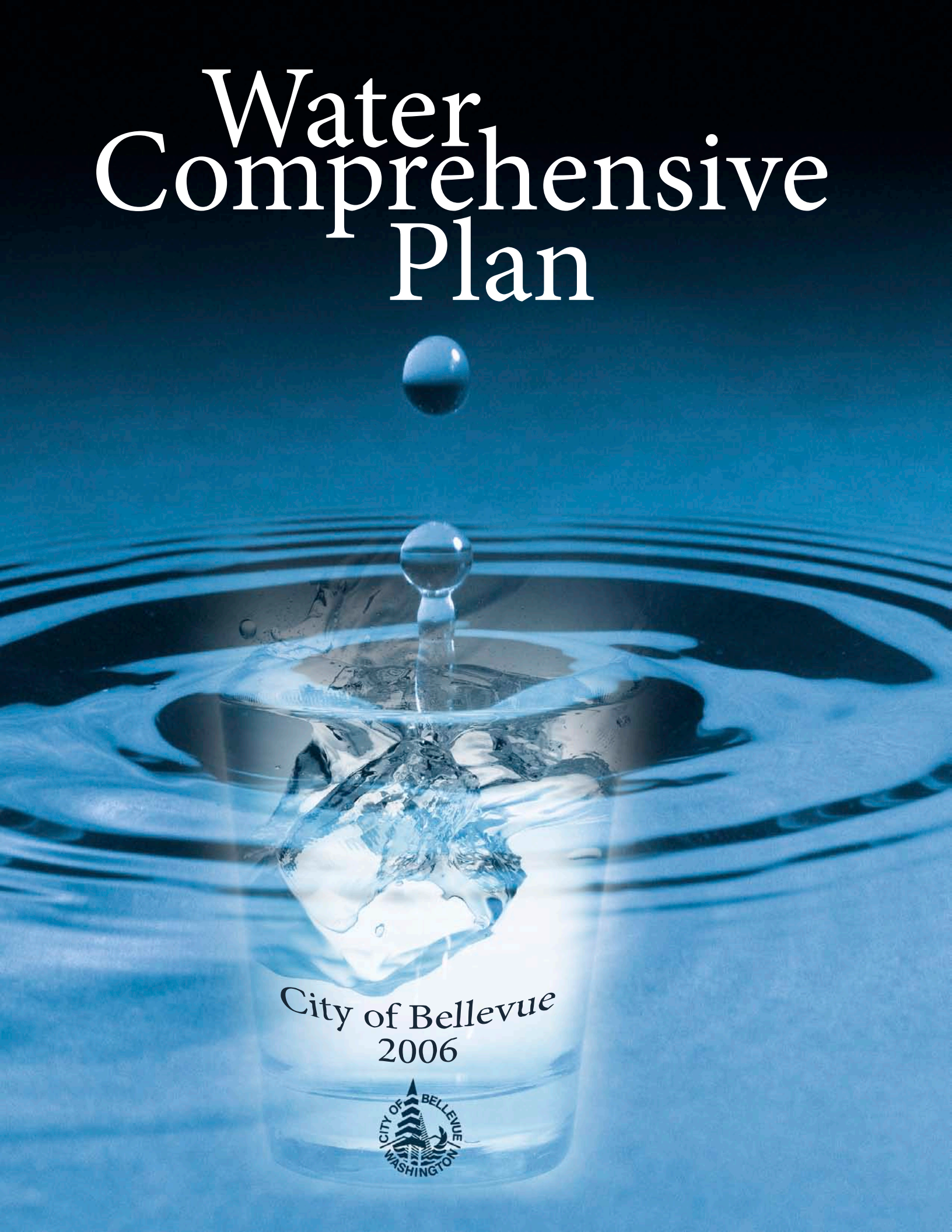
Water Comprehensive Plan



City of Bellevue
2006

CITY OF BELLEVUE WASHINGTON

WATER COMPREHENSIVE PLAN

City of Bellevue, Washington

2006

Adopted by Bellevue City Council
Resolution No. 7722
On April 7th, 2008

RANDALL L. THOMPSON
STATE OF WASHINGTON
25454
REGISTERED
PROFESSIONAL ENGINEER

3/3/08

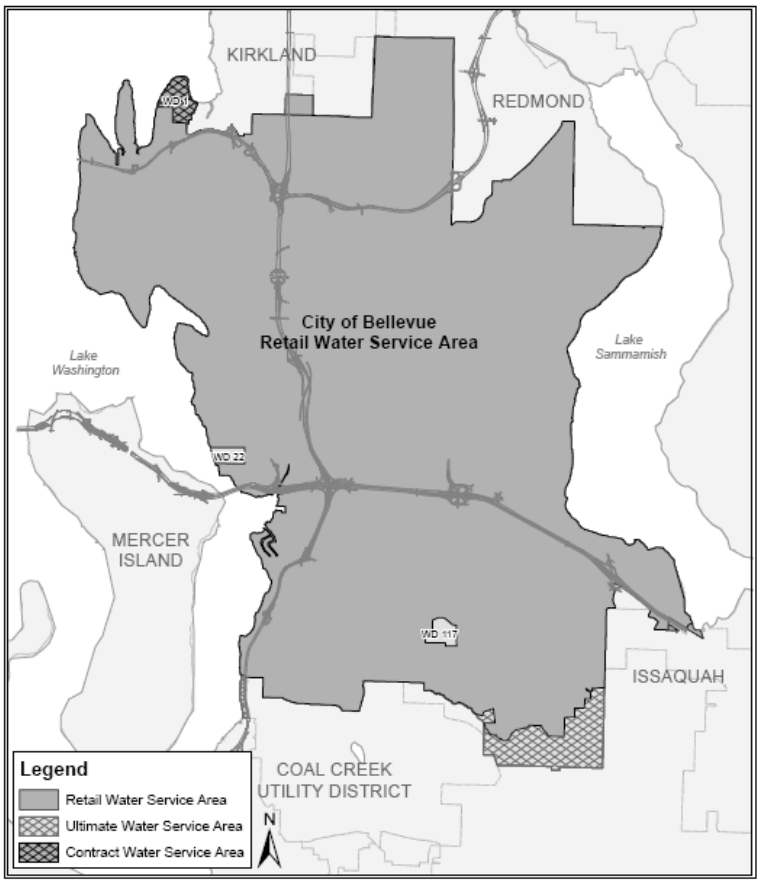
EXPIRES 9/2/08

This report was prepared under the supervision
of a registered professional engineer.

Executive Summary

INTRODUCTION

Bellevue's Water Comprehensive Plan Update was prepared in response to Department of Health (DOH) regulations, which require an update every 6 years (WAC 246-290-100). Bellevue's previous Plan was prepared in 1998. This Plan update was delayed to allow better coordination with Cascade Water Alliance's development of their 2004 Transmission and Supply Plan.



This updated Plan addresses the following changes which have occurred since adoption of the 1998 Bellevue Water Comprehensive Plan:

- Assumption of a portion of the Coal Creek Utility District;
- Updates to water utility policies;
- Revised service area population forecasts;
- Updates to water quality regulatory requirements;
- Updates and changes to water conservation goals and planning requirements;
- Passage of the state's Municipal Water Law.

This Plan provides a basis for capital improvement planning for the next 6 years (through 2013). The plan also forecasts anticipated needs out to a 20 year planning horizon and at build-out.

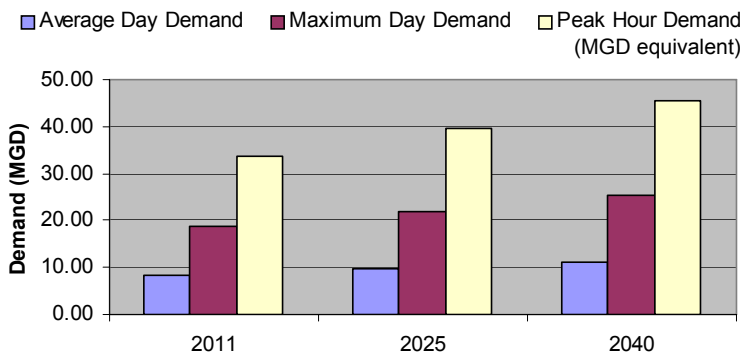
POLICIES

The Water Comprehensive Plan Update summarizes the policies that govern operation of the Water Utility. Policy categories include:

- Customer service
- Facility abandonment
- Water supply
- Financial policies
- Fire protection
- Water quality
- Service area

PLANNING CONSIDERATIONS

Bellevue's Water Comprehensive Plan Update uses population and land use projections developed by the Bellevue Planning and Community Development Department. The projections consider the Bellevue Comprehensive Land Use Plan, Puget Sound Council of Governments data, and U.S. census data.



West Operating Area Future Demand Projections (Includes Downtown Bellevue)

Note: MGD = million gallons per day

Population and water consumption projections consider ultimate growth within the City's designated growth boundary, in accordance with Growth Management Act requirements.

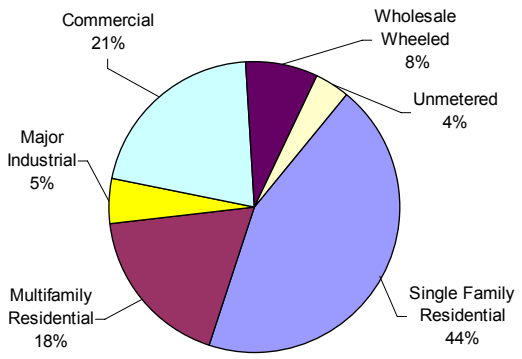
Most areas of Bellevue are nearly fully developed. However downtown Bellevue, in the water systems West Operating Area, still has significant growth potential.

Bellevue's water service area boundary is in accordance with the East King County Coordinated Water System Plan, which was adopted by the City Council on March 19, 1990.

WATER CONSERVATION

Water savings of 2.6 million gallons per day have been realized as of 2004.

Bellevue's Water Conservation Program meets the requirements of the East King County Coordinated Water Supply Plan and the Washington State Department of Health. It also meets the requirements of Bellevue's contract with the Cascade Water Alliance for water supply and the requirements of Cascade's contract with Seattle Public Utilities for wholesale water.



Breakdown of Water Consumption (1997 - 2003)

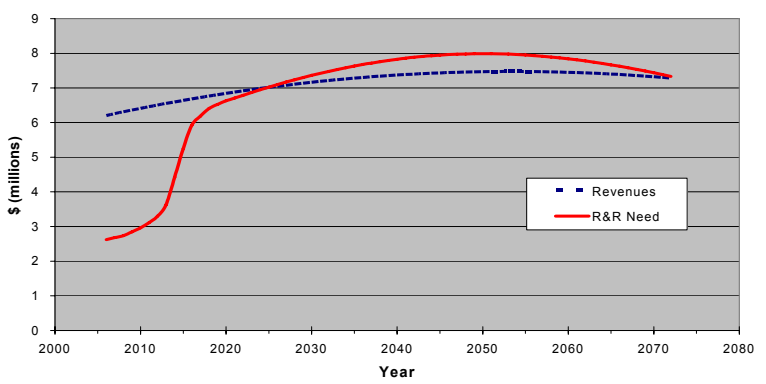
The program has resulted in water savings to the City of 2.6 million gallons per day. This represents a 15% reduction in demand compared to the pre-conservation period of 1986-90.

ASSET MANAGEMENT

R&R needs are regularly reassessed as new information on infrastructure condition and construction cost trends are gathered and analyzed.

Bellevue has developed a comprehensive asset management program which continues to evolve with industry advancements. The primary goal of the program is to manage the life cycle of water system assets in a cost effective, sustainable manner, in order to best meet established service level requirements. It is Bellevue's intention to proactively identify system renewal and replacement (R&R) needs and establish policies and programs to address those needs in a timely and cost effective manner.

In 1995, the City Council established an R&R Account to assist with funding these projects. In the early years, significant balances are accumulated which will be used to fund capital investments during periods of high expenditure.



Projected R&R Annual Expenditures and Revenue Needs

A schedule of the anticipated annual R&R funding requirements has been developed through the year 2075. The cost of R&R projects needed to address an aging infrastructure is expected to begin increasing significantly as we approach 2015. These cost projections are recognized in current rate model forecasts.

SYSTEM ANALYSIS

94.9% of residential customers have an available fire flow of 1,000 gpm or more.

The 1992 Water Comprehensive Plan established a policy to make system improvements such that a minimum standard fire flow of 1000 gpm can be provided throughout the distribution system.

As of 2004, 94.9% of Bellevue's residential customers had an available fire flow of 1000 gpm or more. At the currently scheduled rate of fire flow improvements, all Bellevue customers will have this minimum fire flow available in the year 2020.

Existing system storage and supply inlet capacity is adequate to meet needs until the year

Existing total system storage is adequate to meet projected storage needs until the year 2017. Analysis indicates a long term need to construct additional storage. Where practical, added storage requirements will be coordinated with planned replacement of aging reservoirs.

The capacity of regional supply system inlets serving the west side of Bellevue will also need to be increased in approximately 2017.

WATER QUALITY AND REGULATORY COMPLIANCE

Bellevue has remained in continual compliance with all Federal and State drinking water regulations.

A review of water quality data collected between 1999 and 2004 indicates that Bellevue has been in continual compliance with all Federal and State drinking water regulations.

The City may be challenged in meeting requirements of the new disinfection by-product rule (Stage2). Bellevue is taking pro-active steps to determine the most suitable initial approach for evaluating the distribution system in order to select compliance monitoring locations. Subsequent monitoring data will be used to quantify and evaluate methods to address any potential concerns.

RECOMMENDED SYSTEM IMPROVEMENTS

Ongoing annual improvements recommended to maintain, rehabilitate, and upgrade the City's existing infrastructure are summarized in the table below.

Recommended Annual Capital Improvement Programs (2007-2013)

Program Description	Estimated Average Annual Cost (2006 dollars)
Service Line and Saddle Replacement	$ 150,000
Large Commercial Meter Rehabilitation	209,000
Fire Hydrant Improvements	50,000
Small Diameter Pipe Replacement (Pipeline R&R)	2,087,000*
Pressure Reducing Valve Rehabilitation	400,000
Pump Station Evaluation and Rehabilitation	808,000
Reservoir Evaluation and Structural/Seismic Rehabilitation	429,000
Water Service Extensions	186,000
Minor Capital Improvement Projects	194,000
Total	**$4,513,000**

** Initial spending level, annual program spending will begin to increase significantly during this time frame.*

The need for R&R related projects will continue to increase as the water system ages.

In approximately 2015, Bellevue will need to begin construction of additional reservoir storage and projects to increase the capacity of its connections to the regional water supply system in order to meet the water needs of future development in Bellevue's growing downtown. It is likely that these projects will be constructed in phases over a 10 year period (2015-2025). The total cost of these improvements is expected to exceed $10 million (2006 dollars).

FINANCIAL CONSIDERATIONS

The City has a sound financial base that can finance system operating costs, the recommended capital improvements and the Water Conservation Program. Bond ratings from Moody's Investors Service and Standard and Poors indicate a high level of confidence in the Water Utility's financial stability.

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CHAPTER 1
Introduction

Utilities Department staff began updating Bellevue's 1998 Water Comprehensive Plan in mid 2003. On December 31st, 2003, Bellevue assumed that portion of the Coal Creek Utility District within the Bellevue city limits and much of 2004 was spent gathering and assimilating information on the newly acquired water system. HDR Engineering, Inc. was retained by the City in early 2005 to provide substantial assistance with the plan elements addressing water conservation, water quality, storage analysis and inlet capacity analysis.

PURPOSE

This Water Comprehensive Plan update complies with Washington State Department of Health regulations (WAC 246-290). These regulations require that the City update its Water Comprehensive Plan every six years. This Plan update also complies with King County Code requirements (Chapter 13.24).

This plan update also addresses the following changes which have occurred since the 1998 Bellevue Water Comprehensive Plan was adopted:

- Assumption of the portion of Coal Creek Utility District within Bellevue
- Updates and changes to water utility policies
- Revised service area population forecasts and water use projections
- Updates and changes to water quality regulatory requirements
- Updates and changes to water conservation goals and planning requirements
- Passage of the state's Municipal Water Law

OBJECTIVE

The objective of this plan is to evaluate the existing water system and its operation to identify future needs, and to develop an improvement plan to meet them. The 1998 Bellevue Water Comprehensive Plan was used as a basis for this plan update. The development of this plan includes:

- Review and update of operating system policies to ensure consistent, cohesive utility operation and management.

- Review and update of future service area population projections.

- Determination of current water consumption characteristics and development of projected future demands.

- Assessment of anticipated infrastructure renewal and replacement needs.

- Assessment of the capability of the existing water system to meet current and future demands and regulatory requirements.

- Development of system improvements to meet identified needs.

GENERAL WATER SYSTEM INFORMATION

The City of Bellevue owns and operates a public water system which serves customers both inside and outside of the Bellevue city limits. The following is a summary of information on Bellevue's water system for the year 2005. This information is consistent with data on file with the Department of Health.

Water system name:	City of Bellevue
Water system ID No.:	05575
Water system Classification:	Group A - Community Type
Type of ownership:	Municipal (city government)
Owner No.:	414
Address:	450 – 110th Avenue NE, Bellevue, WA 98004
System Contact Person:	Wes Jorgenson, P.E., Assistant Director for Engineering, Utilities Department
Service area population:	132,000
Number of accounts:	34,193 single family
	653 multi-family
	1,884 commercial

Equivalent Residential Units: 67,300 ERUs (excludes wholesale customers)

DEFINITIONS

The following terms are used in this water comprehensive plan

Consumption. The actual volume of water used by the water system customers. This volume is measured at each customer's connection to the distribution system.

Demand. The quantity of water obtained from the water supply source over a given period of time to meet the needs of domestic, commercial, industrial, and public use. It also includes firefighting water, system losses, and miscellaneous other water uses. Demands are normally discussed in terms of flow rate, such as million gallons per day (mgd) or gallons per minute (gpm). Flow rates can be described in terms of a volume of water delivered during a specific time period. Flow rates pertinent to the analysis and design of water systems are:

> ***Average Daily Demand (ADD).*** The total volume of water delivered to the water system in a year divided by the number of days in the year.
>
> ***Maximum Month Demand.*** The total volume of water delivered to the water system during the month of maximum water use divided by the number of days in the month.
>
> ***Maximum Day Demand (MDD).*** The volume of water delivered to the water system on the year's maximum water use day.
>
> ***Peak-Hour Demand (PHD).*** The volume of water delivered to the water system in the hour of maximum use, usually during the maximum day.

Equalizing Storage. Equalizing storage is the total volume needed to satisfy peak system demands in excess of the hydraulic capacity of the supply system. Equalizing volume requirements are greatest on the day of maximum system demand. Equalizing storage compensates for demands over the average flow rate supplied at system inlets by filling up when water demands are lower than the average inlet flow rate and then emptying when demands are higher.

Fire Flow. The rate of flow of water available to fight fires.

Fire Storage. Reservoir capacity required to sustain fire flows, over a given period of time.

Head. A measure of pressure or force exerted by water. Head is measured in feet and can be converted to pounds per square inch (psi) by dividing by 2.31.

Head Loss. Pressure reduction resulting from pipeline wall friction, bends, physical restrictions, or obstructions as water flows through a pipe. Head loss is determined by pipe diameter, internal roughness, and water velocity.

Hydraulic Elevation. The height of a free water surface above a defined datum; the height above a datum to which water in a pressure pipeline would rise in a vertical, open-end pipe.

Peaking Factor. A dimensionless parameter used to express the relationship among Maximum Day Demand, Peak-Hour Demand, and Maximum Month Demand, as a ratio to the Average Day Demand. The peaking factor used for design purposes is often based on the most severe peaking trends observed on a historical basis.

Purveyor. A local municipality or water district that purchases wholesale water from a regional supplier, as opposed to those with an independent water supply.

Reserve or Emergency Storage. Reservoir capacity provided to meet emergencies such as supply failure, pipeline failure, pump station failure, or power outages.

Service (Pressure) Zone. A water subsystem operating at a common hydraulic elevation.

Turbidity. A measure of suspended particles in water.

Unaccounted-for (Unmetered) Water. Water that is measured going into the distribution system but is not metered going out of the system (e.g., system flushing, fire fighting, leakage).

ABBREVIATIONS

The following abbreviations are used in this report.

AAD	Average annual demand
AC (pipe)	Asbestos-cement pipe
ADD	Average day demand
AMP	Asset Management Program
AWWA	American Water Works Association
AWWARF	American Water Works Association Research Foundation
BAT	Backflow Assembly Tester
Cascade	Cascade Water Alliance
CBD	Central Business District
CCP	Concrete cylinder pipe
CESSL	Cedar East Side Supply Line
ccf	Hundreds of cubic feet
cfs	Cubic feet per second
CCR	Consumer Confidence Report
CCS	Cross-connection Control Specialist
CCUD	Coal Creek Utility District
CI (pipe)	Cast iron pipe
CIP	Capital Investment Program
CIS	Customer Information System
CPR	Conservation Planning Requirements
CWSP	Coordinated Water Supply Plan
CWSSA	Critical Water Supply Service Area
DBP	Disinfection by-product
D/DBP	Disinfectant/Disinfection by-product
DI (pipe)	Ductile iron pipe
DOH	State of Washington Department of Health
Ecology	State of Washington Department of Ecology

EKC	East King County
EKC-CWSP	East King County - Coordinated Water Supply Plan
EKC-RWA	East King County - Regional Water Association
ENR-CCI	Engineering News-Record - Cost of Construction Index
EPA	United States Environmental Protection Agency
ERUsEquivalent Residential Units	
gpcd	Gallons per capita per day
gpd	Gallons per day
gpm	Gallons per minute
GIS	Geographic Information System
HAA5	Five haloacetic acids
HGL	Hydraulic gradeline elevation (hydraulic elevation)
HL	Head loss
HPC	Heterotrophic bacteria plate count
IESWTR	Interim enhanced surface water treatment rule
IOC	Inorganic Chemicals
ISO	Insurance Services Office
IWA	International Water Association
IWG	Interim Water Group
KCWD	King County Water District
Ksqft	Thousand of square feet
LCR	Lead and Copper Rule
LID	Local Improvement District
LOS	Level of Service
LRAA	Location running annual average
MCL	Maximum contaminant level
MCLG	Maximum contaminant level goal
MDD	Maximum day demand
MF	Multi-family
MFR	Multi-family residential
MG	Million gallons
mgd	Million gallons per day
MMIS	Maintenance Management Information System
OFM	Office of Fiscal Management (Washington State)
PAA	Potential annexation area
PHD	Peak hour demand
PNR	Public Notification Rule
PRV	Pressure-reducing valve
PS	Pump Station
psi	Pounds per square inch
PVC (pipe)	Polyvinylchloride pipe
R&R	Renewal and Replacement
RCW	Revised Code of Washington (State)
Res.	Reservoir
RWA	Regional Water Association
SEPA	State Environmental Policy Act
SDWA	Safe Drinking Water Act

SF	Single Family
SFR	Single family residential
SOC	Synthetic Organic Chemicals
SOP	Standard Operating Procedure
SPU	Seattle Public Utilities
SWTR	Surface Water Treatment Rule
TAZ	Transportation Analysis Zone
TCR	Total Coliform Rule
TESSL	Tolt East Side Supply Line
THAA	Total haloacetic acids
THMs	Trihalomethanes
TSP	Transmission Supply Plan
TTHMs	Total trihalomethanes
ULID	Utilities Local Improvement District
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Chemicals
WAC	Washington (State) Administrative Code
WD	Water District
WDM	Water Distribution Manager
WDS	Water Distribution Specialist
WSRB	Washington Survey and Rating Bureau
WCCPS	Water Conservation Coalition of Puget Sound
WUCC	Water Utility Coordinating Committee
WWUC	Washington Water Utilities Council

CHAPTER 2

Water Utility Policies

The Bellevue Water Utility has established several water system policies that govern various facets of utility operations. A listing of the seven policy categories, accompanied by a brief description of each, is provided below. The first six policy categories are grouped together and identified in this chapter as General Policies. These policies are specific to Bellevue's Water Utility. The Financial Policies category comprises the other major policy group. The Financial Policies apply to the all three Bellevue utilities (water, wastewater, and storm drainage). .

Customer Service. These policies define the level of service provided to utility customers as well as public and private ownership and responsibility for water system components.

Facility Abandonment. This policy specifies how to dispose of facilities that are identified for abandonment by the Utility.

Fire Protection. These policies detail the Utility's responsibility for the system infrastructure that provides fire flow. They include system requirements for new and existing construction and the Utility's commitment to system improvements.

Service Area. Service area policies concern the existing and ultimate service area boundaries and conditions for service extension within those boundaries.

Water Quality. This policy explains the obligations of Cascade Water Alliance (Cascade), Seattle Public Utilities (SPU), Bellevue Water Utility, and the customer regarding water quality standards from supply to the point of use.

Water Supply. These policies discuss the Utility's contractual commitment with Cascade, conservation as it affects supply, and the Utility's response during water supply shortages.

Financial Policies. This category summarizes the Utility Department's general financial policies, including those governing rate setting, development charges, capital improvement financing, and reserves.

In addition to these policies, criteria and standards relating to the planning, design, construction, operation, and maintenance of the water system exist to establish consistency and to ensure that adequate levels of service are provided throughout the system. Specific criteria and standards relating to storage volume, distribution system, pressure zones, pump stations, and system operations are subsequently described in Chapter 4.

WATER SYSTEM POLICIES BACKGROUND

These water system policies were originally developed in 1991 by a policy committee comprised of representatives from the Department of Public Works and Utilities, the Bellevue Fire Department, and the City of Medina. This policy committee met regularly to consider policy issues affecting development and operation of the water system. Other long-standing operational policies, and all financial policies, were reviewed by utility management. A discussion of pertinent policy issues was included in the 1992 Bellevue Water Comprehensive Plan. The policies were reviewed and updated by Utilities Department management prior to publication of all subsequent water comprehensive plan updates. The policies (excluding the financial policies) were last reviewed, updated and approved by the Environmental Services Commission on December 2, 2004. The financial policies are reviewed, updated and approved separately as part of each bi-annual budget.

GENERAL POLICIES

Customer Service

Service Ownership/Responsibility

The Utility shall own and maintain the service line to the meter, the meter and setter, and the meter box. The property owner shall own and maintain the service line and other facilities such as pressure reducing valves, pumps, or backflow prevention devices beyond the meter. For unmetered connections (fire sprinklers), City ownership will cease at the connection point to the water main.

Discussion:

The Utility uses meters on services to monitor and charge for water consumption. The Utility needs to control the meter to enforce payment and compliance with utility standards. The meter is normally located at the property line and provides a logical separation point between City and private ownership and responsibility. There are isolated existing instances where ownership of the line to the meter is private, under separate arrangement.

A small portion of Bellevue's water service area is within unincorporated King County. Bellevue's franchise agreement with the County requires the City to assume certain obligations (at no expense to the County) for facilities connected to Bellevue's system that are within County road rights-of-way but which Bellevue does not own, including appurtenant facilities and service lines connecting Bellevue's system to users. Those obligations include:

- The City shall apply for, upon request and on behalf of the owner of the facilities, a County right-of-way construction permit for any repairs required for such facilities, provided such

owner agrees to reimburse the City for all costs incurred by the City and any other reasonable conditions the City requires as a precondition to applying for the permit.

- In the event that the County determines emergency repair of such facilities is necessary to halt or prevent significant damage to County road rights-of-way or significant threats to the health, safety or welfare of parties other than the owner or the occupants of the building served by such facilities, the City shall take prompt remedial action to correct the emergency to the County's satisfaction.

Emergency Preparedness

The Utility will prepare and update an Emergency Plan as a part of its operations program. The plan will ensure that adequate emergency provisions are in place to provide for an organized response to the most likely kinds of emergencies that may endanger the health and safety of the general public or operation of the Water Utility system. The plan will also address issues related to long term system recovery to ensure the orderly and full restoration of the water system after an emergency.

Discussion:

A key Utility responsibility is to respond to the needs of all water utility customers and the general public during times of crisis. The continued availability of potable water during a disaster and restoration of service following a disaster is essential.

The emergency response plan focuses on problems created by major disasters, such as a earthquake or flood. It is not intended to address minor isolated system interruptions such as those caused by isolated main breaks and power outages (standard operating procedures have been established to address these minor interruptions).

The emergency response and recovery plan complies with applicable RCW and WAC requirements as well as requirements of the water supply contract between the Utility and the Cascade Water Alliance. Reconstruction of damaged infrastructure should be to current codes and standards, and should be consistent with current Water Comprehensive Plan Policies, to protect current and future customers, assure consistency with the City's long range plans, and ensure access to federal funds for reconstruction, where available.

Service Pressure and Flow

The Utility shall provide domestic water to Utility customers in sufficient quantity to meet maximum day demands and at a pressure that meets or exceeds all minimum applicable regulations, except during emergency conditions.

Discussion:

The Utility's goal is to provide system static pressure of at least 30 psi, measured at the service meter, except during fire flow and other emergency conditions which may cause lower system pressures. The Utility has investigated the level of service provided at 30 psi and determined it provides adequate pressure to meet normal residential needs. Property owners, however, may install private booster pumps to achieve higher pressures, if they choose. Customer complaints of low water pressure are often caused by corroded internal plumbing which restricts flow volume, rather than system pressure. In such cases, increased system pressure would make very little difference in actual service provided.

Where modification of utility lines would significantly improve flow, such as replacement of single service lines that serve more than one home with adequate internal plumbing, the Utility should make such modification.

Service Reliability

The Utility shall invest resources as necessary to construct, maintain and renew water system infrastructure and equipment such that Utility customers are provided consistent, reliable service. Wherever practicable, the distribution system shall have 100 percent operational redundancy. Connections between adjacent water distribution or supply systems should be encouraged to improve reliability and reduce vulnerability to loss of water service.

Discussion:

The Utility shall provide sufficient maintenance and use appropriate operation practices to keep the water system infrastructure in good working order. Where operation and maintenance procedures are not sufficient or cost effective, capital projects shall be scheduled and funded to replace or rehabilitate infrastructure facilities.

Wherever possible, the Utility shall anticipate system interruptions and shall design and operate the system to minimize the impact of such interruptions to customers. For that reason:

- No more than 250 customers should generally be supplied water from a single source.
- Onsite or portable emergency power generation should be provided at all pump stations.
- To the extent practicable, equipment redundancy should be provided (i.e., provide facilities to pump maximum demand flow rates, even with one pump out of service.)
- Where service reliability can be increased, interties with neighboring jurisdictions should be considered and interties between regional water suppliers should be encouraged.

Facility Abandonment

When the Utility abandons facilities, it shall be done in a safe and environmentally sound manner, consistent with all applicable federal, state, and local regulations at the time of abandonment.

Discussion:

Occasionally, the Utility no longer needs some element of the water system infrastructure, such as a pipe, a pump station, or a reservoir. Whenever such facilities are abandoned, surplus of the facility should be considered. When a water main is abandoned in-place, detailed as-built records should be maintained in utility records.

In the case of abandoned asbestos cement (AC) pipe, standard practice and currently accepted environmental policy dictates that the City should leave the pipe in-place. Asbestos fibers in AC pipe are not released or harmful unless the pipe is broken or disturbed. In that case, the pipe must be dealt with as a hazardous material, and special precautions must be taken to prevent fiber inhalation. For this reason, when AC pipe is abandoned in an easement on private property, where it is unlikely the City would be aware of future pipe disturbance, it should be removed by the Utility unless dictated by specific circumstances. For other instances, such as abandoned AC pipe in the right-of-way, removing the pipe would only concentrate the potential problem at a hazardous waste landfill.

It is impossible to predict whether future regulations will require removal of abandoned AC pipe. Current practice and environmental policy do not suggest that such requirements will ever exist. To remove the pipe just in case such rules are made would be an expensive and inefficient use of Utility funds.

Fire Protection

Fire System Responsibility

The Utility is responsible to provide and maintain system infrastructure to deliver water for fire protection to currently served residents and businesses.

Discussion:

The water system infrastructure, including water mains, storage, hydrants, pump stations, and related facilities, shall be designed to meet all applicable codes at the time of construction.

The Utility is responsible to maintain, repair or replace mains, lines, hydrants, and valves as necessary to keep said facilities in good working order. Where fire protection is provided, benefited properties should pay for that benefit.

Fire Flow Requirements For New Construction

New development or redevelopment is required to provide the minimum fire flow requirement established by the Fire Marshall for that development.

Discussion:

It is the developer's responsibility to install all facilities needed to serve his property, to meet applicable development standards, and to meet the required fire flow established by the Fire Marshall. Such facilities shall be installed to the extreme of the property to accommodate subsequent development at one or more locations, as deemed necessary by the Utility. If necessary to meet these requirements, the developer shall make off-site water system improvements. If off-site improvements result in regional benefit, the Utility may contribute an equitable share of the improvement costs provided sufficient financial resources are available (for example, if an improvement increases fire flow to the Utility's minimum standard fire flow of 1000 gpm or greater in an area that had less that 1000 gpm available prior to the improvement). Occasionally, the Utility may require a developer to install a larger water main than is needed to meet his fire flow requirement. This is done to assure that the fire flow requirements of nearby future development can be met without having to up-size an existing water main. When oversizing is required, the utility will reimburse the developer for the incremental cost increase of the larger pipe, and will recover the cost of oversizing from future development.

Fire Flow Requirements For Existing Construction

Minimum fire flow requirements to existing facilities shall be the fire flow requirements at the time of construction.

Discussion:

Existing structures are not required to upgrade the water system infrastructure to meet current fire flow and development standards. Similarly, the Utility is not obligated to upgrade existing fire flows to meet current codes. When analyzing the need for water system improvements, however, improved fire flows should be included as a benefit when weighing the project's merits.

Redevelopment of existing areas triggers the requirements for new construction.

Fire Flow Improvement Program

The Utility shall implement a program with the objective of meeting a minimum standard fire flow of 1,000 gpm throughout the distribution system.

Discussion:

The Utility should systematically improve infrastructure capacities to provide a minimum level of fire flow protection to all customers within the service area. Improvements should include replacing undersized water mains to provide at least 1,000 gpm (at 20-psi minimum residual pressure at the fire location while meeting system performance criteria for pressure and velocity), installing new hydrants to provide minimum hydrant spacing of 500 ft, and replacing all two port hydrants with three port hydrants. System improvements should generally be prioritized and scheduled according to the severity of deficiencies, although opportunities to make improvements in conjunction with other construction should be considered for economic efficiency.

Service Area

Satellite/Remote Systems

Satellite/Remote Systems are not anticipated within Bellevue's service area. Requests for water service will be accommodated only through direct connection to Bellevue's water system.

Discussion:

Bellevue has in place all of the major facilities (pump stations, storage reservoirs, etc.) and water mains within public rights-of-way required to make water available throughout its ultimate service area via short water main extensions. The Utility will work with property owners to facilitate construction of water main extensions as needed to provide service. All requests for water service can be accommodated through either a City installed water service application or a Utility Developer Extension Agreement application. Therefore, the creation of remote water systems is unnecessary and there is no identified need for Bellevue to become a satellite management agency.

This policy does not preclude the Utility from evaluating and entering interlocal agreements where more efficient and effective service can be provided via connection to an adjacent utility's system.

Service Extension

Water system service extension will be considered, provided the area to be served is within the City's existing retail water service area and the extension of service is consistent with adopted annexation policies. Service extension by the City may be considered under such conditions only if the City's costs are recovered and sufficient financial resource is available.

Discussion:

In 1979, Bellevue reached agreement with Renton and Issaquah, identifying sphere of influence limits. These limits established ultimate annexation boundaries. Since that time, a portion of this sphere of influence line has been eliminated by the incorporation of the City of Newcastle. Because it is most efficient and economical for the City to provide services to city residents, the ultimate water service area coincides with the sphere of influence boundary. The boundary is consistent with the East King County Coordinated Water Supply Plan.

The policy is also consistent with the Utilities Element of the City Comprehensive Plan, which states the City should be the service provider within the city limits (Policy UT-8).

Property owners are responsible for extending water service to their property. The City may extend the system to assure orderly system development, in which case, benefited property owners would be responsible for an equitable share of extension costs. Water system extensions shall be constructed to current city standards.

Requests for Assumption by Water Districts or Private Water Systems

Bellevue may assume the operation of a water district or private water system at their request if the following conditions are met and subject to the approval of the Bellevue City Council:

1. **The district or private system is adjacent to or within Bellevue's water service area.**
2. **The district's or private system's facilities meet Bellevue's performance criteria and engineering standards, or a plan is in place to assure they will be brought up to Bellevue's standards without adversely impacting Bellevue's existing customers financially or with regard to level of service.**
3. **The assumption of the district or private system is permitted by State law.**

Discussion:

King County Water District #1 has approached Bellevue requesting eventual assumption. Their request is being addressed in accordance with this policy. There are two other small districts adjacent to Bellevue which could potentially request assumption by Bellevue: King County Water Districts #22 and #117. Bellevue has not been approached by the owners of either of these districts and therefore Bellevue does not currently anticipate the assumption of these districts by the City. No private water systems operating within Bellevue's service area have indicated an interest in assumption by the City.

Bellevue Initiated Assumption of Water Districts

Bellevue will seek to assume the operation of a water district when the City Council determines that the assumption is in the best interest of the City and the assumption is consistent with the City's Comprehensive Plan, and will do so as permitted by state law.

Discussion:

It is Bellevue's policy, as stated in the City's Comprehensive Plan, to own and operate all publicly owned utility systems within the city limits unless circumstances otherwise dictate. In 2003, Bellevue assumed the portion of Coal Creek Utility District's service area within the Bellevue city limits. That assumption was completed in accordance with this policy and at the direction of the City Council. At this time, there are no longer any water districts providing service within Bellevue's city limits. However, future changes in Bellevue's city limits could result in Bellevue citizens receiving water service from an adjacent district.

Water Sales Outside Bellevue's Service Area

New requests for the sale of water outside of the Utility's ultimate future service area will be considered only under the following circumstances:

1. **The requestor must first obtain a water supply agreement with the agency responsible for supplying Bellevue's water..**

2. **The provision of water should not compromise Bellevue's design and performance standards for existing water customers.**

3. **The sale of water should not result in any adverse financial impact to existing Bellevue water customers.**

Discussion:

Bellevue's water system has been planned and designed to accommodate the current and future needs of customers within Bellevue's ultimate future water service area and existing wholesale customers in accordance with the wholesale water service agreements. Any additional area that may request water supply from Bellevue must address issues relating to limited water supply and adverse impacts on Bellevue's water system and customer service levels. Water service within another jurisdiction's service area would be per interlocal agreement.

Water Quality

Water Quality Responsibility

In accordance with the Supply Agreement, the Utility will rely on the agency supplying Bellevue's water (Cascade Water Alliance) to provide water that meets all water quality standards as identified in the supply agreement. The Utility will take action necessary to ensure that all water quality standards are met to the point of delivery to the customer (typically the meter).

Discussion:

Bellevue's supply agreement with the Cascade Water Alliance requires that water delivered to the City of Bellevue meet all state and federal water quality standards. Water samples are collected and tested for compliance. It is recognized, however, that water is a perishable product. Water quality can fall below accepted standards before reaching the customer when microbial regrowth occurs, excessive levels of disinfection by-products (DBP's) form, or outside contaminants are introduced into the water system. The Utility will take the necessary steps to ensure that water reaching the point of delivery, the customer's meter, meets all water quality standards. To accomplish this, the Utility will maintain programs to prevent microbial regrowth, excessive DBP formation, and contamination of the water system.

Maintaining the water quality from the customer's meter to the actual point of use is the responsibility of the customer; however, if there is a high likelihood that contamination may occur between the meter and the point of use and/or if required by state or federal standards, the Utility will test for water quality at the actual point of use. The results of such tests will be made available to the customers for their action.

Cross Connection Control

The City shall administer a cross connection control program that protects the City's public water supply and users of the public water supply from backflow contamination in accordance with state law and rules promulgated by the Washington State Department of Health.

Discussion:

The Department of Health requires that public water systems implement a cross connection control program that protects water systems and users of the water systems from contamination of the water supply from backflow contamination. The City established a comprehensive cross connection control program nearly 30 years ago. The program requires installation of approved backflow prevention assemblies on, or disconnection of, identified cross connections. The program regularly identifies potential cross connections through both the City's plan and permit review process, and site inspections of high risk properties. The program also requires testing of all backflow prevention assemblies within the water system at the time of installation and annually thereafter. The City will continue to implement all aspects of this program.

Water Supply

Water Supply Source

The Utility will continue to rely on regional water suppliers for water. The Utility will work cooperatively with suppliers, including the Cascade Water Alliance, other purveyors, and other water supply agencies to assure reliable water supply at the lowest environmental and economic cost.

Discussion:

In 1982, Bellevue, along with 28 other agencies (purveyors) entered into a 30-year agreement with the Seattle Water Department (now SPU), for the purchase of water. This agreement stipulated that Bellevue would purchase all of its water supply needs from SPU. In turn, the SPU agreed to provide reliable water supply to meet all of Bellevue's needs for the duration of the agreement. After 15 years (1997) both parties could review the agreement and elect to extend it or allow it to expire at the end of the agreement period in 2012.

In 1997, the decision was made not to extend the current agreement beyond 2012. In 2004 Bellevue cancelled its supply contract with Seattle Public Utilities and entered into a supply contract with a new water supply entity, the Cascade Water Alliance.

The current agreement provides Bellevue and other Cascade Water Alliance members with a greater role in determining future water supply decisions. This role has become increasingly important as water demands approach available water supply. The water supply system is a regional resource that must be managed for the benefit of all current and potential new users. To ensure the objectives of reliable, low cost, and environmentally sensitive water supply, Bellevue must take an active role in deciding the future of the water supply system. As the second largest water purveyor within King County, it is in Bellevue's best interest and its responsibility to ensure that the regional water supply system meets the City's and its customers' needs.

Conservation

The Utility will actively promote voluntary conservation and the wise use of water. the Utility will implement a conservation program consistent with the requirements of the state Department of Health, and will cooperate with the conservation goals of regional water suppliers.

Discussion:

As a result of the population increase in the region, demand for potable water continues to approach the available supply. Unless demand is reduced or supply increased, water shortages may occur within the next decade. The State requires an effective conservation program before any additional water rights will be granted. Therefore the City should continue to support regional water conservation goals.

Reclaimed Water Use

Bellevue will support the regional supplier's study of reclaimed water use opportunities and will work with the Cascade Water Alliance and/or the regional supplier and others to identify potential reclaimed water demand.

Discussion:

Possible sources of reclaimed water should be identified and evaluated by regional water suppliers for their viability as a source to help meet the water supply needs of the region in the same manner as other supply options. Any reclaimed water to be used as a source of supply should only be provided through regional water suppliers.

Potential reclaimed water users and their potential demand for reclaimed water should also be identified. This should include both customers supplied by Bellevue and those facilities with their own supply within Bellevue's service area. The Cascade Water Alliance and/or other regional suppliers and Bellevue should work together to evaluate the feasibility of various methods of supplying reclaimed water to the potential users.

Water Shortage Response

The Utility will prepare and update a local response plan in case of a water supply shortage caused by a drought or supply interruption. The plan will be consistent with regional response plans or contractual agreements. The Utility will take action as necessary to ensure that the essential needs of its customers are met and that available supplies are equitably distributed to all affected customers within a customer class, as well as other purveyors on the supply system.

Discussion:

The 2004 Cascade Water Alliance Interlocal Agreement includes provisions for users of the regional water supply system to respond to water shortages caused by unforeseen events. This provision requires that each user take the necessary steps to reduce the demand for water in their respective service areas to ensure water is available for essential uses for all users. To provide guidelines, the Cascade members will develop and maintain a regional Water Shortage Response Plan (WSRP) that outlines the various stages of a supply emergency and the actions that should be taken. Seattle Public Utilities, as Cascade's current water supplier, will determine the level of emergency that exists and coordinate the response with Cascade and its members . The City Manager is empowered to declare an emergency and to carry out the necessary actions to ensure compliance with the provisions of the WSRP and the intent of the current Water Supply Agreement. Water shortage response will be addressed in all future water supply agreements with regional water suppliers.

Emergencies can occur that disrupt service to localized areas of the Bellevue service area. For such events, the Utility will notify the City Manager of the emergency and provide a recommended plan of action. The City Manager is empowered to take the necessary steps to ensure, to the extent possible, that all essential uses are met.

Waterworks Utility

Financial Policies

December, 2004

INTRODUCTION

The Waterworks Utility is the financial consolidation of the Sewer, Storm & Surface Water and Water Utilities of the City of Bellevue for debt rating and coverage purposes as established in Ordinance No.'s 2169, 2845, 3158 and 4568. It pledges the strengths and revenues of the three separate Utilities for the common financial good while keeping each Utility financially separate for budgeting, rate-setting, revenues, expenditures, debt and accounting.

These "Financial Policies" apply uniformly to the Sewer, Storm & Surface Water and Water Utilities with few, unique exceptions which are identified separately. This update reflects changes consistent with current long-range financial planning, particularly with regard to renewal and replacement funding, the use of debt and rate policies. They supersede the Financial Policies, which were adopted under Resolution No. 5967 in 1995.

These policies do not stand-alone. They must be taken in context with the other major City and Utilities documents and processes. For instance, each Utility has its own Comprehensive Plan, which documents its unique objectives, planning, operations and capital needs. These Comprehensive Plans have historically had a 20-year planning horizon. Future Comprehensive Plans will need to evaluate long term renewal and replacement of aging facilities, much of which were constructed in the 1950's and 1960's during periods of high growth rates and are approaching the end of their useful life. Life cycle costs should be considered in planning the future capital facilities and infrastructure needs.

The City has a seven-year City-wide Capital Investment Program (CIP) Plan which is updated with each biennial budget cycle. All major City capital projects are included. Generally, they are described as over $25,000; involving new physical construction, reconstruction or replacement; and involving City funding. The CIP identifies the level and source of funding for each project. The CIP includes specific sections for each Utility which identify near-term capital projects consistent with each current Utility Comprehensive Plan and several projects of general scope including renewal and rehabilitation, capital upgrades, response to growth and other system needs.

I. GENERAL POLICIES

A. *Fiscal Stewardship*

The Waterworks Utility funds and resources shall be managed in a professional manner in accordance with applicable laws, standards, City financial practices and these Financial Policies.

Discussion:

It is incumbent on Utility management to provide professional fiscal management of utility funds and resources. This requires thorough knowledge of and conformance with the City financial management processes and systems as well as applicable laws and standards. It also requires on-going monitoring of revenues and expenses in order to make decisions and report to City officials, as needed, regarding the status of Utilities financing. Independent financial review, analysis and recommendations should be undertaken as needed.

B*. Self-sufficient Funding*

Each Utility shall remain a self-supporting enterprise fund.

Discussion:

The revenues to each Utility primarily come from customer charges dependent on established rates. State law requires that utility funds be used only for utility purposes. Since each Utility has somewhat differing service areas, it is essential for rate payer equity that they be kept financially separate and accountable. The City's General Fund can legally contribute to the Utility funds but does not. The City budgeting process includes a balanced and controlled biennial Utility budget. This requires careful preparation of expense and revenue projections that will be reviewed by City management, the Environmental Services Commission, the general public and the City Council prior to approval of any change in Utility rates.

C. *Comprehensive Planning Policies*

Comprehensive Plans for the Water and Sewer Utilities shall be completed or updated every six years, using a 20-year planning horizon or greater and considering life cycle costs to identify funding needs. Comprehensive Storm & Surface Water System Plans and individual Storm & Surface Water Basin Plans will be completed and updated as required using similar criteria for planning infrastructure needs.

Substantial portions of the City utility systems were constructed in the 1950's and 1960's. These systems are approaching the end of their useful life as can be seen on the following Exhibit 1 - Watermain Replacement Spending and Exhibit 2 - Sewermain Replacement Spending. The storm & surface water infrastructure is of similar age but has not been graphed. It most likely has a relatively shorter expected life span. The object is to determine and follow a survivor curve replacement schedule rather than the replacement schedule based on age alone. Assumptions for survivor curves and useful lives are revisited periodically. These were assessed in 2004 and updated for the most recent engineering and financial findings. Significant changes include the adjustment of replacement costs to current price levels, categorization of pipe assets based on expected useful lives, and replacement of major non-pipe Utility assets such as pump stations and reservoirs. The Exhibits depict an example survival replacement curve based on preliminary estimates only. As real needs are determined, they will replace the estimated curves. Renewal and/or replacement will require substantial reinvestment in the future and have major rate impacts if large portions of the systems have to be replaced in relatively short periods of time. The actual useful life of underground utilities is difficult to determine and the best available data is needed to be able to plan for the orderly and timely renewal and/or replacement. For this purpose, the comprehensive plans need to have at least 20 year planning horizons and must address the aging of the Utility systems.

Long term comprehensive planning for the Utility systems is required in order to assure that the future financial needs are anticipated and equitable funding plans can be developed. In order to keep funding plans current, comprehensive plans need to be updated approximately every six years (as required by State law for water and sewer comprehensive plans). These Financial Policies will then be reviewed and updated as needed.

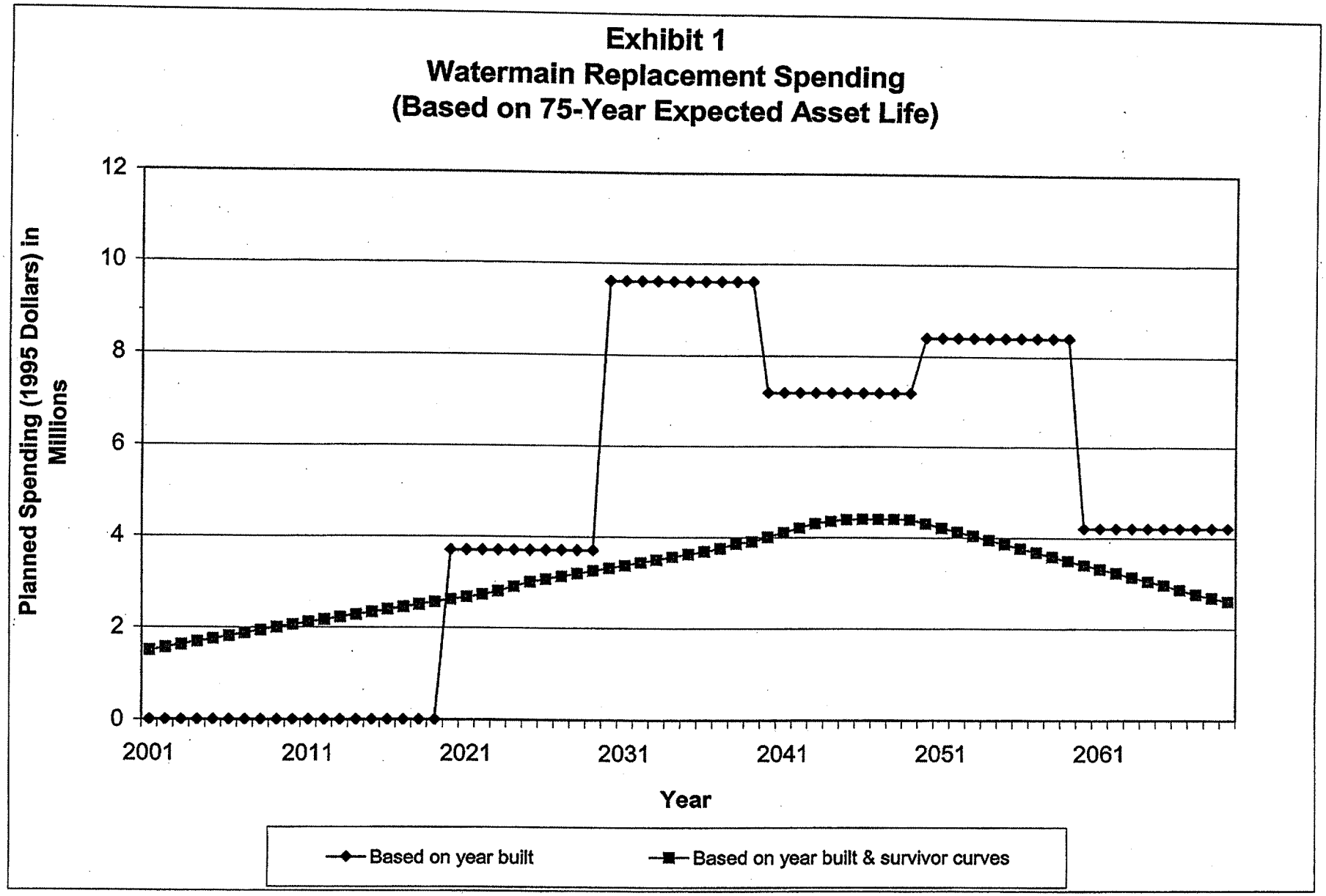
Exhibit 1
Watermain Replacement Spending
(Based on 75-Year Expected Asset Life)
Planned Spending (1995 Dollars) in Millions
12
10
8
6
4
2
0
2001
2011
2021
2031
2041
2051
2061
Year
Based on year built
Based on year built & survivor curves

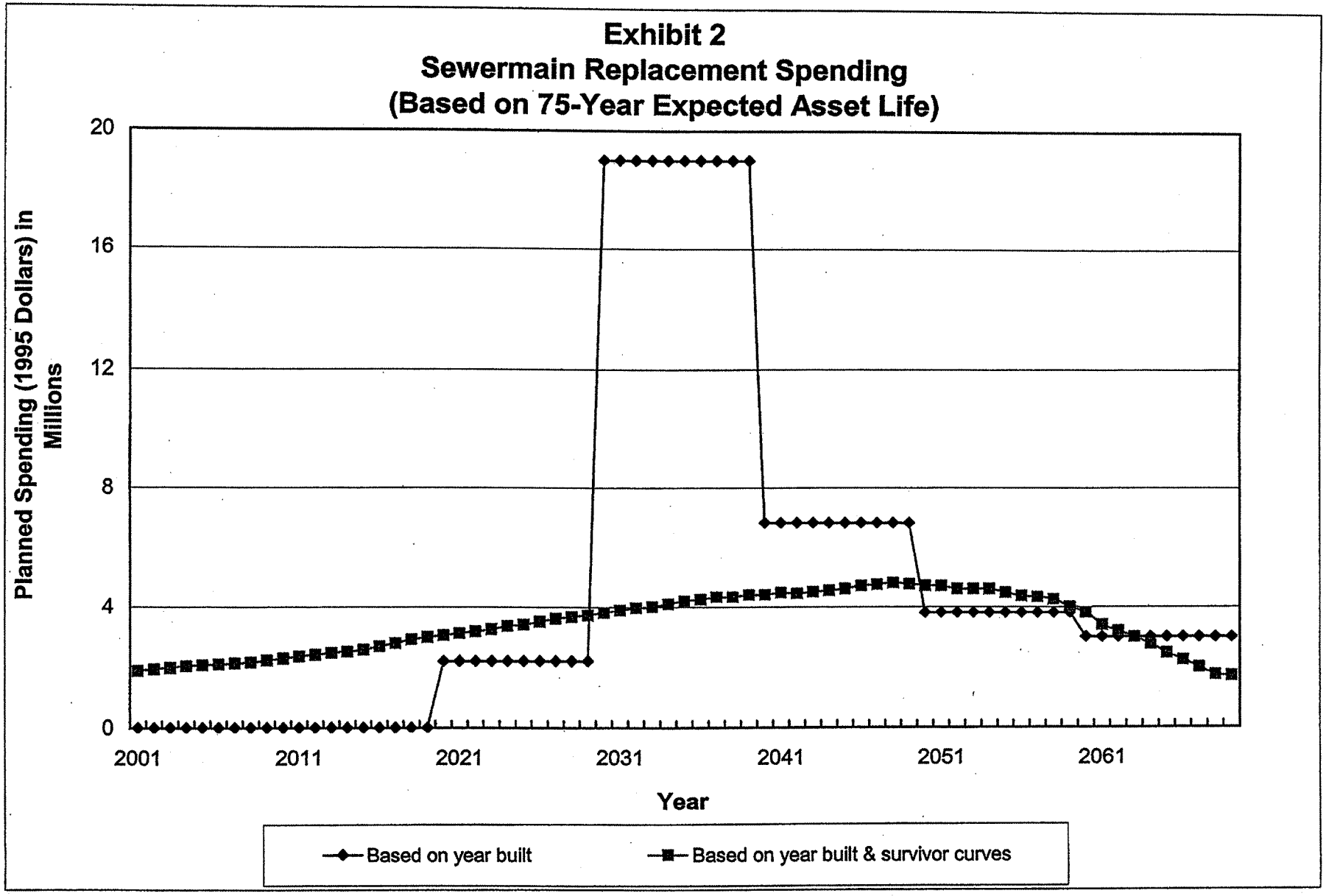
Exhibit 2
Sewermain Replacement Spending
(Based on 75-Year Expected Asset Life)
Planned Spending (1995 Dollars) in Millions
20
16
12
8
4
0
2001
2011
2021
2031
2041
2051
2061
Year
Based on year built
Based on year built & survivor curves

II. CAPITAL INVESTMENT PROGRAM POLICIES

A. *General Scope*

The Utilities Capital Investment Program (CIP) will provide sufficient funds from a variety of sources for implementation of both short- and long-term capital projects identified in each Comprehensive Plan and the City-wide Capital Investment Program as approved by the City Council.

Financial planning for long-term capital investment shall be based on principles that result in smooth rate transitions, maintain high credit ratings, provide for financial flexibility and achieve inter-generational equity.

Discussion:

These near-term capital projects are usually identified in each Comprehensive Plan which also provides the criteria and prioritization for determining which projects will be constructed. Several projects of general scope are also included to allow for on-going projects that are less specifically identified due to their more inclusive nature.

In addition to these near-term projects, funding should be provided for long-term capital reinvestment in the system to help minimize large rate impacts as the systems near the end of their useful life and have to be renewed or replaced. Ordinance No. 4783 established a Capital Facilities Renewal & Replacement (R&R) Account for each Utility to provide a funding source for this purpose. Other policies describe how this Account is to be funded and expended.

A reinvestment policy by itself, without some form of planned and needed expenditure, could lead to excessive or unneeded expenditures, or conversely unnecessary accumulations of cash reserves. The reinvestment policy needs to tie the planned expenditures over time with a solid, long-term financial plan that is consistent with these policies.

The actual needs for the renewal/replacement expenditures should relate to the on-going need to minimize system maintenance and operating costs consistent with providing safe and reliable service, the age and condition of the system components, and any regulatory or technical obsolescence. In essence, plant should be replaced when it is needed and before it fails. As such, the goal setting measure of how much is an appropriate annual or periodic reinvestment in renewals and replacement of existing assets should be compatible with the age and condition of the infrastructure and its particular circumstances.

WP0459C-ORD
06/27/95

ORIGINAL

CITY OF BELLEVUE, WASHINGTON

ORDINANCE NO. 4783

AN ORDINANCE creating utility capital replacement accounts for the Water, Sewer and Storm and Surface Water Utilities within the Utility Capital Investment Fund for the purpose of accumulating funding for long term replacement of utility facilities.

WHEREAS, the Utilities 1995 Cost Containment Study prepared by Financial Consulting Solutions Group, Inc. (FCSG) recommends that current utility rates recover from the ratepayers amounts which at a minimum are equal to the depreciated value of the original cost of utility facilities and at a maximum are amounts equal to the replacement value of utility infrastructure; and

WHEREAS, FCSG recommends that utility funds not needed for current expenditure be placed in a replacement account to be used in the future in combination with current revenues and/or debt financing to replace capital facilities nearing the end of their useful life; and

WHEREAS, implementation of FCSG's recommendations would promote intergenerational rate equity and provide more stable rates to customers over the long term; and

WHEREAS, the Council desires to make an initial, 1995 deposit of $600,000 in savings from the Water Fund into the new capital replacement account for the Water Utility; now, therefore,

THE CITY COUNCIL OF THE CITY OF BELLEVUE, WASHINGTON, DOES ORDAIN AS FOLLOWS:

Section 1. The purpose of this ordinance is to establish capital facilities replacement accounts within the Utility Capital Investment Fund in order to assure a future funding source for replacement of utility facilities nearing the end of their useful life. The City Council will determine each year, as part of the adoption of the utilities operating budgets, how much, if any, utility revenue during the upcoming year shall be designated for transfer to a replacement account. The City Council may also authorize the receipt of other funds directly into these capital facility replacement accounts. Once deposited the funds will accumulate with interest. The decision regarding when and how to utilize such accumulated funds for the replacement of utility facilities will be made as part of the Utility Comprehensive Plans and Utility Capital Investment Program approval process.

ORIGINAL

WP0459C-ORD
06/27/95

Section 2. The following new accounts are established in the Utility Capital Investment Fund:

Capital Facilities Replacement Account - Sewer
Capital Facilities Replacement Account - Water
Capital Facilities Replacement Account - Storm and Surface Water

Section 3. There is hereby authorized the 1995 transfer from the Water Utility Operating Fund to the Capital Facilities Replacement Account - Water the amount of $600,000.

Section 4. This ordinance shall take effect and be in force five days after its passage and legal publication.

PASSED by the City Council this 24th day of July, 1995, and signed in authentication of its passage this 24th day of July, 1995.

(SEAL)

Donald S. Davidson, DDS, Mayor

Approved as to form:

Richard L. Andrews, City Attorney

Richard L. Kirkby, Assistant City Attorney

Attest:

Myrna L. Basich, City Clerk

Published July 28, 1995

B. ***Funding Levels***

Funding for capital investments shall be sustained at a level sufficient to meet the projected 20 year (or longer) capital program costs.

Funding from rate revenues shall fund current construction and engineering costs, contributions to the Capital Facilities Renewal and Replacement (R&R) Account, and debt service, if any.

Inter-generational equity will be assured by making contributions to and withdrawals from the R&R Account in a manner which produces smooth rate transitions over a 20 year (or longer) planning period.

On an annual basis, funding should not fall below the current depreciation of assets expressed in terms of historical costs less any debt principal payments.

Discussion:

These policies are based on the experience gained by developing a long-term Capital Replacement Funding Plan. In absence of such a plan, the range of capital investment funding should fall between the following minimum and maximum levels:

The minimum annual rate funding level would be based on the current depreciation of assets expressed in terms of historical costs, less any debt principal payments.

The maximum annual rate funding level would be based on the current depreciation of assets expressed in terms of today's replacement costs, less any debt principal payments.

The minimum level based on historical cost depreciation approximates the depletion of asset value. Some of the cost may already be in the rates in the form of debt service. Depreciation less debt principal repayment provides a minimum estimate of the cost of assets used. Any funding level below this amount defers costs to future rate payers and erodes the Utility's equity position, which puts the Utility's financial strength and viability at risk.

The maximum level based on replacement cost depreciation represents full compensation to the utility, in terms of today's value, for the depletion of assets. The replacement cost depreciation, again less debt principal repayment, provides a ceiling to an equitable definition of "cost of service".

The purpose of long-term capital reinvestment planning is to establish a target funding level which is based on need and to assure that funds will be available for projected capital costs in an equitable manner. The best projection of the needed capital reinvestment is based on a "survival curve" approach, approximating the timing and cost of replacing the entire system. This defines the projected financial needs and allows determination of equitable rate levels, funding levels for current capital construction and engineering, contributions to and withdrawals from the R&R Account, and the use of debt, if any. It also provides a means to project depreciation on both historical cost and replacement cost basis which are used to calculate minimum and

maximum funding levels, debt to fixed asset ratios, and debt coverage levels, if debt is used. These later measures can be used to assure that the financial plan meets conventional standards.

C. *Use of Debt*

The Utilities should fund capital investment from rates and other revenue sources and should not plan to use debt except to provide rate stability in the event of significantly changed circumstances, such as disasters or external mandates.

Resolution No. 5759 states that the City Council will establish utility rates/charges and appropriations in a manner intended to achieve a debt service coverage ratio (adjusted by including City taxes as an expense item) of approximately 2.00". Please note that the Moody's Investor Services rating should be Aa2 (not Aa as stated in Resolution No. 5759).

Discussion:

The Utilities are in a strong financial position and have been funding the Utility Capital Investment Program from current revenues for a number of years. The current 20 year and 75 year capital funding plans conclude that the entire long-term renewal and replacement program can be funded without the use of debt if rates are planned and implemented uniformly over a sufficient period. Customers will pay less over the long-term if debt is avoided, unless it becomes truly necessary due to unforeseen circumstances such as a disaster or due to changes in external mandates. Having long-term rate stability also assures inter-generational equity without the use of debt because the rate pattern is similar to that achieved by debt service.

Use of low interest rate debt such as the Public Works Trust Fund loans, by offering repayment terms below market rates, investment earnings or even inflation, should be viewed as a form of grant funding. When available or approved, such sources should be preferred over other forms of rate or debt funding, including use of available resources. Since such reserves would generate more interest earnings than the cost of the loan, the City's customers would be assured to benefit from incurring such debt.

WP0254C-RES
03/03/94

CITY OF BELLEVUE, WASHINGTON

RESOLUTION NO. 5759

A RESOLUTION relating to financial policy for the Waterworks Utility and adopting a debt service coverage policy for the Waterworks Utility

WHEREAS, the City of Bellevue is consistently recognized for its prudent financial management; and

WHEREAS, the City of Bellevue's Water and Sewer Bonds are currently rated Aa by Moody's Investor Services and AA- by Standard & Poor's Corporation, which are considered to be excellent ratings; and

WHEREAS, these excellent ratings result in lower interest costs on the City's Water and Sewer bonds, which, in turn, may result in lower water, sewer and storm drainage costs; and

WHEREAS, it is important to the rating agencies and to the financial community that the City articulate its financial goals for its Waterworks Utility; and

WHEREAS, a desirable debt service coverage ratio, the ratio of revenues available for debt service to the annual debt service requirement, positively affects the Utility's bond ratings; and

WHEREAS, the City Council deems it in the City's best interest to establish a debt service coverage policy target for the purpose of protecting its current bond rating and to allow for the development of financial projections, NOW, THEREFORE,

THE CITY COUNCIL OF THE CITY OF BELLEVUE, WASHINGTON, DOES RESOLVE AS FOLLOWS:

Section 1. The City Council hereby adopts the following debt service coverage policy for the bonds issued by the City's Waterworks Utility.

The City Council will establish utility rates/charges and appropriations in a manner intended to achieve a debt service coverage ratio (adjusted by including City taxes as an expense item) of approximately 2.00. The City Council authorizes the Waterworks Utility to utilize this policy in development of pro

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forma projections which will be disseminated to the bond rating agencies and to the financial community generally.

PASSED by the City Council this 7th day of March, 1994, and signed in authentication of its passage this 8th day of March, 1994.

(SEAL)

Donald S. Davidson, DDS, Mayor

Attest:

Myrna L. Basich, City Clerk

D. *Capital Facilities Renewal & Replacement (R&R) Account*

1. Sources of Funds

Revenues to the R&R Account may include planned and one-time transfers from the operating funds, transfers from the CIP Funds above current capital needs, unplanned revenues from other sources, Capital Recovery Charges, Direct Facility Connection Charges and interest earned on the R&R Account.

2. Use of Funds

Funds from the R&R Account shall be used for system renewal and replacement as identified in the CIP. Because these funds are invested, they may be loaned for other purposes provided repayment is made consistent with the need for these funds and at appropriate interest rates. Under favorable conditions, these funds may be loaned to call or decrease outstanding debt.

3. Accumulation of Funds

The R&R Account will accumulate high levels of funds in advance of major expenses. These funds will provide rate stability over the long-term when used for this purpose and *should not be used for rate relief.*

Discussion:

Revenues from Capital Recovery Charges, Direct Facility Connection Charges and interest earned on the R&R Account are deposited directly into the R&R Account. Other transfers are dependent on the long-term financial forecast, current revenues and expenses, and CIP cash flows. The long-term financial forecast projects a certain funding level for the transfers to the CIP and the R&R Accounts. Rates should be established consistent with this long-term financial plan and will generate the funds for such transfers. Setting rates at lower levels may result in current rate payers contributing less than their fair share for long-term equity.

R&R Account funds must only be used for the purpose intended, that is the long-term renewal and replacement of the utility systems. They may be used for other purposes if it is treated as a loan, which is repaid with appropriate interest in time for actual R&R needs for those funds.

These accounts are each projected to accumulate tens of millions of dollars in order to meet the anticipated costs for the actual projects at the time of construction. It is the intent of these policies that these reserve funds will not be used for other purposes or to provide rate relief because that would defeat the long-term equity and could lead to the need for the use of debt to fund the actual needs when they occur.

III. SYSTEM EXPANSION AND CONNECTION POLICIES

A. *Responsibilities*

Those seeking or who are required to have Utility service are responsible for extending and/or upgrading the existing Utility systems prior to connecting.

Discussion:

It is the responsibility of the party seeking Utility service to make and pay for any extensions and/or upgrades to the Utility systems that are needed to provide service to their property. The extensions or upgrades must be constructed to City standards and requirements. This is typically accomplished through a Developer Extension Agreement with the City wherein requirements are documented, standards are established, plans are reviewed and construction is inspected and approved. Service will not be provided until these requirements are met.

The philosophical underpinning of this policy is that "growth pays for growth". Historically, developers constructed much of the City's utility infrastructure. If the infrastructure eventually would benefit more than the initial developer, the Utility signed a Latecomer Agreement to reimburse the original financier from charges to those connecting and receiving benefit at a later point in time. When the cost to extend and/or upgrade the system to accommodate development or redevelopment is beyond the means of a single developer, the Utility has employed a variety of methods to assist in the construction of the necessary infrastructure. Local Improvement Districts (LID's) historically have been used to provide financing for infrastructure for new development, with the debt paid over time by the property owners. Most of the older Utilities infrastructure was financed by this method.

The Utility has in some cases up-fronted the infrastructure construction for new development or redevelopment from rate revenues which are later reimbursed with interest, in whole or in part, by subsequent development through direct facility connection charges (see Cost Recovery Policy). Examples are the water and sewer infrastructure for Cougar Mountain housing development and Central Business District (CBD) redevelopment. Another example is the use of the Utility's debt capacity to provide for development infrastructure whereby the City sells bonds at lower interest rates than can private development, constructs the infrastructure, and collects a rate surcharge from the benefited area to pay off the bonds. Examples of this type of financing include the Lakemont development drainage infrastructure and the Meydenbauer Drainage Pipeline in the CBD.

B. *Cost Recovery*

The Utility shall establish fees and charges to recover Utility costs related to: (1) development services, and (2) capital facilities that provide services to the property.

The Utility may enter into Latecomer Agreements with developers for recovery of their costs for capital improvements, which benefit other properties in accordance with State law. The Utility will add an administrative charge for this service.

Discussion:

In general, Utility costs related to development services are recovered through a variety of fees and charges. There are fixed rates for some routine services based on historical costs and inflation. There are fixed plus direct cost charges and applicable

overhead for developer extension projects to cover the lengthy but variable level of development review and inspection typically required to implement these projects. These rates are reviewed periodically to ensure that the cost recovery is appropriate.

When the means of providing the infrastructure to serve a new development or redevelopment are beyond the means of a single developer, the Utility may elect to assist the developer by using: LID's, Latecomer Agreements, special debt (to be paid by special rate surcharges), up-fronting the costs from Utility rate revenues (to be reimbursed by future developers with interest through direct facility connection charges), or other lawful means. It is the intent of this policy to fully recover these costs, including interest, so as to reimburse the general rate payer.

Latecomer charges allow cost recovery for developers and private parties, for facilities constructed at their own expense and transferred to the Utility for general operation. Properties subsequently connecting to those systems will pay a connection charge that will be forwarded to the original individual or developer or the current owner depending on the terms of the Latecomer Agreement. The Utility collects an overhead fee on this charge for processing the agreements and repayments.

C. ***Use of Revenues***

All capital-related revenues such as Capital Recovery Charges and Direct Facility Connection Charges should be deposited in the Capital Facilities Renewal & Replacement Accounts.

Discussion:

Capital Recovery Charges are collected from all newly developed properties in the form of monthly rate surcharges over a ten year period to reimburse the Utility for historical costs that have been incurred by the general rate base to provide the necessary facilities throughout the service area. These Capital Recovery Charges should be deposited in the Capital Facilities Renewal & Replacement Accounts.

Direct Facility Connection Charges are collected for capital improvements funded by the City as described above in Section 2 under Cost Recovery. The total cost of the improvement is allocated to the area of benefit and distributed on an equitable basis such as per residential equivalent unit. Interest is collected in accordance with State law.

D. ***Affordable Housing Consideration***

The Utility shall base connection charges on the number of units allowed under the basic zoning. Only incremental cost increases will be charged to affordable housing units.

Discussion:

The City has adopted bonus density incentives for developers to build units specifically for affordable housing. Under historical practices these additional units would have been charged the same connection fee as all other units, resulting in a lower cost per unit for all units. While this is fair, it does not create any incentive to develop affordable housing. By charging only the incremental increased facility cost to the affordable

housing units, all developers who include an affordable housing component will experience no increase in cost because of the affordable bonus density units. The cost per unit for affordable units is thereby reduced. The cost per unit for all other units, based on underlying land use zoning, remains unchanged.

IV. RATE POLICIES

A. *Rate Levels*

Rates shall be set at a level sufficient to cover current and future expenses and maintain reserves consistent with these policies and long-term financial forecasts.

Changes in rate levels should be gradual and uniform to the extent that costs (including CIP and R&R transfers) can be forecast.

Cost increases or decreases for wholesale services shall be passed directly through to Bellevue customers.

Local and/or national inflation indices such as the Consumer Price Index (CPI) shall be used as a basis for evaluating rate increases.

At the end of the budget cycle, fund balances that are greater than anticipated and other one-time revenues should be transferred to the R&R account until it is shown that projected R&R account funds will be adequate to meet long-term needs, and only then used for rate relief.

