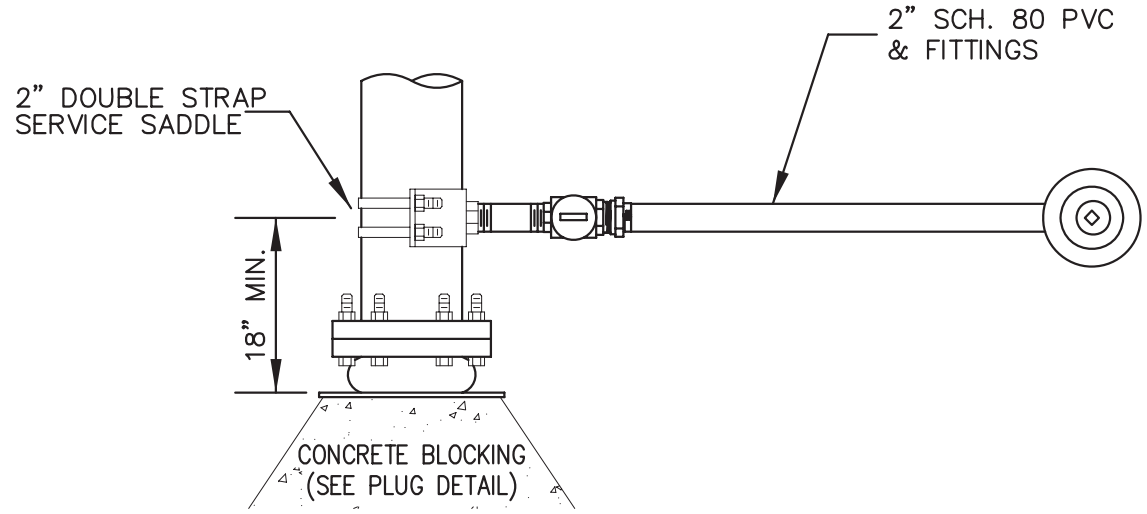
W4 NTS

TYPICAL INTERSECTION LAYOUT

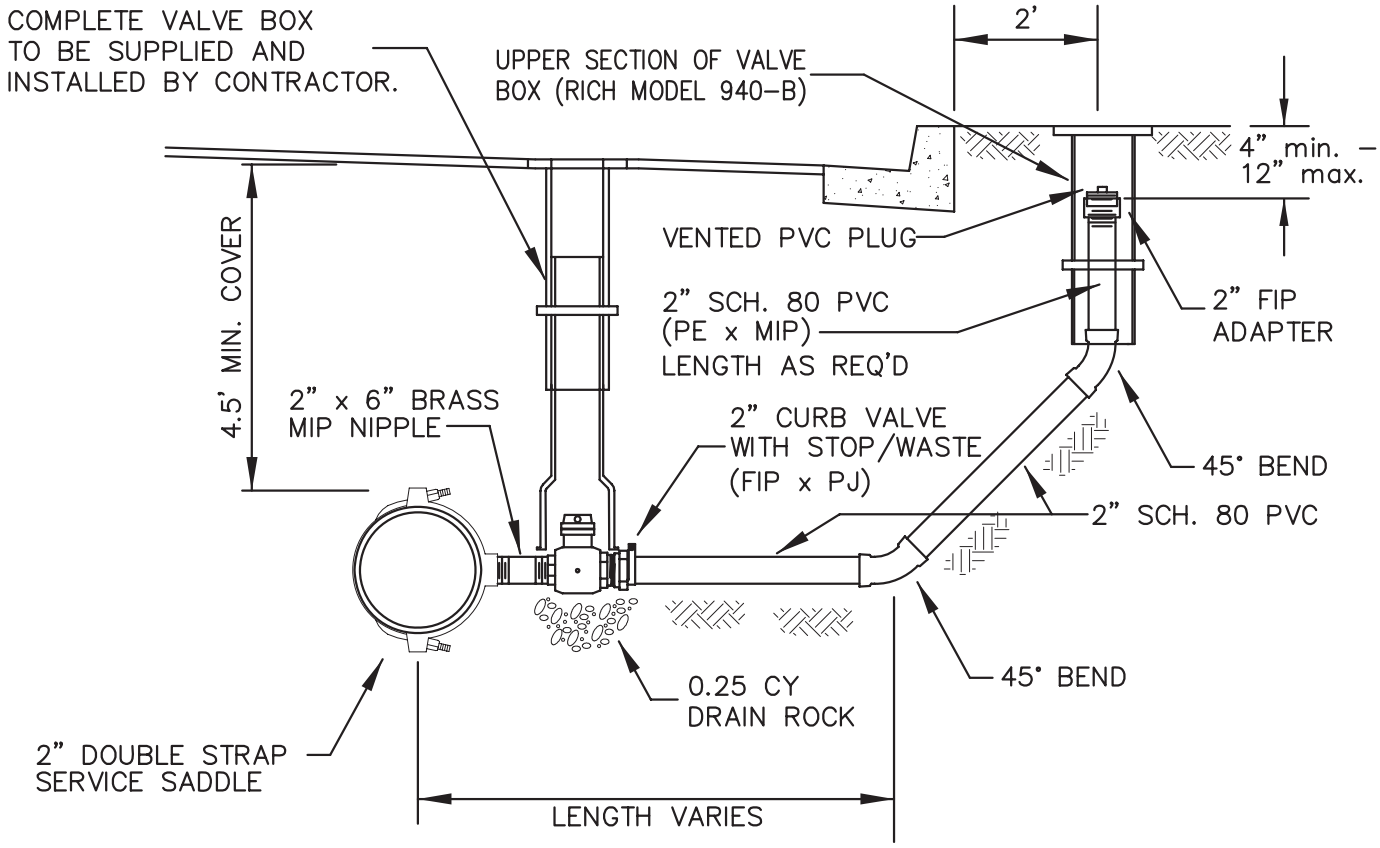
City of Yakima – Engineering Division

APPROVED: 7.9.99

CITY OF YAKIMA - STANDARD DETAIL	TYPICAL INTERSECTION LAYOUT	W4



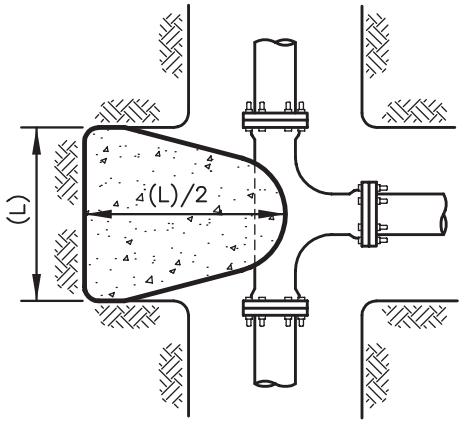
PLAN VIEW



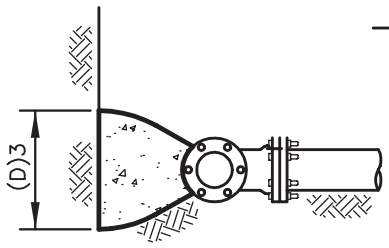
ELEVATION VIEW

APPROVED: 6-28-07

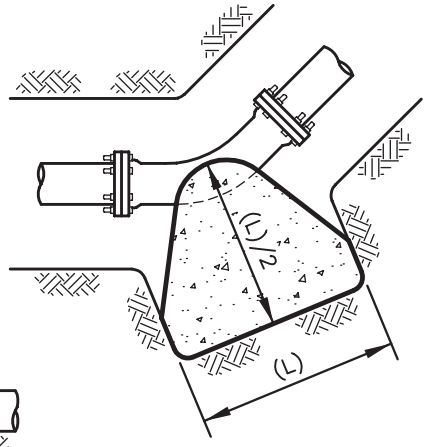
CITY OF YAKIMA - STANDARD DETAIL	TYPICAL BLOW OFF ASSEMBLY	W5



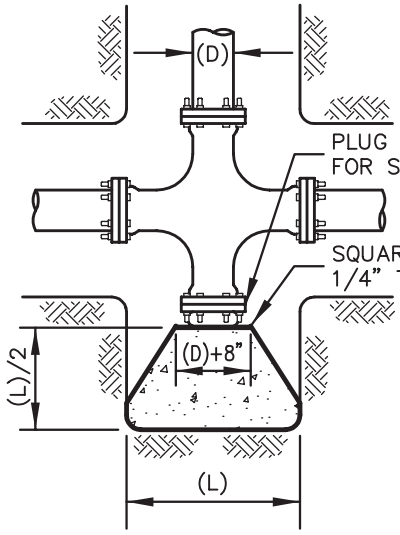
TEES



SIDE VIEW (TYPICAL ALL BLOCKING)



BENDS



PLUGS & CAPS

NOTES

1. FORM CONCRETE TO ALLOW REMOVAL OF BOLTS.
2. ALL FITTINGS AND/OR PIPE MAKING DIRECT CONTACT WITH CONCRETE SHALL BE WRAPPED WITH 4 MIL. POLYETHYLENE SHEETING PRIOR TO PLACEMENT OF CONCRETE.
3. (D) IS NOMINAL PIPE DIAMETER. THE TABLE OF END AREAS IS BASED ON AN ALLOWABLE SOIL BEARING PRESSURE OF 1500 psf. THE ENGINEER SHALL DETERMINE THE REQUIRED END AREAS.
4. ALL CONCRETE IS TO BE CLASS "B" CONCRETE AND IS TO BE POURED IN PLACE.

MINIMUM END AREAS			
PIPE SIZE (D)	TEES & PLUGS	45° BENDS	22 1/2° BENDS
6"	5.1 sq. ft.	3.9 sq. ft.	2.0 sq. ft.
8"	8.8 sq. ft.	6.7 sq. ft.	3.4 sq. ft.
10"	14.3 sq. ft.	11.0 sq. ft.	5.6 sq. ft.
12"	20.4 sq. ft.	15.7 sq. ft.	7.9 sq. ft.
14"	27.7 sq. ft.	21.2 sq. ft.	10.7 sq. ft.
16"	35.8 sq. ft.	27.5 sq. ft.	13.9 sq. ft.

W6
NTS

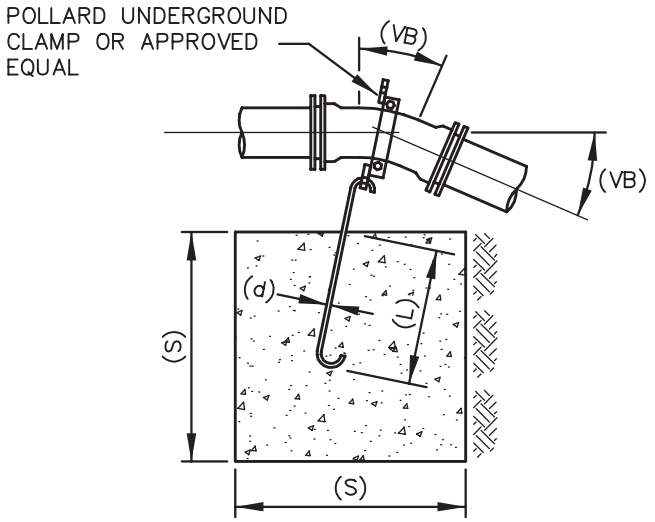
TYPICAL CONCRETE BLOCKING

City of Yakima – Engineering Division

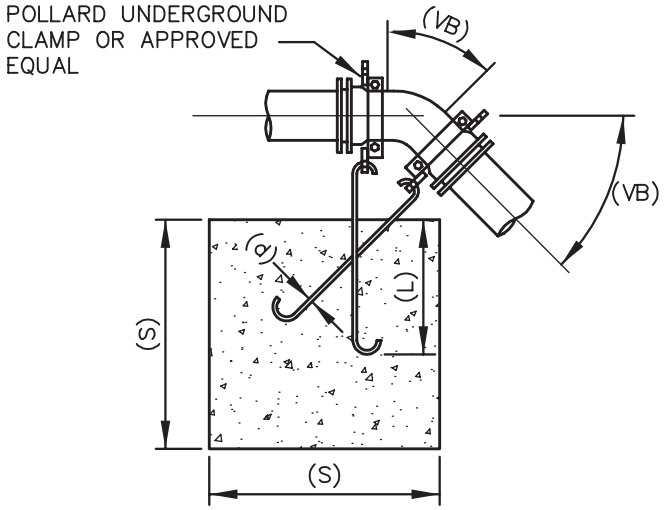
APPROVED: 7.9.99

TYPE "A" BLOCKING FOR 11 1/4°, 22 1/2°, 30° VERTICAL BENDS				
DIA.	(VB)	(S)	(d)	(L)
4"	11 1/4	0.2'	5/8"	1.5'
	22 1/2	2.2'		2.0'
	30	2.6'		
6"	11 1/4	2.2'	5/8"	2.0'
	22 1/2	2.9'		
	30	3.5'		
8"	11 1/4	2.5'	5/8"	2.0'
	22 1/2	3.6'		
	30	4.1'	3/4"	2.5'
12"	11 1/4	3.2'	5/8"	2.0'
	22 1/2	4.5'	7/8"	3.0'
	30	5.1'		
16"	11 1/4	4.1'	7/8"	3.0'
	22 1/2	5.7'	1 1/8"	4.0'
	30	6.5'	1 1/4"	
20"	11 1/4	4.5'	7/8"	3.0'
	22 1/2	6.1'	1 1/4"	4.0'
	30	6.9'	1 3/8"	4.5'
24"	11 1/4	5.0'	1"	3.5'
	22 1/2	6.8'	1 3/8"	4.5'
	30	7.9'	1 5/8"	5.5'

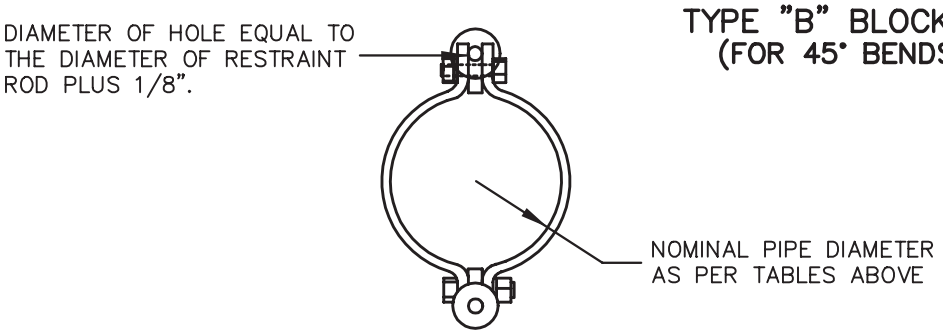
TYPE "B" BLOCKING FOR 45° VERTICAL BENDS				
DIA.	(VB)	(S)	(d)	(L)
4"	45	3.1'	5/8"	2.0'
6"		4.1'		
8"		5.0'		
12"		6.1'	3/4"	2.5'
16"		7.8'	1 1/8"	4.0'
20"		8.2'	1 1/4"	
24"		9.4'	1 3/8"	4.5'



TYPE "A" BLOCKING
(FOR VERTICAL BENDS OF 30° OR LESS)



TYPE "B" BLOCKING
(FOR 45° BENDS)



POLLARD UNDERGROUND CLAMP

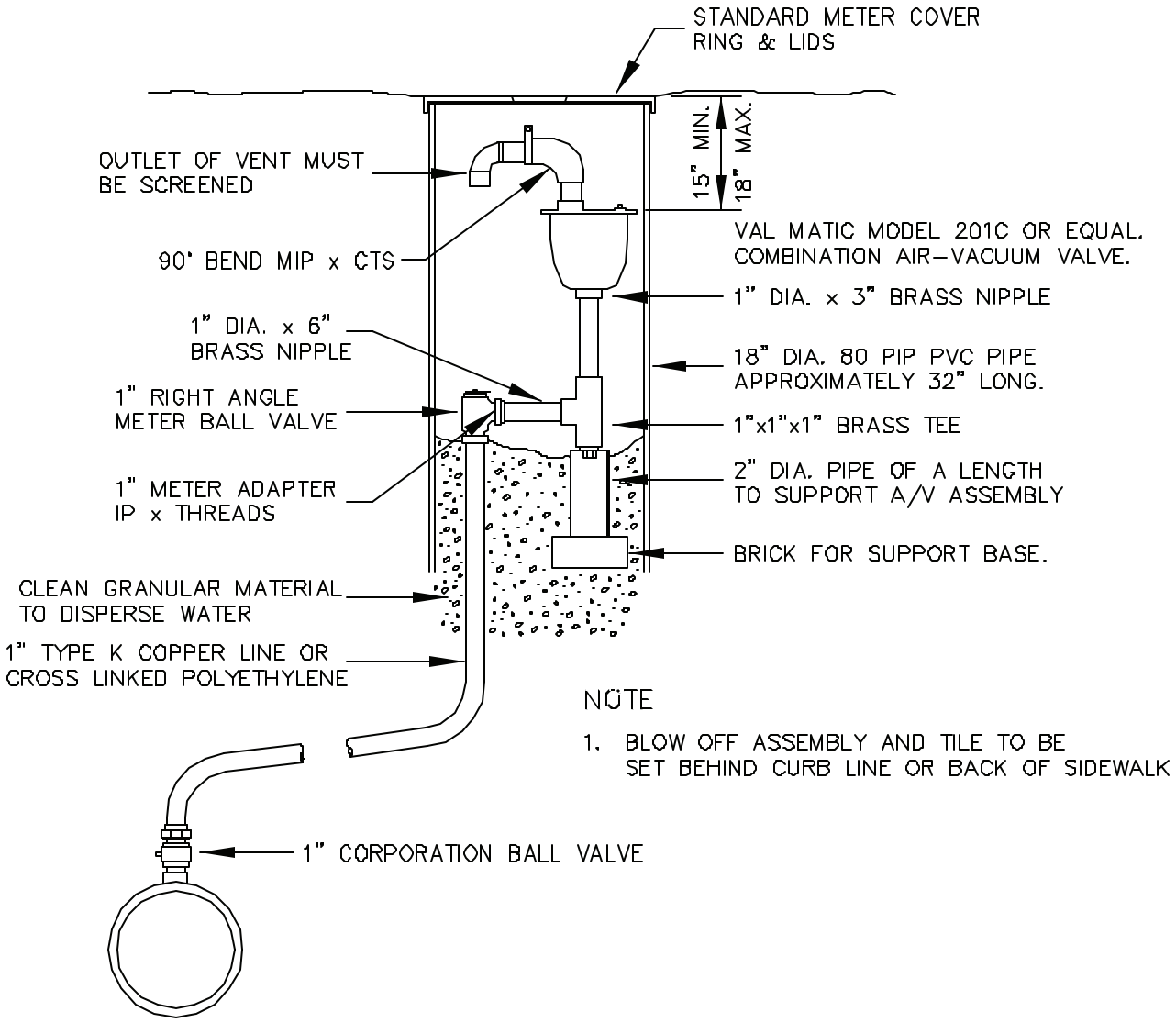
W7
NTS

CONCRETE VERTICAL BEND BLOCKING

City of Yakima – Engineering Division

APPROVED: 7.9.99

CITY OF YAKIMA - STANDARD DETAIL	VERTICAL BEND BLOCKING	W7



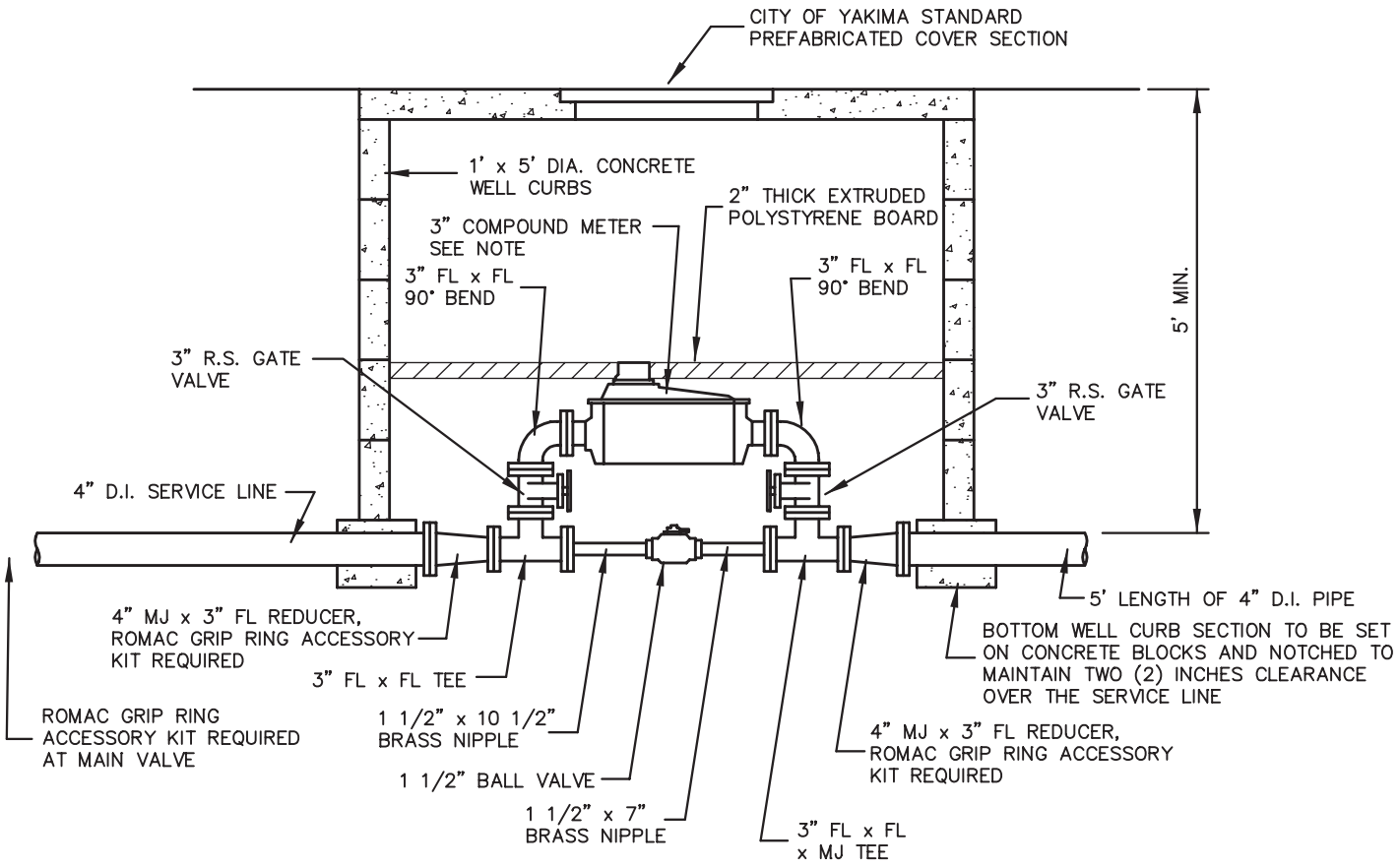
W8 NTS

AIR-VACUUM RELIEF VALVE

City of Yakima – Engineering Division

APPROVED: 8.29.01

CITY OF YAKIMA - STANDARD DETAIL	AIR-VACUUM RELIEF VALVE	W8



NOTE

1. 3" COMPOUND METER SHOWN. IF LARGER THAN 3" COMPOUND METER IS USED, RESIZE THE SERVICE LINE, 90° BENDS, GATE VALVES AND TEES TO TO APPROPRIATE SIZE AND DELETE THE REDUCERS.

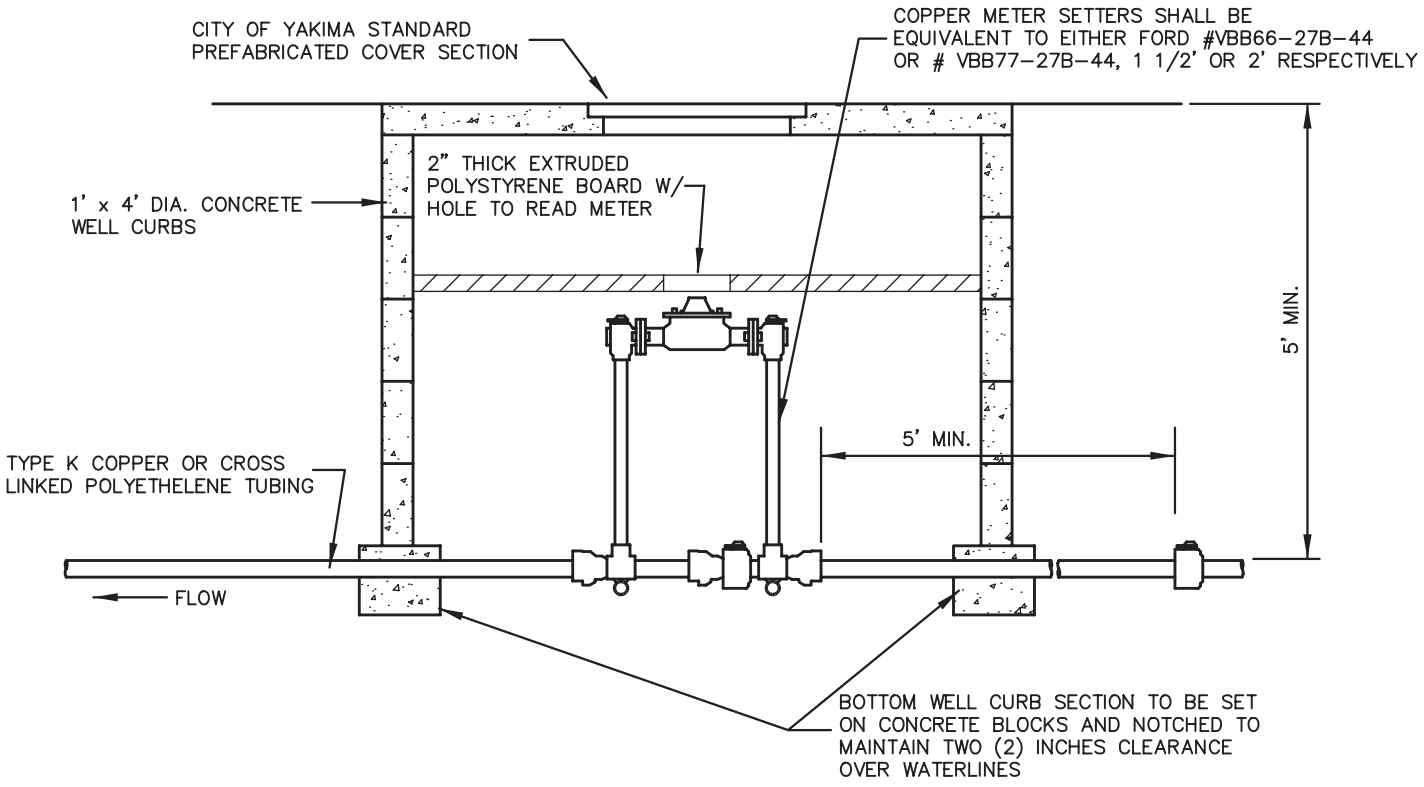
W9 NTS

COMPOUND METER INSTALLATION

City of Yakima – Engineering Division

APPROVED: 7.9.99

CITY OF YAKIMA - STANDARD DETAIL	COMPOUND METER INSTALL	W9



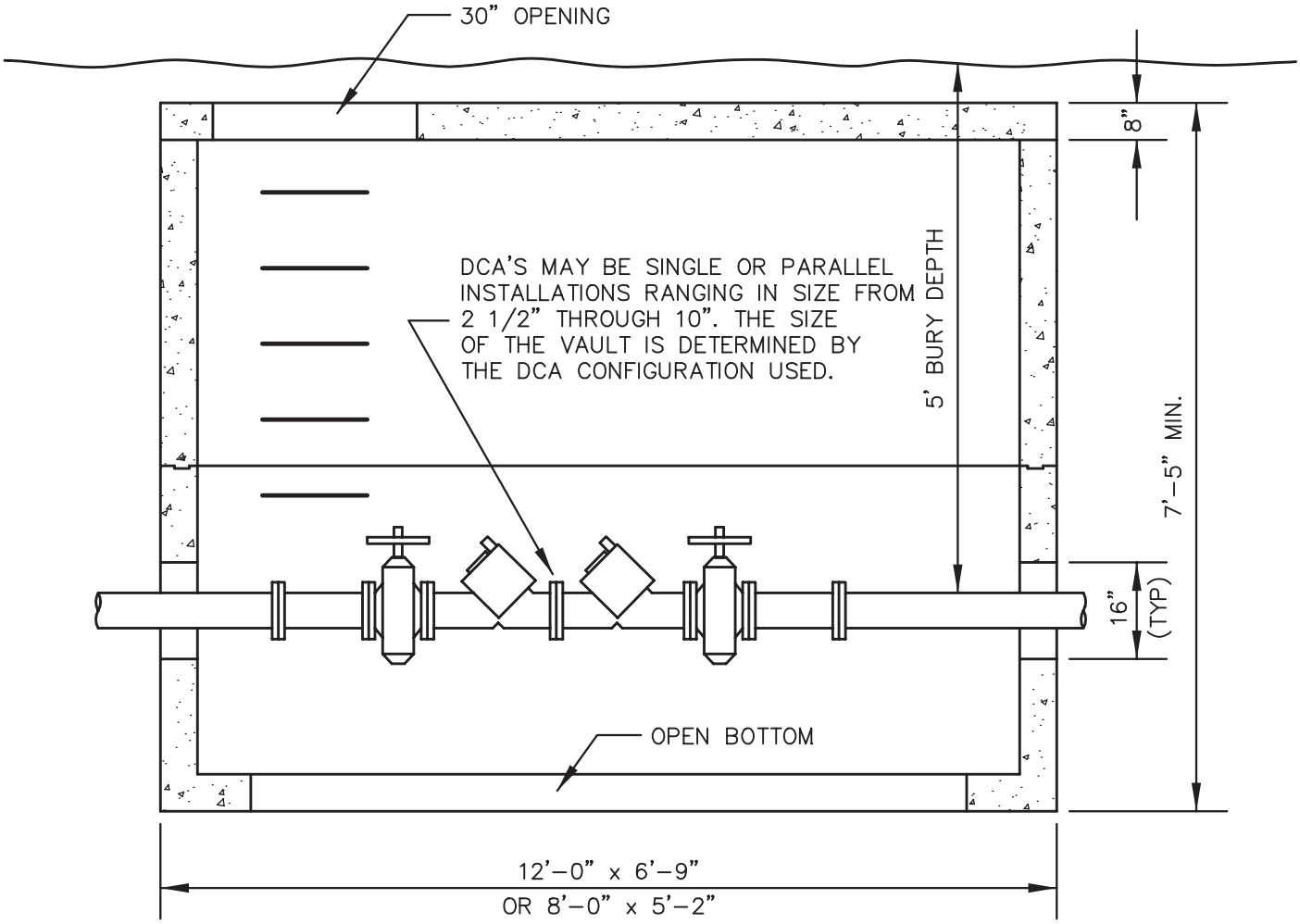
W10 1 1/2" & 2" METER INSTALLATION

NTS

City of Yakima – Engineering Division

APPROVED: 7.9.99

CITY OF YAKIMA - STANDARD DETAIL	1 1/2" & 2" METER INSTALLATION	W10



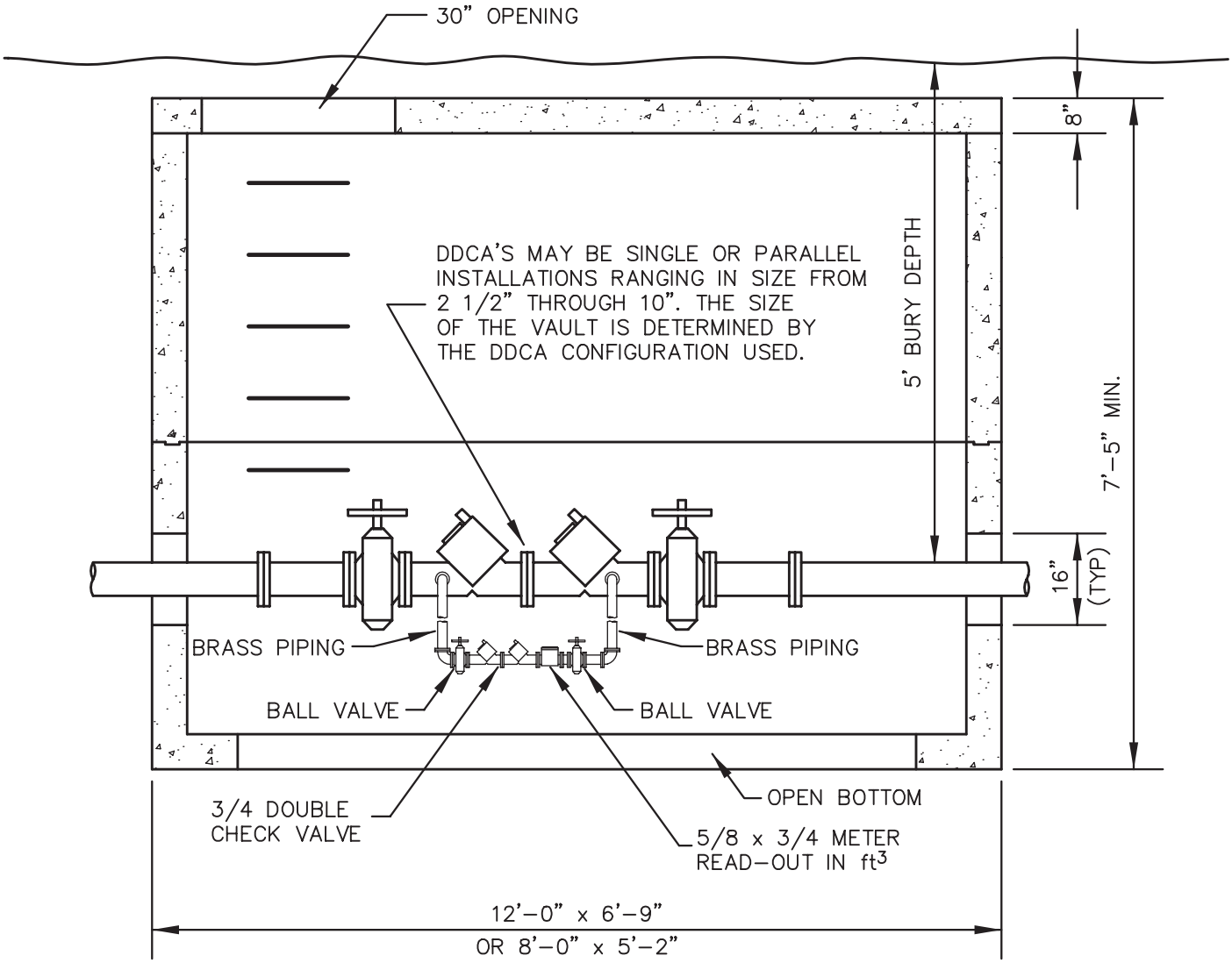
W11 INSTALL REQUIREMENTS FOR DCA'S

NTS

City of Yakima – Engineering Division

APPROVED: 7.9.99

CITY OF YAKIMA - STANDARD DETAIL	INSTALL REQ. FOR DCA'S	W11



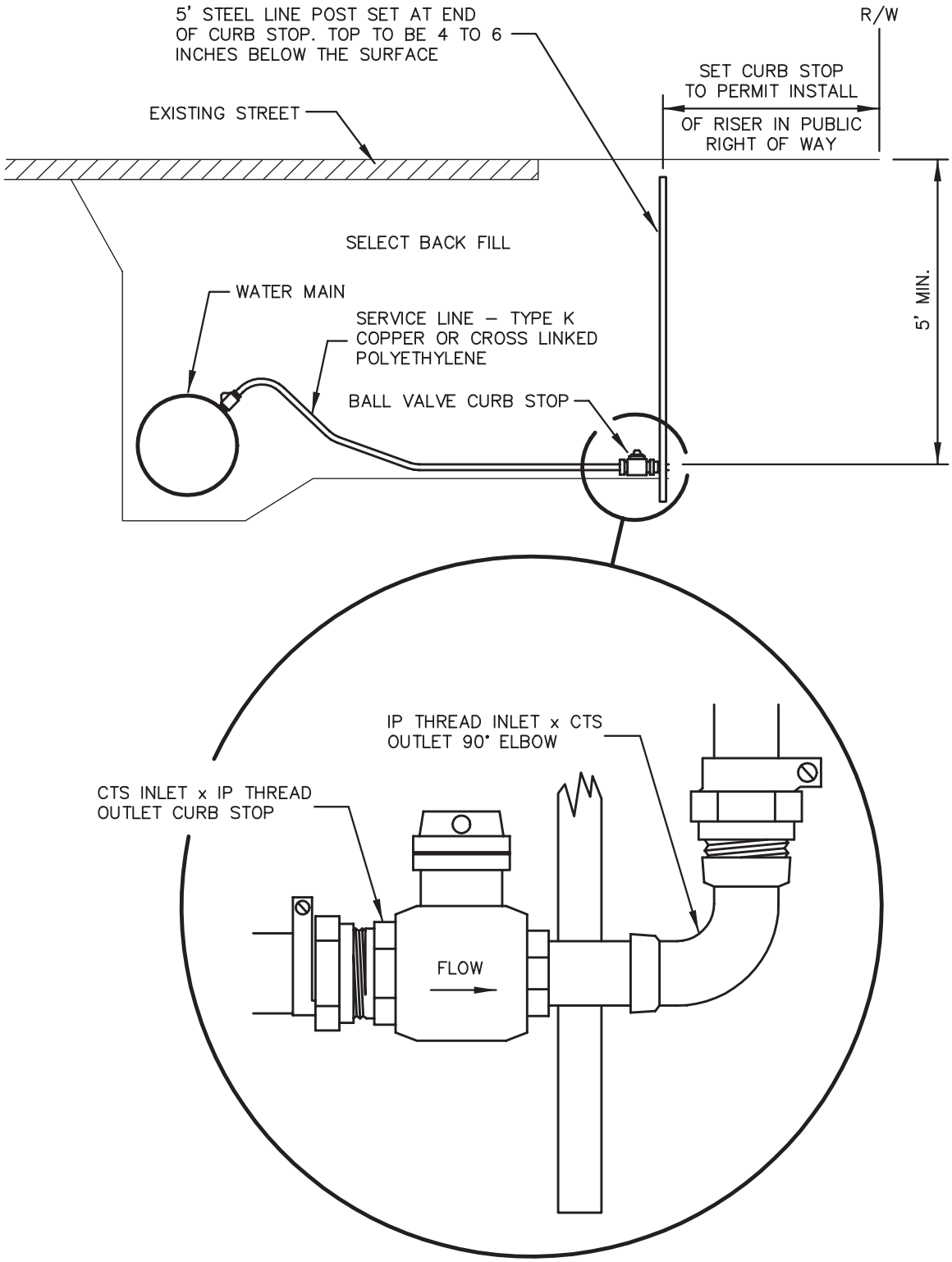
W12 INSTALL REQUIREMENTS FOR DDCA'S

NTS

City of Yakima – Engineering Division

APPROVED: 7.9.99

CITY OF YAKIMA - STANDARD DETAIL	INSTALL REQ. FOR DDCA'S	W12



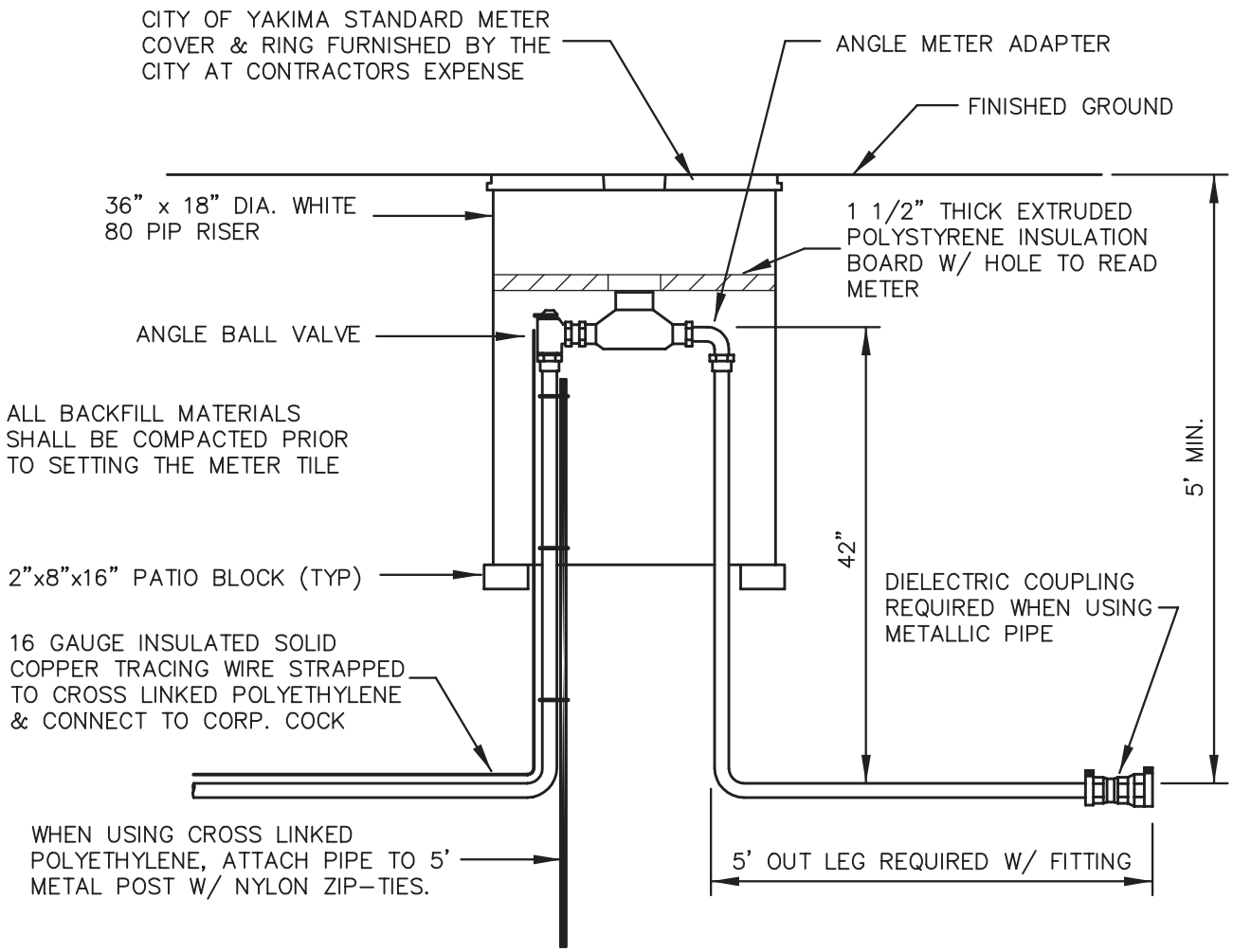
W13 3/4" & 1" SERVICE LINE w/o METER

NTS

City of Yakima – Engineering Division

APPROVED: 7.9.99

CITY OF YAKIMA - STANDARD DETAIL	3/4" & 1" SERVICE LINE	W13



NOTES

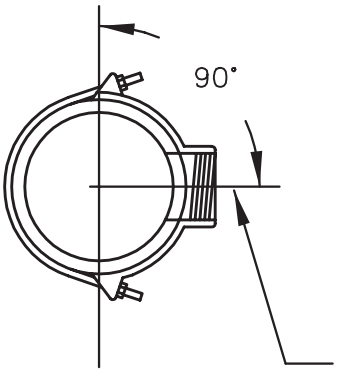
1. USE CROSS LINKED POLYETHYLENE OR TYPE K COPPER
2. WHEN USING CROSS LINKED POLYETHYLENE A BENDING SUPPORT MUST BE USED AT ALL 90° BENDS
3. WHEN USING CROSS LINKED POLYETHYLENE AN INTERNAL TUBING STIFFENER MUST BE USED ON ALL FITTINGS
4. ALL BENDS TO BE MADE WITH COPPER TUBING BENDER

W14 / NTS 5/8", 3/4" & 1" METER INSTALLATION

City of Yakima – Engineering Division

APPROVED: 7.9.99

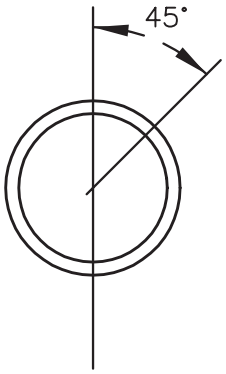
CITY OF YAKIMA - STANDARD DETAIL	5/8", 3/4" & 1" METER INSTALL	W14



TAPS FOR 1 1/2" AND 2" DIA. SERVICES SHALL BE MADE UTILIZING A TWO STRAP TAPPING SADDLE, HAVING IP THREADS. TAPPING SHALL BE DONE WITH A MULLER MODEL D–5 TAPPING MACHINE ALL IN ACCORDANCE WITH THE INSTRUCTIONS INCLUDED WITH SAID TAPPING MACHINE.

NOTES

1. ALL CORPORATION STOPS SHALL BE BALL VALVES

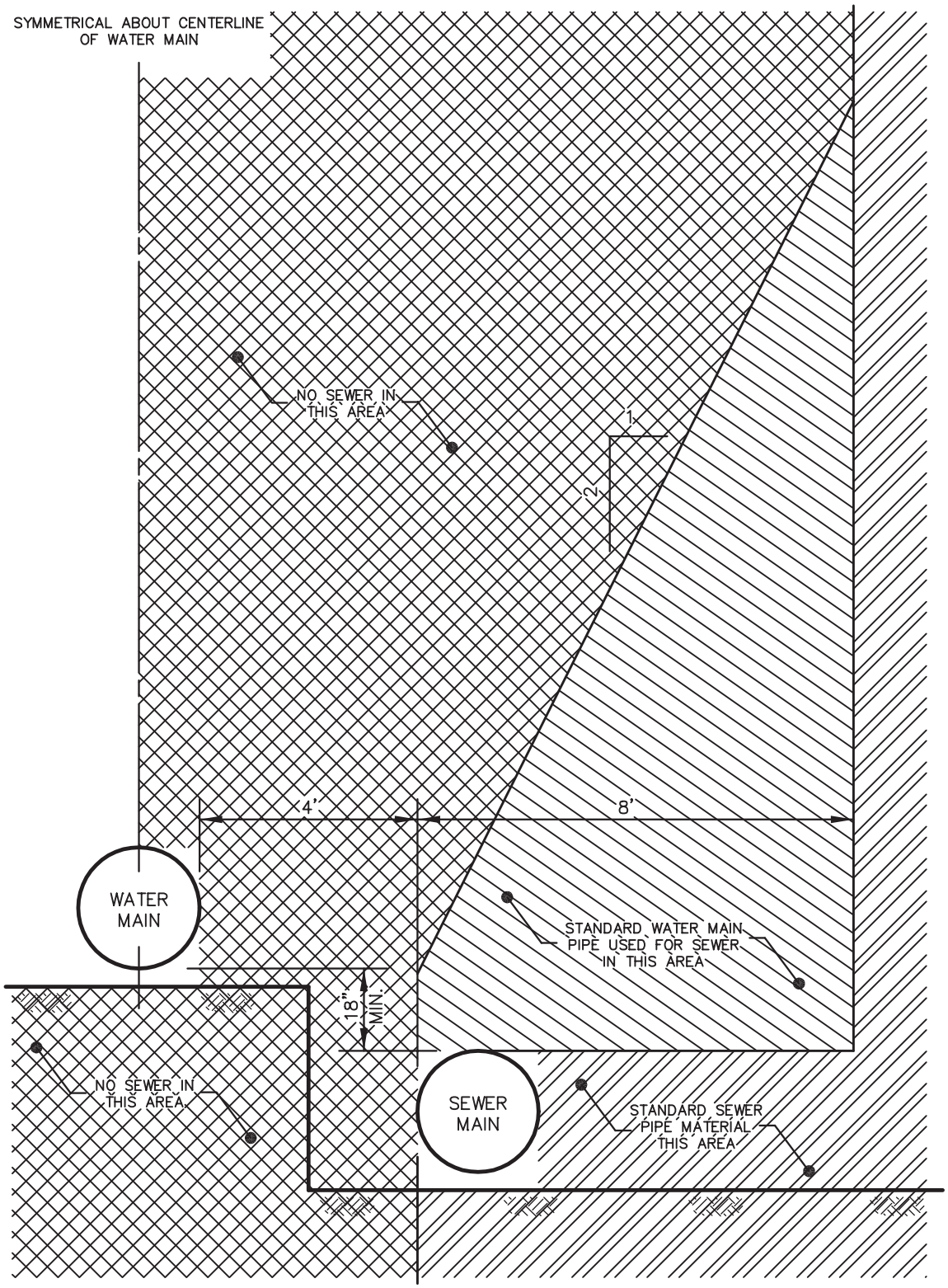


TAPS FOR 3/4" AND 1" DIA. SERVICES SHALL BE MADE UTILIZING A MULLER MODEL B–101 TAPPING MACHINE. THREADS SHALL BE CC. TAPS SHALL BE IN ACCORDANCE WITH THE INSTRUCTIONS INCLUDED WITH SAID TAPPING MACHINE.

W15 TAPPING PROCEDURE DETAIL

NTS City of Yakima – Engineering Division

APPROVED: 7.9.99

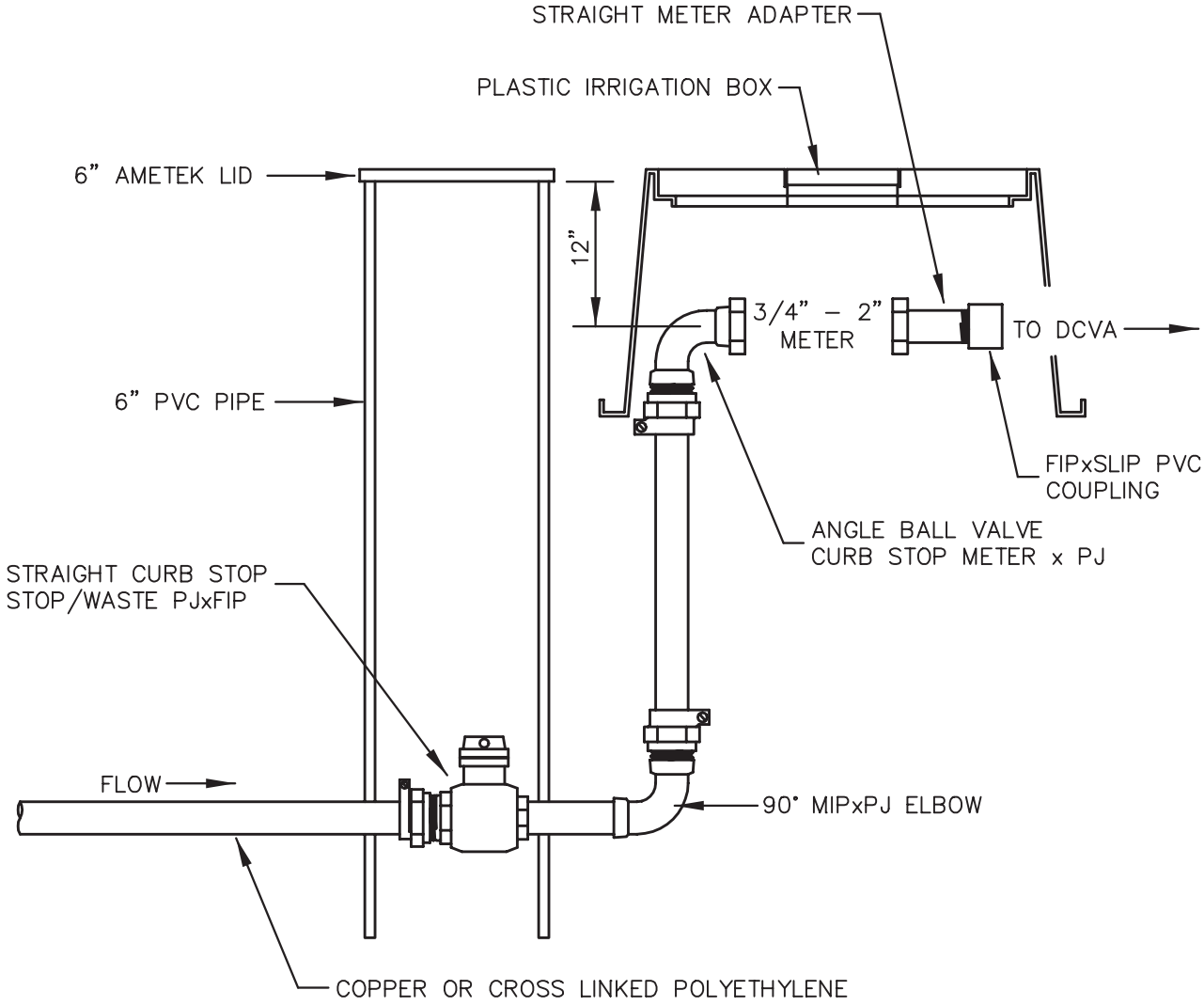


W16 PARALLEL WATER/SEWER SEPARATION

NTS City of Yakima – Engineering Division

APPROVED: 7.9.99

CITY OF YAKIMA - STANDARD DETAIL	WATER/SEWER SEPARATION	W16



NOTE

1. ALL FITTINGS ARE TO BE BRASS.

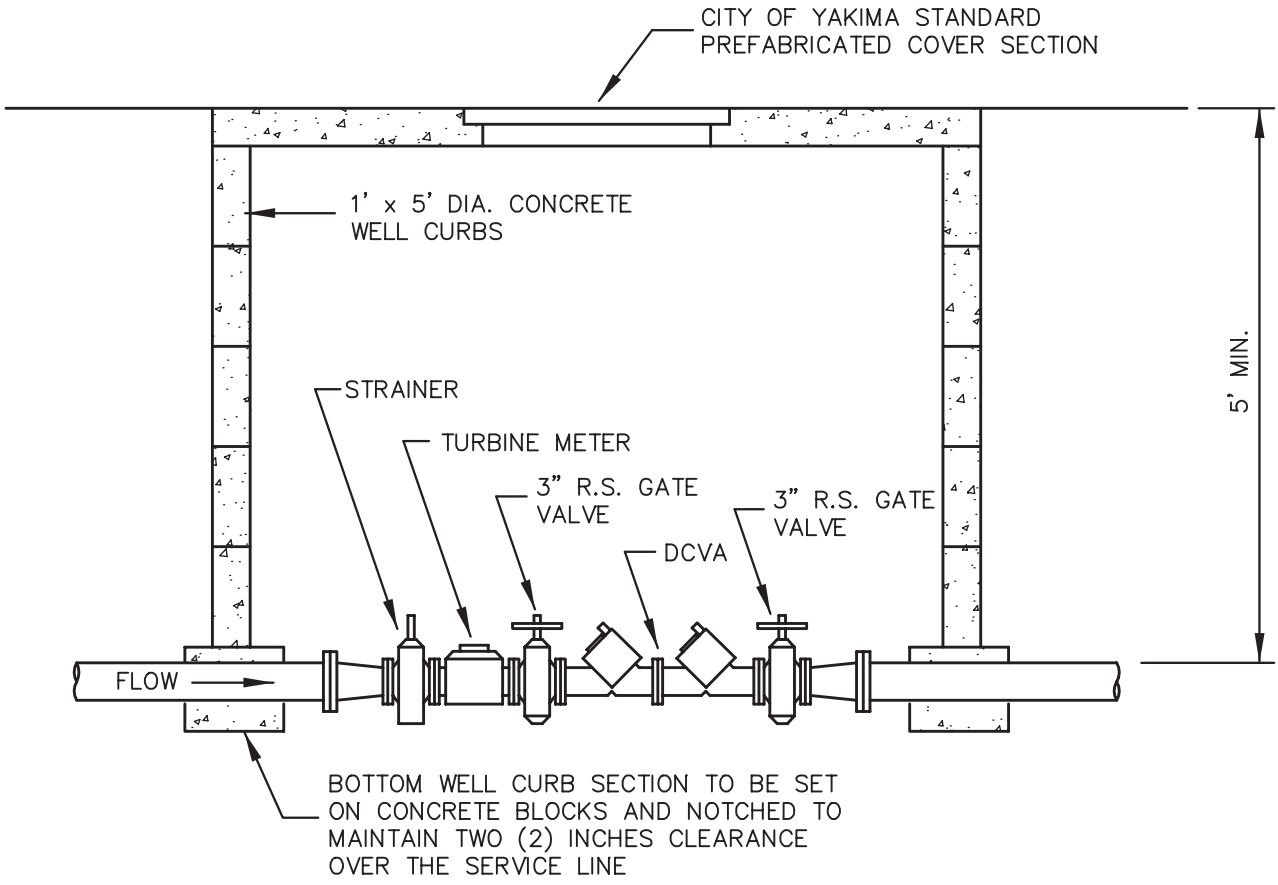
W17 / NTS

3/4" & 2" IRRIGATION METER SET

City of Yakima – Engineering Division

APPROVED: 7.9.99

CITY OF YAKIMA - STANDARD DETAIL	3/4" & 2" IRRIG. METER SET	W17



NOTE

1. ROMAC GRIP RING/RESTRAINERS TO BE INSTALLED ON ALL MECHANICAL JOINT FITTINGS
2. 3" TURBINE METER SHOWN. IF LARGER THAN 3" TURBINE METER IS USED, RESIZE THE SERVICE LINE, 90° BENDS, GATE VALVES AND TEES TO APPROPRIATE SIZE AND DELETE THE REDUCERS.
3. DCVA IS REQUIRED WHEN SERVICE IS FOR IRRIGATION ONLY.