Discussion:

A variety of factors including rate stability, revenue stability, the encouragement of practices consistent with Utility objectives and these Waterworks Utility Financial Policies are considered in developing Utility rates. The general goal is to set rates as low as possible to accomplish the on-going operations, maintenance, repair, long-term renewal and replacement, capital improvements, debt obligations, reserves and the general business of the Utility.

Long-range financial forecast models have been developed for each of the Utilities, which include estimated operating, capital and renewal/replacement costs for a 75 year period in order to plan for funding long-term costs. Operating costs are assumed to remain at the same level of service and don't include impacts of potential changes due to internal, regional or federal requirements. Capital costs, including renewal/replacement, are projected based on existing CIP costs and approximated survival curves for the infrastructure. The models are used to project rate levels that will support the long-term costs and to spread rate increases uniformly over the period. This is consistent with the above policy that changes in rate levels should be gradual and uniform. Uniform rate increases help ensure that each generation of customers bears their fair share of costs for the long-term use and renewal/replacement of the systems.

The biennial budget process provides an opportunity to add to or cut current service levels and programs. The final budget, with the total authorized expenses including transfers to the CIP Fund and the R&R Account, establishes the amount of revenue

required to balance the expenses. A balanced budget is required. The budgeted customer service revenue determines the level of new rates. For example, if the current rates do not provide sufficient revenues to meet the projected expenses, the costs have to be reduced or the rates are increased to make up the shortfall.

For purposes of these policies, wholesale costs are defined as costs to the Utilities from other regional agencies such as the Seattle Public Utilities and/or the Cascade Water Alliance (CWA), and King County Department of Natural Resources for sewer treatment and any agreed upon Storm & Surface Water programs. Costs which are directly based on the Utilities' revenues or budgets such as taxes, franchise fees and reserve levels that increase proportionally to the wholesale increases are included within the definition of wholesale costs.

B. ***Debt Coverage Requirements***

Utility rates shall be maintained at a level necessary to meet minimum debt coverage levels established in the bond covenants and to comply with Resolution No. 5759 which establishes a target coverage ratio of 2.00.

Discussion:

Existing revenue bond covenants legally require the City's combined Waterworks Utility, which includes the Water, Sewer and Storm & Surface Water Utilities, to maintain a minimum debt coverage ratio of 1.25 on a combined basis. In 1994, Council also adopted Resolution No. 5759 that established a policy, which mandates the Utilities to maintain a target combined debt coverage ratio of approximately 2.00, to further protect the City's historically favorable Utility revenue bond ratings. Water and Sewer Utility resources are counted in the official coverage calculation though Storm & Surface Water is responsible for the major portion of current outstanding Utility debt. Requiring Storm & Surface Water to separately maintain the minimum 1.25 legal debt coverage level and to move toward the 2.00 level will help ensure that necessary coverage requirements are met, and that customers of the other Utilities will not be unfairly burdened with the cost of meeting this obligation. It also ensures that sufficient coverage is available to the Water and Sewer Utilities if they need to incur debt.

C. ***Frequency of Rate Increases***

Utility rates shall be evaluated annually and adjusted as necessary to meet budgeted expenses including wholesale cost increases and to achieve financial policy objectives.

Discussion:

In 1996, the City changed to a biennial budget process and adopted a two-year Utilities budget including separate rates for 1997 and 1998. This practice will continue on a biennial basis. However, Utility rates will be evaluated on an annual basis and adjusted as necessary to ensure that they are effectively managed to achieve current and future financial policy objectives. Annual rate reviews will include preparation of forecasts covering a twenty-year period for Utility revenues, expenditures, reserve balances and analysis of the impact of various budgetary elements (i.e. CIP transfers, R&R Account transfers, debt service costs, debt coverage levels, operating expenses, and reserves) on both current and future rate requirements.

D. ***Rate Structure - Sewer***

The Sewer Utility rate structure will be based on a financial analysis considering cost-of-service and other policy objectives, and will provide for equity between customers based on use of the system and services provided.

Discussion:

In 1993, a Sewer Rate Study was performed that resulted in Council approval of a two-step, volume-based rate structure for single-family customers based on winter average metered water volumes instead of the traditional flat rate structure. Flat rate structures were seen as inequitable to low-volume customers who paid the same amount as high volume customers. Rates are based on the level of service used, rather than the availability of service.

The revenue requirements are based on the "average" single-family winter average volume calculated annually from the billing database. The charge for an individual customer is based on their winter average and then charged at that level each bill for the entire year to avoid charging for irrigation use. The customer's winter average is based upon the prior year's three winter bills because the current year's bills include winter months, which would result in the average constantly changing. Customers without prior winter averages to use for a basis are charged at the "average" volume until they establish a “winter-average” or sufficient evidence that their use is significantly different than the "average".

E. ***Rate Structure - Storm & Surface Water***

The Storm & Surface Water Utility rate structure will be based on a financial analysis considering cost-of-service and other policy objectives, and will provide adjustments for actions taken under approved City standards to reduce related service impacts.

Discussion:

In the existing Storm & Surface Water rate structure, customer classes are defined by categories of development intensity, i.e., *undeveloped, lightly developed, moderately developed, heavily developed* and *very heavily developed*. Based on theoretical run-off coefficients for each of these categories, higher rates are charged for increasing degrees of development to reflect higher run-off resulting from that development. Under this structure, billings for both residential and non-residential customers are determined by total property area and rates assigned to applicable categories of development intensity. Customers providing on-site detention to mitigate the quantity of run-off from their property receive a credit equal to a reduction of one rate level from their actual development intensity. Property classified as "wetlands" is exempt from Storm & Surface Water service charges.

Large properties, over 35,000 square feet, with significantly different levels of intensity of development may be subdivided for rate purposes in accordance with Ordinance No. 4947. In addition, properties with no more than 35,000 square feet of developed area in the light and moderate intensity categories may, at the option of the owner, defer charges for that portion of the property in excess of 66,000 square feet. The property owner may apply for a credit against the Storm & Surface Water charge when they can

demonstrate that the hydrologic response of the property is further mitigated through natural conditions, on-site facilities, or actions of the property owner that reduce the City's costs in providing Storm & Surface Water quantity or quality services.

Future design of a water quality rate component will also use cost-of-service principles to assign defined water quality costs to customer classes, according to their proportionate contribution to Utility service demand. It is anticipated that these rate structure revisions will also provide financial incentives to customers taking approved actions to mitigate related water quality impacts.

F. *Rate Structures - Water*

The water rate structure will be based on a financial analysis considering cost-of service and other policy objectives, and shall support water conservation and wise use of water resources.

Discussion:

The water rate structure consists of fixed monthly charges based on the size of the customer's water meter and volume charges, which vary according to customer class and the actual amount of water that the customer uses. There are three different meter rate classifications: domestic, irrigation and fire standby. The different charges are based on a cost-of-service study.

State law and the wholesale water supply contract require the Utility to encourage water conservation and wise use of water resources. Seattle first established a seasonal water volume rate structure for this purpose in 1989 with higher rates in the summer than in the winter. In 1990, based on a water rate study and the desire to provide a conservation-pricing signal to our customers, the City adopted an increasing block rate structure for local volume rates. The rate structure was revised in 1991 to pass through an increase in wholesale water costs, which also included a higher seasonal water rate for summer periods. The block water rate structure was revised again in 1997, to incorporate new cost-of-service results from a 1996 water rate study.

An increasing block rate structure, charges higher unit rates for successively higher water volumes used by the customer. The current rate structure has four rate steps for single-family and three rate steps for multi-family customers, based on metered water volumes. All irrigation-metered water is charged at a separate, higher rate. Because non-residential classes do not fit well in an increasing block rate approach due to wide variations in their size and typical water use requirements, seasonal rates, with and without irrigation, were established for these customers. This rate structure will be thoroughly reviewed, as more historical information is available on the effect of the increasing block and seasonal rate structure.

In 1997, an additional category of fire protection charges was added for structures and facilities that benefit from the City water system but are not otherwise being charged for water service. For example, a number of homes are on private wells but are near a City-provided fire hydrant and enjoy the additional benefit of fire protection yet didn't pay for the benefit on a water bill. The charge is based on an equivalent meter size that would normally serve the facility. It also applies to facilities that have terminated water service but still stand and require fire protection, such as homes or buildings that are not occupied.

G. *Rate Equity*

The rate structure shall fairly allocate costs between the different customer classes. Funding of the long-term Capital Investment Program also provides for rates that fairly spread costs over current and future customers.

Discussion:

As required under State law, Utility rates will provide equity in the rates charged to different customer classes. In general, rates by customer class are designed to reflect the contribution by a customer group to system-wide service demand, as determined by cost-of-service analysis. The RCW also authorizes utility rates to be designed to accomplish "any other matters, which present a reasonable difference as a ground for distinction". For example, increasing water rates for irrigation and higher levels of use is allowed to encourage the wise use and conservation of a valuable resource. Formal rate studies are periodically conducted to assure ongoing rate equity between customer classes and guide any future rate modifications necessary to support changing Utility program or policy objectives.

Contributions from current rates to the R&R Account also provide equity between generations of rate payers by assuring that each user pays their fair share of capital improvements, including renewal and replacement, over the long-term. (See sections B and D under the Capital Investment Program Policies).

H. *Rate Uniformity*

Rates shall be uniform for all utility customers of the same class and level of service throughout the service area. However, special rates or surcharges may be established for specific areas, which require extraordinary capital investments and/or maintenance costs. Revenues from such special rates or surcharges and expenses from capital investments and/or extraordinary maintenance shall be accounted for in a manner to assure that they are used for the intended purposes.

Discussion:

The City Water and Sewer Utilities originally formed by assuming ownership of three separate operating water districts and two sewer districts. In the assumption agreements, each included a provision that requires the Utility to uniformly charge all customers of the same class throughout the entire service area. The basic rates are set for all customers, inside and outside of the City, except for local utility taxes in Bellevue, and franchise fees in Clyde Hill, Hunts Point, Medina, and Yarrow Point. Unlike the Water and Sewer Utilities, the Storm & Surface Water Utility only serves areas within the City limits.

Under state law, Utilities are required to charge uniform rates to all customers in a given customer class, regardless of property location within the service area. The only exception permitted is for certain low-income customers (see below).

However, when conditions in particular service areas require extraordinary capital improvement or maintenance costs to be incurred, special rates or surcharges may be

adopted to recover those costs directly from properties contributing to the specific service demand, instead of assigning that cost burden to the general Utility rate base. This will only apply for costs above and beyond normal operations, maintenance and capital improvements. For example, rate surcharges are being used to recover debt service costs for capital facilities in Lakemont and the CBD. An additional rate surcharge for Lakemont properties is being collected for extraordinary maintenance costs of the storm water treatment facility.

I. *Rate Assistance*

Rate assistance programs shall be provided for specific low-income customers as permitted by State law.

Discussion:

Continual increases in all utility rates have had a significant impact on low-income customers. The City has adopted a rate discount or rebate program for disabled customers and senior citizens over 62 years old and with income below certain levels as permitted under State law and defined in Ordinance No. 4458. It has two levels, one discounting Utility rates by 40 percent and the other level by 75 percent, based on the customer's income level. Customers that indirectly pay for Utility charges through their rent can obtain a rebate for the prior year's Utility charges on the same criteria. The City also rebates 100 percent of the Utility Tax for these customers. The cost of this program is absorbed in the overall Utility expenses and is recovered through the rate base. The General Fund provides for the Utility tax relief.

There are other low-income customers who are less than 62 years old and currently receive no Utility rate relief. However, the City has instituted a separate rebate of Utility taxes for qualified low-income citizens.

V. <u>OPERATING RESERVE POLICIES</u>

A. *Operating Reserve Levels*

The Utilities' biennial budget and rate recommendations shall provide funding for working capital, operating contingency, and plant emergency reserve components on a consolidated basis in accordance with the attached Summary of Recommended Consolidated Reserve Levels table and as subsequently updated.

Discussion:

Utility resources not spent for operations remain in the fund and are referred to as reserves. At the end of each year, these funds are carried forward to the next year's budget and become a revenue source for funding future programs and operations. Under the terms of this policy, the Utility budget is targeted to include a balance of funds for the specific purposes stated above. While included in the total operating budget, these reserves will only be available for use pursuant to these reserve policies. Setting aside these budget resources in the reserve balance will help to ensure continued financial rate stability in future Utility operations and protect Utility customers from service disruptions that might otherwise result from unforeseen economic or emergency events.

City of Bellevue
Summary of Recommended Consolidated Reserve Levels

	Water		Wastewater		Storm Drainage	
Type of Reserve	Basis	Level	Basis	Level	Basis	Level
Working Capital – Reserves against revenue and expense fluctuations within the 2 month billing cycle and during the budget year.	70 days of budgeted O&M costs (excludes debt service, capital funding).	$4,451,000	30 days of Metro costs and 20 days of City O&M costs (excludes debt service, capital funding).	$1,983,000	29 days of budgeted O&M costs (excludes debt service, capital funding).	$582,000
Operating Contingency – Reserves against annual budget shortfalls due to poor financial performance.	7.5% of water purchase costs and 11% of other water O&M costs.	$2,192,000	2% of Metro costs and 5% of other wastewater O&M costs.	$800,000	2.5% of O&M costs.	$183,000
Plant Emergency Contingency – Reserves against failure of a major facility or piece of equipment.	Cost for repair of water main break.	$100,000	Cost of repair for wastewater main break.	$100,000	$500,000 based on potential net cost of flood damage.	$500,000
Less: Allowance for duplicating or offsetting reserves	None.	$0	Working Capital and Operating Contingency include offsetting reserves equal to 2% of all O&M.	$(357,000)	None.	$0
Less: Allowance for consolidating reserves	2.5% of City O&M for interfund charges between utilities.	$(323,000)	1% City O&M for interfund charges between utilities.	$(86,000)	1% of City O&M for interfund charges between utilities.	$(73,000)
	Share of reduced plant emergency reserve.	$(15,000)	Share of reduced plant emergency reserve.	$(15,000)	Share of reduced plant emergency reserve.	$(70,000)
	Lesser of min. working capital or plant emergency reserves.	$(85,000)	Lesser of min. working capital or plant emergency reserves.	$(85,000)	Lesser of min. working capital or plant emergency reserves.	$(220,000)
Total		$6.320,000		$2,340,000		$902,000

Note: Reserve levels based on adjusted 2004 utility budgets.

The working capital reserve is maintained to accommodate normal cyclical fluctuations within the two month billing cycle and during the budget year. These are higher for Water than for Sewer and Storm & Surface Water due to more variable revenues and expenditures. They are described in terms of a number of days of working capital as a percentage of a full-year's budget.

The operating contingency reserve protects against adverse financial performance or budget performance due to variations in revenues or expenses. Again, the Water Utility is most susceptible to year-to-year variations in water demand. They are described in terms of percentages of budgeted wholesale costs and operations and maintenance (O&M) costs.

The plant emergency contingency reserve provides protection against a system failure at some reasonable level. The Storm & Surface Water Utility requires the largest reserve due to the risk of major flood damage to Utility facilities. Water and Sewer Utilities protect against the cost of a major main break or failure. These do not protect against the loss of facilities that are covered by the City's Self-Insurance to which the Utilities pay annual premiums nor are they sufficient to respond to a major disaster, such as a major earthquake.

The reserves of the three utilities have historically been treated separately. This protects against cross-subsidy, thereby retaining rate equity for each utility, each of which has different customers. However, it results in higher reserve targets, with more funds retained than otherwise may be needed. Sharing risks among utilities can reduce reserves. This does not require that reserves actually be consolidated into a single fund, but simply that individual reserve targets reflect the strength provided by the availability of cross-utility support. Under the "consolidated" scenario, cash shortfalls in one reserve could be funded through inter-utility loans, to be repaid from future rates. The likelihood that a serious shortfall would occur in more than one fund at the same time is slight and the benefits of lower overall reserve levels will benefit rate payers. Also, the rate policies and the debt coverage policy will ensure that there will be a strong financial response to any significant shortfall. The risk is considered a prudent financial policy.

For this purpose, O&M costs are the entire annual operating budget of the Utility less the annual debt service, Capital Investment Program transfers and R&R Account transfers. Independent reserve levels are the levels that would be required by an individual Utility Fund (Water, Sewer and Storm & Surface Water) at any point in time to cover financial obligations if any one of the three reserve components where called for; i.e., working capital, operating contingency or plant emergency. At any single time, the full independent reserve levels should be available for the individual stated purpose, again because it is unlikely that all three components would be called for at once. For example, the Water Utility needs $100,000 available for an emergency repair but it is not likely that the Sewer Utility will need $100,000 and the Storm & Surface Water Utility will need $500,000 all at the same point in time.

The consolidated basis is for budget and rate setting purposes only, to reduce the total revenue requirement by considering the reserve risk shared between the three utilities. The dual reserve levels should be considered as circumstances evolve.

In 2004, the Financial Consulting Solution Group (FCSG) performed an analysis of recommended changes to the Water Utility's working capital and operating contingency reserves to reflect the new wholesale water contract with CWA and to update reserve levels for current conditions. Under the new contract, billing practices for wholesale costs have changed as follows:

1. CWA payment occurs before the associated revenues are collected, resulting in a greater lag between wholesale expense and when revenues are collected.

2. CWA payments are distributed over the whole year based on predetermined percentages and not based on actual consumption during the year. Due to seasonal revenue variation, there is an accumulative deficit in revenues prior to the peak revenue period.

In addition, the total costs to Bellevue are now largely fixed for the year due to the "take or pay" nature of the contract between CWA and Seattle Public Utilities. This shifts the risk during a poor water sales year to the City since there will not be a corresponding reduction in water purchase costs when water sales are down.

Changes in both billing practices as well as the fixed nature of the wholesale costs will result in an increase in required reserves for working capital and operating contingency for the Water Fund.

B. ***Management of Operating Reserves***

Related to the recommended target reserve levels, a working range of reserves is established with minimum and target levels. Management of reserves will be based on the level of reserves with respect to these thresholds, as follows:

Above target - Reserve levels will be reduced back to the target level by transferring excess funds to the R&R Accounts in a manner consistent with the long-range financial plan.

Between Minimum and Target - Rate increases would be imposed sufficient to ensure that: 1) reserves would not fall below the minimum in an adverse year; and 2) reserves would recover 50% of the shortfall from target levels in a normal year. Depending on the specific circumstances, either of these may be the constraint, which defines the rate increase needed.

Below Minimum - Rate increases would be imposed sufficient to ensure that even with adverse financial performance, reserves would return at least to the minimum at the end of the following year. To meet this "worst case" standard, a year of normal performance would be likely to recover reserve levels rapidly toward target levels.

Negative Balance - Reserves would be borrowed from another utility to meet working capital needs. Similar to the "below minimum" scenario, rate increases would be imposed sufficient to ensure that even with adverse financial performance, reserves would return from the negative balance to at least the minimum target at the end of the following year, which would allow for loan repayment within that time frame.

Discussion:

"Adverse financial performance" or "worst case" are defined by the 95% confidence interval based on historical patterns. The worst case year is currently defined as a year with sales volumes 15% below the sales volume for a normal year. This was determined by using statistical measurements of sales volumes for 18 years with a 95% confidence interval. That is, in any given year there is only a 5% chance that the worst case year would be more than 15% below the normal year. Another way to say the same thing is that in 19 out of 20 years the worst case year would not be more than 15% below the normal year.

Maintaining the 95% confidence interval, as more and more data becomes available, a worst case year could change upward or downward from the 15% variation from a normal year.

The recommended reserve policies are premised on the vital expectation that reserves are to be used and reserve-levels will fluctuate. Although budget and rate planning are expected to use the target reserve number, reserve levels planned to remain static are by definition unnecessary. It is therefore important to plan for managing the reserves within a working range between the minimum and target levels as stated in the above policies. There may be situations in short-range financial planning where reserves are maintained above target levels to overcome peaks in actual expenses.

In the event of an inter-utility loan, the balance for the borrowing utility would essentially be any cash balance less the amount owed. The lending utility would count the note as a part of its reserves, so that it does not unnecessarily increase rates to replenish reserves that are loaned.

In this management approach, there is still a risk that a major plant emergency could exceed the amount reserved. Such a major shortfall would require rate action to assure a certain level of replenishment in one year. To avoid rate spikes due to this type of action, they should be considered on a case-by-case basis. This will provide the flexibility to use debt or capital reserves in lieu of operating reserves to cover the cost and allow a moderated approach to replenishing reserves out of rates.

C. *Asset Replacement Reserves*

Utility funds will maintain separate Asset Replacement Accounts to provide a source of funding for future replacement of operating equipment and systems.

Anticipated replacement costs by year for the upcoming 20-year period, for all Utility asset and equipment items, will be developed as a part of each biennial budget preparation process. Budgeted contribution to the Asset Replacement Account will be based on the annual amount needed to maintain a positive cash flow balance in the Asset Replacement Account over the 20-year forecast period. At a minimum, the ending Asset Replacement Account balance in each Utility will equal, on average, the next year's projected replacement costs for that fund.

The Utilities Department will observe adopted Equipment Rental Fund (ERF) and Information Services budget policies and procedures in formulating recommendations regarding specific equipment items to be replaced.

Discussion:

Providing reserves for equipment and information technology systems replacement allows monies to be set aside over the service life of these items to pay for their eventual replacement and alleviate one-time rate impacts that these purchases might otherwise require. Annual revenues set aside for this purpose will be based on aggregate Utility asset replacement cash flow needs over the long-term forecast period, instead of individual asset replacement amounts. This strategy will allow Utilities to minimize the progressive build-up of excess Asset Replacement Account balances that would result from creating and funding separate reserve accounts for individual Utility asset and equipment items.

CHAPTER 3
System Planning Considerations

This chapter reviews past population and land use trends within the City's service area and describes how these trends were used to establish the planning criteria for the system. Population projections are presented, and a discussion of future land use is provided. A review of nearby water purveyors is also presented in order to identify the relationship of the City's system with other systems in the region.

WATER SYSTEM HISTORY

Since World War II, the Bellevue water system has grown along with the residential areas on the east side of Lake Washington. Originally the area was primarily served by Water Districts No. 68, 97, and 99. The Bellevue service area lies between the cities of Kirkland and Redmond on the north, and the city of Newcastle and the Coal Creek Regional Park on the south, and between Lake Washington on the west and Lake Sammamish and the city of Issaquah on the east. The earliest development was on the west side of the service area in what is now the central part of Bellevue. Wells originally supplied water to the area and, at one time, treated water from Lake Washington and Lake Sammamish was used. The transition to purchased water from the Seattle Water Department occurred in the mid-1960s. In the early 1970s, as the City of Bellevue grew to include most of the area served by the three water districts, the City moved to incorporate the three water districts into its utilities department to provide uniform water service throughout the Bellevue service area. In January of 1994, the Rose Hill Water District was assumed by the Cities of Kirkland, Redmond and Bellevue. Bellevue assumed a very small portion of the district south of NE 60th Street between 132nd and 148th Avenues. In November of 1998, Bellevue assumed Water District No. 17 which provided water service to the northern portion of the Town of Hunts Point. On December 31, 2003, Bellevue assumed that portion of the Coal Creek Utilities District lying within the Bellevue city limits. The assumption area consists of that portion of the City of Bellevue lying south of I-90 and west of 132nd Avenue SE and its extension. In January 2004, Bellevue began receiving its water supply from the Cascade Water Alliance (Cascade). Cascade was established to provide for the long term water supply needs of it members and replaced Seattle Public Utilities as Bellevue's regional water supplier.

POPULATION PROJECTIONS

The Bellevue Planning and Community Development Department provided population projections within the Bellevue water service area. The population figures were provided using

individual Transportation Analysis Zones (TAZ) developed in the early 1980s in conjunction with traffic modeling for the City. Each TAZ is a geographic area containing essentially homogenous land use, with roadways as boundaries in most cases. Figure 3-1 illustrates the TAZs within the water service area.

To calculate population within each TAZ, the Planning and Community Development Department applied estimated dwelling unit and employment densities to known quantities of single- and multi-family units. Building square footage was used as the basis for calculating future development trends in commercial areas. The densities used were based on the most recent census data which is updated every five years. Current population densities are 2.8 persons per household in single-family units, and 1.8 persons per household in multi-family units. Vacancy rates are 5 percent for single-family, and 7 percent for multi-family units. Population and employee density is summarized in Table 3-1.

Table 3-1
Population and Employee Density

Land Use Category	Employee per Ksqft[a]		Persons per Household	Percent Vacancy	
	CBD[b]	Non-CBD		CBD	Non-CBD
Existing (2003):					
Office	3.1	3.1	—	10	10
Retail	2.5	2.5	—	7	10
Industrial	1.0	1.7	—	5	7
Residential					
Single-Family	—	—	2.8	—	5
Multi-Family	—	—	1.8	10	7
Year 2020:					
Office	3.1	3.1	—	10	10
Retail	2.5	2.5	—	7	10
Industrial	1.0	1.7	—	5	7
Residential					
Single-Family	—	—	2.7	—	5
Multi-Family	—	—	1.7	10	7

[a]Ksqft = one thousand square feet.
[b]CBD = Central Business District

The Bellevue Planning and Community Development Department estimates that saturation densities will be realized within the City by the year 2020 for all areas except the Central Business District (CBD). Saturation densities for the CBD are assumed to occur by the year 2040. Population projections were provided for the years 2020 and the build out condition, assumed to be 2040. These projections were used to estimate the projected populations for the years 2011 (6 year planning horizon) and 2025 (20 year planning horizon). The land use and number of units in each TAZ are consistent with the guidelines established by the Growth Management Act (HB2929) and were the best available information when this portion of the comprehensive plan was prepared.

Projections forecast a total population increase from 2005 to 2025 of approximately 8,678 residents for the water system service area, which translates into an average annual percentage population increase of approximately 0.35 percent. Projected populations are shown by major water utility operating area in Table 3-2. Bellevue's three major operating areas are shown in Figure 6-1 in Chapter 6.

LAND USE

Land Use in Bellevue City Limits

Land use within Bellevue is governed by the City of Bellevue Comprehensive Plan. The plan addresses current land use within the city and future land use direction. This Water Comprehensive Plan was prepared using the land use information contained in the 2004 City of Bellevue Comprehensive Plan

The City is currently evaluating potential changes in land use within the "Bel-Red Corridor" which is generally defined as the area east of I-405 between SR-520 and Bel-Red Road, including properties along the south side of Bel-Red Road. The Bel-Red Corridor Project is examining 5 alternatives (including a no-action alternative) for future land use in the area. Each alternative was preliminarily evaluated to identify potential impacts to the water system and future water demands. No significant impacts were identified. As the project progresses, and alternatives are more specifically defined, the City will continue to re-evaluate them for potential impacts to the water system.

The City is bounded on the north by Kirkland and Redmond, on the west by Lake Washington, on the east by Lake Sammamish and Issaquah, and on the south by Newcastle and the Cougar Mountain Regional Park. There is limited potential for water system expansion into small areas just north of the Cougar Mountain Regional Park. The City has a sphere of influence agreement with the City of Issaquah. This agreement was approved jointly by both city councils in July 1979 and then reaffirmed in August 1987. It identifies a line to which these cities will eventually expand. For each city, the area between the sphere of influence line and the City's current boundary is known as the potential annexation area (PAA).

Figure 3-2 illustrates Bellevue's existing land use. Bellevue's sphere of influence is included in Figure 3-3, which depicts ultimate land use based on the City's Comprehensive Land Use Plan. All zoning within the city limits is consistent with the Comprehensive Land Use Plan, as required by the Growth Management Act. Figures 3-2 and 3-3 were prepared by the City of Bellevue Planning and Community Development Department. It should be noted that for unincorporated areas of King County, there may be minor discrepancies between the City's Comprehensive Land Use Plan, and King County's Comprehensive Plan. King County planning takes precedence in these areas, and should be referred to for specific zoning and planning information, until and unless the area in question is annexed to the City of Bellevue.

Table 3-2

Residential Population Projections

For the City of Bellevue Water System Service Area

Water Operating Area*	2004			2011			2020 **			2025			2040 (Assumed Buildout)**		
	S.F.	M.F.	Total	S.F.	M.F.	Total	S.F.	M.F.	Total	S.F.	M.F.	Total	S.F.	M.F.	Total
West Bellevue	29,232	16,095	45,327	29,882	19,815	49,698	30,743	24,775	55,518	30,811	29,735	60,546	31,031	46,034	77,064
East Bellevue	31,971	18,206	50,177	32,561	18,419	50,980	33,345	18,702	52,047	33,510	18,996	52,506	34,058	19,967	54,025
South Bellevue	17,624	1,032	18,657	17,624	1,288	18,912	19,682	1,628	21,310	20,038	1,661	21,700	21,213	1,767	22,979
Total Pop.	78,828	35,333	114,161	80,068	39,522	119,589	83,770	45,105	128,875	84,360	50,392	134,752	86,301	67,767	154,068

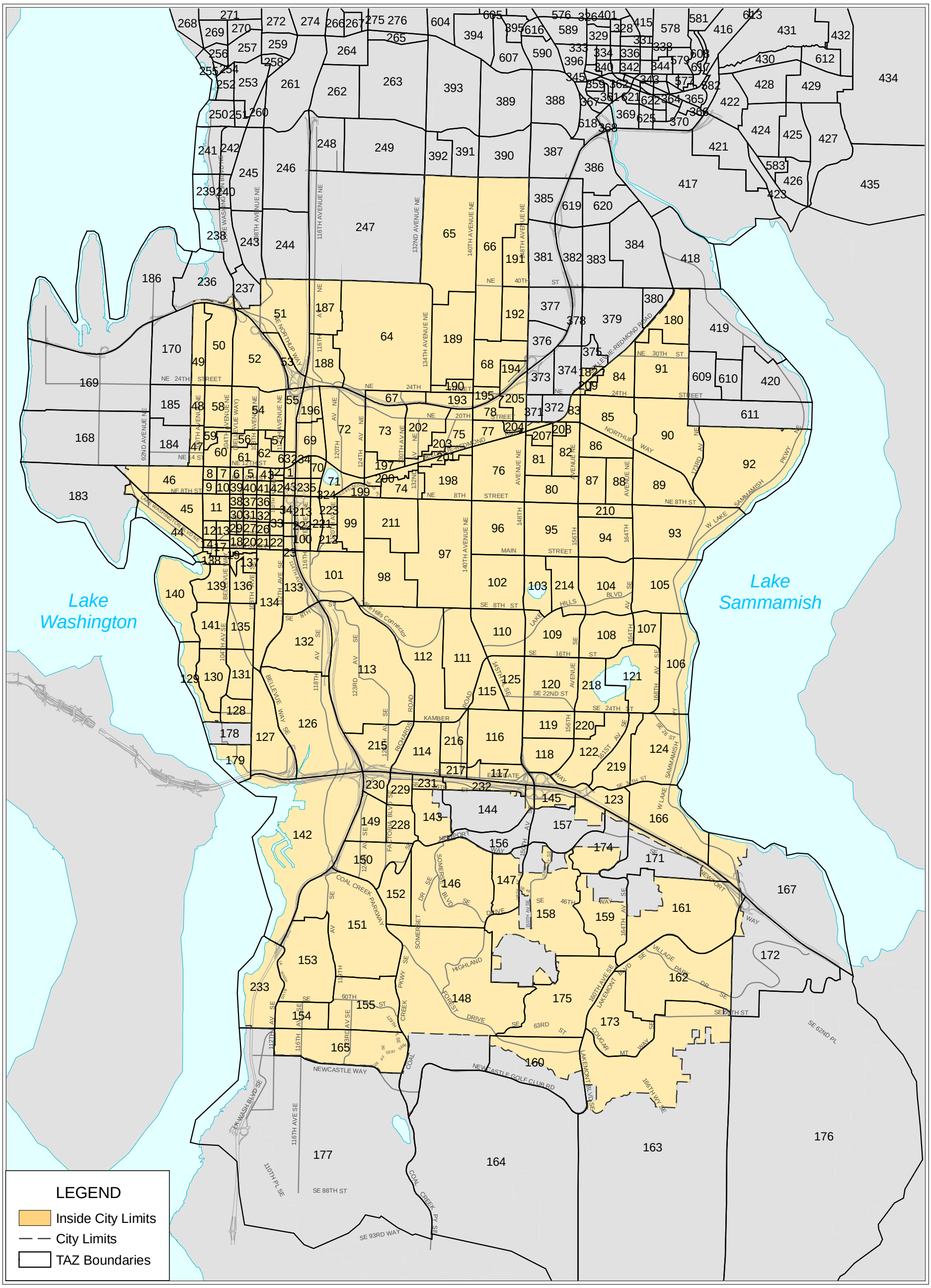
Projections of single-family (S.F.) and multi-family (M.F.) population based on Transportation Analysis Zone (TAZ) data provided by City of Bellevue Planning Department.

Table does not include commercial or empolyment data.

*Figure 6-1 shows the areas included in each operating area. Table 6-1 lists the individual pressure zones included in each operating area.

**2020 and Build Out data obtained from Bellevue's Planning and Community Development Department

TRANSPORTATION ANALYSIS ZONES



=4,700 feet

N

City of Bellevue
IT Department
GIS Services
Plot Date: 8/22/2006

Figure 3-1

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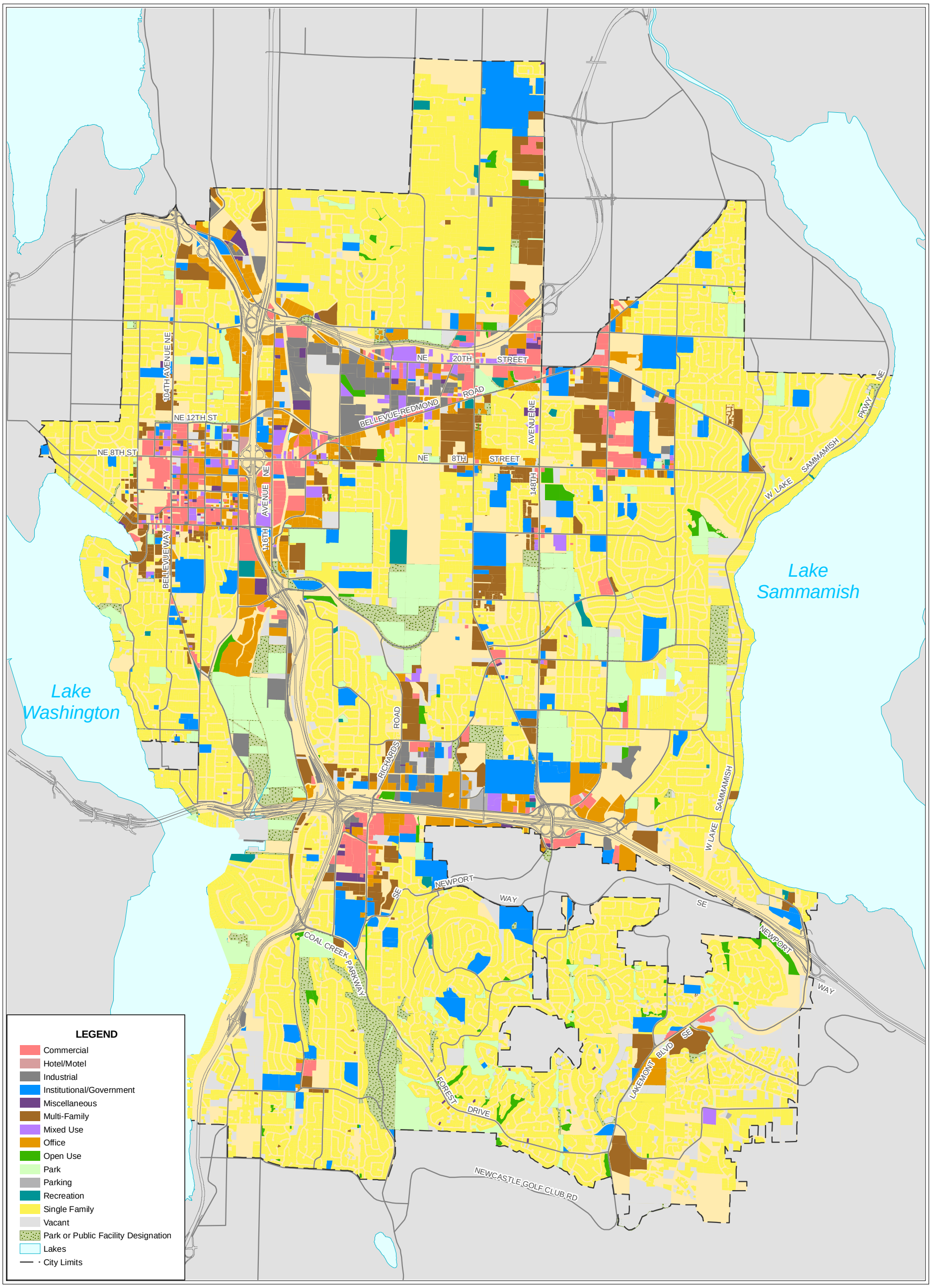
2006
CURRENT LAND USE



= 3,700 feet

N

City of Bellevue
IT Department
GIS Services
Plot Date: 8/22/2006

Figure 3-2

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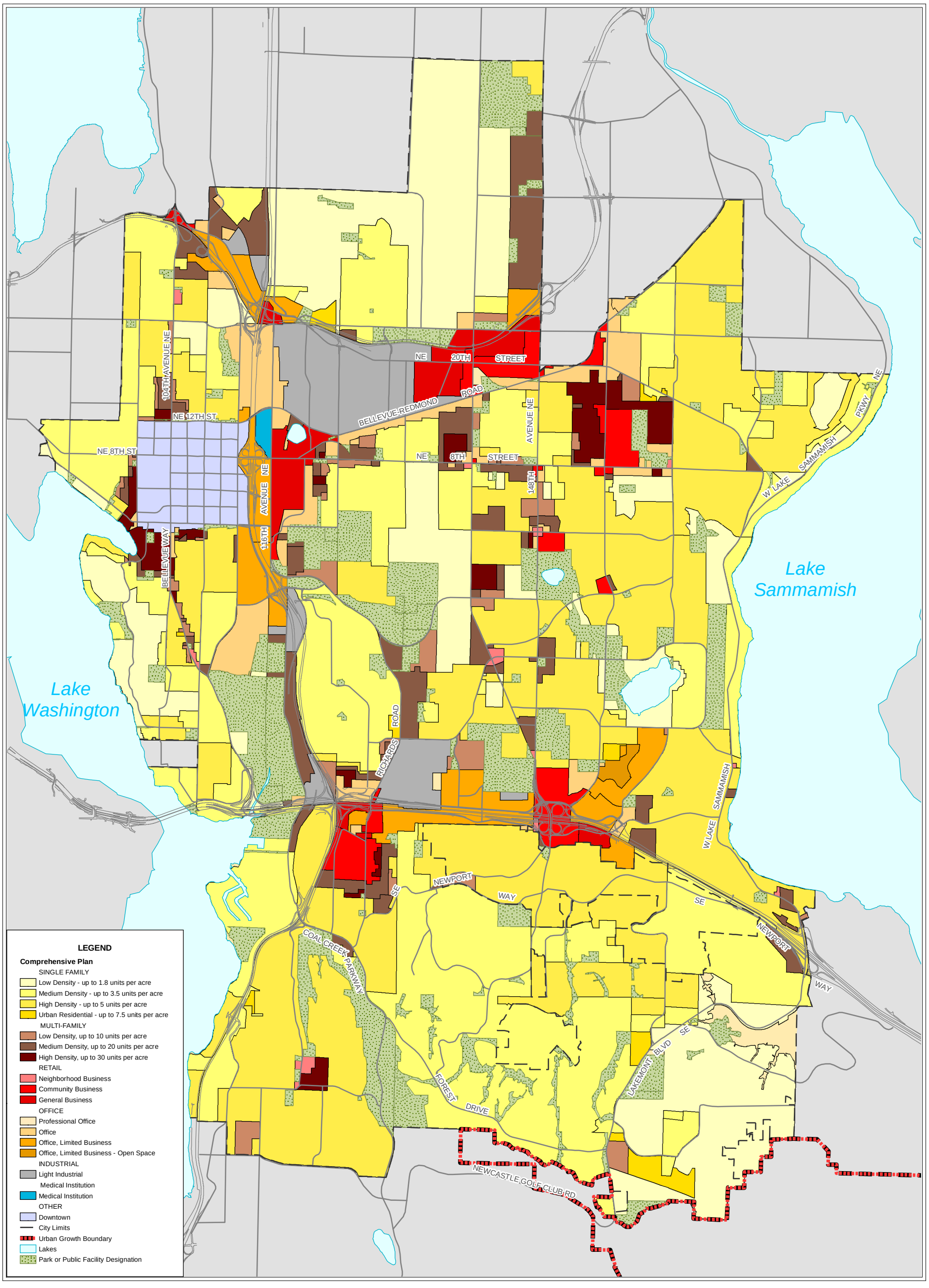
COMPERHENSIVE PLAN



=3,700 feet

N

City of Bellevue
IT Department
GIS Services
Plot Date: 2/28/2008

Figure 3-3

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SERVICE AREA

The current Bellevue city limits, the ultimate water service area, and the retail service area are shown in Figure 3-4. With the exceptions of Bellevue's assumptions of both Water District 17 and the portion of the Coal Creek Utility District within Bellevue's city limits, the ultimate service area is the same as Bellevue's future service area identified in the 1996 East King County Coordinated Water Supply Plan (EKC CWSP) which was approved by the Department of Health in 1998. There is no potential for expanding this service area because the City is surrounded on all sides by natural physical barriers or other communities. Some areas within Bellevue's ultimate service area are not currently incorporated, such as portions of Eastgate and Cougar Mountain. These areas may be annexed by Bellevue in the future.

The only difference between Bellevue's retail service area and its ultimate service area is that Bellevue's retail service area does not include the portion of the ultimate service that is outside the county designated urban growth area boundary. Bellevue is not obligated to provide service outside its retail service area. However, Bellevue's long term planning does include meeting the projected water needs for all properties within its ultimate service area. Prior to receiving service, properties within Bellevue's retail service area must:

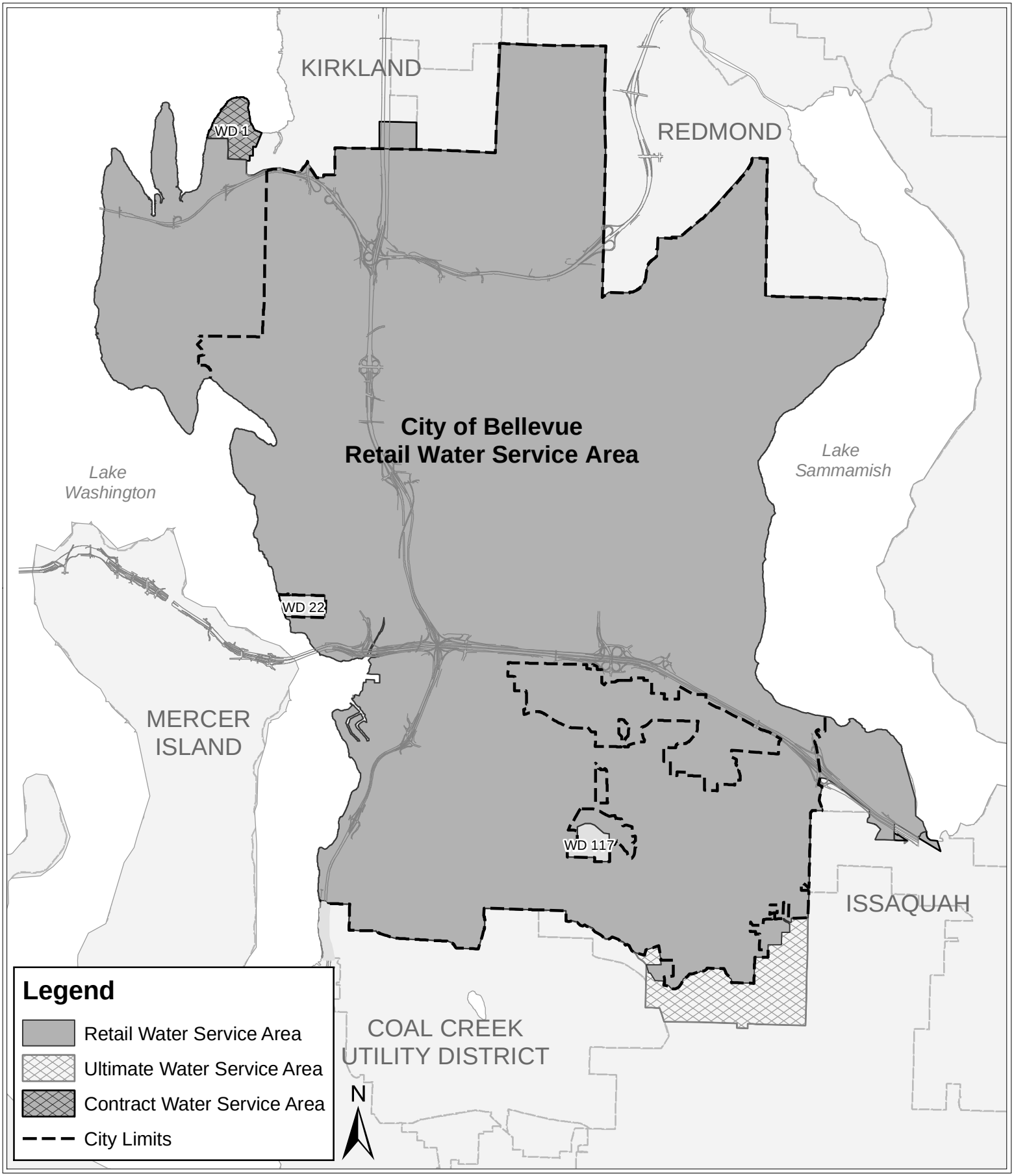
- Provide payment of all applicable connection changes, latecomer charges and fees
- Enter into a Utility Developer Extension Agreement if water system extension is needed
- Annex or agree to annex when contiguous to the City if the property is outside the City limits and outside areas covered by an existing service agreement (in accordance with current City annexation policy).

All of the major facilities needed to make water available throughout Bellevue's ultimate service area (pump stations, storage reservoirs, water mains within existing public rights-of-way, etc.) are in place. Therefore, all requests for water service can be accommodated by the property owner submitting either an application for a City installed water service or a Utility Developer Extension Agreement application. The amount of time required before service can be provided to a new customer is dependent on the type of application required and the scope of the development project. Timelines and requirements for obtaining service are discussed with property owners when they make their initially inquire about connecting to the water system.

ADJACENT PURVEYORS AND INTERTIES

The City of Bellevue water system has interties with several adjacent water systems. It is important that Bellevue coordinate operations with these adjacent purveyors. Figure 3-4 shows Bellevue's service area and adjacent water jurisdictions.

In some cases, interties are beneficial to both parties; in others, they benefit just one party, depending on the type and size of the intertie. The interties Bellevue currently has with other



CITY OF BELLEVUE
WATER SERVICE AREA
2005

FIGURE 3-4

Table 3-3
Interties

(Regional Supply Inlets are Listed Separately in Table 6-2)

Date of First Use	Adjacent System	Hydraulic Grade Bellevue (ft)	Hydraulic Grade Adjacent (ft)	Meter Size** (in)	Primary Purpose
11/05	WD 1	335	335	two 8" pipes	Supply to WD 1
1/87	Kirkland	400	285	8*	Emergency
5/83	Kirkland	545	545	6	Supply to Bellevue
6/73	Kirkland (direct read area)	545	545	two 8" pipes	Supply to Bellevue
11/72	Redmond	520	415	10	Supply to Redmond
11/72	Redmond	520	520	8	Supply to Redmond
11/72	Redmond	520	520	10	Supply to Redmond
11/72	Redmond (direct read area)	520	520	various joint use pipes	Supply to Redmond
4/79	Beaux Arts	300	-	6	Supplemental Supply to Beaux Arts
5/58	W.D. 117	1175	1175	6*	Emergency
5/83	Kirkland	520	545	8*	Emergency
8/68	Redmond	400	335	8*	Emergency
11/72	Redmond	520	520	4	Supply to Bellevue
12/03	Coal Creek Utility Dist.	550	440	various joint use pipes and 8 meters	Supply to Bellevue
8/89	Issaquah	1150	Issaquah Service Area	6	Supply to Issaquah
4/90	Issaquah (direct read area)	520	520	one 12" pipe	Supply to Issaquah

* There are no meters at these emergency connections; just a closed valve. Actual pipe size is shown in these cases.
** Capacity is limited by meter size, or pipe size where closed valve is indicated for emergency connections.
Note: Service areas are defined in the interlocal agreements contained in the appendix (where not defined by agreement, service area must be assumed to correspond to the service area of the purveyor being supplied through the intertie).

local water distribution systems are listed in Table 3-3. The City currently purchases all of its water from the Cascade Water Alliance. Interties with regional transmission and supply systems (regional supply inlet meters) are listed in Table 6-2.

Currently, the City of Bellevue wheels Cascade water through its system to the City of Redmond, and to the City of Issaquah. In addition, the City has service area agreements with the City of Issaquah, the City of Kirkland, the City of Redmond, the Coal Creek Utility District, and Water District #1 (see Appendix B). The Bellevue-Issaquah agreements provide a delineation of the current and future service area between the two cities. Bellevue's provision of water outside its service area requires the approval of the Cascade Water Alliance and is subject to Bellevue's contract with the Cascade Water Alliance.

Coal Creek Utility District, the City of Kirkland, the City of Redmond, and the City of Issaquah are four purveyors adjacent to Bellevue. Summary information on these systems can be found in each purveyor's most recent comprehensive water plan. Highlights of their relationship to Bellevue's system are explained below.

City of Kirkland

The City of Kirkland is an adjacent water purveyor just north of Bellevue and west of 132nd Avenue NE. In 1969, Water District 99 (now a portion of Bellevue) made an agreement with Water District 81 (now a portion of Kirkland) and the City of Kirkland to jointly construct and operate a major storage facility and transmission lines. The 11.2-MG 545 zone reservoir is currently owned jointly by Redmond, Bellevue, and Kirkland as a result of this agreement and the subsequent assumption of Rose Hill Water District (formerly W.D. 81) by the three cities. Bellevue owns 1.5-MG of the total capacity. Maintenance costs for cleaning and painting are shared among the owners in proportion to ownership shares. A 16-inch line passing through Redmond on 140th Avenue NE near NE 60th Avenue connects Bellevue to the jointly owned reservoir, which is operated by Kirkland. Kirkland wheels Cascade water through the 16-inch, metered intertie to approximately 60 homes in Bellevue. Kirkland's slightly higher pressure provides better service, and the flow prevents water quality problems in the 16-inch main. Additionally, there is an emergency supply intertie between Bellevue and Kirkland, located on 148th Avenue NE at NE 51st Street. Water from Kirkland is available at this location via Redmond's water system under the Rose Hill Water District assumption agreement.

As a result of a 2004 amendment to the 1994 Rose Hill Water District assumption by the cities of Kirkland, Redmond and Bellevue, Kirkland also wheels Cascade water via Redmond to the small portion of the former district assumed by Bellevue. This area is bounded by 140th Avenue NE, NE 60th Street, 148th Avenue NE and approximately NE 55th Street and includes approximately 65 Bellevue water service accounts.

An emergency intertie between the Bellevue and Kirkland is located on Northup Way just east of Bellevue Way. The intertie consists of an isolation valve between Bellevue's 400 pressure zone and Kirkland's 285 pressure zone.

Bellevue and Kirkland are currently pursuing two potential new emergency interties. The first proposed intertie would be on 132nd Avenue NE at the Bellevue/Kirkland city limits. This intertie will provide an emergency supply to an area of Bellevue that is currently supplied by a single 5,000 foot long dead end pipe. The intertie would be designed to automatically provide water in the event of a fire or emergency within this area of Bellevue. Kirkland would be able to access Bellevue water through this intertie in the event of an emergency that interrupts Kirkland's ability to supply the area of its water system adjacent to the intertie. The second proposed intertie would be located near NE 38th Street and 96th Avenue NE, at the Kirkland/Yarrow Bay city limits. This intertie would consist of a closed valve and give both Kirkland and Bellevue access to an emergency supply for areas of their systems that currently rely on a single source of supply. This second source of supply provides a population of approximately 1000 people in the Town of Yarrow Point with water supply in the event of an emergency that interrupts the regular supply to this area.

West of Bridle Trails State Park and east of I-405 there is a narrow area along 116th Avenue NE in which both Bellevue and Kirkland operate single feed, dead-end service areas. The benefits of an additional emergency connection in this area should be investigated and pursued if warranted.

The City of Redmond

In 1990, Bellevue and Redmond signed a revised interlocal agreement updating service area and supply requirements. The service area is consistent with the East King County Coordinated Water System Plan (EKC CWSP). In 2004, another revision to this agreement was signed to address the change of regional water supplier from SPU to Cascade. Per the agreement, Bellevue wheels Cascade water to the Viewpoint and Overlake neighborhoods through PRVs fed from three metered connections. The interlocal agreement with Redmond also identifies facility maintenance and ownership responsibilities for joint-use pipelines.

Bellevue and Redmond also have an interlocal agreement that covers maintenance and operation of the jointly-owned 6.0-MG NE 40th reservoir and pump station that serves Bellevue's Lake Hills 520 zone and the East Bellevue Operating Area.

The City of Issaquah

The City of Issaquah's service area is east of Bellevue and south of Lake Sammamish. Bellevue wheels Cascade water to two separate portions of Issaquah's service area through two system interties. The number of water service connections Issaquah is allowed to make in each of these areas is currently limited by interlocal agreement. The intertie in the 17200 block of Newport Way SE is limited to providing water for no more than 600 multi-family units. The intertie in the 18000 block of SE 60th Street and a future intertie near the 18000 block of SE Cougar Mountain Drive are limited to providing water for no more than 700 single family units.

Issaquah is in the process of obtaining additional water supply from Cascade through a recently constructed 24-inch water supply line in Newport Way from approximately 161st Avenue SE east to Issaquah. This new Issaquah water supply line is connected to the Seattle regional supply system by a 24-inch pipe formerly owned by Bellevue. Bellevue transferred ownership of this pipeline to Cascade in 2006.

In 2005, Issaquah annexed the area of King County along the southwest shore of Lake Sammamish known as Greenwood Point and South Cove. This area is currently provided water service by Bellevue. Issaquah has given preliminary indications of their intention to own and operate the utility facilities serving their citizens in this area. It is therefore anticipated that an interlocal agreement will be developed at some time in the future to transfer the water facilities in this area from Bellevue to Issaquah.

Coal Creek Utility District

Coal Creek Utility District, formerly known as Water District 107, is south of Bellevue and east of Lake Washington. The District was formed through the consolidation of Water Districts No. 92, 95, and 102. In 2003, the portion of the District that lies within the City of Bellevue was assumed by Bellevue.

The District's current service area is almost entirely within the City of Newcastle and contains several undeveloped areas. These areas should be developed in a way that maintains the looped systems of Bellevue and Coal Creek Utility District and avoids water main duplication.

The portion of Bellevue's water system that is south and east of the Coal Creek Parkway is supplied with water from the District through eight metered interties. These interties are located along the Bellevue/Newcastle city limits. The District is responsible for operation and maintenance of the major supply facilities (regional supply inlets, pump stations, and reservoirs) for this area. These facilities are identified as joint use facilities in the interlocal agreement between Bellevue and the District.

Water District No. 1

Water District No. 1 is located north of Bellevue's water service area and is within the Town of Yarrow Point. Bellevue now operates and maintains the District's water system and supplies the District with water, per a 2005 interlocal agreement. Prior to Bellevue taking over operation and maintenance of the District's system, the District was required, under the terms of the interlocal agreement, to construct significant system improvements to eliminate all identified water distribution problems within the District.

Water District No. 22

Water District No. 22 is located west of Bellevue's water service area and is within the Village of Beaux Arts. The district's primary water supply comes from a well. The district has a metered intertie with Bellevue that provides emergency and supplemental supply to the district.

Water District No. 117

Water District No. 117 is located in south Bellevue and is within a small area of unincorporated King County known as the Hilltop Community. All of the areas adjacent to the district receive water service from Bellevue. The district's primary water supply comes from a well. The district has an emergency intertie with Bellevue.

EAST KING COUNTY COORDINATED WATER SYSTEM PLAN

The Public Water System Coordination Act of 1977 (Chapter 70.116 RCW) outlines a mechanism whereby water utilities within the state can coordinate their water system planning and construction programs. This process is initiated by formation of a Critical Water Supply Service Area (CWSSA) by the State of Washington Department of Health (DOH) or an appropriate county governing body. Following designation of a CWSSA, a Coordinated Water System Plan (CWSP) must be completed within a prescribed period of time.

The King County Council formally declared East King County a CWSSA through Ordinance No. 7893, passed on December 22, 1986. Concurrently, and in compliance with Ordinance No. 7894, a Water Utility Coordinating Committee (WUCC) was formed, consisting of representatives of water system agencies (including Bellevue) having 50 or more service connections. On September 8, 1987, the King County Council formally adopted the external boundaries of the CWSSA through Ordinance No. 8214.

The WUCC, with the assistance of the East King County Regional Water Association (EKC RWA), updated the CWSP in 1996. The update focused primarily on updated service areas, new demand projections, and a proposed supply strategy. None of the changes alter the basic requirements for Bellevue. The 1996 CWSP was adopted by the King County Council and approved by the Department of Health in January 1998.

As the result of the formation of the Cascade Water Alliance, there is a need to begin the process of updating the CWSP. Cascade is committed to this process and it is Bellevue's intention to participate in the CWSP update process.

Elements of the CWSP

Under the provisions of WAC 248-56-700, a CWSP must include at least two elements:

- A regional supplement that addresses concerns of member water utilities included within the established boundary of the CWSSA must be provided.

- Individual water system plans must be prepared by member utilities and approved by DOH. Member utilities have 1 year from the date of final approval of the regional supplement to prepare water system plans.

Regional Supplement

The regional supplement, which was adopted by the King County Council, in May 1990 and updated in January 1998, concentrated on a number of issues concerning water system planning in east King County. Several of these issues, which have particular relevance to the individual water system plan for the City of Bellevue, are discussed below.

Future Service Areas

The regional supplement designated future service areas for all utilities in the CWSSA. Bellevue's ultimate service area, previously agreed upon with adjacent purveyors, is consistent with the boundaries identified in the regional supplement. There are no known overlaps or boundary dispute issues with adjacent purveyors.

The Bellevue City Council passed Resolution No. 5249, approving the CWSP service area designation on March 19, 1990. The only changes to the 1990 document are the City's assumptions of a small portion of the former Rose Hill Water District, all of King County Water District #17, and the portion of Coal Creek Utility District within Bellevue city limits. All of these assumptions were approved separately by King County Council and the Bellevue City Council.

Minimum Design Standards

Minimum standards for water system materials, construction practices, distribution facilities, metering, fire flows, and related standards were established in the Regional Supplement. The City has the option of imposing more stringent standards but must meet the minimum requirements established in the CWSP. Bellevue's current design standards meet or exceed the standards of the CWSP.

Utility Service Review Procedures

The regional supplement outlines procedures for identifying the appropriate purveyor to provide water service to new developments and expansions.

Satellite System Management Services

The regional supplement established criteria for management of satellite systems. Bellevue's service area is nearly built out, and no satellite management services are anticipated for nearby water systems.

Regional Water Supply Issues

The Cascade Water Alliance is responsible for meeting Bellevue's current and future water supply needs. Implementation of various options for providing regional water supply will have hydraulic and financial impacts on the City of Bellevue. Cascade's 2004 Transmission Supply Plan (TSP) identifies their plans for meeting the water supply needs of their members. The TSP identifies a potential supply shortage that could occur just prior to new sources of supply coming on line in approximately 2010. It is anticipated that additional water to cover the shortfall will be available from other sources currently being explored by Cascade. However, it is recognized that if that additional water is not available, it may be necessary for Bellevue and the other Cascade members to begin implementation of the water supply shortage plan.

Individual Water System Plans

The requirements for individual water system plans are defined in WAC 246-290-200. Individual utilities within the CWSSA must address the following items in their individual water system plans:

- Map of future service area
- Signed service area agreement(s)
- Population and water demand projections
- Minimum design standards
- Minor and major regional projects
- Water utility service review procedures
- Satellite system management programs (where appropriate)
- Water conservation program

Regional Growth Management

All statistical information compiled for this document, including population and land use forecasts, were based on the best available information. The population and employment forecasts used for this Water Comprehensive Plan update were provided by Bellevue's Planning Department, concur with the requirements of the State's Growth Management Act, and were

integrated into the 1998 CWSP. The growth projections in this plan were used to develop the future water demand projections for Bellevue that are used in both this plan and the Cascade Water Alliance 2005 Transmission Supply Plan.

SOURCE OF SUPPLY

Bellevue is one of several purveyors in the Seattle area that are members of the Cascade Water Alliance (Cascade). Cascade is responsible for all of Bellevue's water supply requirements. Cascade is also responsible for planning and developing a long-term water supply plan for its members.

Currently, Cascade receives water from the Seattle Public Utilities' (SPU) Cedar and Tolt supplies. To transport water from these two supplies, SPU has three major transmission pipelines in the Bellevue service area: the Tolt Eastside Supply Line (TESSL), the Cedar River Eastside Supply Line (CESSL), and the Mercer Island Pipeline.

The Cascade Water Alliance's regional supply options are identified in their TSP and include supply from one or more of the following:

- Lake Tapps
- Seattle Public Utilities Cedar and Tolt Rivers Supply
- Tacoma Water Division Second Green River Diversion Supply
- Snoqualmie River Aquifer (North Bend)
- Supplies associated with reuse and reclaimed supply

To support regional supply objectives, Bellevue participates in Cascade's regional water conservation program to supplement its local conservation program.

As part of the Seattle/Cascade water supply contract, SPU is primarily responsible for the quality of water delivered. The water quality delivered complies with all state and federal rules and regulations. SPU samples at various locations throughout the Bellevue service area to verify compliance with state and federal regulations including chemical and bacteriological parameters.

CHAPTER 4
Water Requirements

The existing and projected future water demands for Bellevue's water service area are presented in this chapter. They were used to establish planning criteria for hydraulic analysis of the water system and for developing recommendations for future capital improvements. These demands were also used by Cascade in its 2005 TSP to determine Bellevue's future water supply needs. The system supply data and the consumption and operation records were obtained from City of Bellevue data and records.

The first section of this chapter identifies the water system customer classifications and other water uses. A discussion of daily demand variations is presented to explain how diurnal usage fluctuates among the different customer classifications.

The existing demand section identifies the amount of water currently consumed within each customer classification. The future demands are then presented based on the projected City of Bellevue populations at 2011, 2025 and build out (assumed to be 2040). These demands are analyzed by considering factors that affect water use, such as population, zoning, current land use, and water conservation. Fire flow standards and requirements are presented by area. Bellevue's plan for water conservation and how it affects future demand estimates is discussed in the last section of this chapter.

WATER USE CLASSIFICATIONS

The City of Bellevue divides water users into nine customer billing classifications, plus unmetered, or non-revenue producing, water. The customer classifications are single-family residential, duplex, triplex, multi-family residential, trailer parks, hotel/motel, municipal and schools, commercial, and wheeled/wholesale. The commercial category includes industrial and commercial businesses, plus restaurants and other businesses catering to the public except for hotel/motels. For this comprehensive plan, the utility billing information was condensed into five customer classifications, to accommodate the lower resolution of the planning population forecast numbers and because of their similar water use characteristics. The condensed groupings are: (1) single-family residential, (2) multi-family residential, duplex, triplex, and trailer parks, (3) commercial, hotel/motel, and municipalities/schools, (4) major industrial accounts, and (5) wheeled/wholesale, which includes all water that passes through Bellevue's water system and is delivered to other water purveyors adjacent to Bellevue's service area.

Table 4-1 shows the percentage of total water use for each of the five condensed customer classifications, along with the percentage of unmetered water, for the last several years. This provides a comparison of changes in usage patterns since the 1998 plan. Each of the water use classifications is discussed in more detail below.

Table 4-1 Water Use by Customer Class Percent of Total Consumption							
Customer Class	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
Single-Family Residential	43.4	43.3	43.7	44.8	46.0	43.3	43.1
Commercial, Hotel/Motel, Municipal/Schools	21.0	21.0	21.3	22.0	22.4	21.0	20.9
Multi-Family, Duplex, Triplex, Trailer Parks	17.8	16.9	18.0	18.4	20.3	18.6	17.7
Major Industrial Accounts	4.8	4.3	4.8	4.5	4.7	4.7	4.3
Wheeled & Wholesale Water	7.3	8.1	9.1	8.8	9.0	8.7	8.9
Unmetered Water	5.7	6.3	3.2	1.5	0.0	3.7	5.1
Note: Irrigation meters are included in the appropriate customer class.							

Customer Classifications

Single-Family Residential

Single-family residential customers are the largest water-using group in Bellevue. The water delivered is used for domestic purposes and lawn irrigation. Single-family residences account for approximately 45 percent of all water use over the last 7 years. From 1997 through 2003, single families water use varied between 43.1 percent to 46.0 percent.

During summer months, the amount of water used within this customer classification increases considerably, primarily due to lawn and landscape watering. This irrigation demand also comprises a major portion of system peak-hour demand.

Commercial

Commercial water use, which includes hotels/motels, municipalities, and schools, is the second-largest customer classification. Included in this category are office complexes, commercial laundries, restaurants, health clubs, shopping complexes, hotels, motels and light industry located throughout the city, plus schools, parks, and other municipal uses. The five major industrial water users were excluded from this class and are discussed as a separate classification because their non-characteristic water use would skew analysis of the commercial class water use. Water use by this class accounted for just over 20 percent of all water use during the last 7 years. From 1997 to 2003 it varied between 20.9 percent to 22.4 percent.

This type of demand is relatively constant throughout the year, with little change in the monthly use pattern. The majority of this demand occurs between 7 a.m. and 7 p.m.

Multi-Family, Duplex, Triplex, and Trailer Parks

This use classification is the third largest in the city, accounting for nearly 20 percent of water used during the last 7 years. Consumption for this classification varied between 16.9 to 20.3 from 1997 through 2003. This classification does not have the high peak use in comparison to single-family customers. This can be attributed to a lower irrigation demand and lower total population than that for the single-family customer classification. Duplex, triplex, and trailer parks comprise very small portions of this class.

Major Industrial Accounts

The city's five highest water use accounts comprise this classification. The water use characteristics of these five accounts are very different from the other customers in the commercial classification. Included in this category are Alpharma Northwest, Coca Cola Bottling, Overlake Hospital, Safeway Beverage Plant, and Safeway Distribution Center. This category accounted for nearly 5 percent of Bellevue's water use over the last 7 years.

Wheeled and Wholesale Water

Bellevue wheels water from the Cascade Water Alliance, through its distribution system, to the cities of Redmond and Issaquah, and sells a small amount of water wholesale to Water Districts #1 and #22. Bellevue's delivers the largest volume of water to the City of Redmond. The volume of water delivered to Redmond accounts for approximately 90 percent of all wheeled and wholesale water that passes through Bellevue's distribution system. Water delivered to Issaquah accounts for approximately 10 percent and is slowly increasing as the area supplied through Bellevue becomes more fully developed. Nearly 10 percent of all the water that is delivered to Bellevue through its regional supply meters is wheeled through Bellevue's water system to adjacent purveyors.

Unmetered Water

The difference between the total system demand and the metered consumption comprises the amount of unmetered, or non-revenue producing water. When master meter records at Bellevue's supply inlets from Seattle are compared with service meter records from utility billing, they indicate that between zero and 6.3 percent of the total consumption from 1997 to 2003 was unmetered. For forecasting future water demands to analyze system infrastructure, 8.5 percent was selected as an appropriate value for anticipated long term unmetered water volume.

Municipal utility unaccounted-for water volumes generally range between 10 and 15 percent of total consumption. Bellevue's record of less than 10 percent unmetered water is considered very good by industry standards.

Water Balance

A water balance is an accounting for all water that is produced and/or purchased. Table 4-2 shows the water balance format developed by the International Water Association (IWA) and recommended by the AWWA Water Loss Committee, along with the relevant numbers for Bellevue in 2004. The IWA format has been modified slightly to include a sub-category called "Remainder"; this modification is discussed below.

Table 4-2 - Water Balance 2004

	Level #1	Level #2	Level #3	Volume (gpd)	% of Water Purchased
Water Produced and/or Purchased	Revenue Water	Billed Authorized Consumption	Billed Water Exported	1,852,710	10.7%
			Billed Metered Consumption - Permanent Meters	14,786,929	85.6%
			Billed Metered Consumption - Temporary Meters	0	0.0%
			Billed Unmetered Consumption	0	0.0%
	Non-Revenue Water	Unbilled Authorized Consumption	Unbilled Metered Consumption	0	0.0%
			Unbilled Unmetered Consumption[1]	0	0.0%
		Apparent Losses	Unauthorized Consumption	0	Unknown
			Customer Metering Inaccuracies	0	Unknown
		Real Losses	Known Leakage on Mains	0	0.0%
			Known Leakage on Service Connections	0	0.0%
			Leakage and Overflows at Storage	0	Unknown
		Remainder		626,480	3.6%
TOTAL				**17,266,119**	**100%**

The water balance allocates the Water Produced and/or Purchased to different categories at three different levels.

The first level simply allocates the Water Produced and/or Purchased to either Revenue Water or Non-Revenue Water. As implied by the names, Revenue Water generates income while Non-Revenue Water does not. This is helpful in understanding what percent of water produced and/or purchased generates income for the water utility.

The second level splits Non-Revenue Water into the following four sub-categories which are useful in identifying potential additional revenue sources and identifying the magnitude of leaks that could be fixed:

- **Unbilled Authorized Consumption:** Includes uses such as water system flushing, firefighting, street cleaning, main testing, main breaks, and reservoir draining and cleaning.

- **Apparent Losses:** Includes unauthorized uses and customer meter inaccuracies, both of which are lost revenue opportunities.
- **Real Losses:** Includes various types of system leaks. A certain level of leaks is unavoidable, however, leaks beyond that level should be fixed in order to not unduly burden both the natural resource and the physical infrastructure.
- **Remainder:** This is not part of the IWA's official water balance format. Under the IWA's protocol, any amount that can not be assigned to another category is put into the leaks category. For this Water Comprehensive Plan, any amount that could not be assigned to another category was put into the Remainder category, to acknowledge that data systems are not currently set up to track all of the subcategories discussed above.

The third level simply further splits water into additional sub-categories.

Water Loss Analysis

In 2003, Bellevue developed a "Water System Loss Report", which summarized analysis of unaccounted for water conducted between 2001-2003 to better understand and quantify its various components. The report included analysis of five areas:

- Distribution system losses
- Inlet meter discrepancies
- Customer meter inaccuracies
- Billing adjustments
- Miscellaneous other uses (e.g. maintenance, construction, fire-fighting)

Bellevue's analysis concluded that between 1998 and 2000, its non revenue water during that period was comprised as follows:

10%	System leaks
35%	Inlet meter inaccuracies
45%	Customer meter inaccuracies
10%	Miscellaneous other
100%	Total non revenue water

Leak Detection Survey: In 2001, Bellevue retained Utility Services Associates to conduct water line leak detections surveys on a representative portion of the distribution system. Again, the water lost to leaks was estimated at approximately 1.0%, or 60 million gallons per year. The survey covered approximately 45 miles (or 8%) of the distribution system representing various material types, geographic locations, soil conditions, and pipe characteristics such as size and age. Leakage was generally caused by minor system leaks from pipes and appurtenances, including hydrant foot valves. The report recommended periodic leak detection surveys on representative samples of the water system, as a cost-effective tool to avoid escalation of water loss due to system leaks.

Inlet & Customer Meter Inaccuracies: Meter inaccuracies do not reflect actual water loss, but rather result in revenue losses. The report recommended purchase of testing and calibration equipment, development of SOPs for routine testing and calibration of inlet meters; and increased investment in customer meter replacements, particularly for high volume commercial meters.

Billing Adjustments: Similar to inaccurate meters, billing adjustments do not reflect actual "lost" water, but may increase the volume of non-revenue water and hence affect utility revenues. The new CIS billing system implemented in 2004 will address the potential for "paper" losses associated with billing adjustments.

Non-Revenue Water used for Miscellaneous Activities: The report evaluated the volumes of water used for operational activities, utility project construction, and firefighting. It concluded approximately $72,000 of water purchased from SPU is consumed for these uses annually (approximately 1.0%, or 60 million gallons). The recommendation was to formally recognize this as an inherent cost of doing business.

FUTURE DEMAND PROJECTIONS

Future demand projections were used to evaluate the existing water system and identify required improvements. Projecting the demands for the City of Bellevue system required consideration of:

- Current billing and consumption records
- Land use and zoning information
- Population projections
- Expansion plans for major industrial users
- Information from the City of Redmond on future water supply projections
- Interlocal agreement limitations on the number of living units Issaquah can connect to the area supplied by Bellevue

Existing Demand

Existing water demands for the City of Bellevue, including wheeled supply to the Cities of Redmond and Issaquah, and other wholesale customers, are presented in this section. Table 4-3 summarizes the city's water use from 1997 through 2003.

The City's water use has averaged 5.7 billion gallons per year over the past 7 years. This 5.7 billion gallon average water use is the same as the average use reported in both Bellevue's 1992 and 1998 Comprehensive Plans for 9 of the previous 11 years (1986-1996). 1992 was excluded from the average because mandatory water use restrictions were implemented, and 1993 was excluded because it had an exceptionally wet and cool summer. This lack of growth in water demand in spite of increases in service area population can be attributed to the implementation of water conservation measures and policies over the past 18 years (see Chapter 5, Water Conservation).

Bellevue's maximum day demand for the seven year period 1997-2003 occurred on July 30, 2003, when 34.2 million gallons were used, based on the city's telemetry system demand reports. Historical maximum day demand was 39.1 mgd on June 29, 1987. Maximum month demand during the 7-year period was 28.6 mgd in July 2003. The record maximum month demand of 31.4 mgd occurred in July 1985. This suggests that, in spite of population growth, the City's conservation measures and public education have continued to result in reduced summer water use over the last 7 years.

Table 4-3
City of Bellevue Existing Water Use

Water Use	1997	1998	1999	2000	2001	2002	2003
Annual Volume (MG)	5,593	6,013	5,809	5,742	5,181	5,648	6,025
Average Day Demand, ADD (mgd)	15.3	16.5	15.9	15.7	14.2	15.5	16.5
Maximum Day Demand, MDD (mgd)	30.9 (Aug 11)	32.7 (Jul 27)	28.1 (Jul 12)	30.2 (Aug 4)	24.3 (Aug 13)	26.9 (Jul 24)	34.2 (Jul 30)
Estimated Peak Hour Demand[a] (mgd)	55.6	58.9	50.6	54.4	43.7	48.4	61.6
Average Month Demand (MG)	466.1	501.1	484.1	478.5	431.8	470.7	502.1
Maximum Month Demand (MG)	778.5	808.1	686.9	767.8	631.6	741.3	888.1
Maximum Month Demand (mgd)	25.1 (Aug)	26.1 (Aug)	22.2 (Jul)	24.8 (Aug)	20.4 (Aug)	23.9 (Aug)	28.6 (Jul)
MDD/ADD (ratio)	2.02	1.98	1.77	1.92	1.71	1.74	2.07

[a]Estimated peak hour demand = maximum day demand x 1.80.
Note: Data is based on Seattle inlet meter data from Bellevue's telemetry system and includes water that is wheeled through Bellevue's system to adjacent purveyors.

Demand Development

To develop forecast demands for ultimate populations, information was analyzed as follows:

1. Utility billing records provided consumption data by major customer class for the year 2003. Because the year 2003 had a relatively dry and warm summer, it was considered to be a good representative water use year for planning purposes.

2. Current population and population projections were provided by the Bellevue Planning and Community Development Department for the years 2020 and Build-out (assumed to occur in the year 2040). Information was provided for each major land use category (single-family, multi-family, and commercial) for each Transportation Analysis Zone (TAZ) within the water service area.

3. Existing water use was determined using utility billing data for the year 2003 to calculate an annual average daily water use per person. These per person demands were then applied to the population projections for each TAZ within the water service area.

4. Existing and future water use was determined in this manner for three major land use categories: single-family, multi-family, and commercial.

5. Demand projections for Bellevue's three major industrial users (Coca-Cola, Safeway Bottling, and Overlake Hospital) were determined separately considering their individual future expansion plans (It should be noted that Alpharma and Safeway Distribution closed their Bellevue operations over the course of the past 7 years).

2003 demands in gallons per capita day (gpcd), as a function of land use category, are as follows:

- Single-Family: 2.8 persons per household; 92 gpcd
- Multi-Family: 1.8 persons per household; 80 gpcd
- Commercial: 90 gal. per 1000 sq. ft. of commercial space

These values are consistent with industry standards. The total demand predicted for existing customers based on these assumptions is 99% of the total volume of water actually billed for in 2003, and does not include unmetered water, providing confirmation that the criteria are appropriate.

Demand Projections

Future demand projections were developed for average day (ADD), maximum day (MDD), and peak-hour (PHD) demands. The MDD is critical because it is used for determining the supply requirements and for hydraulic water system analysis.

The future build-out demand projections for each pressure zone are listed by operating area in Tables 4-4a, 4-4b, and 4-4c. The City of Redmond and other wheeled/wholesale customer demands are included.

The projected maximum day demand increases approximately 22 percent from the 39.1 mgd recorded in June 1987 to 47.5 mgd at build-out. Because Bellevue is currently surrounded by existing jurisdictions on all sides, the only major factor that could increase the demands much beyond the projected 47.5 mgd would be a change in zoning and development in response to regional growth management requirements. Successful implementation of additional conservation efforts would decrease the projected ultimate maximum day demand by reducing per capita demand.

Conservation Adjustments to Demand Projections

Adjustments to demand projections were developed to account for the savings in water consumption expected to occur as a result of implementation of plumbing code revisions and specific conservation programs.

Bellevue's demand forecast without additional conservation, as shown in Table 4-4a , includes previous achieved conservation savings, but does not include future any future conservation. Therefore, an adjusted demand forecast was developed to account for future conservation savings expected to result from continued implementation of plumbing code revisions and Bellevue's specific conservation program detailed in Chapter 5, Water Conservation.

Bellevue's initial demand forecast was generated by combining demographic data and water use factors. The demographic data includes information such as population, the number of households, the number of people per household, and the number of square feet of commercial space. Adjusting the demand forecast for conservation involves reducing the water use factors to reflect continued conservation. The water use factors used in the demand forecasts without and with conservation are as follows:

	Without Conservation	With Conservation
Single Family (gallons per capita per day):	92	87
Multifamily (gallons per capita per day):	80	74
Commercial (gallons per 1,000 sq. ft. per day):	90	89

While Bellevue is committed to conservation and expects to continue conservation programs into the future, the 2011 water use factors were used again for the 2025 and 2040 demand forecast, rather than further reducing demand for three reasons. First, conservation often becomes more difficult and expensive in the future as the easiest savings opportunities are exhausted. Second, this provides a slightly conservative demand forecast, which provides a margin of safety in terms of system operation. Third, the opportunity to reduce the water use factors further will occur during preparation of the 2012 Comprehensive Water Plan, when more is known about realistic expectations for those latter years.

Table 4-4a Future Demand Projections without Additional Conservation (mgd)												
	West Bellevue			East Bellevue			South Bellevue			Bellevue Total		
Year	ADD	MDD	PHD	ADD	MDD	PHD	ADD	MDD	PHD	ADD	MDD	PHD
2002	7.49	16.85	30.33	5.99	13.48	24.26	3.47	7.81	14.06	**16.95**	**38.14**	**68.65**
2003	7.59	17.07	30.72	5.99	13.48	24.26	3.48	7.83	14.09	**17.05**	**38.37**	**69.07**
2004	7.68	17.29	31.12	5.99	13.48	24.26	3.48	7.84	14.11	**17.16**	**38.60**	**69.49**
2005	7.78	17.51	31.51	5.99	13.48	24.26	3.49	7.85	14.14	**17.26**	**38.84**	**69.91**
2006	7.88	17.73	31.91	5.99	13.48	24.26	3.50	7.87	14.16	**17.36**	**39.07**	**70.33**
2007	7.98	17.95	32.31	5.99	13.48	24.26	3.50	7.88	14.19	**17.47**	**39.30**	**70.75**
2008	8.07	18.17	32.70	5.99	13.48	24.26	3.51	7.89	14.21	**17.57**	**39.54**	**71.17**
2009	8.17	18.39	33.10	5.99	13.48	24.26	3.51	7.91	14.23	**17.68**	**39.77**	**71.59**
2010	8.27	18.61	33.49	5.99	13.48	24.26	3.52	7.92	14.26	**17.78**	**40.01**	**72.01**
2011	8.37	18.83	33.89	5.99	13.48	24.26	3.53	7.94	14.28	**17.88**	**40.24**	**72.43**
2012	8.47	19.05	34.29	5.99	13.48	24.26	3.53	7.95	14.31	**17.99**	**40.47**	**72.85**
2025	9.75	21.94	39.49	5.99	13.49	24.28	3.61	8.13	14.63	**19.36**	**43.56**	**78.40**
2040	11.26	25.34	45.62	6.16	13.86	24.94	3.71	8.34	15.01	**21.13**	**47.54**	**85.57**

Note: Demand projections do not include water wheeled to others through Bellevue's system.

Table 4-4b Future Demand Projections with Additional Conservation (mgd)												
	West Bellevue			East Bellevue			South Bellevue			Bellevue Total		
Year	ADD	MDD	PHD	ADD	MDD	PHD	ADD	MDD	PHD	ADD	MDD	PHD
2002	7.07	15.90	28.63	5.50	12.37	22.27	3.27	7.35	13.24	**15.84**	**35.63**	**64.14**
2003	7.16	16.11	28.99	5.50	12.37	22.27	3.27	7.37	13.26	**15.93**	**35.84**	**64.52**
2004	7.25	16.31	29.35	5.50	12.37	22.27	3.28	7.38	13.28	**16.03**	**36.06**	**64.90**
2005	7.34	16.51	29.72	5.50	12.37	22.27	3.28	7.39	13.30	**16.12**	**36.27**	**65.29**
2006	7.43	16.71	30.08	5.50	12.37	22.27	3.29	7.40	13.32	**16.21**	**36.48**	**65.67**
2007	7.52	16.91	30.44	5.50	12.37	22.27	3.29	7.41	13.34	**16.31**	**36.70**	**66.05**
2008	7.61	17.11	30.80	5.50	12.37	22.27	3.30	7.43	13.37	**16.40**	**36.91**	**66.44**
2009	7.69	17.31	31.16	5.50	12.37	22.27	3.31	7.44	13.39	**16.50**	**37.12**	**66.82**
2010	7.78	17.51	31.53	5.50	12.37	22.27	3.31	7.45	13.41	**16.59**	**37.33**	**67.20**
2011	7.87	17.72	31.89	5.50	12.37	22.27	3.32	7.46	13.43	**16.69**	**37.55**	**67.59**
2012	7.96	17.92	32.25	5.50	12.37	22.27	3.32	7.47	13.45	**16.78**	**37.76**	**67.97**
2025	9.15	20.58	37.04	5.52	12.41	22.34	3.39	7.63	13.73	**18.05**	**40.62**	**73.11**
2040	10.55	23.74	42.72	5.66	12.74	22.94	3.48	7.82	14.08	**19.69**	**44.30**	**79.74**

Note: Demand projections do not include water wheeled to others through Bellevue's system.

Table 4-4c			
Buildout Demand Projections by Pressure Zone			
(these are the demands used by the hydraulic model of the water system)			
Operating Area /Pressure Zones	**Average Day (mgd)**	**Maximum Day (mgd)**	**Peak Hour (mgd)**
West Bellevue Operating Area			
BV400	8.07	18.16	32.69
PP550	0.22	0.49	0.87
PP670	0.23	0.53	0.95
RH545	0.02	0.05	0.09
BF220	0.49	1.10	1.98
KC300	0.08	0.19	0.34
CL500	0.21	0.46	0.83
CL335	0.45	1.02	1.83
YB300	0.00	0.00	0.00
MD230	0.01	0.02	0.03
EN300	0.23	0.53	0.95
WD450	0.26	0.59	1.05
WD400	0.08	0.19	0.33
WD340	0.00	0.00	0.00
MB252	0.98	2.21	3.98
RV300	0.20	0.46	0.83
HP250	0.02	0.05	0.10
TOTAL (includes wholesale)	**11.57**	**26.03**	**46.85**
East Bellevue Operating Area			
LH520	4.25	9.56	17.21
RM330	0.03	0.06	0.11
RM440	0.07	0.15	0.27
CO440	0.02	0.05	0.09
CO380	0.01	0.02	0.03
KC450	0.61	1.38	2.48
LH435	0.19	0.44	0.79
SA270	0.56	1.26	2.27
EG300	0.02	0.05	0.09
EG370	0.02	0.05	0.09
EG400	0.01	0.02	0.04
EG440	0.05	0.10	0.18
SH450	0.00	0.00	0.00
Redmond (LH520)	1.78	4.00	7.20
Issaquah (LH520)	0.10	0.23	0.41
LH380	0.01	0.03	0.06
TOTAL (includes wheeled)	**7.72**	**17.40**	**31.27**
South Bellevue Operating Area			
FH465	0.04	0.08	0.15
SS550	0.13	0.30	0.55
EG590	0.17	0.37	0.67
EG630	0.01	0.03	0.05
HV700	0.09	0.20	0.36
SS700	0.18	0.40	0.73
SS850	0.72	1.61	2.90
HV940	0.02	0.05	0.09
SS940	0.01	0.03	0.05
SS1000	0.22	0.48	0.87
HV1080	0.04	0.08	0.15
HV1115	0.01	0.03	0.05
HV1175	0.05	0.11	0.20
SU1350	0.04	0.09	0.16
CM1000	0.23	0.51	0.92
CM1150	0.07	0.15	0.27
CM1300	0.01	0.03	0.05
CM1465	0.05	0.12	0.21
CM1550	0.01	0.03	0.05
FH1100	0.01	0.03	0.05
SU1060	0.04	0.08	0.15
SU1100	0.04	0.08	0.15
Issaquah (CM1150)	0.16	0.36	0.64
Sub-Total South-East (includes wheeled)	**2.34**	**5.27**	**9.49**
NS200	0.13	0.30	0.54
FA293	0.14	0.32	0.58
FA470	0.47	1.06	1.90
NH320	0.02	0.04	0.07
NH380	0.02	0.05	0.09
NH470	0.32	0.73	1.31
NH580	0.42	0.93	1.68
Sub-Total South-West (former CCUD area)	**1.53**	**3.44**	**6.18**
TOTAL (includes wheeled)	**3.87**	**8.71**	**15.67**
GRAND TOTAL	**25.10**	**56.49**	**101.65**

Table 4-4b shows total demand forecasts adjusted to include future conservation. Table 4-5 shows the additional average day demand savings which are projected to result from future conservation.

Table 4-5
Conservation Water Savings Over 2003 ADD Levels
by Operating Area
(all values in mgd)

Operating Area	2011	2025	2040 (build-out)
West Bellevue	0.44	0.61	0.71
East Bellevue	0.48	0.48	0.49
South Bellevue	0.21	0.22	0.23
Total	1.13	1.31	1.44

Note: no conservation adjustments have been made to wheeled/wholesale customer water use

VARIATIONS IN DEMAND

Water demand variations occur throughout the day and can be shown on a diurnal demand curve which plots the percentage of daily demand versus time. Figure 4-1 is taken from Bellevue's 1992 Comprehensive Plan and illustrates how water use varies over a 24-hour time period in Bellevue, based on maximum day demand (MDD) conditions. Usage patterns for two major user groups are shown: residential and commercial. A city-wide composite usage pattern is also shown. The curves for residential and commercial users are based on hourly demands as a ratio to 24-hour MDD within each respective group. Therefore, the peak hour-to-MDD ratio among residential users only is higher (almost 2.0) than for the composite curve, which is approximately 1.80. Bellevue's pattern of use is similar to that of other communities on the Eastside.

Table 4-6 compares planning numbers for Bellevue with those identified by other Eastside communities in their most recent water comprehensive plans. As part of the work on Bellevue's 1992 Comprehensive Plan, a limited amount of data was obtained from spot checks of isolated areas. This data showed that Bellevue has experienced peak-hour to MDD peaking factors of 1.50 to 1.87. The continuing implementation of conservation measures since that time may have resulted in a slight reduction in this peaking factor since 1992. In general, water usage patterns are not thought to have changed significantly from those used in the 1992 Plan. The City is therefore continuing to use a peaking factor of 1.80, which represents the magnitude of the evening peak with respect to the MDD, in its hydraulic analysis of the water system.

Diurnal Curve Peaking Data

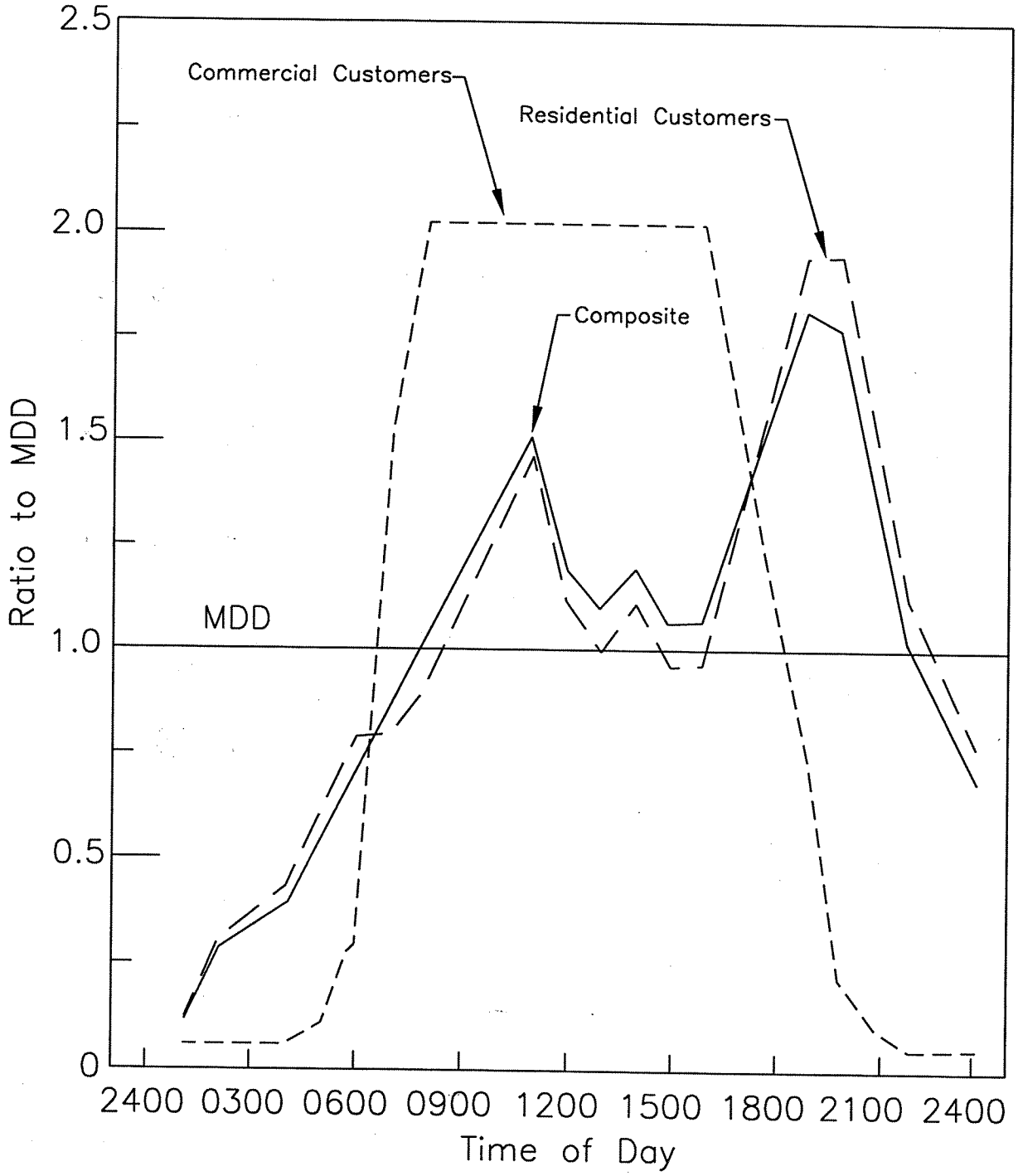


Figure 4-1

Table 4-6 Comparison of Eastside Communities						
Community	**SF Unit (gpd)**	**MF Unit (gpd)**	**Max Day/ ADD**	**Peak Hour/ MDD**	**Commercial (gal/1000 ft^2)**	**Non-Revenue Water**
Bellevue - 2006	248	136	2.25	1.80	90	8.5%
Bellevue - 1998	257	146	2.25	1.80	80	8.5%
Coal Creek Utility Dist.	202	---	2	---	---	4%
Issaquah	209	102	2.5	---	146	10%
Kirkland	214	---	2.21	1.80	---	---
Redmond	220	135	2.4	---	68 or 136	10%

FIRE FLOW REQUIREMENTS

Fire-fighting flow is required at a relatively high rate for a short period of time. Thus, a water system must have a supply, storage, and distribution system grid of sufficient capacity to supply fire-fighting requirements while maintaining adequate service to residential and commercial customers.

Fire-fighting guidelines have been established by the Insurance Services Office (ISO) and adopted by ordinance. Similar standards are administered in this state by the Washington Survey and Rating Bureau (WSRB). Communities' fire suppression systems are reviewed and a public protection classification is developed for insurance rates. The public protection classification number is on a relative scale from 1 through 10, with 10 representing less than the minimum recognized protection. The city's current WSRB rating is 2.

The most severe fire flows that are required to be met in several pressure zones within the City are listed in Table 4-7. The residential fire flow for the city varies from a minimum of less than 1,000 gpm in some areas with older, small diameter pipe, to over 2,500 gpm. The city's fire marshal requires that the fire flow duration equal 1 hour for every 1,000 gpm of flow, with a minimum duration of 2 hours. Fire flows not evenly divisible by 1,000 gpm and greater than 500 gpm are rounded to the next lower increment evenly divisible by 1,000. For example, 2,900-gpm fire flow would require a 2-hour duration.

Analysis of the city's long term fire flow availability in previous water comprehensive plans determined that 6,000 gpm at 6 hours duration was generally available in the highest risk areas, such as the CBD and some other commercial areas, while maintaining a positive residual

Table 4-7
Maximum Required Fire Flows Identified for Indicated Pressure Zones

Location	Pressure Zone	Address	Required Fire Flow (gpm)
Christ the King Church	EG 590	148th Ave SE & SE Eastgate Dr	3,500
Cherry Crest School	PP 670	124th Ave NE & NE 32nd St	3,000
Apartments	PP 550	NE 36th St & 115th Ave NE	8,000
Pines Apartments	LH 520N	156th Ave NE & NE 16th Pl	7,500
Apartments	LH 520S	SE 24th St & 145th Pl SE	5,500
Espana Apartments	KC 450	SE 6th St & 140th Ave SE	6,500
Wildridge Park Condos	SA 400	Approx 162nd Ave SE & SE 34th	3,000
Hide Away Valley Apartments	LH 380	Approx NE 2nd & 168th NE	2,000
Bennett School	LH 435	NE 16th St & 178th Ave NE	5,500
Westminster Chapel	BV 400	NE 24th St & 136th Ave NE	8,500
Bellevue Christian Church	CL 500	NE 16th Pl & 100th Ave NE	5,000
St. Thomas Church	CL 335	NE 12th St & 84th Ave NE	3,000
Hyak School	KC 300	128th Ave SE & SE 6th St	4,500
Marina	MB 252	99th Ave SE & Lk Wa Blvd	7,000
Bellefield Office Building	BF 220	114th Ave SE & SE 15th St	7,500
Enatai School	EN 300	SE 23rd St & 108th Ave SE	3,500
Woodridge School	WD 450	SE 20th Pl & 126th Ave SE	4,500
Newport Vista Apartments	WD 400	125th Ave SE & SE 30th St	3,500
Manufacturing	RV 300	SE 30th & Richards Rd	5,500

Note: Water system analysis indicated that 5,500 gpm is generally available in "high risk" areas. Above 5,500 gpm, the City should require onsite fire protection improvements, because this is more cost effective than capital improvements to meet isolated high fire flow requirements.

pressure throughout the rest of the distributions system.. Currently, the Department of Health requires that a residual pressure of 20 psi be maintained throughout the distribution system during fire flow conditions. This change in requirements has resulted in a reduction of Bellevue's maximum available fire flow from 6,000 gpm to 5,500 gpm in the highest risk areas. However, per Table 4-7, fire flows as high as 8,500 gpm are required in some of these locations. It would be difficult to meet these fire flows without significant and costly storage capacity and distribution system improvements. A more practical approach to attain the required protection in these areas would be to limit water system fire protection to that currently available and request that the property owner install onsite fire protection improvements, such as sprinklers, to reduce the fire flow requirements for existing structures. New commercial buildings are required to provide onsite protection.

The water system's ability to provide the required fire flows is discussed in Chapter 7.

CRITERIA AND STANDARDS

In addition to the water system policies discussed in Chapter 2, various system design and operations criteria and detailed standards have been developed to ensure that a consistent minimum level of service is maintained throughout the system and to facilitate planning, design, and construction of water system projects. These standards are administratively adopted, and are published in the "City of Bellevue Utilities Department Engineering Standards". Descriptions of specific criteria and standards follow.

Supply

Supply facilities should be designed to meet the maximum day demand (MDD). Supply capacity should be sufficient to replenish storage within 3 days of fire or emergency drawdown during MDD conditions. The supply should be provided at a hydraulic grade line (HGL) that meets replenishment needs of storage facilities. The rate of supply should be remotely controlled by an automatic valve located between the supply and distribution systems. This device, operated by telemetry from a master controller, serves to minimize flow fluctuations,.

A demand metering requirement was developed by the Seattle Public Utilities to minimize peak demands on their supply lines. Demand metering requires that water purveyors either reduce peak supply rates during the summer by using equalization storage or pay a demand charge. Demand charges usually occur because of inadequate storage and/or supply-regulating systems, or operator error.

Storage Volume

The total required storage volume for the Bellevue water system is comprised of three components:

- Equalizing volume
- Fire flow volume
- Emergency and reserve (standby) volume

Equalizing volume is the storage needed to satisfy peak system demands in excess of the hydraulic capacity of the supply system. Equalizing storage volume for Bellevue is approximately 20 percent of the MDD. Fire flow storage volume varies among operating areas and is calculated by multiplying the largest fire demand within the operating area being reviewed by a required time of duration that is set by the Insurance Services Office. Emergency and reserve storage volume is determined by analyzing the redundancy and capacity of the supply system and then by assessing how the water system must respond under emergency conditions. DOH has established minimum criteria for emergency and reserve storage volume.

An expanded discussion of each storage component is provided in Chapter 8. It is essential that storage volume and related operational criteria be properly coordinated with supply, transmission, and distribution facilities within the water system to ensure hydraulic compatibility and cost-effective operation.

Distribution System

The function of the distribution system is to convey water to customers at adequate service pressures and to provide fire flows. During the peak-hour demand, the capacity of the distribution system should meet demands with a residual pressure of no less than 30 psi. Current DOH regulations require fire flow to be provided during max day demand conditions with a residual pressure of 20 psi. Over the years, Bellevue's existing distribution system has been constructed according to a variety of different design criteria and state requirements related to fire protection. Bellevue currently determines available fire flows with the requirement that distribution system pressures not drop below 20 psi per current Department of Health standards. Usually, the inability to meet the above demand conditions results from inadequate distribution capacity; that is, pipes are not large enough or pipeline gridding is poor. The capacity of the distribution system is greatly reduced when head loss is greater than about 10 feet per 1,000 feet of pipe length.

Sometimes increasing pipe diameters or pipeline grid spacing is not sufficient to significantly increase flows. In these cases, it is better to consider adjusting the hydraulic elevation of either the supply or storage facilities. When analyzing the distribution system, the capability to replenish equalizing storage volume must be considered. The equalizing volume must be replenished at a rate sufficient to refill the reservoir during the late evening/early morning replenishment hours. The minimum pipeline diameter for new water mains is dictated by the current minimum residential fire flow requirement of 1,500 gpm. The City of Bellevue Utilities Department Engineering Standards require a minimum pipe diameter of 8 inches where fire flow must be provided and that the maximum water velocity in the pipe not exceed 10 feet per second. This maximum velocity requirement is in place to limit velocity forces and reduce the likelihood of distribution system failures associated with water hammer.

Pressure Zones

Pressure zones are determined by evaluating ground elevation as it relates to available hydraulic gradient. The static pressure at the lowest elevation should generally not be greater than 100 psi. The static pressure at the highest elevation of the zone should be sufficient to ensure that at peak hour demand conditions the pressure is not less than 30 psi. Individual pressure control devices are required on service lines where pressures exceed 80 psi, per the International Plumbing Code.

Ideally, a minimum of two supply sources should serve each pressure zone to ensure that minimum pressures are maintained and to meet system supply and fire-fighting requirements when one source is out of service. Bellevue's design criteria limit single supply areas to less than 250 homes.

Existing street configuration and location of pressure reducing valves (PRVs) and supply points must be considered when recommending changes to the existing pressure zones. Exceptions to the static pressure standards are made when streets and mains do not conveniently follow the ideal ground contours. Bellevue's water system was developed by integrating a number of separate water districts to form the current system. Combining these districts into one system has required compromises regarding service pressures. Major improvements required to develop a uniform pressure range throughout the city are more costly than the derived benefit.

Ideally, the number of pressure zones created should be kept to a minimum. Wherever pressure zones are created, the system becomes fragmented, and the water conveyance capacity can be affected because distribution mains cannot be interconnected at pressure zone boundaries. PRVs are mechanical devices requiring maintenance and are subject to failure.

Pump Stations

A minimum of two pumps are required at each pump station to provide flexibility and system redundancy. The City of Bellevue Utilities Department Engineering Standards require that pumps in supply pump stations be sized so that the station can meet MDD design conditions when the largest pump is out of service. Pumps serving pressure systems must consider available storage so that the storage and pump capacity can provide peak hour demand as well as fire flow demand. The total capacity of the pumps should be 25 to 50 percent greater than the required capacity of the pump station in order to provide storage replenishment.

To increase emergency reliability, at least one pump in each pump station should be supplied with onsite standby power or have the capability to connect to a portable power supply. This capability allows some emergency supply capacity, even during a general power outage. Where no direct storage is available to an area with a single supply source, onsite power generation is required.

System Operations

Chapter 9 describes in detail the city's current operation and maintenance procedures. The normal operation and maintenance of the water utility consists of three main activities:

- Administration
- Maintenance
- Operations

CHAPTER 5
Water Conservation

The City of Bellevue has a long standing commitment to water conservation.

Bellevue's conservation program began in 1987 and has evolved significantly since then. Bellevue is committed to participating fully in the development and implementation of future water conservation programs. This chapter has four purposes:

- Review compliance with conservation planning requirements,
- Describe recent conservation measures,
- Document conservation's effect on demand, and
- Describe the City's conservation program for the next six years.

Bellevue's conservation program is comprised of both local and regional programs. Local programs are implemented only in Bellevue's service area and are managed by Bellevue staff. Local programs complement regional efforts and allow for customization to Bellevue's service area, goals, and policies. Regional programs are implemented throughout broader geographic regions and have been managed by Seattle Public Utilities (SPU), Cascade Water Alliance (Cascade), the Water Conservation Coalition of Puget Sound, and King County. Regional programs are beneficial since they are often more cost effective due to economies of scale, bulk purchase discounts, and enhanced marketing effectiveness.

Until recently, much of Bellevue's regional program was administered by SPU under its 1% Conservation Program. In January 2004, Bellevue switched from buying water directly from SPU to buying SPU water indirectly through Cascade. At that time, Cascade also took on the responsibility of administering a regional conservation program on behalf of its members. Per the Cascade Interlocal Agreement, Cascade will develop and implement a conservation management plan that provides a mandatory base conservation program that functions to reduce both average and peak demand.

During 2004 and 2005, Cascade operated under a "Transition Water Conservation Program". Cascade's Transmission and Supply Plan (2004) provides a general framework for its long range conservation program. Details and refinement of that program will be completed in 2006. The program is anticipated to be similar to the conservation activities pursued in recent years.

OBJECTIVES

Bellevue's conservation objectives are as follows:

- Comply with the conservation planning requirements of DOH.
- Promote the efficient use of water within Bellevue's water service area.
- Implement activities that will slow the increase of average and peak water use demands.

- Implement conservation measures that provide value to Bellevue customers cost effectively.
- Work in partnership with Cascade to foster consistency with Cascade's regional conservation objectives and supply management goals.

COMPLIANCE WITH CONSERVATION PLANNING REQUIREMENTS

Current state conservation planning requirements are contained in the following Washington State Department of Health (DOH) documents and have been incorporated into this Water Comprehensive Plan:

- Conservation Planning Requirements: Guidelines and Requirements for Public Water Systems Regarding Water Use Reporting, Demand Forecasting Methodology, and Conservation Programs (March 1994)
- Water System Planning Handbook (April 1997)
- Municipal Water Law: Interim Planning Guidance For Water System Plan / Small System Management Program Approvals (March 2004)

The State of Washington is currently in the process of revising water conservation planning requirements as a result of the 2003 Municipal Water Law. A draft conservation rule was released in June 2005 and the final rule was originally intended to be adopted by the end of 2005. In September 2005, DOH announced it would delay adoption until June 2006 in order to address technical issues raised during an informal comment period. The new requirements will be phased in. This Water Comprehensive Plan is not subject to the new requirements since it is being prepared prior to final rule language, adoption, and effective date. However, Bellevue intends to be proactive about the new requirements and has prepared this chapter based on the draft rule. It is anticipated that Bellevue's conservation program will meet the substantive requirements of both the draft and final rules.

Two other documents are relevant to Bellevue's conservation program, as a member of Cascade:

- Cascade Interlocal Contract: Section 7.2 of the contract states, in part, that "Cascade shall develop and carry out, and Members must participate in, water conservation programs that are uniform among Members. The Board shall develop and implement a Cascade conservation management plan that provides a mandatory base conservation program that functions to reduce both average and peak demands….Members that fail to comply with base programs as set forth in Cascade's conservation management plan may be required to assume a disproportionate reduction in water supply or to pay penalty charges, or both."
- Cascade-SPU Contract: Article VI of the contract states that "Each party is committed to the principles of water conservation and each intends to achieve its anticipated savings by implementing water conservation programs either unilaterally or in partnership with other agencies."

Table 5-1 lists the state's current conservation guidelines and recommendations for a public water system of Bellevue's size, and shows that Bellevue is in full compliance. The table

identifies the main categories of a conservation plan: data collection, demand forecasting, and a conservation program.

Most of the data for the first category is supplied in Chapter 4 Water Requirements, although the rate information (subcategory 1e) is provided later in this chapter.

Table 5-1
Conservation Guidelines and Recommendations For Public Water Systems Serving >25,000 Direct Connections

Category	Sub-Category	Element	Required or Recommended	Bellevue In Compliance?
1. Data Collection	1a. Production/ Purchases	Production	Required	Yes
		Wholesale Amount Imported	Required	Yes
		Emergency Interties Imported	Required	Yes
		Peak Day / Peak Month	Required	Yes
	1b. Sales	Single Family Sales	Required	Yes
		Multifamily Sales	Required	Yes
		Commercial, Government, Industrial Sales	Required	Yes
		Agriculture Sales	Required	n/a
		Wholesale Amount Exported	Required	Yes
		Emergency Interties Exported	Required	Yes
	1c. Non-Revenue Water	Accounted For Water	Required	Yes
		Unaccounted For Water	Required	Yes
	1d. Connections	Number of Connections and Customers	Required	Yes
	1e. Rates	Water Rates	Required	Yes
2. Demand Forecast		Demand Forecasts With and Without Conservation	Required	Yes
3. Conservation Program	3a. Objectives		Required	Yes
	3b. Public Education	School Outreach	Recommended	Yes
		Speakers Bureau	Recommended	Yes
		Program Promotion	Required	Yes
		Theme Shows and Fairs	Recommended	Yes
	3c. Technical Assistance	Purveyor Assistance	Recommended	n/a
		Customer Assistance	Recommended	Yes
		Technical Studies	Recommended	Yes
		Bill Showing Consumption History	Recommended	Yes
	3d. System Measures	Source Meters	Required	Yes
		Service Meters	Recommended	Yes
		Leak Detection (If Unaccounted Water >20%)	Recommended	Yes
	3e. Incentives / Other Measures	Single Family / Multifamily Kits	Recommended	Yes
		Nurseries / Agriculture	Recommended	n/a
		Landscape Management / Playfields	Recommended	Yes
		Conservation Pricing	Recommended	Yes
		Utility Financed Retrofit	Recommended	Yes
		Seasonal Demand Management	Recommended	Yes
		Recycling/Reuse	Recommended	Yes

For the demand forecasting category, the information is found in Chapter 4, Water Requirements.

For the five sub-categories of the conservation program category, DOH guidelines recommend that Bellevue evaluate all listed measures and implement those that are cost effective. Bellevue is actively implementing all measures, except the two that are not applicable to Bellevue's circumstances. The conservation objectives were discussed in the Compliance with Conservation Planning Requirements section of this chapter, and Bellevue's activity in each of the other categories is discussed in the Conservation Savings section of this chapter.

HISTORICAL CONSERVATION PROGRAMS

General Overview

Key milestones in Bellevue's water conservation program are as follows:

- 1987 - Bellevue begins its conservation program.
- 1989 - Bellevue hires a full time Conservation Program Coordinator.
- 1992 - Bellevue develops its first comprehensive conservation program, as part of its Water Comprehensive Plan.
- 1998 - Bellevue updates its comprehensive conservation program, as part of its Water Comprehensive Plan Update.
- 2000 - Bellevue, SPU, and SPU's other wholesale customers create the regional 1% Water Conservation Program, with a goal of reducing demand by 1% per capita per year through 2010.
- 2004 - Bellevue joins Cascade and responsibility for the SPU-administered regional conservation programs transfers from SPU to Cascade.

A summary of the measures Bellevue has implemented is provided in Table 5-2. For each measure, the table indicates the category type (e.g. public education), the years it has been implemented, and the most recent primary lead entity. Since the last six years (1999-2004) are of most interest, the table highlights the beginning of that time period with a dark line. Generally, measures with Bellevue listed as "Most Recent Primary Lead Entity" are local measures; the others are considered regional. The term "SPU/Cascade" identifies regional measures where administration switched from SPU to Cascade when Bellevue joined Cascade. The details of each measure are discussed in the remainder of this chapter.

Table 5-2
Historical Conservation Measures

Category	Measure	Year																		Most Recent Primary Lead Entity
		87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	
N/A	Full Time Conservation Coordinator*			X	X	X	X	X	X	X	X	X	X	**X**	**X**	**X**	**X**	**X**	**X**	Bellevue
Public Education	School Outreach			X	X	X	X	X	X	X	X	X	X	**X**	**X**	**X**	**X**	**X**	**X**	Bellevue, PSE
	Speakers Bureau	X	X	X	X	X	X	X	X	X	X	X	X	**X**	**X**	**X**	**X**	**X**	**X**	Bellevue
	Program Promotion	X	X	X	X	X	X	X	X	X	X	X	X	**X**	**X**	**X**	**X**	**X**	**X**	Bellevue, SPU/Cascade
	Theme Shows & Fairs				X	X	X	X	X	X	X	X	X	**X**	**X**	**X**	**X**	**X**	**X**	Bellevue
Technical Assistance	General Customer Service			X	X	X	X	X	X	X	X	X	X	**X**	**X**	**X**	**X**	**X**	**X**	Bellevue
	Customer Assistance: Residential Audits															**X**				SPU/Cascade
	Customer Assistance: Commercial Audits							X	X	X	X	X	X	**X**	**X**	**X**	**X**	**X**	**X**	SPU/Cascade
	Technical Studies					X	X	X	X	X	X	X	X	**X**	**X**	**X**	**X**	**X**	**X**	SPU/Cascade
	Bill Showing Consumption History					X	X	X	X	X	X	X	X	**X**	**X**	**X**	**X**	**X**	**X**	Bellevue
System Measures	Source Meters	X	X	X	X	X	X	X	X	X	X	X	X	**X**	**X**	**X**	**X**	**X**	**X**	Bellevue, SPU
	Service Meters	X	X	X	X	X	X	X	X	X	X	X	X	**X**	**X**	**X**	**X**	**X**	**X**	Bellevue
	Leak Detection			X	X	X										**X**		**X**		Bellevue
Incentives /Other Measures	Single Family / Multifamily Kits	X	X	X			X	X	X	X	X	X		**X**	**X**	**X**	**X**	**X**	**X**	Bellevue, SPU/Cascade
	Landscape Mgmt: Water Efficient Landscape & Irrigation Requirements			X						X	X	X	X	**X**	**X**	**X**	**X**	**X**	**X**	Bellevue
	Landscape Mgmt: Waterwise Demo Garden & Classes								X	X	X	X	X	**X**	**X**	**X**	**X**	**X**	**X**	Bellevue
	Landscape Mgmt: Water Efficient Irrigation Program										X	X	X	**X**	**X**	**X**	**X**	**X**	**X**	SPU/Cascade
	Landscape Mgmt: Summer Lawn Care (Watering) Campaign					X	X	X	X	X	X	X	X	**X**	**X**	**X**	**X**	**X**	**X**	Multiple Partners
	Landscape Mgmt: Natural Yard Care Neighborhood Program																	**X**		King County/Bellevue
	Landscape Mgmt: Soaker Hose Rebates															**X**	**X**			SPU/Cascade
	Landscape Mgmt: Soil Building/Compost Promotion																**X**			SPU/Bellevue
	Landscape Mgmt: Rain Gauges		X									X								Bellevue
	Conservation Pricing					X	X	X	X	X	X	X	X	**X**	**X**	**X**	**X**	**X**	**X**	Bellevue
	Utility Financed Retrofits: Toilet Rebates								X	X	X	X	X	**X**	**X**	**X**	**X**	**X**	**X**	SPU/Cascade/Bellevue
	Utility Financed Retrofits: Residential Clotheswasher Rebates											X	X	**X**	**X**	**X**	**X**	**X**	**X**	SPU/Cascade
	Utility Financed Retrofits: Commercial Rebates									X	X	X	X	**X**	**X**	**X**	**X**	**X**	**X**	SPU/Cascade
	Seasonal Demand Management				X	X	X	X	X	X	X	X	X	**X**	**X**	**X**	**X**	**X**	**X**	Bellevue, Multiple Partners
	Recycling and Reuse						X												**X**	Bellevue/Cascade

* Not required by DOH guidelines.

Public Education

School Outreach

This measure is defined by DOH as "education programs targeted to increase awareness of local water resources and encourage water conservation practices." Bellevue's school outreach programs aggressively target students at multiple levels of their education.

In the past six years, curriculum-based programs have reached more than 13,000 elementary students in the 16 public elementary schools within Bellevue's service area. Bellevue worked directly with the Bellevue School District to develop a science curriculum called "Shared Waters" used in the fourth grade, that teaches students about water conservation, as well as the water cycle, water as a renewable resource, northwest geography, the function of watersheds, flow patterns of water, characteristics of surface water and drinking water, why water quality is important to humans, and water quality protection actions. Bellevue provides all fourth graders with a water conservation kit and a 5-minute shower timer coincident with the Shared Waters lesson plan.

In the past six years, Bellevue helped more than 1,500 elementary school students to visit the Cedar River Watershed. The watershed tour lectures cover water conservation, as well as explaining where the students' water comes from and what is required to preserve the watershed and provide them quality drinking water.

In 2004, Bellevue began offering assembly programs to all elementary schools in the service area which include public and private schools. The assemblies help students understand how their choices affect the environment around them, including water conservation. In 2004, over 3,000 elementary students attended the "Hop on the Habitat Express" assemblies at eight elementary schools. An updated assembly will be launched in the Fall of 2005 called "Earth Smart Adventures: Choices for Our Planet." Free workshops are offered as a follow-up to the assembly. Workshops available to classroom teachers include "Healthy Habitat," which explores the basic components of habitat, and "Habitat Stewardship," which introduces the concept of stewardship.

For more than a decade, Bellevue has teamed with Puget Sound Energy to provide an in-depth conservation program to more than 13,000 middle school students. Previously known as "In Concert With The Environment," the program went through an extensive revision of its curriculum and is now known as "Powerful Choices for the Environment." The four-day program is integrated into the sixth grade science curriculum. It focuses on water conservation as well as ecosystems, air quality, waste/reuse/recycling, and energy conservation through hands-on activities, classroom presentations, and computer analysis. During the water conservation section, each student is given a digital shower timer and challenged to see how much water they can personally conserve. Their individual water savings are tallied so the students can see how a small personal change in behavior can have a large cumulative impact.

Bellevue regularly partners with other regional purveyors to update educational materials and conduct outreach/educational programs that target children and families.

Speakers Bureau

This measure is defined by DOH as "seeking speaking opportunities and making speakers available to a wide cross-section of service, community, and other groups." Bellevue provides staff to groups requesting presentations on water conservation and pursues opportunities to address audiences.

Program Promotion

This measure is defined by DOH as "publicizing the need for water conservation through television and radio public service announcements, news articles, public water system bill inserts, or other means." In addition to program-specific outreach, Bellevue engages in general program promotion intended to continue to build and reinforce a water conservation ethic among customers.

Bellevue distributes several locally-produced and regionally-produced water conservation brochures. Distribution methods include direct mail, utility billing insertion, and displays at public access locations including the Bellevue Botanical Gardens, key City outreach facilities, local libraries, City Hall, and the Utility's offices. In 2002, Bellevue created a "new residents" brochure, which includes a reply card residents can use to request further information. The reply cards often request watering and other yard care related information.

Bellevue employs media releases such as conservation articles and tips to the *Seattle Times*, the *Seattle PI*, the *King County Journal*, the *Northwest Garden News*, and the *Bellevue Botanical Garden Newsletter*. Bellevue regularly includes water conservation news and water savings tips in the City's quarterly newspaper *It's Your City* and on the Utilities' website.

Bellevue promotes regional conservation websites including www.savingwater.org, Cascade's website, and financially supports the *Water Use It Wisely* regional radio campaign sponsored by the Water Conservation Coalition of Puget Sound.

Bellevue employs interpretive features, such as interactive displays, water related art, signs, and demonstration projects in key areas around the City to raise awareness about the need to conserve and protect water resources. Projects include the Cherry Creek Reservoir, the Lakehills Demonstration gardens, the Bellevue Botanical Gardens, and Lakemont Park.

Theme Shows & Fairs

This measure is defined by DOH as "preparing a portable display on water conservation and selected written material." Bellevue provides display materials and water conservation staff to local and regional theme shows and events. The displays, along with other education materials, are regularly exhibited at a variety of Bellevue's special events, mini city halls, community meetings, public meetings, classes, and the Bellevue Botanical Garden.

Technical Assistance

Customer Assistance

This measure is defined by DOH as "providing assistance and information to customers which facilitate water conservation."

Bellevue provides general technical assistance to customers upon request, including water use assessments and strategies for reducing water use. Assistance includes providing toilet leak detection dye tablets, and providing retrofit devices such as low-flow showerheads and faucet aerators.

Bellevue has a residential audit program for high summer water users. The program provides assistance through water usage audits and materials on efficient outdoor watering practices. Bellevue has a commercial audit program for large commercial water users. The program identifies conservation measures and associated costs and benefits of implementation. The program began in 1993 under SPU and continues via Cascade.

Technical Studies

This measure is defined by DOH as "collecting data and researching new technology to develop programs which would produce measurable water savings."

Since 1991, Bellevue has participated in regional research of potential conservation measures. Studies have included an outdoor water use study; a residential evapotranspiration pilot program; evapotranspiration station research; reclaimed water use feasibility research; a conservation potential assessment for SPU's retail and wholesale service area; and residential and commercial water conservation studies. In 2005, Bellevue, along with the other Cascade members, conducted a conservation potential assessment for the Cascade service area, including baseline market research on customer attitudes, water use behaviors, and water fixture status.

The studies have yielded information on customer water use including attitudes, behaviors, barriers and motivation to change; the level of complexity that can successfully be designed into residential and commercial programs; improved water management at centrally controlled irrigation systems; the development of a temporary reclaimed water treatment plant, and continued evaluation of uses for reclaimed water. These results have been used to guide program expansion and refine existing efforts.

Bill Showing Consumption History

This measure is defined by DOH as "showing the percentage increase or decrease in water use over the same period from the previous year." Bellevue continues to include water consumption histograms on water bills, a practice initiated in 1991.

System Measures

Source Meters

This measure is defined by DOH as "installing master source meters for all sources and maintaining a periodic meter testing and repair program." All of Bellevue's connections to SPU's transmission supply lines are jointly metered by SPU and Bellevue. Telemetry was added in 1991 to monitor the flow from the source meters.

Service Meters

This measure is defined by DOH as "installing individual meters for all water uses and maintaining a periodic meter testing and repair program." Bellevue requires service meters on all connections and recently required a non-metered water district to install service meters before agreeing to assume operation of the District. Bellevue has an ongoing meter repair and replacement program.

Leak Detection

This measure is currently defined by DOH as "conducting a regular and systematic program of finding and repairing leaks" and is currently required if unaccounted water is in excess of 20%.

Two changes are on the horizon related to this measure. First, the American Water Works Association (AWWA) is moving away from using the term "unaccounted water". Second, leakage is one of the areas the State's new conservation rule will address. As mentioned previously, the state's preliminary draft rule is being revised, so the following information may be amended. The preliminary draft rule requires annual calculation of the distribution system leakage, and requires a water loss control action plan if the leakage exceeds 10%.

The distribution system leakage number in the preliminary draft conservation rule is defined as "total water produced and purchased" minus "authorized consumption." Bellevue's 2003 water balance, as provided in Chapter 4, shows Bellevue's system unmetered water to be 5.1% of water purchases, even if all of the unmetered water is assumed to be leakage, it is still well below the preliminary draft rule requirement.

While Bellevue will likely not be required to have a water loss control action plan, Bellevue is proactive about leak control. Bellevue relies on system break history, pipeline condition

assessments, and annual leak detection surveys to help prioritize water system rehabilitation and replacement projects.

Incentives/Other Measures

Single Family/Multifamily Kits

This measure is defined by DOH as "distributing kits containing easily installed water saving devices to single family residential homes and the owners and managers of apartment buildings and condominiums."

Between 1992 and 1997, Bellevue, in conjunction with SPU, Seattle City Light, Puget Power, Bonneville Power Administration, and Washington Natural Gas, conducted a kit program. Free kits including low flow showerheads, toilet flow regulators, faucet aerators, and water conservation information were delivered to18,000 single family households and 7,600 multifamily households in Bellevue. Showerheads were also installed in an undetermined number of gyms.

In 1999 and 2000, retrofit kits were distributed in conjunction with the single family toilet rebate program.

Since 2001, showerheads and faucet aerators have been offered to multifamily customers under the umbrella of a multifamily toilet program.

Retrofit items and conservation information were also made available during the 2001-2002 drought. Approximately 2,500 kits which included showerheads, shower timers, toilet leak detection dye tabs, bathroom faucet aerators, and hose shutoff devices were distributed.

Landscape Management/Playfields

This measure is defined by DOH as "promoting low water demand landscaping in all retail customer classes." Bellevue is particularly active in this area.

Bellevue implemented water efficient landscape and irrigation requirements in 1995 as follow up to the 1989 Wise Water Use Ordinance. The goal of the requirements is to reduce landscape irrigation for commercial properties, street projects, and park sites. It achieves this by requiring proper planning, installation, and maintenance of new or modified landscapes and irrigation systems. The code applies to lots larger than 500 square feet, excluding single family lots. Specific elements include limiting irrigated turf; requiring drought-resistant and native plants; irrigation system specifications; and evapotranspiration based irrigation system scheduling.

In 1994, Bellevue's Utilities and Parks Departments cooperatively developed the Waterwise Garden and Education Program. The program centers around the Waterwise Demonstration Garden at the Bellevue Botanical Garden. Signage, brochures, staff, and volunteers at the garden provide conservation information on site planning, plant selection, soils, watering

schedules, and efficient irrigation systems. Classes are also offered by local experts and are well attended and highly evaluated by participants.

Since 1996, Bellevue has offered a water efficient irrigation program to large volume irrigators. The program provides irrigation audits, technical assistance based on best management guidelines, and financial incentives for cost effective improvements. In the past six years, 35 large volume customers have participated in audit and incentive offerings.

Bellevue participates in a regional summer yard care program that features several elements of natural yard care, including water conservation. The program began in 1991 as a summer watering campaign by the Water Conservation Coalition of Puget Sound. The program was aimed at educating the public about irrigation conservation needs and methods. Since then, Bellevue has participated in *Northwest Natural Yard Days* which integrates water conservation messages with related landscape messages. This program includes broader agency support, partnership with local retailers, and more comprehensive advertising and communications effort than the preceding program. The campaign includes bill stuffers, public service announcements, seminars, information available at gardening centers and nurseries, radio ads, publications, and community outreach efforts.

In 2003, Bellevue participated in a pilot program called the *Natural Yard Care Neighborhood Program*. This effort, in partnership with King County, brought trainings to targeted neighborhoods and promoted community "norms" around natural yard care practices, including efficient water use.

In 2002 and 2003, Bellevue promoted soaker hose "instant" rebates, as part of SPU's regional conservation program. In 2002, the program also offered "instant" rebates for compost, in an effort to promote building healthy soils as a means to conserve water.

In the past, Bellevue promoted awareness of summer watering conservation through the distribution of rain gauges. In 1997, Bellevue distributed gauges at special events, workshops, and lectures held in conjunction with the Waterwise Garden at the Bellevue Botanical Garden.

Conservation Pricing

This measure is defined by DOH as "implementing rate design techniques to provide economic incentives to conserve water."

Bellevue has used conservation pricing since 1990. The current pricing structure is shown in Table 5-3, and encourages the wise and efficient use of water for each customer class. The single family customer class has an inverted block rate structure with four blocks. The multifamily customer class has an inverted block rate structure with three blocks. The commercial customer class uses seasonal rates, charging more for water in the peak season. Dedicated irrigation meters are charged a premium rate, the highest rate of all the water uses.

Utility Financed Retrofits

This measure is defined by DOH as "installing water efficient fixtures in existing residences and commercial/industrial facilities."

Bellevue has offered toilet rebates since 1994. In the past six years, Bellevue, in conjunction with SPU and Cascade, has rebated 695 toilets for single family households in Bellevue. In 2001, a multifamily toilet rebate program, which also includes showerheads and faucet aerators, was launched. This program has replaced 1,314 toilets in Bellevue.

Table 5-3
Rate Structure

Volume	$/ccf
Single Family - Inverted Block Rate	
0 - 20 ccf	$2.17
21 - 30 ccf	$3.00
31 - 100 ccf	$3.86
Over 100 ccf	$5.73
Multifamily - Inverted Block Rate	
0 - 11 ccf	$2.61
12 - 15 ccf	$2.92
Over 15 ccf	$3.45
Commercial - Season Rates	
Non-Peak	$2.22
Peak	$3.11
Irrigation - Premium Rate	
All consumption	$4.49

*2005 Rates shown

Bellevue has offered rebates for residential capacity washing machines since 1997. The program was originally implemented in conjunction with SPU and administrative responsibility has now been transferred to Cascade. The energy utilities Seattle City Light and Puget Sound Energy have often partnered with the program to increase the rebate amount offered to customers. 4,143 rebates have been issued to Bellevue residents in the last six years.

Bellevue has offered financial incentives, as well as technical support, to commercial customers since 1995. The program will pay up to 50 percent of the installed cost for pre-approved conservation projects. Opportunities include replacing toilets and urinals; replacing commercial washers; converting water cooled ice machines to air cooled; eliminating single pass cooling; cooling tower improvements; and more. To date 1,340 toilets and urinals have been replaced in Bellevue under this program.

Seasonal Demand Management

This measure is defined by DOH as "implementing measures aimed at controlling peak seasonal demand." Bellevue's conservation pricing and landscaping management measures described above, are aimed directly at controlling peak seasonal demand.

Recycling/Reuse

This measure is defined by DOH as "examining opportunities for water reuse and recycling as an approach to providing additional water."

Cascade's *2005 Transmission and Supply Plan* analyzed reclaimed water opportunities for Bellevue. Sources of reclaimed water include several King County wastewater treatment facilities: the south treatment plant, the future Brightwater treatment plant, and potentially other satellite facilities. Bellevue has no specific plans for water reuse due to the highly developed nature of its service area. That situation makes provision of reclaimed water to existing customers costly. Minimal opportunities will likely be available with regard to new development for which reclaimed water application is feasible. However, Bellevue has identified potential application sites in the irrigable areas, as shown in Table 5-4.

Table 5-4

Existing Sites with Potential for Reclaimed Water Application (1)

Customer	2003 Total Consumption (ccf)(2)	2003 Total Consumption (gal)(3)	2003 Average Day Demand (gpd)(4)	2003 Peak Season Demand (gpd)(5)
Bellevue Community College	4,571	3,419,108	9,367	28,025
Bentall Capital/Five Newport	10,040	7,509,920	20,575	61,557
Foothill Commons Apts.	4,062	3,038,376	8,324	24,905
Double Tree Inn	5,251	3,927,748	10,761	32,195
Boeing Computer Services	5,145	3,848,460	10,544	31,545
Central Park East Apts.	5,332	3,988,336	10,927	32,691
Colony Woods Apts.	6,223	4,654,804	12,753	38,154
Overlook at Lakemont	4,023	3,009,204	8,244	24,666
Tam O'Shanter Golf Course	10,066	7,529,368	20,628	61,716
Total	**54,713**	**40,925,324**	**112,123**	**335,454**

NA = Not Applicable
1. These sites represent either planned opportunities (where specifically noted) or potential opportunities based on analysis of the largest current irrigation and industrial water customers.
2. From billing records.
3. Converted from ccf to gal.
4. Annual amount divided by 365 days per year.
5. Converted from annual amount to average day demand during peak season. The following assumptions are made:

Irrigation sites - Peak season use only. Peak season assumed to be 122 days (4 months) long.
Industrial sites - Annual use divided by 365 days (full year).

The Bellevue Convention Center Authority operates a pulp-extractor food waste system. The system reduces the facility's water consumption by recycling garbage disposal rinse water instead of using a flow through system, saving approximately 1 million gallons per year. The system serves as a demonstration project for other such facilities, and led to the installation of another system by the Bellevue Public Schools in their central school lunch kitchen facility at Tyee Middle School.

HISTORICAL CONSERVATION SAVINGS

The conservation savings Bellevue has achieved through 2004 are shown in Table 5-5. The table shows demand with and without conservation for various categories including Bellevue's single family, multifamily, and commercial customer categories. The methodology for calculating these numbers is described below and differs between residential and commercial categories.

The main steps to determine the conservation savings for the single family and multifamily sectors shown in Table 5-5 are as follows:

1. "Number of Housing Units" and "Number of Accounts" in the year of interest (rows 2-3) are obtained from the billing system. The numbers are 33,912 housing units for single family and 24,206 housing units for multifamily.

2. "Water Use Per Housing Unit" and "Water Use Per Account" in the baseline period (rows 5-6) are calculated from data from the billing system. The baseline period of 1986-1990 was chosen for three reasons. First, DOH suggests beginning calculating demand reductions in 1991, which implies using a baseline period prior to 1991. Second, using multiple years helps adjust for weather and other factors that may make a single year unrepresentative; therefore extending back several years before 1990 is reasonable. Third, this was the five highest-use years in the City's history. The results per housing units are 283 gpd for single family and 152 gpd for multifamily.

3. "Water Use Per Housing Unit" and "Water Use Per Account" in the three year average (rows 8-9) are calculated from data from the billing system. A three year average is used to correct for weather and other factors that may make the most recent year, or any single year, unrepresentative. The results per housing unit are 240 gpd for single family and 114 gpd for multifamily.

4. "Normalized Demand Without Conservation" (row 11) is calculated by multiplying the "Number of Housing Units" in the year of interest (row 2) by the "Water Use Per Housing Unit" in the baseline period (row 5). The results are 9,597,096 gpd for single family and 3,679,312 gpd for multifamily.

5. "Normalized Demand With Conservation" (row 12) is calculated by multiplying the "Number of Housing Units" in the year of interest (row 2) by the "Water Use Per Housing Unit" in the three year average (row 8). The results are 8,138,880 gpd for single family and 2,759,484 gpd for multifamily.

Table 5-5 Conservation Savings Achieved Through 2004							
Row		**Single Family**	**Multi Family**	**Commer-cial**	**Total Billed**	**Unbilled**	**Purchased Water[4]**
1	**Demographics in Year of Interest (2004)**						
2	Number of Housing Units[5]	33,912	24,206	N/A	N/A	N/A	N/A
3	Number of Accounts[5]	33,912	658	N/A	N/A	N/A	N/A
4	**Water Use Factors in Baseline Period (1986-1990)**						
5	Water Use per Housing Unit (gpd)[1, 6]	283	152	N/A	N/A	N/A	N/A
6	Water Use per Account (gpd)[1, 6]	283	4,872	N/A	486	N/A	N/A
7	**Water Use Factors in 3 Year Average (2002-2004)**						
8	Water Use per Housing Unit (gpd)[1, 6]	240	114	N/A	N/A	N/A	N/A
9	Water Use per Account (gpd)[1, 6]	240	4,594	N/A	N/A	N/A	N/A
10	**Demand and Savings For Year of Interest (2004)**						
11	Normalized Demand Without Conservation (gpd)[2]	9,597,096	3,679,312	4,112,421	17,388,829	1,139,240	18,528,069
12	Normalized Demand With Conservation (gpd)[3, 6]	8,138,880	2,759,484	3,869,918	14,768,282	748,598	15,516,879
13	Actual Demand With Conservation (gpd)[5] *(Uses actual data for year of interest)*	8,240,536	2,828,653	3,717,740	14,786,929	626,480	15,413,409
14	Savings Volume (gpd)[6] *(Based on normalized demands)*	1,458,216	919,828	242,503	2,620,547	390,643	3,011,190
15	Savings Percent *(Based on normalized demands)*	15%	25%	6%	15%	34%	16%

1. Baseline and 3 year average water use per housing unit or account are rounded to zero decimals.
2. For residential, uses baseline period water use factors. For commercial, uses 3-yr average of actual demand plus estimated conservation savings.
3. For residential, uses 3-year average water use factors. For commercial, uses 3-yr average of actual demand.
4. Exclusive of wheeled/wholesale water.
5. Data obtained from the billing system.
6. Calculated from data obtained from the billing system.
7. Source of data is from local and regional commercial sector reports that estimate savings from implemented projects.

6. "Actual Demand With Conservation" (row 13) is obtained from the billing system. The numbers are 8,240,536 gpd for single family and 2,828,653 gpd for multifamily.

7. "Saving Volume" (row 14) is calculated by subtracting "Normalized Demand With Conservation" (row 12) from "Normalized Demand Without Conservation" (row 11). The results are 1,458,216 gpd for single family and 919,828 gpd for multifamily.

8. "Savings Percent" (row 15) is calculated by dividing the "Savings Volume" (row 14) by the "Normalized Demand Without Conservation" (row 11). The results are 15% savings for single family and 25% savings for multifamily.

The main steps to analyze the conservation savings for the commercial sector are as follows:

9. "Normalized Demand Without Conservation" (row 11) is calculated by adding the "Normalized Demand With Conservation" (row 12) and the "Saving Volume" (row 14). The result is 4,112,421 gpd.

10. "Normalized Demand With Conservation" (row 12) is calculated from data from the billing system. It is the average of the actual demands for the year of interest and the two previous years. The result is 3,869,918.

11. "Actual Demand With Conservation" (row 13) is obtained from the billing system. The number is 3,717,740.

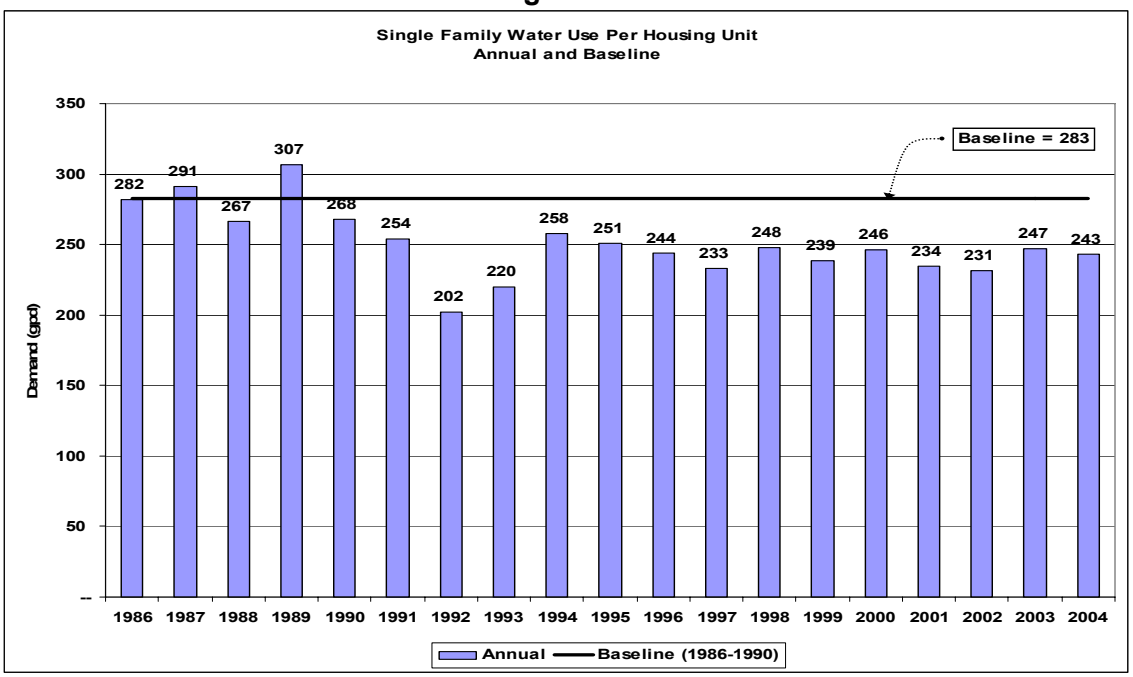
12. "Saving Volume" (row 14) is the estimated cumulative amount of water saved by projects implemented in the commercial sector since 1990. The source for this data is from local and regional commercial sector reports that estimate savings from implemented projects.. The number is 242,503 gpd.

13. "Savings Percent" (row 15) is calculated by dividing the "Savings Volume" (row 14) by the "Normalized Demand Without Conservation" (row 11). The result is 6% savings.

The conservation savings and their effects on demand are shown graphically in Figures 5-1 to 5-4. The figures demonstrate that water conservation has resulted in steadily decreasing water use for single and multifamily units and the commercial sector.

For the single family sector, Figure 5-1 compares the water use per housing unit for each year to the baseline period. The baseline period water use number is 283 gpd. The numbers for the most recent three years average 240 gpd, a 15% reduction compared to the baseline period.

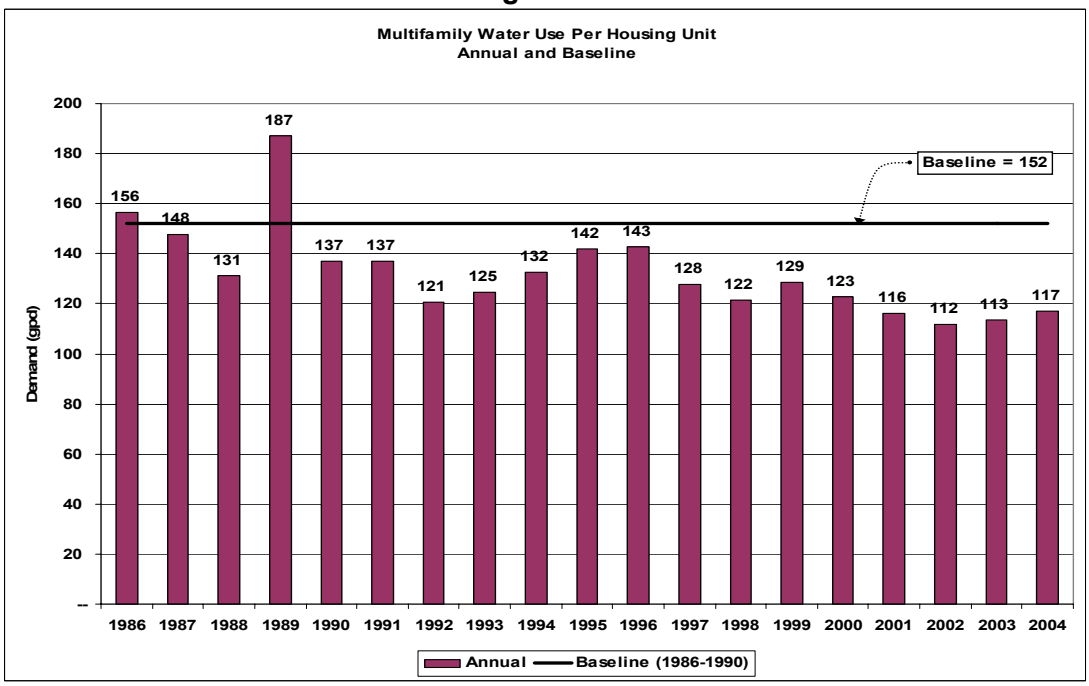
Figure 5-1



Note: The decreased demand in 1992 was the result of drought related mandatory watering restrictions. The decreased demand in 1993 was due to an unusually wet summer and rollover effects from the 1992 drought.

For the multifamily sector, Figure 5-2 compares the water use per housing unit for each year to the baseline number of 152 gpd. The most recent 3-year average (114 gpd) reflects a 25% reduction compared to the baseline period.

Figure 5-2



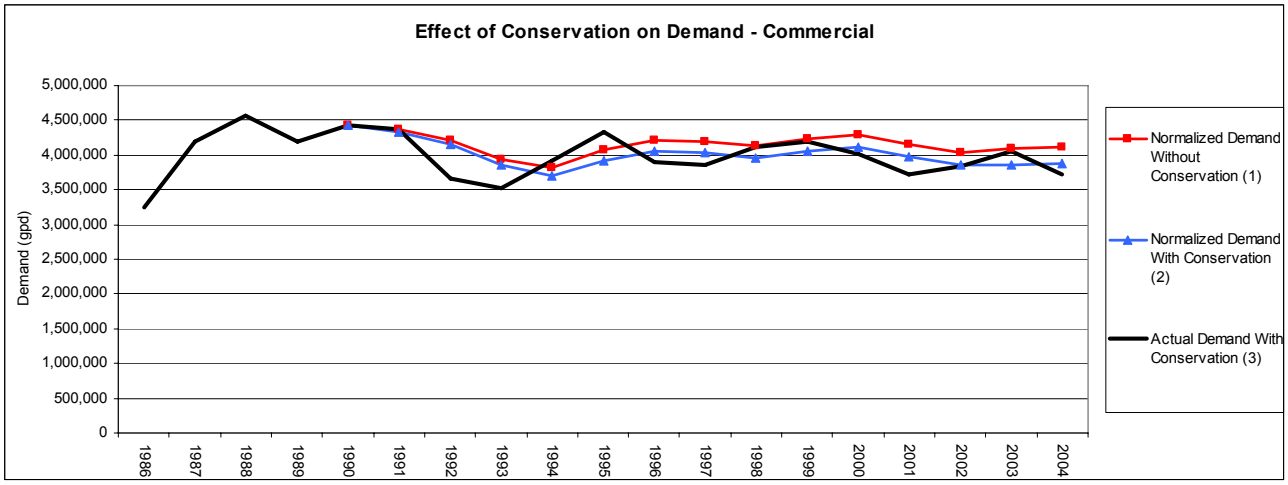
Note: The decreased demand in 1992 was the result of drought related mandatory watering restrictions. The decreased demand in 1993 was due to an unusually wet summer and rollover effects from the 1992 drought.

Figure 5-3 shows the effect of conservation on commercial demand. The figure plots:

- Normalized Demand Without Conservation – This is the normalized demand with conservation plus estimated savings from commercial conservation projects.
- Normalized Demand With Conservation – This is the 3 year average of actual demands.
- Actual Demand With Conservation – This is the actual demand.

Since the post-conservation era began in 1991, the actual demand with conservation has been lower than the normalized demand without conservation, aside from 1994 and 1995 (as noted in footnote 3 to Figure 5-3.) By 2004, the normalized demand with conservation was 6% less than what it would have been without conservation.

Figure 5-3



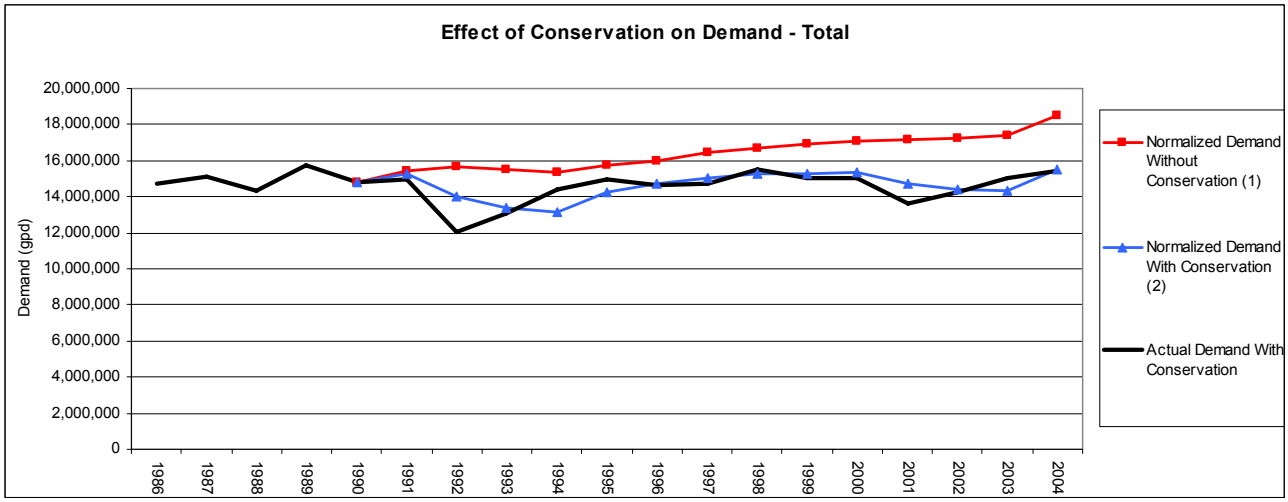
1. 3-year average of actual demands plus estimated conservation savings.
2. 3-year average of actual demands.
3. Any year where the "actual demand with conservation line" is higher than the "normalized demand without conservation" line does not imply that no conservation occurred that year. Rather, it is because the normalized demand without conservation uses a 3-year average of actual demands. Therefore, if the year of interest demand is significantly higher than the two preceding years, the actual demand with conservation line will be higher than the normalized demand without conservation line.

Figure 5-4 shows the cumulative effect of conservation on the entire system. The figure plots:

- Normalized Demand Without Conservation – For the residential sector, this uses baseline period water use factors. For the commercial sector, this uses a 3-yr average of actual demand plus estimated conservation savings.
- Normalized Demand With Conservation – For the residential sector, this uses 3-year average water use factors. For the commercial sector, this uses a 3-yr average of actual demand.
- Actual Demand With Conservation – This is the actual demand.