W18 / NTS

3" & LARGER TURBINE METER SET

City of Yakima – Engineering Division

APPROVED: 7.9.99

CITY OF YAKIMA - STANDARD DETAIL	3" TURBINE METER SET	W18

City of Yakima - Engineering
129 North Second Street
Yakima, WA 98901
Phone (509) 575-6111
Fax (509) 576-6305

City of Yakima – Engineering

WATER
Specifications & Details

Department of Community & Economic Development

1999

Appendix Q

Engineering Design Plan Requirements

DEPARTMENT OF COMMUNITY AND ECONOMIC DEVELOPMENT
Engineering Division
129 North Second Street
Yakima, Washington 98901
(509) 575-6111 • Fax 576-6305

ENGINEERING DIVISION

ADMINISTRATIVE PROCEDURES

TO: All parties of interest

FROM: K. Wendell Adams, City Engineer

DATE: March 17, 2000

SUBJECT: ***ENGINEERING DESIGN PLAN REQUIREMENTS***

It has been the City's policy that all improvements to be installed as PUBLIC facilities or in public right of way must be shown on engineering design plans, reviewed by the CITY OF YAKIMA, ENGINEERING DIVISION and approved by the City Engineer prior to commencing any construction. The engineering design plans must be stamped, signed and dated by a Professional Civil Engineer licensed in the State of Washington. The plans must include all of the applicable requirements outlined below.

At completion of construction, a set of reproducible RECORD DRAWINGS depicting all facilities as constructed shall be submitted to the City Engineer's Office, together with a construction cost summary for all public utilities and a transfer of ownership for all facilities.

The purpose of this procedure is to outline the information that must be shown on all plans in order for the Engineering Division to properly review the design. This shall apply to all projects within the City's jurisdiction.

GENERAL PLAN FORMAT:

1. Plan sheets and profile sheets or combined plan and profile sheets and detail sheets must be on a sheet size of 24" x 36" or 11" x 17" with approval of the City Engineer.

2. Each sheet shall contain the following project information:

   a. Project title and City project number, work order # or L.I.D. #
   b. Name, address and phone number of the owner/developer.
   c. Name, address and phone number and stamp of the Civil Engineer preparing the plans.
   d. Quarter section, S-T-R.
   e. Sheet title.
   f. Page (of page) numbering.
   g. Revision block.

3. All plan sheets must have a NORTH arrow preferably pointing to the top of the sheet or to the left, and must indicate the drawing scale. All engineering plans must be drawn to an appropriate engineer's scale. For profiles, the vertical scale where practical shall be 1"=2', 1"=5' or 1"=10'. The horizontal scale shall be the same for both plan and profile. Plan and profile stationing shall generally read left to right.

4. The Vertical Datum for all plan submittals must be based on the CITY OF YAKIMA DATUM. The benchmark used shall be referenced on the plans. An assumed datum will not be accepted.

5. Existing features and topography within the project construction limits must be shown on the plans. This shall include existing road width and surfacing, utility poles, existing underground utilities and surface appurtenances, significant trees, landscaping and other elements that may affect design/construction.

6. Plan sheets shall indicate all adjacent property lines, right of way lines and easements.

7. Plan sheets shall show all horizontal survey control as required to properly locate and tie the improvements in horizontal location.

8. Vicinity map showing the project site location.

If the engineering plans include more that three (3) sheets, a cover/title sheet may be required. This sheet shall include an overall site plan with contours, a vicinity map, table of contents and applicable project information.

SANITARY SEWER SYSTEM IMPROVEMENTS:

1. Show all existing and proposed sanitary sewer system features including but not limited to the following:

    a. Sewer mains, gravity and force mains
    b. Side service, proposed locations
    c. Manholes
    d. Clean outs

2. Indicate all easements required for the sanitary sewer main extensions and joint use laterals.

3. Provide a profile for each sanitary sewer main extension. Clearly indicate the vertical and horizontal scale. Show the profile on the same sheet with, and aligned underneath, the plan view as practical.

4. Show the sanitary sewer system and water system on the same plan and profile for verification of minimum separation requirements. The design information for each may be on individual drawings for that system.

5. Slope, length, size and pipe type shall be indicated for all mains and depth of the side sewer at the property line. Pipe length shall be measured from centerline of manholes and through all fittings and tees.

6. Each manhole shall be uniquely numbered and shall be stationed off of a referenced centerline. Indicate rim and invert elevations in and out at all manholes. Indicate the length of each side sewer stub, the centerline stationing for each side sewer, and the size. Dimension sewer stub location from property corners if the side sewer is not perpendicular to the main.

7. The plan and profile must show the location of all existing and proposed gas, water, irrigation, storm drain and other utility crossings.

8. Generally show all vertical data in the profile view and all horizontal data in the plan view. It is not desirable to repeat the vertical data in the plan view unless it does not show in a profile.

9. Provide an overall site plan of development with contours, to show that all lots/parcels will be served by the proposed sewer system at design depth for all new development. The City of Yakima aerial mapping may be used.

DOMESTIC WATER AND IRRIGATION SYSTEM IMPROVEMENTS:

1. Show all existing and proposed domestic water system features and irrigation system features, including but not limited to:

    a. Water mains
    b. Water valves
    c. Water meters
    d. Fire hydrants
    e. Blow offs
    f. Air and vacuum release valve assemblies.
    g. Pressure reducing valves
    h. Fire sprinkler system lines
    i. Double check valves
    j. Post indicator valves
    k. Thrust blocking or other restraints
    l. Air release point for charging, flushing and sampling.

2. Identify all joint connections; provide detail "inset" of all non-standard joinings.

3. Station or dimension the location of all fire hydrants, tees, crosses, services relative to centerlines or property lines.

4. Indicate all easements required for the water main extensions.

5. Show the length, size and pipe type for all main extensions, fire sprinkler system services and domestic services where applicable.

6. Show all water systems and sanitary sewer system on the same plan and profile view for verification of minimum separation requirements. The design information for each system may be on individual drawings for that system.

7. A profile view shall be shown for all City water main extensions, showing existing and finished grade, aligned if practical with the plan view. Clearly indicate the horizontal and vertical scales.

8. Show the minimum cover and minimum separation on each sheet as necessary and show absolute valves when critical.

9. In the profile view, show all utilities crossing the proposed watermain.

10. Show all existing irrigation lines and proposed changes to the irrigation system features, including but not limited to:

    a. main lines
    b. service lines
    c. blow-offs
    d. drains

STORM DRAIN SYSTEM IMPROVEMENTS:

1. Show all existing features if known and all proposed storm drain system features including but not limited to:

    a. Storm drain mains and street siphons
    b. Catch basins
    c. Inlets
    d. Drywells
    e. Retention systems
    f. Biofiltration swales
    g. Culverts
    h. Streams
    i. Ditches
    j. Natural drainage swales
    k. Headwalls
    l. Oil/water separator assembly

2. Show slope, length, size and pipe material for all storm mains and lines.

3. All catch basins and inlets shall be uniquely numbered and shall be clearly labeled. Stationing and offsets shall be indicated from referenced centerline. Show all proposed storm drain features within the right-of-way in a profile.

4. Indicate all grate, rim and invert elevations in the profile view.

5. Show all horizontal measurements and control in the plan view.

6. Indicate all easements required for the storm drainage system. .

7. The Plan shall clearly indicate the location of the storm drainage items stationed from a referenced centerline.

ROADWAY IMPROVEMENTS:

1. Show all existing and proposed roadway improvements including but not limited to:

    a. Pavement and subgrade sections
    b. Concrete curb and gutter
    c. Edge of pavement
    d. Sidewalk
    e. Utilities (manholes, power poles, signs, valves, etc.)
    f. Handicap ramps
    g. Barricades
    h. Driveways
    i. Rockery or retaining walls
    j. Mailboxes
    k. Monuments
    l. Streetlights and electrical service cabinets with details

2. Show all right of way lines, centerlines and roadway widths for all right of ways.

3. Clearly differentiate between areas of existing pavement, areas of new pavement, and areas to be overlaid.

4. Provide a cross section or typical section of all right of ways indicating right of way width, centerline, pavement width, sidewalk, curb and gutter, pavement and base thickness, existing pavement.

5. Provide a profile of all new public roadways or extensions of existing roadways. Indicate all vertical curve data, percent of grade, centerline stationing, finish grade elevations and existing ground line. The profile of the existing centerline ground should extend a minimum of 100 feet before the beginning and at the end of the proposed improvements to show the gradient blend.

6. Align the profile view with the plan view if practical. Clearly indicate the horizontal and the vertical scale.

7. Clearly label all profiles with respective street names and plan sheet reference numbers if drawn on separate sheets.

8. Show and identify the horizontal and vertical control that is used to reference the proposed street improvements

Appendix R

Procedures Manual for Construction of Public Improvements

CITY OF YAKIMA
PROCEDURES MANUAL FOR
CONSTRUCTION OF PUBLIC IMPROVEMENTS

INTRODUCTION

The following procedures shall apply to all public improvements financed by Owner/Developer private contracts. In addition, the following procedures shall apply to the public improvements within a Subdivision or Planned Development, or other new development or redevelopment, when required through a permit process. Other improvements so designated by the City may be regarded as "public" improvements within the context of this procedure.

Unless otherwise specifically stated, the term "City" shall mean the City Engineer, or his designated representatives; the "Owner/Developer" shall mean the actual Owner or Developer of the proposed development that includes public improvements or his designated Agent; and "Consulting Engineer" shall mean an individual or firm, licensed to practice Civil Engineering in the State of Washington, who shall have been retained by the Owner/Developer for the purpose of preparing the detailed plans and specifications and doing such other engineering work as shall be specifically identified within the context of these procedures and as approved by the City Engineer.

The improvements for which these procedures shall apply include:

1. Public sanitary sewer interceptors, trunks, mains and their appurtenances including portions of the side services located within the public rights-of-way when specifically approved on the plans and in the specifications. Private Sanitary Sewer service laterals and appurtenances located outside of the public rights-of-way or public easements shall not be included.

2. Public storm drain systems and their appurtenances located within the public rights-of-way when specifically approved on the plans and in the specifications. Private on site roof and foundation drains and parking area drain systems located outside the public rights-of-way shall not be included.

3. Open, natural drainageway improvements that are specifically identified and included on the plans and in the specifications as approved by the City Engineer. Drainageways and swales having only single or double lot property owner importance shall not be included.

4. All public street or roadway facilities and their appurtenances including bridge drainage structures, storm drain systems, street lighting, sidewalks, bicycle

facilities, parking areas, mailbox structures, etc., as specifically approved on the plans and in the specifications. On site sidewalks, private parking and loading facilities, private driveways, and other improvements specifically identified to be made under the normal building permit procedures shall not be included.

5. Public water mains and systems and their appurtenances as specifically approved on the plans and in the specifications. Private water systems on site from the City meter to the service shall not be included.

PROCEDURES

Step I

The Owner/Developer shall, if other than himself, name and identify the person or persons who shall be designated to act on his behalf on matters relating to the project. This Agent may, at the Owner/Developer's discretion and direction, be the Consulting Engineer.

The Owner/Developer shall retain the services of a Consulting Engineer, licensed to practice Civil Engineering in the State of Washington, who is qualified to perform the required engineering services to design, and construction stake/survey, as required, of the proposed public improvements.

If, at any time during the term of the permit, the Owner/Developer shall terminate or reduce the level of the services of the Consulting Engineer or the designated Agent as specifically identified and accepted by the City, the Owner/Developer shall immediately notify the City.

The Owner/Developer and his Consulting Engineer is encouraged to request and schedule a predesign conference with the City for the purpose of establishing project guidelines and requirements and to establish an appropriate working relationship with the City so that the reviews, approvals, and construction can be expedited.

The Owner/Developer has the overall responsibility for project management, construction management, contract administration, permit acquisition and compliance, and, if required, right-of-way acquisition. The City will work closely with the Owner/Developer or his designated Agent in matters pertaining to the permit but the City will not perform contract supervision other than that required to protect the City's interests. Project inspection shall be a specific responsibility of the City, at the Owner/Developer's expense. No work shall be done before the party or parties have communicated with and received instructions from the City inspector.

Step II

The Consulting Engineer shall submit to the City a letter from the Owner/Developer verifying that he has been retained to perform the engineering services for the types of

public improvements to be included in the project. As a minimum, the Consulting Engineer's services shall include:

a. Surveying required to prepare detailed engineering design construction plans;
b. Preparation of detailed plans and specifications;
c. Construction engineering and construction surveying/staking;
d. Preparation of "As-Built Record Drawings" (City inspector and the contractor will provide field notes, changes);
e. Provide required certifications;
f. Such other work as may be applicable and identified.

Prior to commencing with design, it is recommended that the Owner/Developer and/or Consulting Engineer meet with the City for a predesign conference. The purpose of the meeting is to identify specific details of the project and review applicable design standards for the project.

Step III

The Consulting Engineer shall prepare and submit to the City four complete sets of detailed construction plans, profiles, cross sections, support data, design calculations, special details, special specifications, and the improvement evaluation forms. The Consulting Engineer shall prepare legal descriptions for all required permanent and temporary right-of-way/easements and submit the descriptions to the City Engineer for review and approval with the design plans. All right-of-way/easement documents will be prepared by the Consulting Engineer and shall conform to the City's standard forms. The Owner/Developer shall obtain and/or provide the executed documents for all easements and rights-of-way. The City will record all fully executed documents with the County at the Owner/Developer's expense.

The Consulting Engineer shall be responsible for notifying, furnishing plans to and coordinating the public improvements with all appropriate utilities, i.e., water, electric, telephone, gas, TV Cable, etc..

The Consulting Engineer shall submit plans, specifications and other support data and information, as required to the appropriate agency and shall obtain all necessary approvals and permits, i.e., Department of Ecology and/or Health, WSDOT, Department of Natural Resources, Corps of Engineers, or County Utility Permits and copies of such written approvals or permits shall be submitted to the City prior to the City's approval of the Owner/Developer's construction design plans and prior to commencement of construction.

Step IV

The City shall review the submitted design material and shall return one reviewed and noted copy indicating the changes, additions, deletions, or modifications that are

required to make the plans and specifications acceptable. When the revised plans, specifications, and other materials are resubmitted to the City, the City shall review and upon acceptance, approve the revised plans and specifications.

Step V

Upon approval of the submitted material by the City Engineer, the Owner/Developer shall make application to construct the public improvements. The following items shall accompany the permit application:

a. Payment of fees;
b. Copies of any required permits;
c. Indemnity Agreement,
d. Any other documentation as shall be required.

The fees will include plan checking and inspection fees, and such other fees as may be identified as appropriate for the specific project improvements. The Schedule of Charges for Engineering and Related Services have been established by the City Council.

For projects under $500,000.00, the developer shall pay fees based on the percentage method.

For projects over $500,000, the developer may pay actual charges for City Plan Checking and Inspection, or may use the percentage method. The City will provide the developer an estimated cost for these services, and 1/2 of the estimated fees will be due at the time of application for permit. Upon project completion, the second half of the percentage base fees will be due, or for the actual charges method, the total costs will be tabulated and the balance of the fees will be due.

For both types of plan checking and inspection fees, actual overtime costs incurred by the City on behalf of this project will be tabulated and due with all other fees upon completion of the project.

For the percentage estimate, the developer shall submit a copy of the contractor's contract for the basis of establishing the fee and 1/2 of the estimated fee will be due at the time of application for permit. Upon project completion, the developer will provide the City with a copy of the contractor's final payment and the balance of the fee's will be due. If there is a question as to the adequacy of the final construction costs, actual costs for plan review and construction inspection, will be used as the basis for the fees.

The Public Liability and Property Damage Insurance shall include, as a minimum, the insurance coverage as follows:

> Public Liability Insurance in an amount not less than $1,000,000 for injuries, including death, to any one person, and subject to the same limit for each person in an amount not less than $1,000,000 for each

occurrence, and Property Damage Liability Insurance in an amount not less than $1,000,000 for damages for each occurrence.

Copies of the ACORD "Certificate of Liability Insurance" form and the "Additional Insured Endorsement" form are included in the Division 1, Project Special Provisions.

While it is not a specific requirement of the permit, the City recommends that the Owner/Developer include in his contract a requirement that the Contractor furnish him with a Performance and Payment Bond in an amount equal to 100 percent of the Contract amount to insure the faithful performance of the Contractor and Contractor's payment of all bills, liens, or claims. The Performance and Payment Bond shall cover the warranty period. One year Warranty period will begin upon final acceptance by the City.

Step VI

Construction may proceed only after the City has issued the construction permit. A Preconstruction Conference shall be held prior to the start of construction.

The City of Yakima will assign a qualified, experienced construction inspector to the project at the owner/developer's expense. The Inspector shall inspect the work to see that all materials and workmanship meet or exceed the plans and specifications, as approved. The Owner/Developer shall cover all costs associated with quality assurance sampling and testing and provide documentation of the results of the sampling and testing. The requirements for sampling and testing are contained in the current edition of the WSDOT Standard Specifications.

The Owner/Developer or his assigned Agent shall administer and supervise the construction and will be readily available to take direction from the City relating to the construction activities. Any problems that are encountered or changes required due to construction conditions will be reviewed with the consulting Engineer and the owner/developer. Changes that require any increase or decrease to the contractor's cost will be negotiated between the owner/developer and contractor and will be the responsibility of the owner/developer.

All construction shall meet the most current edition of the WSDOT Standard Specifications for Road, Bridge, and Municipal Construction, the approved plans and the approved Special Specifications. Special Provisions/Conditions shall be prepared and submitted to the City for approval for any exception to the most current edition of the Standard Specifications for Road, Bridge, and Municipal Construction. All changes, alterations or revisions to the approved plans or specifications shall be submitted for the approval by the City.

The City shall have the authority to cause a suspension of construction when, in the City's opinion, such work is not being done in conformance with the approved plans, specifications, and the permit.

Step VII

Upon written notice that the public improvements have been substantially completed, the City will, in the company of the Consulting Engineer and/or the Owner/Developer or his Agent, make a final inspection of the construction. The Owner/Developer shall see that all necessary additions, corrections, repairs, and/or modifications are made.

Step VIII

At the conclusion of construction and when all corrections and repairs have been made, the Consulting Engineer shall submit a reproducible set of "As Built" Record Drawings along with a Certification of Work Completion and a request for acceptance by the City. The City's inspector and the Owner/Developer's contractor will provide the Consulting Engineer with field notes of changes to the approved plans. It is the responsibility, however, of the Consulting Engineer to assume conformance of the construction with the plans and specifications. The Consulting Engineer shall also make all other appropriate certifications and copies shall be furnished to the City.

No building or service connection to sanitary sewers, storm drains, or water lines will be permitted until these systems have received final acceptance by the City, or unless otherwise approved by the City for connections.

No permit shall be issued for any building construction until all of the public improvements included in the permit are fully operational and accepted by the City unless agreed to in writing by the City.

Step IX

When all public improvements have been completed in an acceptable manner, the City shall certify its acceptance in writing . Final acceptance by the City shall not relieve the Owner/Developer, the Consulting Engineer, or the Contractor of any liability, present or future, for failure or omissions directly relating to the improvements as included in the approved plans and specifications. The City's letter of acceptance shall specify the effective period of the warranty.

STANDARD FORMS

Attached hereto are samples of the various forms and letters that apply to the permit process for public improvements.

- Public Improvement Procedure Checklist
- Project Acknowledgment (City)
- Permit to Construct Public Improvements (City)
- Contractor's Indemnity Agreement (Contractor)

- Notice of Substantial Completion (Consulting Engineer)
- Final Project Inspection (City)
- Correction Notice (City)
- Certification of Work Completion (Consulting Engineer)
- Affidavit of Release of Liens and Claims (Owner/Developer and Contractor)
- Final Acceptance (City)
- Warranty Inspection (City)

Date_____

TO: CONSULTING ENGINEER

PROJECT ACKNOWLEDGMENT - PROJECT _____

Your letter dated _____ , advising the City that your consulting Engineering firm has been retained to provide the engineering services for this project is hereby acknowledged. We have reviewed your prospectus and it appears that your firm has the qualifications and experience to perform the engineering and supervision necessary to produce the public improvements, noted below, to meet the City's specifications, standards, and requirements.

We look forward to working with you on this project. Please feel free to contact us for assistance. We recommend that a pre-design conference be arranged to review the projects.

Approval for engineering includes:

Street Improvements

Sidewalks and Bicycle Paths

Storm Drainage Systems

Sanitary Sewer Systems

Water Systems

Other (Specify)

Illumination

_____

City of Yakima

cc: Owner/Developer

PUBLIC IMPROVEMENT PROCEDURE CHECKLIST

ITEM	DATE	INITIALS
• Project Acknowledgment		
• Predesign Conference		
• Permits		
- SEPA		
Department of Ecology		
Shorelines NPDES		
Department of Health		
WSDOT		
Department of Natural Resources		
Corps of Engineers		
Wetlands		
City or County Grading and Filling		
• Plan Review		
Water		
Sewer		
Street		
Illumination		
Drainage/Storm Water		
Concurrency		
• Permit for Construction		
• Preconstruction Conference		
• Construction		
Material Submittals-Water, Sewer, Storm, Illumination, etc.		
Quality Assurance Sampling of Materials		
Material Testing Documentation		
• Project Close-Out		
Notice of Substantial Completion		
Final Inspection		
Correction Notice		
Final Acceptance		
As-builts		
Warranty Inspection		
Deeds		
Easements		

CITY OF YAKIMA ENGINEERING DIVISION
PERMIT TO CONSTRUCT PUBLIC IMPROVEMENTS
PERMIT NO._____

OWNER:_____ADDRESS:_____PHONE:_____
ENGINEER:_____ADDRESS:_____PHONE:_____
CONTRACTOR:_____ADDRESS:_____PHONE:_____
LOCATION OF WORK:_____
DESCRIPTION OF THE WORK, INCLUDING METHODS & EQUIPMENT TO BE USED:

_____

_____

PROPOSED STARTING DATE:_____
PROPOSED COMPLETION DATE:_____
COST OF CONSTRUCTION: $_____ (Attach copy of contract) (Inc. sales tax)

I hereby affirm that the above statements are true, and I agree to comply with all City Ordinances in the conduct of the work and that all work shall comply with City Specifications.
OWNER:_____BY:_____

ESTIMATED FEES: (Total estimated fees to accompany application submittal)

1. Plan Check & Inspection = (0.07) ($_____)+(0.06) ($_____)+(0.05) ($_____)=$_____
   (1/2 due at issuance of permit; balance due upon completion of project.) **TOTAL FEE=$_____**

The Plan Check and Inspection Fee shall be computed to cover the cost of inspection as follows: 7 percent for the first $25,000 cost, plus 6 percent for costs from $25,000 and $50,000, and plus 5 percent for all costs over $50,000 (e.g., the fee for a total project cost of $78,000 would be (0.07) ($25,000) + (0.06) ($25,000)+(0.05)($28,000)=$4,650). Projects totaling $500,000 or more may elect to use direct cost method.

Plan Check and Inspection Fee shall be based upon the final project costs. All testing costs will be billed at actual cost plus a 5% administrative fee.

	CONDITIONS OF APPLICATION APPROVAL	**DATES**
1.	Approval of Plans & Specifications	
2.	Payment of Fees 1/2 due prior to permit issue, 1/2 due prior to final acceptance.	
3.	Performance and Payment Bond	
4.	Public Liability (1,000,000) & Property Damage ($1,000,000) Insurance certificate with "Save Harmless" Rider Clause	
5.	Other Agency Approval	
6.	Indemnity Agreement	
7.	Other	

(Conditions for approval will generally be identified by the City with preliminary plan approval)

PERMIT APPROVED:_____DATE:_____

DISTRIBUTION: (1) *Original to Applicant (2) Consulting Engineer (3) Project File (4) Contractor's Copy*

CONTRACTOR'S INDEMNITY AGREEMENT

_____, Contractor, hereby agrees to hold harmless, indemnify, and defend the City of Yakima, a Municipal Corporation; and each of their officers, officials, employees, or agents, from any and all liability claims, losses, or damages arising, or alleged to have arisen, from the performance of work during the construction of public works improvements described as

_____

_____

_____

_____ by reason of any negligent act of omission of the Contractor, any Subcontractor, or Supplier, or by any agent, employee, or representative of any of them.

In witness whereof, the undersigned has caused the Indemnity Agreement to be executed and its seal affixed by the duly authorized officers this _____ day of _____, 20_____.

_____

Name of Corporation/Business

By:_____

Title:_____

Attest:_____

Date

City of Yakima
Engineering Division
129 No. 2nd Street
Yakima, WA 98901

CERTIFICATION OF WORK COMPLETION - PROJECT: _____
_____, Consulting Engineers, do hereby certify that the public improvements including _____
_____
_____
have been constructed in accordance with the approved plans and in accordance with the WSDOT Standard Specifications as amended by the Special Provisions. Copies of the "As-Built" drawings and appropriate certifications are transmitted herewith. An Affidavit of Release of Liens and Claims has been executed by the appropriate authorized officials and is forwarded herewith. Final acceptance of these public improvements is requested.

_____
CONSULTING ENGINEER

cc: Owner/Developer
Contractor

Date

City of Yakima
Engineering Division
129 No. 2nd Street
Yakima, WA 98901

AFFIDAVIT OF RELEASE OF LIENS AND CLAIMS - PROJECT:_____

_____, Owner/Developer, and _____
_____, Contractor, hereby affirm that they have satisfied all claims of project including, but not limited to, all payroll amounts due, all Contractor or Subcontractors amounts due, all accounts for labor, equipment, or materials furnished, and that all claims for incidental services, liens, judgments, and so forth, or claims arising out of said project work. In the event that the City is required to take legal action to satisfy any lien or claim relating to the project, the Owner/Developer and/or the Contractor shall be liable for all costs connected with the clearing any or all liens or claims.

OWNER/DEVELOPER:_____

Address:_____

_____

Authorized Official:_____

Date:_____

Contractor:_____

Address:_____

_____

Authorized Official:_____

Date:_____

Date

CONSULTING ENGINEER

CORRECTION NOTICE -- PROJECT:_____

The attached list identifies the changes and/or corrections that are required to complete the public improvements in accordance with the WSDOT Standards and Specifications as amended by the Special Provisions. Please notify this office when the correction work is to take place. When the corrections have been satisfactorily completed, the project will be ready for the finalization and acceptance process.

cc: City of Yakima
Contractors
Owner/Developer

Date

City of Yakima
Engineering Division
129 No. 2nd Street
Yakima, WA 98901

NOTICE OF SUBSTANTIAL COMPLETION - PROJECT:_____

The following listed public improvements have been substantially completed and are ready for final inspection:

_____

_____

We hereby request that the City conduct its final inspection of these improvements. We will be happy to accompany the City's representatives on this inspection. Please contact_____ _____.

CONSULTING ENGINEER

cc: City of Yakima
Contractors
Owner/Developer

Date

OWNER/DEVELOPER

FINAL ACCEPTANCE - PROJECT:_____

The following listed public improvements have been constructed in accordance with the City's requirements and are hereby accepted by the City for operation and maintenance:

_____

_____

_____

The one-year warranty period shall commence _____ and shall be effective through _____. The City will conduct a warranty inspection prior to the above date and will notify you of any repairs or corrections that will be required under the warranty. You will be expected to have the repairs and/or corrections made immediately. Any required repair or correction identified at any time during the warranty period shall be made immediately upon notification.

cc: City of Yakima
   a. Engineering Division
   b. Wastewater Division
   c. Water/Irrigation Division
   Contractors
   Owner/Developer

Date

OWNER/DEVELOPER

WARRANTY INSPECTION - PROJECT:_____

A warranty inspection was conducted on _____, for the public improvements in the above noted project. The following items have been noted as requiring correction or repair.

_____

_____

_____

These corrections and repairs should be made prior to _____, the end of the warranty period. Upon satisfactory completion of these items, the City will release the warranty fund contained within your Permit to Construct Public Improvements.

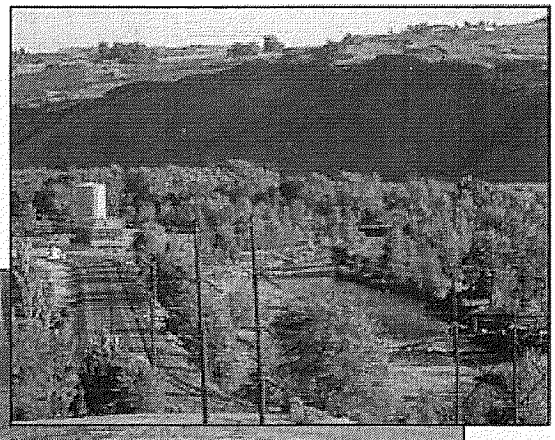
cc: City of Yakima
   a. Engineering Division
   b. Wastewater Division
   c. Water/Irrigation Division
   Contractors
   Owner/Developer

Appendix S

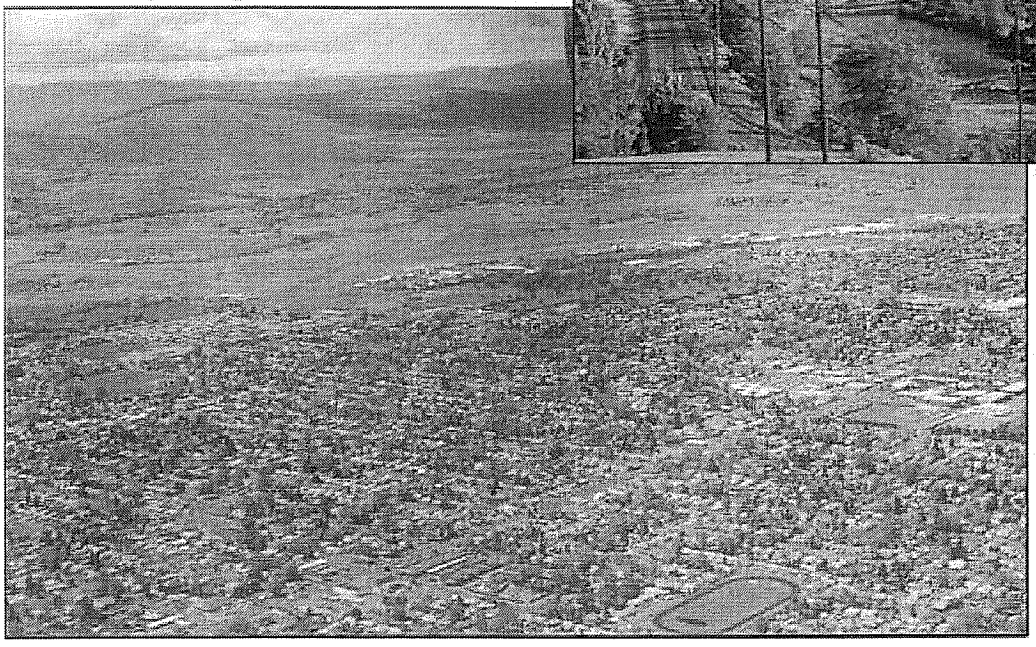
ASR Project Summary Report

AQUIFER STORAGE AND RECOVERY (ASR)
STATUS SUMMARY
CITY OF YAKIMA, WASHINGTON

Naches River (Rowe Hill)
Drinking Water Treatment Plant on the Naches River



Ahtanum Valley Recharge Site



Golder Associates

ABSTRACT

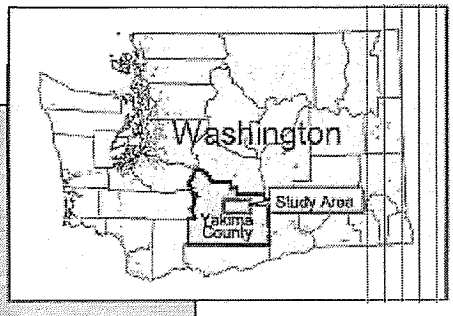
The City of Yakima requires additional groundwater supply capacity to increase the reliability of existing water supply and to meet future demand. Aquifer Storage and Recovery (ASR) may provide a means of acquiring permits for additional groundwater wells. A pilot test conducted during the winter of 2000-2001 showed a sustained rise in water levels after recharging 45.2 million gallons (135 acre feet) over 25 days thereby indicating that the aquifer is well-suited for containing recharged water. The distribution system operated without disruption to regular customers, and drinking water quality standards were met throughout the test. ASR is considered to be hydrogeologically and operationally feasible in the Ahtanum-Moxee Subbasin in which the City of Yakima is located. Implementation of a full ASR program to increase system reliability and create a desired 100% redundancy may require the installation of three wells designed for ASR recharge and recovery.

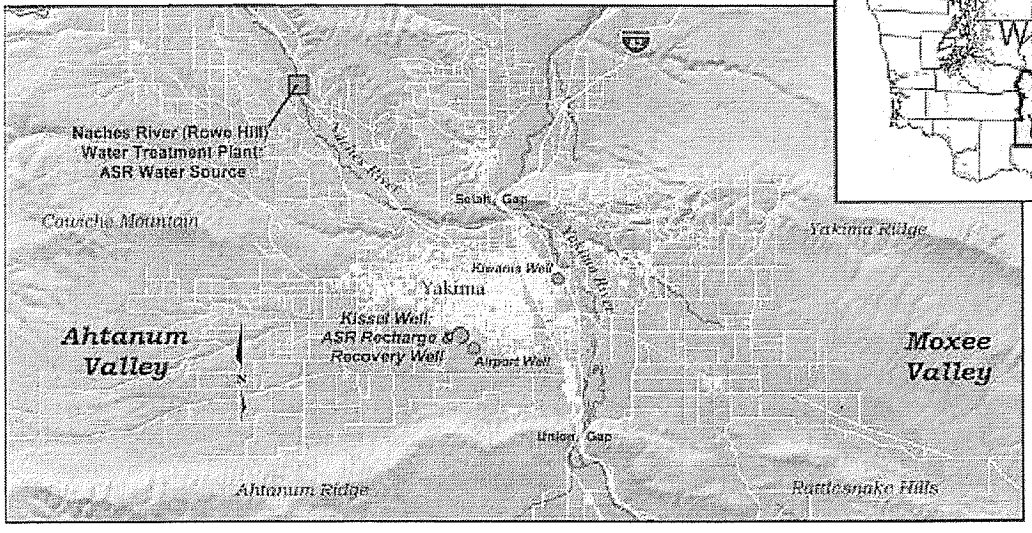
INTRODUCTION

The City of Yakima commissioned a pilot test to determine the feasibility of Aquifer Storage and Recovery (ASR) in the Ahtanum-Moxee sub-basin in the central part of the Yakima Basin, Washington. The City currently relies on surface water sources (the Naches River) as the primary municipal water supply. Groundwater sources provide redundancy and increased reliability. The current capacity of the groundwater sources is approximately 50% of the surface water capacity. Increased groundwater capacity is advisable in case the surface water supply is interrupted for extended periods of time. ASR may provide an acceptable means to permit increased groundwater supply.

Three reports associated with the ASR pilot test were prepared and provide the material contained in this status summary. The technical compilation (September 2000) addressed issues of geology, hydrogeology, water quality, engineering considerations related to the ability of the existing distribution system to deliver water for recharge without disrupting other services, and potential impacts of ASR activities on other water users. The pilot test plan (September 2000) provided specifications for retrofitting the Kissel Well for ASR use, a pumping regimen for ASR recharge and recovery testing activities, physical and water quality monitoring schedules, and regulatory considerations. A pilot test report (December 2001) describes the testing activities and response of the aquifer and distribution system to ASR activities, and associated water quality analysis.

These reports were shared with, presentations were made to, and comments invited from, stakeholders including the Washington Department of Ecology (Ecology), the Yakama Nation, the Tri-County Water Resources Association, the Bureau of Reclamation (BoR), the United States Geological Survey (USGS), the Washington Department of Health, and others. The BoR provided funds supporting the installation of an automated basin-widewater level monitoring network. A copy of the well log database developed for the project was given to the USGS, and





regular access to the monitoring network is being provided to the on-going Yakima Basin groundwater study being conducted by the USGS on behalf of the BoR, Ecology and the Yakama Nation.

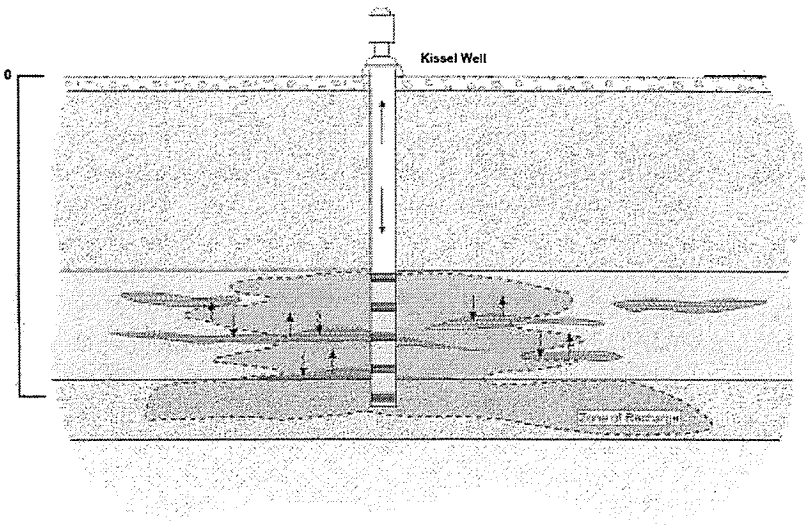
EXISTING SYSTEM

The existing water supply system consists of a single primary surface water source on the Naches River, and three backup groundwater wells (Kiwanis, Airport and Kissel Wells). The Naches River (Rowe Hill) Water Treatment Plant has a capacity of approximately 23 million gallons per day (MGD). Current peaking summer demand is approximately 23 MGD. Occasionally, operation of the surface water treatment plant service is temporarily interrupted by river conditions (e.g., ice build-up or very high turbidity) or engineering factors (e.g., pump failure or transmission main maintenance). When operation of the Rowe Hill Plant is interrupted, water service can be maintained through the use of groundwater wells. However, the groundwater capacity is only half of the peak demand. In the event of service interruption of the Rowe Hill Plant, full service can currently be maintained for several days through the combined use of wells and above ground storage tanks before normal demand will fall to be met. The construction of additional storage capacity and/or groundwater wells will provide increased reliability and redundancy to the water supply system of the City of Yakima.

Crane permanently stationed at the Rowe Hill Water Treatment Plant to minimize disruptions by ice and debris.

OVERVIEW OF THE ASR PILOT TEST

An Aquifer Storage and Recovery (ASR) pilot test was conducted during the winter of 2000-2001 to assess the operational and technical feasibility of incorporating ASR as part of the municipal water supply system. The source of the water was the Naches River (Rowe Hill) Water Treatment Plant located approximately seven miles upstream from the City of Yakima. The recharge well was the City's Kissel Well, which is screened 1,000 feet below ground surface. Recharge to the Kissel Well was conducted for 25 days at a rate of approximately 1,200 gallons per minute (gpm). A total of approximately 45.2 million gallons (Mgal; ~139 acre-feet [AF]) was recharged. After a storage period of 55 days, recovery was conducted at a constant pumping rate of approximately 2,000 gpm for 30 days and approximately 89.7 Mgal (~275 AF) was withdrawn. The recovered water was delivered to the drinking water system of the City of Yakima.



REGULATORY ISSUES

Pilot Test

All ASR pilot test activities were conducted using existing water rights held by the City of Yakima. The Kissel Well was registered as an ASR recharge well with Ecology in compliance with the Underground Injection Control Program. Water quality testing was conducted after retrofitting the Kissel Well in compliance with the Safe Drinking Water Act. All water recharged and recovered met drinking water standards. Ecology allowed the introduction and removal to groundwater of compounds formed by chlorination disinfection of drinking water during pilot test activities.

ASR Rule-Making

Water right permitting of an ASR program is possible under the water code existing before 2000. However, one of the steps to permitting an ASR project under the pre-existing code is to establish a Groundwater Management Area through rule-making for each area. To provide a smoother process, the 2000 state legislature passed a bill to permit ASR projects under a single state-wide rule. Rule-making for this legislation has been on-going since the middle of 2000 and has been delayed due to reallocation of Ecology staff to drought response in 2001.

In developing an ASR rule, two significant regulatory issues are recognized related to implementation of a full ASR program by the City of Yakima:

1. How much water may be recovered after recharge (a water right issue); and,
2. Resolve potential inconsistencies between the Safe Drinking Water Act requirements and ground water protection regulations.

Water Rights for ASR

It is expected that water right permitting of an ASR project will involve:

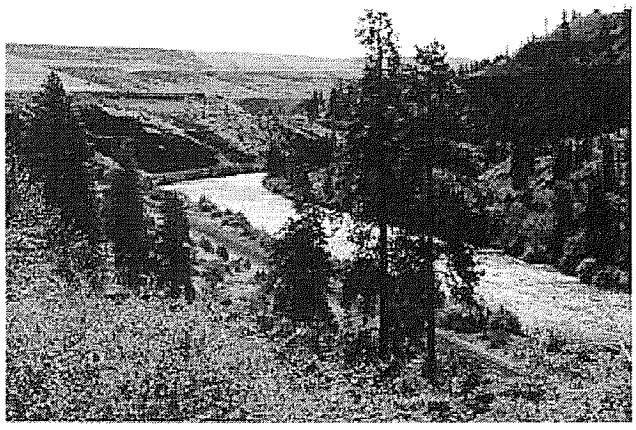
1. A primary water right for the source water to recharge;
2. A reservoir right to store water in an aquifer; and,
3. Potentially, a secondary right for withdrawing the water.

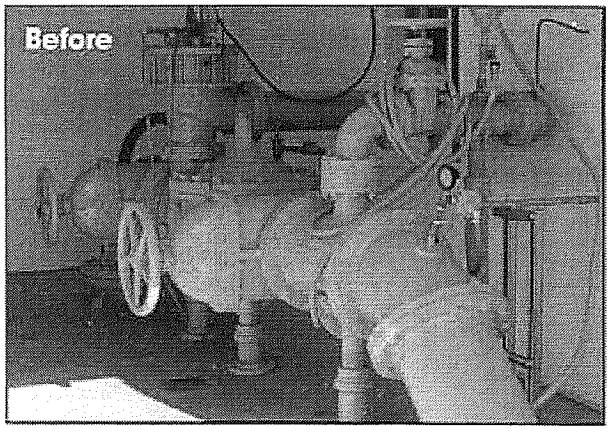
The rule making effort assumes that the primary right will be obtained outside of the purview of an ASR rule and is focused on administration of reservoir rights and secondary rights. How the City of Yakima may address each of these water right components is described below:

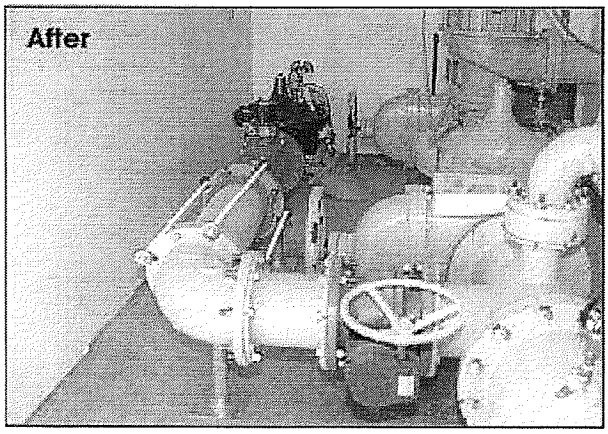
Primary water rights: The City of Yakima, may use existing water rights as primary rights.
Reservoir water rights: It is anticipated that reservoir rights for ASR will be granted as long as there is no impairment of other resource users.
Secondary rights: If required, the secondary right will quantify how much water may be recovered. It is anticipated that the developed rule will not prescribe a method for determining this amount, but that each project will be required to present a technical analysis justifying how much water may be recovered.

Water Quality Regulations

Conventional ASR is typically considered for drinking water purposes and uses water treated to drinking water standards. Chlorination is the most widespread means of treating water to drinking water standards. In the chlorination process, disinfection byproducts (e.g., trihalomethanes) are formed in concentrations that meet standards for human consumption, but exceed state-defined criteria for the protection of groundwater. Variances may be granted by Ecology for a maximum of five years after which they must be renewed. However, renewing a variance every five years creates uncertainty for infrastructure investment of ASR facilities, bonding surety, and water supply planning which typically operate with horizons of 20 years or more. New legislation or regulations may be required to resolve inconsistencies between current regulations regarding groundwater quality and the practicalities of ASR.







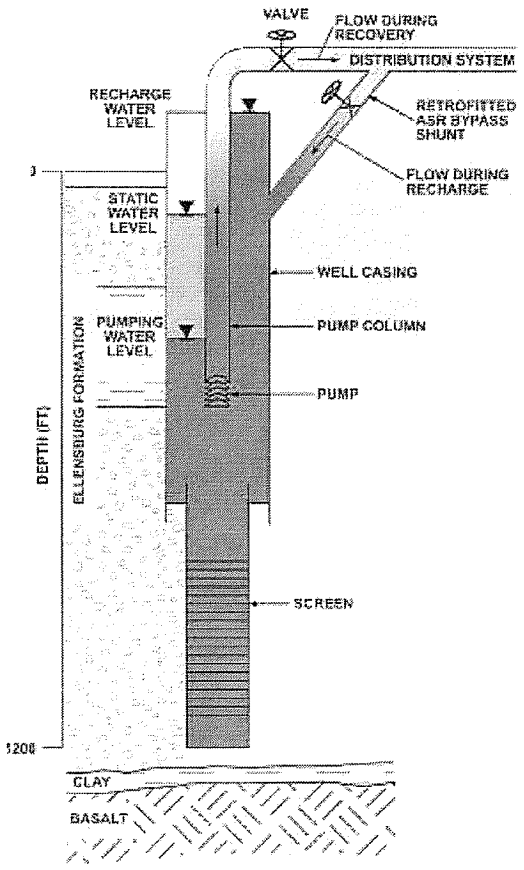
Kissel Well retrofit.

ENGINEERING CONSIDERATIONS

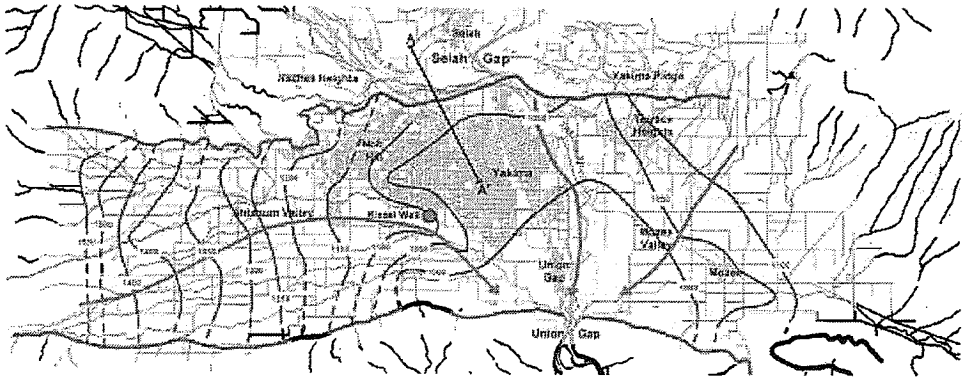
The distribution system of the City of Yakima is well suited for ASR. The system includes a surface water source that treats water to drinking standards, and a transmission network that can deliver water to existing wells. Hydraulic modeling of the distribution system was conducted to predict what would happen to system pressures during ASR activities. Enough pressure is available to conduct recharge activities while maintaining adequate pressure for fire safety and normal water distribution services.

The Kissel Well was selected for ASR pilot testing because it had the best construction in that it has a surface seal extending to approximately 500 feet below ground surface. This ensures the delivery of water through the well to the deeper parts of the aquifer system. The Kissel Well was retrofitted for ASR purposes by inserting a bypass shunt to allow system water to enter the well between the well casing and the pump column. Entrainment of air in cascading water within an ASR recharge well can sometimes reduce well efficiencies. To avoid this in the Kissel Well, recharge was conducted at a high enough rate to eliminate air pockets and completely fill the well with water.

A major operational consideration in ASR programs is well efficiency. Suspended sediment, scale from the distribution pipes, and/or mineral precipitation can clog a well. Well testing before and after the pilot test showed that well performance remained excellent. During recharge, well efficiency decreased approximately 25%, but fully recovered after eight hours of pumping. It is believed that pipe scale may be responsible for most of the decreased efficiency. Pipe scale will be removed with repeated ASR cycles.



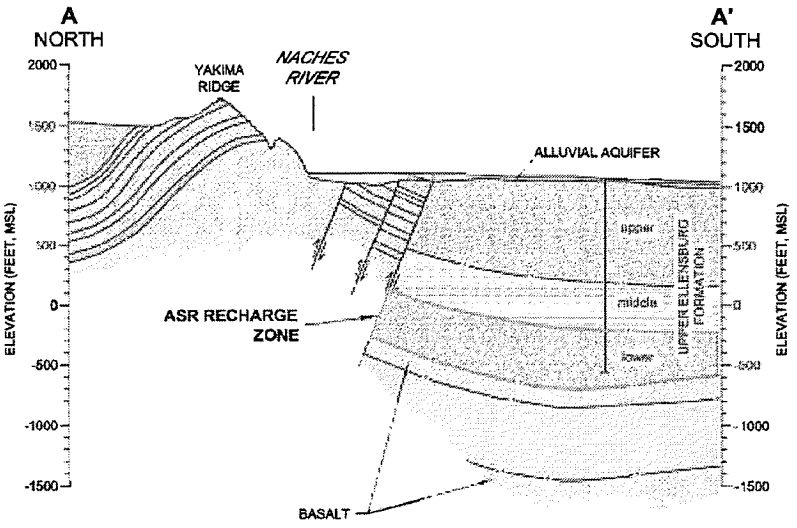
Kissel Well schematic design (not to scale).



Groundwater flow in the Upper Ellensburg Fm.

HYDROGEOLOGY

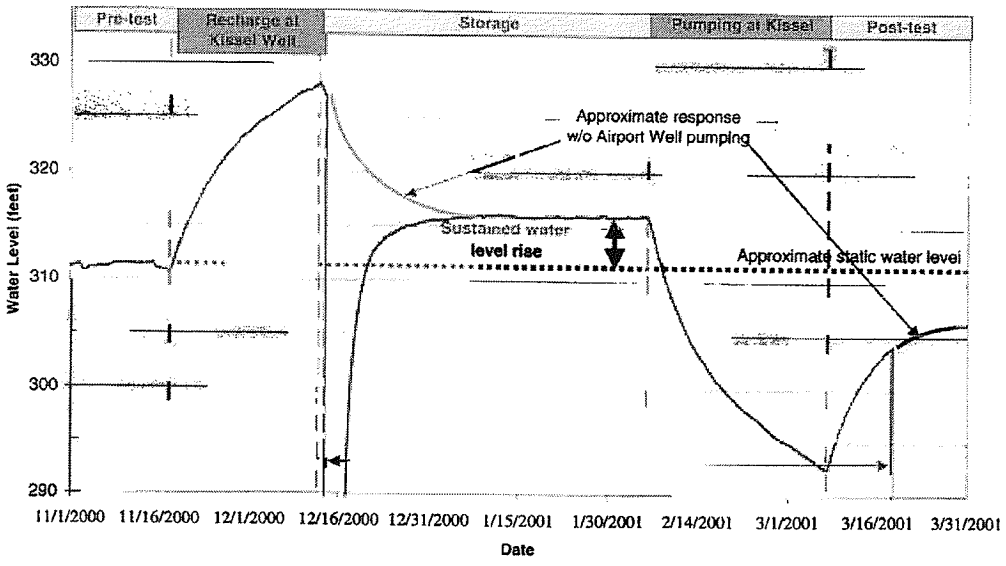
The City of Yakima is situated in the heart of the Ahtanum-Moxee Subbasin. It is a hydrologically closed bowl-shaped basin bounded by Yakima Ridge to the north, Rattlesnake Hills to the south, the Cascade Range to the west and the Black Rock divide to the east. Surface water flows into this basin by the Naches River and by the Yakima River through Selah Gap. The only surface water outlet from this basin is south by the Yakima River through Union Gap.



There are three principal groundwater aquifers: the loose sand and gravel (alluvial) aquifer at ground surface; the Upper Ellensburg Formation which is the target of ASR activities; and, the deepest underlying basalt aquifers. The shallow alluvial aquifer discharges along most reaches of the rivers. Summer irrigation results in higher water levels in this aquifer during the summer that drop off sharply at the end of the irrigation season for winter. This is a reversal of natural trends.

The Upper Ellensburg Formation contains two relatively coarse-grained members separated by a middle finer-grained members. Most water supply wells in the valley tap the upper coarse-grained member. The middle finer-grained member acts as a confining layer to the underlying coarse-grained member (i.e., it holds the water in). The lower coarse-grained member is the target aquifer for ASR purposes in which the City has completed two production wells (Airport and Kissel Wells). The lower member is underlain by a clayey weathered horizon of basalt which acts as a confining barrier to the passage of water. The presence of underlying and overlying confining layers make the approximately 200-foot thick lower member of the Upper Ellensburg Formation particularly well-suited to contain water introduced to it by ASR.

The structural geology of the Ahtanum-Moxee Sub-basin is such that the alluvial and Upper Ellensburg Formations are not continuous between basins. Groundwater within the Upper Ellensburg Formation flows radially from the edges of the sub-basin and discharges upward to the Yakima River immediately north of Union Gap. Interbasin groundwater flow occurs in the underlying basalt.



Airport Well water levels located ~1 mile from the Kissel Well (seasonally-adjusted data).

Kissel Well water level plot.

ASR PILOT TEST

Water was recharged to the Kissell Well at a rate of 1,200 gpm for 25 days. A water level rise of six feet was sustained during the 55-day period of storage. Following the storage period, water was recovered at a rate of 2,000 gpm for 30 days. Of six wells in which water levels were monitored within a 2-mile radius, an increase in water level was noted in all except the shallowest well (180 feet deep). Water levels in the recharged Kissel Well and the Airport Well, about one mile away, stayed approximately six feet higher than estimated background levels during the 55-day storage period. Both of these wells are completed in the same lower member of the Upper Ellensburg Formation. Smaller responses occurred at other wells completed in the upper member of the Upper Ellensburg Formation up to approximately two miles from the recharged Kissel Well.

During recharge and recovery, a 1 gpm stream of water was passed through a fine filter, and the captured material was identified using a binocular microscope. During recharge, material consistent with pipe scale was filtered out of water delivered from the distribution system. It is this pipe scale that probably caused temporary diminished well efficiency. With repeated recharge cycles, most of this pipe scale is expected to be removed from the distribution system in the vicinity of the recharge well. During recovery, material similar to aquifer material was filtered from water pumped out of the aquifer.

WATER QUALITY

Water quality analysis was conducted throughout the ASR pilot test to:

1. Ensure compliance of recovered water with state and federal drinking water standards;
2. Monitor any reactions resulting from mixing of surface and groundwater;
3. Assess the fate of disinfection by-products; and,
4. Evaluate the degree of mixing between recharged water and groundwater, and to estimate the amount of recharged water recovered.

Water quality met drinking water standards at all times. Disinfection byproduct concentrations increased during the first 40 days of storage to a maximum of 22.7 micrograms per liter (µg/L) for chloroform, and thereafter decreased. Concentrations at all times were within safe drinking levels (the maximum possible allowable level is 100 µg/L). However, the highest concentration allowed by Ch. 173-200 WAC is 7 µg/L.

Using geochemical fingerprinting of recharged surface water and the naturally-occurring groundwater, it is estimated that 70% of the recharged water was recovered. The rest of the water presumably contributed to the net storage of the aquifer.