Since the post-conservation era began in 1991, both the normalized demand with conservation and the actual demand with conservation have consistently been lower than the normalized demand without conservation. By 2004, the demand (normalized) with conservation was 16% less than what it would have been without conservation.

Figure 5-4



1. For residential, uses baseline period water use factors. For commercial, uses 3-yr average of actual demand plus estimated conservation savings.
2. For residential, uses 3-year average water use factors. For commercial, uses 3-yr average of actual demand.

CONSERVATION PROGRAM FOR 2006-2011

Bellevue's conservation program for the next six years, 2006-2011, is designed to continue the historical success, as well as to meet the stated objectives listed in Chapter 5.2. As noted above, by 2004 Bellevue had achieved a 16% reduction in overall demand compared to what demand would have been without conservation.

Selection of the conservation program components is also guided by the *2005 Cascade Water Alliance Conservation Potential Assessment* (CPA). The CPA analyzed conservation opportunities and estimated water savings and costs associated with various conservation measures. The analysis was performed for each individual Cascade member, as well as for Cascade collectively. For Bellevue's portion of the CPA, the single family sector has the largest savings potential (approximately 65% of Bellevue's total savings), followed by multifamily (approximately 25%) and then by commercial (approximately 10%). The CPA also indicates that the outdoor portion of Bellevue's single family sector has strong savings potential, with approximately 25% of Bellevue's total savings potential coming from this component. Therefore, Bellevue's strong focus on the single family sector and landscape management measures is consistent with the CPA analysis.

Details of the 2006-2011 conservation program are provided in Table 5-6. The table is structured to show that the new program continues to meet or exceed DOH requirements, as well as to allow for comparisons between new and historical programs. A summary

Table 5-6 Conservation Program for 2006-2011			
Category	**Measure**	**Summary**	**Lead Entity**
N/A	Full Time Conservation Coordinator	Continue staffing.	Bellevue
Public Education	School Outreach	Continue 4th grade Shared Waters curriculum and conservation kit, 6th grade Powerful Choices for the Environment program, Cedar River watershed tours, assembly programs, and teacher workshops.	Bellevue, PSE
	Speakers Bureau	Continue providing speakers for groups.	Bellevue
	Program Promotion	Continue general program promotion through brochures, media releases, city newsletter, website, displays, demonstration projects, and more.	Bellevue, Cascade
	Theme Shows & Fairs	Continue providing display materials and staff to local and regional theme shows and events.	Bellevue
Technical Assistance	General Customer Service	Continue water use assessments and strategies to reduce water use.	Bellevue
	Customer Assistance: Residential Audits	Continue water usage audits and materials for high summer water users.	Cascade
	Customer Assistance: Commercial Audits	Continue water usage audits for large commercial customers.	Cascade
	Technical Studies	Evaluate participating in technical studies as appropriate.	Cascade
	Bill Showing Consumption History	Continue providing consumption history on bills.	Bellevue
System Measures	Source Meters	Continue metering, as well as meter testing and repair.	Bellevue, SPU
	Service Meters	Continue metering, as well as meter testing and repair.	Bellevue
	Leak Detection	Continue leak control programs.	Bellevue
Incentives /Other Measures	Single Family / Multifamily Kits	Continue providing showerheads and faucet aerators to multifamily customers.	Bellevue, Cascade
	Landscape Mgmt: Water Efficient Landscape & Irrigation Requirements	Continue landscaping-oriented conservation requirements for commercial properties, street projects, and parks.	Bellevue
	Landscape Mgmt: Waterwise Demo Garden & Classes	Continue landscaping-oriented conservation education, signage, and classes.	Bellevue
	Landscape Mgmt: Water Efficient Irrigation Program	Continue landscaping-oriented water usage audits, technical assistance, and financial incentives for large commercial customers.	Cascade
	Landscape Mgmt: Summer Lawn Care (Watering) Campaign	Continue landscaping-oriented conservation through Northwest Natural Yard Days.	Multiple Partners
	Conservation Pricing	Continue inverted block rate structure for residential, seasonal rate structure for commercial, and premium pricing for irrigation meters.	Bellevue
	Utility Financed Retrofits: Toilet Rebates	Continue toilet rebates for multi-family and commercial customers.	Cascade
	Utility Financed Retrofits: Residential Clotheswasher Rebates	Continue clotheswasher rebates for residential customers.	Cascade
	Utility Financed Retrofits: Commercial Rebates	Continue rebates up to 50% of installed cost for most equipment.	Cascade
	Seasonal Demand Management	Continue conservation pricing and landscape management measures listed above.	Bellevue, Multiple Partners
	Recycling and Reuse	Continue promoting the use of reclaimed water as appropriate.	Bellevue/Cascade

statement about each measure is included in the table and more detailed measure descriptions are available in the Conservation Savings section of this chapter. For measures where the lead entity is not the City of Bellevue, continuation of the measure is contingent on continued participation by the lead entity.

Cascade serves as Bellevue's regional partner for a range of conservation services. As a Cascade member, Bellevue actively participates in planning these regional services. In 2006 Bellevue will be working with Cascade in formulating Cascade's Long-Range Conservation Plan. The items listed in Table 5-6 are based on Cascade's transition conservation program, which is currently in effect, and could change as Cascade develops its long range plan.. Bellevue anticipates that regional conservation services performed by Cascade will be at least equivalent to the transition program elements.

Bellevue finances its conservation program through customer rates. Bellevue pays directly for measures where it is the lead entity. Bellevue's share of Elements where Cascade is lead entity are included as part of wholesale water payments to Cascade.

WATER SHORTAGE CONTINGENCY PLAN

The City of Bellevue maintains a specific *Water Shortage Contingency Plan* as Appendix 3 in Volume 2 of the *Bellevue Utilities Emergency Management Plan* (Red Book) referenced in the Emergency Procedures section of Chapter 9. The *Water Shortage Contingency Plan* provides a systematic response, should the need arise, for Bellevue to reduce customer water demands in response to a water supply emergency or a drought event. The Water Shortage Contingency Plan is designed to be used in highly unusual and infrequent events, and to be coordinated with Cascade's *Regional Water Shortage Contingency Plan*. The Plan identifies:

- The Water Shortage Response Team (both local and regional) responsible for coordinating and implementing Bellevue's response in the event of a water shortage;
- Actions to be implemented by Bellevue during each stage of a water shortage response;
- Bellevue staff, and City Council members who should be notified and routinely briefed on the status of a water shortage, and;
- Public notification procedures and messages that should be implemented during each stage of a water shortage response.

The *Water Shortage Contingency Plan* is divided into four stages which allow Bellevue to either progressively implement more severe demand reduction activities as conditions warrant (as in the case of a regional drought), or to immediately invoke severe restrictions (as in the case of a local or regional supply emergency or failure). In general, the four stages are:

- Advisory Stage: Customers are notified as early as meaningful data are available that weather conditions may result in a less than normal available supply of water.

- Voluntary Stage: Voluntary support and cooperation of customers is relied upon to meet target consumption goals in response to a water shortage.
- Mandatory Stage: If voluntary support and cooperation by customers does not reduce demand enough to meet target consumption goals, or if supply conditions continue to deteriorate, mandated restrictions are placed on discretionary water uses in order to meet consumption goals.
- Rationing Stage: Water rationing is implemented only when a critical water supply situation exists which threatens availability of water for public health and safety.

The Water Shortage Response Team includes staff from the Engineering and Operations & Maintenance Divisions, from the Utilities Department Director's Office, and the Utility's Public Information Officer. Water conservation staff are responsible for maintaining the *Water Shortage Contingency Plan* and response team composition. The complete response team roster is contained in the Plan, along with the names, titles, work and home phone numbers of the staff (in ranked order) responsible for assembling and directing the Water Shortage Response Team, and the Utility's response in the event of a water shortage.

CHAPTER 6
Existing System

This chapter identifies physical facilities within the Bellevue water system and summarizes their operation.

OPERATING AREAS

The Bellevue water system is best described in terms of operating areas and pressure zones. Operating areas are those areas of the system that operate somewhat independently in terms of storage and supply. Within each operating area there may be several pressure zones that operate at different pressures or hydraulic elevations. These pressure zones rely on storage within the operating area, even though storage may be at different hydraulic elevations. Some zones, therefore, must access storage via pump stations or pressure reducing valves (PRVs).

Table 6-1 lists the three operating areas within Bellevue's water system and shows the pressure zones, and supply sources serving each operating area. Bellevue's three major operating areas are also shown in Figure 6-1. Hydraulic profiles for Bellevue's system are shown in Figures 6-2a, 6-2b, and 6-2c. The locations of pressure zones and supply facilities are show in Figure 6-3.

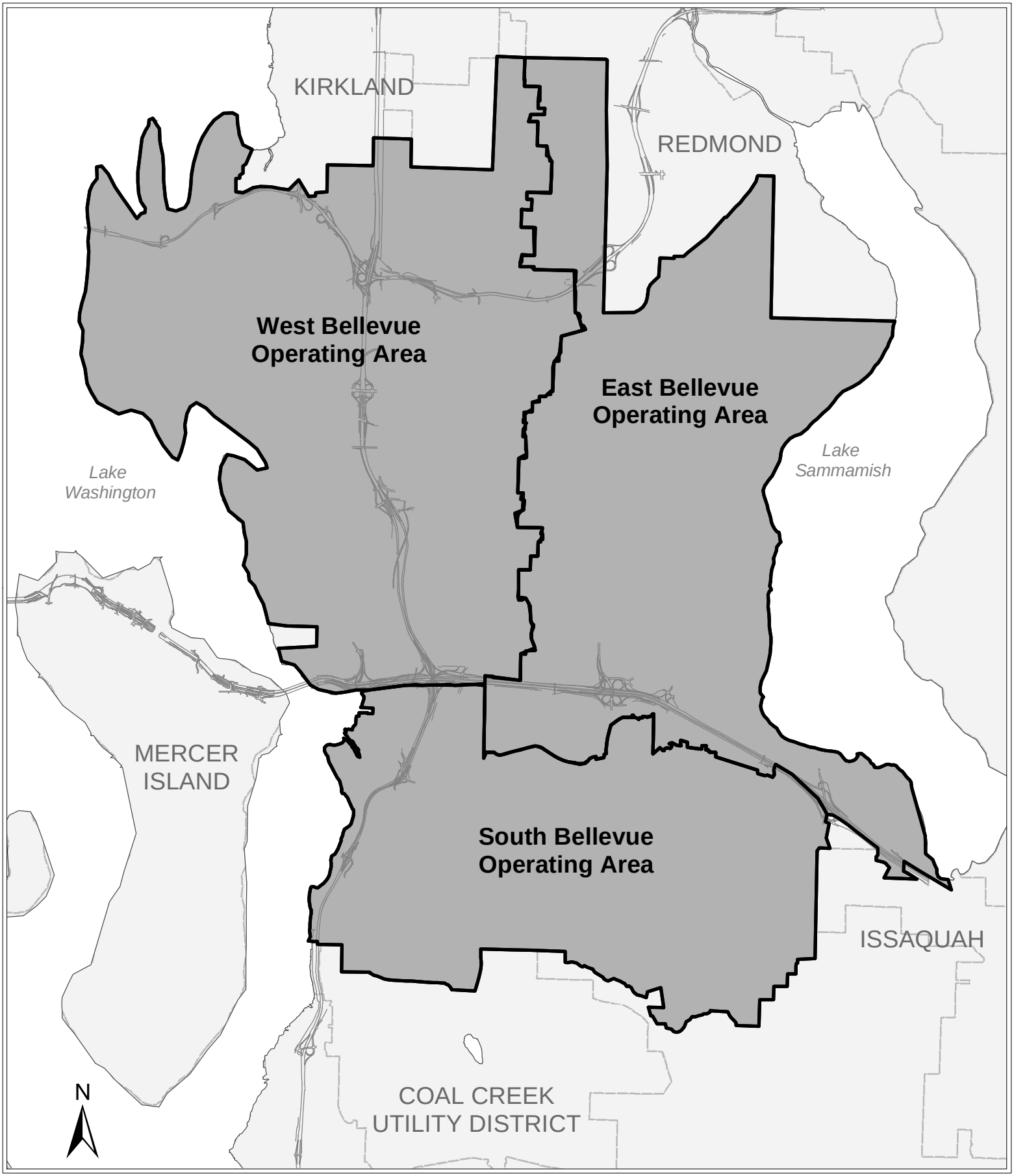
PHYSICAL FACILITIES

The following text discusses major facilities in the Bellevue system. Most of the existing facilities in Bellevue's water system were originally part of six water districts that formerly comprised the Bellevue system.

Regional Supply Connections

Bellevue has 15 connections to Seattle Public Utilities' (SPU) regional supply system and one connection to Cascade Water Alliance's regional supply system. Each SPU supply connection includes an SPU meter, a City of Bellevue meter, and a device to control flow from the inlet. Flow control devices are either PRVs, which control flow as determined by the pressure differential across the valve or by flow control valves, which control flow as determined by input from the water operations control center located at the Bellevue Service Center. Connections

Table 6-1 Existing Operating Areas			
Operating Area	**Pressure Zones**	**Primary Supply**	**Storage**
West Bellevue	Bellevue (BV) 400 Pikes Peak (PP) 550, 600, 670 Bellefield (BF) 220 Kelsey Creek (KC) 300 Clyde Hill (CL) 335, 500 Yarrow Bay (YB) 300 Medina (MD) 230 Enatai (EN) 300 Woodridge (WD) 340, 400, 450 Meydenbauer (MB) 252 Richards Valley (RV) 300 Hunts Point (HP) 250	Cherry Crest NE 40th Bel-Red Enatai Richards Road	Pikes Peak Cherry Crest Clyde Hill 335 (2), 390, 465 Woodridge Meydenbauer
East Bellevue	Lake Hills (LH) 520 Rose Hill (RH) 545 Redmond (RM) 330, 400 College Hill (CO) 380, 440 Kelsey Creek (KC) 450 Lake Hills (LH) 380, 435 Sammamish (SA) 270 Eastgate (EG) 300, 370, 400, 440 Sunset Hills (SH) 450	NE 8th SE 28th Eastgate NE 40th	NE 40th Lake Hills 520 (N & S) Newport Parksite Sammamish City of Kirkland's 545 Reservoir
South Bellevue	Newport Shores (NS) 200 Factoria (FA) 293, 440, 470 Newport Hills (NH) 380, 470, 580 Forest Hills (FH) 465, 1100 Somerset (SS) 550, 700, 850, 940, 1000 Eastgate (EG) 590, 630 Horizon View (HV) 700, 940, 1080, 1115, 1175 Summit (SU) 1060, 1100, 1350 Cougar Mountain (CM) 1000, 1150, 1300, 1465, 1550	Somerset Inlet Eastgate SE 28th Inlets 7, 9, 10, 11	Somerset 2, 3 Forest Hills Horizon View 1, 2, 3, 3a Cougar Mountain 1, 2, 3, 3a Factoria CCUD's 440, 580 (E & W)



CITY OF BELLEVUE
WATER OPERATING AREAS
2005

FIGURE 6-1

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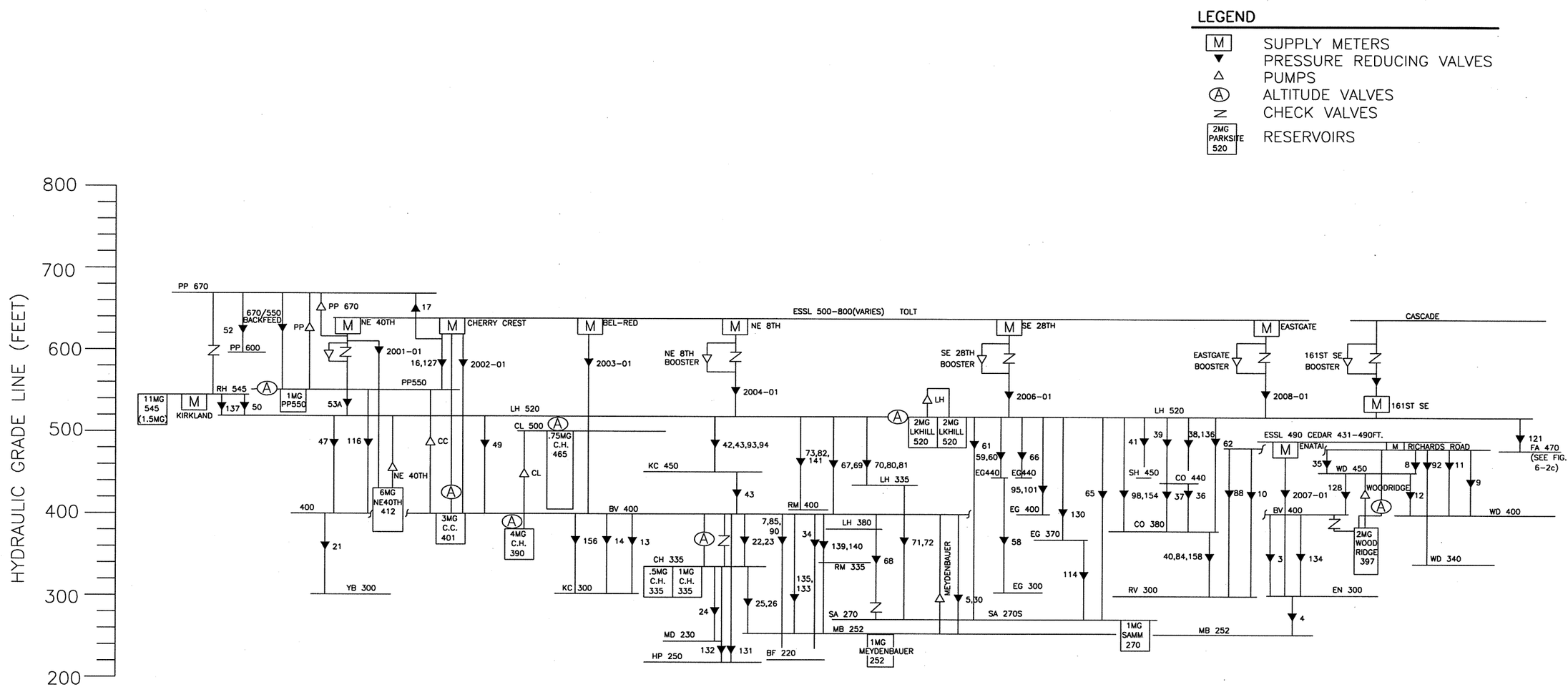


WEST AND EAST OPERATING AREAS

Figure 6-2a
WATER SYSTEM
HYDRAULIC PROFILE
City of Bellevue

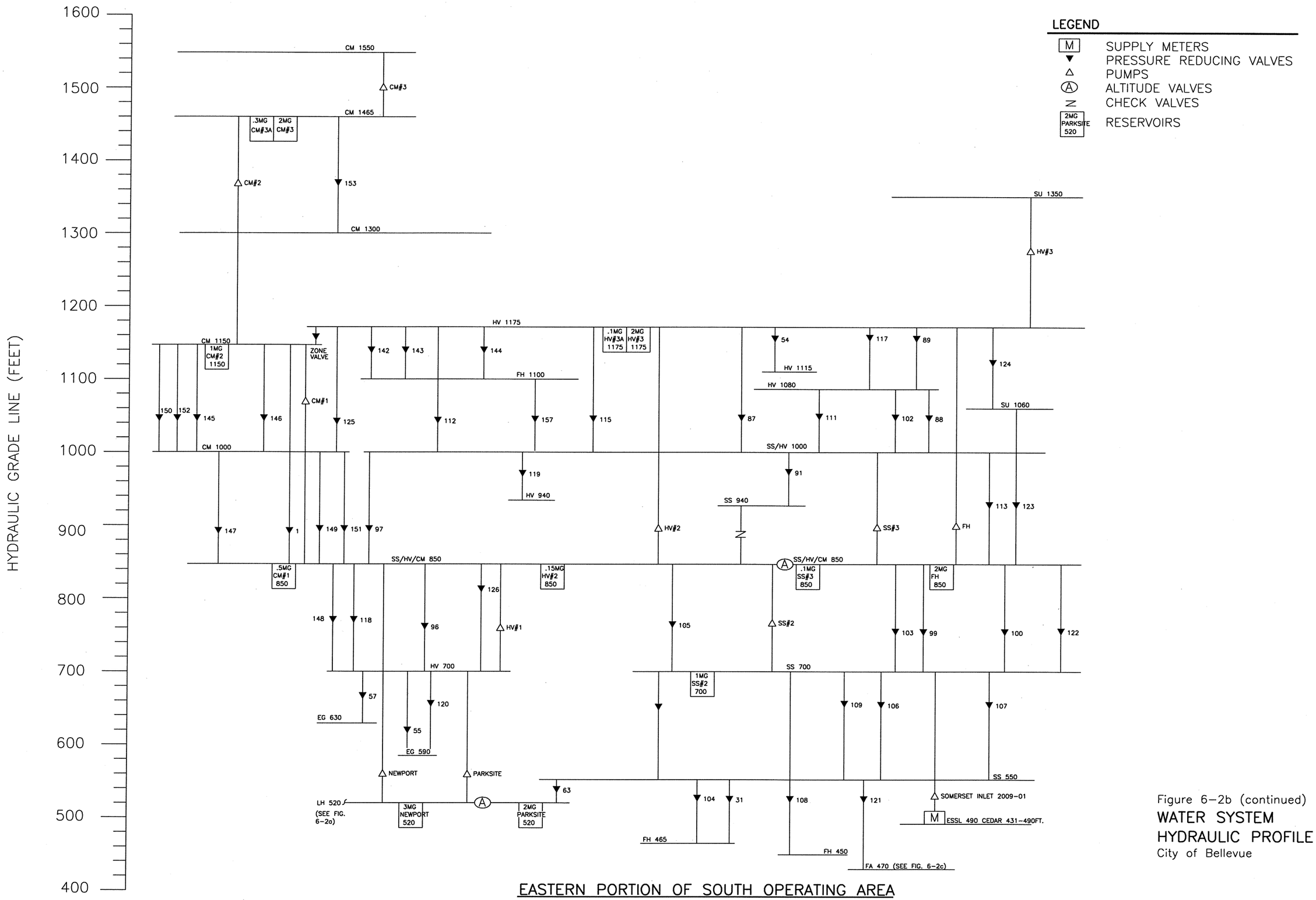
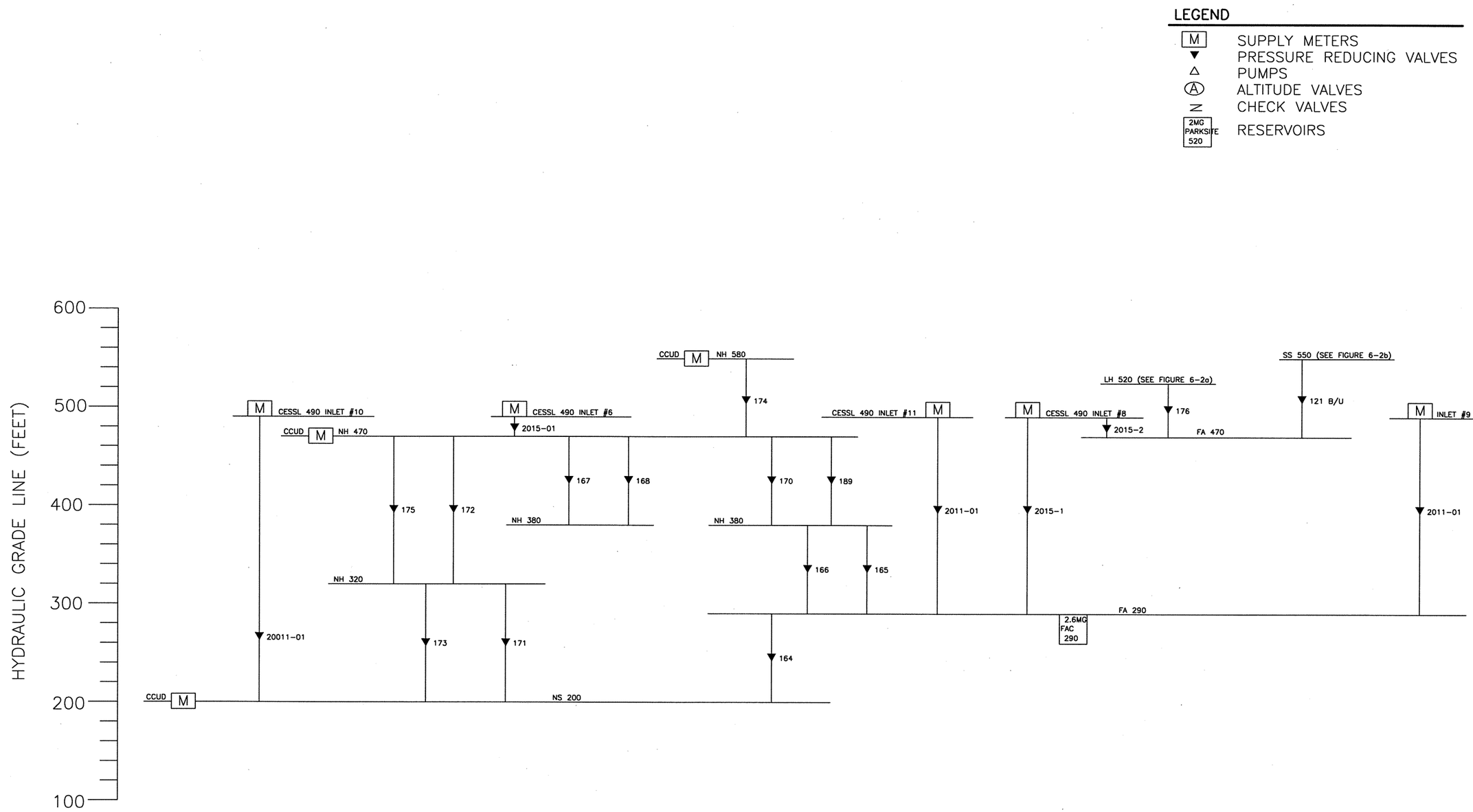


Figure 6-2b (continued)
WATER SYSTEM HYDRAULIC PROFILE
City of Bellevue

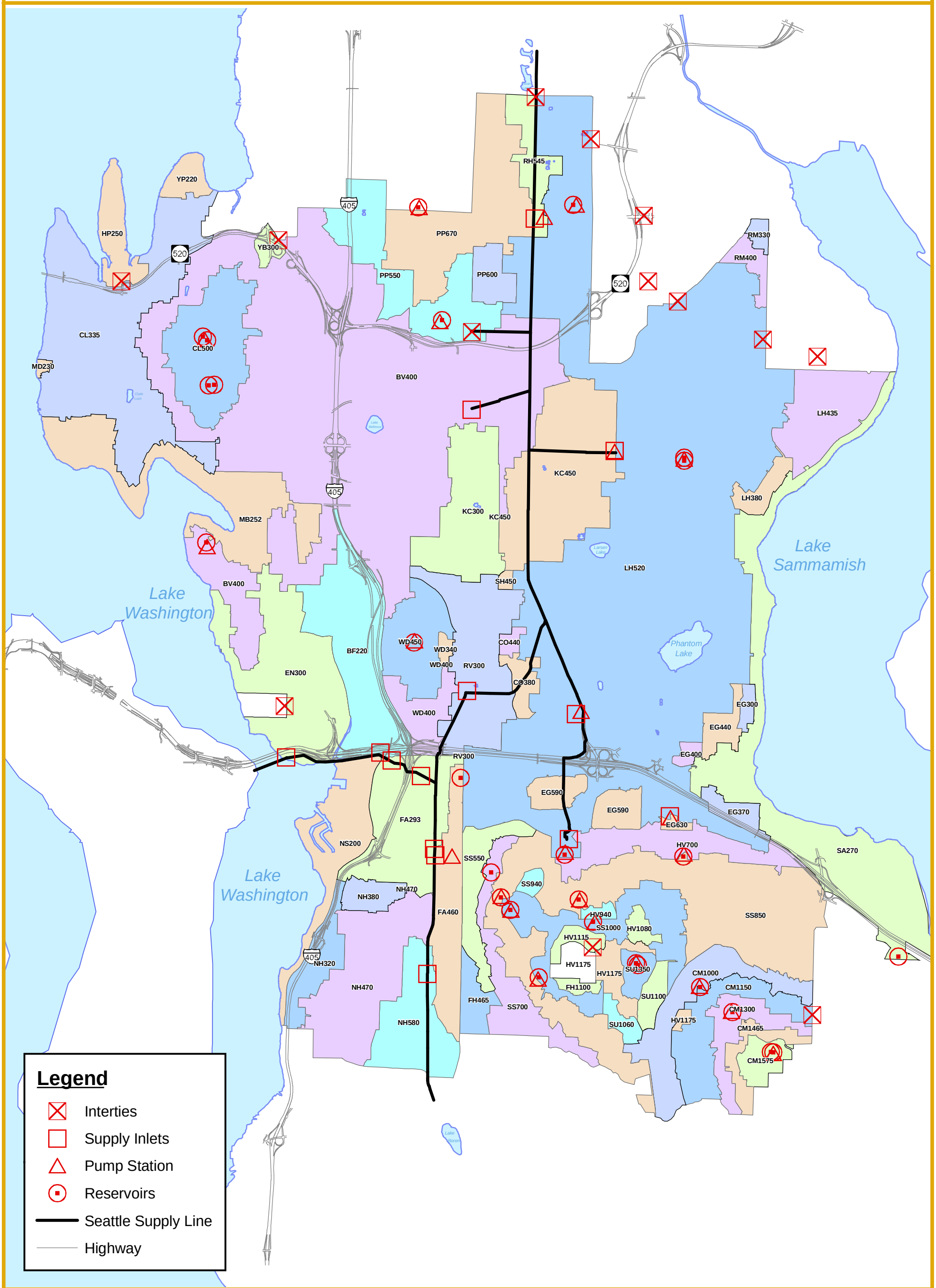


WESTERN PORTION OF SOUTH OPERATING AREA

Figure 6-2c (continued)
WATER SYSTEM
HYDRAULIC PROFILE
City of Bellevue

City of Bellevue

Water Pressure Zones



1 inch equals 4,088 feet

IT Department
Applications GIS

Plot Date: 2/21/2007

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Figure 6-3

may also incorporate pump stations. All of these connections are continually monitored and controlled by telemetry at the Bellevue Service Center. Table 6-2 briefly describes the fifteen supply inlet meters at the regional supply connections. Table 6-3 summarizes system operations information associated with each regional supply connections.

Table 6-2
Regional Supply Inlet Meters

Name	Date of First Use (approx.)	Regional Supply Line Feeding	Seattle Demand Metering	Bellevue Recording	Bellevue Control	Meter Size (in)	Capacity (gal/min)
NE 40th	1965	Tolt Eastside Supply Line	Yes	Yes	Yes	18	5,000
Cherry Crest	1965	Tolt Eastside Supply Line	Yes	Yes	Yes	12	5,500
Bel-Red	1965	Tolt Eastside Supply Line	Yes	Yes	Yes	12	5,500
NE 8th	1965	Tolt Eastside Supply Line	Yes	Yes	Yes	16	4,200
SE 28th	1965	Tolt Eastside Supply Line	Yes	Yes	Yes	16	4,700
Eastgate	1991	Tolt Eastside Supply Line	Yes	Yes	Yes	16	4,000
Richards Road	1967	Cedar Eastside Supply Line	Yes	Yes	Yes	8	2,500
Enatai	1967	Mercer Island Pipeline (Cedar)	Yes	Yes	Yes	8	1,500
Somerset	1967	Cedar Eastside Supply Line	Yes	Yes	Yes	12	1,800
161st Ave SE	2003	Cascade Water Alliance	Yes	Yes	Yes	12	3,500
Inlet #6 (Newport Hills)	---	Cedar Eastside Supply Line	Yes	Yes	Yes	6	850
Inlet #7	---	Cedar Eastside Supply Line	N/A	---	---	---	Out of Service - Emergency
Inlet #8 (Newport Way)	---	Cedar Eastside Supply Line	Yes	Yes	No	6	1,500
Inlet #9 (Greenwich Crest)	---	Mercer Island Supply Line	Yes	Yes	Yes	6	Planned to be eliminated
Inlet #10 (Newport Shores)	---	Mercer Island Supply Line	Yes	Yes	No	6	Planned to be eliminated
Inlet #11 (Factoria)	---	Mercer Island Supply Line	Yes	Yes	Yes	8	2,500

Table 6-3
System Description by Regional Supply Connection

Supply Connection	Storage Facilities Filled	Primary Pressure Zones Served	Pressure Zone Served through PRV or Pump Station
NE 40th Inlet	NE 40th reservoir from NE 40th Inlet pump station	Lake Hills 520	PRV 2001-02 or pumped from NE 40th Reservoir Pump Station
		Pikes Peak 670	pumped from NE 40th 670 zone pump station, PRV 1003-02
		City of Redmond	primary supply for water wheeled to the City of Redmond through Bellevue's 520 zone.
Cherry Crest Inlet	Cherry Crest reservoir through PRV 3003-01	Bellevue 400 West	PRV 2002-01
		Pikes Peak 550	pumped from Cherry Crest pump station, PRV 016
		Pikes Peak 600	
		Pikes Peak 670	PRV 017
Bel-Red Inlet		Bellevue 400 East	PRV 2003-01
NE 8th	Lake Hills reservoir	Lake Hills 520 North	PRV 2004-01 or NE 8th Inlet booster pump station
SE 28th	Lake Hills reservoir	Lake Hills 520 South	PRV 2006-01 or SE 28th Inlet booster pump station
Eastgate		Lake Hills 520 South	PRV 2008-01
161st Inlet and Pump Station		Lake Hills 520 Southeast	PRV 2010-01 or 161st Inlet pump station
Richards Road Inlet	Woodridge Reservoir through PRV 3011-01 and altitude valve PRV 3001-01 to maintain cnstant rate of flow at the Richards Road Inlet	Woodridge 300	
		Woodridge 340	
		Woodridge 400	
		Woodridge 450	PRV 1009-02 or pumped from Woodridge pump station
		Bellevue 400	PRV 1009-04
Enatai Inlet	When pressures are high, the Meydenbauer reservoir is filled through altitude valve PRV 3010-01	Enatai 300	PRV 2007-01
Somerset Inlet	During high demand, the Somerset 3 reservoir is filled by Somerset 2 pump station	Somerset 700	Pumped from Somerset Inlet pump station through PRV 2009-01
Inlet #6		Newport Hills 470 (emergency backup feed)	PRV 2015-01
Inlet #7		Newport Hills 470 (currently not in service)	
Inlet #8		Factoria 293	PRV 2015-1
		Factoria 460	PRV 2015-2
Inlet #9		Factoria 293	PRV 2011-01
Inlet #10		Newport Shores 200	20011-01
Inlet #11	Factoria Reservoir	Factoria 293	PRV 2011-01

CCUD Supply Connections

The Coal Creek Utilities District (CCUD) supplies the City of Bellevue through a series of 8 master meters. These supply connections include bi-directional flow meters allowing for the free movement of water between CCUD and the City of Bellevue's water system. All connections are owned and operated by CCUD. Flow control at these connections is not an issue since most of the water is wheeled to the City of Bellevue from CCUD. These connection meters are read monthly and currently are not remotely controlled or monitored by Coal Creek. Table 6-4 briefly describes these 8 supply connections and their operation.

Table 6-4
C.C.U.D. Supply Connections

Master Meter	Meter Spec	Zone Served
#1	4" fire meter 1" bi-directional	Newport Shores 200
#2	4" bi-directional mag	Newport Hills 470 (western)
#3	6" bi-directional mag	Newport Hills 470 (central)
#5	6" bi-directional mag	Newport Hills 470 (eastern)
#6	6" bi-directional mag	Newport Hills 580 (western)
#7	6" bi-directional mag	Newport Hills 580 (central)
#9	6" bi-directional mag	Newport Hills 580 (eastern)
#10	2 - 1" bi-directional	Newport Hills 580 (eastern)

Pressure Reducing Valve Stations

The topography within the Bellevue water service area requires extensive use of pressure reducing valve (PRV) stations. Pressure reducing valves are mechanical devices that lower the pressure downstream to a desired level. Currently, the City tries to maintain a service pressure between 40 and 80 psi at each customer's service. This pressure is sufficient to allow operation of all residential water-using devices; however, system pressures of up to 100 psi are acceptable for operation of appliances. The uniform plumbing code adopted by the City requires that house plumbing pressure not exceed 80 psi; therefore, in areas where system pressure exceeds 80 psi, developers or homeowners must install individual service pressure reducing valves.

Detailed information on PRV stations is maintained in Maximo. Each PRV record includes location, the upstream or supply zone, the downstream or service zone, the upstream and downstream pressure settings in psi, valve size, ground elevation, and grid location. Where

appropriate, PRV records also include remarks of special interest from an operational standpoint, such as whether a valve is equipped with some special modification to provide additional services for reducing pressure. In many locations, ancillary equipment has been provided to the PRVs so that the pressure setting can be controlled from the water system operations control center. These modifications allow the operator to remotely adjust the valve and control the flow from the zone of supply.

Pump Stations

Elevations within the Bellevue water service area range between 25 and 1450 feet. The supply hydraulic grade line at the SPU supply connections is generally high enough to serve many adjacent service areas; thus, several of the connections are equipped with PRVs, as discussed previously. During high demand periods, however, the supply gradient falls, and pumping is required at some connections. The operation of the pump stations is discussed later in this chapter under "Hydraulic Operations." In addition to those pump stations associated with the supply connections, a number of areas are at elevations that require pumping of all water delivered to the service area, such as the South Bellevue operating area.

The pumping stations are listed in Table 6-5. The table indicates the location of pump stations, the zone from which they are supplied, the zone to which they pump, the number of pumps within each pump station, the elevation of the station, and some characteristic data about the pumps within the station. The table also includes the type of control system used at the pump station. Local automatic control indicates that the pumps turn on and off in response to a pressure sensor at the station or in the system near the station. Telemetry control indicates that on and off switching is done at the Bellevue Service Center. The status report indicates whether there is feedback to the operations office indicating that a pump is on, off, ready to come on, or that some failure is occurring.

Storage

Storage facilities are located throughout Bellevue's water system. The storage provides an equalizing effect to meet varying system demands throughout the day, water to meet fire demands, and water for emergencies caused by supply outage or contingency. All of Bellevue's water storage facilities are all covered, ground-level reservoirs or standpipes.

Table 6-6 lists the storage facilities within the Bellevue water system. The table indicates the volume of storage in million gallons (MG) and the maximum and minimum water levels for each reservoir within the system. Also shown are the primary zones to which each reservoir supplies water. The City continuously records the water level of each reservoir at the water operations control center.

Table 6-5
Pump Stations

Name	Map Location Code	Zones		Pump No.	Head (ft)		Flow Operating (gpm)	Local Elevation (ft)	Local Automatic Control	Telemetry	
		Supply	Service		Operating	Shut Off				Control	Status Report
Pikes Peak	H-2	550 550 550	670 670 670	4 5 6	100 100 100	130 130 130	1000± 1250 1250	521.3 521.3 521.3	Yes	Yes	Yes
Clyde Hill	D-5	400 400 400 400	500 500 500 500	1 2 3 4	135 138 138 138	170 172 172 172	200± 600± 600± 600±	355.6 355.6 355.6 355.6	Yes	Yes	Yes
Meydenbauer	D-8	252	400	1	170	195	1000±	226	Yes	Yes	Yes
Woodridge	H-10	400 400 400	450 450 450	1 2 3	104 102 102	166 166 166	800± 3000± 3000±	327 327 327	Yes	Yes	Yes
670 Pump Station at NE 40th St (BPS)	J-3	TESSL TESSL TESSL TESSL	670 670 670 520	*1 *2 *3 4	110 110 110 40	125 142 175 60	200± 300± 1800± 2500	305 305 305 305	Yes	Yes	Yes
Somerset Inlet	H-14	CESSL CESSL CESSL CESSL	700 700 700 700	1 2 3 4	392 392 392 392	468 501 500 459	400 1200 1200 800	370 370 370 370	No	Yes	Yes
Somerset-2	J-14	700 700 700	850 850 850	1 2 3	216 220 216	280 280 270	1100 1100 650	688 688 688	No	Yes	Yes
Somerset-3	J-14	850 850 850	1000 1000 1000	1 2 3	189 180 180	190 210 210	50 240 240	834.5 834.5 834.5	Yes	No	No
Parksite	J-13	520 520	700 700	1 2	220 220	300 300	1980 1980	480.4 480.4	No	Yes	Yes
Horizon View-1	J-14	700 700	850 850	1 2	200 200	272 272	1300 1275	667 667	No	Yes	Yes
Horizon View-2	K-15	850 850	1175 1175	1 2	370 370	480 479	1100 1100	821 821	No	Yes	Yes

Table 6-5
Pump Stations

Name	Map Location Code	Zones		Pump No.	Head (ft)		Flow Operating (gpm)	Local Elevation (ft)	Local Automatic Control	Telemetry	
		Supply	Service		Operating	Shut Off				Control	Status Report
Horizon View-3	K-15	1175	1350	1	184	220	220	1153.5	Yes	No	Yes
		1175	1350	2	184	220	220	1153.5	Yes	No	Yes
		1175	1350	3	188	220	1500	1153.5	Yes	Yes	Yes
Newport	L-13	520	850	1	380	450	1200	505	No	Yes	Yes
		520	850	2	388	450	1600	505			
		520	850	3	380	400	375	505			
		520	850	4	380	400	375	505			
NE 40th (Reservoir Pump Station)	J-2	TESSL	520	1	140	233	2000	390	Yes	Yes	Yes
		TESSL	520	2	144	260	4000	390			
		TESSL	520	3	145	258	4000	390			
Lake Hills (Booster Station)	L-7	520	520	1	50	75	1500±	440.0	No	Yes	Yes
		520	520	2	50	75	1500±	440.0			
Cherry Crest	H-4	400	550	1	150	190	650	391	No	Yes	Yes
		400	550	2	150	190	650	391			
NE 8th (BPS)	K-6	TESSL	520	1	165	205	4000	310	No	Yes	Yes
		TESSL	520	2	165	205	4000	310	No	Yes	Yes
SE 28th (BPS)	J-11	TESSL	520	1	260	320	5000	420	No	Yes	Yes
		TESSL	520	2	245	330	4000	420	No	Yes	Yes
Cougar Mountain-1	M-16	850	1150	1	321	410	590	831	No	Yes	Yes
		850	1150	2	321	410	590	831			
		850	1150	3	310	406	1000	831			
Cougar Mountain-2	M-16	1150	1465	1	350	435	1000	1116.4	No	Yes	Yes
		1150	1465	2	350	437	1000	1116.4			
Cougar Mountain-3	N-17	1465	1550	1	115	162	200	1445	Yes	Yes	Yes
		1465	1550	2	115	162	200	1445			
		1465	1550	3	115	162	50	1445			
		1465	1550	4	115	162	100	1445			
		1465	1550	5	162	200	1500	1445			
Forest Hills	J-16	850	1175	1	155	170	1000	821	No	Yes	Yes
		850	1175	2	155	210	1000	821			

*Operating parameters vary with Seattle suction head. ± Denotes Variable Frequency Drive

Table 6-6
Storage Facilities

Operating Area/Name	Map Location Code	Volume (MG)	Water Level (el. in ft)		Zone Served	Construction Material	Volume Per Foot (gal)
			Maximum	Minimum			
West Bellevue							
Pikes Peak 550	H-2	1	550	526	670/600	Steel	42,450
Meydenbauer 252	D-8	1.2	251	246	252	Concrete	57,142
Woodridge 397 Standpipe	H-10	2	397	326	400/450	Steel	28,200
Clyde Hill 465 Standpipe	D-5	0.75	465	365	465/500	Steel	7,500
Clyde Hill 390	D-5	4	389.6	358.6	500/400	Prestressed concrete	132,000
Clyde Hill 335 Round	D-6	1	335	311	335	Steel	41,450
Clyde Hill 335 Square	D-6	0.5	335	319	335	Reinforced concrete	31,600
Cherry Crest 401	H-4	3	404	384	400	Concrete	150,390
Subtotal		13.45					
East Bellevue							
Lake Hills (N)	L-7	2	520	445	520	Steel	28,650
Lake Hills (S)	L-7	2	520	445	520	Steel	28,650
Parksite	J-13	2	520	480.4	520	Steel	50,490
Newport	L-13	3	519.42	499.42	520	Prestressed Concrete	169,000
Sammamish	P-15	1	259.5	224.5	270	Prestressed Concrete	29,000
Kirkland's 545 Reservoir	N\A	1.5[a]	545		520N	Steel	
NE 40th Reservoir	J-2	3.4[b]	412.5	376.5	520N	Prestressed Concrete	169,750
Subtotal		14.9					

Table 6-6
Storage Facilities

Operating Area/Name	Map Location Code	Volume (MG)	Water Level (el. in ft)		Zone Served	Construction Material	Volume Per Foot (gal)
			Maximum	Minimum			
South Bellevue							
Factoria	H-12	2.6	290	278	293	Steel	100,000
CCUD's 440 Reservoir	N/A	1.65[a]	434	428	470	Steel	250,000
CCUD's 580 West Reservoir	N/A	1[a]	567	548	580	Steel	62,500
CCUD's 580 East Reservoir	N/A	0.4[a]	567	548	580	Steel	25,000
Somerset-1	I-14	0.1	550.5	540.5	550	Concrete	9,500
Somerset-2	I-14	0.1	700	690	700	Concrete	9,500
Somerset-3	I-14	0.1	844.5	834.5	850	Concrete	9,700
Horizon View-1	J-14	0.2	700	666.3	700	Steel	5,900
Horizon View-2	K-15	0.15	850	821	850	Steel	5,100
Horizon View-3	K-15	2	1175	1155	1175/1350	Prestressed Concrete	99,300
Horizon View-3A	K-15	0.1	1175	1159.5	1175/1350	Reinforced Concrete	6,700
Forest Hills	J-16	2	845.5	822	850	Prestressed Concrete	84,600
Cougar Mountain-1	M-16	0.5	846	822	850	Prestressed Concrete	21,875
Cougar Mountain-2	M-16	1.0	1150.0	1118.0	1150	Prestressed Concrete	31,250
Cougar Mountain-3	N-17	2.0	1465.6	1445.25	1465/1550	Steel	100,000
Cougar Mountain-3A	N-17	0.3	1465.6	1445.25	1465/1550	Steel	15,000
Subtotal		14.2					
						Total Storage	42.55 MG

[a]Capacity available to Bellevue's water system. These joint use facilities are operated and maintained by the City of Kirkland or the Coal Creek Utility District (CCUD).
[b]Capacity available to Bellevue's water system. This is a 6.0 MG joint use facility with the City of Redmond. It is operated and maintained by Bellevue

Zone Valves

Zone valves throughout the Bellevue water system allow the emergency interconnection of adjoining pressure zones, but do not allow free transfer of water between the zones. These interconnections are important during times of emergency or partial system shutdown because they may be operated to allow water to transfer between the zones, as pressure allows.

Supervisory Control

The City maintains telemetry and supervisory control throughout its system. The supervisory control is very important to the operation of the water system because it allows the operator to adjust operational parameters to meet specialized needs and requirements that vary with time of day and season of the year. The control system is fully automated but allows for manual control. It also collects operational data for records and analysis. This data is critical in gauging the water system's overall performance.

Pipe Network Grid

The pipe network grid within the Bellevue service area is largely a result of the growth that led to the construction of the water system. Within each of the water districts that were incorporated into Bellevue's water system, the pipe network was laid out as demand for service grew, with little regard for neighboring districts. The major linking of the various districts is done through Seattle's Tolt and Cedar Eastside Supply Lines (TESSL and CESSL). As individual water districts developed, the need for major transmission mains was limited since the districts were close to the Tolt and the Cedar pipelines. When the City first incorporated the various districts, the individual systems were connected at convenient locations via distribution mains. As a result, the Bellevue system has few transmission mains.

Individual transmission mains are pipelines that typically do not have service connections, but rather transfer water from one area to another. One example is a pipeline that carries water from the Seattle supply line on 132nd NE to the Clyde Hill area at approximately 92nd NE. Because services are not provided directly off these lines, pressures in transmission lines can vary greatly as they cross areas of lower ground elevation. The high pressures can maintain a hydraulic grade line that is suitable for serving a distant area without pumping. Distribution pipes, on the other hand, are pipes with pressures suitable for serving customers along their entire length.

As mentioned, most of the water that is transferred from one geographic area to another must be moved through distribution pipelines. Transferring water is usually done through larger-diameter pipes within the distribution pipe grid. There are a number of key pipelines within the Bellevue water system. The major pipes in the north-south direction lie on or near 168th, 148th, 140th, 116th, and 112th NE. Major east west pipelines include Northup Way, NE 12th, Bellevue-Redmond Road, NE 8th, NE 4th, Main Street, SE 8th and Newport Way.

HYDRAULIC OPERATIONS

Tables 6-7 through 6-9 summarize the hydraulic operation of the Bellevue system. Administrative operations and specific operation and maintenance programs are discussed in Chapter 9. Hydraulic operations are summarized for each of Bellevue's three major operating areas: East Bellevue operating area, West Bellevue Operating Area, and South Bellevue Operating Area. Figure 6-3 show the locations of each pressure zone. The tables are arranged by major operating area. An operating area consists of those pressure zones that use common reservoirs for equalizing and emergency storage. The individual pressure zones associated with each of these major areas are summarized in each Table separately. The Tables include, primary supply connections, reservoirs and PRV's serving each pressure zone.

Table 6-7
East Bellevue Operating Area Pressure Zones

Zone	Primary Supply Connections	Reservoirs	Zone served by PRV's
Lake Hills 520* Lake Hills 520 Crossroads Area*	NE 40th Inlet, NE 8th inlet, SE 28th Inlet, 161st Street Inlet, Eastgate Inlet	NE 40th, Lake Hills, Newport, Parksite, Kirkland's 545	50 (emergency) 137 (emergency)
Redmond 400	Served directly from the 520 zone		073, 082, 041
Redmond 330	Served from the 520 zone through Redmond 400 zone		139, 140
Kelsey Creek 450	Relies on 520 zone for storage		042, 093, 044, 094
Lake Hills 435	Served directly from the 520 zone		081, 070, 080
Lake Hills 380	Served directly from the 520 zone		067, 069
Sammamish 270 North* Sammamish 270 Central* Sammamish 270 South*	Main supply from 520 via the Eastgate 370 zone through PRV 065	Sammamish	065, 061, 072, 071, 068, 114
Eastgate 440	Served directly from the 520 zone		059, 060, 066
Eastgate 400	Served directly from the 520 zone		095, 101
Eastgate 370	Served directly from the 520 zone		130
Eastgate 300	Served from the 520 zone through Eastgate 440 zone		058
Sunset Hills 450	Served directly from the 520 zone		041
College Hill 440	Served directly from the 520 zone		039, 136
College Hill 380	Served from the 520 zone through College Hill 440 zone		037, 038, 154, 098

* Lake Hills 520 and Sammamish 270 Pressure Zones cover large areas where typical pressure ranges vary and thus were separated into geographical areas .

Table 6-8 West Bellevue Operating Area Pressure Zones			
Zone	**Primary Supply Connections**	**Reservoirs**	**Zone served by PRV's**
Bellevue 400 West* Bellevue 400 East*	Cherry Crest Inlet Bel-Red Road Inlet Richards Road Inlet	Cherry Crest Clyde Hill 390	047 (standby from LH 520) 043 (standby from LH 520) 128 (standby from WD 450)
Yarrow Bay 220	Served from CL335 zone		177, 178
Yarrow Bay 300	Served directly from the 400 zone		021
Clyde Hill 500	Pumped by Clyde Hill pump station supplied by 400 zone during high demand, during low demand supply met from CH 465 Reservoir		
Clyde Hill 335		Clyde Hill 335 (0.5 and 1 MG)	022, 023, 3006-01
Kelsey Creek 300	Relies on 400 zone for storage		013, 014
Medina 230	Served from Clyde Hill 335		024
Hunts Point 250	Served from Clyde Hill 335		131, 132
Meydenbauer 252	Primary supply from Enatai 300 and Bel 400 zones	Meydenbauer	03010-01, 1008-02, 005, 025, 026, 133, 135
Bellefield 220	Served directly from the 400 zone Inlet #10???		034, 085, 007, 090
Woodridge 450		Woodridge	035, 008
Woodridge 400	Served from Richards Road Inlet and WD 450 zone		011, 009, 012
Woodridge 340	Served from WD 450 zone		092
Richards Valley 300	Served primarily from Richards Road Inlet		086, 040, 158
Enatai 300	Enatai Inlet		2007-01, 134, 003
Rose Hill 545	Served from NE 40th Inlet and PP 670 zone This zone also feeds Kirkland's 140th Intertie		
Pikes Peak 670	NE 40th Inlet or pumped from NE 40th inlet and Pikes Peak pump stations		1003-02, 017
Pikes Peak 600	Served exclusively from the PP670 zone		052
Pikes Peak 550	Served from Cherry Crest pump station during high demands	Pikes Peak 550 Reservoir, (provides equalizing, fire, and emergency storage for the Pikes Peak 550, 600 and 670 zones)	016 1001-01 (emergency)
* Bellevue 400 Pressure Zone cover large areas where typical pressure ranges vary and thus were separated int			

Table 6-9 South Bellevue Operating Area Pressure Zones			
Zone	**Primary Supply Connections**	**Reservoirs**	**Zone served by PRV's**
Newport Shores 200	Fed primarily from FA 293 Inlet #10 (emergency)		164, 171, 173
Factoria 293	Inlet #11 Inlet #8	Factoria	Inlet #11 PRV, 2014-01, 165, 166, Inlet #9 PRV (emergency)
Factoria 470	Inlet #8		2014-01, 178, 121
Newport Hills 320	Fed from NH 470 zone		171, 175
Newport Hills 380	Supplied by NH 470 zone		169, 170
Newport Hills 360	Supplied by NH 470 zone		167, 168
Newport Hills 470	Inlet #5	CCUD 470	174, 2015-01 (emergency)
Newport Hills 580	Supplied from NH 470 reservoir pump station	CCUD 580 West CCUD 580 East	
Somerset 550	Served primarily from SS700 zone	Somerset 1	3014-01, 109, 107, 106
Somerset 700	Somerset Inlet and pump station	Somerset 2	
Somerset 850	Three pump stations: Newport, Somerset 2, and Horizon View 1	Forest Hills, Horizon View 2, Cougar Mountain 1, Somerset 3	097, 149, 113, 123, 147, 151
Somerset 940	Fed from SS 1000 zone		091
Somerset 1000	Primary storage from Horizon View 3 reservoir Secondary supply from Somerset 3 pump station		125, 112, 115, 087, 111, 088, 102, 157
Eastgate 590	Fed from HV 700 zone		055, 120
Eastgate 630	Fed from HV 700 zone		057
Horizon View 700		Horizon View-1	105, 103, 099, 100, 122
Horizon View 940	Fed from CM 1000 zone		119
Horizon View 1080	Fed from HV 1175 zone		117, 089
Horizon View 1115	Fed from HV 1175 zone		054
Horizon View 1175	Two pump stations: Horizon View 2, Forest Hills	Horizon View-3	
Forest Hills 465	Fed from SS 550 zone through PRV's 31 and 104		31, 104
Forest Hills 550	Fed from SS 700 zone through PRV 108		108
Forest Hills 1100	Fed from HV 1175 zone		115, 144
Summit 1060	Fed from HV 1175 zone		124
Summit 1100	Fed from HV 1175 zone		143
Summit 1350	Fed from HV 1175 zone through Horizon View 3 pump station		
Cougar Mountain 1000	Primary storage from Cougar Mt. 1 reservoir		145, 146, 150, 152
Cougar Mountain 1150		Cougar Mountain-2	
Cougar Mountain 1300	Fed from CM 1465 zone		153, 160
Cougar Mountain 1465	Zone and reservoirs served from Cougar Mountain 2 pump station	Cougar Mounatin-3	
Cougar Mountain 1550	Fed from CM 1465 zone through Cougar Mountain 3 pump station		

CHAPTER 7
Asset Management

While including a discussion of asset management in the Water Comprehensive Plan is not a requirement of the state Department of Health, Bellevue recognizes that management of infrastructure is critical to continued cost-effective delivery of service to customers. A more rigorous approach to asset management is also consistent with industry trends and embraced by Bellevue.

The fundamental goal of Bellevue's Asset Management Program (AMP) is to manage the life cycle of its assets in the most cost effective, sustainable manner to meet established service level requirements. The AMP enables the Utility to more accurately anticipate necessary actions including funding, maintenance, renewal, rehabilitation, or replacement, and when such actions should be initiated and completed. The conceptual framework for the Utility's Asset Management Program is presented in the City's draft AMP document. It provides an introduction to the AMP and identifies best practices for Bellevue. The AMP document is evolving and will ultimately include Asset Management Improvement Strategy sections for each group of similar assets.

The Utility's AMP is structured around Ten Core Processes introduced and promoted by the US EPA. These Ten Core Processes are used to organize the many diverse activities required to manage utility assets:

1. Inventory Assets
2. Assess Condition
3. Determine Residual Life
4. Determine Life Cycle Costs
5. Set Target Level of Service
6. Determine Business Risk Exposure
7. Determine Appropriate Maintenance
8. Determine Appropriate CIP
9. Determine Utility Funding Strategy
10. Build the Asset Management Program (implement and improve)

This chapter summarizes the City's approach to effective long term management of its utility infrastructure, separate from the capacity and operational deficiency analysis presented in Chapter 8.

ASSET MANAGEMENT PROGRAM DEVELOPMENT

Development of Bellevue's Asset Management Program builds on the Utility's existing asset information and historical infrastructure management practices. It is consistent with the Utilities' Strategic Plan Initiative for Infrastructure Management, which envisions an enterprise-wide method to balance cost, risk, and benefit when making decisions about asset construction, rehabilitation, replacement, or abandonment. The AMP requires a *sustainable* approach which balances the economic, social, cultural, and environmental implications of business decisions. Consequently, it recognizes the long term liability associated with the Utility's assets, and includes a long term funding strategy.

As mentioned, the Bellevue's AMP is evolving with the industry, as Utility resources allow. Utility Financial Policies and other Comprehensive Plan Operational Policies support system management for the long term. The Operations and Maintenance Annual Plan and Capital Investment Program support program implementation. As software systems for inventory and condition tracking, and maintenance management are replaced, due consideration is given to enhanced functionality to allow "smarter" system management. Studies are completed periodically to refine forecast estimates of fiscal resources required to manage the system consistent with AMP goals.

A summary of current practices for each of the identified AMP core processes is included below, along with specific improvement strategies staff are studying for each.

SUMMARY OF CORE PROCESSES

Inventory Assets

Bellevue's current inventory of water system assets is generally very complete. Most assets have unique identification numbers, providing a way to easily associate the asset with all the relevant information needed to effectively manage it. Water pipelines do not currently have unique identification numbers. Bellevue is developing of a methodology and implementation plan for assigning identification numbers to pipes.

Assess Condition

The "Assess Condition" process collects technical and statistical information about the condition of assets and how they are performing. The information is used to estimate the residual life until intervention is required or the asset reaches the end of its expected physical life. Condition and reliability monitoring supports estimates of business risk exposure and improves maintenance and CIP strategies. The Utility develops an understanding of failure causes and rates of decay for classes of assets based on condition assessment data.

Bellevue routinely assesses the condition of all of its major assets. The processes for condition assessment of above ground assets is generally very thorough and provides the information

needed to manage those assets at a very high level. There are also processes in place for assessing the condition of Bellevue's buried assets. However, because of limited access to these assets, these processes provide only limited information for use in making asset management decisions. Bellevue's biggest challenge in this area is obtaining useful information on the condition of its asbestos cement (AC) water pipe, which comprises 53% of the system. Bellevue currently runs a full range of tests on AC pipe that has appeared to fail due to age-related deterioration. So far the City has not obtained enough test data to establish a correlation between an easily performed test and the condition of the pipe.

Determine Residual Life

The residual life of an asset determines what the Utility has left to manage. It is also called the remaining effective or useful life. For the broad picture, Bellevue uses the age of the asset and estimates of average life expectancy of that class of asset to predict effective and residual life. To further refine the estimates, factors that increase or reduce effective life (such as soil type, presence of ground water, etc.) are also considered.

Determine Life Cycle Costs

Economic, social, and environmental costs all affect decisions for management of assets. Asset life cycle costs begin when a need for the asset is identified, and they accumulate throughout the life of the asset, including needs justification, design, construction, operation, maintenance, condition assessment, risk management, renewal, replacement, and disposal. Risk management includes an evaluation of environmental and social costs which generally involve a disruption of service or impact to habitat. All costs must be accounted to determine the real cost of owning and operating assets. As part of the development of the AMP, Bellevue is developing a more formalized process for determining life cycle costs.

Set Target Level of Service

Bellevue has established various target levels of service. These levels of service represent choices made by the Utility to focus efforts and resources. They communicate Utility understanding of customer expectations and regulator requirements. Target levels of service (LOS) are intended to balance expectations with the cost to provide that service. They affect asset inventory, residual life, life cycle costs, business risk exposure, maintenance activities, CIP proposals, and funding requirements.

Determine Business Risk Exposure

Evaluation of business risk exposure is a systematic identification of the likelihood and consequences of an asset failing, and the development of appropriate strategies to minimize risk. Threats to an asset can be natural events, external impacts, or physical or operational failures. Economic, social, and environmental consequences are considered. Data on system characteristics and condition is used to estimate useful life and probability of failure. Bellevue has also identified various factors to be considered to rate how severe the consequence of an assets failure would be. The probability and consequence of failure are combined to determine

total business risk exposure.

Determine Appropriate Maintenance

Each year, Bellevue develops an Operations and Maintenance Annual Plan. This plan identifies and justifies the both operations and maintenance needs and the resources required to meet those needs for the coming year.

Determine Appropriate CIP

Every two years, Bellevue develops the Utility's Capital Investment Program Plan as part of the City's bi-annual budget process. This plan identifies and justifies each capital project the utility plans to construct over the next seven years.

Determine Utility Funding Strategy

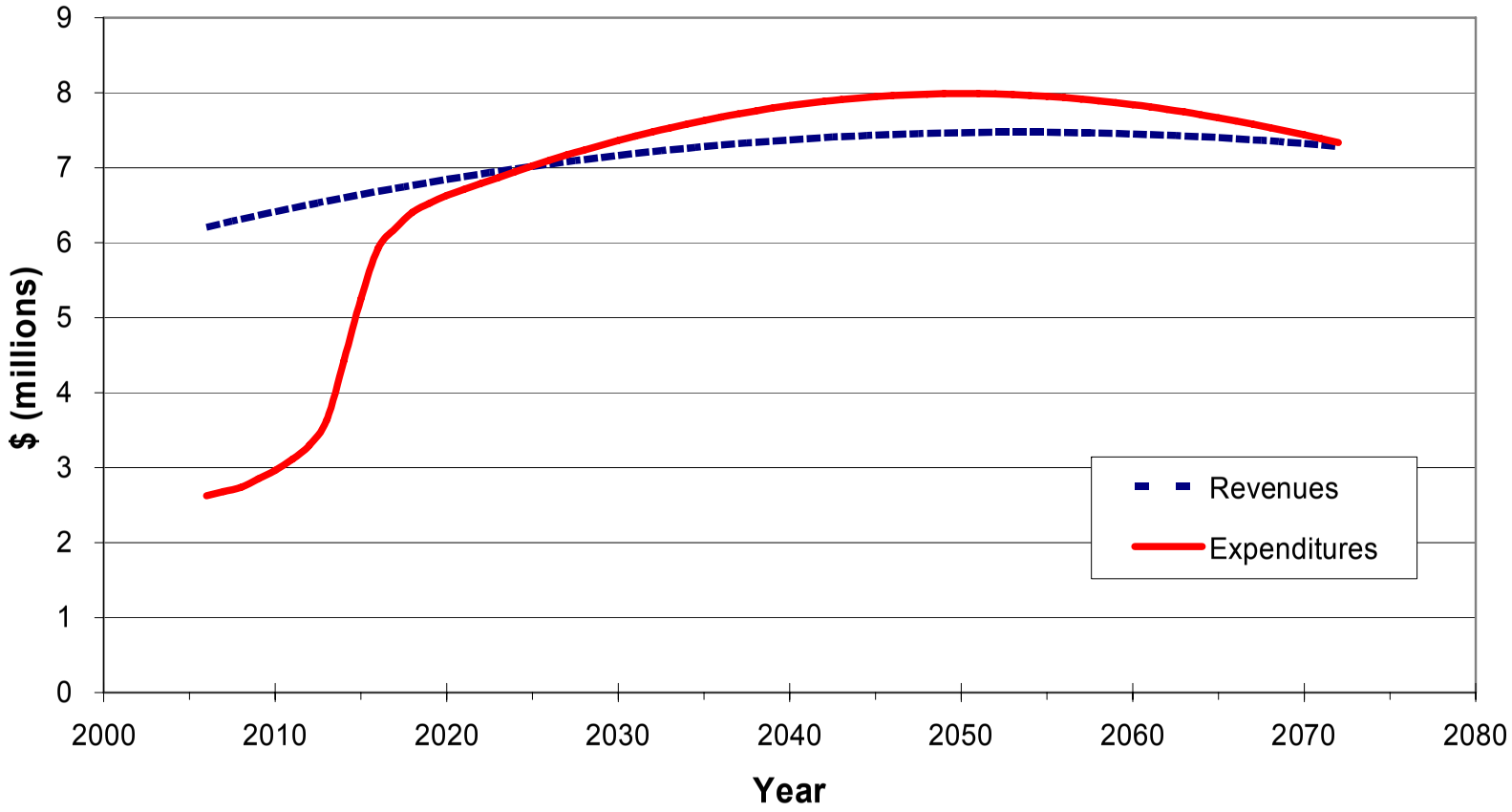
In order to help assure long term rate stability, the Utility established a Renewal and Replacement Account in which funds accumulate to address anticipated future system renewal and replacement (R&R) needs. Bellevue's current R&R needs are relatively low because the system is still fairly young. However, a substantial portion of system was constructed within a short time window of approximately 20 years. Consequently, Bellevue expects to experience a future peak in renewal and replacement needs, which this fund is intended to address. Figure 7-1 shows all anticipated R&R revenues and expenditures from 2006 to 2075.

Build the Asset Management Program

Future iterations of the Asset Management Program will incorporate emerging industry and Utility strategies on best appropriate management of assets. They will also continue to identify specific problems and strategies for the resolution of those problems. Bellevue will revisit the AMP broad conceptual framework periodically, and improvement strategies will be revisited annually.

A discussion of specific management strategies and activities for pipes, reservoirs, pump stations, pressure reducing valves and large commercial meters follows.

Figure 7-1
Planned Water System R&R Revenues and Expenditures
2006-2075
(2006 dollars)



PIPELINE RENEWAL AND REPLACEMENT

Bellevue's program for pipe replacement is based on a plan that balances the cost of replacement against corrective action after failure and anticipated preventative maintenance for the residual life of the pipe. To accomplish the that objective, a predicted useful life for the various pipe materials is combined with actual field experience for all pipe in the system to determine the likelihood of failure. The likelihood of failure is combined with an assessment of the consequence of failure to determine business risk. The renewal and replacement (R&R) plan then recommends pipe replacement in the most cost-effective manner, while minimizing the number of pipeline failures that would result in significant customer inconvenience and problems.

The City's program recognizes that the entire piping system will be replaced over a time period equivalent to the useful life of the pipe. This analysis refines replacement criteria and estimates resulting projected expenditures over time so that appropriate water rate revenue adjustments can be made to provide the necessary funding for the R&R program.

The City preliminary estimate for pipeline replacement costs and timing (to predict the cash flow requirements) is based on the age, diameter, pipe material, length of pipe in the system, projected time of pipe replacement, and estimated present value cost of the replacement. This work is used during rate analyses to forecast required adjustments to water rates.

Pipeline Replacement Program

Bellevue has a capital investment program to increase fire flow protection by replacing small diameter (4-inch and some 6-inch) AC pipe that restricts available fire flow to less than 1000 gpm by the year 2020. This fire flow improvement program involves annual replacement of approximately 2.3 miles of pipe. This small diameter pipe is typically replaced with 8-inch DI pipe regardless of the size of the existing pipe. Coincidentally, the small diameter AC pipe is generally the oldest pipe in Bellevue's system.

Figure 7-1 includes anticipated pipeline R&R expenditures. These expenditures are based on effective useful life estimates and incorporate the use of survival curves.

Identifying Specific Replacement Projects

The development of the effective useful life data and projected expenditures does not identify individual pipelines is to be replaced at any particular time. The City must determine and prioritize the specific pipe replacement schedule. City staff develop the annual capital improvement schedule based on predicted life, maintenance and failure history, business risk exposure (criticality), and other considerations such as street resurfacing and related projects.

Table 7-1 lists various criteria that the City could use to assist in prioritizing specific R&R projects as well as a suggested method for obtaining the information.

Table 7-1 Criteria for Prioritizing R&R Projects	
Criteria	**Source of Information**
Break/Leak History	Maintenance Records
In-field Observations	Main Observation Reports
Pipe Material/Age and relationship to useful life	GIS database
Capacity of Pipe	Diameter of Pipe (larger pipes have higher capacity)
Importance of Pipe for Fire Protection	Fire flow simulations with and without pipe
Leak Testing Results	Pilot leak testing program
Other Work in City	CIP schedules for sewer, streets, parks, etc.
Customer Complaints	Maintenance/Customer Service Records
Impact of Loss of Pipe on System Operations	Hydraulic analysis with and without pipe
Other Consequence of Failure	GIS database (easements, hospital access, etc.)

The importance of each of the criteria listed above must be evaluated, and relative weights for the various criteria be developed. Ultimately each pipe in the system should be rated on each criterion and a weighted value developed. The relative priority for replacement of each pipe in the system would then be developed through the use of the weighted values.

RESERVOIR STRUCTURAL EVALUATION AND REHABILITATION

The City of Bellevue has a capital improvement program in place to mitigate earthquake damage to water reservoirs and to maintain their function following seismic events. The program should continue as noted below.

In 1993, the City of Bellevue authorized Kennedy/Jenks Consultants to conduct a Reservoir Seismic Vulnerability Study. The study looked at 21 of the City's 26 reservoirs. The study did not include five recently constructed reservoirs (Horizon View 3a, Cougar Mountain 1, 2, 3, and 3a) since they were built to current seismic design standards. The consequence of failure and the seismic vulnerability of each reservoir in the study was quantified and a priority rating assigned. Reservoirs with an overall priority rating of low or low to moderate were not considered for further analysis. To obtain a low or low to moderate overall rating, required that the reservoir have a low seismic vulnerability and/or low failure consequence rating. A total of 12 reservoirs were identified as requiring more detailed analysis.

In 1995, KCM completed detailed structural analysis of the three highest priority reservoirs. Based on those results, Bellevue has constructed seismic improvements at the Clyde Hill 465 reservoir and has reconstructed both the Cherry Crest reservoir and the Meydenbauer 252 reservoir.

In 1999 Montgomery Watson completed a detailed structural analysis of the next 7 reservoirs on the priority listing. Based on those results, Bellevue has constructed seismic improvements at the Lake Hills (both north and south tanks), Woodridge and Parksite reservoirs, and the Somerset 1 reservoir is in the process of being abandoned. This analysis identified the need for seismic improvements at each of the remaining two reservoir sites covered in the study, with similar improvements anticipated at three additional sites with reservoirs similar to those covered in the study.

The Utility has budgeted approximately $3 million (2006 dollars) of its capital improvement budget over the next 7 years (2007-2013) for this work and expects the program to continue beyond the current CIP window. Specific project scopes, expenditures and schedules will be developed and adjusted as the results of each reservoir's specific improvement needs are determined.

PUMP STATION EVALUATION AND REHABILITATION

The City of Bellevue is initiating a capital improvement program to rehabilitate all of its pump stations and mitigate earthquake damage to the pump station structures and their contents in order to maintain their function following seismic events. Kennedy/Jenks Consultants is currently performing structural analysis and condition assessment of all 23 of the City's water pump stations. The study will identify needed improvements and prioritize them based on a determination of business risk which will include a determination of consequence of failure and seismic vulnerability of each pump station.

The City has set aside approximately $5.7 million (2006 dollars) of its capital improvement budget over the next 7 years (2007-2013) for this work. Specific project scopes, expenditures and schedules will be developed and adjusted as the results of each pump station's specific improvement needs are determined.

PRV REHABILITATION

Bellevue currently has approximately 160 pressure reducing valves (PRVs) located in water mains throughout the water service area. These PRVs provide an important means of supplying water to its 62 distinct pressure zones.

Bellevue has a program in place to rehabilitate or replace old, deteriorating and unsafe water system vaults containing these pressure reducing valves (PRVs) and upgrade or replace the valves themselves. Program funding is currently sufficient to rehabilitate or replace approximately 4 PRVs each year, with average budget of approximately $270,000 per year (2006 dollars) over the next 7 years (2007-2013). As of the end of 2005, this program has rehabilitated or replaced 22 PRVs

The program was established in 1991 to address increasing maintenance and reliability concerns at these facilities, many of which are over 25 years old and contain galvanized pipe, valves, and

associated equipment which are deteriorating. The size and difficulty of access to many of these older vaults makes increased maintenance and repair activities difficult and raises maintenance and personnel safety concerns.

A number of the Utility's PRV's were installed in a relatively short time frame and many of those are nearing the end of their useful life. The annual budget for this program is not adequate to address the resulting peak in PRV rehabilitation need. It is recommended that funding for this program be roughly doubled over the next 6 years to address the short term increase in need. It is recommended that this program continue indefinitely as a prudent means of maintaining the reliability of the water supply to areas served by these PRVs and commercial meters, as well as increasing meter accuracy. It is also recommended that Bellevue assess future needs in this area with each comprehensive plan update, to assure appropriate funding levels are being allocated to this program.

LARGE COMMERCIAL METER REHABILITATION

Bellevue owns and maintains approximately 260 large commercial meters (greater than 3"). This program rehabilitates or replaces deteriorating and unsafe vaults containing these meters, and upgrades or replaces the meters. This program should continue as a prudent means of maintaining the reliability and accuracy of commercial meters.

Bellevue has a program in place to rehabilitate or replace old, deteriorating and unsafe commercial meters and their vaults throughout its service area. Program funding is currently sufficient to rehabilitate or replace 5 commercial meters annually, with an average annual budget of $200,000 per year (2006 dollars) over the next 7 years (2007-20013). As of the end of 2005, 23 commercial meters have been replaced.

The program was established in 1991 to address increasing maintenance and reliability concerns at these facilities. Repair parts for many of the older commercial meters are difficult if not impossible to find. The size and difficulty of access to many of these older vaults makes increased maintenance and repair activities difficult and raises maintenance and personnel safety concerns.

The annual budget for this program is adequate to address identified needs for the next ten years. It is recommended that this program continue indefinitely as a prudent means of maintaining the reliability and accuracy of commercial meters. It is also recommended that Bellevue assess future needs in this area with each comprehensive plan update, to assure appropriate funding levels are being allocated to this program.

CHAPTER 8
System Analysis

The purpose of hydraulic analysis is to determine the hydraulic capacity and operational behavior of the City's water distribution system and to learn how the supply, pumping, and storage components interact.

Bellevue uses the EPANET computer modeling program for hydraulic analysis of its water system. For this comprehensive plan update, the hydraulic model calibration was checked using six field flow tests conducted throughout the service area, and current data on reservoir performance obtained from system telemetry data. With all the model's system parameters set to match the operating conditions at the time of the field flow test, the model results compared well with each of the six field flow tests. Therefore it was determined that no adjustments to further calibrate the model were necessary. Model demands were updated to reflect current forecasts of build-out conditions as described in Chapter 4. The EPANET hydraulic model is routinely used by the City to evaluate water quality, available fire flow, capital projects, and developer extension requirements and impacts.

METHODOLOGY

The City models its water system as four separate areas corresponding to the water system's three major operating areas and the area of the City's water system that was formerly part of the Coal Creek Utility District (CCUD). The City is in the process of merging the South Operating Area and CCUD modeling input files into a single file for the South Operating Area. Division of the City's model into these four areas makes sense because very little water moves between these operating areas. Hydraulic control for each area is provided by storage facilities, booster pumps, and/or the regional supply system, with each operating independent of the others.

In 1998, the operating areas were evaluated by using the ultimate demand conditions. The ultimate demand conditions used for Bellevue's 2006 Water Comprehensive Plan analysis are slightly lower than those identified in the 1998 Comprehensive Plan due primarily to reductions in per person water use across all water use classifications between 1998 and 2006. Demands for the CCUD assumption area were also significantly lower than those used for analysis in CCUD's 1994 Comprehensive Water System Plan, which was the most recent comprehensive plan covering this area.

Since there were no significant changes to the various modeling parameters (such as reservoir storage volume settings and demand peaking factors) between those used in 1998 and those used in the current model, and system demands are slightly less than those used in 1998, no new fire flow analysis was done as part of this plan update. The general analysis that was conducted as

part of the 1998 Water Comprehensive Plan update is still considered valid. However, all previous fire flow analyses were reviewed to assure that all historical fire flow availabilities meet the City's current requirements that pipe velocities not exceed 10 fps and pressures do not drop below 20 psi throughout the distribution system during the fire.

HYDRAULIC CONTROLS

Hydraulic control for Bellevue's system is provided by the regional supply system, storage facilities and individual PRV's within the City's distribution system. The various facilities and pressure zones associated with each operating area are discussed in detail in Chapter 6 and summarized in Table 6-1. The operating area boundaries are shown in Figure 6-1.

West Bellevue Operating Area

Five of the fifteen regional supply connections to Bellevue provide water to the west Bellevue operating area. These supply connections include the Enatai, Cherry Crest, Richards Road, Bellevue/Redmond Road, and NE 40th (via the NE 40th inlet pump station) SPU supply inlets. Each SPU supply inlet has a minimum hydraulic gradeline that is set by Cascade's Contract with SPU. During high demand or emergencies, two PRVs (No. 47 and 43) from the East Bellevue operating area can also supply water to the West Bellevue operating area. Storage is provided to this operating area by seven reservoirs: Cherry Crest 401, Clyde Hill 390, Clyde Hill 465, Clyde Hill 335 (two reservoirs), Pikes Peak 550, Woodridge 397, and Meydenbauer 252. These reservoirs maintain the hydraulic gradeline in the operating area and supplement sources of supply during high demands.

East Bellevue Operating Area

The East Bellevue operating area is supplied by four SPU supply connections: NE 40th Street, NE 8th Street, SE 28th Street, and Eastgate. The City also has a supply connection with the City of Kirkland at NE 60th Street. The six reservoirs within the east Bellevue operating area include the two Lake Hills 520 reservoirs, the NE 40th reservoir (which is shared with Redmond), the Parksite 520, the Newport 520, and the Sammamish 270.

Additional emergency storage is provided by the City of Kirkland's 545 reservoir, based on a joint ownership agreement. The City wheels water to the City of Redmond's Overlake and Viewpoint water distribution systems, and is required by agreement to supply fire flows to the boundary interties.

South Bellevue Operating Area

The South Bellevue operating area is supplied directly by six SPU inlet connections, inlets number 6, 8, 9, 10 and 11, and the Somerset inlet. Coal Creek Utility District supplies water to this operating area through eight master meters. Water is also supplied to this operating area

from Seattle's Eastgate and SE 28th inlets and Cascade's 161st Ave. SE inlet. This water is pumped from the East Bellevue operating area by the Newport and Parksite pump stations. Twelve reservoirs serve this area: Somerset 2, and 3; Horizon View 1, 2, 3, and 3a; Forest Hills; Cougar Mountain 1, 2, 3 and 3a; and Factoria. Storage is also provided by the Coal Creek Utility District's 440, 580 East and 580 West reservoirs, based on a joint ownership agreement. Water is distributed to the high elevation central and eastern portions of this area by pumping from three supply points to higher pressure zones as demand requires and using PRVs to drop water to lower pressure zones.

HYDRAULIC PARAMETERS

Hydraulic parameters used to evaluate the distribution system are summarized below. The system design parameters specified are consistent w/ Bellevue's Utility Engineering Standards, which guide system extensions or modifications.

Operating Pressure

The target minimum system operating pressure is 30 psi, with 43 psi desirable during peak-hour operation. The Department of Health (DOH) requires a minimum pressure of 30 psi during peak-hour demand conditions. During fire flow conditions, a residual pressure of 20 psi must be maintained at the flowing hydrant and throughout the rest of the system.

The target maximum distribution system pressure is 80 psi, with 100 psi as the upper allowable limit. Because of the hilly terrain throughout Bellevue, there are isolated areas that have pressures greater than 100 psi. Homes or buildings that exceed 80 psi in the city, or 100 psi in King County, are required to have individual pressure-reducing devices per the plumbing code.

Pipeline Capacity

The capacity of distribution mains is evaluated in terms of the maximum allowable head loss in the main. Good design practice is to size gravity distribution mains to operate within a maximum hydraulic gradient head loss of less than 10 feet per 1,000 feet of length. In pumped systems, the allowable head loss should be held lower, in the range of 6 feet to 8 feet per 1,000 feet of length. Under high flow conditions, such as fire flows, the maximum allowable pipeline velocity is 10 feet per second. This limitation is consistent with good engineering practice to minimize velocity forces and the likelihood of water hammer in the distribution system. It is also consistent with WAC 246-290-230 which requires that a water hammer analysis be conducted for any transmission main that is designed to carry flows at rates greater than 10 feet per second.

SYSTEM SERVICE PRESSURE ANALYSIS

System operating pressures are recorded at each fire hydrant during routine hydrant maintenance activities. A review of these hydrant pressures shows that the only hydrants with recorded pressures lower than 30 psi are located along transmission mains where there are no service connections.

In order to evaluate the water system's future ability to provide pressures of at least 30 psi to all customer service connections, the system was modeled using build-out demand projections during peak hour demand conditions with all equalizing storage depleted. The results of this analysis showed that all areas of Bellevue were provided with at least 30 psi of pressure under these demand conditions.

FIRE FLOW ANALYSIS

Available fire flow is calculated presuming maximum day demand under build-out conditions with both the storage for fighting the fire and all equalizing storage having been depleted. As discussed previously, no significant changes have been made that would alter the fire flow analysis results presented in the previous plan update. As a result, fire flow analysis results are not presented in this plan update. Previous analysis showed that there are single-family areas and nonresidential and multifamily sites in the service area that met fire flow requirements at the time the water system was constructed but fall short of current fire flow standards. The Utility and the Fire Marshal have identified and maintain an inventory of these sites. In the majority of these cases, the available fire flow is limited by the presence of small diameter water main, usually 4-inch, being relied upon to provide fire protection. When adjacent CIP projects or developer extensions are designed, new pipes are sized with consideration of the need for increased fire flow to these sites. The Utility does not currently have or recommend a policy to eliminate these "grandfathered" areas. However the Utility does have a policy and CIP program in place to improve fire flows. That program is discussed below.

Fire Flow Improvement Program

In 1984, Bellevue established a program to replace older, primarily 4-inch, asbestos-cement (AC) water mains which had experienced breaks and/or leaks, shown signs of potential loss of strength, or were in areas where scheduled street overlays provided an opportunity for replacement cost savings.. This program has replaced approximately 20 miles of 4-inch AC pipe over the past 22 years.

The primary objectives of this program are two-fold: to proactively address potential pipe failures, and to improve fire flow in areas with undersized water mains. The program currently replaces approximately 2.3 miles of older small diameter (primarily 4" and some 6") pipe each

year. When these small-diameter pipelines are replaced, the City also replaces non-standard fire hydrants and improves fire hydrant spacing to meet current standards.

Bellevue established a policy in 1996 to provide a minimum standard fire flow of 1000 gpm throughout the distribution system. Subsequently, extensive evaluation and hydraulic analysis of the water system identified all areas where currently available fire flow is less than 1000 gpm. The identified areas are all older, single family neighborhoods supplied almost exclusively by 4 and 6-inch diameter AC pipe. Currently, 94.9% of Bellevue's residential customers have fire flows of 1000 gpm or more. The City has identified approximately 35 miles of 4-inch and 6-inch AC pipe requiring replacement in order to bring the minimum fire flow up to 1000 gpm throughout the water service area. At the current rate of replacement, and assuming all pipe replacements are in areas with less than 1000 gpm fire flow, this program objective will be met in the year 2020.

The program should continue to address 4-inch pipe in streets scheduled for overlay, as well as any 6-inch pipe replacement needed to increase fire flow to a minimum of 1000 gpm. Additional criteria that are considered when prioritizing fire flow improvement projects include the age of the pipe, areas where the highest number of homes are benefited on a per dollar basis, and areas where system pressures of less than 20 psi could occur during fire flow conditions.

STORAGE ANALYSIS

This section evaluates existing and future storage volume needs within the Bellevue's water system. Storage calculations are made in accordance with the Washington State Department of Health (DOH) Sizing Guidelines, and the criteria summarized in Chapter 4. Population forecasts provided by the Bellevue Planning Department were used for the analysis. Forecasts were developed for each pressure zone, resulting in precise demand projections and service requirements.

The hydraulics of filling and drawing from storage facilities are evaluated under diurnal operation requirements. Items of potential concern include the ability to fill the reservoir during MDD conditions and the ability to draw water out of the facility during low-flow situations. To analyze hydraulic behavior of existing and proposed storage facilities, 24-hour dynamic simulation computer runs were used.

Level-of-Service Criteria

Level-of-service criteria, used to establish the desired level of performance for particular elements of the water system, must be reviewed to evaluate total storage volume needs. This criteria provides a basis for evaluating the capability of the water system to provide the desired service, and define the rationale for design of capital facilities to correct deficiencies identified during the evaluation.

As discussed in Chapter 4, storage volume level-of-service criteria are established for three distinct operational requirements:

- Equalizing volume
- Fire flow volume
- Emergency and reserve (standby) volume

After evaluating each of these criteria separately, total system storage needs were determined by adding the volume components needed to satisfy each requirement.

Equalizing Volume

Definition

Equalizing volume is the total volume needed to satisfy peak system demands in excess of the hydraulic capacity of the supply system. Equalizing volume requirements are greatest on the day of maximum system demand. They are most often analyzed over a 24-hour demand cycle, although a longer cycle can be used. The water system is hydraulically balanced when supply facilities and connecting pipelines can replenish the equalizing volume within the time frame of the demand cycle chosen, on the day of maximum demand.

Figure 4-1 illustrates this concept. It shows how demand varies in Bellevue over a 24-hour maximum day demand cycle for the two most predominant customer categories in the city: residential and commercial. Operation of a properly balanced system should result in replenishment of storage facilities during those times of the day when the demand curve is below the capacity of the supply system. Water will be drawn from storage when the demand exceeds supply capacity.

Criteria

An analysis of the composite diurnal demand curve in Figure 4-1 indicates that approximately 18 percent of the total demand volume consumed on a day of peak demand exceeds the average supply capacity of the water system. In other words, approximately 18 percent of the demand on a day of maximum system demand must come from storage. As a result, level-of-service criteria for purposes of calculating equalizing storage volume has been set at 20 percent of the total volume consumed on a day of maximum demand. Reservoir mass balance studies for other eastside communities done in the early 1990s determined their equalizing volume requirements to be 20 to 22 percent. Several of these communities calculate their equalizing storage volume by using 25 percent of the maximum day demand. This percentage provides a slightly more conservative approach than that used by Bellevue, which is appropriate for communities that have a higher residential demand component than Bellevue.

Fire Flow Volume

Definition

WAC 246-290-230 and DOH design criteria require that new or expanding water systems have capacity to provide design fire flows during maximum day demand conditions, that is, during the highest demand day of the year. It is also a requirement that the analysis be done under the conditions where both equalizing and fire flow storage components have been depleted .

Required fire flow volume is calculated by multiplying the design fire flow by a time of duration, defined as 1 hour for each 1,000 gpm increment of design fire flow. As an example, a design fire flow of 3,000 gpm would require a minimum time of duration of 3 hours, resulting in a minimum fire flow volume of 540,000 gallons (0.54 MG).

Criteria

Fire volume criteria was based on the largest fire flow the system can reasonably be expected to provide within each operating area, determined to be 5,500 gpm in each operating area based on previously conducted fire flow analysis. Therefore, required fire storage in each operating area is 1.65 MG. Bellevue Fire Department experience shows that the probability of occurrence of multiple large fires in the city is extremely small, except in the case of a large seismic event. However, because of limited hydraulic transfer capacity between the three operating areas, particularly across I-90, separate fire volume components are provided for each operating area.

Emergency and Reserve (Standby) Volume

Definition

Emergency and reserve (or standby) volume is required to supply reasonable system demands during an interruption to normal supply or an emergency, such as a major pipeline failure, power outage, or other system interruption. A key concept is that establishment of reserve storage volume involves planning for reasonable system outages, those that can be expected to occur within normal planning contingencies. Major system emergencies, such as those created by an earthquake, are covered under emergency system operations planning, because additional constraints can be imposed on water usage, thereby reducing anticipated demands.

The required emergency and reserve storage volumes depend on the system demand, the duration of the system outage, and the available remaining supply capacity to the system at the time of the emergency. Emergency volume is the most difficult of the three storage components to quantify because it involves subjective evaluation of system emergency scenarios that, by their nature, are difficult to predict and evaluate. DOH has published design guidelines that quantify target storage volumes on the basis of number of equivalent residential connections. For systems that have a single source of supply, the guidelines recommend a standby storage volume of at least 800 gallons per connection per day. This target volume may be reduced for systems that have multiple sources of supply and/or redundant supply facilities; however, total standby volume may not be less than 200 gallons per day per equivalent connection.

Criteria

Bellevue receives most of its water from the SPU's regional supply system and will continue to do so throughout the twenty year planning horizon of this comprehensive plan. Because of Bellevue's location along that system, it can be supplied by either Seattle's Tolt River or Cedar River systems. In addition, Bellevue has multiple pump stations capable of moving water upward through the various pressure zones within the system. The combined pumping capacities of the pump stations is larger than the forecast peak day demand for each individual zone.

Because of the reliability and redundancy inherent in the SPU facilities that supply Bellevue, because the City maintains multiple connections to these facilities, and because of the large capacities of the pump stations between pressure zones, the minimum standby storage criteria was selected to coincide with minimum DOH criteria, that is, 200 gallons per day per equivalent connection.

Although Bellevue receives most of its water from connections to Seattle's regional supply system, it purchases that water from Cascade. Cascade is the regional water supplier responsible for meeting Bellevue's current and future water supply needs. The specifics of how Cascade will supply Bellevue beyond the planning horizon of this comprehensive plan are currently under evaluation by Cascade. Therefore, the longer term redundancy and reliability of Bellevue's supply are currently unknown. However, because Cascade's future regional supply system will almost certainly be within close proximity to Seattle's system at several locations, emergency interties between the two systems seem likely. Such interties would serve to further increase the region's water supply redundancy and reliability in an emergency and therefore be mutually beneficial to Seattle and Cascade.

Evaluation of Storage

Operating Areas

Evaluation of existing and future storage needs was accomplished by looking at the three hydraulic operating areas of the Bellevue water system: West Bellevue, East Bellevue, and South Bellevue operating areas. Each of these operating areas contain one or more primary pressure zones which utilize several regional supply inlets as their main source of supply. These primary pressure zones in turn supply water to several secondary pressure zones within the same operating area via pump stations and PRVs.

Discussion of Storage Analysis Results

Tables 8-1a, 8-1b, and 8-1c summarize storage volume needs within the Bellevue system, as indicated by planning year, operating area, and storage volume component.

A storage capacity evaluation was completed for the 1998 Water Comprehensive Plan. As discussed in the 1998 plan, only the West Operating Area was shown as being deficient for the year 2017 and also for build-out conditions. This deficiency is predominantly due to a large

increase in demand anticipated due to growth that is expected in downtown Bellevue. Both the East and South Operating Areas have a surplus of total required storage, through build-out.

As part of this Comprehensive Plan update, a new storage capacity analysis was completed to provide an updated basis for addressing the West Operating Area deficiency. The storage evaluation method for each operating area used in the previous Water Comprehensive Plan was also used in the recent calculation. The results presented here presume the following conditions:

- Bellevue is supplied water from multiple sources.
- Supply sources have sufficient capacity to meet maximum day demands.
- Supply sources have sufficient capacity to meet average day demand with the largest source out of service.
- Nesting of fire flow and standby storage components is not utilized. (Nesting allows for the same storage volume to be used for both fire flow and standby uses. So the required storage volume for both is equal to whichever storage component is larger.)

To evaluate storage adequacy for the years 2011 and 2025 (six- and twenty-year planning horizons) and projected build-out, as shown in the tables, the following procedures were followed:

- The number of Equivalent Residential Units (ERUs) and the maximum day demand were derived from the population and demand analysis performed in Chapter 4
- Existing storage for each operating area was identified and listed.
- Required standby storage was calculated as 200 gallons per ERU.
- Equalizing storage was calculated as 20 percent of the peak day demand.
- The appropriate level of fire flow was included (5,500 gpm for all operating areas).
- The total storage requirement was calculated as the sum of the three values calculated above.
- Available storage was compared to required storage to determine the level of storage excess or deficiency.
- System analysis was conducted to evaluate system improvements to meet required storage needs.

The result of future water conservation activities and their impact on the storage requirements within Bellevue have not been specifically addressed. The only portion of the calculation of storage requirements that would be impacted by a decrease in demand is equalizing storage, calculated as 20 percent of the maximum day demand. For example, a decrease in maximum day demand of 100,000 gpd would result in a decease in storage requirements of 20,000 gallons.

Table 8-1a
Summary of Storage Evaluation
West Operating Area

WEST OPERATING AREA	Projected Current Demand YR 2003	Projected 6-Year Demand YR 2011	Projected 20-Year Demand YR 2025	Projected Buildout Demand YR 2040	Maximum ERU with Existing Facilities) (11)
Demand Summary (gpd) (1)					
Equivalent Residential Units (ERUs)	29,068	33,414	39,171	45,344	40,321
Projected Demand, Current consumption patterns (gpd) (2)					
Average Day	7,487,849	8,300,000	9,730,000	11,263,391	10,015,701
Maximum Day	16,850,000	18,716,667	21,942,500	25,340,000	22,532,989
Peak Hour	28,982,000	32,192,667	37,741,100	43,584,800	38,756,742
Available Storage (gal) (4)					
Pikes Peak 550	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Meydenbauer	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000
Woodbridge 397 Standpipe	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
Clyde Hill 465 Standpipe	750,000	750,000	750,000	750,000	750,000
Clyde Hill 390	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000
Clyde Hill 335 Round	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Clyde Hill 335 Square	500,000	500,000	500,000	500,000	500,000
Cherry Crest	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000
Total Available Storage (gal)	**13,450,000**	**13,450,000**	**13,450,000**	**13,450,000**	**13,450,000**
Storage Evaluation					
Multi-Source Credit w/ new source	11,088,000	11,516,667	14,742,500	18,140,000	15,332,989
Existing Source					
Required Standby Storage (gal) (5)	5,813,547	6,682,770	8,372,000	9,068,753	8,943,402
Required Equalizing Storage (gal) (6)	3,370,000	3,743,333	4,388,500	5,068,000	4,506,598
20-percent of Maximum Day Demand					
Required Fire Flow Storage (gal) (7)	1,650,000	1,650,000	1,650,000	1,650,000	1,650,000
Total Required Storage (gal) (8)	**10,833,547**	**12,076,103**	**14,410,500**	**15,786,753**	**15,100,000**
Storage Surplus/(Deficiency) Existing Source (gal) (10)	**2,616,453**	**1,373,897**	**(960,500)**	**(2,336,753)**	**N/A**

Notes:

(1) Residential ERUs are calculated based on number of households and 2.8 persons/SFU for current conditions and 2.7 persons/SFU for future conditions. Non-residential flows are converted to equilvalent ERUs.

(2) Projected demands are provided by or interpolated from estimates provided by City of Bellevue staff.

(3) Not used.

(4) It is assumed that the entire storage volumes are available.

(5) Required standby storage is equal to the larger of 200 gallons per ERU or 2 time ADD minus multi-source credit.

(6) Required equalizing storage based on larger of 20% of the maximum day demand or the DOH equation (PHD-Source) (gpm) * 150 minutes.

(7) Fireflow storage based on largest fireflow the system can reasonably be expected within this area. Based on 5,500 gpm for 5 hrs.

(8) Bellevue's system improvement plans include maintaining supply source adequate to meet MDD.

(9) Not used.

(10) Storage Surplus/(Deficit) is equal to the total available storage minus total required storage minus smaller of fire flow and standby storage.

(11) Calculation of Maximum number of ERUs available assuming no new source or storage. If MDD is greater than source, calculation of storage continues assuming no new source has been installed.

Table 8-1b
Summary of Storage Evaluation
East Operating Area

EAST OPERATING AREA	Projected Current Demand YR 2003	Projected 6-Year Demand YR 2011	Projected 20-Year Demand YR 2025	Projected Buildout Demand YR 2040	Maximum ERU with Existing Facilities) (11)
Demand Summary (gpd) (1)					
Equivalent Residential Units (ERUs)	23,251	24,436	24,718	24,792	47,786
Projected Demand, Current consumption patterns (gpd) (2)					
Average Day	5,989,421	6,070,000	6,140,000	6,158,456	11,869,996
Maximum Day	13,480,000	13,426,667	13,485,000	13,860,000	26,714,187
Peak Hour	23,185,600	23,093,867	23,194,200	23,839,200	45,948,402
Available Storage (gal) (4)					
Lake Hills North	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
Lake Hills South	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
Parkside	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
Newport	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000
Sammamish	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Kirkland 545 Reservoir	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000
NE 40th Reservoir	3,400,000	3,400,000	3,400,000	3,400,000	3,400,000
Total Available Storage (gal)	**14,900,000**	**14,900,000**	**14,900,000**	**14,900,000**	**14,900,000**
Storage Evaluation					
Multi-Source Credit w/ new source	18,144,000	18,144,000	18,144,000	18,144,000	18,144,000
Existing Source					
Required Standby Storage (gal) (5)	4,650,171	4,887,279	4,943,639	4,958,499	9,557,163
Required Equalizing Storage (gal) (6)	2,696,000	2,685,333	2,697,000	2,772,000	5,342,837
20-percent of Maximum Day Demand					
Required Fire Flow Storage (gal) (7)	1,650,000	1,650,000	1,650,000	1,650,000	1,650,000
Total Required Storage (gal) (8)	**8,996,171**	**9,222,612**	**9,290,639**	**9,380,499**	**14,900,000**
Storage Surplus/(Deficiency) Existing Source (gal) (10)	**5,903,829**	**5,677,388**	**5,609,361**	**5,519,501**	**N/A**

Notes:

(1) Residential ERUs are calculated based on number of households and 2.8 persons/SFU for current conditions and 2.7 persons/SFU for future conditions. Non-residential flows are converted to equilvalent ERUs.
(2) Projected demands are provided by or interpolated from estimates provided by City of Bellevue staff.
(3) Not used.
(4) It is assumed that the entire storage volumes are available.
(5) Required standby storage is equal to the larger of 200 gallons per ERU or 2 time ADD minus multi-source credit.
(6) Required equalizing storage based on larger of 20% of the maximum day demand or the DOH equation (PHD-Source) (gpm) * 150 minutes.
(7) Fireflow storage based on largest fireflow the system can reasonably be expected within this area. Based on 5,500 gpm for 5 hrs.
(8) Bellevue's system improvement plans include maintaining supply source adequate to meet MDD.
(9) Not used.
(10) Storage Surplus/(Deficit) is equal to the total available storage minus total required storage minus smaller of fire flow and standby storage.
(11) Calculation of Maximum number of ERUs available assuming no new source or storage. If MDD is greater than source, calculation of storage continues assuming no new source has been installed.

Table 8-1c
Summary of Storage Evaluation
South Operating Area

SOUTH OPERATING AREA	Projected Current Demand YR 2003	Projected 6-Year Demand YR 2011	Projected 20-Year Demand YR 2025	Projected Buildout Demand YR 2040	Maximum ERU with Existing Facilities) (11)
Demand Summary (gpd) (1)					
Equivalent Residential Units (ERUs)	13,480	13,929	14,291	14,922	27,423
Projected Demand, Current consumption patterns (gpd) (2)					
Average Day	3,472,360	3,460,000	3,550,000	3,706,687	6,811,932
Maximum Day	7,810,000	7,925,000	8,130,000	8,340,000	15,326,762
Peak Hour	13,433,200	13,631,000	13,983,600	14,344,800	26,362,031
Available Storage (gal) (4)					
Factoria	2,600,000	2,600,000	2,600,000	2,600,000	2,600,000
CCUD 440 Reservoir	1,650,000	1,650,000	1,650,000	1,650,000	1,650,000
CCUD 580 West Reservoir	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
CCUD 580 East Reservoir	400,000	400,000	400,000	400,000	400,000
Somerset-2	100,000	100,000	100,000	100,000	100,000
Somerset-3	100,000	100,000	100,000	100,000	100,000
Horizon View-1	200,000	200,000	200,000	200,000	200,000
Horizon View-2	150,000	150,000	150,000	150,000	150,000
Horizon View-3	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
Horizon View-3A	100,000	100,000	100,000	100,000	100,000
Forest Hills	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
Cougar Mountain-1	500,000	500,000	500,000	500,000	500,000
Cougar Mountain-2	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Cougar Mountain-3	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
Cougar Mountain-3A	300,000	300,000	300,000	300,000	300,000
Total Available Storage (gal)	**14,100,000**	**14,100,000**	**14,100,000**	**14,100,000**	**14,100,000**
Storage Evaluation					
Multi-Source Credit w/ new source	11,808,000	11,808,000	11,808,000	11,808,000	12,446,762
Existing Source					
Required Standby Storage (gal) (5)	2,695,932	2,785,829	2,858,293	2,984,450	5,484,648
Required Equalizing Storage (gal) (6)	1,562,000	1,585,000	1,626,000	1,668,000	3,065,352
20-percent of Maximum Day Demand					
Required Fire Flow Storage (gal) (7)	1,650,000	1,650,000	1,650,000	1,650,000	1,650,000
Total Required Storage (gal) (8)	**5,907,932**	**6,020,829**	**6,134,293**	**6,302,450**	**8,550,000**
Storage Surplus/(Deficiency) New Source (gal) (10)	**8,192,068**	**8,079,171**	**7,965,707**	**7,797,550**	**N/A**

Notes:

(1) Residential ERUs are calculated based on number of households and 2.8 persons/SFU for current conditions and 2.7 persons/SFU for future conditions. Non-residential flows are converted to equilvalent ERUs.

(2) Projected demands are provided by or interpolated from estimates provided by City of Bellevue staff.

(3) Not used.

(4) It is assumed that the entire storage volumes are available.

(5) Required standby storage is equal to the larger of 200 gallons per ERU or 2 time ADD minus multi-source credit.

(6) Required equalizing storage based on larger of 20% of the maximum day demand or the DOH equation (PHD-Source) (gpm) * 150 minutes.

(7) Fireflow storage based on largest fireflow the system can reasonably be expected within this area. Based on 5,500 gpm for 5 hrs.

(8) Bellevue's system improvement plans include maintaining supply source adequate to meet MDD.

(9) Not used.

(10) Storage Surplus/(Deficit) is equal to the total available storage minus total required storage minus smaller of fire flow and standby storage.

(11) Calculation of Maximum number of ERUs available assuming no new source or storage. If MDD is greater than source, calculation of storage continues assuming no new source has been installed.

Storage Conclusions and Recommendations

Based on the storage analysis:

- Storage volume is adequate in two of the three operating areas, for current and projected fire flow, equalizing, and standby requirements, through build-out.

- In the West Bellevue operating area, calculated storage requirements are greater than provided by available storage reservoirs. This is projected to first occur in 2018. A total of 2.35 MG of additional storage in the West Operating Area will be required to meet build-out conditions. Of this total, approximately 1 MG is needed by 2025. Therefore, adding 1 MG of storage by 2018, would preclude the need for additional storage until 2025.

  Construction of new storage could be located at existing reservoir sites in the West Operating Area. Since there is time before the additional storage is needed, construction of the new storage could be paired with demolition of existing reservoirs as they age. The demolished reservoirs would then be replaced with larger reservoirs on the same site. A planning level cost estimate for design and construction of 2.35 MG of new storage is approximately $5.2 million.

- The total deficiency of 2.35 MG does not necessarily mean that new storage must or should be constructed. Additional storage capacity could be made available to the West Bellevue operating area from the East Bellevue operating area's 5 MG of surplus storage.

  Two projects were identified that, if both were constructed, would provide the capacity needed to transfer enough water from East Operating Area storage surplus to eliminate the West Operating Area's storage deficiency. Each project would construct new 12-inch diameter pipe, a large PRV, and modify system valveing to improve the systems flow transfer capacity. These two projects are generally located along NE 40th Street between 148th and 132nd Avenues, and along NE 8th Street between 151st and 132nd Avenues. The PRV's would need to include controls that would automatically activate them in an emergency in order for the East Operating Area storage to be considered available in an emergency. The planning level cost estimates for these projects are approximately $2.1 million and $1.5 million respectively.

  Use of the PRV stations and piping improvements instead of construction of new storage will be beneficial for water quality, particularly chlorine residual concentrations. By moving more water from the storage-rich East Bellevue operating area to the storage deficient West Bellevue operating area, water will reach the customer more quickly and there will be less degradation of chlorine concentrations in the distribution system.

- The choice of method to address the West Operating Area storage deficiency should be further evaluated for cost and for the secondary benefits that can be derived from the construction, such as increased supply redundancy, water quality impacts of increased storage, the ability to respond to short-term emergencies such as fires, and the availability of water near the point of demand versus having to transfer water across the distribution system

from the point of supply to the point of use. The choice of method will also need to consider the specific locations and capacities of future regional supply inlets, currently unknown.

A mix of building new storage and constructing system improvements to access surplus East Operating Area storage should also be considered. This would involve building only a portion of the required storage and scaling back the scope of the system improvement work to provide less capacity and therefore access to a lower volume of East Operating Area storage.

- The addition of new storage should be coordinated with the water quality goals of the Bellevue water system. Storage capacity significantly in excess of that needed has a negative impact on water quality, causing water age to increase and chlorine residuals to decrease. New storage should not be constructed in increments that cause large short-term excesses.

SUPPLY INLET CAPACITY ANALYSIS

This section evaluates existing and future inlet capacity requirements for Bellevue's water system. System demands and hydraulic model parameters are in accordance with the criteria summarized in Chapter 4. Population forecasts as provided by the Bellevue Planning Department were used for the analysis. These forecasts, developed for each pressure zone, will result in precise demand projections and service requirements.

Evaluation of Supply Inlet Capacity

Operating Areas

Evaluation of existing and future inlet capacity needs was also accomplished by evaluating the three hydraulic operating areas of the Bellevue water system. Each of these operating areas contains one or more primary pressure zones with several regional supply inlets. These primary pressure zones in turn supply water to several secondary pressure zones within the same operating area via pump stations and PRVs.

Discussion of Inlet Capacity Analysis Results

Inlet capacity was evaluated in the 1998 Water Comprehensive Plan. As discussed in the 1998 plan, only the West Operating Area was predicted to be deficient for both the year 2017 and for build-out conditions. This deficiency is again predominantly due to large increases in demand due to significant growth forecasted for downtown Bellevue. Both the East and South Operating Areas will have surplus inlet capacity through build-out.

As part of this Water Comprehensive Plan update, a more in-depth inlet capacity analysis was completed. Bellevue's primary objectives for inlet supply to each operating area are:

- Provide sufficient capacity to meet maximum day demands.
- Provide sufficient capacity to meet average day demand with any single inlet out of service.

To evaluate required capacity for the years 2011 and 2025 (six- and twenty-year planning horizon) and projected build-out, as shown in the tables, the following procedures were followed:

- The maximum day demand and average day demand were taken from the population and demand analysis performed in Chapter 4
- Current inlet capacity for each operating area was identified and listed.
- Existing inlet capacity was compared to system demands to obtain the level of excess or deficiency.
- System analysis was conducted to determine the degree of mitigation that could be achieved through construction of the system improvement identified and discussed in the Storage Analysis section of this chapter. Those improvements would provide the West Operating Area with access to both surplus inlet capacity and surplus storage in the East Operating Area.

The result of water conservation activities and their impact on inlet capacity requirements within Bellevue have not been specifically addressed. So this analysis may be somewhat conservative.

Inlet Capacity Conclusions and Recommendations

Following are conclusions and recommendations, based on the inlet capacity analysis.

- Inlet capacity is adequate in two of the three operating areas, the south and the east, for current and projected demands.

- In the West Bellevue Operating Area, inlet capacity is first projected to be less than the max day demand by 2010. The City has identified a project to modify and rehabilitate the Bel-Red Inlet to increase its capacity. The Bel-Red Inlet modifications are planned for 2007 and will provide sufficient capacity to meet projected max day demands until the year 2018. The estimated cost of these improvements is $350,000.

  Additional inlet capacity for the West Bellevue Operating Area will be required prior to 2018 in order to meet 2025 and build-out max day demand conditions. The required capacity can be provided either by installation of new inlets or by upgrading existing inlets. The specifics of how Cascade will provide future water supply to Bellevue are currently not defined and will significantly influence decisions on how best to provide sufficient inlet capacity to meet Bellevue's future demands. The cost of constructing additional inlet capacity has not been determined because it varies depending on the specifics of Cascade's plan for delivering water to Bellevue.

  Since Bellevue's distribution system was designed with the capacity to accept large inlet water volumes from the current SPU inlet locations, any new inlet location may require significant upsizing of Bellevue's distribution system piping. Bellevue's system is most capable of accepting additional inlet flows at the Bel-Red inlet location and in the vicinity of SE 8th Street east of I-405.

- If improvements to increase the water system's ability to transfer flow from the East Operating Area to the West Operating Area (discussed in the Storage Analysis section of this chapter) are constructed, surplus inlet capacity in the East Operating Area would become available to the West Operating Area. This surplus capacity could be used to defer the need for inlet capacity improvements in the West Operating Area beyond 2018.

VULNERABILITY ANALYSIS

Overview

The primary focus of vulnerability analysis for Bellevue's water system is the determination of operational capabilities following loss of a major facility which might result from an emergency such as an earthquake or from planned or emergency maintenance activities. Analysis of system vulnerability was performed as part of the storage and inlet capacity analysis described above. System vulnerability was evaluated under build-out demand conditions.

Under most operational scenarios, system adjustments can be made to accommodate the loss of a single pump station, reservoir, or transmission line through redundant facilities inherent in Bellevue's distribution system.

System analysis was conducted to simulate the loss of major facilities followed by a reduction of demand from MDD to ADD after 24 hours, presuming this will be the result of public notifications and it is consistent with the Water Shortage Contingency Plan. This demand reduction reflects the City's actual experience during past emergencies. The results of this analysis indicated the system could maintain system pressures above 30 psi during a 72 hour duration simulation. There is sufficient redundancy of major facilities to adequately meet the customers need under ADD conditions. The vulnerability analysis conducted for this plan did not include any manual operational changes that could be made to further mitigated the loss of a major facility and is therefore a conservative assessment. System vulnerability should be considered when analyzing and evaluating any improvement to the water system.

CHAPTER 9
Operations and Maintenance

This chapter discusses current City of Bellevue Water Utility operating procedures. It includes descriptions of the water utility personnel and equipment, routine operations, and procedures for preventive maintenance and emergency operations.

All discussions related to water quality monitoring, cross connection control, and other water quality related items can be found in Chapter 10.

The criteria used to review and evaluate the water system operations are discussed in Chapter 2.

ORGANIZATIONAL STRUCTURE

Bellevue's water system is administered according to Bellevue City Code Chapters 24.02 and 24.04. Appendix C contains indexes for both code chapters. Chapter 24.02 is the Water Utility Code and Chapter 24.04 is the Sewer Utility Code; however, both chapters contain regulations and procedures applicable to the water system.

Bellevue's Water Utility is part of Bellevue's Utilities Department, managed by Denny Vidmar, Utilities Director. Management of the Water Utility is separated into three divisions under the Director's Office. The Assistant Director for Engineering, Wes Jorgenson, P.E., is responsible for engineering functions. Figure 9-1a shows the organizational structure of the Engineering Division. The Assistant Director for Resource Management and Customer Service, Anne Weigle, is responsible for the financial and billing functions within the utility. Figure 9-1b shows the organizational structure of the Finance and Customer Service Division. The Acting Assistant Director for Operations and Maintenance, Mike Jackman, manages the operation and maintenance of the water, sewer, surface water, and transportation systems. Utility and Streets operations are supervised by the Operations and Maintenance Manager, Joe Harbour. Figure 9-1c shows the organization of the Operations and Maintenance Division.

Operator Certification

Systems serving one hundred services or more in use at any one time require a certified operator under chapter 70.119 RCW and Chapter 246-292 WAC. The WAC requires the certified operator to be in charge of the active, daily, technical operation of all portions of a public water system. Where shift work is practiced, a certified operator is required to be in charge of each operating shift, either present or on call. Bellevue's distribution system is classified as

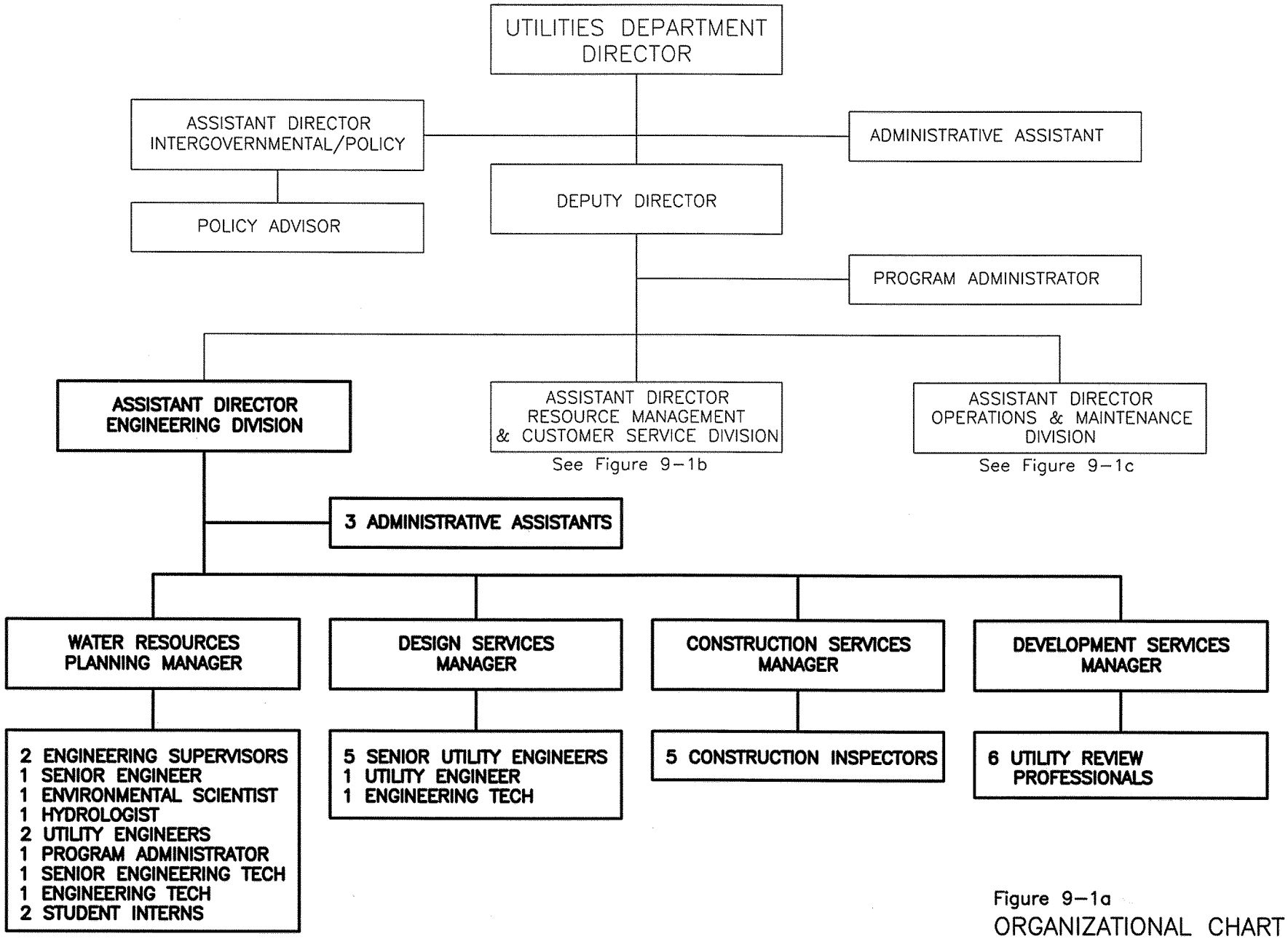


Figure 9-1a
ORGANIZATIONAL CHART
ENGINEERING DIVISION
Bellevue Utilities

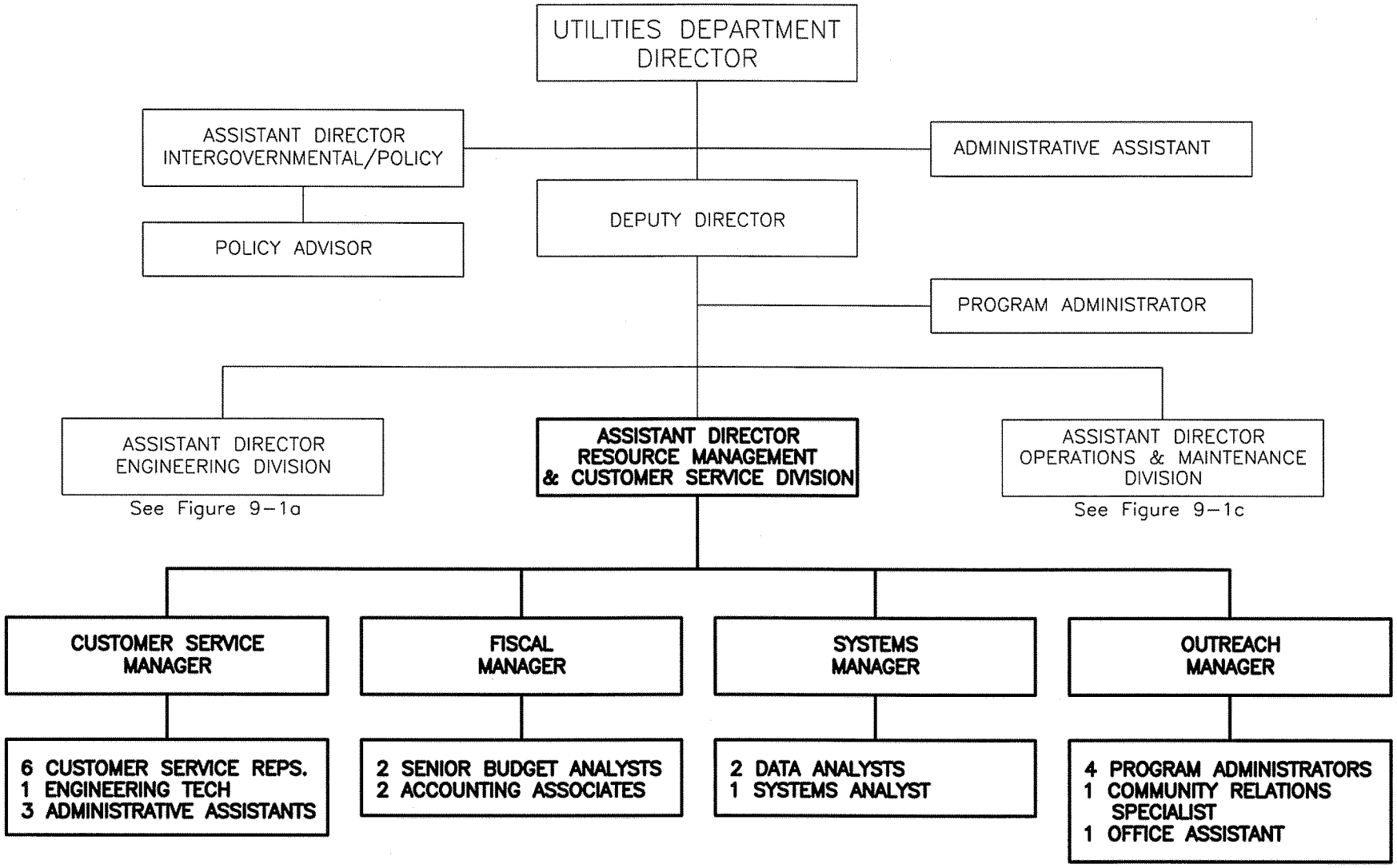


Figure 9-1b
ORGANIZATIONAL CHART
RESOURCE MANAGEMENT & CUTOMER SERVICE DIVISION
Bellevue Utilities

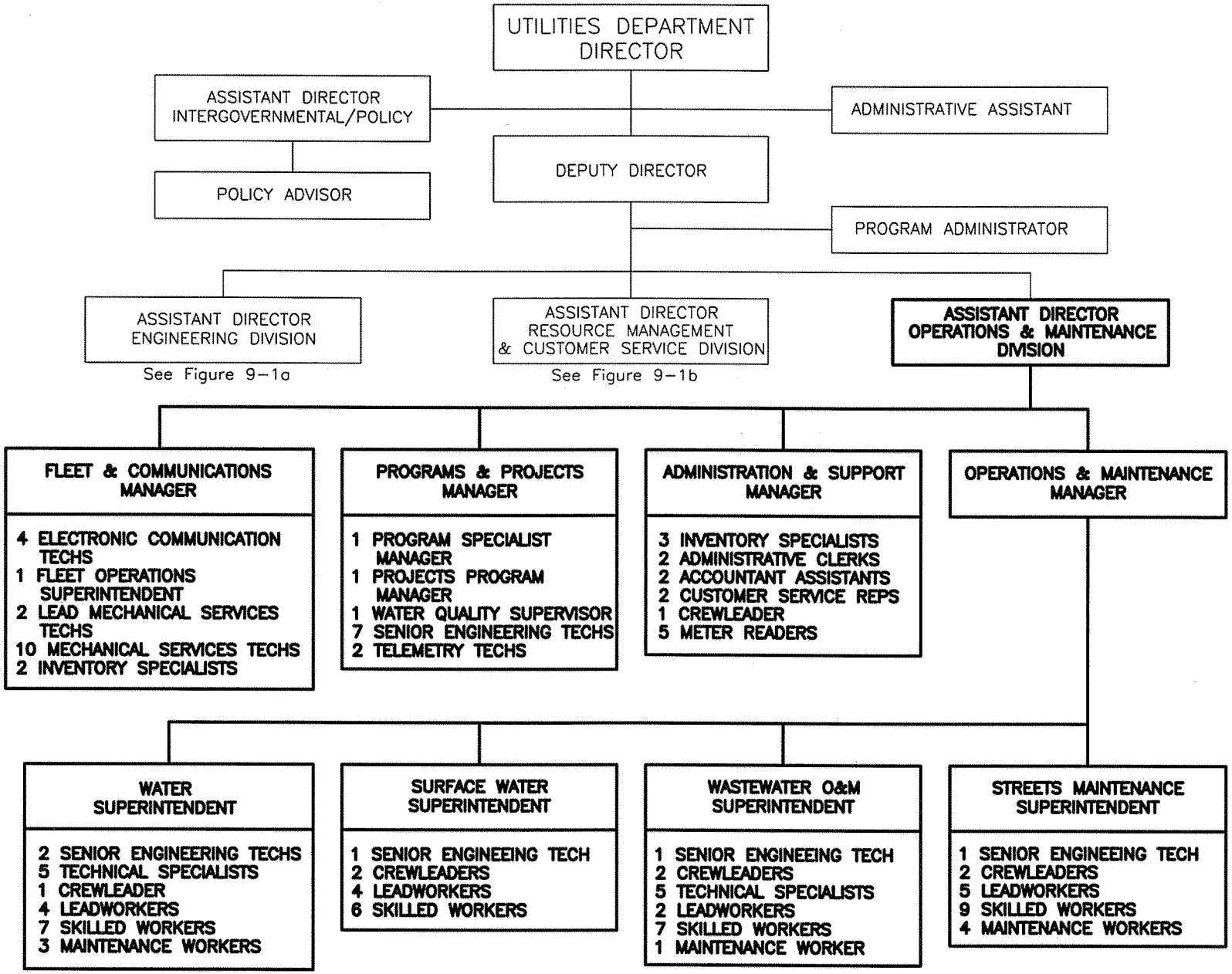


Figure 9-1c
ORGANIZATIONAL CHART
OPERATIONS & MAINTENANCE DIVISION
Bellevue Utilities

Group 4, serving greater than a 50,000 population. Since Bellevue does not provide any water treatment, a Water Distribution Manager 4 is required to be responsible for the operation of the system. Bellevue has designated two mandatory positions to meet operator certification requirements. These positions are the Assistant Director for Engineering (Wes Jorgenson, WDM 4), and the Assistant Director for Operations and Maintenance (Alan King, WDM 3).

Bellevue Utilities encourages employee training and recognizes certification as a measure of skill in providing excellent service. Table 9-1 lists water utility engineering management and other engineering staff that have obtained their state water works operator certifications. Table 9-2 provides information on the water utility maintenance staff.

ROUTINE OPERATIONS

The Bellevue Utilities Department obtained APWA accreditation in 2004, demonstrating compliance with internationally developed and accepted standards for water utility operations.

Routine operations involve the development and analysis of procedures to ensure that water system facilities are operated properly and functioning efficiently. The utility practices excellent operation and maintenance procedures which are well documented and available to all staff via the City's intranet. When local water service is interrupted for any reason, the Utility's standard procedure is to work continuously until service is restored. Dedicated staff are on call 24 hours a day so that necessary repairs to the system can be made promptly. Joe Harbour, the Water and Sewer Operations Manager, is responsible for administering the water utility operations. Table 9-3 lists the motor vehicles and other large equipment assigned to the Water Utility.

Meter Reading & Customer Billing

The Operations and Maintenance Division is responsible for reading all commercial and domestic meters. They work closely with utility Billing staff to assure customers are billed accurately on a bi-monthly cycle. Meter reading staff are responsible for closing accounts, re-reads, and meter shut-off/turn-on.

Safety

Bellevue Utilities employees are provided with appropriate safety and personal protective equipment for the tasks and work environments they encounter as part of their jobs. Staff are also provided with necessary training to ensure that they understand and practice all applicable safety regulations.

Table 9-1
Engineering and Environment Divisions
Staff Certified by the Department of Health

Name	Position	Certificate Classification	Certificate Number
Engineering Management			
Wes Jorgenson, P.E.	Assistant Director for Engineering	WDM-4, CCS-1	3181
Regan Sidie, P.E.	Design Manager	WDM-3	3860
Joy Ramshur	Development Review Manager	WDS-2	6399
Pam Maloney, P.E.	Systems & Programs Planning Manager	WDM-3	6106
Other Certified Engineering Staff			
Rob Hutchinson	Development Review Professional	WDM-1, WDS-2, CCS-1, BAT	3830
Rick Pederson	Construction Inspector	WDM-2, WDS-2, CCS-1	3664
Chris Brookes	Construction Inspector	WDS-2	6825
Brad Ayers	Development Review Professional	WDS-2	4664
Aaron Thress	Construction Inspector	WDM-2, WDS-2, CCS-1	5235

Note: WDM = Water Distribution Manager
WDS = Water Distribution Specialist
CCS = Cross-connection Control Specialist
BAT = Backflow Assembly Tester

Table 9-2
Operations and Maintenance Division
Water Utility Staff

Name	Position	Certificate Classification	Certificate Number
Mike Jackman	Assistant Director (Acting)	WDM-2, WDS-2, CCS-1	2235
Joe Harbour	O&M Manager	WDM-2, CCS-1, BAT	4392
Chris Hagen	Sr. Engineering Tech	WDM-3, WDS-2, CCS-1	1024
Scott Jonas	Sr. Engineering Tech	WDM-3, WDS-2, CCS-1, WW-2	2236
Jenelle Harrison	Maintenance Crewleader	WDS-1, CCS-1	3259
Kipp Fockler	Maintenance Crewleader	WDS-1	8167
Greg Knight	Operations Crewleader	WDM-2, WDS-2, CCS-1	2300
Dan Jackson	Technical Specialist	WDM-1, WDS-2, CCS-1	3831
Jon Noland	Technical Specialist	WDS-1	6374
Rich Johnson	Technical Specialist	WDS1	9921
Gary Schroder	Technical Specialist	WDM-2, WDS-1, CCS-1, BAT	3934
Andrew Tuchscherer	Technical Specialist	WDM-2	7600
Mark Frazier	Leadworker	WDS-1, CCS-1, BAT	4476
Tom Zwaller	Leadworker	WDS1	9457
Phil Ast	Leadworker	WDS-1, CCS-1	5651
Mike Greenleaf	Skilled Worker	WDS1	9801
Robert Humphries	Skilled Worker	WDS1	8317
Charles Sellers	Skilled Worker	WDS1	8341
Mike Hoel	Maintenance Worker	WDS1	10842
Cory Kuzaro	Maintenance Worker	WDS1	10733
Brian James	Maintenance Worker	WDS1	10718
John Konrad	Maintenance Worker	WDS1	10730
Mike Graves	Senior Engineering Tech	WDM-2, CCS-1, BAT	5399

Note: WDM = Water Distribution Manager WDS = Water Distribution Specialist
CCS = Cross Connection Control Specialist BAT = Backflow Assembly Tester

Table 9-3
Water Department Vehicles and Equipment

Year	Asset	License No.	Description
2001	3319	34206D	Case Backhoe
2001	3318	34468D	Sterling Hydro Excavator
2002	3354	35033D	International 6 yd Yard Dump Truck
1999	3097	28967D	Chevrolet Astro Van
1988	9012	04704D	12 Ton Tilt-bed Trailer
1988	9032	05112D	Case Backhoe
2000	3152	29854D	For Ranger ¼ Ton Pick-up
1999	3099	28969D	Dodge Van
2000	3153	29855D	Ford Ranger ¼ Ton Pick-up
2003	3327	06009D	GMC Flat Bed Utility Truck
2003	3463	36048D	Jeep Wrangler Right Hand Drive
2003	3475	36406D	Jeep Wrangler Right Hand Drive
2003	3464	36049D	Jeep Wrangler Right Hand Drive
2003	3476	36050D	Jeep Wrangler Right Hand Drive
2003	3461	37753D	Chevrolet 1 Ton Utility Truck
2003	3466	37393D	Ford Ranger 4X4 Pick-up
2000	3154	29856D	Ford Ranger ¼ Ton Pick-up
1991	9294	10633D	Ford 5 Yard Dump Truck
2000	3161	30930D	Dodge Ram 3/4 Ton Pick-up
1998	3039	15804D	Ford 1 Ton Utility Truck
2002	3287	33179D	Ford 450 Crew truck
1992	9339	11677D	Ford Ranger 4X4 Pick-up
2001	3269	33174D	Chevrolet Express Van
2000	3184	31253D	Chevrolet Astro Van

Table 9-3
Water Department Vehicles and Equipment

1992	9366	11700D	Sullivan Compressor
1992	9383	14022D	Eager Beaver Tilt Trailer
2003	3465	36003D	Chevrolet S10 Pick-up
2000	9423	94476D	Shoring Trailer
1994	9459	15809D	Chevrolet USV Van
1994	9477	15821D	Pontiac Gran Prix
1994	9704	17117D	Chevrolet Astro Van
1994	9712	17148D	Chevrolet 1 Ton HD 3500 Utility Truck
1994	9713	17125D	Chevrolet 3/4 Ton Pick-up
1995	9763	20409D	Buick Century Station Wagon
1996	9793	20464D	Ford F350 1 Ton USV Van
1998	9927	24453D	Ford 1 Ton Utility Truck
2003	3472	36060D	Chevrolet S-10 Pick-up
2003	3432	36047D	Jeep Wrangler Right hand Drive
1998	9976	24448D	Jeep Cherokee
1998			250 KW Generator

RECORDS AND DATA MANAGEMENT

System Operation and Performance Data

The volume of data generated each month within the water utility is substantial and include utility billing data and customer information, work request data, system as-built data, water quality data, flow/pressure data, reservoir data, pump station data, and event and alarm data. All of this data and how it is managed are routinely being improved upon and upgraded as technology, software and other available tools continue to improve. Links between the City's various databases are one of the primary ways that the data is made more readily available and more useful for daily operations, analysis and decision making. The city has a telemetry data-logger and a computerized data management system that can be accessed to report operations data in all types of formats, including trending historical data or viewing current on-line data. The utility maintains up-to-date pump station, inlet, reservoir files, and operations manuals that document system operation. This data is used to help evaluate actual system performance under a variety of operational conditions. Discussion of water quality related data records and reporting can be found in Chapter 10.

Work Requests and Customer Complaints

Requests for work are generated from three different sources. Approximately 45% come from citizens, 38% from City staff, and 16% are billing-related. All work request related data is tracked using the Utility's Maintenance Management Information System (MMIS).

The most common requests come from citizens and are related to leaks, water pressure, water quality (taste and odor), a damaged or leaking hydrant, and valve box problems. Customers are notified of planned work or results of the request by phone or field contact.

Complaints of low pressure are regularly received from private residences constructed during the early 1960s. These homes are typically equipped with galvanized service lines and galvanized interior plumbing systems. These old galvanized pipes contribute significantly to the reduction of water flow within the home because of interior pipe corrosion. The City investigates low-pressure complaints, and when it is suspected that home plumbing systems may be the cause of the problem, the City advises the homeowner to have their interior system checked for signs of galvanized piping and potential loss of capacity as a result of interior corrosion. Bellevue Utilities replaces galvanized service lines up to the meter in cases where this pipe replacement will resolve the low flow problem.

Work requests are scheduled by a crewleader according to priority. Emergency request response is immediate. Secondary priority response is typically within forty-eight hours. Discussion of complaints related to water quality issues is contained in Chapter 10.

PREVENTIVE MAINTENANCE

Preventive maintenance consists of regularly servicing pumps and motors, PRVs, exercising valves and fire hydrants, cleaning reservoirs, and flushing water mains. Preventive maintenance is essential to assuring the proper and efficient operation of the water system and maximum useful life of facilities. The frequency of maintenance inspections and servicing depends on operation and manufacturer requirements of the facility and is defined in SOPs and service manuals for each facility. These regular activities are also done on priority bases; servicing pumps and cleaning reservoirs have the highest priority. The operation and maintenance of specific Utility facilities are discussed below.

Bellevue uses MAXIMO software for its maintenance management information system (MMIS). The program is accessible at personal computers throughout the city. The maintenance management information system makes it possible to fully integrate operations and maintenance planning, budgeting, and performance reporting. The system tracks how actual performance compares to plan with respect to infrastructure maintenance, customer service demand, and costs.

The tangible results of the system include an inventory of the City's infrastructure; the activities required to maintain it in good condition; condition assessment history and trend analysis; defined levels-of-service; the resources of labor, equipment, materials, and "outside" services required; and their schedules.

The MAXIMO system has been in use at Bellevue since 1999. Bellevue is currently evaluating next generation maintenance management software which would enhance the asset management capability and interface better with the Customer Information System and other City software applications.

Valves. The field maintenance personnel exercise all the valves in the system once every two years. The City has identified and located all of the valves in the system and keeps the information in MAXIMO.

Fire Hydrants. The operation of every fire hydrant in the system is checked every two years. The recordkeeping system for fire hydrants is similar to that described for valves.

PRVs. Field operations personnel perform routine maintenance to all pressure regulating valves, including those at inlet stations. Maintenance intervals depend on valve function and operation. Inlet stations are assigned the highest priority. All valves are inventoried in MAXIMO.

Distribution/Transmission Pipelines. The City monitors, operates and maintains the pipeline system on a continual basis. In addition, the City flushes all water mains every six years to assure water quality.

Pump Stations. Each pump station is visited frequently by water utility personnel. Additional site visits are conducted if an alarm triggers requiring a response is received. During these visits, visual checks are made of the grounds, and the station is observed for security purposes, leaks, unusual odors, noise, or temperature. Diesel-driven pumps and generators are exercised bi-monthly. Amperage draws on electric motors are checked annually; other maintenance is performed as needed. All pump motors are lubricated twice a year; other maintenance at the pump stations is performed as needed.

Storage Reservoirs. Each reservoir is frequently visited. Additional site visits are conducted if an alarm requiring a response is triggered. During these visits, a visual inspection of the grounds and perimeter is done, and cathodic protection of steel reservoirs is checked for normal operation. Concrete reservoirs are leak tested each year. Steel and concrete reservoirs are drained, cleaned, and inspected for structural integrity at least every 3 years. Bellevue's telemetry system continually monitors and records the water level in each storage reservoir. If a problem occurs, the telemetry system triggers an alarm and water utility personnel can respond.

EMERGENCY PROCEDURES

The City developed and uses an Emergency Operations Plan which defines emergency management organization, responsibilities, and procedures for all City functions in the event of an emergency or disaster. This plan provides for coordinated response to an emergency among all the City's departments, as well as with county, state and federal agencies, and adjacent jurisdictions. It is routinely reviewed and updated to respond to evolving understanding of potential threats and national and state emergency response policy.

The City's plan is supplemented by the Utilities Department's Emergency Management Plan (aka Red Book). The Red Book describes how Bellevue Utilities Department staff should react to an emergency, including functions and responsibilities of personnel, procedures to be followed, maps of the area, means of establishing communications between various organizations, and lists of people to contact during an emergency.

Water Utility personnel have been instructed that, in case of an emergency, they should first ensure their family's safety and then report to work. During an emergency, the Utility would first attempt to locate any problems, for example, broken water mains, by either the public notifying the Utility or by reports from utility personnel sent out to survey the system. Utility personnel will also perform critical site assessments and report any damage. Mike Jackman, Programs and Projects Manager in the Operations and Maintenance Division, is responsible for implementing the emergency response program.

Following the terrorist attack against the U.S. on September 11, 2001, Bellevue Utilities evaluated the security of its drinking water supply and distribution system against terrorist attack. A consultant performed a preliminary vulnerability assessment of the City's water system in December 2001. Security procedures and physical security measures recommended

by this report were implemented. An internal "Water Security Team" was developed, which includes maintenance, operations, and water quality staff. This team is tasked with continual refinement of water system security and response protocols.

The Water Security Team meets regularly to identify gaps in water security and to develop solutions to eliminate or mitigate these gaps. The *Bellevue Utilities Department Water Security Manual* is the baseline document used by the team to organize its work and capture its work product. Manual updates occur routinely based on team decisions.

Under most operational scenarios, the loss of a single reservoir, pump station, or transmission line could be accommodated through redundancy inherent in Bellevue's system. Vulnerability of Bellevue's water system was assessed as part of the development and implementation of improvements to Bellevue's security procedures and physical security measures. System vulnerability was also assessed as part of the storage and regional supply analysis conducted for this comprehensive plan update and the results of that analysis are summarized on page 8-16

A brief description of Bellevue's Water Shortage Contingency Plan, which is included in the Red Book as Appendix D, can be found at the end of Chapter 5, Conservation. The Water Quality Emergency Response Plan, is also included in the Red Book as Appendix C.

CHAPTER 10
Water Quality

This Chapter evaluates Bellevue's compliance with applicable state and federal drinking water regulations between 1998 and 2004. The discussion includes:

- An overview of Bellevue's supply with respect to source and supplier;
- Voluntary monitoring conducted by Bellevue;
- Stage 2 Disinfection By-Product (DBP) Rule, which has now been finalized but was not effective during 1998-2004; and
- A description of the future regulatory climate, with a focus on issues surrounding Bellevue's distribution system.

REGIONAL AND LOCAL WATER QUALITY COMPLIANCE RESPONSIBILITIES

Bellevue purchases 100% of its water from Cascade, and provides no additional treatment. Cascade is a regional water supply organization composed of local cities and water districts, formed so that regional drinking water purveyors, such as Bellevue, could cooperate in providing current and future water supply. Purchased water reaches Bellevue's system through 15 supply inlets.

Currently, Cascade supplies Bellevue with water purchased from Seattle Public Utilities (SPU). During typical operations, water is supplied from both the Cedar and South Fork Tolt Rivers. The Cedar is an unfiltered drinking water supply; the Tolt River has been filtered since the Tolt Water Treatment Facility came online in 2001.

With respect to the quality of the drinking water provided, Cascade's contract with member agencies states:

> "Cascade shall be responsible for water quality that meets or exceeds all federal or state requirements at the point of delivery from Cascade to the Member, consistent with applicable laws and regulations. Cascade assumes source water quality responsibility and liability with respect to Water Supply Assets under its ownership or control (including water wheeled to a Member utility through another Member's facilities). Cascade is also responsible for preparing and carrying out water quality activities compatible with the water quality requirements of Regional water suppliers integrated with Cascade's system (i.e.. Tacoma, Everett, and Seattle)."

While Cascade is responsible for ensuring the quality of water reaching its Member utilities Cascade plans to purchase most of its water from SPU and Tacoma Public Utilities during the

next 20 years. Clearly defined roles and responsibilities with respect to water quality management will be particularly important.

The Washington Administrative Code (WAC) 246-290, which regulates public drinking water supplies in Washington State, requires the following of systems that are selling and/or receiving water:

- Source water monitoring – Utilities are responsible for conducting monitoring per regulations for drinking water supply sources under their control. For regulations with population-dependent monitoring requirements, these utilities are to meet requirements for the entire population served by the source of supply. This does not apply to systems that wheel water.
- Distribution system monitoring – Utilities that receive and distribute water are responsible for meeting water quality requirements in the distribution system.

Therefore, SPU (or any future water supplier to Cascade) is responsible for ensuring that its sources, treatment processes, and finished water meet applicable state and federal water quality regulations. Bellevue is responsible for ensuring compliance with water quality regulations that apply to drinking water throughout the distribution system, from the point of supply to the point of customer delivery.

DRINKING WATER REGULATIONS

Washington State drinking water suppliers are subject to both federal and state drinking water regulations. At the federal level, the Safe Drinking Water Act (SDWA) (1974) and SDWA Amendments (1986 and 1996) assign the United States Environmental Protection Agency (USEPA) the responsibility of developing and administering national standards for drinking water quality. Table 10-1 lists current federal drinking water regulations developed as part of the SDWA and amendments and indicates which regulations apply to source and treatment, to the distribution system, and whether they were in effect between 1998 and 2004.

The Washington State Department of Health (DOH) is the primacy agency responsible for ensuring state drinking water laws are implemented and enforced. Washington State must adopt laws at least as stringent as federal regulations. When a federal drinking water law has yet to be included in state drinking water codes, drinking water suppliers are responsible for meeting federal regulatory requirements as put forth by the USEPA.

Washington Administrative Code (WAC) 246-290 - Group A Public Water Systems incorporates federal drinking water requirements. Bellevue is a Group A system; defined as a drinking water system that provides service to 15 or more service connections used by year-round residents for 180 or more days within a calendar year, or regularly serving at least 25 year-round residents (in residence at least 180 days per year).

Since Bellevue does not own and/or operate any drinking water supply sources, it is not responsible for monitoring at the source(s) or directly after treatment for purchased water.

Bellevue is responsible for monitoring and maintaining compliance with drinking water regulations that apply to distribution system water quality.

Table 10-1
Federal Drinking Water Quality Regulations

Rule (Date Effective)	Parameters Regulated	Requirements Apply Primarily to…
National Primary Drinking Water Requirements (1976)	Physical and chemical	Treated water
Total Trihalomethane Rule (1979)	Trihalomethanes	Distribution system[1]
Phase I (VOCs) and Phase II and Phase V (IOCs and SOCs) - (1989 and 1993, respectively)	Volatile Organic Chemicals (VOCs), Inorganic chemicals (IOCs), and Synthetic Organic Chemicals (SOCs)	Treated water[2]
Surface Water Treatment Rule (1990)	Turbidity, disinfection, viruses, *Giardia lamblia*, and disinfectant residual	Source and treated water[3]
Total Coliform Rule (1990)	Coliform	Distribution system
Lead and Copper Rule (1992) and Lead and Copper Rule Minor Revisions (2000))	Lead and Copper and treatment for corrosion control	Treated water and at customers' taps
Interim Enhanced Surface Water Treatment Rule (2002)	Turbidity and *Cryptosporidium*	Source and treated water
Arsenic Rule (2002)	Arsenic	Treated water
Stage 1 Disinfectant/Disinfection By-Products Rule (2002)	Disinfectant Residual, Total Trihalomethanes, and Haloacetic Acids	Distribution system
Radionuclides Rule (2003)	Radionuclides	Treated water

1. Replaced by the Stage 1 Disinfectant/Disinfection By-Products Rule in 2004.
2. Asbestos is monitored in the distribution system.
3. A disinfectant residual must be present in 95% of samples collected monthly at coliform monitoring sites or heterotrophic plate count levels must be less than or equal to 500 colony forming units per mL.

Between 1998 and 2004, Bellevue has been responsible for complying with these federal regulations (as enacted by the WAC 246-290):

- Total Trihalomethane (TTHM) Rule;
- Phase II Rule – asbestos;
- Surface Water Treatment Rule – disinfectant residual;
- Total Coliform Rule – coliform;
- Lead and Copper Rule – lead and copper; and
- Consumer Confidence Reports and Public Notification Rule.

Washington State adopted the Stage 1 Disinfectant/Disinfection By-Product (D/DBP) Rule which replaced the TTHM Rule, for systems that add a disinfectant to the drinking water supply. Bellevue purchases water without adding additional disinfectant. Even though not currently

required by state or federal regulations to conduct DBP monitoring, Bellevue has been monitoring those DBPs regulated by the Stage 1 D/DBP Rule since the first quarter of 2004. Prior to this, SPU performed DBP monitoring in Bellevue's system. This monitoring has been conducted in anticipation for the upcoming Stage 2 DBP Rule, which will apply to Bellevue, and to ensure public health protection. DBP monitoring has been conducted quarterly at locations anticipated to be consistent with upcoming IDSE and Stage 2 requirements. The DBP levels in the voluntary samples are all below the MCLs established in the Stage 1 D/DBP.

Bellevue's compliance with these regulations during the last six years is detailed below.

Disinfection By-Product Monitoring

Regulatory Requirements

Some disinfection by-products (DBPs), such as trihalomethanes, have been shown to cause cancer and negative reproductive health effects. Until 2002, Bellevue was required to sample quarterly for Total Trihalomethanes (TTHMs). The Maximum Contaminant Level (MCL) for TTHMs was 100 µg/L. In 2002, the federal Stage 1 Disinfectant/Disinfection By-Product Rule became effective for surface water supplied systems with more than 10,000 customers, making the previous TTHM requirements no longer applicable. The TTHM MCL was reduced from 100 to 80 µg/L and an MCL was added for the total of five haloacetic acids (HAA5) at 60 µg/L. As adopted in the WAC 246-290, the Stage 1 DBP requirements were not enforced for systems that purchase all of their water and do not apply any disinfectant.

Bellevue Status

Bellevue participated in SPU's TTHM Regional Monitoring Plan, which resulted in reduced monitoring. TTHM monitoring was conducted by SPU quarterly at two locations in Bellevue's distribution system, one served by the Tolt supply and the other served by the Cedar supply. Annual average TTHMs from 1998 through 2003 are shown in Table 10-2. Between 1999 and 2002, Bellevue collected 12 HAA5 samples per DOH requirements at location BE-S15, that averaged to 37 µg/L. The monitoring sites were changed in 2001, and the Tolt River supply became filtered, reducing DBP precursor levels entering Bellevue's distribution system. Bellevue has been in compliance with the DBP MCLs throughout this period.