ECONOMIC CONSIDERATIONS

The Comprehensive Water System Plan of the City of Yakima identifies the need for an additional 9 million gallons of storage for fire protection and other purposes. The capital cost for storage is on the order of $1.00/gallon, or $9 M. The available storage capacity of the Ellensburg Formation is estimated to be in excess of a billion gallons. The capital cost of using this storage is on the order of $1 M per well, and it is envisioned that three wells will provide the necessary supply to satisfy fire flow and other Department of Health requirements. Operating costs of running the Rowe Hill treatment plant at full capacity during the off-season in order to provide treated water for recharge is minimal. Operational pumping costs are similar for both an ASR program (pumping water out of the ground) or for a conventional above ground storage tank (pumping water into the tank and from the tank into a pressurized distribution system). Therefore ASR is considered the more economical alternative to provide the needed storage.

CONCLUSIONS AND RECOMMENDATIONS

Aquifer Storage and Recovery in the Upper Ellensburg Formation aquifer of the Ahtanum-Moxee Sub-basin is hydrogeologically feasible. The aquifer has significant storage capacity and the response to artificial recharge is a sustained rise in aquifer water levels. ASR has also been shown to be operationally feasible. Recharge can be accomplished through existing wells, however using existing wells will not result in an increase in the total withdrawal capacity of the City of Yakima's groundwater supply system. To increase the capacity of the groundwater supply system, additional wells will have to be installed. Four candidate locations considering both natural hydrogeological and infrastructure considerations are shown below.

Permitting of withdrawals is anticipated to be facilitated if they are operated as part of an ASR program. Permitting of an ASR program would likely be facilitated by development of regulations by the Washington Department of Ecology. Key regulatory components that require resolution in order to provide permitting surety for ASR programs in general include:

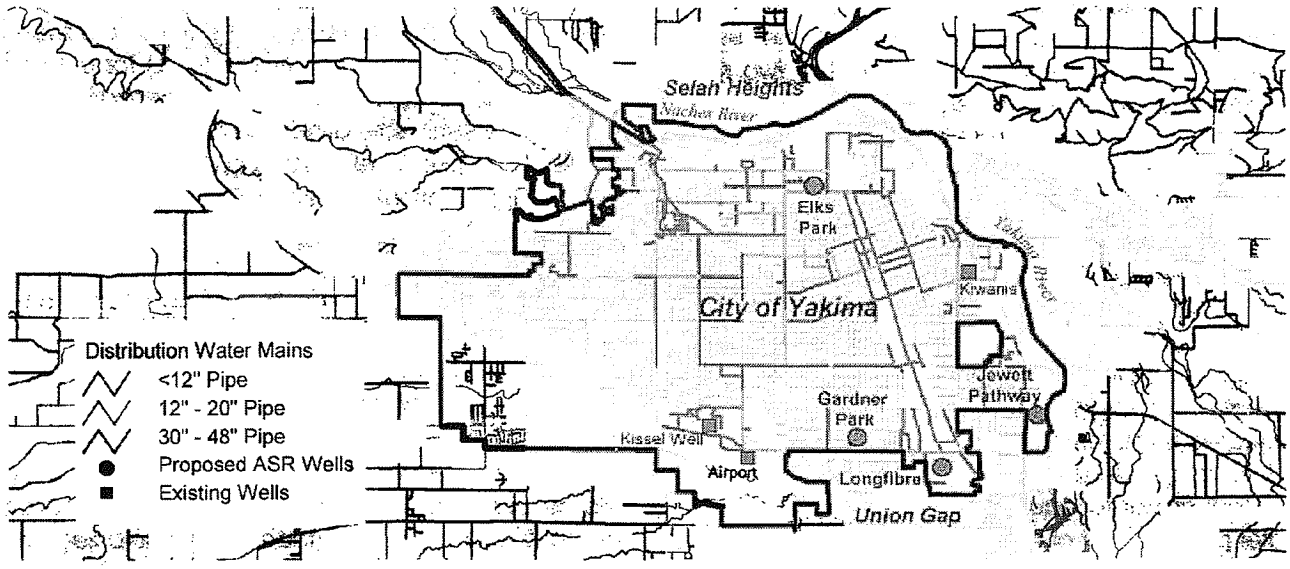
1. The means of quantifying the permitted amount of water that may be recovered following recharge; and,
2. How ASR operations using chlorinated drinking water containing DBPs will be addressed under existing Water Quality Standards for Groundwater (Ch. 173-200 WAC).

The next step in advancing an ASR program is to obtain the required permits, and sequential installation of ASR wells, including funding.

March 25, 2002

Golder Associates

(425) 883-0777
18300 NE Union Hill Road
Suite 200
Redmond, WA 98052
www.golder.com/water



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On file with the City of Yakima Water/Irrigation Division

Appendix T

Emergency Response Plan (Emergency Operations Guidelines)

WATER/IRRIGATION DIVISION

EMERGENCY OPERATIONS GUIDELINES

FOR DOMESTIC WATER
SUPPLY – TREATMENT - DISTRIBUTION

Table of Contents

Section 1 – Mission Statement and Goals

MISSION STATEMENT

In an emergency, the mission of the City of Yakima Water / Irrigation Division is to protect the health of the citizens of Yakima, as well as the health and safety of our employees, by being prepared to respond immediately to a variety of events that may result in the interruption of water supply and / or the possible contamination of the potable water supply.

GOALS

- Be able to quickly identify an emergency and initiate timely and effective response action.
- Be able to quickly notify local, state, and federal agencies to assist in the response.
- Protect public health by being able to quickly determine if the water is not safe to drink or use and being able to immediately notify customers effectively of the situation and advise them of appropriate protective action.
- To be able to quickly respond and repair damages to minimize system down time.

Section 2 – City of Yakima Water / Irrigation System Information

System ID	991509
System name and address	City of Yakima Water / Irrigation Division 2301 Fruitvale Blvd. Yakima, WA. 98902
Directions to Water / Irrigation Offices	From Hwy 12, take the N. 40th Ave exit, turn left on Fruitvale Blvd for approx. 2 miles. City of Yakima Public Works complex will be on North side of Fruitvale Blvd.
Basic description of system facilities	**PRIMARY SUPPLY** The primary water supply is from the tailrace of the Bureau of Reclamations Wapatox Canal which is supplied from the Naches River at the Wapatox diversion dam (from the beginning of April through the end of October) and intake structure West of Naches on Hwy 12. At times when the Wapatox Canal is out of service (from the end of October through the beginning of April), direct diversions of raw water are available through the head gates of the City of Yakima's raw water intake structure. When the head gates are open to achieve the desired flow directly from the Naches River, at the lower intake structure the Obermeyer weir fish bar shall be in place. During periods of extremely low flows it may be necessary to erect a coffer dam to direct the flow into the intake structure. This has been accomplished in the past by using heavy equipment in the river to push up rubble from the river bottom to build a coffer

dam. A hydraulic permit is necessary prior to placing equipment into the river. Through this structure the main source of supply is diverted to the City's Naches River Water Treatment Plant which provides complete filtration and disinfection of this supply. This water is delivered by gravity flow through a 48" transmission main to the distribution system.

Note: The City of Yakima's primary and secondary source descriptions can be found in Appendix B.

SECONDARY SUPPLY

The City of Yakima's three wells are capable of pumping directly into the distribution system. Disinfection is provided for at each site. The three wells pump directly into the low pressure zone of the distribution system. These groundwater supplies are utilized as a seasonal water source and are maintained in a standby status.

STORAGE AND DISTRIBUTION

The City's distribution system is adjacent to several water systems, but is only intertied with the Nob Hill Water Association. Three interties exist with Nob Hill Water Association. Nob Hill Water interties are located in the high zone pressure area at the intersection of 56th Avenue and Lincoln Avenue, at the intersection of 45th Avenue and Tieton Drive which is within the middle pressure zone and at S. 32nd Ave. and Ahtanum Road.

The distribution pipelines are 4 to 24 inches in diameter. The pipe materials are mainly cast iron, with ductile iron being used since the early 1970's. There are several steel pipelines and many unlined cast iron pipelines remaining in the system.

The City's existing storage capacity is 32 million gallons (MG) distributed among five reservoirs within the three pressure zones. Each pressure zone has an established hydraulic elevation. This elevation is maintained by the distribution reservoir/s located in each of the pressure zones.

Note: The reservoirs are shown on the hydraulic profile in Appendix C. The table indicates the volume of storage, the zone served, the type of material, and the overflow and floor elevation of the five reservoirs in the distribution system.

PUMP STATIONS

The City of Yakima operates four booster pump stations. Three of the booster pump stations (40th Ave. pump station, Stone Church pump station, and 3rd level pump station) provide water to the middle and high zones, as shown in the hydraulic profile. The fourth pump station is at Gleed and supplies water to approximately 25 customers in the Gleed area (including Naches Primary School located in Gleed).

Note: The pump stations are listed in Appendix D, indicating the location, the supply location, the zone that is served, the number of pumps in each station, pump capacity, and some other characteristics.

INTERTIES

	The Nob Hill Water Association and the City of Yakima have three emergency interties between their respective distribution systems. 1. This intertie is located at the intersection of N. 56th Avenue and Lincoln Avenue. This connection is between the City of Yakima's high pressure zone and Nob Hill Water Association's middle pressure zone. The City of Yakima High Zone System pressure exceeds the Nob Hill Water System pressure by approximately 7 psi. 2. This intertie is located at the intersection of S.45th Avenue and Tieton Drive. This connection is between the City of Yakima's middle pressure zone and Nob Hill Water Association's low pressure zone. This intertie was installed to provide a secondary supply to the hospitals on Tieton Drive. Utilization of the intertie for this purpose requires the isolation of the main line in Tieton Drive to divert water directly to the hospitals. 3. This intertie is located at S. 32nd Avenue and Ahtanum Road. This connection is between the City of Yakima's low pressure zone and Nob Hill Water Association's low pressure zone through a two way pressure reducing valve. Flow is limited to 2,500 gpm in both directions.	
Location/Town	Yakima, WA.	
Population served and service connections from Division of Drinking Water records.	65,038 People	18,700 Service Connections
System owner (the owner should be listed as a person's name)	Dave Brown – Water / Irrigation Division Manager	
System manager responsible for plan	Dave Brown - Water / Irrigation Division Manager	(509) 575-6204 Phone (509) 901-4870 Cell (509) 575-6187 Fax

Section 3 – Chain of Command

Name and title	Responsibilities during an emergency	Contact numbers
Dave Brown **Water / Irrigation Division Manager**	Responsible for overall management and decision making for the water system. The Water / Irrigation Division Manager is the lead for managing the emergency, providing information to regulatory agencies, the public and news media. All communications to external parties are to be approved by the Water / Irrigation Division Manager.	Phone: (509) 575-6204 Cell: (509) 901-4870 Fax: (509) 575-6187
Mike Shane **Water / Irrigation Engineer**	Responsible for maintaining water and irrigation system integrity and assisting Division Manager, Distribution Supervisor, WTP Supervisor with logistical / engineering expertise.	Phone: (509) 576-6480 Cell: (509) 728-3939 Fax: (509) 575-6187
James Dean **Distribution Supervisor**	In charge of operating the water system, performing inspections, maintenance, sampling and relaying critical information, assessing distribution system, and providing recommendations to the Water / Irrigation Division Manager. **NOTE:** These duties are in cooperation with the WTP Supervisor and the Water / Irrigation Engineer.	Phone: (509) 575-6196 Cell: (509) 728-2360 Fax: (509) 575-6187
Jeff Bond **Water Treatment Plant Supervisor**	In charge of running the water treatment plant, wells, booster pump stations, performing inspections, maintenance and sampling and relaying critical information, assessing facilities, and providing recommendations to the Water / Irrigation Division Manager. **NOTE:** These duties are in cooperation with the Distribution Supervisor and the Water / Irrigation Engineer.	Phone: (509) 575-6177 Cell: (509) 728-2362 Fax: (509) 966-5878

Any assigned staff from Distribution, WTP, Irrigation, or Admin.	Delivers door hangers and supports Water / Irrigation Division during emergency event. Responsible for administrative functions in the office including receiving phone calls and keeping a log of events. These personnel will provide a standard carefully pre-scripted message to those who call with general questions provided by Division Manager.	Phone: (509) 575-6154 Fax: (509) 575-6187

Section 4 - Events That Cause Emergencies

Why do emergencies happen? There are a variety of reasons including:

- Natural disasters.
- Accidents.
- Deliberate acts of vandalism or terrorism.
- System neglect or deferred maintenance.

Type of event	Probability or risk (High-Med-Low)	Comments
Flood	**High**	During spring runoff there are several City of Yakima water facilities that have the potential to be damaged and water quality compromised at flood stage water levels.
Earthquake	**Med**	The Pacific Northwest has the potential for earthquake activity that could cause damage to distribution system, WTP facilities, and irrigation systems.
Fire	**Med**	The Yakima Valley is susceptible to both wild fires as well as structure fires that may require action on the part of the City of Yakima Water / Irrigation Division to assist emergency personnel in redirecting flow of water for higher pressures for fire fighting.
High winds	**Med**	System is vulnerable to high wind events. Power is disrupted, telemetry is disrupted, water facilities can be damaged due to high winds.

Ice and Snow Storms	**Med**	Excessive ice and snow can damage water facilities, freeze pipes (burst mains), and make transportation during emergency events difficult.
Drought	**Med**	Need to plan for decrease in available water for late spring, summer and early fall during a drought year.
Construction accident	**Low**	Contractors occasionally damage buried water lines while excavating.
Terrorism	**Low**	Need to be trained on suspicious activity and report to proper authorities.
Chemical spill	**Low**	City of Yakima has a Complete wellhead protection plan.

Section 5 – Severity of Emergencies

Level I Emergency

Description: The City of Yakima Water / Irrigation Division considers the following as level I emergencies:

- Distribution line breaks.
- Irrigation line breaks.
- Short power outages.
- Minor mechanical problems at WTP, Wells, Booster Pump Stations.
- Other minor situations where it is not likely that public health will be jeopardized.

The system has specific response activities identified for these types of emergencies, including proper sampling, disinfection, and pressure testing activities. System personnel are advised and are directed to work on the problem and are usually capable of resolving the problem within 24 hours. If it is determined that the problem will take longer than 24 hours to resolve and storage is likely to be drawn down below a safe operating level, the situation will be elevated to level II.

Level II Emergency

Description: The City of Yakima Water / Irrigation Division considers the following to be level II emergencies:

- Disruption in supply such as a transmission main line break, pump failure with a potential for backflow, and loss of pressure.
- Storage levels are not adequate to handle disruption in supply.
- An initial positive coliform or E. coli sample.
- An initial primary chemical contaminant sample.
- A disruption in chlorine/chemical feed from the groundwater sources.
- A minor act of vandalism.
- Drought, with a noticeable and continuing decline of water level in the well.

Level III Emergency

Description: If the City of Yakima Water / Irrigation Division experiences significant mechanical or contamination problems where disruption in supply is inevitable and issuance of a health advisory is needed to protect public health. Major emergencies should be reported to DOH as soon as possible to determine the best available means to protect customers' health. System personnel are directed to the situation, and outside entities are notified to aid in the response. Major emergencies may require more than 72 hours to resolve and include:

- A verified acute confirmed coliform MCL or E. coli/fecal positive sample requiring immediate consideration of a health advisory notice to customers.
- A confirmed sample of another primary contaminant requiring immediate consideration of a health advisory notice to customers.
- A loss or complete malfunction of the water treatment facilities for the surface water source, including chlorination.
- A major line break or other system failure resulting in a water shortage or requiring system shutdown.
- An act of vandalism or terrorist threat such as intrusion or damage to a primary facility.
- An immediate threat to public health of the customers and an advisory is required.
- Severe drought significantly affecting well yield.

Level IV Emergency

Description: If the City of Yakima Water / Irrigation Division experiences major damage or contamination from a natural disaster, an accident, or an act of terrorism. These incidents usually require immediate notification of local law enforcement and local emergency management services. Immediate issuance of health advisories and declaration of water supply emergencies are critical to protect public health. These events often take several days or weeks to resolve before the system returns to normal operation and may include:

- Earthquake that shuts down the system or impacts sources, lines, etc.
- Act of terrorism possibly contaminating the water system with biological or chemical agents.
- Flood that infiltrates system facilities and sources.
- Chemical spill within 2000 feet of the system's sources.

- Storm that significantly damages power grid and system facilities.
- Mudslide or other earth shift that causes failure of transmission or loss of water in well.

Section 6 – Emergency Notification

Notification procedures

Notification Procedures for Level III, and Level IV Emergencies

Who is Responsible:	The City of Yakima Water / Irrigation Manager is responsible for assigning public notification duties to desired personnel based on the severity of the emergency. If the Water / Irrigation Manager is not available, the assignment responsibility will go to the Assistant City Manager.
Water Emergency Procedures for Level III and Level IV Emergencies:	• Water / Irrigation Manager confers with key staff to verify problems. • Water / Irrigation Manager organizes staff to develop the message to be delivered to the customers. (Dependent upon the severity of the water emergency) • Water / Irrigation Manager assigns personnel to consult with state drinking water staff regarding the problem. • Water / Irrigation Manager with assistance from the Community Relations manager prepares door hangers, signs and radio message. • Water system operator continues to investigate problem and make repairs as necessary. • Water / Irrigation Management team will determine if there is any need for notification of wastewater collections or stormwater management due to localized flooding from distribution line breaks or chemical spills. • The water emergency notification will be distributed by: 1. Field staff placing “water emergency notices” on doors and along travel routes. 2. Staff will place signs on main travel routes into the community. 3. Water / Irrigation Manager contacts Community Relations Manager and requests issuance of the water emergency notice and any further public education notices for emergency. 4. Administrative support personnel will provide a pre-scripted message to phone callers and log in each phone call. • Water system operator continuously updates the Water / Irrigation Manager on water emergency and the progress that is being made. • Once the water emergency is resolved, re-notify customers. As a Level III or Level IV emergency is resolved a post emergency meeting will be conducted to determine if anything could have been done better or to determine if any Public Assistance from the State of Washington or FEMA can be applied for. **NOTE: It is vitally important for all activities, financial, physical work, phone logs, operational logs, and contact information, be documented for FEMA Public Assistance.**

Notification Procedures for Health Advisories

Who is Responsible:	The City of Yakima Water / Irrigation Manager is responsible for assigning public notification of health advisories to desired personnel. If the Water / Irrigation Manager is not available, the assignment responsibility will go to the Assistant City Manager.
Health Advisory Procedures:	• Water / Irrigation Manager confers with key staff to verify problems. • Water / Irrigation Manager organizes staff to develop the message to be delivered to the customers. • Water / Irrigation Manager assigns personnel to consult with state drinking water staff regarding the problem. • Water / Irrigation Manager with assistance from the Community Relations manager prepares door hangers, signs and radio message. • Water system operators continue to investigate problem and keep City of Yakima Water / Irrigation Manager informed of progress continuously. • The water emergency notification will be distributed by: 1. Field staff placing "health advisories notices" on doors and along travel routes. 2. Assigned staff will make contact with all special needs contacts and assist in educating and keeping them informed of all progress and activities. 3. Staff will place signs on main travel routes into the community. 4. Water / Irrigation Manager contacts Community Relations Manager and requests issuance of the health advisory notice and any further public education notices for emergency. 5. Administrative support personnel will provide a pre-scripted message to phone callers and log in each phone call. • The Division of Drinking Water has put together a number of tools, including fact sheets, brochures, forms, and templates to help prepare for a health advisory. These are on the Web at: http://www.doh.wa.gov/ehp/dw/Our_Main_Pages/purveyor_assist_2.htm • Once the water emergency is resolved, re-notify customers and conduct a post advisory meeting to determine problems or aspects to improve upon.

Notification Procedures for Level I and Level II Emergencies

Who is Responsible:	The City of Yakima Water / Irrigation individual supervisors will be responsible for assignment of all emergency duties in regard to Level I and Level II emergencies. These supervisors are responsible for keeping the Water / Irrigation Division Manager informed of the progress of the activities during these emergencies. If the supervisors are not available during these emergencies, crew leaders and plant operators will be responsible for these emergency duties and keeping the division Manager comprised of activities.

Water Emergency Procedures for Level I and Level II Emergencies:	• Each Water / Irrigation supervisor (or acting representative) will be responsible for level I or level II emergencies, making contact with essential personnel or essential entities, such as: 1. City of Yakima Water / Irrigation Manager 2. Essential Water / Irrigation personnel to alleviate water emergencies. 3. Any contractor (construction, electrical, pump / motor repair or sales, etc.) that may be needed to alleviate water emergencies. 4. Wastewater collections and/or stormwater management in the event of any localized flooding due to distribution or irrigation main breaks or chemical spills that may effect stormwater collection or wastewater collection. • In the event of a Level I or Level II emergency, the responsible supervisor (or acting representative) will be required to keep the Division Manager informed of any problems that may require these emergencies to be classified as a higher level of emergency.

Alerting local law enforcement, fire protection services, state drinking water officials, state dept. of ecology, local health, and local emergency management

Who is Responsible:	The City of Yakima Water / Irrigation Manager is responsible for assigning law enforcement, fire protection services, state drinking water officials, local health, local emergency notification duties to desired personnel based on the severity of the emergency. If the Water / Irrigation Manager is not available, the assignment responsibility will go to the Assistant City Manager.
Procedures:	• If there is any immediate emergency that potentially could cause bodily harm or personal property damage, CALL 911. • Determine if there is a need for law enforcement involvement in regard to the emergency. If so, contact local law enforcement and advise them of emergency. • Determine if there is a need for fire protection services involvement in regard to the emergency. If so, contact local fire protection services and advise them of emergency. • Determine if there is any regulatory reason for the Dept. of Health to be involved. If there is, contact regional engineer at Washington State Dept. of Health Office of Drinking Water. • If there is any flooding of City of Yakima structures and facilities that may cause environmental hazards of rivers, lakes, or streams, contact the Washington State Dept. of Ecology immediately. • Determine if there is any chance of water customers being exposed to a health risk due to a water emergency, if so, contact Yakima County Health District immediately. • Determine if there is any need for local (Yakima County) emergency management to be notified due to local road closures, flooding of river banks, etc.

Contacting service and repair contractors

Who is Responsible:	In the event of most water emergencies, it will be the responsibility of the effected supervisor to be in contact with vendors and/or contractors to determine their availability for a given emergency.
Procedures:	• It is very important to make sure that the contractor that we will be in contact with is a vendor with the City of Yakima Purchasing Dept. and that they meet the qualifications of updated insurance and a current affidavit to pay prevailing wage. • A requisition will need to be done and a purchase order created for any work to be done. In the event that an emergency happens and the work must start immediately and the supervisor is not able to start a requisition right away. The supervisor must create a requisition as soon as possible after the work has started. • When hiring a contractor for an emergency it will be important to detail to the contractor (as well as city personnel) what the scope of their work is to be. • For Level III and Level IV emergencies it is very important that all time (contractor or city employee) be tracked. **NOTE: It is vitally important for all activities, financial, physical work, time sheets, phone logs, operational logs, and contact information, be documented for Washington State public assistance and / or FEMA Public Assistance.**

Contact neighboring water systems, if necessary

Who is Responsible:	In the event that a water emergency requires that the City of Yakima Water / Irrigation Division needs to contact any neighboring water utility for any reason, the responsibility of this activity will go to the City of Yakima Water / Irrigation Manager or otherwise assigned personnel. If the Division Manager is not available this responsibility will be the Assistant City Managers or otherwise assigned personnel.

Procedures:	• Water / Irrigation Manager will confer with the Water / Irrigation management team to determine if there is any chance of any neighboring domestic water provider or irrigation water provider being affected by any City of Yakima Water emergency. If there is any potential for them to be affected, contact immediately and include them in our emergency planning activities. • Water / Irrigation Manager will confer with the Water / Irrigation management team to determine if there is any need for interties to be opened between the City of Yakima water system and Nob Hill Water Associations water system. If so, contact Nob Hill Water Association and determine the availability of water from said interties. • If water is not available from Nob Hill Water Association, determine whether the City of Yakima needs to implement water conservation measures. If these measures are warranted, this emergency will be defined as a Level III emergency and the procedures for said emergency should be followed.