Table 10-2 Annual Average of Total Trihalomethane Sampling					
Year	Maximum Contaminant Level (MCL) (µg/L)	Annual Average - Sample Location BE-S15 (µg/L)	Annual Average – Sample Location BE-E9 (µg/L)	Annual Average - Sample Location BE-W7 (µg/L)	Annual Average - Sample Location BE-S13 (µg/L)
1998	100	28	66		
1999	100	65	51		
2000	100	40	66		
2001	100			32	43
2002	80			35	23
2003	80			30	44

Phase II Rule

Regulatory Requirements

As part of the Phase II Rule regulating synthetic organic chemicals and inorganic chemicals, systems with a significant amount of asbestos-cement (AC) pipe must conduct periodic asbestos monitoring in the distribution system. In Washington State, DOH has historically required systems that contain more than 10% AC pipe to comply with the monitoring requirement. These systems must collect one sample in the distribution system at a tap served by AC pipe and under conditions where asbestos contamination is most likely to occur.

Bellevue Status

As of 2005, approximately 53% of Bellevue'S distribution system was comprised of AC pipe. (Four- and six-inch diameter AC pipe is being replaced with ductile iron pipe at a rate of between one and two miles per year.) Therefore Bellevue was required to monitor for asbestos during the first three-year compliance period of each nine-year compliance cycle, beginning in the compliance period starting January 1, 2001 and ending December 31, 2003. Bellevue conducted the required asbestos monitoring during January of 2002. The sample indicated that the asbestos level was below detection. The MCL for asbestos is 7 million fibers per liter. The next compliance period will begin in 2010.

Surface Water Treatment Rule

Regulatory Requirements

The Surface Water Treatment Rule (SWTR) applies to systems using a surface water supply or groundwater under the influence of a surface water body. In addition to the SWTR, the Interim Enhanced Surface Water Treatment Rule (IESWTR) regulates the treatment and disinfection of

surface waters, establishing requirements for Giardia lamblia, viruses, Legionella, heterotrophic bacteria, and turbidity levels of treated water.

After treatment, the SWTR requires a minimum disinfectant residual of 0.2 mg/L at the point of entry to the distribution system at all times. Additionally, a detectable disinfectant residual must be present in at least 95% of all distribution system samples collected at the same location and frequency as samples collected for compliance with the Total Coliform Rule. Alternatively, samples may be analyzed for heterotrophic bacteria using the plate count method (HPC). An HPC level of 500 colony forming units per mL (cfu/mL) or less is considered equivalent to a detectable disinfectant residual.

Bellevue Status

Bellevue samples chlorine residual 84 times each month at 23 sites throughout the distribution system. Between 1998 and 2004, chlorine residual was always detectable in at least 95% of samples collected at total coliform sampling stands. In addition, between 2000 and 2004, Bellevue collected 410 HPC samples throughout the distribution system. Of these, the maximum HPC result was 49 cfu/mL and nearly 88% of the collected samples contained 0 cfu/mL.

Total Coliform Rule

Regulatory Requirements

The Total Coliform Rule (TCR) requires systems to monitor their distribution system for coliforms, which are bacteria used to indicate the presence of potentially harmful bacteria such as E. coli. Under this rule, there are two types of violations: acute and non-acute. An acute MCL violation for coliform is the presence of fecal coliform or E. coli in a repeat sample, or coliform presence in a repeat sample collected as a follow-up to a sample indicating the presence of fecal coliform or E. coli. A non-acute MCL violation for coliform occurs when a system that collects 40 or more coliform samples per month has more than 5.0% of the routine samples taken in one month test positive for the presence of total coliform.

Bellevue Status

Bellevue is one of approximately 27 water systems and districts that receive water from sources treated and operated by SPU. SPU and its wholesale customers have been part of a regional, DOH-approved, coliform monitoring program since 1972. As part of the regional program, wholesale customers are responsible for installing and maintaining designated coliform monitoring sample stands, while SPU collects the monthly samples. Under this agreement, SPU and its purveyors sample at a rate of 70% of samples required by the Total Coliform Rule. Bellevue currently supplies water to a population of approximately 134,000, therefore, the minimum number of routine samples collected within Bellevue's distribution system is 84 per month (70% of the 120 samples required for systems serving 130,001 to 220,000 customers). According to the regional monitoring plan, SPU collects routine samples. Bellevue is

responsible for collecting any repeat samples. Samples are currently collected at 23 sample stands under a regional monitoring program with SPU as approved by the Department of Health.

Bellevue's Coliform Monitoring Plan was most recently updated in March, 2005 and covers the following topics:

- Overview of water system, including hydraulic operations;
- Compliance requirements, including sampling procedures and reporting to the State;
- Public notification for acute and non-acute violations;
- Relevant system maps; and
- City, DOH, and adjoining system contacts.

Bellevue has been in compliance with the TCR for the 1998 to 2004 period. Within this time period, there were 10 positive coliform samples, two of which occurred in the same month. In this case, the two positive coliform samples represented less than 3% of Bellevue's monthly coliform samples. Between 1998 and 2004, approximately 0.02% of coliform samples were positive. Bellevue's monitoring plan meets DOH requirements with respect to content included in the plan. Bellevue is currently updating its Coliform Monitoring Plan to clarify the procedure for calculating the number of monthly samples required for compliance.

Lead and Copper Rule

Regulatory Requirements

Lead and copper are metals that may be found in household plumbing materials and water service lines. Lead can cause a variety of negative health impacts, including delaying physical and mental development in infants and children. Copper can cause aesthetic issues in addition to short-term and long-term negative health impacts. The Lead and Copper Rule (LCR) establishes action levels, monitoring, and compliance requirements for lead and copper levels at customers' taps. To meet the established action levels, ninety percent of all samples must have lead levels equal to or less than 0.015 mg/L and copper levels equal to or less than 1.3 mg/L. If these action levels cannot be met, systems must implement public education and a corrosion control treatment strategy for meeting these levels.

Bellevue Status

A regional, DOH-approved lead and copper monitoring program was adopted by SPU and its purveyors in 1992. This type of program is appropriate because SPU applies corrosion control as part of their drinking water treatment. Monitoring was initiated in 1992 and conducted most recently from March 2003 through March 2004. The 103 samples collected in Bellevue's system were pooled with the rest of SPU's direct service and wholesale customer samples, resulting in a targeted total pool of 375 samples for each monitoring round. Table 10-3 presents the results, indicating that Bellevue and the SPU regional results were in compliance with both the lead and copper action levels throughout the testing period.

Table 10-3 2003-2004 Lead and Copper Monitoring Results							
		Regional Results				Bellevue	
Parameter	Action Level	90th Percentile - 2003	90th Percentile - 2004	# of homes exceeding Action Level - 2003	# of homes exceeding Action Level - 2004	# of homes exceeding Action Level - 2003	# of homes exceeding Action Level - 2004
Lead (mg/L)	0.015	0.0079	0.0103	11	24	0	5
Copper (mg/L)	1.3	0.2	0.26	0	0	0	0

Based on the 2003 – 2004 LCR tap monitoring results, DOH determined that SPU's treatment was optimized for corrosion control. As part of this determination, DOH established optimal water quality parameter requirements. These requirements consist of maintaining a minimum pH of 7.6 throughout the distribution system and a minimum alkalinity of 15 mg/L in the portions of the distribution system receiving Tolt water.

The most recent round of lead and copper tap sampling took place in 2005. During 2005, lead and copper tap samples and water quality parameter samples were taken during two consecutive 6-month periods. After meeting the required action levels for lead and copper and optimal water quality parameter requirements during two consecutive six-month periods, SPU, Bellevue, and the other participants in the regional plan will be eligible for reduced monitoring. Reduced monitoring will require fewer lead and copper tap samples and water quality parameter samples to be collected on an annual basis. After meeting the optimal water quality parameter requirements for three consecutive years, SPU, Bellevue, and the other participants in the regional plan will be eligible for triennial reduced monitoring. Under this reduced monitoring requirement, lead and copper tap samples must be collected once every three years.

Consumer Confidence Reports and Public Notification Rule

Regulatory Requirement

Under the Consumer Confidence Report (CCR) Rule promulgated in 1998, community water systems are required to provide an annual CCR on the source of their drinking water and levels of any contaminants found. The annual report must be supplied to all customers and must include:

- Information on the source of drinking water;
- A brief definition of terms;
- If regulated contaminants are detected, the maximum contaminant levels goal (MCLG), the maximum contaminant level (MCL), and the level detected;
- If an MCL is violated, information on health effects; and
- If EPA requires it, information on levels of unregulated contaminants.

While the CCR provides an annual "state-of-the-water" report, the Public Notification Rule (PNR) directs utilities in notifying customers of acute violations when they occur. The PNR was revised in May 2000 and outlines public notification requirements for violations of MCLs, treatment techniques, testing procedures, monitoring requirements, and violations of a variance or exemption. If violations have the potential for "serious adverse effect," consumers and the State must be notified within 24 hours of the violation. The notice must explain the violation, potential health effects, corrective actions, and whether consumers need to use an alternate water source. Notice must be made by appropriate media or posted door-to-door. Less serious violations must be reported to consumers within 30 days, in an annual report, or by mail or direct delivery service within one year depending on the severity of the violation.

Bellevue Status

Bellevue is in compliance with the CCR Rule. Annual CCRs have been published as required by July 1 and provided to all customers via direct mail, the City's website, and the City's newsletter. No acute violations have occurred since the promulgation of these rules and therefore the PNR has not been implemented.

CUSTOMER CONCERNS

All water quality customer complaints Bellevue receives are routed directly to Water Quality staff. Complaints are recorded, and when the cause of the complaint is known, suggestions are provided to the customer over the phone. If there is any question as to the cause of the complaint, appropriate action is taken and a Water Quality technician is immediately dispatched to the home. Samples are taken if needed. Samples are analyzed by a certified laboratory for the appropriate parameters of concern.

Review of customer complaint data provided between 1998 and 2004 indicates that Bellevue received less than 130 complaints per year during this time, resulting in approximately one complaint per thousand customers per year. The vast majority of these were associated with clarity of the water, caused by construction or main breaks occurring nearby. Taste and odor were the second and third most common complaints. Bellevue maintains data on all customer complaints in the drinking water quality database.

LABORATORY CERTIFICATIONS

Bellevue uses three State-certified laboratories to perform water quality testing. The contact information is listed below:

Washington State Department of Health – Public Health Laboratories
1610 NE 150th Street
Shoreline WA 98155-9701
206-418-5400

Am Test Laboratories
14603 NE 87th St.
Redmond WA 98052
425-885-1664

Seattle Public Utilities – Water Quality Laboratory
800 S. Stacey St.
Seattle WA 98134
206-684-3000

STAGE 2 DISINFECTANTS/DISINFECTION BY-PRODUCTS RULE

The Stage 2 DBPR was promulgated on January 4, 2006, concurrently with the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) and became effective in March 2006. Because this regulation was not effective between 1998 – 2004, it was not included in the evaluation of Bellevue's regulatory compliance status described in the previous sections. However, there are regulatory milestones associated with the Stage 2 DBPR that will have immediate impacts on Bellevue.

The Stage 2 DBP Rule has been developed by the EPA to further reduce exposure to DBPs that have been linked to bladder, rectal, and colon cancers. This Rule applies to community water and nontransient, noncommunity water systems that serve drinking water treated with a primary or secondary disinfectant other than UV. The Stage 2 Rule does the following:

- Changes the method of calculating DBP regulatory compliance to a locational running annual average (LRAA) of quarterly samples, in which the system calculates a running annual average for each DBP monitoring location instead of calculating a running annual average for the entire system.
- Reestablishes the location and number of DBP monitoring sites. The proposed rule requires systems to conduct an Initial Distribution System Evaluation (IDSE) to select Stage 2 DBP monitoring locations in the distribution system. Additionally, the final Stage 2 DBP Rule requires systems to determine monitoring requirements based on population.
- Establishes DBP operational evaluation levels. A system that exceeds this level is required to conduct an operational evaluation, evaluating their distribution system operations and determining ways to reduce DBP levels. The system is required to notify the state of an operational evaluation level exceedance and submit evaluation results within 90 days of the exceedance.
- Consecutive systems that purchase drinking water carrying a disinfectant are required to implement Stage 2 DBP requirements.

Bellevue's first step in complying with the Stage 2 DBP Rule will be conducting an IDSE. The goal of the IDSE is to identify areas that have routinely higher DBP concentrations than other areas in the distribution system and use this information to select monitoring locations for long-term Stage 2 DBP compliance monitoring. The IDSE requirement can be met in four ways:

- Very Small System Waiver – Systems serving less than 500 customers that qualify for this waiver are exempt from IDSE requirements. (Not applicable to Bellevue)

- 40/30 Certification – This approach allows systems to meet the IDSE requirement by certifying that all individual Stage 1 total trihalomethanes (TTHM) and haloacetic acids (HAA5) compliance monitoring results or equivalent DBP data collected over a specified 2-year period have met the following criteria:
    - TTHM $\leq$ 40 µg/L
    - HAA5 $\leq$ 30 µg/L
    - Systems must submit the required documentation to the primacy agency (which is currently USEPA Region 10).

- Standard Monitoring Program (SMP) – Systems conduct one year of monitoring in the distribution system to identify high DBP locations. Systems must submit a SMP Plan and IDSE report to the primacy agency as part of the IDSE process.

- System Specific Study (SSS) -
    - SSS Using Existing Monitoring Data - Systems can meet IDSE requirements using existing monitoring data. The EPA has established criteria that the existing data must meet in order to be used to meet the IDSE requirement. Systems must submit an SSS Plan and/or IDSE Report to the primacy agency as part of the IDSE process.
    - SSS Using Hydraulic Model - Systems can meet IDSE requirements using a water distribution system hydraulic model. The EPA has established criteria that the hydraulic model must meet in order to be used for IDSE compliance. Systems must submit an SSS Plan and IDSE Report to the primacy agency as part of the IDSE process.

Systems that are consecutive systems, purchasing some or all of their water from another system, and systems that sell water wholesale comply with the Stage 2 Rule on a schedule based on the population served by the largest system in the combined distribution system. A combined distribution system is the interconnected distribution system consisting of the distribution systems of wholesale systems and consecutive systems that receive finished water from those wholesale system(s). Stage 2 sampling requirements are based on the retail population served by each system, not the combined distribution system.

As a system serving a population of more than 100,000 customers, Bellevue will follow the compliance schedule shown in Table 10-4.

Table 10-4 Timeline for Bellevue's Stage 2 DBP Compliance	
Milestone	**Date**
Final Stage 2 DBP Rule is effective	January 4, 2006
IDSE Plan due to primacy agency	October 1, 2006
Primacy agency reviews plan	Completed by October 1, 2007
Meet IDSE requirements	September 30, 2008
Submit IDSE Report	January 1, 2009
Submit Stage 2 Compliance Monitoring Plan	April 1, 2012

Compliance with the Stage 2 DBPR will be a complex process and will likely require significant planning and resources. Bellevue is currently taking proactive steps to determine the most suitable IDSE compliance approach and has begun to plan for development and completion of the IDSE process.

ANTICIPATED REGULATIONS

Several new or revised SDWA regulations will be promulgated by 2011 that will impact Bellevue. It is important that Bellevue continue to track the development of these regulations which affect distribution system monitoring and compliance. Table 10-5 presents anticipated regulations applicable to Bellevue's system as of this writing, the projected regulatory schedule, and regulated parameters. Monitoring required by the various rules is required starting in the first designated period after promulgation. The effective date is the date by which the system must be in full compliance with the subject rule.

Table 10-5
Anticipated Distribution System Drinking Water Regulations

	Action	Date	Parameter(s)
Unregulated Contaminant Monitoring Rule 2 (UCMR 2)	Proposed Promulgated Effective	2005 2006 2007	Various parameters
Lead and Copper Rule Revisions	Proposed Promulgated Effective	2006 Unknown Unknown	How systems implement monitoring and other activities
Total Coliform Rule (TCR) (Revised)	Proposed Promulgated Effective	Unknown Unknown Unknown	Total Coliforms Fecal Coliforms *E. coli* Potentially other distribution system contaminants and sources

In addition to proposed regulations, Bellevue can track potential regulations associated with EPA's Contaminant Candidate List (CCL). The CCL is EPA's primary source for establishing priority contaminants that may face future regulation. In February 2005, EPA issued the second

CCL, which is comprised of 51 (nine microorganisms and forty-two chemical contaminants) contaminants included on the previous list. EPA is currently preparing to make a determination of whether the CCL 2 contaminants should be pursued for future regulations.

Proposed Unregulated Contaminant Monitoring Rule 2

In August, 2005, EPA proposed a second UCMR, which includes two lists of contaminants for which some systems, including Bellevue, will be required to monitor. All public water systems serving more than 10,000 people will be required to conduct assessment monitoring for 11 contaminants on the Assessment Monitoring List at distribution system entry points. Systems serving more than 100,000 people and selected smaller systems will be required to conduct screening monitoring for 15 contaminants on the Screening Survey List. This list includes contaminants that will be monitored at distribution system entry points and within the distribution system. This monitoring will be required during a 12-month period between 2007 and 2009.

While the proposed rule includes distribution system monitoring, Bellevue may be exempt from UCMR 2 monitoring requirements since distribution system entry point monitoring is typically conducted directly after treatment. Bellevue may not be required to conduct assessment monitoring or conduct monitoring for many of the parameters on the Assessment Monitoring List. Nitrosamines, included in the screening monitoring list, are to be monitored at maximum residence time locations defined during Stage 1 D/DBP monitoring. Per EPA's proposal, it appears possible that systems which were not required to monitor for the Stage 1 D/DBP Rule, including Bellevue, may only be required to conduct this monitoring at the distribution system entry point, instead of within the distribution system.

Anticipated Lead and Copper Rule Revisions

EPA initiated a review of LCR implementation across the nation in 2004. This effort was focused on determining if national lead levels are increasing in the United States. As a result of this effort, EPA identified beneficial changes to the existing regulation. Table 10-6 lists the nine areas that will be revised, according to EPA in March 2005. EPA had anticipated issuing proposed revisions in early 2006.

Table 10-6 Proposed areas of LCR Revision		
Activity	**Proposed Rule Revision**	**Revision Objective**
Monitoring	Clarify language that speaks to the number of samples required	Address confusion about sample collection
	Clarify language regarding the number of locations from which samples should be collected	Address confusion about sample collection
	Modify definitions for a monitoring period and compliance period	Address inconsistencies between guidance and regulations
	Modify language to make it clear that all samples must be taken within the same calendar year	Ensure that samples collected reflect effectiveness of corrosion control
	Modify language to reconsider allowing large systems above the action level to reduce tap monitoring based solely on the results of their water quality parameter monitoring	Ensure that systems over the action level maintain a sense of the degree of exposure in the community
Treatment	Modify language to require that a public water system notify the state of treatment changes 60 days prior to a treatment change rather than 60 days after a change	Allow states an opportunity to provide input on the utility's decision or require additional monitoring prior to a change in treatment that could affect corrosion control
Public Relations	Add language to require that utilities provide occupant notification of the results of monitoring	Increase awareness for homeowners who participate in tap monitoring programs and parents, students, and staff at schools that are required to monitor for lead in drinking water
	Revise language to permit states to allow utilities to modify the premise piping flushing directions in public education language to address local circumstances	Address concerns about the appropriateness of flushing guidance included in current public education language. Guidance will be provided to states and utilities to help them determine an appropriate flushing time to recommend to customers
Lead Service Line Replacement	Revise language to require that any line previously deemed to be replaced through testing be reevaluated in the event that a subsequent treatment change causes the system to exceed the action level	Ensure that service lines that test below the action level are not considered permanently "replaced" and removed from the utility's inventory, but are instead retested after any major changes to treatment which could affect corrosion control

Source: USEPA 2005. "Drinking Water Lead Reduction Plan – March 2005." http://www.epa.gov/safewater/lcrmr/reductionplan_actions.html

Anticipated Revised Total Coliform Rule/Distribution System Rule

As part of its six year review of existing regulations, EPA has determined the need to revise the TCR. Revisions may include requirements to address finished water quality in the distribution system as well as evaluate additional or alternative monitoring strategies that would be more cost-effective and maintain or improve public health. As part of EPA's process for determining the appropriate revisions to this Rule and the need for a future Distribution System Rule, a series of white papers were developed by EPA and other groups in 2002 to describe potential health risks in the distribution system. These papers cover the topics of:

- Intrusion;
- Cross-connection control;

- Aging infrastructure and corrosion;
- Permeation and leaching;
- Nitrification;
- Biofilms and bacterial growth;
- Covered storage;
- Decay in water quality over time; and
- New or repaired water mains.

In addition, EPA and American Water Works Association are currently preparing 10 issue papers related to the development of revisions to the current TCR. These papers will cover the distribution system topics of:

- Indicators of water quality;
- Effectiveness of disinfectant residual;
- Compliance with the existing TCR;
- Assessment of distribution systems;
- Optimization of monitoring strategies;
- Hazard analysis and control strategies;
- Accumulation of inorganic contaminants;
- Nutrient availability;
- Causes of contaminant events and positive coliform samples; and
- Total coliform sample invalidation.

The date for a proposed revised TCR rule and/or Distribution System Rule is uncertain at this time. However, any developments with either rule will likely have an impact on Bellevue. It is quite possible that these rules will include the use and documentation of best management practices within the distribution system. Cross-connection control may be a primary focus. As part of this Water System Plan update, a detailed review of Bellevue's cross connection control program was conducted to ensure that Bellevue's program fulfills all required elements of cross-connection program so as determined by Washington State.

SUMMARY OF REGULATORY STATUS

Review of water quality data collected between 1999 and 2004 indicates that Bellevue complied with all applicable federal and State drinking water regulations. Table 10-7 summarizes those regulations and Bellevue's compliance status.

Table 10-7
Summary of Applicable Regulations and Compliance Status

Regulation	Requirements	Status	Compliance?
Phase II Rule	• Monitor distribution system for asbestos	• Meets MCL	Yes
Surface Water Treatment Rule	• Monitor chlorine residuals throughout the distribution system	• Meets minimum Cl_2 requirement	Yes
Total Coliform Rule	• Written Plan • Monitoring	• Monitors throughout distribution system as part of SPU regional program • Meets MCLs	Yes
Total Trihalomethane Rule[1]	• Monitoring	• Monitored at two distribution system locations. • Met MCL.	Yes
Lead and Copper Rule	• Monitoring	• Monitors as part of SPU regional program • Meets MCLs	Yes
CCR and Public Notification Rules	• Annual Reports • Reporting as needed	• Consumer Confidence Reports published annually	Yes

[1]The Stage 1 D/DBP Rule replaced the TTHM Rule in 2002, but as a consecutive system, Bellevue was not required to comply.

SUMMARY OF MONITORING REQUIREMENTS

Table 10-8 summarizes water quality monitoring requirements applicable to Bellevue. The table includes parameters to be monitored, sampling location and frequency.

Table 10-8
Summary of Distribution System Monitoring Requirements

Parameter	Regulatory Requirement	Location	Frequency
Lead Copper	Lead and Copper Rule	Customer taps	Varies. During 2005, two rounds of LCR monitoring were conducted at the tap. If eligible for reduced monitoring, this will occur once per year until system is eligible for a further monitoring reduction of once every three years.
Asbestos	Phase II Rule	One site in distribution system	Once every nine years. Next monitoring occurs in 2010.
Total Coliform	Total Coliform Rule	Throughout distribution system	84 samples per month
Chlorine Residual	SWTR	Throughout distribution system	84 samples per month
TTHM[1] HAA5[1]	Stage 2 DBP	Throughout distribution system	IDSE plan in 2006 IDSE report in 2008 Quarterly monitoring for MCL compliance beginning in 2012.

[1]The Stage 1 D/DBP Rule replaced the TTHM Rule in 2002, but as a consecutive system, Bellevue was not required to comply. Bellevue is required to comply with requirements of the Stage 2 DBP Rule.

RECOMMENDATIONS

With regard to proposed regulations, Bellevue will be most impacted by the Stage 2 DBP Rule. Bellevue has begun planning their IDSE approach, ensuring adequate time to develop and submit their IDSE sampling plan by the deadline established by the final rule. Additionally, Bellevue should continue voluntary monitoring for DBPs in their system to ease preparations for compliance with the MCLs included in the Stage 2 DBP Rule.

Bellevue should continue to closely follow developments associated with revisions to the Total Coliform Rule and with development of the potential Distribution System Rule.

During the next six years, it is likely that Cascade will begin supplying Bellevue with water from the Green River. This supply source will be an unfiltered, ozonated drinking water supply,

similar in some respects to water from the Cedar River, which Bellevue currently receives. To ensure continued compliance with drinking water regulations, it is important that Bellevue understand how the new source of supply could impact the existing monitoring and analysis agreements with SPU as well as how the new source will impact water quality conditions in Bellevue's system. Bellevue initiated a review of potential future water quality conditions through evaluations conducted as part of this Plan update.

CROSS CONNECTION CONTROL

Bellevue Utilities has an ongoing cross connection control program with authority established by City Ordinance No. 24.02.190. Bellevue's program conforms to WAC 246-290-490, and has adopted the Accepted Procedure and Practice in Cross-Connection Control published by the Pacific Northwest Section of the American Water Works Association as its primary practice, and utilizes other DOH recognized CCC manuals as reference. The Engineering Technician (CCS and BAT) for Water Quality prepares and administers program guidelines, documents, and standard operating procedures.

Bellevue's cross-connection control program follows and complies with the minimum elements of a cross connection program identified In WAC 246-290-490 (3) as described below:

The purveyor shall coordinate with the local administrative authority(LAA) in all matters concerning cross-connection control...

> Bellevue has a detailed written agreement with the LAA within the City limits covering all requirements of the WAC. Bellevue has a cooperative agreement with the LAA in unincorporated areas of its utility service area and is actively pursuing completion of a written agreement with them.

Element 1: The purveyor shall adopt a local ordinance, resolution, code, bylaw…

The following City Code 24.02.190 meets the requirements of element 1 and it's subsections (i), (ii), and (iii).

24.02.190 Cross-connection abatement and control.

A. General.

1. The utility shall initiate and carry out a cross-connection abatement and control program in conformance with state law by establishing and maintaining minimum requirements for the installation, inspection, testing, certification and maintenance of backflow prevention assemblies. The program shall meet the minimum requirements of WAC 246-290-490 and the latest edition of the Uniform Plumbing Code adopted by the city.

2. The utility hereby adopts by reference the standards and requirements of WAC 246-290-490, as now or hereafter amended.

B. Approved Backflow Prevention Assemblies. Only those backflow prevention assemblies and controls identified in the most recent current edition of Approved Cross Connection Control Assemblies, published by the Washington State Department of Health, shall be approved for installation.

C. New or Upgraded Cross-Connection Control Requirements.

1. In situations where there is an existing water service or use and the water supply is protected from cross-connection by a nonconforming backflow prevention assembly (i.e., an assembly that does not meet the current standards and requirements of WAC 246-290-490 or this code), the existing nonconforming backflow prevention assembly shall, at the owner's risk, be allowed to remain in service only if:

a. At the time the backflow prevention assembly was installed the assembly was a state-approved backflow prevention assembly; and

b. At the time the backflow prevention assembly was installed its installation was approved by the city as appropriate for the degree of hazard; and

c. The backflow prevention assembly does not meet the criteria for upgrading as required in subsection (C)(2) of this section.

2. All existing nonconforming backflow prevention assemblies shall be replaced and upgraded to current standards at such time as any of the following conditions exist:

a. The assembly fails to operate properly;

b. The assembly fails required annual testing and certification;

c. The assembly requires continual and excessive repair or maintenance;

d. The degree of hazard at the premises increases from that which existed at the time the assembly was installed; or

e. The water service, fire sprinkler system or plumbing are, or have been, modified.

3. When the utility discovers previously unknown and/or unprotected cross-connections, the utility shall notify the property owner of the cross-connection, the degree of hazard, and the cross-connection abatement and control measures required. The property owner shall make provision to implement all required abatement and control measures within the time frame specified by the utility subject to the enforcement provisions of BCC 24.02.250 or state law.

D. Inspection, Testing and Certification Requirements.

1. All newly installed or relocated backflow prevention assemblies shall be inspected, tested and certified by the utility, except that newly installed irrigation system backflow prevention assemblies may be tested by a certified private backflow prevention assembly tester following city inspection of assembly installation.

2. All backflow prevention assemblies shall be inspected, tested and certified annually by the utility or a private backflow prevention assembly tester certified by the Washington State Department of Health.

E. Costs and Fees. The property owner shall be responsible for paying all utility costs and fees associated with the installation, inspection, testing, certification, repair, replacement or upgrade of backflow prevention assemblies. See BCC 24.02.250 regarding fees. (Ord. 4751 § 3, 1995.)

Element 2: The purveyor shall develop and implement procedures and schedules for evaluating new and existing service connections to assess the degree of hazard posed by the consumer's premises to the purveyor's distribution system…

1) Evaluations of new construction and sites are completed through the Utilities Development Review process and City's Plumbing Inspection plan review.
2) Utilities cross-connection program has been active since the mid 1980's when initial evaluations were conducted on commercial sites. Evaluations of residential sites are done through the PCD plan review process and individually as time permits.
3) Commercial change of use and Tenant Improvements are evaluated through the PCD plan review process. Periodic reevaluations of service connections are prioritized based on the degree of hazard determined during the initial evaluation. In order of importance: (1) Table nine sites annually (exception: a; continue to receive satisfactory test results on an annual basis b; complex plumbing systems with limited access agree to test on a bi-annual basis (i.e. Overlake Hospital). (2) Change of use. Most frequently accomplished through the plumbing and plan review process (3) commercial/retail connections 4) residential connections as time permits, and with public outreach and education.

Element 3: …develop and implement procedures and schedules ensuring that…cross connections are eliminated…controlled by installation of approved backflow preventer…installed in accordance with requirements…

Through City Code, the evaluation process, the use of "Accepted Practices and Procedures…", and the DOH list of approved assemblies all aspects of this element are met within Utilities cross connection program. Utilities specifically requires more stringent installation practices with the following: 1) Mixed use (multi-family and commercial/retail) buildings are required to install and RPBA for premise isolation. 2)

All properties using unapproved auxiliary water supply are required to install an RPBA for premise isolation.

Element 4: The purveyor shall ensure that personnel, including at least one person certified as a CCS, are provided to develop and implement the cross-connection program.

CCS Requirements by Position

Position	primary duties	CCS	BAT
Engineering Tech (1)	cross connection program	mandatory	mandatory
Sr. Engineering Tech (2)	WQ regulatory compliance	mandatory	mandatory
Water Technical Specialists (5)	water operations	mandatory	n/a
Crew/Lead/Skilled Workers (13)	water maintenance	optional	n/a

The current program contact is Michael Graves, CCS #5399, BAT #4016 425-452-2030.
Or Rob Hutchinson CCS #3830 BAT #4155 425-452-5208

Element 5: The purveyor shall develop and implement procedures to ensure that approved backflow preventers are inspected and/or tested (as applicable) in accordance with subsection (7) of this section.

Utilities cross connection program administrator tests and inspects all new backflow assemblies upon installation (except residential irrigation), as well as, air gaps (portable and fixed). Residential irrigation tests are done independently by certified BAT's and test reports submitted to Utilities for review.

Utilities is currently developing a system to incorporate inspection of existing and new AVB's into the data base used for annual notification letters to our customers. Procedures for repair or replacement of BPA's are covered under city code as listed above.

Element 6: The purveyor shall develop and implement a backflow prevention assembly testing quality control assurance program…

The testers listed on the back of Utilities annual notification letter are required to submit copies of current certification and test kit calibration. Testers not on the list submit these documents with each test. Problem, or late, tests are followed up with a phone call to the tester and possible inspection of assembly in question.

Element 7: The purveyor shall develop and implement (when appropriate) procedures for responding to backflow incidents.

This element is covered in the City of Bellevue Water Quality Emergency Response Plan.

Element 8: The purveyor shall include information on cross-connection control in the purveyor's existing program for educating consumers…

Information is included on cross connection in Bellevue's annual CCR. There are also brochures mailed to new customers, mail survey's, and public outreach at fairs and events.

Element 9: The purveyor shall develop and maintain cross-connection control records…

Bellevue has an excellent record keeping system that includes all the information identified in the subsections of this element. Air Gaps and AVB's are being incorporated into the annual notification data base as they installed and/or discovered. Bellevue has always been in compliance with ASR requirements.

Element 10: Purveyors who distribute and/or have facilities that receive reclaimed water within their water service area…

To the best of our knowledge, there are currently no distributors or receivers of reclaimed water within Bellevue's water service area.

CHAPTER 11
Recommended System Improvements

Previous chapters have concentrated on projections of future water consumption, system renewal and replacement needs, and on analysis of existing and required future water system components including storage, distribution, supply, and transmission capacity. This chapter summarizes recommended water system improvements. The improvement recommendations contained in this Plan focus primarily on ongoing programs which the City established to address various needs. Recommended improvement programs are listed in Table 11-2 at the end of this chapter, along with estimated annual program funding level recommendations. This plan also recommends specific projects to increase storage and regional supply inlet capacity in order to meet the needs of future growth. These recommended projects are listed in Table 11-1, along with planning level cost estimates and the year they are expected to be needed.

The Bellevue Water Utility's Capital Investment Program (CIP) is a separate document that prioritizes projects and identifies funding plans for a 7-year period, updated and adopted bi-annually concurrent with the City's operating budget. The CIP provides for orderly expansion and improved system reliability and integrity in conformance with utility policies explained in Chapter 2. Project schedules and the allocation of funds for projects and programs are reevaluated and prioritized during each CIP update.

This plan does not attempt to identify every capital improvement needed to serve all potential developments within the study area. Specific onsite or offsite improvements that are needed as a result of development activity are generally the developer's responsibility, and are outside the scope of this water system Plan.

SYSTEM IMPROVEMENTS SINCE 1998

The City's 1998 Water Comprehensive Plan outlined a program of improvements to Bellevue's water system. Most recommendations were for programs to address various on-going system needs. These on-going programs will be discussed under the "Recommended System Improvements" section of this chapter. The only specific program initiated since 1998 is the upgrading of several reservoirs to improve or maintain water quality. A brief discussion of that project follows.

Reservoir Water Quality Upgrades

This project was identified as a potential project in the 1998 Water Comprehensive Plan. It was initiated following implementation of operational changes recommended in the 1998 Water Comprehensive Plan and completion of a subsequent water quality assessment. The improvements include installation of online chlorine analyzers at water storage reservoirs,

separation of common water inlets/outlets at reservoirs to improve mixing, and piping upgrades to decrease water age. The project scope also includes improvements to enhance Bellevue's ability to monitor water quality. The project was initiated in 2001 and is expected to be completed in 2009.

RECOMMENDED SYSTEM IMPROVEMENTS

The 1998 Water Comprehensive Plan identified long term improvement needs to address storage and regional inlet capacity deficiencies expected to occur just beyond the 20 year planning horizon of that plan. The need for those improvements fall within the planning horizon for this Plan update. These improvements were addressed in detail by this Plan in Chapter 8 and are included below under "Projects to Address Future Capacity Needs".

The 1998 Plan also identified and discussed several on-going capital improvement programs related to maintaining and upgrading the City's existing infrastructure. The individual projects under each program are identified on an annual basis and are located throughout the water service area. This Plan recommends the continuation of these programs, and recognizes the addition of programs for replacement of water service lines and saddles, and for rehabilitation of pump stations. Each program is discussed below under "On-going Capital Programs" and listed in Table 11-2.

Projects to Address Future Capacity Needs

Four capacity improvement projects have been identified by the system analysis summarized in Chapter 8. These improvements are needed to address deficiencies expected to occur as a result of future growth and increasing water demands within Bellevue's Central Business District (downtown), within the 20 year planning horizon.

Addition of Storage to the West Bellevue Operating Area

In the West Operating Area, calculated storage requirements are greater than provided by available storage reservoirs. This is projected to first occur in 2018. This project would construct 2.35 MG of additional storage. Of this total, approximately 1 MG is needed by 2025. Therefore, if 1 MG of storage is added by 2018, then additional storage will not be needed until 2025.

Increase System Capacity to Transfer Water from East to West Operating Areas

The total storage deficiency of 2.35 MG in the West Operating Area does not necessarily need to be addressed by constructing new storage. Additional storage capacity can be made available to the West Bellevue Operating Area from the East Bellevue Operating Area's 5 MG of surplus storage. This project would construct two new 12-inch diameter mains and two large PRV stations to allow a greater volume of water to move from East to West Operating Areas.

Modify and Rehabilitate the Bel-Red Inlet

In the West Bellevue Operating Area, inlet capacity is first projected to be less than the max day demand by 2010. The City has identified a project to modify and rehabilitate the Bel-Red Inlet to increase its capacity. The Bel-Red Inlet modifications are recommended for 2007 and will provide sufficient capacity to meet projected Max Day Demands until the year 2018.

Increase Supply Inlet Capacity to the West Bellevue Operating Area

Additional inlet capacity for the West Bellevue Operating Area will be required prior to 2018 in order to meet 2025 and build-out max day demand conditions. The required capacity can be provided either by installation of new inlets or upgrades to existing inlets. The specifics of how Cascade will provide future water supply to Bellevue are currently not defined, and will significantly influence decisions on how best to provide inlet capacity to meet Bellevue's future demands. The cost of constructing additional inlet capacity has not been determined because it varies depending on the specifics of Cascade's plan for delivering water to Bellevue.

On-going Capital Programs

The City has several on-going capital programs, with annual funding allocations identified in the CIP. The annual budgets for these projects were established based on the City's experience and/or studies to determine resource needs.

Service Line and Saddle Replacement

Bellevue is responsible for maintaining approximately 33,000 water services and saddles (connections to the main water line). This program addresses the increasing need for replacement of aging and deteriorating service saddles and associated service lines. Many of these facilities have a shorter useful life than the associated water main. This program provides the means for a more proactive approach towards maintaining the function of the City's portion of individual service connections.

Large Commercial Meter Rehabilitation

Bellevue owns and maintains approximately 260 large commercial meters (greater than 3"). This program rehabilitates or replaces deteriorating and unsafe vaults containing these meters, and upgrades or replaces the meters. This program should continue as a prudent means of maintaining the reliability and accuracy of commercial meters. Further discussion of this program can be found in Chapter 7.

Fire Hydrant Improvements

This program improves fire hydrant spacing and eliminates non-standard two-port hydrants throughout the water service area.

Phase I of this program was completed in 1997, adding new hydrants wherever hydrant spacing exceeded 1,000 feet. Current standards require hydrants at intervals not exceeding 500 feet.

Phase II of this program is now underway, and involves the replacement of non-standard two-port fire hydrants. These two-port hydrants are less efficient hydraulically than three-port hydrants and increase response time in the event of a fire, due to the need for a special fire connection to supply the pumper truck from both ports. The Washington Survey and Rating Bureau assigns deficiency points to the water system for fire insurance rating purposes where such hydrants are present, and the Bellevue Fire Department has identified them as a priority item for replacement. The City acquired additional two port hydrants when it assumed the portion of the Coal Creek Utility District that was within Bellevue. At the current funding level the replacement of these hydrants will be completed in approximately 7 years.

Small-Diameter Pipe Replacement

This program replaces 4-inch and 6-inch distribution mains in order to improve system fire flows. In the process, this program also replaces the system's most vulnerable pipe, older 4-inch AC pipe which accounts for most of the system's pipe failures caused by age-related pipe deterioration. When these small-diameter pipelines are replaced, the City also replaces any non-standard fire hydrants and improves fire hydrant spacing to current standards. This program will replace approximately 2.3 miles of pipe each year with the objective of providing a minimum standard fire flow of 1000 gpm throughout the distribution system. At the target rate of replacement, this program objective will be achieved in 2020.

Pressure Reducing Valve (PRV) Rehabilitation

Bellevue owns and maintains approximately 160 pressure reducing valves located in water mains throughout the water system. This program rehabilitates or replaces deteriorating and unsafe water system vaults containing these valves, and upgrades or replaces the valves. This program should continue as a prudent means of maintaining the reliability of the water supply to areas served by PRVs. Further discussion of this program can be found in Chapter 7.

Pump Station Evaluation and Rehabilitation

The City is just beginning a program to rehabilitate all of its 23 pump stations and bring other life/safety and functional features up to current codes. This program will first conduct a comprehensive evaluation of each pump station to identify needed improvements. In addition to the internal components, this evaluation will including a seismic evaluation of each structure housing the pumps. Once the needs have been identified, each station will be assigned a relative priority. Further discussion of this program can be found in Chapter 7.

The City has proposed a budget of approximately 5.7 million dollars over the next 7 years (2007-2013) in anticipation of these pump station rehabilitation projects. Specific project scopes, budgets, and schedules will be developed as each pump station's specific improvement needs are determined. The program will extend well beyond the 2007 – 2013 CIP "window".

Reservoir Evaluation and Structural/Seismic Rehabilitation

This program was developed to modify existing water reservoirs to mitigate potential earthquake damage and to maintain their function during seismic events. Specific improvements have been completed at eight reservoirs. Analysis has identified the need for seismic improvements at five more sites. Further discussion of this program can be found in Chapter 7.

The City proposed a budget of approximately 3 million dollars over the next 7 years (2007-2013) in anticipation of these reservoir rehabilitation projects. Specific project scopes, budgets, and schedules will be developed as each reservoir's specific improvement needs are determined.

Water Service Extensions

Funds are budgeted annually to extend water service to properties within the existing service area. Selected projects eliminate dependence on well systems with questionable water quality and dependability; may coincide with other utility or roadway improvements, thereby reducing community disruption and project costs; and are generally constructed when property owners approach the City for assistance. Project costs are recouped through connection fees.

Minor Capital Improvement Projects

Funds are budgeted annually to pay for improvements to correct minor deficiencies, solve maintenance problems, improve water quality, and improve reliability.

Pipeline Renewal and Replacement (R&R) Program

The estimate of future pipeline R&R needs and the annual expenditures that will be required to address those needs for the next 75 years are reviewed during development of each bi-annual budget. These estimates require ongoing refinement as better and/or more complete information becomes available. More information about the development of annual cost estimates for this program can be found in Chapter 7, Asset Management. At this time, no specific pipeline R&R projects other than those associated with the Fire Flow Improvement Program are recommended.

The City's current policy is to provide sufficient funds to meet anticipated pipeline R&R needs as they occur, funded by rates. The impact of funding these R&R expenditures through rates has been identified using the Utility's rate model. A discussion of this program's impact on rates is included in Chapter 12, Financial Information.

PRIORITIZATION OF IMPROVEMENTS

Capital Improvement projects to address future capacity needs are listed in Table 11-1. Recommended CIP projects/programs from 2006 to 2013 are presented in Table 11-2 and are listed with average anticipated annual funding over the next 7 years. The funding priorities shown can be expected to change and should not be construed as a commitment by the City to fund a particular program at the level shown. The City updates and adopts the 7-year CIP, with detailed funding sources and scheduling, every 2 years concurrent with the Operating Budget. This 7-year plan should be referenced to determine actual project commitment schedules. During each update, all proposed CIP projects are weighed against specific criteria and are prioritized, funded, and scheduled accordingly.

Table 11-1
Capital Improvement Projects to Address Future Capacity Needs

Project Description	Year Needed	Project Cost (2006 dollars)**
Bel- Red Road Inlet Modifications	2009	350,000
Increase West Operating Area Reservoir Storage Capacity*	2017	5,200,000
Increase System Capacity to Move Water from the East Operating Area to the West Operating Area *	2017	3,600,000
Increase West Operating Area Supply Inlet Capacity	2017	Unknown

*One or both of these project, or some combination of the projects with reduced scopes is required
**Project costs are planning level estimates

Table 11-2 Recommended Annual Capital Improvement Programs (2007-2013)	
Program Description	**Estimated Annual Cost (2006 dollars)**
Service Line and Saddle Replacement	150,000
Large Commercial Meter Rehabilitation	209,000
Fire Hydrant Improvements	50,000
Small Diameter Pipe Replacement	2,087,000*
Pressure Reducing Valve Rehabilitation	400,000
Pump Station Evaluation and Rehabilitation	808,000
Reservoir Evaluation and Structural/Seismic Rehabilitation	429,000
Water Service Extensions	186,000
Minor Capital Improvement Projects	194,000
TOTAL Recommended Annual Investment	4,513,000

*Initial spending level, annual program spending will begin to increase significantly during this time frame.
Note – R&R needs will increase as the water system ages and undergo regular reassessment.

CHAPTER 12
Financial Information

This chapter summarizes the current and forecasted financial strength of Bellevue's Water Utility and it's funding strategy for recommended investments through the 20-year planning period.

CURRENT FINANCIAL STATUS

Table 12-1 summarizes actual cash-basis revenues, expenses, and fund balances for the Water Utility for the most recent 8-year period. Over this period, the Utility fund balance, which represents total unexpended resources carried forward to future years, increased from $1.7 million at the beginning of 1998 to a current balance of $12.0 million at the end of 2005. This is consistent with reserve polices in place since 1992 and adjustments made to those policies in 2004 to account for the change in the Utility's wholesale suppliers. These adjustments increased reserve requirements due to differences in lags between wholesale expenses and revenue collections as well as the "take or pay" nature of the contract with the Utility's new wholesale water supplier.

During 1998 through 2005, a total of $27.2 million was transferred to the Utility Capital Improvement Fund to finance budgeted capital project expenses. These transfers represent approximately 15 percent of total water utility expenses for the 8-year period.

FINANCIAL OUTLOOK — Upcoming 8-Year Period

Table 12-2 presents a projection of annual utility revenues, expenses, and fund balances for the next 8 years, based on the 2006 adopted budget amounts and changes expected to occur in various categories over the subsequent 7-year period as a result of new customers, general inflation, and other related factors. This type of forecast is routinely used by utility staff to develop rate adjustment proposals and to assess the impact of changing budget assumptions on future rate requirements.

Some key assumptions used to forecast future annual revenues and expenses that appear in Table 12-2 are outlined below:

1. Growth in total water utility customers/water consumption levels will equal 0.5 percent per year in 2006 through 2013, based on historical averages.

2. Interest and other revenue sources will grow by 4.9 percent per year, based on historical trends and projected fund balances.

TABLE 12-1

City of Bellevue
Water Utility Fund
Actual Revenues, Expenses & Fund Balances by Year
2000 Through 2005

	Thousands of Dollars							
	2005 Actuals	**2004 Actuals**	**2003 Actuals**	**2002 Actuals**	**2001 Actuals**	**2000 Actuals**	**1999 Actuals**	**1998 Actuals**
BEGINNING FUND BALANCE	$ 10,467	$ 7,356	$ 5,499	$ 4,594	$ 3,987	$ 2,367	$ 1,718	$ 1,742
ANNUAL REVENUES:								
Water Service	$ 25,926	$ 26,848	$ 24,998	$ 21,722	$ 19,228	$ 19,032	$ 16,500	$ 15,251
Interest on Investments	247	112	111	86	192	205	105	94
Connection Fees	399	258	229	191	238	283	164	158
Other Revenues	3,842	2,897	4,322	935	914	867	976	722
Sub-Total	$ 30,414	$ 30,116	$ 29,659	$ 22,934	$ 20,572	$ 20,387	$ 17,745	$ 16,225
ANNUAL EXPENDITURES:								
Wholesale Water Purchases	$ 9,735	$ 10,128	$ 10,659	$ 8,291	$ 7,317	$ 7,862	$ 6,831	$ 6,469
Personnel Expense	4,525	4,419	4,015	3,897	3,706	3,319	3,327	3,184
Other Maintenance & Operating Expense	8,574	7,512	8,780	5,104	4,683	4,518	4,023	3,887
Capital Outlay	283	75	570	267	770	286	382	249
Transfers to Capital Project Fund	5,220	4,239	3,428	4,093	3,207	2,491	2,275	2,217
Debt Service Expense	558	631	350	377	282	291	258	242
Sub-Total	$ 28,895	$ 27,005	$ 27,803	$ 22,029	$ 19,965	$ 18,767	$ 17,096	$ 16,249
ENDING FUND BALANCE	$ 11,986	$ 10,467	$ 7,356	$ 5,499	$ 4,594	$ 3,987	$ 2,367	$ 1,718

TABLE 12-2

City of Bellevue
Water Utility Fund
Forecasted Revenues, Expenses & Fund Balances by Year
2006 Through 2013

	Thousands of Dollars							
	2006 Amended Budget	**2007 Forecast (1)**	**2008 Forecast**	**2009 Forecast (2)**	**2010 Forecast**	**2011 Forecast**	**2012 Forecast**	**2013 Forecast**
BEGINNING FUND BALANCE	$ 10,860	$ 12,257	$ 13,226	$ 14,085	$ 14,178	$ 14,466	$ 13,606	$ 13,949
ANNUAL REVENUES:								
Water Service	$ 27,749	$ 29,125	$ 31,155	$ 33,397	$ 35,843	$ 38,511	$ 41,417	$ 44,585
Interest/Other Revenues	2,812	3,069	3,242	3,443	3,532	3,634	3,675	3,751
Sub-Total	$ 30,561	$ 32,194	$ 34,397	$ 36,840	$ 39,375	$ 42,144	$ 45,093	$ 48,336
ANNUAL EXPENDITURES:								
Wholesale Water Purchases	$ 10,610	$ 11,813	$ 13,020	$ 14,322	$ 15,754	$ 17,330	$ 19,063	$ 20,969
Personnel Expense	4,728	5,050	5,382	5,738	6,125	6,537	6,977	7,225
Other Maintenance & Operating Expense	7,452	8,271	8,666	9,305	9,757	10,245	10,766	11,325
Capital Outlay	851	440	239	761	459	1,536	411	254
Transfers to Capital Project Fund	5,496	4,781	5,371	6,020	6,705	7,071	7,248	7,495
Debt Service Expense	672	712	707	601	286	286	285	285
Sub-Total	$ 29,809	$ 31,067	$ 33,385	$ 36,747	$ 39,087	$ 43,004	$ 44,750	$ 47,553
ENDING FUND BALANCE	$ 11,612	$ 13,384	$ 14,239	$ 14,178	$ 14,466	$ 13,606	$ 13,949	$ 14,731

(1) The beginning fund balance in 2007 does not equal the budgeted ending fund balance in 2006 because revised estimates for 2006 indicate a greater than anticipated beginn fund balance as a result of low water sales, offset by a one-time refund from the City's wholesale water supplier in 2005.

(2) The beginning fund balance for 2009 does not equal the budgeted ending fund balance for 2008 because it includes projected 1.5% underexpenditures for other operating expenses less capital for 2007 and 2008. Not recognizing this historical underexpenditure percentage would cause future rate projections to be overstated.

3. Wholesale water costs for 2006 through 2013 are expected to nearly double from an average cost per ccf of $1.46 in 2006 to $2.77 per ccf in 2013. Consistent with Utility financial policies (see Chapter 2), these increases will be "passed through" to the customer via Utility rate increases.

4. Personnel costs will increase annually by 6.2 percent per year, based on average historical trends and projected increases in benefit costs.

5. Other maintenance and operations and capital outlay expenses will increase annually by 3.9 percent, based on historical trends and projected increases in the Seattle Consumer Price Index (CPI-U).

6. Annual debt service expense will equal scheduled payments for current outstanding revenue bond issues.

7. Water rate increases are projected each year from 2007 - 2013 to cover the impact of anticipated wholesale water rate increases and the cost of local program operations.

FUNDING FOR COMPREHENSIVE PLAN CAPITAL IMPROVEMENT RECOMMENDATIONS

Figure 7-1 and Tables 11-1 and 11-2 showed the estimated funding needs of capital improvement activity recommended in this Comprehensive Plan. Transfers to the capital improvement fund included in Table 12-2 represent anticipated funding needs for projects in the current (2006-2011) CIP, they will be updated to reflect the recommendations cited in this plan for future budget and rate projections.

Potential means of funding these recommendations include re-allocating funds from other lower-priority projects identified in the CIP, obtaining low-interest public works trust fund loans for projects satisfying necessary eligibility requirements, adopting additional water service rate increases to provide additional resources for capital project support, or using funds from the R&R Account for eligible projects (see next section).

FUNDING FOR PIPELINE RENEWAL & REPLACEMENT PROGRAM

Figure 7-1 showed the estimated cost for the water utility renewal and replacement (R&R) projects from 20014 - 2080 in 2006 dollars. Financial policies adopted in 1995 and revised in 1998 established an R&R Account to assist with the funding of these projects over a long term replacement period (75 years with policy recommendations on a 20-year horizon). In the early years, significant balances will be accumulated which will be used to fund capital investments

during periods of high expenditures. The revised financial policy relies on this R&R Account, in conjunction with rates, to fund capital replacement and does not plan to use debt except to provide rate stability in the event of significantly changed circumstances, such as disasters or external mandates.

All connection charge revenues, and other one-time sources of funds, including ending fund balances higher than budgeted, will be deposited to the R&R Account. Table 12-3, shows the projected balances in the account from 2006-2013.

FUNDING FOR WATER CONSERVATION PROGRAM

Table 12-2 includes recurring costs of approximately $220,000 per year in 2006 dollars to fund the water conservation program. Specific or additional initiatives will be considered in each year's budget preparation. The program will be funded at a sufficient level to meet state and contractual requirements, plus approved local initiatives, as identified in Chapter 5.

CURRENT DEBT STATUS

As listed below, the Utility currently has one outstanding revenue bond issue, to refinance other bond issues previously sold for capital project needs, and one Public Works Trust Fund Loan.

Water Utility Debt Outstanding as of December 31, 2005

Bond Series	Issue Date	Original Issue Amount	Bonds Outstanding 12-31-05	Final Maturity Date
2004 Water Refunding Bonds	2004	6,825,000	5,490,000	Oct. 1, 2010
1994 Public Works Trust Fund Loan	1994	559,800	265,500	July 1, 2014

CREDIT WORTHINESS

While they operate independently, the City's water, sewer, and storm and surface water utilities officially merged in 1980 into one combined "Waterworks Utility" for financial reporting purposes. This action has allowed the individual utilities to issue bonds at more favorable interest rates by presenting their combined financial resources and revenue generating capability as related debt security.

TABLE 12-3

City of Bellevue
Water Utility Renewal and Replacement Account
Forecasted Revenues, Expenses & Fund Balances by Year
2006 Through 2013

	Thousands of Dollars							
	2006 Amended Budget	**2007 Forecast**	**2008 Forecast**	**2009 Forecast**	**2010 Forecast**	**2011 Forecast**	**2012 Forecast**	**2013 Forecast**
BEGINNING FUND BALANCE	$ 6,844	$ 9,629	$ 12,182	$ 15,598	$ 18,096	$ 21,904	$ 25,327	$ 29,803
ANNUAL REVENUES:								
Direct Facility Charges	137	85	85	40	35	35	35	35
Capital Recovery Charges	581	613	618	535	392	354	335	307
Contribution from Rates/Other Sources	1,861	1,374	2,043	1,064	2,386	1,830	2,713	1,867
Interest on Investments	205	481	670	858	995	1,205	1,393	1,565
Sub-Total	$ 2,784	$ 2,554	$ 3,416	$ 2,497	$ 3,809	$ 3,423	$ 4,476	$ 3,773
ANNUAL EXPENDITURES:								
Renewal & Replacement Projects	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other	-	-	-	-	-	-	-	-
Sub-Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
ENDING FUND BALANCE	$ 9,629	$ 12,182	$ 15,598	$ 18,096	$ 21,904	$ 25,327	$ 29,803	$ 33,577

Bonds issued by the "Waterworks Utility," although primarily related to storm and surface water capital financing needs in recent years, have earned very positive evaluation of credit worthiness by bond rating agencies, based on factors that include the financial position, reserve levels, and ratio of net annual operating revenues to annual debt service payments (that is, debt service coverage) for the three utilities as a whole.

The “Waterworks Utility” currently has a bond rating of “Aa2" from Moody's Investors Service. Ratings at this level indicate a strong degree of confidence by the rating agencies in the ability of the City's utilities to repay related debt obligations. The Water Utility has no immediate plans to issue additional debt. However, if this action becomes necessary, the Utility can expect a proposed bond issue to receive a similarly favorable credit rating and, therefore, to sell at lower interest rates than would otherwise be possible.

A comparative balance sheet and operating statement for the Waterworks Utility for the 8-year period from 1998 through 2005 are provided in Tables 12-4 and 12-5 on the following pages.

TABLE 12-4

City of Bellevue
Waterworks Utility
Comparative Balance Sheet

	Thousands of Dollars							
	2005 Actuals	**2004 Actuals**	**2003 Actuals**	**2002 Actuals**	**2001 Actuals**	**2000 Actuals**	**1999 Actuals**	**1998 Actuals**
Assets:								
Current Assets	$ 33,389	$ 28,905	$ 25,634	$ 20,579	$ 19,146	$ 16,395	$ 12,271	$ 12,447
Restricted Assets	28,319	20,957	17,515	22,910	18,276	20,593	18,936	16,791
Deferred Debits	266	409	367	322	400	470	528	455
Net Property, Plant & Equipment	197,953	196,247	193,852	176,897	175,236	168,727	164,244	159,550
Total Assets	$ 259,927	$ 246,518	$ 237,368	$ 220,708	$ 213,058	$ 206,185	$ 195,979	$ 189,243
Liabilities:								
Current Liabilities	$ 5,524	$ 3,221	$ 3,633	$ 4,159	$ 4,942	$ 5,144	$ 3,680	$ 4,314
Long-Term Liabilities	5,339	6,394	9,490	10,892	11,139	12,733	14,222	15,606
Total Liabilities & Deferred Credits	$ 10,863	$ 9,615	$ 13,123	$ 15,051	$ 16,081	$ 17,877	$ 17,902	$ 19,920
Fund Equity:								
Retained Earnings & Contributed Capital	$ 249,064	$ 236,903	$ 224,245	$ 205,657	$ 196,977	$ 188,308	$ 178,077	$ 169,323
Total Liabilities & Fund Equity	$ 259,927	$ 246,518	$ 237,368	$ 220,708	$ 213,058	$ 206,185	$ 195,979	$ 189,243

TABLE 12-5

City of Bellevue
Waterworks Utility
Operating Statement
(Years Ending December 31)

	Thousands of Dollars							
	2005 Actuals	**2004 Actuals**	**2003 Actuals**	**2002 Actuals**	**2001 Actuals**	**2000 Actuals**	**1999 Actuals**	**1998 Actuals**
Service Charges & Fees	$ 65,697	$ 63,749	$ 61,736	$ 56,330	$ 49,129	$ 49,317	$ 44,318	$ 42,921
Miscellaneous	3,371	773	914	773	744	950	727	768
Total Operating Revenue	$ 69,068	$ 64,522	$ 62,650	$ 57,103	$ 49,873	$ 50,267	$ 45,045	$ 43,689
Non-Operating Revenue	2,299	4,587	1,356	1,393	2,248	2,285	1,642	1,677
Total Revenue & Income	$ 71,367	$ 69,109	$ 64,006	$ 58,496	$ 52,121	$ 52,552	$ 46,687	$ 45,366
Administrative & General	$ 15,073	$ 15,069	$ 11,293	$ 10,585	$ 10,468	$ 10,311	$ 9,516	$ 9,153
Maintenance & Operations	40,214	36,637	36,831	35,320	30,891	30,102	29,080	28,273
Miscellaneous	-	211	97	17	17	73	311	206
Total Operating Expenses	$ 55,287	$ 51,917	$ 48,221	$ 45,922	$ 41,376	$ 40,486	$ 38,907	$ 37,632
Available for Debt Service	$ 16,080	$ 17,192	$ 15,785	$ 12,574	$ 10,745	$ 12,066	$ 7,780	$ 7,734
Actual Debt Service	$ 1,642	$ 3,871	$ 2,058	$ 2,493	$ 2,480	$ 2,472	$ 2,972	$ 2,444
Coverage	9.79	4.44	7.67	5.04	4.33	4.88	2.62	3.16

APPENDIX A

State Environmental Policy Act (SEPA) Documentation

DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT
ENVIRONMENTAL COORDINATOR
11511 MAIN ST., P.O. BOX 90012
BELLEVUE, WA 98009-9012

DETERMINATION OF NON-SIGNIFICANCE

PROPONENT: City of Bellevue

LOCATION OF PROPOSAL: Programmatic City Wide

NAME & DESCRIPTION OF PROPOSAL:

This programmatic SEPA review of the Water Comprehensive Update addresses the following changes that have occurred since the last update in 1998: (1) assumption of the portion of the Coal Creek Utility District within Bellevue; (2)updates and changes to water utility policies; (3) revised service area populations forecasts and water use projections; (4) updates and changes to water quality regulatory requirements; (5) updates and changes to water conservation goals and planning requirements; and, (6) passage of the state's Municipal Water Law. Future capital projects coming out of this planning effort may need project level SEPA review.

FILE NUMBER: 06 133115 LM

The Environmental Coordinator of the City of Bellevue has determined that this proposal does not have a probable significant adverse impact upon the environment. An Environmental Impact Statement (EIS) is not required under RCW 43.21C.030(2)(C). This decision was made after the Bellevue Environmental Coordinator reviewed the completed environmental checklist and information filed with the Land Use Division of the Department of Planning & Community Development. This information is available to the public on request.

☐ There is no comment period for this DNS. There is a 14-day appeal period. Only persons who submitted written comments before the DNS was issued may appeal the decision. A written appeal must be filed in the City Clerk's office by _____.

☑ This DNS is issued after using the optional DNS process in WAC 197-11-355. There is no further comment period on the DNS. There is a 14-day appeal period. Only persons who submitted written comments before the DNS was issued may appeal the decision. A written appeal must be filed in the City Clerk's Office by 5 p.m. on **April 26, 2007.**

☐ This DNS is issued under WAC 197-11-340(2) and is subject to a 14-day comment period from the date below. Comments must be submitted by 5 p.m. on _____. This DNS is also subject to appeal. A written appeal must be filed in the City Clerk's Office by 5 p.m. on _____.

This DNS may be withdrawn at any time if the proposal is modified so that it is likely to have significant adverse environmental impacts; if there is significant new information indicating, or on, a proposals probable significant adverse environmental impacts (unless a non-exempt license has been issued if the proposal is a private project): or if the DNS was procured by misrepresentation or lack of material disclosure.

Michael N. Paine for
Environmental Coordinator

4/12/07
Date

OTHERS TO RECEIVE THIS DOCUMENT:
State Department of Fish and Wildlife
State Department of Ecology,
Army Corps of Engineers
Attorney General
Muckleshoot Indian Tribe

ENVIRONMENTAL CHECKLIST

11/3/06

Thank you in advance for your cooperation and adherence to these procedures. If you need assistance in completing the checklist or have any questions regarding the environmental review process, please visit or call the Permit Center (425-452-6864) between 8 a.m. and 4 p.m., Monday through Friday (Wednesday, 10 to 4). Assistance for the hearing impaired: Dial 711 (Telecommunications Relay Service). ..

INTRODUCTION

Purpose of the Checklist:

The State Environmental Policy Act (SEPA), Chapter 43.21c RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the City of Bellevue identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the City decide whether an EIS is required.

Instructions for Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Answer the questions briefly, with the most precise information known, or give the best description you can. You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer or if a question does not apply to your proposal, write "do not know" or "does not apply." Giving complete answers to the questions now may avoid unnecessary delays later.

Some questions ask about governmental regulations such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the Planner in the Permit Center can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. Include reference to any reports on studies that you are aware of which are relevant to the answers you provide. The City may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impacts.

Use of a Checklist for Nonproject Proposals: *A nonproject proposal includes plans, policies, and programs where actions are different or broader than a single site-specific proposal.*

For nonproject proposals, complete the Environmental Checklist even though you may answer "does not apply" to most questions. In addition, complete the Supplemental Sheet for Nonproject Actions available from Permit Processing.

For nonproject actions, the references in the checklist to the words *project*, *applicant*, and *property* or *site* should be read as *proposal*, *proposer*, and *affected geographic area*, respectively.

Attach an 8 ½" x 11 vicinity map which accurately locates the proposed site.

ENVIRONMENTAL CHECKLIST

Revised by [illegible] 2/5/2007 11/3/06

If you need assistance in completing the checklist or have any questions regarding the environmental review process, please visit or call the Permit Center (425-452-6864) between 8 a.m. and 4 p.m., Monday through Friday (Wednesday, 10 to 4). Our TTY number is 425-452-4636.

BACKGROUND INFORMATION

Property Owner: *N/A*

Proponent: *City of Bellevue*

Contact Person: *Randall Thompson, Engineering Supervisor - Utility Systems Planning*
(If different from the owner. All questions and correspondence will be directed to the individual listed.)

Address: *City of Bellevue*
Utilities Department
450 – 110th Avenue NE
Bellevue, WA 98004

Phone: *425-452-6919*

Proposed Title: *City of Bellevue 2006 Water Comprehensive Plan*

Proposed Location: *City of Bellevue water service area*
(Street address and nearest cross street or intersection) Provide a legal description if available.

Please attach an 8 ½ x 11" vicinity map that accurately locates the proposed site.

Give an accurate, brief description of the proposal's scope and nature:

1. General description: *The Plan is an update of the City of Bellevue's 1998 Water Comprehensive Plan. This plan contains recommendations for future capital projects.*
2. Acreage of site: *N/A*
3. Number of dwelling units/buildings to be demolished: *N/A*
4. Number of dwelling units/buildings to be constructed: *N/A*
5. Square footage of buildings to be demolished: *N/A*
6. Square footage of buildings to be constructed: *N/A*
7. Quantity of earth movement (in cubic yards): *N/A*
8. Proposed land use: *The plan is based on existing zoning and comprehensive land use plans designated by local jurisdictions (City of Bellevue and King County)*
9. Design features, including building height, number of stories and proposed exterior materials: *N/A*
10. Other

HLT

d. Are there surface indicatio... or history of unstable soils in the immedia... cinity? If so, describe.

Soils investigations will be done if warranted for specific projects recommended in the Plan. Each project will be reviewed individually for SEPA compliance as required.

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

The Plan does not contain detailed descriptions of capital improvement projects and therefore does not address excavation and fill quantities.

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

With any construction project, erosion is always possible. Implementing best management practices (BMPs) such as those contained in the Stormwater Management Manual for Western Washington will minimize construction erosion.

23.76 impacts addressed w.r.t. o/p. BMPs

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

The Plan does not contain detailed descriptions of capital improvement projects. Therefore specific impervious surface areas for recommended projects are not addressed.

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

Implementing BMPs contained in the Stormwater Management Manual for Western Washington and requirements of Bellevue's Clearing and Grading code.

2. AIR

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

Dust could result from construction activities. Ensuring the contractor follows BMPs will reduce the potential of significant dust generation.

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

None.

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

Construction equipment will meet Federal, State and local emissions standards. The contractor will be required to implement BMPs.

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.

N/A

MN 2/5/2007

4. Plants

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

X deciduous tree: alder, maple, aspen, other

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?

Project impacts are minimal and will be addressed during the design of each project.

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

None.

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

None.

5. ANIMALS

a. Check or circle 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:

☐ Fish: bass, salmon, trout, herring, shellfish, other:

Most of these animals can be found in the service area.

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

Chinook salmon have been observed in the service area.

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

N/A

MW 2/5/2007

8. Land and Shoreline Use

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

Primarily single-family residential with multifamily residential, commercial, public/institutional, and undeveloped.

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

Some areas in the service area have historically been agricultural.

c. Describe any structures on the site.

N/A

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

The implementation of plan recommendations could result in the demolition and reconstruction of aging water reservoirs.

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

Varies. The Utility's service area covers most of the City of Bellevue, adjacent Points communities and areas of unincorporated King county within the service area boundary.

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

Varies. The Utility's service area covers most of the City of Bellevue , adjacent Points communities and areas of unincorporated King county within the service area boundary

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

N/A

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

The service area contains wetlands, streams and steep slopes. Those areas will not be affected by Plan recommendations.

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

N/A

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

None.

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

N/A

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

The Water Comprehensive Plan is reviewed by the State Departments of Health and Ecology, King County, other municipalities within Bellevue's water service area, the Cascade Water Alliance, Seattle Public Utilities, adjacent water districts and agencies, the City of Bellevue Environmental Services Commission, and the Bellevue City Council.

mind 8/5/2007

b. Would the proposed pro, . displace any existing recreational uses? ɔ, describe.

No.

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

N/A

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.

No.

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

None.

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

N/A

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.

Public streets, major arterials and highways are located throughout the service area.

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

N/A

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

N/A

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).

No.

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

N/A

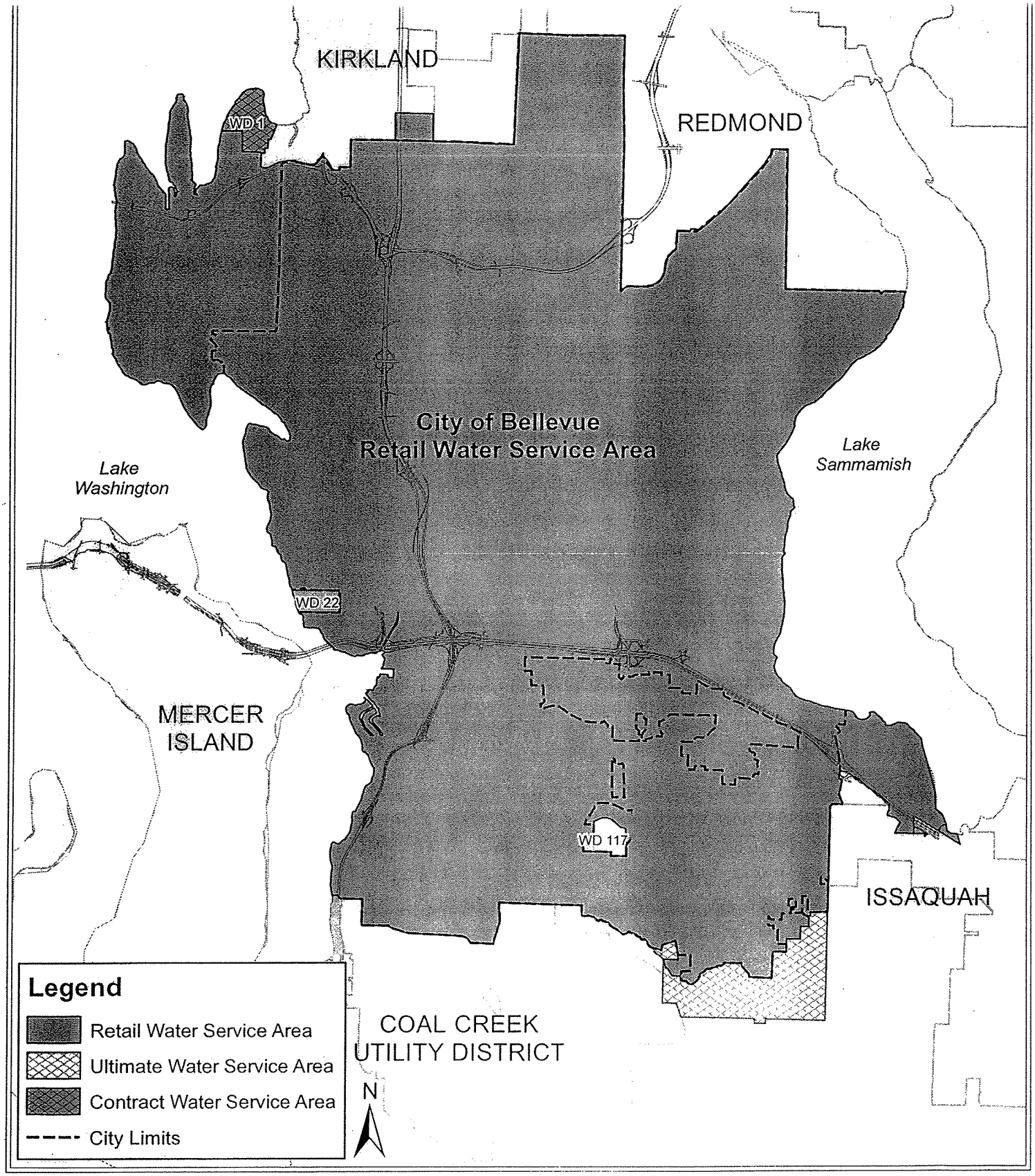
f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

None.

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

N/A

2/5/2007



CITY OF BELLEVUE WATER SERVICE AREA 2005

FIGURE 3-4

APPENDIX B

Service Area and Adjacent Purveyor Agreements

ORIGINAL

FILED NO. 12560
CITY OF BELLEVUE
DATE 5/28/90
CITY CLERK Lynn O'Connell
Res. 5249

AGREEMENT
FOR ESTABLISHING WATER UTILITY SERVICE AREA BOUNDARIES AS IDENTIFIED BY THE EAST KING COUNTY COORDINATED WATER SYSTEM PLAN

PREAMBLE

The Agreement for the water utility service area boundary identifies the external boundary of the service area for which the designated water purveyor has assumed direct retail water service responsibility. The responsibilities accepted by the water purveyor are outlined in the East King County Coordinated Water System Plan (CWSP), and as defined by the adopted rules and regulations of the Department of Health (DOH). This agreement does not give new authorities or responsibilities to the water purveyor or to the County or State regulatory agencies, but rather acknowledges the geographical area for these designated service responsibilities.

The terms used within this Agreement shall be as defined in the implementing regulations of Chapter 70.116RCW, except as identified below.

1. East King County Critical Water Supply Service Area Map shall mean the map referenced in the Agreement as Attachment A for the retail service area, except as amended in accordance with the CWSP procedures and with the concurrence of the affected water purveyors.

2. Retail Service Area shall mean the designated geographical area in which a purveyor shall supply water either by direct connection, by a satellite system, or through interim service by an adjacent utility or Satellite System Management Agency under agreement with the designated utility.

3. Wholesale Service Area shall mean the designated geographical area in which a purveyor, a group of purveyors, or another organization provides water to other water purveyors on a wholesale basis. A wholesale water supplier shall not provide water to individual customers in another purveyor's retail service area except with the concurrence of the purveyor responsible for the geographical area in question.

4. Lead Agency for administering the Agreement For Establishing Water Utility Service Area Boundaries shall be the King County Parks, Planning, and Resources Department, Building and Land Development Division, unless otherwise established by amendment to the CWSP.

The authority for this Agreement is granted by the Public Water System Coordination Act of 1977, Chapter 70.116 RCW.

WHEREAS, Such an Agreement is required in WAC 248-56-730, Service Area Agreements-Requirement, of the Public Water System Coordination Act; and

WHEREAS, Designation of retail water service areas, together with the cooperation of utilities, will help assure that time, effort, and money are best used by avoiding unnecessary duplication of service; and

WHEREAS, Definite future service areas will facilitate efficient planning for, and provision of, water system improvements within East King County as growth occurs; and

WHEREAS, Definite retail and wholesale service areas will help assure that water reserved for public water supply purposes within East King County will be utilized in the future in an efficiently planned manner,

NOW, THEREFORE, the undersigned party, having entered into this Agreement by signature of its authorized representative, concurs with and will abide by the following provisions:

Section 1. Service Area Boundaries. The undersigned party acknowledges that the East King County Critical Water Supply Service Area Map, included as Attachment A to this Agreement and as may be subsequently updated, identifies the utility's future water service area. The undersigned further acknowledges that there are no service area conflicts with adjacent water utilities, or, where such conflicts exist, agrees that no new water service will be extended within disputed areas until such conflicts are resolved.

Section 2. Common Service Area Transfer. It is understood that utilities may initially continue existing water service within the boundaries of neighboring utilities, as defined in Section 1 hereof. Such common service areas, if they exist, are described in Attachment B to this agreement. Also included in Attachment B are copies of, or a list of, all resolutions, ordinances, or agreements enabling these uncontested overlays. The undersigned party agrees that any water line for retail service extending outside of the retail service area boundary, as set forth in Section 1, shall be phased out and service transferred to the designated adjacent utility on an economic basis or by mutual agreement.

Economic basis considerations may include, but are not limited to:

(a) A determination by the present owner of service lines that maintenance, repair, and/or replacement costs exceed attributable income.

(b) Planned or imminent major street improvements or major improvements to either or both water systems which include an opportunity to transfer service.

The terms of the transfer of service area described in this Section shall be established in a separate agreement among the adjacent utilities whose boundaries are affected.

Section 3. Boundary Streets. Unless separate agreements exist with adjacent utilities concerning water services or other utility services, this party agrees that the water utility which is located to the north and/or east of boundary streets between this party and adjacent utilities will be entitled to provide future water service on both sides of those streets. Depth of service on boundary streets shall be limited to one platted lot or as otherwise agreed by the utilities. Existing services on boundary streets shall remain as connected unless transfer of service is agreed to by both parties, as per Section 2. These provisions do not disallow the placement of mains in the same street by adjacent utilities where geographic or economic constraints require such placement for the hydraulic benefit of both utilities.

Section 4. Boundary Adjustments. If, at some time in the future it is appropriate for the undersigned party to make service area boundary adjustments, such modifications must receive written concurrence (which shall not be unreasonably withheld) of all utilities that would be directly affected by such a boundary adjustment and the proper legislative authority(ies). This provision does not apply where boundary adjustments are made as a result of municipal annexations or incorporations, nor is it intended to modify the provisions of state law. These written modifications must be noted and filed with the designated King County lead agency and DOH. It is understood by the undersigned party that if, as provided by RCW 70.116.040, it is unable to provide service within its designated service area boundary it may decline to do so. But, in that case, an applicant may be referred to other adjacent utilities, to a pre-qualified Satellite System Management Agency (SSMA), or a new utility may be created and the original service area boundary will be adjusted accordingly.

Section 5. Service Extension Policies. The undersigned party agrees that in order to expand its water service area, other than by addition of retail customers to existing water mains, or to serve in the capacity of a pre-qualified SSMA, it shall have adopted design standards and Utility Service extension policies. The design standards shall meet or exceed the East King County Minimum Design Standards.

Municipalities further agree that if they identify a service area outside of their existing municipal corporate boundaries, the municipality will assume full responsibility for providing water service equivalent to (excluding rates and charges) the level of service provided for their inside-city customers. This will be in conformance with applicable land use policies.

This agreement by reference includes the following attachments:

Attachment A - East King County Critical Water Supply Service Area Map. (See Section 1)

Attachment B - Common Service Area Agreements with Redmond and Issaquah. Resolutions 5159, 5232, 5226.

IN WITNESS WHEREOF, the undersigned party has executed this Agreement as of 4-10-90 (date).

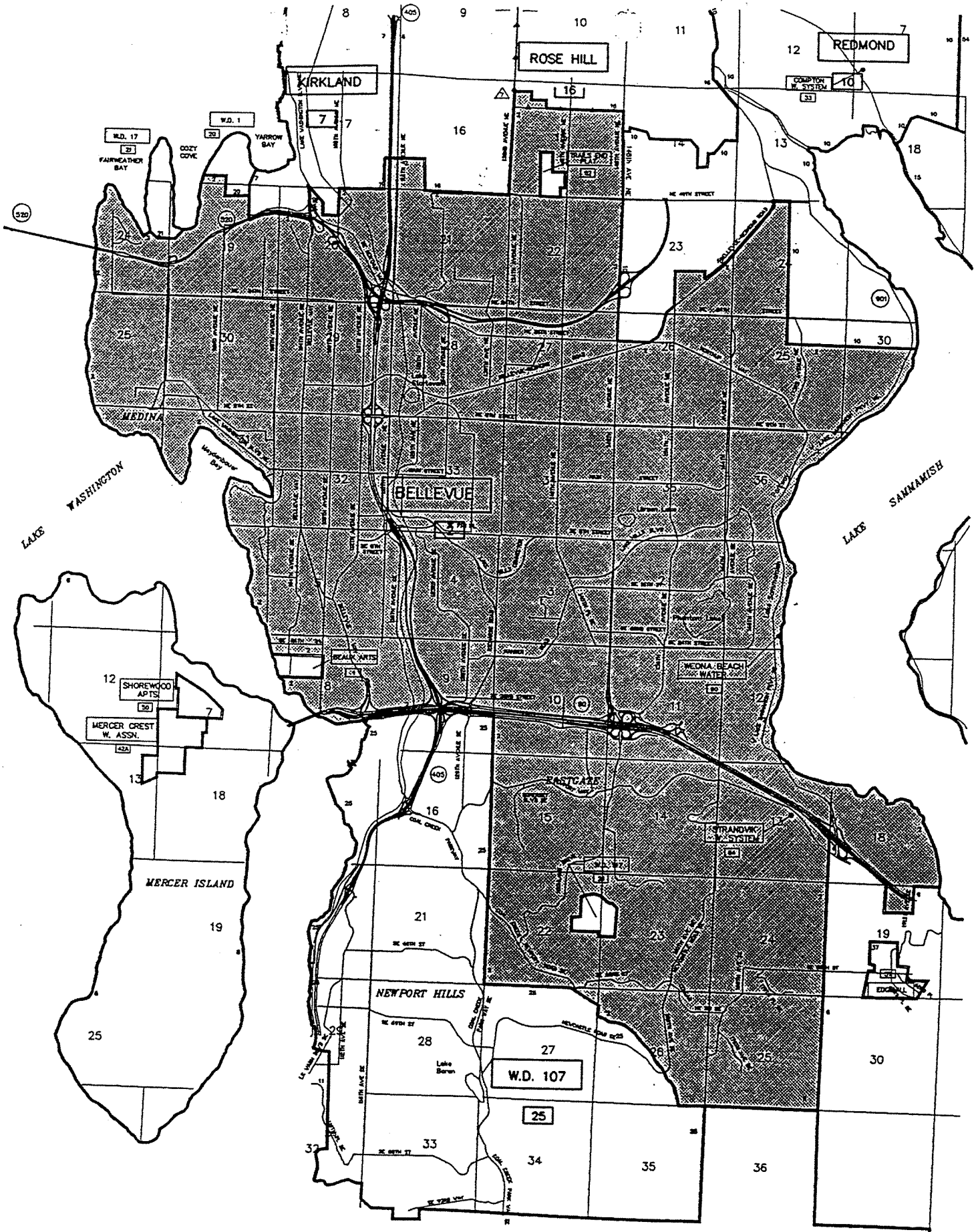
City of Bellevue

Phil Kushlan, City Manager

Receipt Acknowledged:

Richard Rodrigues
King County Parks, Planning, and Resource Department

4-10-90
Date



COORDINATED WATER SERVICE PLAN
CITY OF BELLEVUE WATER SERVICE AREA

ORIGINAL

0445C
03/08/90

CITY OF BELLEVUE, WASHINGTON

RESOLUTION NO. 5249

A RESOLUTION authorizing the City Manager to sign an agreement declaring and acknowledging the City of Bellevue's Water Utility service area boundary.

WHEREAS, the East King County Regional Water Association (EKCRWA) has completed a Coordinated Water System Plan (CWSP) for East King County; and

WHEREAS, it is necessary to define service areas to resolve any discrepancies or disputes between neighboring purveyors and to define the area for which purveyors are responsible for planning; and

WHEREAS, WAC 248-56-730 specifically requires that public water systems within critical water supply service areas be determined by written agreement among the respective existing purveyors and approved by the appropriate legislative authority; now, therefore,

THE CITY COUNCIL OF THE CITY OF BELLEVUE, WASHINGTON, DOES RESOLVE AS FOLLOWS:

Section 1. The City Manager or his designee is authorized and directed to execute that certain Agreement For Establishing Water Utility Service Area Boundaries As Identified By The East King County Coordinative Water System Plan, a copy of which has been given Clerk's Receiving No. 15360.

PASSED by the City Council this 19th day of March, 1990, and signed in authentication of its passage this 19th day of March, 1990.

(SEAL)

Terry Lukens

Terry Lukens, Mayor

Attest:

Marie K. O'Connell

Marie K. O'Connell, City Clerk

CR# 37403 DATE 04-15-05 LOC 05-335 PO 510530

Cascade Water Alliance

INTERLOCAL CONTRACT

Amended and Restated

December 15, 2004

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CASCADE WATER ALLIANCE

INTERLOCAL CONTRACT

Recitals

WHEREAS, the Cascade Water Alliance, an intergovernmental organization created by Interlocal Contract effective April l, 1999 (as amended July 2000 and November 2002) to further the interests of its Members with respect to water supply and to work cooperatively with other water supply entities in the region; and

WHEREAS, Members of the Cascade Water Alliance have determined to amend the Cascade Water Alliance's Interlocal Contract to better facilitate the purposes of the Cascade Water Alliance;

NOW, THEREFORE, it is agreed as follows:

ARTICLE 1. Agreement

The Cascade Interlocal Contract, effective April 1, 1999, and entered into under authority of the Interlocal Cooperation Act, Chapter 39.34 RCW is amended and re-stated as provided herein.

ARTICLE 2. Definitions

"Asset Transfer Agreement" means an agreement between Cascade and a Member by which the Member transfers title to Water Supply Assets to Cascade, with or without monetary consideration, to be operated and maintained as part of the Cascade Water System.

"Authorized Issuer" means either: (a) Cascade (or a successor entity); or (b) a Member or other entity authorized to issue Bonds for the benefit of Cascade and approved by Resolution of the Board.

"Board" means the Board of Directors of Cascade.

"Bonds" means short-term or long-term bonds, notes, warrants, certificates of indebtedness, or other obligations issued by, or on behalf of Cascade.

"ByLaws" means the ByLaws of Cascade, as adopted and amended by the Board.

"Cascade" means the Cascade Water Alliance.

"Cascade ERUs" ("CERUs") means equivalent residential units, calculated according to the Regional Capital Facilities Charge Methodology.

"Cascade Source Exchange Program" means a program adopted by Resolution of the Board for the replacement of all or a portion of a public water systems existing water supply to benefit stream flow and fish without serving growth or increasing that system's water supply. A program utilizing Lake Tapps Water Supply shall include the terms and conditions for source exchange contained in the Lake Tapps' Water Right Report of Examination.

"Cascade Source Exchange Program Agreement" means an agreement between Cascade and a Member or another public water supplier to implement the Cascade Source Exchange Program.

"Cascade Supply Date" means the date for the Founding Members and each new Member, established by Resolution of the Board, upon which Cascade undertakes a Supply Commitment.

"Contract" means this Cascade Water Alliance Interlocal Contract.

"Demand Share" means either a Member's current share of water provided through the Supply System, or estimated share of water to be provided through the Supply System, whether Full Supply or Interruptible Supply, expressed in millions of gallons per day. Demand Share is calculated according to the Rate Calculation Methodology.

"Dual Majority Vote" means Board approval of a proposal on the basis of a simple majority of all Members, allowing one vote per Member, together with a simple majority of all Members on the basis of each Member's Weighted Vote. A "simple majority" means a majority of all Members of Cascade, not just the Members present and voting.

"65% Dual Majority Vote" means Board approval of a proposal on the basis of a 65% supermajority of all Members, allowing one vote per Member, together with 65% supermajority of all Members on the basis of each Member's Weighted Vote. A "supermajority" means 65% of all Members of Cascade, not just the Members present and voting.

"Founding Member" means the City of Bellevue, Covington Water District, the City of Issaquah, the City of Kirkland, the City of Redmond, Sammamish Plateau Water and Sewer District, Skyway Water and Sewer District, and the City of Tukwila.

"Gross Cascade Revenue" means all of the earnings and revenues received by Cascade from any source whatsoever including but not limited to: (a) Member Charges; (b) revenues from the sale, lease or furnishing of other commodities, services, properties or facilities; (c) the receipt of earnings from the investment of money in any maintenance fund or similar fund; (d) and withdrawals from any rate reserve or rate stabilization fund or account.

However, Gross Cascade Revenue shall not include: (a) principal proceeds of Bonds or any other borrowings, or earnings or proceeds from any investments in a trust, defeasance or escrow fund created to defease or refund obligations relating to the Water Supply System (until commingled with other earnings and revenues included in Gross Cascade Revenue) or held in a special account for the purpose of paying a rebate to the United States Government under the Code; (b) taxes and other income and revenue which may not legally be pledged for revenue bond

debt service; (c) improvement district assessments; (d) federal or state grants allocated to capital projects; (e) payments under Bond Insurance or other credit enhancement policy or device; (f) insurance or condemnation proceeds used for the replacement of capital projects or equipment; (g) earnings in any construction fund or bond redemption fund; (h) deposits to any rate reserve or rate stabilization fund or account; or (i) any revenues generated by any Independent Supply except those amounts that are payable to Cascade pursuant to this Contract or another interlocal agreement.

"Independent Supply" or **"Independent Supplies"** means a Member's Water Supply Assets that are not part of the Supply System.

"Member" or **"Members"** means one or more member agencies of Cascade.

"Member Charges" means all payments that Cascade Members are required by this Contract to make to Cascade, including but not limited to all Rates and Charges, RCFCs, dues, assessments and other payments from Members.

"Net Cascade Revenue" means Gross Cascade Revenue less Operations and Maintenance Costs.

"Non-Member" means any person or agency that is not a party to this Contract.

"Operations and Maintenance Costs" or **"O&M Costs"** means all expenses incurred by Cascade to operate and maintain the Supply System in good repair, working order and condition, including without limitation, payments made to any other public or private entity for water or other utility service. Except as approved by the Board, Operations and Maintenance Costs shall not include any depreciation, capital additions or capital replacements to the Supply System.

"Rates and Charges" means the rates and charges (not including RCFCs) chargeable to each Member using the Rate Calculation Methodology plus any late payment or other charge that may be due.

"Rate Calculation Methodology" means the method of setting Rates and Charges adopted by the Board in accordance with Section 7.5.

"Regional Capital Facilities Charges" ("RCFCs") means the charges to each Member for new CERUs connected to that Member's water distribution system.

"Regional Capital Facilities Charge Methodology" ("RCFC Methodology") means the method of determining the RCFCs adopted by the Board in accordance with Section 5.5.

"Satellite Systems" means water supply facilities identified as such by the Board, including but not limited to facilities that serve a portion of a Member's customers but that are not part of the Member's main water system.

"Seattle Contract Purveyor" or **"Seattle Contract Purveyors"** means a Member that is or was a party to The City of Seattle Water Purveyor Contracts, Version A or Version B, dated November 1981 (as amended) executed prior to July 1, 1998.

"Supply Commitment" means the obligation undertaken by Cascade, established by Resolution of the Board to supply water to a Member. With respect to Members, that obligation shall be characterized as "**Full Supply Commitment,"** or an **"Interruptible Supply Commitment"** defined as follows:

"Full Supply Commitment " for any or all of a Member's water needs means that those needs, as projected in the Member's lawfully adopted water supply plan, shall be met from the Supply System, net of independent supply and subject to the other limitations established in this

agreement, on an equal parity with all other Full Supply Commitments, and with a guaranteed priority no lower than for any other Supply Commitment made by Cascade; provided that no Member is guaranteed any given amount of supply or capacity.

"Interruptible Supply Commitment" means a supply of all or part of a Member's water needs from the Supply System on an as-available basis on a lower priority than any Full Supply Commitment.

The Supply Commitment for a Member shall be defined by this Interlocal Contact, the terms and conditions of membership, and the Supply Commitment resolution.

"Supply System" means the Water Supply Assets owned or controlled by Cascade.

"Water Supply Assets" means tangible and intangible assets usable in connection with the provision of water supply, including without limitation, real property, physical facilities (e.g., dams, wells, treatment plants, pump stations, reservoirs, and transmission lines), water rights, capacity and/or contractual rights in facilities or resources owned by other entities, and investments in conservation programs and facilities.

"Watershed Management Plan" means a plan adopted by Cascade for purposes of regional water supply, water transmission, water quality or protection, or any other water-related purpose, including but not limited to the plans identified in RCW 39.34.190 (3).

"Water Supply Plan" means the Cascade Regional Water Supply Plan (which may include the Cascade Watershed Management Plan) adopted by the Board as provided in Section 8.1 and 8.2.

"Weighted Vote" means a vote in which each Member's vote is counted according to the Member's Demand Share, but no Member shall have a Weighted Vote of less than one.

ARTICLE 3. Formation of Entity; Purpose and Powers

Section 3.1 Formation. The Cascade Water Alliance was created on April 1, 1999 as a public body and an instrumentality of its Members, which exercises essential governmental functions on its Members' behalf as authorized by the Interlocal Cooperation Act (RCW 39.34). Cascade is incorporated under RCW 39.34.040(3) as a public nonprofit corporation in the manner set forth in RCW 24.03 or 24.06 and it may, with Board approval, be incorporated as a partnership in the manner set forth in RCW 25.04, or the Board may organize the form of Cascade in any other manner permitted by law. In addition to its status under any other applicable law, Cascade shall constitute a "watershed management partnership" as provided in Chapter 39.34 RCW. The Board may approve the filing of Articles of Incorporation or similar documents in connection with incorporating Cascade or organizing it in some other manner.

Section 3.2 Membership. Subject to restrictions on future Cascade water rights, or to limitations upon water's place of use imposed by contract or permit, any municipal water utility serving within the Central Puget Sound Region may be admitted to Cascade. The decision to admit new Members rests with the sole discretion of the Board, which shall determine whether to extend a membership offer taking into consideration the audit findings, Cascade water resources, and any other factors the Board deems advisable.

When a municipality applies for membership, Cascade shall conduct a water supply audit according to the methodology and within the period determined by the Board. Audit results shall be provided to the Board and to the applicant.

If a membership offer is extended, it shall address the nature of the Water Supply Assets being transferred or retained and the "value" of those assets in terms of the calculation of an

applicant's Demand Share, RCFCs and other matters relating to the rights and obligations of the applicant and Cascade, which must be recorded in the form that the Board determines and which will constitute, along with this Contract, the conditions under which an applicant becomes a Member of Cascade. An applicant for membership shall be admitted by adoption of a Resolution of the Board accepting the application for membership and incorporating the terms and conditions of membership.

Each membership application must be accompanied by a nonrefundable application fee based on the cost of the audit and other costs related to the admission of a new Member or a request for new supply. The Board shall set the application fee for each applicant based on the estimated cost of processing the application, including the cost of the audit.

As a condition of membership, each new Member admitted to Cascade shall, in addition to any other applicable fees, rates, charges or assessments, pay to Cascade the membership fee, as established by the Board.

If an applicant's planning process or plans are materially out of compliance with the requirements of the Growth Management Act, the Board may condition an offer of membership upon the applicant's compliance with that act.

Section 3.3 Conversion to Municipal Corporation Status. In accordance with Section 10.4, Cascade may be converted into a separate municipal corporation if, and as permitted by law. Upon the creation of such a separate municipal corporation, all Cascade rights and obligations and all Member rights and obligations under this Contract shall transfer to that new municipal corporation.

Section 3.4 Purposes. Cascade's purposes include only those related to water resources, and do not include the provision of other general services to the public, and are to:

a. provide a safe, reliable and high quality drinking water supply to meet the current and projected demands of Cascade Members serving the Central Puget Sound Region, and for Non-Members as determined by Cascade, and to carry out this task in a coordinated, cost-effective, and environmentally sensitive manner;

b. develop, contract for, manage, acquire, own, maintain and operate Water Supply Assets, including without limitation, surface water supplies, groundwater supplies, reclaimed water supplies, and other water supply resources as determined by the Board;

c. contract with Seattle to transfer to Cascade and to modify Seattle's rights and duties with respect to Seattle Contract Purveyors;

d. contract for, or assume certain contractual rights and duties related to the Tacoma Second Supply Pipeline project;

e. purchase and provide water supply, transmission services, treatment facilities and other related services;

f. provide conservation programs to promote the wise and efficient use of resources;

g. carry out emergency water supply and shortage management programs for its Members when demands exceed available supply;

h. coordinate and plan cooperatively with other regional or local water utilities and other entities to maximize supply availability and to minimize system costs;

i. develop a Water Supply Plan addressing the needs of its Members and develop a Watershed Management Plan serving the needs of its Members and Cascade itself and develop a regional water supply plan with other water providers as Cascade may find convenient or necessary to meet regional, state and federal planning requirements, and to take a leadership role in developing and coordinating those supply plans;

j. share costs and risks among Members commensurate with benefits received; and

k. carry out, or to further other water supply purposes that the Members determine, consistent with the provisions of this Contract.

Section 3.5 Powers. To further its purposes, Cascade has the full power and authority to exercise all powers authorized or permitted under RCW 39.34 and any other laws that are now, or in the future may be, applicable or available to Cascade and to engage in all activities incidental or conducive to the attainment of the purposes set forth in Section 3.4 of this Contract, including but not limited to the authority to:

a. acquire, construct, receive, own, manage, lease and sell real property, personal property, intangible property and other Water Supply Assets;

b. operate and maintain facilities;

c. enter into contracts;

d. hire and fire personnel;

e. sue and be sued,

f. exercise the power of eminent domain (through its Members at their individual discretion, unless and until Cascade has that power under applicable law);

g. impose, alter, regulate, control and collect rates, charges, and assessments,

h. purchase and sell water and services within and outside the geographical boundaries of its Members;

i. borrow money (through its Members or other entities at their individual discretion or as authorized by Chapter 39.34 RCW now or in the future), or enter into other financing arrangements;

j. lend money or provide services or facilities to any Member, other governmental water utilities, or governmental service providers;

k. invest its funds;

l. establish policies, guidelines, or regulations to carry out its powers and responsibilities;

m. purchase insurance, including participation in pooled insurance and self-insurance programs, and indemnify its Members, officers and employees in accordance with law;

n. exercise all other powers within the authority of, and that may be exercised

individually by all of its Members with respect to water supply, conservation, reuse, treatment and transmission, or any of the other purposes set forth in Section 3.4;

o. exercise all other powers within the authority of, and that may be exercised individually by all its Members with respect to watershed planning and management; and_

p. exercise all other corporate powers that Cascade may exercise under the law relating to its formation and that are not inconsistent with this Interlocal Contract or with Chapter 39.34 RCW or other applicable law.

ARTICLE 4. Organization Structure; Board

Section 4.1 Composition, ByLaws and Meetings. Cascade is governed by a Board of Directors consisting of one individual representative appointed by Resolution of the Member's legislative authority. Members may similarly appoint Alternate Board Members. Each Board Member and each Alternate Board Member must be an elected official of the Member.

The Board shall adopt ByLaws consistent with this Interlocal Contract that specify, among other matters, the month of Cascade's Annual Meeting, Board powers and duties and those of the Executive Committee, Standing Committees, Officers and employees.

The Board shall meet as required by the ByLaws, but no less than quarterly.

Section 4.2 Powers of the Board. The Board has the power to take all actions on Cascade's behalf in accordance with voting provisions set forth in Section 4.3. The Board may delegate to the Executive Committee or to specific Cascade Officers or employees any action that does not require Board approval under this Contract.

Section 4.3 Voting. All Board actions must be approved by Dual Majority Vote of all Members, except where this Contract requires either a 65% Dual Majority Vote, as provided in Sections 5.2, 5.5, 7.1, 7.3, 8.3, 10.3, 10.4, and Article 11; or ratification by the Members'

legislative authority, as provided in Section 10.4 and Article 11. The Board may act by voice votes, as set forth in the ByLaws. Any Member may require a recorded tabulation of votes either before or immediately after a voice vote is taken. Although voting is, in part, based on Weighted Vote, the Members expressly agree that there is only one class of voting membership, and voting occurs within that single class.

Any Member that has been declared to be in default of its obligations under this Interlocal Contract by the Board shall lose its right to vote until the Board has declared the default to be cured.

Section 4.4 Officers and Committees. Cascade Officers shall include a Chair, a Vice Chair, a Secretary and a Treasurer. The Chair serves as the chair of the Board (and may be known as the "President", if the ByLaws so designate) and performs those duties set forth in the ByLaws.

The Vice Chair shall perform the duties of the Chair in the Chair's absence and shall perform other duties as set forth in the ByLaws. The Secretary shall be responsible for Cascade records and performs other duties as set forth in the ByLaws. The Treasurer shall be responsible for Cascade accounts and financial records and performs other duties as set forth in the ByLaws.

Consistent with the provisions of this Contract, the Board may, in the ByLaws, establish additional Officers and set forth their duties.

The Board may create and appoint Members to Standing Committees and special committees as it deems appropriate. Committee Members need not be elected officials or employees of Members, but Standing Committee Chairs must be Board Members or Alternate Board Members.

Section 4.5 Executive Committee. The Chair, Vice Chair, Secretary, Treasurer and chairpersons of Standing Committees together constitute Cascade's Executive Committee. The Chair (or acting Chair) shall vote on matters before the Executive Committee only if necessary to break a tie. The Executive Committee's duties and responsibilities are set forth in the ByLaws. The Executive Committee shall not have the power to:

a. approve any contract for a term longer than three years;

b. approve any contract involving expenditure by, or revenue to Cascade in excess of such amounts and under such circumstances as set forth in the ByLaws;

c. retain or dismiss the chief executive officer or determine the chief executive officer's compensation; or

d. take any actions expressly reserved to the Board by this Contract or the ByLaws.

The Executive Committee shall have the authority, if necessary, to avoid default on any Bond, to withdraw from any capital reserve fund or rate stabilization fund, an amount equal to the amount necessary to avoid a default and to authorize payment of that amount to avoid default.

Section 4.6 Staff, Consultants and Contractors. Cascade staff shall consist of a chief executive officer and other positions established by the Board. The Board shall appoint, designate the title of, and establish the compensation range of the chief executive officer. The Board shall hire or retain legal counsel and independent accountants and auditors for Cascade. The authority to hire other consultants may be delegated to the Executive Committee. The chief executive officer appoints persons to fill other staff positions, and those appointments may be subject to ratification by the Board or the Executive Committee if the ByLaws so provide. The Board may also provide that administrative, professional or technical services be performed by contract.

Section 4.7 Budget; Dues; Financial Management. The Board must approve an annual budget determining Cascade's revenues and expenditures no later that sixty (60) days before the beginning of the fiscal year in which that budget will be in effect. The budget will be developed and approved according to a schedule established by the ByLaws. The budget must identify the levels of Member Charges on which revenue projections are based. The Board may amend the budget.

Each Member must pay annual dues to defray part of Cascade's administrative costs based on the number of CERUs served by its water system, regardless of water usage or capacity, and regardless of whether those units are served by the Supply System or by Independent Supply. Total dues collected from all Members may not exceed the greater of $1,000,000.00 or 5% of Cascade's annual revenue requirement, less debt service. The Board may establish minimum annual dues per Member and may provide that less than all of a Member's CERUs be taken into account in establishing dues.

All Cascade books and records shall be open to inspection by the Washington State Auditor.

ARTICLE 5. Asset Development and Supply Commitment

Section 5.1 Property Acquisition, Ownership and Disposition. Cascade may construct, purchase, rent, lease, manage, contract for, or otherwise acquire and dispose of Water Supply Assets and other assets. Cascade may control and manage both the assets it owns and the assets that are owned by Members that have transferred control and management of those assets to Cascade. This Contract does not vest in Cascade any authority with respect to Members' other facilities or assets, such as Water Supply Assets retained by Members as Independent Supply.

Subject to Cascade's agreement, a Member may transfer to Cascade its title to, or operational control and management of Water Supply Assets. Water Supply Assets may also be fully retained by Members as Independent Supply, subject to the provisions of Article 6. At the discretion of the Board, Cascade may accept title to, or operational control and management of Water Supply Assets offered by Members or accept supply assets that constitute all or part of a Member's Satellite System(s). The Board may accept supply assets subject to the terms and conditions arranged between Cascade and the Member, based on the result of the audit process and mutual needs.

Cascade may enter into Asset Transfer Agreements which shall provide for the terms and conditions of: (a) Cascade's operation of the transferred Water Supply Asset with respect to the Member transferring the asset; (b) Cascade's operation, maintenance and replacement of the Water Supply Asset as part of the Supply System; (c) return or disposition of the Water Supply Asset if Cascade terminates its existence or the Member withdraws; (d) continuation of service (if appropriate) to Members or former Members by the Member receiving the Water Supply Asset at reasonable rates and charges or payment to Cascade of the cost of replacing the Water Supply Asset; and (e) such other conditions as the Board and the Member agree upon.

Members shall not be deemed to hold legal ownership rights in any Water Supply Assets owned by Cascade, whether those Water Supply Assets have been developed by, purchased by, or transferred to Cascade, and regardless of the accounting treatment of RCFC payments and other payments made to Cascade.

Section 5.2 Supply Commitment

Section 5.2.1 Commitment to Members. Beginning on the Cascade Supply Date, Cascade shall provide a Full Supply Commitment to each Founding Member. Thereafter, Cascade shall provide a Full Supply Commitment to meet all current and future water supply needs of a Member that joins with Water Supply Assets sufficient to provide for its needs during the following fifteen (15) years (whether or not those Water Supply Assets are transferred to Cascade or retained as Independent Supply) commencing on the Member's Cascade Supply Date. When a supply contract is negotiated with Seattle, any Member that is a Seattle Contract Purveyor shall relinquish its rights under its Seattle Water Purveyor Contract to Cascade and execute such documents as may be necessary to transfer those rights to Cascade. Cascade shall accept those rights and a corresponding obligation to provide a Full Supply Commitment (net of Independent Supply). The approval of a contract with the City of Seattle providing for the initial acquisition of rights to substantial Water Supply Assets, and any material amendment to that contract, shall be effective upon a 65% Dual Majority Vote.

Any Full Supply Commitment shall be subject to water shortages, to Cascade's ability to implement the Water Supply Plan, and to the portion of the Member's needs that can be served by the audited capacity of its Independent Supply. If the needed supply is not available, the shortage shall be shared by all the Members in accordance with Cascade's shortage management plan, except as otherwise provided in Section 5.5. Cascade is not obligated to provide water supply to service area expansions in or outside the urban growth boundary, unless Cascade agrees to such expanded service area. However, Cascade shall be obligated to provide water supply to the entire service area of each Member (as that service area is defined in terms under which the Member was admitted), whether or not some of that service area is within the Member's current

jurisdictional boundaries and/or within the current urban growth boundary. Cascade is not obligated to provide increased water supply to any Member if it is determined that the Member's planning process or plans are materially out of compliance with the requirements of the Growth Management Act.

A Member that joins with Water Supply Assets insufficient to provide for its needs for fifteen (15) years receives the Full Supply it desires only if, when, and to the extent it is available within reliability standards determined by Cascade's system reliability methodology. If sufficient Full Supply is not available within reliability standards determined by Cascade's system reliability methodology, the Member receives partial Full or Interruptible Supply, and Full Supply must be provided within fifteen (15) years. Cascade shall then undertake to include in Cascade's Water Supply Plan, and to acquire the facilities or other assets necessary in the Board's determination to provide for that deficit. If Cascade fails to develop sufficient assets to timely provide the increased Full Supply, the commitment becomes a Full Supply Commitment at the end of that fifteen- (15) year period, and any shortage shall be shared by all Members in accordance with Cascade's shortage management plan.

If multiple Members request new Full Supply, requests must be honored in the order received (i.e., in the order in which application is made accompanied by the application fee). With respect to new Members, requests for Full Supply "vest" no earlier than the date that membership is effective. In cases of conflict or ambiguity, the Board may determine the order of requests.

Section 5.2.2 Additional Rules for Members Retaining Independent Supply. Whenever Cascade has a Supply Commitment to a Member that retains Independent Supply, Cascade shall provide Full Supply for all of that Member's water supply needs minus the amount

of water that an audit determines may be provided by that Member's Independent Supply. Members are not required to share shortages resulting from the loss of all or part of Independent Supply, although Cascade may make Interruptible Supply available to a Member that loses Independent Supply at prices that are consistent with the price of Interruptible Supply being made available to others at that time. Cascade may at any time and at its cost and expense carry out audits of a Member's Independent Supply.

A Member requesting an additional Full Supply Commitment due to loss of Independent Supply shall make that request by Resolution of the requesting Member's legislative authority. When and as determined by the Board, the Member shall pay an amount equal to the RCFCs allocable to the number of CERUs that can be served by the replacement supply provided or to be provided by Cascade. Cascade shall then include the supply in its Water Supply Plan, and provide the supply when it becomes available, but in any event within fifteen (15) years. If, within fifteen (15) years the supply is not available, Cascade's commitment becomes a Full Supply Commitment and any shortage with respect to that supply must be shared by all the Members in accordance with the Shortage Management Plan, except as otherwise provided in Section 7.3.

Section 5.2.3 Additional Rules for Source Exchange. The Board may, at its sole discretion, authorize a Cascade Source Exchange Program Agreement with a Member or Non-Member. The terms and conditions of a Cascade Source Exchange Program Agreement shall be developed from a source exchange proposal submitted to the Board. The agreement shall identify: (a) the water right (instantaneous and annual) to be augmented or replaced; (b) the Water Supply Assets to be utilized; (c) mechanisms and arrangements for delivery of regional water; (d) characteristics of supply obligation (for example, peak and average quantities, seasonal or annual

delivery, duration, interruptibility and shortage management); (e) reporting requirements; (f) changes in operation needed to benefit stream flow and fish; (g) rates and charges; and (h) such other conditions as the Board and the Member or public water supplier agree upon. The agreement may or may not provide for adjustments to a Member's RCFC payments or credits and whether or not the source exchange is a loss of a Member's Independent Supply that would be subject to the provisions of Section 5.2.2.

Section 5.3 Financing of Assets. The acquisition of new capital facilities and other Water Supply Assets may be financed using RCFCs, transfers of Water Supply Assets, Rates and Charges, the issuance of revenue Bonds and such other sources as the Board may deem appropriate.

Section 5.3.1 Issuance of Bonds. An Authorized Issuer may issue Bonds payable from and secured solely by all or a portion of Net Cascade Revenue, evidencing indebtedness up to an amount approved by Resolution of the Board in order to provide financing or refinancing to acquire, construct, receive, own, manage, lease or sell real property, personal property, intangible property and other Water Supply Assets, to establish debt service reserves, to provide for capitalized interest and to pay the costs of issuance of, and other costs related to the issuance of the Bonds. Such Bonds shall be payable solely from all or a portion of the Net Cascade Revenue or (if the Authorized Issuer is other than Cascade) from payments to be made by Cascade out of all or a portion of Net Cascade Revenue, and such Bonds shall not pledge the full faith and credit or taxing power or, except as expressly provided by contract, the revenue, assets or funds of any Member.

Members serving as Authorized Issuers may conduct the financing through "separate

systems" permitted by their applicable bond resolutions, or in some other appropriate manner, and Cascade may compensate those Members for all costs associated with the financing. Bond-related documents of Authorized Issuers other than Cascade must expressly permit the Bonds to be refunded or prepaid without penalty prior to their stated maturity, on and after such dates as are approved by the Authorized Issuer and the Board, to allow for a transfer of the obligation to Cascade or to Cascade's successor entity, including without limitation a joint operating agency or similar entity, as may be permitted by law.

Section 5.3.2 Pledge of Revenues. For as long as any Bonds payable from Net Cascade Revenue (or any portion thereof) are outstanding, Cascade irrevocably pledges to establish, maintain and collect all Member Charges in amounts sufficient to pay when due the principal of and interest on the Bonds (and, if the Authorized Issuer is other than Cascade, in addition to the foregoing pledge, to pledge to make timely payments to that Authorized Issuer for the payment of principal of and interest on the Bonds), together with amounts sufficient to satisfy all debt service reserve requirements, debt service coverage requirements, and other covenants with respect to the Bonds.

Each Member hereby irrevocably covenants that it shall establish, maintain and collect rates, fees or other charges for water and other services, facilities and commodities related to the water supply it receives from Cascade and/or its water utility at levels adequate to provide revenues sufficient to enable the Member to: (a) make the payments required to be made under this Contract; and (b) pay or provide for payment of all other charges and obligations payable from or constituting a charge or lien upon such revenues. Each Member hereby acknowledges that this covenant and its covenant in Section 7.9 of this Contract may be relied upon by Bond

owners, consistent with this Contract.

Each Member shall pay the Member Charges imposed on it whether or not the Water Supply Assets to be financed through the issuance of Bonds are completed, operable or operating, and notwithstanding the suspension, interruption, interference, reduction or curtailment in the operation of any Water Supply Assets for any reason whatsoever, in whole or in part. Member Charges shall not be subject to any reduction, whether by offset or otherwise, and shall not be conditioned upon the performance or nonperformance of any Member, or of any entity under this or any other agreement or instrument. However, credits against future RCFCs and Rates and Charges described in Sections 5.5 and 7.5, respectively, for development or addition of excess capacity that is either transferred to Cascade or retained as Independent Supply, shall not be considered "offsets" or "reductions" for the purposes of this Section.

If, in connection with the issuance of obligations, any Member establishes a new lien position on revenues relating to its water utility, that Member shall covenant in the relevant documents that the amounts to be paid to Cascade as Member Charges shall be treated either: (a) as part of that Member's internal operation and maintenance costs payable prior to debt service on those obligations; and/or (b) for any portion of those Member Charges that is allocable to capital costs, as a contract resource obligation payable prior to debt service on those obligations. If any Member has existing outstanding revenue obligations relating to its water utility, it shall include substantially similar "springing covenants" in the documents relating to any new parity obligations.

Section 5.3.3 Continuing Disclosure. To meet the requirements of United States Securities and Exchange Commission ("SEC") Rule 15c2-12(b)(5) (the "Rule") as applicable to a

participating underwriter for any Bonds and any obligation of each Member as an "Obligated Person" under the Rule, Cascade and each Member agree to make an appropriate written undertaking, respectively, for the benefit of holders of the Bonds consistent with the requirements of the Rule.

Section 5.3.4 Preservation of Tax Exemption for Interest on the Bonds. Each Member covenants that it will take all actions necessary to prevent interest on tax-exempt Bonds from being included in gross income for federal income tax purposes, and it will neither take any action nor make or permit any use of proceeds of tax-exempt Bonds or other funds treated as proceeds of those Bonds at any time during the term of those Bonds that will cause interest on those Bonds to be included in gross income for federal income tax purposes.

Section 5.3.5 Additional Certificates. Each Member further agrees to provide such certificates or verifications as are reasonably requested by an Authorized Issuer in connection with the issuance of Bonds under this Section.

Section 5.4 Supply Expansions and System Extensions. Cascade must provide for Supply System expansions and extensions to meet the needs of additional water customers of Members, subject to consistency with applicable growth management plans and comprehensive plans, Cascade's water supply plan, orderly asset development, reasonable cost and financing capacity. The Board shall establish a water supply development process, including criteria governing the evaluation of new projects, and that process must promote equality of costs and services (other than direct local services), regardless of geographic location. The results of the water supply planning process must be reflected in Cascade's Water Supply Plan. The Board shall have the authority to undertake new projects identified in Cascade's Water Supply Plan for the

expansion of Water Supply Assets and regional transmission system extensions to meet Members' projected needs. To reduce costs, Cascade may, to the extent that the Board deems advisable, enter into agreements with Members to wheel water through their existing systems. When facilities are constructed that are used partially by Cascade for wheeling water and partially by Members or other entities for their purposes, the Board may determine an appropriate Cascade contribution to the cost of those facilities. Existing arrangements among Members (and between Members and Non-Members), in place when a Member joins Cascade, remain unaffected except as otherwise agreed between Cascade and the other entities concerned.

Section 5.5 Regional Capital Facilities Charges. To allocate growth costs to those Members that require capacity increases, each Member shall pay to Cascade an RCFC for each new CERU connected to its water distribution system. Growth in water usage by existing CERUs is not subject to RCFCs unless that growth constitutes a CERU increase as provided in the RCFC Methodology. Members with a supply deficit must pay an RCFC commensurate with that deficit. To the extent that a Member transfers to Cascade or retains as Independent Supply water supply in excess of its needs, it receives a corresponding credit against future RCFCs.

Subject to the provisions of Section 5.2.2, a Founding Member pays no RCFCs with respect to the number of CERUs served as of January 31, 2003, or other such later date as determined by Resolution of the Board.

A new Member with adequate supply shall commence paying RCFCs fifteen (15) years prior to the date that its Water Supply Assets are projected to be insufficient to provide for its needs as determined by the Board (taking into consideration the results of the Water Supply Audit).

A Member that joins with Water Supply Assets that are projected to be insufficient to provide for its needs for fifteen (15) years shall immediately pay RCFCs for the number of CERUs representing the deficit as determined by the Board.

RCFCs shall be calculated according to the RCFC Methodology, which shall define the analytical steps required to calculate the RCFCs according to the greater of: (a) the incremental difference between the average unit cost of expanding the system (i.e., the marginal cost of new capacity) and the average unit cost of the existing system; or (b) the average unit cost of past construction of the existing system plus then-planned Supply System improvements. The methodology shall provide for an annual escalator, recalculation and update not less frequently than every fifth year, and a methodology for determining CERUs. The RCFCs shall be imposed on the Member for each new CERU of that Member in accordance with the terms of this Contract. Amendments to the RCFC Methodology shall require a 65% Dual Majority Vote.

If a Founding Member owns Water Supply Assets or transfers Water Supply Assets to Cascade under Section 5.1, to the extent the audited capacity of those assets (including Seattle Contract Purveyor rights) exceeds the Member's needs, that Member shall receive a credit against future RCFCs. If a Member seeks to transfer assets substantially in excess of its foreseeable needs, Cascade may negotiate appropriate compensation arrangements for the transfer.

Members that develop new Independent Supply that is approved by the Board in accordance with Article 6, similarly receive a credit effective when the Independent Supply is placed in service as determined by the Board.

A Member that accepts ownership of a Satellite System that Cascade agrees to serve shall pay an RCFC for the amount of supply needed to serve that system in excess of its rated capacity.

Members that experience a net reduction in the number of CERUs served shall receive a CERU-for-CERU credit against future RCFCs.

RCFC credits may not be transferred among Members without Board approval.

Members shall not be required to pass RCFCs to their customers as capital facilities charges, but may provide for the payment of RCFCs in whatever manner they deem appropriate.

For Members joining with an unmet net supply need, Cascade may, under circumstances determined by the Board, require the prepayment of RCFCs allocable to the full amount of the requested supply, i.e., when funds are needed to begin the construction of facilities immediately.

Section 5.6 Transfer Upon Mergers, Consolidations and Assumptions. If: (a) two or more Members merge or consolidate; (b) a Member or a Non-Member assumes jurisdiction of part or all of a Member; or (c) a Member assumes jurisdiction of part or all of a Non-Member, the jurisdictions' water supply rights from and obligations to Cascade must be transferred or assumed under applicable law and consistent with the requirements of this Contract and the obligations of Cascade.

ARTICLE 6. New Independent Supply

Members may not bring new Water Supply Assets on-line as Independent Supply without Board approval. That approval may be granted or denied following an evaluation process, based on whether the Board determines that development of the proposed Independent Supply will benefit or be adverse to the interests of the Members as a whole. Recognizing that in certain circumstances the acquisition of additional Independent Supply might benefit (or cause no material harm to) the Members, new supplies under one (1) MGD may be approved by the Board regardless of the provisions of the Water Supply Plan and without a formal evaluation process.

New supplies in amounts greater than one (1) MGD must be described in and be consistent with the Water Supply Plan.

Members that have invested in the development of new Independent Supply assets may offer to sell their interest in such assets to Cascade. Cascade may, in its sole discretion and subject to mutually agreeable terms and conditions, purchase the Member's interest in such Independent Supply asset by reimbursing or otherwise compensating the Member for its investment in the project to the extent that investment has been capitalized. Once Cascade has purchased a Member's interest in a project, the project will be considered a Water Supply Asset of Cascade and be incorporated into the Water Supply Plan.

ARTICLE 7. Asset Management

Section 7.1 Supply System Management. Cascade is responsible for managing, on behalf of all Members, the Supply System. Cascade is not responsible for managing Independent Supply unless it has expressly agreed to do so. Supply System management responsibilities shall be governed by Cascade's system management plan adopted by the Board. Cascade's system management plan concerns, without limitation, matters such as daily system operations and maintenance, interface with other supply providers, contractual obligations, water quality, billing, management and administration. Cascade may delegate and/or contract out its Supply System responsibilities.

Cascade must manage the Supply System in compliance with applicable laws, regulations and Cascade's minimum service standards. Adoption and amendments to the minimum service standards shall require a 65% Dual Majority Vote.

Section 7.2 Conservation. Cascade shall develop and carry out, and Members must participate in, water conservation programs that are uniform among Members. The Board shall develop and implement a Cascade conservation management plan that provides a mandatory base conservation program that functions to reduce both average and peak demands and may establish a charge or assessment to fund development and implementation of the program. Members may implement additional conservation programs. The Board may adopt wholesale charges in addition to normal Demand Share charges to encourage resource conservation. The Board may also provide or contribute to additional local conservation programs that are not offered to all Members, and these local programs may be locally funded or funded by Cascade. Members that fail to comply with base programs as set forth in Cascade's conservation management plan may be required to assume a disproportionate reduction in water supply or to pay penalty charges, or both.

Section 7. 3 Shortages and Emergency.

Section 7. 3.1 Shortages. Members must respond to water shortages in a collective, shared fashion under a Cascade shortage management plan adopted by the Board. Resources must be shared in a manner that reduces the risk of severe shortages to each Member. Cascade's shortage management plan may include without limitation, a definition and classification of shortages, a shortage contingency plan including mandatory programmatic actions among all Members in the event of shortages, allocation of authority for determining and responding to shortages, and a communications and outreach program for the public. Members shall not be required to implement Cascade's shortage management plan in areas not served by the Supply System.

In the event of shortages, Cascade shall reduce or halt Interruptible Supply before invoking the Shortage Management Plan with respect to all Members with a Full Supply Commitment. However, the Board may, by 65% Dual Majority Vote, continue service in the amounts it deems appropriate to one or more Members receiving Interruptible Supply.

The Board may require that Members failing to comply with mandatory shortage management programs implemented under Cascade's shortage management plan assume a disproportionate reduction in supply or pay penalty charges, or both.

In the event of a Cascade-wide water shortage, Members with Independent Supply may, without penalty, decline to participate in the shortage management program for that shortage by foregoing all supply from Cascade for the duration of the emergency or shortage.

To avoid shortages resulting from emergencies or the inability to develop sufficient supplies, the Board may, by 65% Dual Majority Vote, establish moratoria on connections or additional commitments for future water services by the Members. A moratorium may be discontinued by a Dual Majority Vote of the Board.

Section 7. 3.2. Emergency. The Board shall include in Cascade's shortage management plan policies and procedures for addressing short-term disruptions of water supply, transmission or water quality, and it may delegate to the General Manager authority to address such disruptions according to such policies and procedures.

Section 7.4 Water Quality. Cascade shall be responsible for water quality that meets or exceeds all federal or state requirements at the point of delivery from Cascade to the Member, consistent with applicable laws and regulations. Cascade assumes source water quality responsibility and liability with respect to Water Supply Assets under its ownership or control

(including water wheeled to a Member through another Member's facilities). Cascade is also responsible for preparing and carrying out water quality activities compatible with the water quality requirements of regional water suppliers integrated with Cascade's system (e.g., Tacoma, Everett and Seattle).

Cascade may, in its sole discretion, determine and adjust the appropriate method and level of treatment of water that it supplies, so long as that water meets applicable state and federal requirements. If water that it supplies meets those requirements, Cascade shall not be obligated to adjust the method or level of treatment so that the water can be more readily blended with a Member's Independent Supply or more readily transmitted through a Member's internal system. Each Member shall remain responsible for water quality within its respective distribution system, assuming that adequate water supply quality is provided by Cascade at the point of delivery from Cascade.

Each Member shall be responsible for all costs related to making water supplied by Cascade compatible with that Member's internal system, including but not limited to, costs of additional treatment.

Section 7.5 Water Supply Rates and Charges. The Board shall set Rates and Charges according to a Rate Calculation Methodology adopted from time to time by the Board. The Rate Calculation Methodology for Members' Supply Commitment shall provide for the definition and calculation of Demand Shares and for a uniform pricing structure with a commodity charge and fixed charges allocated by Demand Share.

Cascade may sell water to a Non-Member under terms and conditions established by the Board. The terms and conditions shall not be more favorable than the terms and conditions under

which water is sold to Members. Revenue received from the sale of water to Non-Members shall be used to offset or reduce Rates and Charges to Members to the extent practicable, except that such revenue need not be treated as reducing or offsetting those amounts that are necessary for the payment of debt service on Bonds and for the provision of reserve and coverage requirements for the Bonds.

A Member shall be assigned a Demand Share based on the Board's best estimate of capacity to be used by that Member. Initially, the Board may base its estimate on a Seattle Contract Purveyor's use of water from Seattle. For a Member that joins without a supply history as a Seattle Contract Purveyor, or for a Member that has received only part of its water from Seattle, the Demand Share shall be established based on an audit of that Member's past three (3) years of water use. After three (3) years as a Member, the baseline demand and capacity obligation for that Member shall be fixed based on actual experience as a Member. Specific Demand Shares may be set by the Board to account for circumstances, such as (by way of example and not by limitation) costs of extending the Supply System to a Member, or when Independent Supplies affect regional demand patterns. When water supply from Cascade is wheeled through a Member to another Member, Cascade may presume that the first Member receiving the water is the "User" for calculation of Demand Shares unless the Members concerned instruct Cascade to use a different allocation. Rate credits for Water Supply Asset transfers are not deducted in the calculation of Demand Shares but are applied to reduce what a Member would otherwise pay.

The Board must set Member Charges at levels it determines to be sufficient, together with other available revenue sources, to provide adequately for Operation and Maintenance Costs,

Bond debt service, coverage and other covenants, replacement and renewal of facilities, reserves and other costs that the Board deems appropriate. The Board may provide that a Member's failure to participate in the planning process may result in penalty charges.

A Member that has transferred Water Supply Assets shall receive a credit, determined when those assets are audited and transferred, based on the useful life of those facilities and on the Member's use of the water produced by those assets or an amount of water equivalent to the amount of supply from them.

The Board may implement wholesale charges (additional to Demand Share-based charges and variable commodity charges) to reduce extreme peak use (e.g., "peaking-off of the pipe").

Water Rates and Charges must be the same for all Members receiving the same class of service (subject to credits, surcharges and penalty charges).

Section 7.6 New Water Surcharge.

A new water surcharge of $0.75 per 100 cubic feet (ccf) shall be imposed, effective on the Cascade Supply Date, and continue through December 31, 2011. It shall be applicable to all water purchased by Members over and above each Member's Old Water Allowance in the Seattle Purveyor Contract, if applicable, or to all water purchased by non-Seattle Purveyor Members. New water surcharge revenues shall be used to offset or reduce Rates and Charges to Members to the extent practicable, except that such revenue need not be treated as reducing or offsetting those amounts that are necessary for payment of debt service on Bonds and for the provision of reserve and coverage requirements for the Bonds.

Section 7.7 Franchises and Easements. Except to the extent otherwise required by state law, each Member shall provide franchises and rights of way on, under or across that

Member's streets or other property, to Cascade and to other Members for Water Supply Assets, without charging any fees, rent or charges other than the customary and usual right-of-way permit and inspection fees.

Section 7.8 Sales of Water to Non-Members. Unless approved by the Board, a Member shall not sell water, including source exchange water, supplied by Cascade, nor shall a Member sell Independent Supply offset by water supplied by Cascade, to a Non-Member. Notwithstanding the foregoing, any Member may sell water supplied by Cascade to a Non-Member to the extent required by a contract in effect as of the date the Member joins Cascade.

Section 7.9 Payment Procedures; Default; Step-Up Provisions.

Section 7.9.1 Invoice and Payment.

(a) Cascade shall provide each Member with periodic invoices showing the Member Charges payable by that Member for the billing period and the due date. Invoices shall be provided monthly or on other such periodic schedule as determined by the Board, but no more frequently than monthly nor less frequently than once every six months. The Board will determine a due date for all invoices.

(b) Payment of any and all invoices shall be due and payable on or before the due date, and shall be made by wire transfer or such other means as are agreed to by Cascade and the Member. If a treasurer, trustee, fiscal agent or escrow agent is appointed in connection with the issuance of Bonds, Cascade may require, and specify on the invoice, that certain amounts be provided directly to that person or entity, and the Member shall pay those amounts in the manner and to the person so specified.

(c) If full payment of any invoice is not received on or before the due date, such payment shall be considered past due and a late payment charge shall accrue for each day that the invoice remains unpaid. The late payment charge shall equal the product of the unpaid amount and an interest rate established by the Board. Late payment charges shall continue to accumulate until the unpaid amount of the invoice and all late payment charges are paid in full. Further, if an invoice or any portion thereof remains unpaid for more than sixty (60) days after the due date, Cascade may pursue any legally available remedy at law or equity for the unpaid amount, including without limitation, specific performance and collection of the late payment charge. Cascade's right to enforce payments in this regard may be assigned to a treasurer, trustee, credit enhancement provider or other entity. Furthermore, upon written notice, Cascade may reduce or suspend delivery of water until the invoice and late payment charges are paid.

(d) If any Member disputes all or any portion of an invoice, it shall notify Cascade immediately upon receipt. If Cascade does not concur, the Member shall remit payment of the invoice in full, accompanied by written notice to Cascade indicating the portions of the invoice that the Member disputes and the reasons for the dispute. The Member and Cascade shall make a good faith effort to resolve such dispute. If the Member fails to remit payment of the invoice in full pending resolution of the dispute, the prevailing party in an action relating to the collection of that invoice shall be entitled to reasonable attorney fees and costs.

Section 7.9.2 Default and Step-Up.

(a) If any Member fails to make any payment in full for more than fifty (50) days past the due date, Cascade shall make written demand upon that Member to make payment in full within ten (10) days of the date that the written demand is sent by Cascade. If the failure to pay is not

cured within the ten (10) day period, the Member shall be deemed to be in default.

(b) Upon an event of default as described in subsection 7.9.2(a), the other Members shall pay Cascade (in addition to Member Charges otherwise due) the defaulting Member's Member Charges in proportion to each remaining Members' Demand Share in accordance with a schedule established by Resolution of the Board.

(c) The payment of a proportionate share of the existing defaulted Member's Member Charges by Members shall not relieve the defaulting Member of its liability for those payments. Cascade shall have a right of recovery from the defaulting Member on behalf of each Member. Cascade may commence such suits, actions or proceedings at law or in equity, including but not limited to suits for specific performance, as may be necessary or appropriate to enforce the obligations of this Contract against any defaulting Member. Cascade's right to enforce payments in this regard may be assigned to a treasurer, trustee, credit enhancement provider or other entity. Amounts recovered by Cascade as payment of amounts due shall be passed through to each Member in proportion to the share that each assumed, in cash or in credit against future Member Charges as the Board shall determine.

(d) The prevailing party in any such suit, action or proceeding, shall be entitled to recover its reasonable attorney fees and costs against the defaulting Member.

ARTICLE 8. Planning

Section 8.1 Water Supply Plan. Cascade must plan for its Members' water supply needs. That planning shall be to be compatible with the equivalent planning responsibilities of other wholesale water providers and with state, county and city planning responsibilities under the Growth Management Act. The Board must adopt, and may from time to time amend, a Water

Supply Plan that must be based on no less than a twenty- (20) year planning horizon. Cascade shall coordinate its planning effort with local and regional utilities and other appropriate agencies and work to encourage cooperative region-wide planning and coordination.

Each Member shall actively participate in Cascade's water supply planning and shall provide to Cascade accurate data regarding its facilities and operations together with good-faith estimates of future needs and a description of any involvement in the development of new Independent Supplies. Each Member's water comprehensive or system plan shall be consistent with any plans adopted by Cascade, and shall be consistent with applicable requirements of the Growth Management Act and comprehensive plans.

Section 8.2 Watershed Management Plan. Cascade may adopt Watershed Management Plans, as appropriate, for the watersheds within its service area provided that a Watershed Management Plan may take the place of, or may be incorporated into a Cascade Water Supply Plan. In fulfilling its responsibilities for watershed management, Cascade may enter into interlocal agreements with Non-Member municipalities to engage in watershed management, including development of Watershed Management Plans and the implementation and financing of such plans.

Section 8.3 System Reliability Methodology. Cascade shall develop and adopt a system reliability methodology for planning, operation and management purposes. Adoption and amendments to the system reliability methodology shall require a 65% Dual Majority Vote.

ARTICLE 9. Filings

This Contract must be filed with the King County Office of Records and Elections or with any other applicable county auditor, in accordance with RCW 39.34.040, and must be submitted

for review by the Washington State Department of Health and the Washington State Department of Ecology, in accordance with RCW 39.34.050.

ARTICLE 10. Duration and Dissolution; Withdrawal

Section 10.1 Duration. Except as provided in Section 10.3, Cascade shall remain in existence for the longer of the following: (a) the period it holds any assets; (b) the period during which Bonds are outstanding; or (c) the period it continues to include Members.

Section 10.2 Withdrawals. A Member may notify Cascade of its intent to withdraw by delivery to Cascade of a Resolution of its legislative authority expressing such intent. Upon receipt of such Resolution, the Member shall lose its right to vote and the Board shall determine: (a) the withdrawing Member's allocable share of the cost of the then-existing obligations of Cascade; and (b) the withdrawing Member's obligations to Cascade. "Then-existing obligations of Cascade" means obligations or costs incurred by Cascade as of the date the Member's withdrawal notice is received, including but not limited to Bond obligations, contract obligations and cash financed capital projects; provided that a withdrawing Member's allocable share shall in no event include an obligation for future expenses for which Cascade has not incurred a legal obligation; and provided further, that to the extent the Member's obligation (with respect to such costs) is re-paid over time, the Member shall be entitled to a credit for supply abandoned by the Member and is otherwise used by Cascade. A "withdrawing Member's obligation to Cascade" includes but is not limited to, the Member's share of fixed operating costs, any other expenses contained in Cascade's adopted budget for that year, and any assessments or other similar charges lawfully imposed by Cascade. For purposes of the preceding sentence, "fixed operating costs" shall be determined in the year of withdrawal, and the Member's obligation with respect to such

costs shall be limited only to that amount required to pay for supply abandoned by the Member and not otherwise used by Cascade.

The allocable share of cost or obligations shall be determined by the Board, taking into consideration as deemed applicable by the Board: (a) the ratio of the Member's Demand Share to total Member demand; (b) the ratio of the Member's contribution to Cascade revenue to total Cascade revenue including RCFCs; (c) the cost or a portion of the cost of capital projects or facilities specially benefiting the Member; and (d) and any other factor the Board deems appropriate to consider. The Member's withdrawal shall be effective on payment of such allocable share or provision for arrangements to pay such allocable share that are satisfactory to the Board. Until the effective date of withdrawal, the Member shall continue to comply with all applicable provisions of this Interlocal Contract.

Upon withdrawal, except as provided in an Asset Transfer Agreement, the withdrawing Member shall have no right to, or interest in any Water Supply Assets owned by Cascade. The withdrawing Member shall be deemed to have abandoned any and all rights to service, to the use of Cascade Water Supply Assets or other rights with respect to Cascade (except as otherwise expressly provided in this Contract).

Notwithstanding the provisions of this Section 10.2, Cascade will, upon the withdrawal of a Member that has transferred operational control and management of (but not title to) an Independent Supply Asset to Cascade under Section 5.1, return operational control of such asset to the withdrawing Member. Return of operational control and management will be subject to: (a) continued use by Cascade, to the extent and for such time as the Board deems such use necessary for Cascade to continue providing service to its Members; and (b) payment or provision for

payment of any Cascade costs, including but not limited, to those associated with the withdrawing Member's Independent Supply Asset.

The Board may establish additional generally applicable conditions and requirements for withdrawal.

Section 10.3 Dissolution. Cascade may be dissolved by a 65% Dual Majority Vote. Upon dissolution, except as provided in an Asset Transfer Agreement, Cascade's assets initially shall be held by its then current Members as tenants in common. Each Member's ownership interest must be based on that Member's Demand Share as of the time of the dissolution. Cascade's liabilities (including Bonds and other contractual obligations) initially shall be distributed based on Members Demand Shares as of the time of the dissolution. Assets and liabilities must be distributed in accordance with agreement or contract, under a voluntary mediation process, or by a court of law. A court may appoint an arbitrator or special master. Distribution shall be based on the best interests of efficient and economic water supply in the entire area served by the Members, subject to a rebuttable presumption that Water Supply Assets will be returned to the Member that originally transferred them to Cascade. That presumption may be overcome by a showing that another asset distribution is in the best interests of efficient and economic water supply. The proceeds of any sale of assets must be distributed among the then current Members based on the Demand Shares at the time of dissolution.

Section 10.4 Successor Entity. Notwithstanding the provisions of Section 10.3, upon a 65% Dual Majority Vote (ratified within one hundred and twenty (120) days by 65%), as measured by Dual Majority Vote of the Members' legislative authorities, all assets, liabilities, and obligations of Cascade may be transferred to any successor entity (including without limitation, a

joint operating agency or other municipal corporation, as permitted under state law), and all obligations of Members and parties contracting with Cascade become obligations to the successor entity.

ARTICLE 11. Amendments.

Amendments to this Contract shall be effective upon approval by 65% Dual Majority Vote (ratified within one hundred and twenty (120) days by 65%), as measured by Dual Majority Vote of the Members' legislative authorities.

ARTICLE 12. Applicable Law and Venue.

This Contract is governed by the laws of the state of Washington. The venue for any legal action arising from a dispute under this Contract is the Superior Court for King County.

ARTICLE 13. No Third Party Beneficiaries.

There are no third-party beneficiaries to this Contract except for the rights of Bond owners as provided in Section 5.3.2, no person or entity other than an agency signatory to this Contract shall have any rights hereunder or any authority to enforce its provisions, and any such rights or enforcement must be consistent with and subject to the terms of this Contract.

ARTICLE 14. Severability.

If any provision of this Contract or its application is held by a court of competent jurisdiction to be illegal, invalid, or void, the validity of the remaining provisions of this Contract or its application to other entities or circumstances shall not be affected. The remaining provisions continue in full force and effect, and the parties' rights and obligations must be construed and enforced as if the Contract did not contain the particular invalid provision. But if the invalid provision or its application is found by a court of competent jurisdiction to be substantive and to

render performance of the remaining provisions unworkable and infeasible, is found to seriously affect the consideration, and is inseparably connected to the remainder of the contract, the entire Contract is deemed void.

ARTICLE 15. Entire Agreement.

This Contract constitutes the entire and exclusive agreement between the parties relating to the specific matters covered in this Contract. All prior or contemporaneous verbal or written agreements, understandings, representations or practices relative to the foregoing are superseded, revoked and rendered ineffective for any purpose. This Contract may be altered, amended or revoked only as set forth in Article 11. No verbal agreement or implied covenant may be held to vary the terms of this Contract, any statute, law, or custom to the contrary notwithstanding.

ARTICLE 16. Execution.

This Contract may be executed in one or more counterparts.

Signatory Agency

By: ER Oberg

Title: Deputy City Manager Date: 04/15/2005

Attest: Myra L Basch

Title: City Clerk Date: 04/15/2005

Authorized by: Res. No. 7165
(Resolution or Ordinance)

Date: 4/4/2005

Approved as to form:
Patrice C. Cole
Assistant City Attorney

Cascade Water Alliance:

By: _____

Title: Chair Date: DECEMBER 15, 2004

Attest: _____

Title: General Manager Date: DECEMBER 15, 2004

Authorized by: Resolution No. 2004-18

Date: DECEMBER 15, 2004

1327-RES
3/31/2005

CITY OF BELLEVUE, WASHINGTON

RESOLUTION NO. 7165

A RESOLUTION authorizing and directing the City Manager to execute the Amended and Restated Cascade Water Alliance Interlocal Contract.

WHEREAS, the Cascade Water Alliance (Cascade) was formed in April 1999 pursuant to an Interlocal Contract for the purpose of providing water supply to meet the growing demands of its members, including the City of Bellevue; and

WHEREAS, amendments to the Interlocal Contract were approved in September 1999 and November 2002 by Cascade and the City of Bellevue; and

WHEREAS, the Cascade Board passed a resolution for the purpose of adopting amendments to the Interlocal Contract on December 15, 2004; and

WHEREAS, the Amended and Restated Interlocal Contract establishes 1) Cascade as a Watershed Management Partnership as provided in the Interlocal Cooperation Act (Chapter 39.34 RCW), and 2) overall structure and principles for financing projects, borrowing funds, issuing and securing debt; now, therefore,

THE CITY COUNCIL OF THE CITY OF BELLEVUE, WASHINGTON, DOES RESOLVE AS FOLLOWS:

Section 1. The City Manager or his designee is hereby authorized and directed to execute the Amended and Restated Cascade Water Alliance Interlocal Contract, a copy of which Contract has been given Clerk's Receiving No. 37403

Passed by the City Council this 4th day of April, 2005, and signed in authentication of its passage this 4th day of April, 2005.

(SEAL)

Connie B. Marshall

Connie B. Marshall, Mayor

Attest:

Myrna L. Basich

Myrna L. Basich, City Clerk

CASCADE WATER ALLIANCE

RESOLUTION NO. 2004-18

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE CASCADE WATER ALLIANCE, A WASHINGTON NONPROFIT CORPORATION, FOR THE PURPOSE OF ADOPTING AN AMENDED AND RESTATED INTERLOCAL CONTRACT

WHEREAS, the Cascade Water Alliance (Cascade) is a Washington Nonprofit Corporation composed of municipal corporations and special purpose Municipal Corporations which is organized under authority of the Interlocal Cooperation Act (Chapter 39.34 RCW) for the purpose of providing water supply to meet the growing demands of its Members and the region; and

WHEREAS, Cascade was formed in April 1999, according to the terms of an Interlocal Contract which established the basis for Membership and for developing the Cascade Water System; and

WHEREAS, The Board of Directors of Cascade approved Amendments to the Interlocal Contract in September 1999 and November 2002; and

WHEREAS, the Amended and Restated Interlocal Contract establishes 1) Cascade as a Watershed Management Partnership as provided in the Interlocal Cooperation Act (Chapter 39.34 RCW); and 2) overall structure and principles for financing projects, borrowing funds, issuing and securing debt;

NOW THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE CASCADE WATER ALLIANCE, as follows:

Section 1. The Board of Directors of Cascade approves and adopts the Amended and Restated Interlocal Contract, in the form attached to this Resolution; and

Section 2. The Board directs the Chair and General Manager to distribute the Amended and Restated Interlocal Contract for ratification by Members' legislative authorities.

ADOPTED AND APPROVED by the Board of Directors of the Cascade Water Alliance at a regular meeting thereof, held on this 15 day of December, 2004.

CASCADE WATER ALLIANCE

Grant Degginger, Chair

Stanley Stone, Vice Chair

Jim Haggerton, Secretary/Treasurer

Attest – Michael Gagliardo, General Manager

Members

Yes 7

No 0

Demand Share

Yes 99 %

No 0 %

CR# 39543 DATE 6/30/06 LOC 06-391

PIPELINE TRANSFER AND ACQUISITION AGREEMENT

THIS AGREEMENT ("Agreement") is between the CASCADE WATER ALLIANCE, a Washington public nonprofit corporation ("Cascade") and the CITY OF BELLEVUE, a municipal corporation ("Bellevue").

RECITALS

1. The Cascade Water Alliance is a public nonprofit corporation established by Interlocal Contract under the authority of Chapter 39.34 RCW, the Interlocal Cooperation Act, and incorporated under Chapter 24.03 RCW to further the interests of its members with respect to water supply and to work cooperatively with other water supply entities in the central Puget Sound region.

2. Bellevue owns a 24-inch water transmission main (the "Pipeline") that conveys water from the Seattle Inlet at the Eastside Reservoir to the intersection of 163rd and Newport Way in Bellevue.

3. Bellevue has agreed to transfer ownership of the Pipeline and its capacity to Cascade, and Cascade has agreed to accept ownership of the Pipeline and its capacity according to the terms and conditions of this Agreement.

4. After title to the Pipeline is transferred to Cascade, Cascade shall have responsibility for operations and maintenance of the Pipeline.

AGREEMENT

NOW, THEREFORE, the Parties agree as follows:

1. Cascade Acquisition of Pipeline. Cascade shall acquire from Bellevue exclusive title to the Pipeline, along with all appurtenances and real property interests (if any) associated with the Pipeline as provided in this Agreement. The Pipeline consists of water pipelines, valves, fittings, thrust restraint, and appurtenances from a point of connection from the Seattle Inlet at the Eastside Reservoir to a point of connection with the Issaquah pipeline purchased by Cascade in December, 2004 at the intersection of 163rd and Newport Way in Bellevue, as more fully set forth in Exhibit A.

2. Transfer of Pipeline and Capacity. Bellevue shall convey the Pipeline and the Pipeline's capacity to Cascade as follows:

   A. Bellevue shall transfer the Pipeline and its capacity to Cascade without monetary consideration; provided that, if in the future Cascade provides compensation to any of its members for the transfer of member assets that are to be used by or for the benefit of Cascade and its members, Cascade shall compensate Bellevue for the reasonable value of the Pipeline as of the original date of the transfer.

   B. In consideration of the transfer of the Pipeline and its capacity, Cascade shall

accept ownership of the Pipeline and operate and maintain the Pipeline such that water delivery to its members is consistent with the Cascade Interlocal Contract. Cascade may enter into a contract with another party (which may be a Cascade Member) for maintenance and operations of the Pipeline. Cascade shall provide Bellevue with water supply at a point of delivery at 161st and Newport Way such that Bellevue can continue to provide necessary supply to its customers served from the Pipeline.

C. Bellevue shall retain ownership of and operation responsibility for the booster pump station located at 161st and Newport Way; provided that all of Bellevue's costs associated with the booster pump station, including but not limited to, operations, maintenance, repair and replacement costs, shall be Cascade's responsibility. Costs associated with the booster pump station shall include, but not be limited to, all time and materials and 3rd party expenditures/billables (e.g. power bills) and include an amount not to exceed 18% for overhead and other indirect costs. The 18% overhead rate shall be periodically reviewed and adjusted as necessary to ensure consistency with Bellevue overhead rates. Cascade shall no longer be responsible for costs associated with the booster station if Cascade changes the operation of its system such that the booster pump station is no longer necessary, so long as Bellevue's water supply service to its customers is not adversely impacted. Cascade shall continue to be responsible for any removal or decommissioning costs associated with the pump station.

D. For all non-emergency maintenance and/or repair activities conducted on that segment of the Pipeline situated within Eastgate Park, as depicted on Exhibit A to this Agreement, Cascade agrees to obtain a properly executed Right of Entry from Bellevue, which Right of Entry shall not be unreasonably withheld. Cascade further agrees to return the Eastgate park property to its pre-maintenance or pre-repair condition at the termination of any such activity.

E. Bellevue shall provide Cascade with an easement for operation, maintenance, repair or replacement of the segment of the Pipeline situated in Eastgate Park, as depicted on Exhibit A to this Agreement.

3. Indemnification and Hold Harmless. Cascade shall indemnify, defend and hold harmless Bellevue, its officers, agents and employees, from and against any and all claims, losses, or liability, including attorneys' fees, arising from injury or death to persons or damage to property occasioned by any act, omission or failure of Cascade, its officers, agents or employees, in the performance of this Agreement. This includes but is not limited to any liabilities resulting from:

A. Construction of upgrades to the Pipeline as required by this Agreement or by the Pipeline Operations Agreement.

B. The transition of service from Bellevue to Cascade's supply system.

C. Leaks or breaks in the Pipeline after the execution of this Agreement.

D. Prior and future actions of Cascade and its agents other than Bellevue.

4. Closing. The parties shall not be obligated to close unless and until each party has

performed its covenants and obligations hereunder.