Local notification list (All Water / Irrigation Staff After Hours Contact Info On Call Out List)

Water / Irrigation Manager (day) **Dave Brown** **575-6204**	Water / Irrigation Manager (After Hours) **Dave Brown** **901-4870**
Water / Irrigation Engineer (day) **Mike Shane** **576-6480**	Water / Irrigation Engineer (After Hours) **Mike Shane** **728-3939**
Water Distribution Supervisor (day) **James Dean** **575-6196** **If not available, contact crew leader**	Water Distribution Supervisor (After Hours) **James Dean** **728-2360** **If not available, contact crew leader**
Water Distribution Crew Leaders (day) **Jim Bumgarner – 728-2354** **Rich Peck – 728-2353** **Emilio Lopez – 728-2355**	Water Distribution Crew Leaders (After Hours) **Jim Bumgarner** **Rich Peck** **Emilio Lopez**
Water Treatment Supervisor (day) **Jeff Bond** **575-6177**	Water Treatment Supervisor (After Hours) **Jeff Bond** **728-2362**
Water Quality Specialist (day) Damon Wilkens **576-6477 or 575-6177**	Water Quality Specialist (After Hours) **Damon Wilkens** **728-2361**
Irrigation Supervisor (day) **Alvie Maxey** **575-6194** **If not available, contact crew leader**	Irrigation Supervisor (After Hours) **Alvie Maxey** **728-2320** **If not available, contact crew leader**
Irrigation Crew Leaders (day) **Rich Sanislo – 728-2350** **Brad Harrison – 728-2351**	Irrigation Crew Leaders (After Hours) **Rich Sanislo – 728-2350** **Brad Harrison – 728-2351**

Utility Locate (day) **728-2359**	Utility Locate (After Hours) **728-2359**
Asst. City Manager (day) **Dave Zabell** **575-6123**	Asst. City Manager (After Hours) **Dave Zabell** **Use daytime number**
City Manager (day) **Dick Zais** **575-6040**	City Manager (After Hours) **Dick Zais** **Use daytime number**
Wastewater Collections (day) **Kim Webster** **575-6118**	Wastewater Collections (After Hours) Kim Webster **728-4229 or 575-6077**
Street/Traffic Division (day) **Wayne Deason** **575-6005**	Street/Traffic Division (After Hours) **Wayne Deason** **575-6005**
Neighboring Water System (day) **Nob Hill Water Association** **966-0272** **This number can be used for after hours**	Neighboring Water System (After Hours) **Nob Hill Water Association** **966-0272** **This number can be used for after hours**
Neighboring Water System (day) **Yakima County** **Joe Stump** **574-2425**	Neighboring Water System (After Hours) **Yakima County** **Joe Stump** **574-2300**
Neighboring Water System (day) **Union Gap** **Dennis Henne or Mike Stillwaugh** **225-3524**	Neighboring Water System (After Hours) **Union Gap** **Dennis Henne or Mike Stillwaugh** **248-0430 (after hours to police dept. and they will call out appropriate personnel)**
Neighboring Water System (day) **City of Selah** **Joe Henne or Ty Jones** **698-7365**	Neighboring Water System (After Hours) **City of Selah** **Joe Henne or Ty Jones** **698-7365 Anserwing service after hours**
Regional Stormwater Mgt. Program (day) **574-2300**	Regional Stormwater Mgt. Program (After Hours) **574-2300**
Yakima County Flood Hazards (day) **Joel Freudenthal** **574-2322**	Yakima County Flood Hazards (After Hours) **Joel Freudenthal** **654-2342**
Yakima County Road, Bridges, and Levees (day) **Matt Pietrusiewicz** **574-2320**	Yakima County Road, Bridges, and Levees (After Hours) **Matt Pietrusiewicz** **945-4957**
Local Health Jurisdiction (day) **952-7976**	Local Health Jurisdiction (After Hours) **575-4040 @ prompt #1**
Ambulance Service (day) **911**	Ambulance Service (After Hours) **911**
Local Law Enforcement (day) **Dispatch** **575-3012**	Local Law Enforcement (After Hours) **Dispatch** **575-3012**

Fire Dept (day) **Dispatch** **575-3014**	Fire Dept (After Hours) **Dispatch** **575-3014**
Community Relations Manager (day) **Randy Beehler** **575-6092**	Community Relations Manager (After Hours) **Randy Beehler** **575-6092**
City of Yakima Utility Billing (day) **575-6080**	City of Yakima Utility Billing (After hours) **728-4183 Pete Hobbs**

County, State, and Federal notification list

State Police (day) **Dispatch** **249-6700**	State Police (After Hours) **Dispatch** **249-6700**
Division of Drinking Water Regional Office(day) **Andy Cervantes** **509-329-2120**	Division of Drinking Water (After Hours) **Andy Cervantes** **509-329-2120**
Dept. of Ecology Water Quality Program (day) **575-2490**	Dept. of Ecology Water Quality Program (After Hours) **575-2490 Answering service after hours**
Washington Department of Fish & Wildlife Screen Shop **575-2733**	Washington Department of Fish & Wildlife Screen Shop **575-2733 or 575-2740**
Bureau of Reclamation (day) **Tom Merendino** **(509) 575-5848 ext 227**	Bureau of Reclamation (After Hours) **(509) 457-2374 Follow instructions**
Army Corps of Engineers (day) **Cathy DesJardin – Levee Specialist** **(206) 764-3406**	Army Corps of Engineers (After Hours) **Cathy DesJardin - Levee Specialist** **(206) 909-7937**
Army Corps of Engineers (day) **Doug Webber** **(206) 764-3406**	Army Corps of Engineers (After Hours) **Doug Webber** **(206) 764-3406**

Service/Repair notification list

Electric Utility (day) **Pacific Power** **877-548-3768**	Electric Utility (After Hours) **Pacific Power** **877-548-3768**
Electrician (day) **Tim Irvine – MBI** **453-3326**	Electrician (After Hours) **Tim Irvine - MBI** **833-9278**
Pump & Motor Specialist (day) **H & N (Pasco)** **509-547-1691 (800-795-3537)**	Pump & Motor Specialist (After Hours) **H & N (Pasco)** **509-547-1691 (800-795-3537)**

Pump Specialist (day) **Foremost Pump** **Roy Jensen** **930-2557**	Pump Specialist (After Hours) **Foremost Pump** **Roy Jensen** **930-2557**
Soil Excavator (day) **TTC Construction** **AJ Heckart** **457-3969** **945-6749**	Soil Excavator (After Hours) **TTC Construction** **AJ Heckart** **457-3969** **945-6749**
Soil Excavator (day) **Ken Leingang Excavating** **Ken or Daren Leingang** **575-5507**	Soil Excavator (After Hours) **Ken Leingang Excavating** **Daren Leingang (509) 728-0117** **Victor Bohannon (509) 728-0183**
Equipment Rental (day) **Star Rental** **575-1414**	Equipment Rental (After Hours) **Star Rental – John Heilman** **728-1951**
Central Pre-Mix Concrete Co. (day) **Tami Cain** **248-2041**	Central Pre-Mix Concrete Co. (After Hours) **Tami Cain** **728-8275**
Russell Crane Service (day) **Don Russell** **457-6341**	Russell Crane Service (After Hours) **Greg Huylar** **949-5611**
Tank Trucks (day) **LTI, Inc.** **800-422-5993**	Tank Trucks (After Hours) **LTI, Inc.** **800-422-5993**
Pipe and Fittings (day) **H D Fowler** **248-8400**	Pipe and Fittings (After Hours) **H D Fowler – Tim Heary** **728-3444**
Pipe and Fittings (day) **United Pipe** **248-9046**	Pipe and Fittings (After Hours) **United Pipe** **248-9046**
Laboratory (day) **Cascade Analytical** **452-7707**	Laboratory (After Hours) **Cascade Analytical** **452-7707**
Laboratory (day) **Edge Analytical** **(800) 755-9295**	Laboratory (After Hours) **Edge Analytical** **(800) 755-9295**

Special needs locations

Name	Address	Telephone	Reason for Requesting Priority Service	Alternative Source? YES/NO	Emergency Action(s) To Be Taken
Memorial Hospital	2811 Tieton Drive	509-575-8052 509-575-8000	Patient Care	YES	Activate Tieton Drive Nob Hill Water Association Interties
Yakima Regional Hospital	110 S. 9th Avenue	509-575-5131 509-575-5000	Patient Care and Home Kidney Dialysis Patients	NO	
Westside Medi-Center	4001 Tieton Drive	509-965-1770	Patient Care	NO	
Chandler House	701 N. 39th Ave.	509-248-1007	Patient Care	NO	
Garden Village	206 S. 10th Avenue	509-453-4854	Patient Care	NO	
Park Meadows	1010 N. 34th Ave.	509-249-0258	Patient Care	NO	
Crescent Health Care	505 N. 40th Avenue	509-248-4446	Patient Care	NO	
Renaissance Care Center	4007 Tieton Drive	509-966-4500	Patient Care	NO	
Chinook Convalescent	3300 Roosevelt Ave.	509-248-6220	Patient Care	NO	
Cedar HIlls	1603 Drake Ct.	509-457-6954	Patient Care	NO	
Living Care Retirement Community	3801 Summitview Ave.	509-853-3111	Patient Care	NO	
Landmark Care Center	710 N. 39th Ave.	509-248-4102	Patient Care	NO	

Yakima Retirement Manor	9 S. 9th Avenue	509-575-0954	Patient Care	NO	
Englewood Heights Senior Living Community	3710 Kern Rd.	509-452-5822	Patient Care	NO	
Chesterley Court Memory Care Community	1100 N. 35th Ave.	509-452-1010	Patient Care	NO	
Wynwood of Yakima	4100 Englewood Ave.	509-965-0111	Patient Care	NO	
North Star Lodge Cancer Care Center	808 N. 39th Ave.	509-574-3400	Patient Care	NO	
Children's Village	3801 Kern Rd.	509-574-3200	Patient Care	NO	
Yakima County Juvenile Justice Center	1728 Jerome Ave.	509-574-2100 or 574-2110	Inmate Health	NO	
Yakima County Jail	111 N. Front St.	509-574-1700	Inmate Health	NO	
Yakima County Jail	1500 Pacific Ave.	509-574-1700	Inmate Health	NO	
Dialysis Patients	Several	**Refer to current Dialysis Patient List (This list should be updated as needed) Appendix E**			

Section 7 – Water Quality Sampling

Many types of emergencies can jeopardize the quality of water and potentially water customers. Because the most important goal for any water system is to protect human health, the system must know how to act quickly and make decisions on whether to issue a health advisory. Sampling and obtaining results from a lab takes time and this fact should be taken into consideration when considering a course of action during any emergency.

If there is reason to believe that the water has been contaminated, the Water / Irrigation Manager (or an acting representative) should consult with DOH and consider issuing a health advisory as soon as possible – often before conducting water quality sampling.

Contamination of drinking water, whether intentional or unintentional, comes in many forms, which are classified in four general categories:

- Inorganics such as metals or cyanide.
- Organics such as pesticides or volatile solvents.
- Radionuclides.
- Pathogenic microorganisms.

If you suspect someone intentionally sabotaged the system or contaminated the water, this should be considered a crime scene. Immediate contact with local law enforcement and DOH Division of Drinking Water regional office will be necessary, and be sure not to disturb any potential evidence.

Water quality sampling

Sampling parameter	**Do we have procedures? Yes/No**	**Basic steps to conduct sampling (sites, frequency, procedures, lab requirements, lab locations, lab contacts, lab hours, etc.)**
Coliform Bacteria An indicator used to determine biological contamination	Yes	Determine sample point. Draw sample in appropriate thiosulphate prepared containers and submit to Cascade Analytical, 1008 W Ahtanum Rd, Union Gap, WA 98903, (509) 452-7707.
VOC's Volatile organic chemicals eg. gasoline	Yes	Determine sample point. Draw sample in appropriate airless containers and, if possible, ship to Edge Analytical, 1620 Walnut St, Burlington, WA 98233, 800 755-9295. If unable to coordinate shipping, submit to Cascade Analytical.
Chlorine Residual Presence of Cl2 residual is quickest way to determine acute biological threat	Yes	Determine sample point, draw sample and analyze in portable colorimeter. Expand your area of contamination surveillance by drawing in an increasing radius to determine extent, and perhaps origin of contamination.
Chlorine Demand Depletion over time, can be used as rough estimate of severity of reactive contamination	Yes	Determine sample point, draw sample into several airless containers. Perform residual analysis as above on sequential samples at predetermined time intervals and plot demand.
Nitrate/Nitrite A pollutant of groundwater, causes blood and kidney damage	Yes	Draw sample from wellhead and submit to Cascade Analytical, 1008 W Ahtanum Rd, Union Gap, WA 98903, (509) 452-7707.
SOC's Broad category of synthetic contaminants, includes poisons	Yes	Determine sample point. Draw sample in appropriate airless containers and, if possible, ship to Edge Analytical, 1620 Walnut St, Burlington, WA 98233, 800 755-9295. If unable to coordinate shipping, submit to Cascade Analytical.
Radionuclides Uranium, radium, particle emissions	Yes	Determine sample point. Draw sample into 1L bottles and submit to Cascade Analytical, 1008 W Ahtanum Rd, Union Gap, WA 98903, (509) 452-7707.

IOC's Specific elemental constituents	Yes	Determine sample point. Draw sample into 1L bottles and submit to Cascade Analytical, 1008 W Ahtanum Rd, Union Gap, WA 98903, (509) 452-7707.

Return to Service: Treatment operations, valve positions, and other emergency protective measures can be re-established by the Water / Irrigation Division Manager (or acting representative), after contaminants have been proven to be at or below Maximum Contaminant Limits (MCL's). NOTE: More extensive return to service procedures are located in section 10 of this manual.

Section 8 – Effective Communication

Effective communications is a key element of emergency response. How we communicate with employees, customers, and the media can affect the outcome of the emergency situation. It is vitally important that an effective communication plan be developed and adhered to by all personnel involved in any emergency response.

A well developed relationship with outside entities can prove to be valuable in an emergency situation. In the event of an emergency it may be beneficial for the City of Yakima to look to Yakima County Emergency Management, Washington State Dept. of Health, Washington State Dept. of Ecology, Washington Dept. of Fish & Wildlife, or the Bureau of Reclamation for assistance in communicating with the public in regard to their individual areas of expertise. The City of Yakima will look to the Community Relations Manager for assistance with communications with local or national media.

Communication Tips

Do:

- Be prepared.
- Designate a spokesperson.
- Provide complete, accurate, and timely information.
- Tell the truth.
- Express empathy.
- Acknowledge uncertainty and offer to get back with more information later.
- Document your communications.

Do not:

- Speculate on the cause or outcome of an incident.
- Blame or debate.
- Minimize or brush off concerns of customers.

- Treat inquiries from interested parties as an annoying distraction from the real business of emergency response.

Designate a spokesperson and alternates

Water / Irrigation Spokesperson	Water / Irrigation Spokesperson 2	Water / Irrigation Spokesperson 3
Dave Brown, Manager	Mike Shane, Engineer Randy Beehler, City of Yakima Communications Manager	James Dean, Supervisor Jeff Bond, Supervisor Alvie Maxey, Supervisor

Key messages

- We are taking this incident seriously and doing everything we can to resolve it.
- Our primary concern is protecting our customers' health.
- Another important concern is keeping the system operational and preventing damage.
- What we know right now is _____
- The information we have is incomplete. We will keep you informed as soon as we know more.
- We have contacted state and local officials to help us respond effectively.
- If you think you may be ill or need medical advice, contact a physician.
- We are sampling the water and doing tests to determine whether there is contamination.

Health advisories

During events when water quality and human health are in question, it may be necessary to issue a health advisory that gives advice or recommendations to water system customers on how to protect their health when drinking water is considered unsafe or potentially compromised. These advisories are issued when the health

risks to the consumers are sufficient, in the estimation of the water system or state or local health officials, to warrant such advice.

Health advisories usually take the form of a drinking water warning or boil water advisory. Communication during these times is critical. Health advisories should always be well thought out and provide very clear messages.

The Division of Drinking Water has put together a number of tools, including fact sheets, brochures, forms, and templates to help prepare for a health advisory. These are on the Web at: http://www.doh.wa.gov/ehp/dw/Our_Main_Pages/purveyor_assist_2.htm

Section 9 – Staff Instructions / Contingency Plans for Various Facilities and Emergencies

The following water system facilities have been analyzed for vulnerability situations and contingency plans formed including general and specific instructions on how to handle each problem identified.

1. Supply
2. Naches River Raw Water Intake
3. Transmission Mains
4. WTP Levee
5. Naches River Water Treatment Plant
6. Distribution System and Storage Reservoirs
7. Booster Pumping Stations
8. PRV Stations
9. Electrical Energy Supply

10. Materials and Supplies

11. Communications

12. Transportation

CITY OF YAKIMA MAJOR FACILITIES -- SUPPLY

PRIMARY SUPPLY

The primary water supply is from the tailrace of the Bureau of Reclamations Wapatox Canal which is supplied from the Naches River at the Wapatox diversion dam (from the beginning of April through the end of October) and intake structure West of Naches on Hwy 12.

At times when the Wapatox Canal is out of service (from the end of October through the beginning of April), direct diversions of raw water are available through the head gates of the City of Yakima's raw water intake structure. When the head gates are open to achieve the desired flow directly from the Naches River, at the lower intake structure the Obermeyer weir fish bar shall be in place. During periods of extremely low flows it may be necessary to erect a coffer dam to direct the flow into the intake structure. This has been accomplished in the past by using heavy equipment in the river to push up rubble from the river bottom to build a coffer dam. A hydraulic permit is necessary prior to placing equipment into the river. Through this structure the main source of supply is diverted to the City's Naches River Water Treatment Plant which provides complete filtration and disinfection of this supply. This water is delivered by gravity flow through a 48" transmission main to the distribution system.

Note: The City of Yakima's primary and secondary source descriptions can be found in Appendix B.

SECONDARY SUPPLY

The City of Yakima's three wells are capable of pumping directly into the distribution system. Disinfection is provided for at each site. The three wells pump directly into the low pressure zone of the distribution system. These groundwater supplies are utilized as a seasonal water source and are maintained in a standby status.

INTERTIES

The Nob Hill Water Association and the City of Yakima have three emergency interties between their respective distribution systems.

- This intertie is located at the intersection of 56th Avenue and Lincoln Avenue. This connection is between the City of Yakima's high pressure zone and Nob Hill Water Association's middle pressure zone. The City of Yakima High Zone System pressure exceeds the Nob Hill Water System pressure by approximately 7 psi.

- This intertie is located at the intersection of 45th Avenue and Tieton Drive. This connection is between the City of Yakima's middle pressure zone and Nob Hill Water Association's low pressure zone. This intertie was installed to provide a secondary supply to the hospitals on Tieton Drive. Utilization of the intertie for this purpose requires the isolation of the main line in Tieton Drive to divert water directly to the hospitals.
- This intertie is located at S. 32nd Avenue and Ahtanum Road. This connection is between the City of Yakima's low pressure zone and Nob Hill Water Association's low pressure zone through a two way pressure reducing valve. Flow is limited to 2,500 gpm in both directions.

OPERATING MODES AND ALTERNATIVES

The function of the water system's supply is to provide a potable water supply for the City of Yakima. This supply is additionally utilized for fire suppression, sanitation and public health, industry, irrigation and recreation.

Should the water system's supply cease to be available, the following alternatives may be utilized to augment or replace the water system's supply.

- **Activation of the City of Yakima's wells.**

  Failure of the water system's main supply to be available may require rationing or restriction of use of the remaining available water supplies.

  The City of Yakima's groundwater sources are ample enough to meet the system's average day demand. Restrictions of water use may only be necessary during periods of the year when water usage exceeds the average day demand.

- **Activation of the interties with the Nob Hill Water Association.**

  Utilization of the interties with the Nob Hill Water System as a sole source of supply would require rationing. This is because the amount of water available from Nob Hill's water system is limited; especially during the peak use summer months. In addition, the hydraulic capability of the piping making the interties is not of sufficient size to allow flows large enough to meet the City's needs. Therefore, isolation of the hospitals on Tieton Drive will need to be evaluated to insure that their supply is adequate.

- **Hauling of potable water from other safe sources.**

  Hauling of water would only be implemented in extreme emergency when complete loss of the primary, secondary, and intertie source of supplies has occurred.

STAFF INSTRUCTIONS FOR SUPPLY LOSS

POSSIBLE CAUSES:

-- Spring runoff resulting in flooding and increased turbidities exceeding the process capabilities of the Water Treatment Plant.

-- Extended periods of drought resulting in loss of river flow.

-- USBR proration of water storage rights.

-- Failure of 54 inch transmission main transporting water from the Intake Structure to the Water Treatment Plant.

-- Failure of 48 inch transmission main transporting water from the Water Treatment Plant to the City's water distribution system.

ALTERNATIVE 1: Activation of the City wells.

PROCEDURE:

1. Shutdown the Water Treatment Plant or reduce flows as required.
2. Determine an estimate of the length of time the main source of supply will be unavailable or reduced.
3. If it is determined that the water in the storage reservoirs will be inadequate to meet the needs then initiate procedures to activate the wells in the following order:
   1. Kissel Park, 2. Airport, 3. Kiwanis
4. Notify specific customers that wells are started.

ALTERNATIVE 2: Activation of the interties with the Nob Hill Water Association.

PROCEDURE:

1. Contact representatives of the Nob Hill Water Association (telephone 966-0272) and request that the appropriate interties be opened to allow water to enter the distribution system.
2. Meet the Nob Hill Water Association representatives at the intertie locations and slowly open the control valves until pressure in both systems has stabilized.
3. Monitor the pressure levels of the City of Yakima's water distribution system in conjunction with the Nob Hill Water Association. Accomplish this by installing pressure gauges on respective system hydrants in the near vicinity of the interties.
4. Implement water rationing until the primary or secondary source of supply is available.

ALTERNATIVE 3: Hauling of potable water from other safe sources.

PROCEDURE:

1. Implement water rationing until a sufficient supply of water is available to the system. Notify Yakima County Department of Emergency Services for assistance in this effort.
2. Notify the local Fire Departments that no water is available for firefighting purposes from the hydrants.
3. Contact local tanker truck hauling firms and request assistance in water hauling operation. The local Fire Department's tanker truck located at the City of Yakima's Fire Station #5 may be pressed into service.
4. Locate a safe potable water source from as close a potable water purveyor as possible.
5. Locate potable water tanker trucks at the City of Yakima's Fire Stations for distribution of potable water to the public. Additional City of Yakima owned property should be utilized, depending on tanker truck availability (City Hall, Community Centers, Parks, etc.)

CITY OF YAKIMA MAJOR FACILITIES - INTAKE

DESCRIPTION

The major features of the Naches River Raw Water Intake Structure are:

- **Head Gates to the Intake:** The head gates are located at the extreme upstream portion of the structure. These gates are operated manually or powered by a portable generator driven Milwaukee drill motor. The gates are used to control direct river diversions. Direct river diversions are necessary when an inadequate supply is available from the Wapatox Canal (primarily from October 31st to April 1st).

- **Bureau of Reclamation Tailrace:** The main source of raw water supply from April through October of every year is the tailrace of the Bureau of Reclamations facility on the Wapatox Canal at Rowe Hill.

- **Wapatox Canal Bypass (flush ditch):** The canal bypass (flush ditch) outlet is located so that the flow enters into the old intake structure. The water from this outlet is not an alternate source of supply.

- **Radial Gates and Operators:** There are radial gates that are located at the extreme downstream portion of the old intake structure. These gates are powered by electric gear drive operators. The purpose of these gates is to control the outflow of water from the Wapatox canal bypass (flush ditch) through the old intake structure back out to the Naches River.

- **Old Intake Bar Screens:** These screens are located across the opening of the overflow weir and the outboard radial gate overflow weir. These screens were installed by the Washington State Department of Fish and Wildlife in the summer of 1984. The screens are cleaned of trash and operated by Water Treatment Plant staff. The purpose of the bar screens is to prevent anadromous fish from entering the intake structure and moving up The Bureau of Reclamations flush ditch. This is necessary to prevent fish from being fooled by the natural attraction of the outflow from the intake as being a tributary where they might spawn.

- **Fish Screens:** These screens are located inside the intake structure. They provide protection for fish, by screening out of the water supply. These screens are backwashed automatically with an air bust.

- **Concrete Wall of the Intake Structure:** The concrete wall separates the river from the water confined in the structure. Water must be confined within the structure to build a head of water above the 54" pipeline so that the water may flow by gravity through this pipeline to the Water Treatment Plant.

OPERATING MODES AND ALTERNATIVES

The function of the raw water intake is to divert a supply of water to the Naches River Water Treatment Plant. Under normal conditions (April 1st – October 31st), the Wapatox Canal supplies water to the intake structure through the Bureau of Reclamations tailrace. The river head gates may be used when the canal source is unavailable for direct diversion of water into the structure and temporary fish screens have been installed.

Should the intake structure or fish screen backwash system cease to function, the following alternatives may be utilized to accomplish some or all of the same functions as stated above.

1. Manually maintain flow into intake structure by removing debris as needed.
2. Manually move ice and slush through intake channel by raising and lowering Obermeyer Inflatable Weir as needed to maintain adequate flow and head through channel.
3. Provide air for screen backwashing from distribution portable air compressors.

Failure of the intake structure would reduce or eliminate the water supply available to the Water Treatment Plant. Should the system reserves be inadequate to meet system demands before one of the alternatives above can be implemented, then the emergency should be handled as a loss of supply.

STAFF INSTRUCTIONS FOR LOSS OF RAW WATER INTAKE

POSSIBLE CAUSES:

-- Washed out by floods.

-- Filled with debris during floods.

-- Filled with ice.

ALTERNATIVE 1: Manually maintain flow into intake structure by removing debris as needed.

PROCEDURE:

1. Shut down the Water Treatment Plant or reduce flows as required.
2. Begin manual removal of debris from intake structure if this can be safely accomplished.
3. Determine an estimate of the length of time reduced flows, or plant shut down may be needed. This information is to be used to determine if the situation requires immediate action of starting wells for maintaining adequate reservoir levels and/or contacting Nob Hill Water Assoc. for assistance with an intertie.
4. After flows have been restored, adjust flow rate or restart the Water Treatment Plant.

ALTERNATIVE 2: Manually move ice and slush through intake channel by raising and lowering Obermeyer Inflatable Weir as needed to maintain adequate flow and head through channel.

PROCEDURE:

1. It is primarily important for there to be adequate flow through the head gates at the upstream most end of the intake channel. (NOTE: During winter months there will not be any flow from the Wapatox canal). Throughout the winter months it will become necessary to maintain adequate head over the fish screens in the intake structure to maintain gravity flow to the water treatment plant.
2. In extreme cold temperatures (20 degrees Farenheit or lower) it is very likely that the intake channel will become filled and blocked with ice / slush ice. It will be necessary for water plant personnel to try to move ice as much as possible by raising and lowering the Obermeyer Inflatable Weir in order to try to maintain the necessary head over the fish screens.
3. If it is deemed impractical to try to fight the ice, starting wells to maintain adequate reservoir levels will be necessary.
4. After flows have been restored, adjust flow rate or restart the Water Treatment Plant.

ALTERNATIVE 3: Provide air for screen backwashing from distribution portable air compressors.

PROCEDURE:

1. In the event that there is a mechanical malfunction at the intake structure in regard to any of the air compressors being down for repair it will be necessary for water plant staff to contact water distribution and acquire the use of a portable air compressor so that flow through the fish screens can be maintained or so the Obermeyer Inflatable Weir can be inflated.
2. Once the repairs to compressor in question is complete, return portable compressor to distribution and resume normal operations.

CITY OF YAKIMA MAJOR FACILITIES - TRANSMISSION MAINS

DESCRIPTION

The transmission mains are pretensioned concrete cylinder pipe and range in size from 54 inch to 48 inch to 30 inch.

54 inch = 3,500 L.F.
48 inch = 45,200 L.F.
30 inch = 3,000 L.F.

These mains were installed during the period of 1968-1972. Water flows through these pipelines utilize the force of gravity only. No pumps are required to aid the movement of water. The 54 inch transmission main moves water from the Naches River Raw Water Intake Structure to the Naches River Water Treatment Plant.

The 48 inch transmission main moves water from the Naches River Water Treatment Plant to the City of Yakima's domestic water distribution system.

The 30 inch transmission main moves water between the equalizing reservoir at 40th Avenue and Englewood and the 48 inch transmission main.

OPERATING MODES AND ALTERNATIVES

The function of the transmission facilities is to transport large quantities of water from the source to the point of treatment and disinfection (Naches River Water Treatment Plant) and from this point to the City's distribution system.

The 48 inch transmission main has outlets installed along its length at intervals of approximately every 1000 feet. Connections to this main can be accomplished through the use of an existing outlet or by direct tap.

The hydraulic gradient, as it currently exists, is such that the 48 inch pipeline does not become full of water under normal circumstances until somewhere between Eschbach Road and the community of Gleed.

The 48 inch pipeline follows Highway SR 12 from the Water Treatment Plant crossing the Naches River to 40th Avenue where it turns south on 40th Avenue to Powerhouse Road. The main turns and runs along Powerhouse Road to Englewood Avenue at the intersection of Powerhouse Road and Englewood Avenue. The 30 inch pipeline between the equalizing reservoir at 40th Avenue and Englewood Avenue and the 48 inch pipelines are connected. The 48 inch main continues from this junction along Englewood Avenue to the intersection of 16th

Avenue and Cherry Avenue where the 48 inch pipeline terminates with several distribution pipelines radiating out from this terminus.

Should the transmission facility cease to function between the source and 40th Avenue then this loss will be treated as a loss of supply. Should the break occur between 40th Avenue and 16th Avenue, then the damaged section will need to be isolated until repairs or replacement can be accomplished.

STAFF INSTRUCTIONS FROM TRANSMISSION MAIN FAILURE

POSSIBLE CAUSES:

-- Exposure and damage by river flooding or unauthorized excavation.

-- Failure from earth movement due to earthquake tremors.

-- Pipeline material failure.

ALTERNATIVE 1: Activation of City wells should transmission main failure result in loss of supply.

PROCEDURE:

1. Isolate the damaged area from the system by closing the necessary valves.
2. See loss of supply crew instructions for correct procedures to follow to restore water supply.
3. Excavate damaged area to determine extent of the damage.
4. Replace or repair the damaged pipe as required. (No repair parts or additional concrete pipe is kept in stock.)

ALTERNATIVE 2: Repair of the transmission main when in an area that doesn't cause a loss of supply.

PROCEDURE:

1. Isolate the location of the break or failure and so limit any escaping water damage.
2. Excavate the damaged area to determine the extent of the damage.
3. Replace or repair the damaged pipe as required. (No repair parts or additional concrete pipe is kept in stock.)

CITY OF YAKIMA MAJOR FACILITIES - NACHES RIVER WATER TREATMENT PLANT LEVEE

DESCRIPTION

The City of Yakima WTP levee is approximately 1150 feet long and is located on the east bank of the Naches River in Section 24, Township 14 North, Range 17 East, Willamette Meridian, Yakima County, Washington. The levee protects the Naches River Water Treatment Plant structures, the WTP waste pond area, as well as the public parking/ fishing access area off of State Highway 12.

The City of Yakima WTP staff maintains the levee by periodically pruning the vegetation, placing gravel on the surface, and performing pre- and post-flood inspections. This level of maintenance is consistent with the standards of the Seattle District for eligibility in the Rehabilitation Inspection Program. It is increasingly important for WTP staff to be diligent in pre and post spring run-off inspections of the levee due to increased river level that may adversely affect the levee. Should there be a high water event that has damaged the WTP levee, please follow Staff instructions listed below.

NOTE: Should there be any questions that arise in regard to the proper maintenance or operation parameters for the WTP levee, the Army Corps of Engineers Levee Owners Manual for Non-Federal Flood Control Works, can be found in the WTP supervisors office. More information can be found in Appendix I of this manual.

STAFF INSTRUCTIONS FOR WTP LEVEE DAMAGE

POSSIBLE CAUSES:

-- Damage from high water / flood event.

-- Damage from earthquake.

ALTERNATIVE 1: If it has been determined that there has been levee damage on either the riverward or landward side of the levee due to a high water / flood event it is crucial to proceed to the following procedures for life and property safety.

PROCEDURE:

1. Record level of river at Naches River measuring station. **Note: If the Naches River is predicted to be above flood stage and the City of Yakima has mobilized the personnel and equipment available for a flood fight, the levee is in danger of being breached, it will be necessary to contact the Army Corps of Engineers and request "Technical Assistance". At this time the ACE will determine their ability to respond to our levee for a flood fight.**

2. If river levels are predicted to rise and it appears that the levee will be over topped, personnel and equipment should be mobilized to fill and transport sand bags to protect the WTP and Fluoride building. Upon the mobilization of personnel and equipment for a flood fight at the WTP levee, a 10 yard dump truck will need to be dispatched to Central Pre-Mix to obtain sand for sand bags (central pre-Mix contact info is on page 17 of this manual. **Note: One ton super sacks for sand bagging of a breached levee can be obtained at the Water / Irrigation warehouse. Smaller sand bags for use at WTP entry points can be found on the WTP third floor storage. For the filling of sand bags, the filter media hopper at the WTP can be used to dump sand into and fill bags at the bottom of the hopper.**

3. It will need to be determined if the WTP needs to be isolated / shut down and secondary sources started due to potential flooding of WTP structures. If flooding of WTP structures is possible, sand bagging of WTP structures may be necessary to prevent flooding of pipe gallery, chemical building, and / or fluoride building.

4. If the City of Yakima's wells will not be enough to meet the water demand in Yakima, emergency water restrictions may need to be imposed and/or it may be necessary to contact Nob Hill Water Association to open interties.

5. While repairs are being completed on the levee it will be necessary for Water / Irrigation staff to continually assess whether the WTP can be operational, the secondary sources should be operational, emergency restriction on water may need to be continued or if the Nob Hill water Association interties should be open.

6. It is vitally important for all activities, financial, physical work, phone logs, operational logs, and contact information, be documented for Washington State and / or FEMA Public Assistance.

ALTERNATIVE 2: If the WTP levee has been compromised due to earthquake it will be crucial to proceed to the following procedures for life and property safety.

PROCEDURE: 1. In the case of an earthquake that has affected the levee, follow the instructions for a flood and levee damage.

CITY OF YAKIMA MAJOR FACILITIES - NACHES RIVER WATER TREATMENT PLANT

DESCRIPTION

The existing Naches River Water Treatment Plant (WTP) has a rated capacity of 25 MGD with a direct filtration process. Raw water enters the plant from the Naches River intake via a 54 inch raw water transmission main. The main is reduced in size and controlled by a 36 inch influent valve.

OPERATING MODES AND ALTERNATIVES

Chemicals are applied at the hydraulic flash mix, which provides a mixing time of approximately 2-1/2 minutes. The chemically treated water discharges into one of two contact basins with a total detention time of about 30 to 75 minutes. The effluent from the contact basin flows to the filters, which discharge to a very small clearwell. (Please refer to the treatment process schematic.)

The chemicals available to be used in the treatment process include aluminum chlorohydrate (ACH) as a primary coagulant, polymer as a coagulant aid an as a filter aid, powdered carbon for taste and odor control, caustic soda (sodium hydroxide) for pH control and sodium hypochlorite (chlorine) for disinfection.

The backwash water storage reservoir has a capacity of 750,000 gallons of finished water for use in washing the filters. This water is then wasted to the waste pond for storage and further settling before being pumped back into the contact basin influent flume zone and recycled.

Should the treatment facility become unable to produce water which meets or exceeds all of the drinking water standards, then the plant is to be placed out of service and the procedures for loss of supply followed.

Should components of the Water Treatment Plant cease to function, the following alternatives may be utilized:

FLASH MIX: Make adjustments to the chemical feed pumps to increase the chemical dosage and rely on hydraulic mixing of the chemicals. We do have the ability to use the old flash mix structure and flash mixer for addition and mixing of chemical should the hydraulic mixing area become unavailable for use.

CONTACT BASIN: The basin is divided in two and may be operated separately.

FILTERS: Four filters are available and a maximum of three may be isolated at one time.

BACKWASH RESERVOIR: The reservoir may be isolated through utilization of the 24 inch butterfly valve installed between the WTP and the reservoir. The backwash refill pumps are then used to pump water directly from the clear well to the filters for washing. A small 3 horsepower pump and the appropriate fittings are stored at the WTP to provide service water under the above conditions.

WASTE POND: The backwash water could be allowed to be diverted directly to the river. Contact the Washington State Department of Ecology prior to the diversion of any water directly diverted to the river.

CHLORINATION: One option should the chlorine generator be unavailable is to purchase 12.5% sodium hypochlorite (barrels) and dilute to 0.8% solution an fill NaOCL storage tanks. Should there continue to be a problem with the chlorine generator, shut down the WTP and start wells.

(Water Treatment Plant Process Schematic Chart – See Appendix F)

STAFF INSTRUCTIONS FOR WTP LOSS OF FUNCTION

POSSIBLE CAUSES:

-- Damage from flooding.

-- Raw water turbidity too high for effective treatment.

ALTERNATIVE 1: If determination is made that loss of the facility is expected to be of short duration and that adequate supply is available from storage simply isolate the plant and shut down.

PROCEDURE:

1. Isolate the plant and shut down. Sand bag around WTP structures if necessary.
2. Log time of day and reason for shut down.

ALTERNATIVE 2: If you determine that water from storage will not meet demand during the expected duration of the outage, proceed to follow the instructions for loss of supply.

PROCEDURE: See "Loss of Supply" instructions in this manual.

CITY OF YAKIMA
MAJOR FACILITIES - DISTRIBUTION SYSTEM
AND STORAGE RESERVOIRS

DESCRIPTION

The City's distribution system is adjacent to several water systems, but is only intertied with the Nob Hill Water Association. Three interties exist with Nob Hill Water Association. Nob Hill Water interties are located in the high zone pressure area at the intersection of 56th Avenue and Lincoln Avenue, at the intersection of 45th Avenue and Tieton Drive which is within the middle pressure zone and at S. 32nd Ave. and Ahtanum Road.

The distribution pipelines are 4 to 24 inches in diameter. The pipe materials are mainly cast iron, with ductile iron being used since the early 1970's. There are several steel pipelines and many unlined cast iron pipelines remaining in the system.

The City's existing storage capacity is 32 million gallons (MG) distributed among five reservoirs within the three pressure zones. Each pressure zone has an established hydraulic elevation. This elevation is maintained by the distribution reservoir/s located in each of the pressure zones.

The City's existing instrumentation and control (I&C) system located at the WTP monitors and controls the functions of the distribution system and storage reservoirs.

Note: The reservoirs are shown on the hydraulic profile in Appendix C. The table indicates the volume of storage, the zone served, the type of material, and the overflow and floor elevation of the five reservoirs in the distribution system.

OPERATING MODES AND ALTERNATIVES

The function of the distribution system is to deliver potable water to the service connections and fire hydrants.

The function of the storage reservoirs is to provide: 1) standby water storage for emergencies and short-term interruptions of source of supply; 2) additional source of water for fire protection purposes; 3) equalizing water for changes in water demands within the system.

Distribution pipelines branch off from the transmission mains, conveying water to the three pressure zones -- high, middle, and low. Gravity alone provides adequate pressure to serve water to the low zone. Booster pump stations push the water up to the reservoirs in the middle and high zones, and pressure-reducing valves (PRV's) regulate water flows back from the middle to the low zones when necessary. Normally, closed valves may be operated to move water from the high zone to the middle zone. Conversely, portions of the high zone could be served (at lower pressure) from the middle zone through operation of these normally closed valves and existing check valves.

The six million gallon reservoir at 40th Avenue and Englewood Avenue is utilized as an equalizing reservoir for the entire water system. The flow at the WTP is based upon levels in this reservoir. Any water not consumed by the low pressure zone through customer demand; or by pumping to the middle and high pressure zones, is stored here.

Should the distribution system cease to function in specific areas, these areas may be isolated by closing valves to sections as needed according to the distribution grid system serving the affected area.

Should the entire distribution system fail to provide its function, then water would necessarily have to be hand carried or transported by vehicles. No fire protection would be available from the system. Fire Department tankers would have to be utilized for fighting fires.

Potable water would need to be made available at distribution points throughout the system. The Yakima Firing Center, the National Guard, and private carriers may be pressed into service in an emergency. Fire stations, City parks, and other City property make good points of distribution of potable water. City residents would be notified of these distribution points and instructed to bring containers to receive their allotment of water.

The source of water for supplying the distribution points could be the Kiwanis Park and Airport artesian wells. Additionally, potable water could be purchased from any adjacent purveyors that would still have a safe plentiful supply.

Should the storage reservoirs cease to function, the system's ability to meet all demands would become undependable. Some fire fighting capability might be retained but not to normal standards.

The interties with Nob Hill Water Association could be utilized to place their reservoirs into shared operation, it is unlikely that water could be obtained from the intertie with the City of Union Gap as the system pressure in the City system is much greater than the City of Union Gap.

The reservoirs could be isolated and water supply pumped directly into the system from the wells or by the gravity from the WTP. The 48" transmission main could act as a reservoir during an emergency.

During extended emergencies portable storage reservoirs or temporary reservoirs could be utilized to accomplish the same function as a storage reservoir.

STAFF INSTRUCTIONS FOR DISTRIBUTION SYSTEM AND STORAGE RESERVOIR LOSS OF FUNCTION

POSSIBLE CAUSES:

-- Earthquake

-- Sabotage

-- Nuclear disaster

ALTERNATIVE 1: Should localized areas of failure be determined, isolation of these areas of the distribution system or storage reservoirs is in order to reduce property damage from escaping water and maintain the system integrity.

PROCEDURE:

1. Notify the Fire Department of the extent of service they may expect from the system and the approximate duration of this service level.
2. Check water system maps and records for locations of system valves to be utilized in isolating the affected area or structure.
3. Proceed to the valves and operate them into closed position.
4. Depending upon the volume of water escaping, notify the customers in the affected area either before or after isolating the area.
5. Determine amounts of damage to the affected areas.
6. Determine methods and estimate the cost of repairs.
7. Costly repairs (greater than $10,000) should be given approval by upper management.
8. Institute water rationing and a distribution point program within the affected areas if repairs cannot be made immediately.
9. Make repairs or replace the portions of the distribution system and storage reservoirs that have failed.
10. Disinfect the main repairs and/or replacements made during restoration. Flush the mains and take a bacteriological sample. Receive a negative report on the bacteriological sample before returning the system back into service.

ALTERNATIVE 2: Should complete failure of the distribution system and/or storage reservoirs occur, water rationing and potable water distribution points would need to be established to provide customers with a safe drinking water supply.

PROCEDURE:

1. Notify the Fire Department that no water supply is available from the system.
2. Notify the customers that the water supply is not safe or reliable and that water rationing is in effect.
3. Determine sources and methods of distributing a potable water supply to the customers.
4. Distribute information regarding the locations of potable water supply to the customers.
5. Determine what portions of the system are salvageable and determine methods and costs to repair and/or replace the damaged portions of the system.
6. Implement repair and/or replacement program.

ALTERNATIVE 3: Should only the storage reservoirs cease to function, they should be isolated and the system operated on a limited basis without benefit of storage reservoirs.

PROCEDURE:

1. Notify the Fire Department that a reduced amount of water supply is available from the distribution system.
2. Notify the customers that the system use is curtailed and water rationing is in effect.
3. Determine best method to utilize under the disaster circumstances: a) utilize Nob Hill Water Association's storage reservoirs; b) place water directly into the distribution system without benefit of storage; c) construct or utilize temporary storage facilities through the use of portable reservoirs or open excavations with plastic or vinyl linings.

CITY OF YAKIMA MAJOR FACILITIES -- BOOSTER PUMPING STATIONS

DESCRIPTION

The pump stations are listed in Appendix C, indicating the location, the supply location, the zone that is served, the number of pumps in each station, pump capacity, and some other characteristics.

Note: The pump stations are listed in Appendix D, indicating the location, the supply location, the zone that is served, the number of pumps in each station, pump capacity, and some other characteristics.

OPERATING MODES AND ALTERNATIVES

The booster pump stations provide water to the middle and high zones, as shown in the hydraulic profile. The 40th Avenue and Stone Church pumps are operated in a variety of lead lag positions depending on the demand and the season. The difference in water demands is due to an irrigation demand in the middle and high zones. These pumps are controlled by the middle zone's two reservoir levels through the radio telemetry system.

The high zone pumping station is only capable of operating one of the 125 hp pumps at a time. This is due to the size of the electrical service available when the facility was constructed. The two 125 hp pumps are alternated with one placed in a standby role, while the other is being used and with the 30 hp pump placed in the lag position. The smaller 30 hp pump is placed in the lead during low demand times. This station's pumps are controlled by the water levels in the high zone's two reservoirs through the radio telemetry system.

The Gleed pumping station is operated by utilizing the two 5 HP pumps to meet domestic water demands and the 125 HP pump for fire flow demands. This station's pumps are controlled by pressure sensing controls and a hydropneumatic tank. At 55 psi the lead pump will start and run until pressure builds to 75 psi. Should the pressure continue to drop after the lead pump starts then at 45 psi the backup pump starts. This pump shuts off at 65 psi. Should the first two pumps be unable to supply sufficient pressure above 30 psi, the 125 HP will start and run until it has run at 90 psi for 12 minutes before shutting off. A pressure relief valve is located in the manifold system and allows the bypass of water back into the 48" transmission main of any water in excess of 100 psi.

Should the 40th Avenue and Stone Church pump stations cease to function, the available supply in the twin twelve (12) million gallon reservoirs needs to be determined. If additional water supply is needed to meet the demands. The Nob Hill Water Association may also be contacted to furnish a source of water through the emergency intertie in the middle and high zones. Should the station cease to function because of an electrical power outage, a portable electrical generator might be used to restore electrical power to the 40th Ave. pump station and/or depend on the generator at the Stone Church pump station.

PUMP STATIONS

Should the High Zone Pump Station cease to function, the available supply in the twin one (1) million gallon reservoirs need to be determined. If additional water supply is needed to meet demands, the Nob Hill Water Association may be contacted to furnish a source of water through the emergency intertie at 56th Avenue and Lincoln Avenue. Should the station cease to function because of an electrical power outage, the electrical generator should be used to restore electrical power to the site.

Should the Gleed pump station cease to function, the customers are without a water supply at adequate pressure (greater than 30 psi). However, as long as the 6 million gallon reservoir at 40th Avenue and Englewood Avenue is capable of maintaining at least a minimum level there is a positive pressure at Gleed. Currently, there are less than twenty customers served by this pump station and one school. Water supply for domestic purposes would continue to be available at low pressure (10-15 psi). A local carrier with a food grade tanker may be filled with water and connected to the fire hydrant near the Naches Primary School to supply the Gleed System. The Gleed Fire Department should be notified immediately if the station is to be out of service for any length of time. This rural department has the capability of fighting fires without adequate water supplies available close at hand through use of tanker trucks and can dispatch additional tanker units if necessary.

STAFF INSTRUCTIONS FOR BOOSTER PUMPING STATIONS LOSS OF FUNCTION

POSSIBLE CAUSES:

-- Earthquake
-- Sabotage
-- Nuclear Disaster
-- Electrical Power Loss

ALTERNATIVE 1: Should any of the booster pumping stations fail, the duration of the failure and available water storage must be determined. If the determination is that an additional water source will be needed to meet demands prior to placing the stations back in service, then the emergency interties(s) with the Nob Hill Water Association must be activated.

PROCEDURE:

1. The WTP personnel will note the time of booster pumping station failure. Verify available water storage and supply demand.
2. Proceed to the booster pumping station and make a preliminary inspection for possible causes of the loss of service.
3. If possible, determine cause of problem and estimate duration of time the pumping station will be out of service. Make repairs as required to restore normal service.

4. Determine if additional water supply will be necessary and estimate quantity needed to satisfy demand.

5. Contact Nob Hill Water Association and James Dean, Water Distribution Supervisor, for implementation of the appropriate emergency interties.

6. Make repairs as required to restore normal service.

ALTERNATIVE 2: Should the booster pumping stations fail due to the loss of electrical power and it is determined that the loss will be of a significant duration; secure portable electric power plants and temporarily restore electrical power at Gleed Pump Station and/or start generator at the High Zone Pump Station and/or Stone Church Pump Station.

PROCEDURE:

1. Secure an adequately sized portable generator for the pump station:

   Gleed: 250 KW

2. Contact the Street/Traffic Engineering Division or local electrical contractor for assistance in disconnecting the normal power supply and reconnecting the emergency power supply.

3. Monitor the operation of the emergency power supply until the normal power supply is restored.

4. Contact the Street/Traffic Engineering Division or local electrical contractor for assistance in disconnecting the emergency power supply and reconnecting the normal power supply.

5. Return the portable power generating equipment to its owners.

CITY OF YAKIMA MAJOR FACILITIES -- PRESSURE REDUCING VALVE STATIONS

DESCRIPTION

The PRV locations are listed in **Appendix G,** indicating the location, size, pressure settings, the zone that is served and some additional information.

The valves listed as "not in service" have been made redundant through changes in the boundaries of the pressure zones and are no longer required.

OPERATING MODES AND ALTERNATIVES

Control of water flow between the middle and low pressure zones is provided by the PRV's located throughout the distribution system. These control valves are set to open and close at various hydraulic elevations depending on the intended purpose of the valve (continual supply or emergency only).

The normal use of the City's PRV's is to provide additional water flow for emergency purposes. The reduction of pressure in the low zone under emergency conditions because of a fire flow or other large water demand will

cause the hydraulic elevation to decrease. This reduction in hydraulic elevation will cause the normally closed hydraulically actuated valves to open and provide additional flow into the low zone.

Should the PRV stations cease to function, the valves may be manually operated either open or closed.

The effects of the PRV stations having failed are: 1) Water movement between zones which will result in losses and increases in water pressure in the distribution system, if failure is in the open position. 2) Inadequate water flows during an emergency or other high demand situations, should the valve fail in the closed position.

STAFF INSTRUCTIONS PRV STATIONS LOSS OF FUNCTION

POSSIBLE CAUSES:

-- Sabotage
-- Freezing
-- Mechanical Malfunctions

ALTERNATIVE 1: Isolate the PRV stations that have failed.

PROCEDURE:

1. Determine which station(s) has/have failed by checking each station individually.
2. Determine problem and attempt repairs or manually activate the valves either open or closed.
3. If you fail in attempting to make repairs, isolate the valve(s) with the gate valves provided.
4. Complete repairs as soon as possible. Parts are stocked at the Water Division Warehouse.
5. Place the station(s) back in service.

CITY OF YAKIMA MAJOR FACILITIES -- ELECTRICAL POWER SUPPLY

DESCRIPTION

The source of the electrical power supply for the City of Yakima Water System is the PacifiCorp. All of the water system facilities are dependent upon electrical energy.

OPERATING MODES AND ALTERNATIVES

The function of the water system's power supply is to provide the electrical energy necessary to operate the multitude of electrically powered equipment necessary for operation of the water system.

With the loss of electrical energy, the Water Treatment Plant, booster pumping stations, wells, telemetry control systems and telephonic communications may be effected; depending on the extent of the loss of power.

Should the water system's power supply cease to be available, the following alternatives may be utilized to augment or accomplish the same function.

1. Contact the PacifiCorp to determine the extent of the power outage and the length of time the loss of power is expected to last. Local Dispatch 575-3134.

2. Secure portable electrical generators to serve as a temporary power supply for the affected facility.

3. Utilization of the natural artesian well head pressure at the Kiwanis Park and Airport wells. (36 psi at the Airport well) (7 psi at Kiwanis)

STAFF INSTRUCTIONS FOR ELECTRICAL POWER SUPPLY LOSS

POSSIBLE CAUSES:
-- Severe storms, earthquakes, volcanoes, and other natural disasters.
-- Sabotage of electrical generation facilities
-- Nuclear disaster

ALTERNATIVE 1: Contact the PP&L

PROCEDURE:
1. Attempt to telephone PP&L at 575-3133. If telephone communication is not possible, wait for normal business hours and personally contact them at their offices on North 16th Avenue or 7 North 3rd Street.
2. Secure from PP&L their estimate of the area affected by the power outage and the estimate of the length of time the outage is expected to last.
3. Using this information, along with the amount of water in storage at the time of the loss of power and the average daily system demand, determine if the water in storage is inadequate to meet the needs during the outage.
4. If the electrical power is to be restored prior to the stored water levels, dropping below one day's reserves then simply wait for restoration of the power supply. If the loss of power will exceed this time frame, then implement the water rationing procedures outlined under "loss of supply" in this guide.
5. When the loss of power supply is isolated to one or a few facilities, attempt to utilize an alternative to that particular facility or facilities. (see Major Facilities in this guide)

ALTERNATIVE 2: Secure portable electrical generators to serve as temporary power supplies for the affected facility.

PROCEDURE:
1. If only the Water Treatment Plant is affected, then treat the emergency as a "loss of supply" and follow the instructions as outlined in this guide.
2. Secure a generator from a local machinery vendor, Yakima Firing Center or the Washington State National Guard.

3. Once you have secured a generator, contact the City of Yakima Traffic Engineering Division or a private electrical contractor to disconnect the electrical service from PP&L and reconnect to the temporary power supply.

4. Gleed System existing power requirements 250 KW.

5. Operate the pump station under these conditions until PP&L has completely restored a reliable power source. Contact the electrical technicians to disconnect the emergency power source and reconnect to PP&L's system.

6. Return the portable generator to its owner.

ALTERNATIVE 3: Utilization of artesian wells.

PROCEDURE:

1. Proceed to the Kiwanis and Airport wells and activate the controlling valves to allow the natural artesian flow pressure into the distribution system. (Airport Well = 36 psi) (Kiwanis Well = 7 psi)

2. The valves between the wells and the system are hydraulically operated and will be required to be manually overridden. This procedure should not be attempted until the water in storage is exhausted.

3. Secure the hypochlorinator from the WTP or the City of Yakima Shops Complex - Water Division Warehouse.

NOTE: Points of withdrawal in or near the pump house may be utilized as fill points for water hauling operations.

CITY OF YAKIMA MAJOR FACILITIES -- MATERIALS AND SUPPLIES INVENTORY

DESCRIPTION

The City of Yakima Water Division maintains an extensive inventory of waterworks parts and supplies at its warehouse at 2301 Fruitvale Blvd.

An inventory index is maintained by the Division's Storekeeper. The inventory consists of parts and supplies must commonly utilized for operating and maintaining a water system.

OPERATING MODES AND ALTERNATIVES

The function of this inventory is to provide a readily available source of the most often used materials and supplies for repair and operation of the water system.

Should necessary materials or supplies be unavailable from this inventory then the following alternatives may be utilized.

1. Contact local vendors and suppliers for needed materials or supplies. (Local includes all of Washington State and Portland, Oregon)

2. Contact adjacent water purveyors as possible sources of needed materials or supplies.

3. Isolate the affected area and re-route water flow, if possible.

STAFF INSTRUCTIONS FOR UNAVAILABILITY OF MATERIALS AND SUPPLIES

POSSIBLE CAUSES:
-- Seldom used or odd sized materials or supplies
-- Delivery of material or supplies is delayed

ALTERNATIVE 1: Contact local vendors and suppliers.

PROCEDURE:
1. Make telephone inquiries regarding item's availability and cost.
2. If costs exceed the City of Yakima Purchasing Guidelines ($7,500) then an emergency purchase order must be obtained from Purchasing.
3. Secure material or supplies and have delivered or picked up; whichever is appropriate.

ALTERNATIVE 2: Contact adjacent water purveyors

PROCEDURE:

1. Make telephone inquiries to surrounding and adjacent water purveyors.
2. Request use of the needed material or supplies.
3. Obtain needed items from other water purveyors.
4. Make arrangements to order the identical material or supplies to replace the items.

ALTERNATIVE 3: Isolate the area and re-route water flow if possible.

PROCEDURE:

1. Through the use of existing valves, isolate the affected area to as small an area as possible.
2. Utilize temporary or partial repairs to minimize the number of customers out of service.
3. If necessary, construct temporary mains or services to restore water service.

CITY OF YAKIMA MAJOR FACILITIES -- COMMUNICATIONS

DESCRIPTION

The City of Yakima Water Division utilizes the Qwest Telephone Company service and 20 cell phones. The cell phones are utilized in place of hand held radios.

The telemetry system operates on a stand-alone radio system at 155.125 MHz.

OPERATING MODES AND ALTERNATIVES

The function of the water system's communication system is two-fold: 1) Allow communication between service vehicles and the Water / Irrigation Division offices and water treatment plant ; 2) Allow communication between the automatic telemetry controls and the Water Treatment Plant.

Should the communication system cease to function, the following alternatives might be utilized.

1. Secure back up hand held radios, use cell phones or citizen-band type radios.
2. Operate automatically controlled equipment in the manual mode and utilize vehicles and staff to operate and control the water system functions manually.

STAFF INSTRUCTIONS FOR LOSS OF COMMUNICATIONS SYSTEMS

POSSIBLE CAUSES: -- Radio interference from a natural or manmade source
-- Qwest Telephone Company system problems or failures

ALTERNATIVE 1: Utilize portable radios or CB radios

PROCEDURE:

1. If radio communications are possible, secure portable radios from the City of Yakima Police Department or Fire Department as they operate on an alternate radio band.

2. If the radios above are unavailable, utilize citizen band type radios. Several employees have personal CB radios which could be volunteered for use during an emergency situation.

ALTERNATIVE 2: Operate automatic equipment in the manual mode.

PROCEDURE:

1. Proceed to each necessary automated equipment location and place the equipment in the manual control mode.

2. Monitor the reservoir levels, booster pumping stations and pressure sensing stations physically at intervals determined to be necessary under the conditions existing at the time.

CITY OF YAKIMA MAJOR FACILITIES -- TRANSPORTATION

WATER DIVISION EQUIPMENT LISTING

Number	Description	Fuel Type	Location
3	Backhoe/Loaders	Diesel	City Shops Complex
1	Boom Truck	Diesel	City Shops Complex
3	Service Vans	Diesel	City Shops Complex
1	4WD Pickup Truck	Gas	Water Treatment Plant
1	4WD Pickup Truck	Gas	Water Treatment Plant
3	4WD Pickup Truck	Gas	City Shops Complex
1	Valve Trucks	Gas	City Shops Complex
2	Valve/Vacuum Trailers	Gas	City Shops Complex
2	10 Yd. Dump Truck	Diesel	City Shops Complex
3	Air Compressor	Diesel	City Shops Complex
2	Compact Pickup Truck	Gas	City Shops Complex
4	2WD Pickup Trucks	Gas	City Shops Complex
1	Front End Loader	Diesel	City Shops Complex
1	Asphalt Zipper / Grinder	Diesel	City Shops Complex
1	Hydbrid 4 door vehicle	Gas	City Shops Complex
1	5 Yd Dump Truck	Diesel	City Shops Complex

The City of Yakima maintains a fuel supply at 2301 Fruitvale Blvd. and has a standing agreement with a private sector supply in case of emergency. Contact the Fleet Maintenance Manager if the City's supply is unavailable.

OPERATING MODES AND ALTERNATIVES

The function of the transportation system and vehicles is to mobilize the necessary manpower and equipment between different areas or parts of the water system.

Should the transportation system cease to function, the following alternatives might accomplish the same function.

1. Utilization of alternate routes and/or equipment.

2. Assigning manpower to sections of the water system making each responsible for the area assigned to them.

STAFF INSTRUCTIONS FOR LOSS OF THE TRANSPORTATION SYSTEM

POSSIBLE CAUSES: -- Massive destruction from a natural event such as fire, earthquake, volcano, flood, etc.
-- Massive destruction from a nuclear disaster.

ALTERNATIVE 1: Utilization of alternate routes and/or equipment.

PROCEDURE:

1. Attempt to utilize existing equipment and try alternate routes until you can reach your destination.

2. Attempt to rent alternate equipment from rental businesses or utilize volunteer equipment from private citizens (i.e., 4 WD and Off Road Vehicle Clubs, Helicopters)

ALTERNATIVE 2: Assign manpower to sections of the Water system.

PROCEDURE:

1. Loss of transportation may isolate the operator or operators on duty at the Water Treatment Plant. Should this occur, the operator is required to remain at the WTP until relieved or released from duty by qualified WTP staff or other qualified personnel.

Section 10 – Returning to Normal Operation Conditions

Many factors might need to be considered before you decide to return to normal operation after Level III, Level IV emergencies, or Health Advisories emergencies. For example:

- Has the system been repaired to the point that it can meet demand?
- Has the system operator made a safety and operational inspection of all system components?
- Has the system been properly flushed, disinfected and pressure tested?
- Has the water been adequately tested in accordance with sampling regulations?
- Does the water meet standards?
- Is there adequate staff to operate and manage the system?
- Do federal, state, and local agencies support returning to normal operation?
- Have you developed the proper public messages?

General Level III and level IV: Returning to normal operations

Action	Description and actions
Inspect, flush, and disinfect the system (if necessary)	Water system operator and support staff inspect all system facilities, ensure all water quality tests have been completed and the system has been flushed and disinfected if necessary. Water system operator makes a report to the Water / Irrigation Manager. Water / Irrigation Manager makes decision on current condition of system and will determine if each system component is ready for return to service.
Verification of water quality (if necessary)	Water / Irrigation Manager (or acting representative) verifies water quality sampling results and advises staff to return to service or if more sampling needs to be performed.
Coordinate with DOH	Water / Irrigation Manager (or acting representative) coordinates with DOH on system condition and water quality results.
Coordinate with PP&L, hired contractors, emergency / public safety agencies or other outside agencies	Water / Irrigation Manager (or acting representative) coordinates with outside stakeholder that may have been involved in emergency activities. Determine that all stakeholders have completed emergency work and are ready for a return to service on their end.
Notify customers	Water / irrigation Manager meets with water system operators and Community Relations Manager to prepare a notice to customers to advise of return to service activities and general explanation of system activities.

Section 11 – Plan Approval

Plan approval

This plan is officially in effect when reviewed, approved, and signed by the following people:

Name/Title	Signature	Date
Dave Brown – Water / Irrigation manager		
Mike Shane – Water / Irrigation Engineer		
James Dean – Water Distribution Supervisor		
Jeff Bond – Water Treatment Plant Supervisor		
Alvie Maxey– Irrigation Supervisor		

Appendix U

Department of Health comments

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

May 4, 2011

David Brown, Manager
City of Yakima Water Division
2301 Fruitvale Blvd.
Yakima, WA 98902

Subject: Yakima Water Division, City of; PWS ID #991509; Yakima County Water System Plan; DOH Project #11-0201; **DOH COMMENTS**

Dear Mr. Brown:

Thank you for providing the draft Water System Plan (WSP), received in this office on February 2, 2011, and the appendices received on February 23, 2011. Please address the following comments so that we can issue a final approval of the plan.

Chapter 1

1. Include existing, retail and future service areas on the service area map, or the place of use map. See Fact Sheet #331-432 for assistance.
2. Include signed Local Government Consistency (LGC) forms from Yakima County and the City of Yakima. See LGC Form attached.
3. On Page 1-3 please remove the last sentence in the seventh paragraph. This is an incorrect statement.
4. Include a "Duty to Serve" statement on Page 1-35 in the second draft.

Chapter 4

5. Water Use Efficiency, please;

   - Document the public meeting held to adopt the Water Use Efficiency (WUE) goal.
   - Describe the goal as it is in the WUE report. It is not a complete goal in the plan.
   - Describe the current conservation program.
   - Describe the City's meter calibration and replacement schedule and include this in the budget

- Evaluate a rate structure that encourages water demand efficiency.
- A Water Loss Control Action Plan is required because distribution system leakage (DSL) is over 10 percent.
- Describe the measures that will be implemented to achieve the goal and include them in the budget.
- Describe the process used to evaluate the WUE measures you did not implement.
- Describe the yearly consumer education program.
- Estimate projected water savings from selected measures.
- Describe the process that will be used to determine the effectiveness of the program.

6. Provide a 20-year water right assessment.

7. On Page 4-36 please note, you have the City of Union Gap listed as an emergency intertie, however, this is the only place it appears. Please make sure in all areas of the plan where you discuss the interties, all of the interties are listed.

Chapter 5

8. Update the information provided on Table 5-34. The information on the table must match the emergency contact information provided in Chapter 6, and the Emergency Response plan.

Chapter 6

9. Remove the vulnerability analysis out of the water system plan submitted to the Department of Health (DOH). We want you to do it for your system, but because our plans are subject to public disclosure requests, we do not want this in our copy.

Chapter 9

10. The financial program is confusing and it appears that the system is operating in the red. Please explain the acronyms in the plan, and provide a complete balanced budget for the water system in the second draft.

Chapter 10

11. Provide a signed and dated copy of the SEPA and Determination of Non-Significance (DNS).
12. Provide documentation of the informational meeting held for citizens to review the WSP.
13. Provide signed and dated copies of the MOA's.
14. Remove Appendix W, this is outdated and not used any more.
15. Provide consistency checklists from the County and City.

End of Comments

Please address any comments received from Ecology in the second draft submittal.
Per DOH policy, there is a fee assessed for the review of Water System Plans. Payment for our review is due at this time and an invoice for $5,484.00 has been enclosed.

Please complete the DOH comment response form and submit it along with two copies of your revised plan. Your revised plan is due by June 4, 2011. The plan must be approved by August 1, 2011, for the SRF process so there is an expedited return time for your plan.

Thank you again for submitting your draft Water System Plan for review. If you have any comments concerning this review, please contact Andres Cervantes at (509) 329-2120 or Christine Collins at (509) 329-2122.

Sincerely,

Andres Cervantes, PE
Regional Engineer
Office of Drinking Water
Division of Environmental Health

Christine Collins
Regional Planner
Office of Drinking Water
Division of Environmental Health

Enclosures: Invoice
Comment Response Form
Service Area Fact Sheet
Local Government Consistency Form
Duty to Serve Fact Sheet

cc: Yakima County Planning Department
Yakima County Health District
Breean Zimmerman, Department of Ecology, CRO
Thomas Coleman, PE

DOH COMMENT RESPONSE FORM

DOH Comment No.	DOH Comment	Water System Response	Page Number of Response	Other Water System Response
1	Include existing, retail and future service areas on the service area map, or the place of use map. See Fact Sheet #331-432 for assistance	Figure 1-2 has been revised. Because of the 2002 Settlement Agreement the place of use, existing, retail, and future service areas are all essentially the same.	1-5	
2	Include signed Local Government Consistency (LGC) forms from Yakima County and the City of Yakima.	The completed and signed Local Government Consistency forms are included in Appendix W.	Appendix W	
3	On Page 1-3 please remove the last sentence in the seventh paragraph. This is an incorrect statement.	An explanation has been added to clarify this sentence. The place of use area is in accordance with the 2002 Settlement Agreement.	1-3	The 2002 Settlement Agreement was in connection with the Acquavella water rights case.
4	Include a "Duty to Serve" statement on Page 1-35 in the second draft.	A Duty to Serve statement has been added to Section 1.10, Conditions of Service.	1-36	
5	Water Use Efficiency, please; Document the public meeting held to adopt the Water Use Efficiency (WUE) goal.	The sign Resolution No. R-2008-11 and the Council Meeting Action Minutes are included in Appendix G.	Appendix G	
5 (cont.)	Describe the goal as it is in the WUE report. It is not a complete goal in the plan.	The WUE Goal has been restated to be consistent with the WUE Report.	4-3	
5 (cont.)	Describe the current conservation program.	Section 4.1.5 has been revised to provide a description of the Conservation Program.	4-4	
5 (cont.)	Describe the City's meter calibration and replacement schedule and include this in the budget	The Advanced Metering Infrastructure Project will include calibration and replacement of all meters.	4-6, 4-8	

DOH COMMENT RESPONSE FORM (continued)

DOH Comment No.	DOH Comment	Water System Response	Page Number of Response	Other Water System Response
5 (cont.)	Evaluate a rate structure that encourages water demand efficiency.	A conservation rate structure was evaluated in 2007 and implemented in January 2009.	4-5	
5 (cont.)	A Water Loss Control Action Plan is required because distribution system leakage (DSL) is over 10percent.	A Water Loss Control Action Plan has been added as Section 4.1.8.	4-9	
5 (cont.)	Describe the measures that will be implemented to achieve the goal and include them in the budget.	The measures are described in Section 4.1.8, as well as in Section 4.1.4, 4.1.5, 4.1.6, 4.1.7, and in Chapter 8.	pp. 4-3 through 4-10	
5 (cont.)	Describe the process used to evaluate the WUE measures you did not implement.	Included in Section 4.1.5.	4-6	
5 (cont.)	Estimate projected water savings from selected measures.	Included in Section 4.1.6. It is estimated that the selected measures will bring the DSL to 10% or less and the usage rate back to 74.9 gpcd in accordance with the WUE goals.	4-7	Also discussed in Section 4.1.5
5 (cont.)	Describe the process that will be used to determine the effectiveness of the program.	Described in Section 4.1.6.	4-7	
6	Provide a 20-year water right assessment.	Section 4.3 now includes three water right assessment tables (existing, 6-year, and 20-year. (Tables 4.5, 4.6, and 4.7, respectively).	pp. 4-34 through 4-42	
7	On Page 4-36 please note, you have the City of Union Gap listed as an emergency intertie, however, this is the only place it appears. Please make sure in all areas of the plan where you discuss the interties, all of the interties are listed.	There is currently no intertie with the City of Union Gap and this statement has been deleted.	4-44	

DOH COMMENT RESPONSE FORM (continued)

DOH Comment No.	DOH Comment	Water System Response	Page Number of Response	Other Water System Response
8	Update the information provided on Table 5-34. The information on the table must match the emergency contact information provided in Chapter 6, and the Emergency Response plan.	The information in Table 5-6 has been revised to include the correct connect information for the Department of Health.	5-34	
9	Remove the vulnerability analysis out of the water system plan submitted to the Department of Health (DOH). We want you to do it for your system, but because our plans are subject to public disclosure requests, we do not want this in our copy.	The reference to the vulnerability analysis has been removed and the Emergency Response Plan is now included only by reference.	6-35	
10	The financial program is confusing and it appears that the system is operating in the red. Please explain the acronyms in the plan, and provide a complete balanced budget for the water system in the second draft.	Chapter 9 has been revised to provide the requested clarification.		
11	Provide a signed and dated copy of the SEPA and Determination of Non-Significance (DNS).	A threshold determination will be issued following the SEPA appeal period which ends on June 29, 2011.	Appendix B	
12	Provide documentation of the informational meeting held for citizens to review the WSP.	The draft documents have been posted on the City's website since February 1, 2011. A public meeting is scheduled for July 5, 2011.		
13	Provide signed and dated copies of the MOA's.	Signed and dated MOAs are included in Appendix F.	Appendix F	
14	Remove Appendix W, this is outdated and not used any more.	What was Appendix W has been removed and the Appendices have been reordered accordingly.		
15	Provide consistency checklists from the County and City.	Consistency checklists are included in Appendix W.	Appendix W	

Appendix V

Yakima County Planning Department comments

Subject: RE: City of Yakima Water System Plan
From: Phil Hoge <phil.hoge@co.yakima.wa.us>
Date: Fri, 3 Jun 2011 18:51:05 -0700
To: "'Brown, Dave'" <dbrown@ci.yakima.wa.us>
CC: 'Thomas Coleman' <tecoleman@tecpecs.com>

Dave,

I have reviewed the City's draft Water System Plan Update (including the appendices provided on CD) and find it consistent with local plans and regulations. Accordingly, I am mailing to you the "Local Government Consistency Review Checklist" indicating consistency, dated April 8, 2011.

In addition, having reviewed the document, I offer for your consideration the following comments concerning statements and information on the indicated pages:

Page 1-19: The West Valley Neighborhood Plan was adopted by the City Council and Board of County Commissioners on Feb. 15, 2011. This, however, doesn't particularly affect the City's Water Service Area.

Pages 1-20 and 1-21: The WWTP is now providing sewer service to Moxee.

Page 1-21: A copy of the 4PA in my possession indicates that it was originally entered into on Feb. 23, 1976.

Page 1-22 & Fig. 1-7: The Yakima UGA was expanded in 3 areas (Dazet area, Scenic area, SR-24 area) in December 2007 by the Board of County Commissioners (i.e., after this map appeared in the YUACP 2025).

Page 1-25: Yakima County has more than the four listed SMAs. I understand that Joe Stump has provided additional info on that to you.

Page 2-25: The Yakima Urban Area Comprehensive Plan has been amended during several of the years subsequent to the years indicated. The most recent amendment was the West Valley Neighborhood Plan, adopted on Feb. 15, 2011 by the City Council and Board of County Commissioners.

Pages 2-25 – 2-28: Adoption of the West Valley Neighborhood Plan provides future land use map designations within the Yakima Urban Service Area where none existed before it was adopted. This makes some of the information and data on these pages outdated. However, again, this doesn't particularly affect the City's Water Service Area.

Thank you for the opportunity to review the City's draft Water System Plan Update.

Sincerely,

Phil Hoge
Long Range Planning
Yakima County Department of Public Services
128 N. Second Street, 4th Floor
Yakima, WA 98901
(509)-574-2254
1-800-572-7354 (toll-free)
(509)-574-2301 (fax)
http://www.yakimacounty.us/publicservices

Appendix W

Consistency Statement Checklists (Re: Municipal Water Law Sections 5 and 8)

Washington State Department of Health

Local Government Consistency Review Checklist

Water System Name City of Yakima, Water Division PWS ID: 991509

Planning/Engineering Document Title: 2011 Water System Plan Update Plan Date: 1/31/2011

Local Government with Jurisdiction: City of Yakima

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.	1-19 to 1-33 2-25 to 2-30	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.	2-31 to 2-32	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.	1-33 to 1-36	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)].	1-33 to 1-36	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, Reclaimed Water plans, Groundwater Area Management plans, and Capital Facilities Element of Comprehensive plans.	1-19 to 1-33 4-6 to 4-9 8-6 to 8-7	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

5-31-2011
Date

Joseph Calhoun, Assistant Planner, City of Yakima
Printed Name, Title, & Jurisdiction

Consistency Review Guidance
For Use by Local Governments and Municipal Water Suppliers

This checklist may be used to meet the requirements of WAC 246-290-108. When using an alternative format, it must describe all of the elements; 1a), b), c), d), and e), when they apply.

For **water system plans (WSP)**, a consistency review is required for the retail service area and any additional areas where a municipal water supplier wants to expand its water right's place of use.

For **small water system management programs**, a consistency review is only required for areas where a municipal water supplier wants to expand its water right's place of use. If no water right place of use expansion is requested, a consistency review is not required.

For **engineering documents**, a consistency review is required for areas where a municipal water supplier wants to expand its water right's place of use (water system plan amendment is required). For non-community water systems, a consistency review is required when requesting a place of use expansion. All engineering documents must be submitted with a service area map per WAC 246-290-110(4)(b)(ii).

A) Documenting Consistency: Municipal water suppliers must document all of the elements in a consistency review per WAC 246-290-108.

1 a) Provide a copy of the adopted **land use/zoning** map corresponding to the service area. The uses provided in the WSP should be consistent with the adopted land use/zoning map. Include any other portions of comprehensive plans or development regulations that are related to water supply planning.

1 b) Include a copy of the **six-year growth projections** that corresponds to the service area. If the local population growth rate projections are not used, provide a detailed explanation on why the chosen projections more accurately describe the expected growth rate. Explain how it is consistent with the adopted land use.

1c) Include water service area policies and show that they are consistent with the **utility service extension ordinances** within the city or town boundaries. This applies to cities and towns only.

1 d) Include all **service area policies** for how new water service will be provided to new customers.

1 e) **Other relevant elements** related to water supply planning as determined by the department (DOH). See Local Government Consistency – Other Relevant Elements, Policy B.07, September 2009.

B) Documenting an Inconsistency: Please document the inconsistency, include the citation from the comprehensive plan or development regulation, and provide direction on how this inconsistency can be resolved.

C) Documenting Lack of Consistency Review by Local Government: Where the local government with jurisdiction did not provide a consistency review, document efforts made and the amount of time provided to the local government for their review. Please include: name of contact, date, and efforts made (letters, phone calls, and e-mails). In order to self-certify, please contact the DOH Planner.

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

Local Government Consistency Review Checklist

Water System Name City of Yakima, Water Division PWS ID: 991509

Planning/Engineering Document Title: 2011 Water System Plan Update Plan Date: 1/31/2011

Local Government with Jurisdiction: Yakima County

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.	1-19 to 1-33 2-25 to 2-30	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.	2-31 to 2-32	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.	1-33 to 1-36	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)].	1-33 to 1-36	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, Reclaimed Water plans, Groundwater Area Management plans, and Capital Facilities Element of Comprehensive plans.	1-19 to 1-33 4-6 to 4-9 8-6 to 8-7	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.

Phil Hoge
Signature

4-8-11
Date

Phil Hoge, Project Planner, Yakima County
Printed Name, Title, & Jurisdiction

Appendix X

Letter of Commitment for Participation on Regional Wellhead Committee

WATER & IRRIGATION DIVISION
2301 FRUITVALE BLVD.
Yakima, Washington 98902

September 20, 2002

Megan Harding
Regional Planner
Dept. Of Health
1500 West 4th Ave.; Suite 305
Spokane, WA 99204

RE: City of Yakima Wellhead Protection Program

Dear Megan:

This letter is to inform you of the City's compliance with the two year Wellhead Protection Program update and our compliance with the City's Wellhead Protection Plan and the Upper Yakima Valley Regional Wellhead Protection Plan.

We have completed the following tasks:

- Updated the "potential contamination sources" list. Compared the list Dept. of Ecology list, reviewed building permits and verified by a windshield survey.
- Semi-annual notification letters of location within the wellhead protection area were sent to all "potential Contamination sources". Copy of letter enclosed.
- Sent new list of potential contamination sources to Yakima County GIS Division for map update and Upper Yakima Valley Regional Wellhead Protection Plan update.
- Verified that our Building Codes Division is issuing a notification letter of location within the wellhead protection area for all building permits issued within the wellhead protection areas, including Nob Hill Water Association wellhead protection areas that are within the City Limits. Copy of letter enclosed.
- Insuring that the Planning Division is issuing a notification letter of location within the wellhead protection area for all submittals for zoning change requests, short plats, long plats, ect.
- Signs indicating the boundary of the wellhead protection areas have been installed.

We are also scheduled to hand out brochures, copy enclosed, about the wellhead protection program and answer questions at the Yakima County Fair, September 27th to October 5th.

Sincerely,

Dave Brown
Water/Irrigation Engineer

Enc. Letters, brochures
Copy: Dave England, Nob Hill Water
Joe Stump, Yakima County

Appendix Y

Plan Adoption by Yakima City Council

RESOLUTION NO. R-2011-105

A RESOLUTION adopting the 2010 the Water System Plan Update with its Appendices for the City of Yakima, Washington.

WHEREAS, the City of Yakima, is required to adopt the Water System Plan Update in accordance with WAC 246-290-100 by the Washington State Department of Health; and

WHEREAS, the City of Yakima has complied with all of the requirements of WAC 246-290-100 in developing said Plan; and

WHEREAS, the City Council has given notice, held public sessions, completed a SEPA and distributed copies of said Plan upon request; now, therefore,

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF YAKIMA:

The document entitled "City of Yakima Water System Plan Update" dated June 2010, together with its appendices, a true copy of said Plan and Appendices is on file in the City Clerk's Office and are incorporated by reference herein, are adopted by the City of Yakima.

ADOPTED BY THE CITY COUNCIL this 5th day of July 2011.

Micah Cawley, Mayor

ATTEST:

Deborah Klostei
City Clerk

129 N. 2nd Street, Yakima, WA. 98901
Phone: (509) 575-6000 • Fax (509) 576-6614
Email: ccouncil@ci.yakima.wa.us • www.ci.yakima.wa.us

Yakima City Council Agenda

Anyone wishing to address the Council, please fill out the form found on the tables and give it to the City Clerk

YAKIMA CITY COUNCIL
JULY 5, 2011
COUNCIL CHAMBERS, YAKIMA CITY HALL

5:00 P.M. – EXECUTIVE SESSION

1. Roll Call

2. Executive Session (allow 1 hour)
   - Prospective litigation
   - To evaluate the qualifications of an applicant for public employment

6:00 P.M. – BUSINESS MEETING

1. Roll Call

2. Pledge of Allegiance

3. Open Discussion for the Good of the Order
   A. Proclamations
   B. Presentations/recognitions/introductions
      1. Flag Presentation by Veterans of Foreign Wars Honor Guard
      2. Yakima Trolley presentation – Ken Johnson
      3. Special Recognition of retiring City Manager Dick Zais
         - Proclamation of Commendation and Appreciation
         - Resolution designating the name of "Richard A. Zais, Jr. Center for Law and Justice" as the name of the City of Yakima building at 200 South Third Street in Yakima in honor and recognition of the outstanding service of City Manager Dick Zais to the City of Yakima
   C. Status reports on prior meeting's citizen service requests
      1. Response to Tony Courcy regarding traffic volume information
      2. Response to Lynne Kittelson regarding truck routes
   D. Appointments to Boards, Commissions and Council Committees

4. Consent Agenda
   All items listed with an asterisk (*) are considered routine by the City Council and will be enacted by one motion without discussion. A citizen may request Council to remove an item from the Consent Agenda, and if approved, it will be considered in its normal sequence on the agenda.

*A. Consideration of approval of City Council Meeting Minutes
- Special Meeting/Study Session – March 8, 2011
- Business Meeting – March 15, 2011

*B. Consideration of approval of Council Committee Meeting Minutes
- Gang Free Initiative – June 2, 2011
- Economic Development Committee – June 14, 2011
- Public Safety Committee – June 15, 2011
- Boards and Commissions Nominating Committee – June 16, 2011
- Budget Committee – June 16, 2011

5. Audience Participation – Community members are invited to address items that are not listed on the regular business meeting agenda. A guideline of three (3) minutes per speaker is in place in order to allow as much opportunity as possible for audience participation. A speaker's time may be extended at the discretion of the Mayor and/or the consensus or vote of the Council. Written communication and e-mail messages are strongly encouraged.

CITY MANAGER'S REPORTS

6. Accepting public input and Consideration of a Resolution adopting the 2010 Water System Plan Update

7. Update of the Multi-year Irrigation System Rebuild Project

8. Consideration of a Resolution approving the Maple Street Incinerator designation as a historic property and placement on the Yakima Register of Historic Places

*9. Consideration of a Resolution authorizing execution of an agreement with Mercer Group, Inc. to provide recruitment services for the position of Chief of Police

*10. Consideration of a Resolution authorizing execution of a Memorandum of Understanding with the U.S. Department of the Interior, Bureau of Land Management, for implementation of the Cowiche Mill Post-fire Emergency Stabilization and Rehabilitation on City-owned parcels that were purchased for the William O. Douglas Trail

*11. Consideration of a Resolution authorizing execution of an easement to Yakima County for improvements to the Yakima County Courthouse

*12. Consideration of a Resolution authorizing execution of an interlocal agreement to fund a portion of Yakima Transit's vanpool program

*13. Consideration of a Resolution authorizing execution of the two-year temporary staffing services agreement with Entrust

*14. Consideration of a license agreement with the North Front Street Improvement Association for primary use of the street banner poles on North Front Street

*15. Consideration of a Resolution authorizing the Department of Community and Economic Development to submit to the Washington State Department of Ecology a Shorelines Master Program grant application in the amount of $40,000

*16. Consideration or a Resolution approving the preliminary plat of Apple Blossom Phase VII

*17. Consideration of a Resolution amending the Capitol Theatre Operating Agreement for the purpose of correcting the legal description of the property

*18. Consideration of A resolution authorizing execution of a public defender agreement with Richard Gilliland, Attorney at Law

*19. Set date of public hearings for July 19 and August 2, 2011 to consider amendments to the City of Yakima 2011 Annual Action Plan regarding the reduction of CDBG and HOME program funding

ORDINANCES

20. Consideration of an Ordinance amending Chapter 11.62 of the Yakima Municipal Code pertaining to historic preservation

*21. Consideration of an Ordinance amending the City of Yakima Municipal Code, repealing section of Chapter 6.48 and Chapter 6.04 to adopt the equivalent and/or similar Revised Code of Washington statutes relating to public safety

*22. Second reading of an Ordinance amending the 2011 Budget and making appropriations in the 477-Domestic Water Improvement fund to repair a broken water main

23. Other Business
    - Update on City Manager search process

24. Adjournment

Any invocation that may be offered before the official start of the Council meeting shall be the voluntary offering of a private citizen, to and for the benefit of the Council. The views or beliefs expressed by the invocation speaker have not been previously reviewed or approved by the Council, and the Council does not endorse the religious beliefs or views of this, or any other speaker.

A Council packet is available for review at the City Clerk's Office, Library and Police Department. An abbreviated packet is also available on line at www.ci.yakima.wa.us under Quick Picks. THE NEXT COUNCIL BUSINESS MEETING IS JULY 19, 2011 at 6:00 P.M.

The City provides special accommodations, such as hearing devices and wheelchair space, for City meetings. Anyone needing special assistance please contact the City Clerk's office at (509) 575-6037

Appendix Z

Department of Health Approval Letter

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

July 8, 2011

David Brown, Manager
City of Yakima Water Division
2301 Fruitvale Blvd.
Yakima, WA 98902

Subject: Yakima Water Division, City of; PWS ID #991509; Yakima County
SRF APPLICATION 2011-018
Water System Plan; DOH Project #11-0201; **DOH APPROVAL**

Dear Dave:

The City of Yakima Water System Plan (WSP), received in this office on March 23, 2011, with revisions submitted on June 10, 2011, has been reviewed and in accordance with the provisions of WAC 246-290-100, is hereby **APPROVED**.

The approval for the plan is valid for six years. An approved update of this WSP is required on or before July 8, 2017, unless the Department of Health (DOH) requests an update or plan amendment pursuant to WAC 246-290-100(9). Approval of this WSP is valid as it relates to current standards outlined in Washington Administrative Code (WAC) 246-290 revised July 2008, WAC 246-293 revised September 1997, and RCW 70.116, and is subject to the qualifications herein. Future revisions in the rules and statutes may be more stringent and require facility modification or corrective action.

This water system plan meets the planning requirement for SRF Application 2011-018.

The WSP includes capacity information that demonstrates the physical and legal ability of this water system to provide water during the six-year period for which the approval of the WSP is valid. **Based on the analysis presented in the WSP, the approved number of connections for this water system will remain unspecified.** The limiting factor for the system is source capacity.

The City of Yakima is responsible for permitting new service connections in a manner consistent with the water system plan so that the physical capacity and water right limitations are not exceeded.

This approval does not provide any guarantee and should not be considered to provide any guarantee concerning legal use of water or any subsequent water right decisions by the Department of Ecology (Ecology). This approval does not affect any uncertainties regarding your water rights or the resolution of those uncertainties. Depending on the resolution of the uncertainties, further planning and/or other action may be necessary.

Pursuant to RCW 90.03.386(2), the service area identified in the WSP service area map (Figure 1-2) now represents "place of use" for this systems water rights. Future changes in service area should be made through a WSP amendment.

The City of Yakima has a duty to provide new water service within its retail service area. This WSP includes service policies to describe how your system plans to provide new service within your retail service area.

Submittal of the WSP included local government consistency determinations from Yakima County Planning and the City of Yakima. This WSP meets local government consistency requirements for WSP approval pursuant to RCW 43.20 for these entities.

Standard Construction Specifications for distribution main extensions and distribution related projects have been approved as part of this WSP. The distribution related projects includes booster stations and reservoirs identified as improvement projects within the current Water System Plan. With this approval and consistent with WAC 246-290-125 (2) and (3) the City of Yakima may proceed with the installation of distribution main extensions, and distribution related projects, without DOH approval, provided that:

> The City of Yakima maintains on file completed construction completion reports (a copy of which is attached) in accordance with WAC 246-290-125(2) and makes them available for review upon request by DOH.

The approval of this waiver does not include construction without DOH approval for source related projects, such as but not limited to, new sources, treatment, or transmission main.

The Yakima City Council adopted the WSP on July 5, 2011 a copy of the council minutes is included in the plan.

Thank you for your cooperation. DOH recognizes the significant effort and resource commitment involved in the preparation of this WSP.

If you have questions or wish to check our records, please contact either of us at (509) 329-2122 or (509) 329-2120, respectively.

Sincerely,

Andres Cervantes, PE
Regional Engineer
Office of Drinking Water
Division of Environmental Health

Christine Collins, MURP
Regional Planner
Office of Drinking Water
Division of Environmental Health

Enclosure: Construction Completion Report
Green Operating Permit

cc: Yakima County Planning Department
Yakima County Health District
Karen Klocke; DOH
Bruce Lund, Public Works Board
Department of Ecology, CRO
Thomas Coleman, PE