A. Closing shall occur on or before _____ 2006 at the offices of_____, or at such other time and place agreeable to the parties. Bellevue and Cascade shall each be responsible for one-half of the closing costs.

B. At closing CASCADE shall deliver to BELLEVUE:

1. A duplicate original of the Pipeline Operations Agreement properly executed by Cascade.

C. At closing BELLEVUE shall deliver to CASCADE:

1. A Bill of Sale transferring to Cascade all of Bellevue's right, title and interest in the Pipeline and its capacity and warranting that Bellevue has exclusive title to the Pipeline. Other than the above warranties, the Bill of Sale shall indicate that the sale is an "As Is" sale, with no other warranties, express or implied.

2. Properly executed conveyance documents conveying to Cascade those real estate interests (if any) associated with the Pipeline.

3. A duplicate original of the Pipeline Operations Agreement properly executed by Bellevue.

4. "As Built" Pipeline documents in the possession of Bellevue.

D. When the requirements of 3(B) and 3(C) have been fulfilled, this transaction shall be closed without further instruction.

E. To the extent that there are any taxes, special assessments or utility service fees relating to the Pipeline or its use that are the legal obligation of one party but are attributable in part to a time period during which that party did not have possession of the Pipeline, then the parties will share in the obligation to pay such taxes, assessments or fees on the basis of a proration as of Closing. Cascade may record such deeds, assignments and other transfer documents as it desires and shall pay the cost thereof. Based on current State law, the Parties do not expect that any retail sales tax, use tax, real estate excise tax or any other transfer tax will be due on the contemplated transfer. However, if any such tax is due, the Party legally obligated to pay such tax shall do so.

5. Transfer of Responsibility.

A. Effective 12:01 a.m. on the day immediately following Closing, Bellevue relinquishes responsibility for the Pipeline to Cascade, and Cascade assumes responsibility for the Pipeline on that date.

B. Effective 12:01 a.m. on the day immediately following Closing, Cascade shall be fully responsible for the Pipeline at Cascade's sole cost. The Pipeline shall be operated

by Cascade as a regional facility, providing water supply to Cascade members that can be served by the Pipeline.

C. The Pipeline shall be operated according to requirements of law and the terms and conditions of the Pipeline Operations Agreement and the Cascade Interlocal Contract. Cascade shall maintain the Pipeline in accordance with the more stringent of industry standards or standards adopted by Cascade. Cascade shall maintain the Pipeline in accordance with industry standards such that if or when Bellevue withdraws from Cascade or Cascade dissolves, the Pipeline will be in a reasonable condition based upon the length of time it has been in service.

D. Cascade's ownership of the Pipeline shall be subject to the following limitations should Bellevue withdraw from Cascade or should Cascade dissolve.

1. Bellevue withdraws from Cascade:

a. Cascade will continue to own and be responsible for the Pipeline.

b. When Bellevue withdraws, Cascade shall continue to deliver water purchased by Bellevue from sources other than Cascade, through the Cascade Supply System, in an amount equal to the volume of Cascade water received by Bellevue through the Pipeline, at a cost equal to a then agreed upon fair share of Cascade costs. This cost may include operational and future replacement costs. Provided however, if Cascade chooses to upsize the Pipeline to meet its own needs, Bellevue will not be responsible for any of that cost, and Cascade will continue to provide service as provided in this Section 4(D)(1)(b).

2. Cascade Dissolves:

a. The Pipeline and its capacity shall be returned to Bellevue at no cost with no warrantees, guarantees or encumbrances and shall not be subject to Article 10 "Duration and Dissolution; Withdrawal" of the Cascade Water Alliance Interlocal Contract.

b. Bellevue, as owner of the Pipeline, shall continue to allow access by agencies that depended upon this facility for supply service while it was owned by Cascade and shall wheel water for agencies that received supply from Cascade through this facility at a fair cost to be negotiated during the dissolution procedures of Cascade. This cost may include operational and future replacement costs.

6. Severability. The invalidity or unenforceability of any provisions of this Agreement shall not affect the other provisions hereof, and this Agreement shall be construed in all respect as if such invalid or unenforceable provisions were admitted.

7. Amendment. No change, amendment or modification of any provisions of the

Agreement shall be valid unless set forth in a written amendment to this Agreement signed by both parties.

8. Authorization. By signing this Agreement, each party certifies that it has the authority to bind its respective governing bodies to all of the terms and conditions of this Agreement.

9. Effective Date. This Agreement is effective upon the date of the last signature below.

CASCADE WATER ALLIANCE, a Washington nonprofit corporation

By: _____
Its: CHAIR
Dated: 6-30-06

Attest:
SECRETARY OF THE BOARD
By: _____

Approved as to form:

By: _____
Attorney for Cascade

CITY OF BELLEVUE, a municipal corporation

By: _____
Its: Interim Deputy City Mgr
Dated: 6-30-06

Attest:
CITY CLERK

By: _____

Approved as to form:

By: _____
Asst. City Attorney

CR# 39544 DATE 6/30/06 LOC 06-391

Pipeline Operations Agreement

AGREEMENT FOR OPERATIONS AND MAINTENANCE OF CASCADE WATER ALLIANCE PIPELINE

THIS Pipeline Operations Agreement between the CASCADE WATER ALLIANCE, a Washington public nonprofit corporation ("Cascade"), and the CITY OF BELLEVUE, a municipal corporation ("Bellevue") is made this ____ day of _____, 2006.

WHEREAS, the Cascade Water Alliance is a public nonprofit corporation established by Interlocal Contract under the authority of Chapter 39.34 RCW, the Interlocal Cooperation Act, and incorporated under Chapter 24.03 RCW to further the interests of its members with respect to water supply and to work cooperatively with other water supply entities in the central Puget Sound region, and

WHEREAS, pursuant to the Pipeline Transfer and Acquisition Agreement, Bellevue transferred ownership to Cascade of a 24-inch transmission main ("the Pipeline") consisting of water pipelines, valves, fittings, thrust restraint and appurtenances from the point of connection from the Seattle inlet at the Eastside Reservoir to a point of connection at the intersection of 163rd and Newport Way in Bellevue, Washington, and

WHEREAS, Cascade does not have staff to perform maintenance and operations of its newly acquired Pipeline facilities, and

WHEREAS, Bellevue is willing to perform such maintenance and operations on behalf of Cascade, and

WHEREAS, Cascade wishes to contract with Bellevue for the operations and maintenance of its Pipeline facilities from the point of connection from the Seattle inlet at the Eastside Reservoir to a point of connection at the intersection of 163rd and Newport Way in Bellevue, Washington,

NOW THEREFORE, the Parties agree to the following:

1. CASCADE WATER ALLIANCE:

A. Cascade is responsible for the operations and maintenance of the Pipeline facilities and is contracting the performance of such work to Bellevue.

B. Cascade will determine with Bellevue how best to operate the Pipeline facilities to ensure adequate water supply and water quality in accordance with the Cascade Interlocal Contract. Bellevue will continue to operate and maintain the Pipeline in accordance with its current practices, until Bellevue and Cascade develop mutually agreeable operating guidelines.

C. This Agreement does not delegate Cascade's responsibility under the Cascade Interlocal Contract for the delivery of water supply and the water quality of such supply to any of its members.

2. BELLEVUE:

Bellevue shall operate and maintain the Pipeline facilities, on behalf of Cascade, located from the point of connection from the Seattle inlet at the Eastside Reservoir to a point of connection at the intersection of 163rd and Newport Way in Bellevue, Washington.

3. OPERATIONS:

Bellevue agrees to coordinate and cooperate with Cascade on operation and maintenance of Cascade's Pipeline facilities to help Cascade ensure the delivery of water supply of quality and quantity in accordance with the Cascade Interlocal Contract.

4. COST REIMBURSEMENT:

A. Cascade shall reimburse Bellevue for all time and materials and 3rd party expenditures/billables (e.g. power bills) used to perform the required maintenance and operations of the Pipeline facilities in accordance with Cascade standards. Included shall be an amount not to exceed 18% for overhead and other indirect costs attributable to the performance of such maintenance and operations. The 18% overhead rate shall be periodically reviewed and adjusted as necessary to ensure consistency with Bellevue overhead rates.

B. Bellevue shall provide Cascade a semi-annual invoice for all costs associated with providing such operations and maintenance.

C. Cascade shall pay such invoice within 30 days of receipt.

5. LIABILITY/HOLD HARMLESS:

A. Bellevue shall indemnify, defend, and hold harmless Cascade, its officers, agents and employees, from and against any and all claims, losses, or liability, including attorneys' fees, arising from injury or death to persons or damage to property occasioned by any act, omission or failure of Bellevue, its officers, agents and employees, in the performance of this Agreement and as to claims against Cascade, its officers, agents and employees, Bellevue expressly waives its immunity under Title 51 of the Revised Code of Washington, the Industrial Insurance Act, for injuries to its employees and agrees that the obligation to indemnify, defend and hold harmless provided for in this paragraph extends to any claim brought by or on behalf of any employee of Bellevue. To the extent any of the damages referenced by this paragraph were caused by or resulted from the concurrent negligence of Cascade, its agents or employees, this obligation to indemnify, defend and hold harmless is valid and enforceable only to the extent of the negligence of Bellevue, its officers, agents and employees.

B. Cascade shall indemnify, defend, and hold harmless the City of Bellevue, its officers, agents and employees, from and against any and all claims, losses, or liability, including attorneys' fees, arising from injury or death to persons or damage to property occasioned by any act, omission or failure of Cascade, its officers, agents and employees, in the performance of this Agreement and as to claims against Bellevue, its officers, agents and employees, Cascade expressly waives its immunity under Title 51 of the Revised Code of Washington, the Industrial Insurance Act, for injuries to its employees and agrees that the obligation to indemnify, defend and hold harmless provided for in this paragraph extends to any claim brought by or on behalf of any employee of Cascade. To the extent any of the damages referenced by this paragraph were caused by or resulted from the concurrent negligence of Issaquah, its agents or employees, this obligation to indemnify, defend and hold harmless is valid and enforceable only to the extent of the negligence of Cascade, its officers, agents and employees.

6. DISPUTE RESOLUTION:

Both parties to this Agreement shall use every reasonable effort to resolve any maintenance or operational issue arising under Agreement or any dispute regarding the eligibility of costs for reimbursement by Cascade. In the event the parties are not able to resolve a dispute arising under this Agreement, the issue shall be directed to the General Manager of Cascade and the Utilities Director or other designee of Bellevue for resolution. In the event that resolution is still not reached, the General Manager and Utilities Director or other designee shall agree to the appointment of a mutually acceptable third party who shall meet with the parties, hear argument and provide a written decision which shall be advisory but non-binding on the parties.

7. AUTHORITY:

By signing this Agreement, each party certifies that it has the authority to bind its respective governing bodies to all of the terms and conditions of this Agreement. This Agreement may be terminated by either party upon giving the other party 6 months prior written notice. The provisions of Paragraph 5 shall survive termination of this Agreement.

8. EFFECTIVE DATE:

This Agreement is effective upon the date of last signature below.

CASCADE WATER ALLIANCE, a
Washington nonprofit corporation

By: _____
Its: CHAIR
Dated: 5-30-06

Attest:
SECRETARY OF THE BOARD
By: Jim Haggerton

Approved as to form:
By: Dallon Reiten
Attorney for Cascade

CITY OF BELLEVUE, a municipal corporation

By: Brad Miyake
Its: Interim Deputy City Mgr
Dated: 6-30-06

Attest:
CITY CLERK

By:_____

Approved as to form:

By: Patricia C. Cole
City of Bellevue Attorney

ORIGINAL

1353-RES
5/27/2005

CITY OF BELLEVUE, WASHINGTON

RESOLUTION NO. 7196

A RESOLUTION authorizing and directing the City Manager to execute Amendment No. 1 to the Interlocal Operation and Maintenance Agreement among the cities of Bellevue, Redmond and Kirkland for water system facilities.

WHEREAS, the City of Bellevue, the City of Redmond and the City of Kirkland entered into an Interlocal Operation and Maintenance Agreement in 1997 for the operation and maintenance of jointly owned water system facilities that were acquired with the assumption of the Rose Hill Water District; and

WHEREAS, under the 1997 agreement, Redmond and Bellevue paid Kirkland for water purchases that Kirkland made from Seattle; and

WHEREAS, the Cascade Water Alliance (Cascade) was formed in April 1999 pursuant to an Interlocal Contract for the purpose of providing water supply to meet the growing demands of its members, including Bellevue, Redmond and Kirkland; and

WHEREAS, the Amendment No. 1 recognizes that Bellevue, Redmond and Kirkland now pay Cascade Water Alliance directly for water supply; now therefore,

THE CITY COUNCIL OF THE CITY OF BELLEVUE, WASHINGTON, DOES RESOLVE AS FOLLOWS:

Section 1. The City Manager or his designee is hereby authorized and directed to execute Amendment No. 1 to the Interlocal Operation and Maintenance Agreement among the cities of Bellevue, Redmond and Kirkland for water system facilities, a copy of which Agreement has been given Clerk's Receiving No. 37670.

Passed by the City Council this 6th day of June, 2005, and signed in authentication of its passage this 6th day of June, 2005.

(SEAL)

Connie B. Marshall
Connie B. Marshall, Mayor

Attest:

Myrna L. Basich
Myrna L. Basich, City Clerk

After recording return to:

_____

_____

_____

CR# 37620 DATE 6-8-05 LOC 05-488

Acs 7186

AMENDMENT NO. 1
TO
INTERLOCAL OPERATION AND MAINTENANCE AGREEMENT

THIS AMENDMENT NO. 1 to that certain Interlocal Operation and Maintenance Agreement dated October 9, 1997 (the "1997 Agreement") is made by and between the cities of Kirkland ("Kirkland"), Redmond ("Redmond") and Bellevue ("Bellevue"), all municipal corporations in King County, Washington, collectively referred to as the "Cities" for the purposes set forth herein.

RECITALS

A. The Cities previously entered into an Assumption Agreement whereby the Cities assumed the assets, liabilities and operations of the Rose Hill Water District, a former municipal corporation in King County, Washington.

B. Section 5 of the 1997 Agreement provides for the purchase of water from the City of Seattle, and anticipates the possibility that the City of Seattle may choose not to renew its purveyor contract with Kirkland.

C. The City of Seattle has chosen not to renew the existing purveyor contract with Kirkland.

D. The Cascade Water Alliance is a regional water supply organization ("Cascade") of which the Cities are members.

E. The Cities wish to amend the 1997 Agreement to reflect the purchase of water from Cascade as of January 1, 2004;

NOW, THEREFORE, in consideration of the terms and conditions contained herein, the parties agree as follows:

1. Water Supply. Section 5 of the 1997 Agreement is deleted in its entirety and replaced with the following:

> 5. Water Supply. Kirkland, Redmond and Bellevue shall each contract with the Cascade Water Alliance ("Cascade") for the purchase of their respective water supplies, and shall pay all applicable costs of supply to Cascade in accordance with such agreements. Kirkland shall operate the Joint Facilities to distribute Cascade water to Kirkland, Redmond and Bellevue.

2. Water Usage. Section 6 of the 1997 Agreement is amended by deleting the reference to the "City of Seattle" and replacing it with "Cascade."

3. Water Supply, Operation and Maintenance Costs. Subsections 9(a), 9(b), 9(e), and 9(i) of the 1997 Agreement are deleted and replaced with new subsections 9(a), 9(b), 9(e) and 9(i) to read as follows:

> a. Water Charges. The charge for water shall be paid directly by each city to Cascade in accordance with Cascade's membership agreement and resolutions.
>
> b. Meter Charges. There are no Cascade meter charges for the supply meters. There shall be no charges for any city-operated master meter. Costs associated with the operation and maintenance of master meters shall be borne by the city served by the master meter. City-operated master meters will be tested and calibrated as determined by the Joint Board.
>
> e. Administration Charges. Kirkland shall assess Redmond and Bellevue based on water usage for their proportionate shares of the administrative costs incurred by Kirkland to provide administrative activities and duties for this Agreement and operation and maintenance of the joint facilities for which Kirkland is responsible. These administrative activities include but are not limited to financial and accounting services, record keeping, and billing.
>
> i. Demand Metering. This subsection is deleted.

4. Water Supply, Operation and Maintenance Payments. Subsections 10(b) and 10(c) of the 1997 Agreement are deleted and replaced with new subsections 10(b) and 10(c) to read as follows:

> b. Supply and Consumption Reports. Kirkland shall prepare a supply and consumption report for each month of the year within ninety (90) days of the end of each such month. The report shall indicate the total purchased supply, the wholesale usage and retail water usage reported by each city, and the unaccounted

water usage calculated for each city. This report shall correlate the total purchased supply and reported usages to actual calendar periods of use as may be determined based on the varying meter read dates and frequency of meter readings. Kirkland shall provide copies of the monthly supply and consumption reports to Cascade.

c. Billings and Payments. Each city shall invoice the other cities monthly or quarterly as determined by the billing city for any charges authorized herein.

5. Seattle Water Purveyor Contract. Section 11 of the 1997 Agreement is hereby deleted in its entirety.

6. Severability. The invalidity of any clause, sentence, paragraph, subdivision, section or portion of this Amendment No. 1 shall not affect the validity of the remainder of this agreement.

7. Counterparts. This document may be signed in two or more counterparts, all of which, when considered together, shall constitute one fully executed document.

8. Effective Date and Ratification. This Amendment shall take effect upon signature by each City and filing with the King County Department of Records and Elections. The Cities intend that this Amendment relate back to January 1, 2004, and this Amendment shall ratify the prior oral understandings between the parties now set forth in this Amendment.

Except as expressly modified by this Amendment No. 1, all terms and conditions of the 1997 Agreement shall remain in full force and effect.

EXECUTED by the parties on the dates set forth below.

CITY OF KIRKLAND

By: _____
Its: ASSISTANT CITY MANAGER
Dated: 7/11/05

APPROVED AS TO FORM:

By: _____ 07/08/05
Kirkland City Attorney Date

CITY OF REDMOND

By: _____
Its: MAYOR
Dated: 4-5-2005

APPROVED AS TO FORM:

By: _____ 4/5/05
Redmond City Attorney Date

CITY OF BELLEVUE

By: [illegible]
Its: Deputy City Manager
Dated: 6/8/05

APPROVED AS TO FORM:

By: Patricia Cole 5/23/05
Bellevue City Attorney Date

{ASB571685.DOC;1/00020.900175/}

ORIGINAL

FILED NO. 24972
CITY OF BELLEVUE
DATE 10/13/97
M. Reel
CITY CLERK'S OFFICE

INTERLOCAL OPERATION AND MAINTENANCE AGREEMENT

This Agreement is made by and between the Cities of Kirkland ("Kirkland"), Redmond, ("Redmond"), and Bellevue, ("Bellevue"), municipal corporations in King County, Washington, collectively referred to as the "Cities" for the purposes set forth herein.

RECITALS

A. The Cities have previously approved an Assumption Agreement whereby the Cities have assumed the assets, liabilities and operations of the Rose Hill Water District, a municipal corporation in King County, Washington ("District").

B. Prior to the assumption of the District by the Cities, Kirkland and Bellevue maintained jointly owned water facilities with the District pursuant to various interlocal agreements providing for such. In addition, Redmond entered into certain interlocal agreements with the District regarding water system operation and water supply. Upon the effective date of the assumption of the District by the Cities, the Cities have assumed ownership and responsibility for the District's water supply facilities within the Cities' respective service areas. However, certain District facilities will continue to be jointly owned and operated by the Cities in accordance with the terms of the Assumption Agreement and their respective undivided ownership interests in such facilities.

C. The purpose of this Agreement is to provide for the respective responsibilities and obligations of the Cities to provide for the ongoing operation and maintenance of water supply facilities ("joint facilities") within the common service areas as further described in this Agreement.

D. The Cities are authorized by Chapter 39.34 RCW, the Interlocal Cooperation Act, to enter into interlocal agreements for the joint action referenced herein.

NOW, THEREFORE, in consideration of the terms and conditions contained herein, the parties agree as follows:

1. Modification of Assumption Agreement. Exhibit C to the Assumption Agreement describes the jointly owned facilities and the distribution of ownership believed appropriate at the time the Assumption Agreement was executed. After additional evaluation it has been determined that modifications to the designation of jointly owned facilities and the distribution of ownership are necessary. Therefore, Attachment "A" to this Interlocal Operation and Maintenance Agreement supersedes Exhibit C to the Assumption Agreement.

2. Service Areas. Each City shall be the direct provider of water service within its service area. For purposes of this Agreement, "service area" means that portion of the City's incorporated area that overlays a portion of the previous District area together with adjacent unincorporated areas as more generally described as follows:

a. The service area for Bellevue shall be that area existing within the Bellevue city limits as of the effective date of this Agreement.

b. The service area for Kirkland shall be that area existing within the Kirkland city limits as of the effective date of this Agreement and any District service areas that are in unincorporated King County lying west of 132nd Avenue NE and its northerly extension.

c. The service area for Redmond shall be that area existing within the Redmond city limits as of the effective date of this Agreement and any District service areas that are in unincorporated King County lying east of 132nd Avenue NE and its northerly extension.

d. Any unincorporated area previously within the Rose Hill Water District Boundaries which is subsequently annexed into a City shall remain in or be transferred to the service area of the annexing City.

3. Meter Areas. Within each City's service area there are hereby established "direct read meter areas" and "master meter areas."

a. Direct read meter areas are within the previous District service area between the Seattle meters in place as of the effective date of the Assumption Agreement and the points at which City master meters exist or are installed in the future. Direct read meter areas indicate retail water usage within that area.

b. Master meter areas are those areas previously served by the District outside of the previous District service area boundary and downstream from City master meters.

4. City Master Meters are those existing or future meters that meter water to master meter areas.

5. Water Supply.

a. Kirkland shall purchase water from The City of Seattle for supply to the service areas of Kirkland, Redmond and Bellevue and shall sell water to Redmond and Bellevue.

b. Where Bellevue's direct service area lies within a portion of Redmond's master meter area, Redmond shall sell water to Bellevue to serve such area.

c. In the event The City of Seattle chooses to modify the purveyor contract with Kirkland to limit the quantity of supply to Kirkland, Kirkland shall continue to supply the service areas of Redmond and Bellevue. The quantity to be supplied to Redmond and Bellevue shall then be the amount of supply allocated to Kirkland from Seattle divided amongst the three cities in proportion to the percent ownership in the joint facilities as stated in Section 4 of Attachment A. Bellevue customers served by Redmond or Kirkland shall continue to receive their allocation based upon the average of the demand for the previous three years limited in the same proportion as are Kirkland and Redmond customers. Kirkland shall not be obligated to supply water to Redmond and Bellevue in excess of the respective City's proportionate amount supplied by The City of Seattle.

d. In the event Seattle chooses to not renew its purveyor contract with Kirkland, Kirkland shall not be obligated to supply water to Redmond and Bellevue. In the event that the supply from the City of Seattle is limited or eliminated by Seattle, the Joint Board shall evaluate and make recommendations to the Councils of the three cities on the alternatives to be considered and pursued for additional or alternate source(s) of supply.

e. In the event a regional water supply authority or water supply other than The City of Seattle is formed, the Councils of Redmond and Kirkland shall determine if Kirkland, or Kirkland and Redmond should jointly contract for supply from the new authority and whether to amend or terminate the City of Seattle contract ("Purveyor Contract") and/or this Agreement.

6. Water Usage. The water usage within the direct read meter areas shall be referred to as "retail water" and the water usage through master meters shall be referred to as "wholesale water." The water loss within the direct read meter areas to uses including but not limited to flushing, construction, leakage and firefighting shall be referred to as "unaccounted water." The usage of each City shall be computed for retail water, wholesale water and unaccounted water separately. Unaccounted water usage shall be determined by subtracting the wholesale water usage and retail water usage for each of the three Cities from the quantity of water purchased from The City of Seattle. The unaccounted water shall then be allocated to each of the Cities in proportion to the amount of retail water used within each City's direct read meter areas.

7. Operation and Maintenance. Kirkland and Redmond shall be jointly responsible for performing the operation and maintenance of any facilities jointly owned by the Cities. Redmond shall operate, maintain and repair any jointly owned water lines within the Redmond service area. Kirkland shall operate, maintain and repair all other jointly owned facilities.

Kirkland, Redmond and Bellevue each agree to not operate their facilities which are not joint-use facilities in any way which would be detrimental to the operations of any city. If a situation arises between the cities, the Joint Board shall determine how the water system shall be operated and maintained to the benefit of all cities.

8. Establishment of a Joint Board. The Cities hereby establish a Joint Board which shall provide oversight for the planning and performance of operations, maintenance, extraordinary maintenance, repair, and replacement of the joint facilities. The Joint Board shall be authorized to negotiate and execute leases of joint facilities. The Joint Board shall meet at least annually and shall be comprised of the Public Works Director (or equivalent department head) of each City or his/her designee. Should the Public Works Director or equivalent department head of any city appoint an alternate representative to the Joint Board, such appointment shall be in writing to the other cities by the Public Works Director or equivalent department head.

A quorum at any meeting of the Joint Board shall consist of a simple majority of the Joint Board's membership. All Joint Board members shall have one equal vote and, except as provided otherwise herein, all actions required to be authorized by vote of the Joint Board shall require approval of a majority of those present; provided however, that if the proposed action directly pertains to the operations, maintenance, extraordinary maintenance, repair or replacement of a particular jointly-owned facility, then the Joint Board action shall be by weighted majority vote based on the percentage of ownership interest of each City in the particular jointly owned facility to be operated, maintained, repaired or replaced.

9. Water Supply, Operation and Maintenance Costs. Costs for water supply and water system operation, maintenance, extraordinary maintenance, repair and replacement as further defined herein, shall be shared by the Cities and shall consist of the following components:

a. Water Charges: The water rates for wholesale water, retail water and unaccounted water shall be the commodity rates charged by the City of Seattle for the type of water (old, new) and for the period consumed (summer, winter). This rate shall also include but not be limited to emergency surcharges and applicable commodity or other charges or surcharges established by the City of Seattle.

b. Meter Charges: The meter charges for the City of Seattle meters shall initially be allocated to each City as follows:

Kirkland:	65%
Redmond:	35%
Bellevue:	0%

The percentage allocation of meter charges to the Cities shall be reviewed annually by the Joint Board on or about January 1 and shall be adjusted, if deemed necessary by the Joint Board, based upon the total quantity of water usage by each City in proportion to the total quantity of water purchased through the Seattle meters for the previous year.

There shall be no charges for any City-operated master meter. Costs associated with the operation and maintenance of master meters shall be borne by the City served by the master meter. City operated master meters will be tested and calibrated in even numbered years by the City served by the master meter.

c. Operation Charges. Kirkland shall assess Redmond and Bellevue for their proportionate shares of labor and costs incurred in the daily operation of the joint facilities based on water usage. Operation of the joint facilities shall include but not be limited to the operation of the instrumentation/control systems for such joint facilities, and for controlling the rate of flow from the Seattle supply facilities. The operation charges shall be actual expenses incurred including overhead. These expenses shall be subject to periodic review by the Joint Board at least every two (2) years.

d. Maintenance Charges: Kirkland shall assess Redmond and Bellevue, and Redmond shall assess Kirkland and Bellevue, based on their respective ownership interests in the joint facilities, for providing routine maintenance of and repairs to the joint facilities for which Kirkland or Redmond is responsible based upon service area location. These maintenance and repair activities include but are not limited to maintenance and repair of the instrumentation/control system for the joint facilities, maintenance and repair of the reservoirs, jointly owned pipelines, pumping facilities, reservoir control facilities, landscape maintenance and groundskeeping for the various joint facilities, and other activities of a similar nature. Redmond shall make similar assessments for routine maintenance of joint pipeline facilities within its service area. The Cities' ownership interests in the joint facilities are identified in Attachment A to this Agreement.

The maintenance charges from Kirkland to Redmond and Bellevue shall be actual expenses incurred including overhead. The maintenance charges from Redmond to Kirkland and Bellevue shall be actual expenses incurred including overhead. These expenses shall be subject to periodic review by the Joint Board at least every two (2) years.

e. Administration Charges: Kirkland shall assess Redmond and Bellevue based on water usage for their proportionate shares of the administrative costs incurred by Kirkland to provide administrative activities and duties for this Agreement and operation and maintenance of the joint facilities for which Kirkland is responsible. These administrative activities include but are not limited to coordination with the City of Seattle, financial and accounting services, record keeping, and billing.

The administrative charges shall be actual costs incurred including overhead. These charges shall be subject to periodic review by the Joint Board at least every two (2) years.

f. Insurance: The Joint Board shall determine the nature and amount of hazard and liability insurance to be provided for the joint facilities and their operation. Each City may but shall not be required to maintain casualty insurance for all risks of direct physical loss from external cause on the jointly-owned facilities to the extent of their interest at the current replacement cost of such improvements, which costs shall be updated annually. The Cities may agree that one of the Cities may obtain such insurance

naming the other Cities as named insureds and for the sharing of the costs of such insurance based upon the percentage of ownership of the joint facilities by each respective City.

g. Special Assessments.

1) Special Assessments for Emergency Items. Special assessments shall be made for emergency maintenance, repair, and replacement activities of the joint facilities. Emergency maintenance, repair, or replacement activities shall be defined as maintenance, repair, or replacement of joint use facilities requiring immediate attention and, without such attention, could cause a disruption to water supply or quality. The Joint Board shall have the authority to approve and assess such special assessments based on actual costs of such emergency maintenance, repair, or replacement activities as demonstrated by an accounting of time and materials; provided, however, any such special assessment approved by the Joint Board, to the extent it exceeds ~~$50,000.00~~ $25,000.00 for any City, shall not obligate such City until and unless approved by that City, unless that City delegates by appropriate legislative action the authority to its representative on the Joint Board to approve a larger special assessment on its behalf. This amount may be adjusted every five (5) years by the Joint Board by an amount not to exceed increased costs due to inflation. In calculating such adjustments, the Joint Board may rely on consumer price indices for the Seattle-Metropolitan area and similar locally available indices. Time and materials shall include labor, benefits, overhead, materials, taxes and contract amounts. Each City shall be assessed such special assessment based on its respective ownership interest in the joint facility under emergency maintenance or repair.

9-29-97

2) Special Assessments for Extraordinary Items. Special assessments may also be made for extraordinary maintenance, repair and replacement activities of the joint facilities or joint capital improvement project for new or existing joint facilities. Extraordinary maintenance, repair and replacement activities may include but are not limited to coating, replacement, and structural repairs of the water storage facilities, and replacement of joint facilities (pipelines, pumps, motors, valves, vaults, supply meters and structures).

3) Destroyed or Damaged Facilities. In the event any of the joint facilities are destroyed or irreparably damaged by any cause, the facility so destroyed or damaged shall be promptly replaced by the Cities and the cost thereof shall be paid in the same proportion as the ownership of the facility. The Cities may, by unanimous agreement, determine that such facilities need not be replaced or reconstructed if the Joint Board finds the facilities are no longer necessary to the efficient provision of water supply.

h. Charges Between Cities. All charges assessed by one City against either of the other Cities for operation, maintenance, administration or special assessment shall include supporting documentation justifying said charges.

i. Demand Metering. Kirkland shall be responsible for demand metering as required in it's Purveyor Contract with the City of Seattle. During the demand metering period of June 1 through August 31, Redmond and Bellevue must notify Kirkland of their planned withdrawal rates by 8:00 a.m. daily to allow Kirkland sufficient time to set flow rates from the Seattle meters. The Joint Board will determine how to distribute the cost of a surcharge between the Cities.

j. Response to Emergencies. Costs of emergency response or repair activities to a joint facility by either City shall be allocated between the Cities based upon the percentage of ownership in the joint facility(s) involved.

10. Water Supply, Operation and Maintenance Payments.

a. Meter Reading. The Cities shall read their master meters and direct read meters as follows:

1) Redmond: Kirkland shall read Redmond's master meters at least monthly. Redmond shall read its direct read meters monthly or bimonthly in accordance with Redmond's policies and procedures. Redmond shall report to Kirkland the retail usage and the meter read dates within thirty (30) days of meter reading.

2) Bellevue: Kirkland shall read Bellevue's master meters at least monthly. Bellevue shall read its direct read meters monthly or bimonthly in accordance with Bellevue policies and procedures. Bellevue shall report to Kirkland the retail usage and meter read dates within thirty (30) days of meter reading.

3) Kirkland: Kirkland shall read its master meters at least monthly and shall read its direct read meters monthly or bimonthly in accordance with Kirkland policies and procedures.

b. Supply and Consumption Reports. Kirkland shall prepare a supply and consumption report for each month of the year within ninety (90) days of the end of each such month. The report shall indicate the total purchased supply, the wholesale usage and retail water usage reported by each City, and the unaccounted water usage calculated for each City. This report shall correlate the total purchased supply and reported usages to actual calendar periods of use as may be determined based on the varying meter read dates and frequency of meter readings. This report shall indicate the type of water used (old, new) and the period of use (summer, winter).

c. Billings and Payments. Kirkland shall invoice Redmond and Bellevue monthly for estimated water usage or any other charges as set forth herein. Estimated water usage shall be established from prior years' actual consumption records for retail water usage. Actual Master meter readings shall be used for the wholesale meter usage. With each monthly supply and consumption report an invoice shall be prepared based on actual usage.

d. Delinquent Payments. All payments between any of the Cities pursuant to the terms of this Agreement shall be made within 45 days of receipt of invoice. Payments not made within 45 days will be subject to 1% (one percent) per month interest charges on the outstanding balance.

11. Seattle Water Purveyor Contract. The parties acknowledge that the District has assigned its water purveyor contract with the City of Seattle to Kirkland pursuant to the Assumption Agreement and that Kirkland is a purveyor of water to Redmond and Bellevue. As set forth in the Assumption Agreement, Kirkland agrees to apportion its purveyor committee weighted votes between Kirkland and Redmond as allowed and provided by the Seattle Purveyors Committee By-laws. Kirkland further agrees to allocate between the Cities the flushing allowance provided for in the water purveyor contract in proportion to the total water used by each city as supplied by Kirkland in the previous year.

The water purveyor contract also provides in section III F therein for a purveyor facilities account. That section provides for identification and compensation for certain facilities that have been allocated to and paid for by the purveyors. Any allocation or credit to Kirkland under the purveyor contract in the event of the application of Section III F shall be reallocated by Kirkland to the three Cities based upon water purchased by each City in those years the allocation is made.

12. Status of Parties. This Agreement shall not be construed to establish a partnership, joint venture or any other legal relationship between the parties hereto except as common owners of the jointly owned facilities.

13. Successors. This agreement and its terms and conditions shall be binding upon the successors and assigns of the parties hereto.

14. Change in Proportion of Use or Ownership. The Cities may agree to adjust the use and/or ownership of the joint facilities identified in this Agreement and exhibits hereto as either a permanent amendment to this Agreement or as a temporary arrangement, and may agree that one party will pay the other party on an agreed basis for such permanent or temporary use of all or part of the other parties' contract share of the joint facilities.

15. Term and Termination. The term of this Agreement shall commence upon approval by the three cities. This Agreement shall remain in effect until terminated by mutual agreement of the three Cities. Upon termination of this Agreement, the disposition of the jointly owned facilities shall be in accordance with the ownership interests identified in Attachment A hereto; and all other property acquired during the life of this Agreement shall be distributed to the contributing City or Cities to the extent of such City's or Cities' contribution(s).

16. Emergencies, Notice and Response. In the event of an emergency condition occurring in the water system within the service areas of any of the Cities which affects the operation of the joint facilities, the City experiencing the emergency condition shall, upon learning of the condition, endeavor to immediately notify the other Cities. The Joint Board shall establish procedures for such notification providing as a minimum, a priority of names and telephone numbers for notification. The parties so notified shall, if requested and to the extent practicable, render emergency assistance to the other party and modify their system operations and control to the extent practicable as reasonably necessary to meet the emergency. In the event of such emergency, the party experiencing the emergency shall reimburse the other parties for the reasonable cost of any assistance provided.

17. Records. Kirkland shall maintain records indicating all operation and maintenance and administrative costs and charges and maintenance schedules for the joint facilities for which Kirkland is responsible and identifying actual maintenance performed.

18. Indemnification. Each City agrees to defend, indemnify, and hold the other Cities harmless from any and all losses, claims, demands, payments, suits, liabilities, or judgments of every nature and description brought or recovered against the other Cities for damages suffered, or alleged to be suffered by persons or property caused by or resulting from the operation or maintenance of the joint facility as described herein, except to the extent such damages resulted from the negligence of the other Cities.

19. Notice and Communications. All notices and other formal communications to be given or any documents to be delivered by any party to any other party shall be delivered in person or mailed by certified mail and addressed to the respective parties at the following addresses:

To Kirkland at: Director of Public Works
City of Kirkland
123 Fifth Avenue
Kirkland, Washington 98033

To Redmond at: Director of Public Works
City of Redmond
15670 NE 85th Street
Redmond, Washington 98052

To Bellevue at: Utility Director
City of Bellevue
PO Box 90012
Bellevue, WA 98009-9012

20. Modification of Agreement. This Agreement may be amended, modified or added to only by written instrument properly signed by all parties hereto.

~~THIS NEXT PARAGRAPH WILL REMAIN HERE, FOR NOW, AS WE MAY PUT IT BACK INTO DOCUMENT.~~

9.29.97

21. Superseding Agreement. Several agreements and contracts have been approved and / or adopted by the District over the years. The following listed agreements and contracts constitute the entire list of agreements and contracts that were known to be in existance at the time of the signing of this Interlocal Operations and Maintenance Agreement.

In the event that this Interlocal Operations and Maintenance Agreement conflicts with the provisions of any other District agreement or contract presently in effect but not listed below, this Interlocal Operations and Maintenance Agreement shall govern. The Joint Board shall be responsible to consider any such agreements and contracts on an individual basis to nullify, modify or amend any such agreements or contracts and shall do so by amendment to this Interlocal Operations and Maintenance Agreement .

The following listed agreements and contracts are hereby null and void in their entirities:

RESOLUTION OF BOARD OF COMMISSIONERS OF ROSE HILL WATER DISTRICT ADOPTING INTERLOCAL GOVERNMENTAL AGREEMENT FOR CONSTRUCTION OF 14.3 MILLION GALLON RESERVOIR. (Resolution No. 737)

RESOLUTION OF THE BOARD OF COMMISSIONERS OF ROSE HILL WATER DISTRICT EXTENDING CONTRACT FOR WATER SALES TO THE CITY OF REDMOND. (Resolution No. 679)

A RESOLUTION OF THE BOARD OF COMMISSIONERS OF ROSE HILL WATER AND SEWER DISTRICT APPROVING AGREEMENT WITH CITY OF REDMOND FOR WATER DISTRIBUTION SYSTEM. (Resolution No. 648)

RESOLUTION OF THE BOARD OF COMMISSIONERS OF ROSE HILL WATER AND SEWER DISTRICT APPROVING CONTRACT FOR SALE OF WATER TO THE CITY OF REDMOND. (Resolution No. 547)

RESOLUTION OF THE BOARD OF COMMISSIONERS OF KING COUNTY WATER DISTRICT NO. 81 APPROVING AMENDMENT TO JOINT WATER STORAGE AND DISTRIBUTION PROJECT AGREEMENTS. (Resolution No. 457)

A RESOLUTION OF THE BOARD OF COMMISSIONERS OF KING COUNTY WATER DISTRICT NO. 81 REQUESTING THE ESTABLISHMENT OF A JOINT MAINTENANCE FUND. (Resolution No. 257)

A RESOLUTION OF THE BOARD OF COMMISSIONERS OF KING COUNTY WATER DISTRICT NO. 81 ACCEPTING JOINT FACILITIES RESERVOIR CONSTRUCTION. (Resolution No. 250)

A RESOLUTION OF THE BOARD OF COMMISSIONERS OF KING COUNTY WATER DISTRICT NO. 81 APPROVING THE EXECUTION OF A CONTRACT FOR TELEMETERING SERVICE FOR THE JOINT FACILITIES PROJECT. (Resolution No. 248)

A RESOLUTION OF THE BOARD OF COMMISSIONERS OF KING COUNTY WATER DISTRICT NO. 81 ACCEPTING JOINT FACILITIES WATER MAIN CONSTRUCTION. (Resolution No. 246)

A RESOLUTION OF THE BOARD OF COMMISSIONERS OF KING COUNTY WATER DISTRICT NO. 81 APPROVING AN AGREEMENT FOR JOINT CONSTRUCTION OF WATER STORAGE AND DISTRIBUTION FACILITIES. (Resolution No. 233)

A RESOLUTION OF THE BOARD OF COMMISSIONERS OF KING COUNTY WATER DISTRICT NO. 81 APPROVING AN AGREEMENT FOR EXCHANGE OF WATER UTILITY FACILITIES WITH THE CITY OF KIRKLAND. (Resolution No. 232)

A RESOLUTION OF THE BOARD OF COMMISSIONERS OF KING COUNTY WATER DISTRICT NO. 81 APPROVING A CONTRACT WITH THE CITY OF KIRKLAND. (Resolution No. 118)

A RESOLUTION OF THE BOARD OF COMMISSIONERS OF KING COUNTY WATER DISTRICT NO. 81 APPROVING AN AGREEMENT WITH THE CITY OF KIRKLAND. (Resolution No. 180)

A RESOLUTION OF THE COMMISSIONERS OF KING COUNTY WATER DISTRICT NO. 81 AUTHORIZING THE CREATION OF A CONTRACT WITH THE CITY OF KIRKLAND FOR THE SUPPLY OF WATER AND THE SERVICING OF A WATER DISTRIBUTION SYSTEM. (Resolution No. 9)

22. Severability. The invalidity of any clause, sentence, paragraph, subdivision, section or portion of this Agreement shall not affect the validity of the remainder of the Agreement.

23. Counterparts. This Agreement may be signed in counterparts and, if so signed, shall be deemed one integrated document.

24. Filing and Effective Date. This Agreement shall be filed with the King County Department of Records and Elections and the Secretary of State of the State of Washington and shall take effect upon approval and signature by each City.

CITY OF KIRKLAND

By _____
Its City Manager
Dated 9-29-97

Approved as to Form:
OFFICE OF THE KIRKLAND
CITY ATTORNEY

By _____
Its City Attorney
Dated 9-29-97

CITY OF REDMOND

By _____
Its EXEC ASST
Dated 9/25/97

Approved as to Form:
OFFICE OF THE REDMOND
CITY ATTORNEY

By _____
Its Assistant City Attorney
Dated 9/4/97

CITY OF BELLEVUE

By _____
Its Deputy City Mgr.
Dated 10/9/97

Approved as to Form:
OFFICE OF THE BELLEVUE
CITY ATTORNEY

By _____
Its Asst City Atty
Dated 10/6/97

3city94\operagre\rjp:nmw
4/21/94

TABLE 2C
JOINT OWNERSHIP FACILITIES-WATER SUPPLY, STORAGE AND TRANSMISSION
PERCENTAGE AND VALUE OF OWNERSHIP AFTER ASSUMPTION

DESCRIPTION	CITY AREA	SERVICE YEAR	ORIG. COST OR EST.	AFTER ASSUMPTION				AFTER ASSUMPTION				
				RHWD %	KRK %	REDMD %	BELL %	RHWD	KRK	REDMD	BELL	
STATION 2-12 INCH AT NE 85TH ST AND I-405	KIRKLAND	1985	$36,487	0.0%	100.0%	0.0%	0.0%	$0	$36,487	$0	$0	K-2
STATION 1-12 INCH AT NE 60TH AND I-405	KIRKLAND	1985	$36,487	0.0%	100.0%	0.0%	0.0%	$0	$36,487	$0	$0	K-1
STATION 3-12 INCH AT NE 86TH ST AND I-405	KIRKLAND	1985	$36,487	0.0%	100.0%	0.0%	0.0%	$0	$36,487	$0	$0	K-3
SUBTOTAL METERING STATIONS			$219,948					$0	$145,948	$63,500	$10,500	
TRANSMISSION MAINS-545 ZONE												
16" 132ND TRANSMISSION(1989 PWTF Loan for Main Replacement)												
9063'-16" DI ON 132ND AVE NE	KIRKLAND	1990	$588,000	0.0%	66.0%	34.0%	0.0%	$0	$388,080	$199,920	$0	
FROM NE 85TH ST TO NE 116TH ST												
55'-16" DI 0N 108TH AVE NE-14.3MG RESERVOIR CONNECTION	KIRKLAND	1990	$4,000	0.0%	66.0%	34.0%	0.0%	$0	$2,640	$1,360	$0	
FROM E TO W SIDE OF 132ND AVE NE												
16" DI 11.2MG RES TO NE 55TH ST AND 140TH AVE NE(Item 3-1970 Jt. Const. Agreement)												
2500'-16" ON NE 66TH ST, 135TH AVE NE, & 136TH AVE NE	REDMOND	1971	$39,350	0.0%	0.0%	25.0%	75.0%	$0	$0	$9,838	$29,513	
FROM 132ND AVE NE TO S LN SW 1/4 SEC 10-25-5												
1370'-16" DI ON S LN SW 1/4 SEC 10-25-5	REDMOND	1971	$21,564	0.0%	0.0%	25.0%	75.0%	$0	$0	$5,391	$16,173	
FROM 136TH AVE NE TO 140TH AVE NE												
210'-16" ON 132ND AVE NE	KIRKLAND	1971	$3,305	0.0%	0.0%	25.0%	75.0%	$0	$0	$826	$2,479	
FROM NE 66TH ST TO NE 65TH ST												
340'-16" DI ON NE 65TH ST	KIRKLAND	1971	$5,352	0.0%	0.0%	25.0%	75.0%	$0	$0	$1,338	$4,014	
FROM 132ND AVE NE TO 11.2 MG RESERVOIR		4420										
20" DI TOLT LINE TO 11.2MG RESERVOIR(Item 7 1970 Jt Const. Agreement+1983 main replacement)												
290'-20" DI ON NE 65TH ST	KIRKLAND	1971	$5,394	0.0%	57.2%	29.4%	13.4%	$0	$3,085	$1,586	$723	
FROM 305' W TO 132ND AVE NE												
620'-20" DI ON 132ND AVE NE	KIRKLAND	1968	$11,532	0.0%	57.2%	29.4%	13.4%	$0	$6,596	$3,390	$1,545	
FROM OLD REDMOND ROAD TO NE 70TH ST												
2670'-20" DI ON NE 70TH ST	REDMOND	1968	$49,663	0.0%	57.2%	29.4%	13.4%	$0	$28.407	$14,601	$6,655	
FROM 132ND AVE NE TO 140TH AVE NE												
895'-16" DI ON 132ND AVE NE	KIRKLAND	1983	$58,000	0.0%	41.2%	58.8%	0.0%	$0	$23,890	$34,110	$0	
FROM OLD REDMOND ROAD TO NE 65TH ST												
700'-16" ON 132ND AVE NE	KIRKLAND	1968	$13,020	0.0%	0.0%	25.0%	75.0%	$0	$0	$4,765	$8,255	
FROM OLD REDMOND RD TO NE 66TH ST												
24"-NE 85TH TOLT CONNECTION TO NE 70TH(1983 Jt. Const. Agreement)												
4260'-24" DI ON 132ND AVE NE	KIRKLAND	1983	$480,005	0.0%	66.0%	34.0%	0.0%	$0	$316,804	$163,202	$0	
FROM NE 70TH ST TO SR-908(NE 85TH ST)												
INLET-OUTLET MAINS TO 14.3 MG RESERVOIR(1991 Jt. Const.Agreement)												
1993 CWIP ADDITIONS-16" INLET,18" AND 12" OUTLET, STORM	KIRKLAND	1993	$313,753	0.0%	66.0%	34.0%	0.0%	$0	$207,077	$106,676	$0	
AND SANITARY DRAINS, AND CONTROL PUMP STATION AT												
14.3 MG RESERVOIR SITE BTW 132ND 1ND 129TH PL. N.E.												
TRANSMISSION MAINS-650 ZONE-650 PUMP SATION TO 132ND-DISTRIBUTION/TRANSMISSION LOOP												
320'-12" DI ON NE 65TH ST		1968	$8,000	0.0%	86.0%	14.0%	0.0%	$0	$6,880	$1,120	$0	
FROM 132ND AVE NE TO 280' E OF 130TH AVE NE												
830'-12" DI ON 132ND AVE NE		1983	$28,953	0.0%	86.0%	14.0%	0.0%	$0	$24,900	$4,053	$0	
FROM OLD REDMOND ROAD TO NE 65TH ST												
265'-12" DI ON NE 65TH ST		1968	$5,000	0.0%	86.0%	14.0%	0.0%	$0	$4,300	$700	$0	
FROM 130TH AVE NE TO 280' E OF 130TH AVE NE												
1090'-12" DI ON 130TH AVE NE		1963	$16,000	0.0%	86.0%	14.0%	0.0%	$0	$13,760	$2,240	$0	
FROM NE 65TH ST TO NE 70TH ST												
950'-12" DI ON NE 70TH ST		1990	$59,916	0.0%	86.0%	14.0%	0.0%	$0	$51,528	$8,388	$0	
FROM 132ND AVE NE TO 130TH AVE NE												
SUBTOTAL TRANSMISSION MAINS			$1,710,809					$0	$1,077,948	$563,505	$69,357	
TOTAL DISTRIBUTION FACILITIES			$1,930,757					$0	$1,223,896	$627,005	$79,857	
TOTAL JOINT FACILITIES			$6,588,880					$0	$4,286,138	$2,130,224	$172,519	

TABLE V-2B
JOINT OWNERSHIP FACILITIES-WATER SUPPLY, STORAGE AND TRANSMISSION
PERCENTAGE AND VALUE OF OWNERSHIP BEFORE ASSUMPTION

DESCRIPTION	CITY AREA	SERVICE YEAR	ORIG. COST OR EST.	BEFORE ASSUMPTION				BEFORE ASSUMPTION			
				RHWD %	KRK %	REDMD %	BELL %	RHWD	KRK	REDMD	BELL
WATER SUPPLY FACILITIES											
WATER SUPPLY METERS FROM CITY OF SEATTLE											
STATION 5-12 INCH AT NE 116TH ST AND 132ND AVE NE	KIRKLAND	1959/1983	$45,000	15.0%	85.0%	0.0%	0.0%	$6,750	$38,250	$0	$0
FROM SEATTLE, WITH 12 X 4 PRV											
STATION 7A-16 INCH AT SR 908 AND 132ND AVE NE	REDMOND	1984	$32,000	50.0%	50.0%	0.0%	0.0%	$16,000	$16,000	$0	$0
FROM SEATTLE,WITH 10" & 12" BALL VALVES											
STATION 8-12 INCH AT NE 70TH ST AND 140TH AVE NE	REDMOND	1959/1968	$13,000	36.6%	50.0%	0.0%	13.4%	$4,758	$6,500	$0	$1,742
FROM SEATTLE, WITH 12" BALL VALVES AND 8" PRV											
WATER SUPPLY PRESSURE REGULATING STATIONS											
PRESURE REDUCING STATION SW TO 545 ZONE	KIRKLAND	1988	$27,000	100.0%	0.0%	0.0%	0.0%	$27,000	$0	$0	$0
PRESSURE REDUCING STATION SW TO 650 ZONE	REDMOND	1968	$8,000	100.0%	0.0%	0.0%	0.0%	$8,000	$0	$0	$0
LOCATED AT N LN SW 1/4 SEC 10-25-5,											
1100' W OF 140TH AVE NE											
PRESSURE REDUCING STATION SW TO 650 ZONE	KIRKLAND	1988	$33,000	100.0%	0.0%	0.0%	0.0%	$33,000	$0	$0	$0
LOCATED AT NE 85TH ST AND 132ND AVE NE											
TOTAL WATER SUPPLY FACILITIES			$158,000					$95,508	$60,750	$0	$1,742
PUMPING PLANT											
8000 GPM,TWO PUMPS WITH POWER GENERATION-	REDMOND	1984	$423,647	60.5%	39.5%	0.0%	0.0%	$255,566	$168,081	$0	$0
545 ZONE INCLUDING TELEMETRY, LAND AND CONNECTING 16" AND		(LAND)	$51,775	60.5%	39.5%	0.0%	0.0%	$31,245	$20,530	$0	$0
20" DI WATER MAINS TO 132ND AVE NE TO N OF SR 908-W OF SITE											
SE CORNER OF SR 908 AND 132ND AVE NE											
3250 GPM, 5 PUMPS, TWO EQUIPED WITH	KIRKLAND	1969	$70,000	100.0%	0.0%	0.0%	0.0%	$70,000	$0	$0	$0
VARIABLE FREQUENCY DRIVE-650 ZONE											
SE CORNER OF NE 65TH ST AND 130TH AVE NE											
1993 CIP ADDITION-650 ZONE PS WIRING FOR EMERGENCY POWER	KIRKLAND	1993	$39,945	100.0%	0.0%	0.0%	0.0%	$39,945	$0	$0	$0
1993 CIP ADDITION-650 ZONE PS EMERGENCY POWER GENERATOR	KIRKLAND	1993	$54,508	100.0%	0.0%	0.0%	0.0%	$54,508	$0	$0	$0
SUBTOTAL LAND			$51,775					$31,245	$20,530	$0	$0
SUBTOTAL FACILITIES			$588,100					$420,019	$168,081	$0	$0
TOTAL PUMPING PLANT			$639,875					$451,264	$188,611	$0	$0
TRANSMISSION AND DISTRIBUTION											
RESERVOIRS											
11.2 MG STEEL AND TELEMETRY	KIRKLAND	1972	$701,949	36.6%	50.0%	0.0%	13.4%	$266,122	$344,906	$0	$90,920
SE CORNER OF NE 65TH ST AND 130TH AVE NE											
1993 CIP ADDITION-14.3 MG STEEL	KIRKLAND	1993	$3,158,299	49.6%	50.4%	0.0%	0.0%	$1,599,206	$1,559,093	$0	$0
ADJSCENT KIRKLAND MARK TWAIN PARK											
SW CORNER OF NE 108TH ST AND 132ND AVE NE											
TOTAL RESERVOIRS			$3,860,248					$1,865,328	$1,903,999	$0	$90,920
DISTRIBUTION											
REDMOND METERING STATIONS											
STATION 11-6 INCH AT NE 51ST ST AND	REDMOND	1982	$14,000	0.0%	0.0%	100.0%	0.0%	$0	$0	$14,000	$0
W LK SAMMAMISH PKWY NE											
STATION R1-6 INCH AT LEARY WAY NE AND	REDMOND	1986	$16,000	0.0%	0.0%	100.0%	0.0%	$0	$0	$16,000	$0
SAMMAMISH RIVER											
STATION R2-6 INCH AT NE 85TH ST AND	REDMOND	1986	$16,000	0.0%	0.0%	100.0%	0.0%	$0	$0	$16,000	$0
SAMMAMISH RIVER											
STATION R3-6 INCH AT NE 51ST ST AND	REDMOND	1986	$14,000	0.0%	0.0%	100.0%	0.0%	$0	$0	$14,000	$0
156TH AVE NE											
BELLEVUE METERING STATION											
STATION 10-6 INCH AT 140TH AVE NE AND	BELLEVUE	1982	$14,000	25.0%	0.0%	0.0%	75.0%	$3,500	$0	$0	$10,500
NE 61ST ST											
KIRKLAND METERING STATIONS-METERED SUPPLY TO KIRKLAND											
STATION 4-8 INCH AT NE 116TH ST AND I-405	KIRKLAND	1985	$36,487	50.0%	50.0%	0.0%	0.0%	$18,244	$0	$0	$0

TABL[illegible]V-2B
JOINT OWNERSHIP FACILITIES-WATER SUPPLY, STORAGE AND TRANSMISSION
PERCENTAGE AND VALUE OF OWNERSHIP BEFORE ASSUMPTION

DESCRIPTION	CITY AREA	SERVICE YEAR	ORIG. COST OR EST.	BEFORE ASSUMPTION				BEFORE ASSUMPTION			
				RHWD %	KRK %	REDMD %	BELL %	RHWD	KRK	REDMD	BELL
STATION 2-12 INCH AT NE 85TH ST AND I-405	KIRKLAND	1985	$36,487	50.0%	50.0%	0.0%	0.0%	$18,244	$0	$0	$0
STATION 1-12 INCH AT NE 60TH AND I-405	KIRKLAND	1985	$36,487	50.0%	50.0%	0.0%	0.0%	$18,244	$0	$0	$0
STATION 3-12 INCH AT NE 86TH ST AND I-405	KIRKLAND	1985	$36,487	50.0%	50.0%	0.0%	0.0%	$18,244	$0	$0	$0
SUBTOTAL METERING STATIONS			$219,948					$76,474	$0	$60,000	$10,500
TRANSMISSION MAINS-545 ZONE											
16" 132ND TRANSMISSION(1989 PWTF Loan for Main Replacement)											
9063'-16" DI ON 132ND AVE NE	KIRKLAND	1990	$588,000	100.0%	0.0%	0.0%	0.0%	$588,000	$0	$0	$0
FROM NE 85TH ST TO NE 116TH ST											
55'-16" DI 0N 108TH AVE NE-14.3MG RESERVOIR CONNECTION	KIRKLAND	1990	$4,000	100.0%	0.0%	0.0%	0.0%	$4,000	$0	$0	$0
FROM E TO W SIDE OF 132ND AVE NE											
16" DI 11.2MG RES TO NE 55TH ST AND 140TH AVE NE(Item 3-1970 Jt. Const. Agreement)											
2500'-16" ON NE 66TH ST, 135TH AVE NE, & 136TH AVE NE	REDMOND	1971	$39,350	25.0%	0.0%	0.0%	75.0%	$9,838	$0	$0	$29,513
FROM 132ND AVE NE TO S LN SW 1/4 SEC 10-25-5											
1370'-16" DI ON S LN SW 1/4 SEC 10-25-5	REDMOND	1971	$21,564	25.0%	0.0%	0.0%	75.0%	$5,391	$0	$0	$16,173
FROM 136TH AVE NE TO 140TH AVE NE											
210'-16" ON 132ND AVE NE	KIRKLAND	1971	$3,305	25.0%	0.0%	0.0%	75.0%	$826	$0	$0	$2,479
FROM NE 66TH ST TO NE 65TH ST											
340'-16" DI ON NE 65TH ST	KIRKLAND	1971	$5,352	25.0%	0.0%	0.0%	75.0%	$1,338	$0	$0	$4,014
FROM 132ND AVE NE TO 11.2 MG RESERVOIR		4420									
20" DI TOLT LINE TO 11.2MG RESERVOIR(Item 7 1970 Jt Const. Agreement+1983 main replacement)											
290'-20" DI ON NE 65TH ST	KIRKLAND	1971	$5,394	36.6%	50.0%	0.0%	13.4%	$1,974	$2,697	$0	$723
FROM 305' W TO 132ND AVE NE											
620'-20" DI ON 132ND AVE NE	KIRKLAND	1968	$11,532	36.6%	50.0%	0.0%	13.4%	$4,221	$5,766	$0	$1,545
FROM OLD REDMOND ROAD TO NE 70TH ST											
2670'-20" DI ON NE 70TH ST	REDMOND	1968	$49,663	36.6%	50.0%	0.0%	13.4%	$18,177	$24,832	$0	$6,655
FROM 132ND AVE NE TO 140TH AVE NE											
895'-16" DI ON 132ND AVE NE	KIRKLAND	1983	$58,000	100.0%	0.0%	0.0%	0.0%	$58,000	$0	$0	$0
FROM OLD REDMOND ROAD TO NE 65TH ST											
700'-16" ON 132ND AVE NE	KIRKLAND	1968	$13,020	25.0%	0.0%	0.0%	75.0%	$4,765	$0	$0	$8,255
FROM OLD REDMOND RD TO NE 66TH ST											
24"-NE 85TH TOLT CONNECTION TO NE 70TH(1983 Jt. Const. Agreement)											
4260'-24" DI ON 132ND AVE NE	KIRKLAND	1983	$480,005	60.5%	39.5%	0.0%	0.0%	$288,915	$191,091	$0	$0
FROM NE 70TH ST TO SR-908(NE 85TH ST)											
INLET-OUTLET MAINS TO 14.3 MG RESERVOIR(1991 Jt. Const.Agreement)											
1993 CWIP ADDITIONS-16" INLET,18" AND 12" OUTLET, STORM	KIRKLAND	1993	$313,753	49.6%	50.4%	0.0%	0.0%	$156,378	$157,375	$0	$0
AND SANITARY DRAINS, AND CONTROL PUMP STATION AT											
14.3 MG RESERVOIR SITE BTW 132ND 1ND 129TH PL. N.E.											
TRANSMISSION MAINS-650 ZONE-650 PUMP SATION TO 132ND-DISTRIBUTION/TRANSMISSION LOOP											
320'-12" DI ON NE 65TH ST		1968	$8,000	100.0%	0.0%	0.0%	0.0%	$8,000	$0	$0	$0
FROM 132ND AVE NE TO 280' E OF 130TH AVE NE											
830'-12" DI ON 132ND AVE NE		1983	$28,953	100.0%	0.0%	0.0%	0.0%	$28,953	$0	$0	$0
FROM OLD REDMOND ROAD TO NE 65TH ST											
265'-12" DI ON NE 65TH ST		1968	$5,000	100.0%	0.0%	0.0%	0.0%	$5,000	$0	$0	$0
FROM 130TH AVE NE TO 280' E OF 130TH AVE NE											
1090'-12" DI ON 130TH AVE NE		1968	$16,000	100.0%	0.0%	0.0%	0.0%	$16,000	$0	$0	$0
FROM NE 65TH ST TO NE 70TH ST											
950'-12" DI ON NE 70TH ST		1990	$59,916	100.0%	0.0%	0.0%	0.0%	$59,916	$0	$0	$0
FROM 132ND AVE NE TO 130TH AVE NE											
SUBTOTAL TRANSMISSION MAINS			$1,710,809					$1,259,692	$381,760	$0	$69,357
TOTAL DISTRIBUTION FACILITIES			$1,930,757					$1,336,166	$381,760	$60,000	$79,857
TOTAL JOINT FACILITIES			$6,588,880					$3,748,267	$2,535,121	$60,000	$172,519

TABLE V-2C
JOINT OWNERSHIP FACILITIES-WATER SUPPLY, STORAGE AND TRANSMISSION
PERCENTAGE AND VALUE OF OWNERSHIP AFTER ASSUMPTION

DESCRIPTION	CITY AREA	SERVICE YEAR	ORIG. COST OR EST.	AFTER ASSUMPTION				AFTER ASSUMPTION				
				RHWD %	KRK %	REDMD %	BELL %	RHWD	KRK	REDMD	BELL	
WATER SUPPLY FACILITIES												
WATER SUPPLY METERS FROM CITY OF SEATTLE												
STATION 5-12 INCH AT NE 116TH ST AND 132ND AVE NE	KIRKLAND	1959/1988	$45,000	0.0%	66.0%	34.0%	0.0%	$0	$29,700	$15,300	$0	S-3
FROM SEATTLE, WITH 12 X 4 PRV												
STATION 7A-16 INCH AT SR 908 AND 132ND AVE NE	REDMOND	1984	$32,000	0.0%	66.0%	34.0%	0.0%	$0	$21,120	$10,880	$0	S-2
FROM SEATTLE,WITH 10" & 12" BALL VALVES												
STATION 8-12 INCH AT NE 70TH ST AND 140TH AVE NE	REDMOND	1959/1968	$13,000	0.0%	57.2%	29.4%	13.4%	$0	$7,436	$3,822	$1,742	S-1
FROM SEATTLE, WITH 12" BALL VALVES AND 8" PRV												
WATER SUPPLY PRESSURE REGULATING STATIONS												
PRESURE REDUCING STATION SW TO 545 ZONE	KIRKLAND	1988	$27,000	0.0%	66.0%	34.0%	0.0%	$0	$17,820	$9,180	$0	
PRESSURE REDUCING STATION SW TO 650 ZONE	REDMOND	1968	$8,000	0.0%	86.0%	14.0%	0.0%	$0	$6,880	$1,120	$0	
LOCATED AT N LN SW 1/4 SEC 10-25-5,												
1100' W OF 140TH AVE NE												
PRESSURE REDUCING STATION SW TO 650 ZONE	KIRKLAND	1988	$33,000	0.0%	86.0%	14.0%	0.0%	$0	$28,380	$4,620	$0	
LOCATED AT NE 85TH ST AND 132ND AVE NE												
TOTAL WATER SUPPLY FACILITIES			$158,000					$0	$111,336	$44,922	$1,742	
PUMPING PLANT												
8000 GPM,TWO PUMPS WITH POWER GENERATION-	REDMOND	1984	$423,647	0.0%	66.0%	34.0%	0.0%	$0	$279,607	$144,040	$0	S-2
545 ZONE INCLUDING TELEMETRY, LAND AND CONNECTING 16" AND		(LAND)	$51,775	0.0%	66.0%	34.0%	0.0%	$0	$34,171	$17,603	$0	
20" DI WATER MAINS TO 132ND AVE NE TO N OF SR 908-W OF SITE												
SE CORNER OF SR 908 AND 132ND AVE NE												
3250 GPM, 5 PUMPS, TWO EQUIPED WITH	KIRKLAND	1969	$70,000	0.0%	86.0%	14.0%	0.0%	$0	$60,200	$9,800	$0	S RES. P.S.
VARIABLE FREQUENCY DRIVE-650 ZONE												
SE CORNER OF NE 65TH ST AND 130TH AVE NE												
1993 CIP ADDITION-650 ZONE PS WIRING FOR EMERGENCY POWER	KIRKLAND	1993	$39,945	0.0%	86.0%	14.0%	0.0%	$0	$34,353	$5,592	$0	
1993 CIP ADDITION-650 ZONE PS EMERGENCY POWER GENERATOR	KIRKLAND	1993	$54,508	0	100.0%	0.0%	0.0%	$0	$54,508	$0	$0	S RES P.S
SUBTOTAL LAND			$51,775					$0	$34,171	$17,603	$0	
SUBTOTAL FACILITIES			$588,100					$0	$428,668	$159,432	$0	
TOTAL PUMPING PLANT			$639,875					$0	$462,839	$177,036	$0	
TRANSMISSION AND DISTRIBUTION												
RESERVOIRS												
11.2 MG STEEL AND TELEMETRY	KIRKLAND	1972	$701,949	0.0%	57.2%	29.4%	13.4%	$0	$403,589	$207,439	$90,920	S RES
SE CORNER OF NE 65TH ST AND 130TH AVE NE												
1993 CIP ADDITION-14.3 MG STEEL	KIRKLAND	1993	$3,158,299	0.0%	66.0%	34.0%	0.0%	$0	$2,084,478	$1,073,822	$0	N RES
ADJSCENT KIRKLAND MARK TWAIN PARK												
SW CORNER OF NE 108TH ST AND 132ND AVE NE												
TOTAL RESERVOIRS			$3,860,248					$0	$2,488,067	$1,281,261	$90,920	
DISTRIBUTION												
REDMOND METERING STATIONS												
STATION 11-6 INCH AT NE 51ST ST AND	REDMOND	1982	$14,000	0.0%	0.0%	100.0%	0.0%	$0	$0	$14,000	$0	R-1
W LK SAMMAMISH PKWY NE												
STATION R1-6 INCH AT LEARY WAY NE AND	REDMOND	1986	$16,000	0.0%	0.0%	100.0%	0.0%	$0	$0	$16,000	$0	R-3
SAMMAMISH RIVER												
STATION R2-6 INCH AT NE 85TH ST AND	REDMOND	1986	$16,000	0.0%	0.0%	100.0%	0.0%	$0	$0	$16,000	$0	R-4
SAMMAMISH RIVER												
STATION R3-6 INCH AT NE 51ST ST AND	REDMOND	1986	$14,000	0.0%	0.0%	100.0%	0.0%	$0	$0	$14,000	$0	R-2 (Not monitored)
156TH AVE NE												
BELLEVUE METERING STATION												
STATION 10-6 INCH AT 140TH AVE NE AND	BELLEVUE	1982	$14,000	0.0%	0.0%	25.0%	75.0%	$0	$0	$3,500	$10,500	B-1
NE 61ST ST												
KIRKLAND METERING STATIONS-METERED SUPPLY TO KIRKLAND												
STATION 4-8 INCH AT NE 116TH ST AND I-405	KIRKLAND	1985	$36,487	0.0%	100.0%	0.0%	0.0%	$0	$36,487	$0	$0	K-4

BELLEVUE DEPT. OF [illegible]S

DEC 30 1974

Received by.....

AGREEMENT FOR JOINT MAINTENANCE AND OPERATION OF WATER STORAGE AND DISTRIBUTION PROJECT

AGREEMENT among CITY OF KIRKLAND, KING COUNTY WATER DISTRICT NO. 81 and CITY OF BELLEVUE, all municipal corporations of the State of Washington.

1. Purpose. The City of Kirkland, King County Water District No. 81 and King County Water District No. 99 previously entered into an agreement, dated December 1, 1970, entitled "Agreement for Joint Construction of Water Storage and Distribution Project." Pursuant to the agreement, a water storage reservoir, telemetering system, and certain distribution mains were constructed and are now in operation. The City of Bellevue, by contract, has succeeded to the interest of King County Water District No. 99 in the said joint project. The purpose of this agreement is to provide for the joint maintenance of the said project, pursuant to paragraph 17 of the construction agreement.

2. Definitions. The words defined in paragraph 1 of the construction agreement shall have the same meaning herein.

3. Control Board. The Control Board established pursuant to paragraph 11 of the construction agreement shall continue for the purpose of operation of the joint facilities. In order to carry out the purpose of this agreement, and within its provisions, the Control Board, by majority vote, shall determine such matters of operating policy as may not be specifically covered herein and as may arise from time to time. The Board by unanimous vote, may appoint an operating committee consisting of one or more employees of the parties with such powers and duties as may be determined by the Board. The Board shall meet at least semi-annually, in April and October at a time mutually convenient to the members, and may meet at any other time on the call of any member, or by mutual agreement. The Control Board member representing the City of Bellevue shall be the City Manager of the City of Bellevue.

4. Operating agent. King County Water District No. 81 shall be the agent of the parties, acting under the direction of the Control Board, in operating the joint facilities pursuant to this agreement.

5. Water. All water consumed by Kirkland and District 81, and a part of the water consumed by Bellevue, is supplied by the City of Seattle through master meters from the East Side supply line to the District 81 system. Water furnished from the District 81 system to Kirkland and Bellevue is measured by secondary master meters. It is recognized that some leakage in the District 81 distribution system supplying the secondary master meters, slippage and errors in the secondary master meters, and loss from ruptures in the District 81 system or for some other causes, will occur. The Control Board shall determine a reasonable addition to the water shown to pass through the secondary master meters, to compensate for such loss factors. Until such determination, the initial percentages to be added to the secondary meter readings shall be:

City of Kirkland	15%
City of Bellevue	2%

The water consumed by District 81 is assumed to be the difference between the Seattle master meter readings and the readings from the secondary master meters, adjusted for loss. In any event, it is the intent of this agreement that each party shall pay its fair share of the water jointly purchased from Seattle. District 81 will bill each party for its share of water consumed, and each party shall reimburse the Joint Maintenance Fund promptly. The foregoing percentages will be adjusted at the end of each year to reflect actual losses. District 81 will keep records sufficient to substantiate the adjusted percentages.

6. Insurance. The Control Board shall determine the nature and amount of hazard and liability insurance to be provided for the joint facilities and their operation. District 81 shall procure

such insurance in its name, and the cost shall be pro-rated among the parties in such manner, determined by the Control Board, as shall fairly represent the proportion of benefit which each party is entitled to receive from the joint facilities. Each party shall be entitled to obtain any additional insurance which it may wish.

7. Mutual Aid. Each party agrees to render emergency assistance to the other parties for the maintenance and repair of the parties' respective water distribution systems, upon request, and to the extent facilities should be available. A party so rendering assistance shall be entitled to be reimbursed for the reasonable cost incurred by it.

8. Finances. Water District 81 shall cause to be maintained in the office of the King County Treasurer a fund to be known as "Joint Maintenance Fund". All funds received from the parties or from any other source, pursuant to this agreement, shall be deposited as received in the said fund. Warrants shall be drawn by the King County Department of Budgets & Accounts for payment by the King County Treasurer, on vouchers prepared by Water District 81 and approved by its Commissioners in the same manner as other warrants issued pursuant to claim vouchers approved by Water District 81. To provide initial operating funds, each district shall contribute to the Joint Maintenance Fund the amount set opposite its name below:

City of Kirkland	50%	$1800
Water District 81	36.6%	$1318
City of Bellevue	13.4%	$ 482

Water District 81 shall bill each of the parties for its share of the operating expense incurred, periodically, and each party shall remit its share of said expense promptly to Water District 81. Water District 81 will contribute its share of operating expense by transfer from its Maintenance Fund to the Joint Maintenance Fund. District 81 will furnish each of the parties a monthly account of receipts and disbursements.

9. Fixed monthly expense. (a) The expected regularly recurring fixed expenses of administering the project are set out in the attached Schedule B, and shall be paid monthly by the component agencies in the following proportions:

City of Kirkland	50%
Water District 81	36.6%
City of Bellevue	13.4%

(b) The amounts shown in Schedule B are based on present costs to Water District 81 and are to be adjusted in the future by the Control Board to conform to changes in costs or as the result of experience in administering the project, to the end that Water District 81 will be fully reimbursed for its actual cost of administration.

10. Other expense. (a) In addition to the fixed monthly expense described in the preceding paragraph, certain items of maintenance should be performed yearly and other work will be performed as needed. A description of these items is set out in the attached Schedule C.

(b) The work described in this paragraph which is for the benefit of the whole project, will be shared in the same proportions as the fixed monthly expense described in the preceding paragraph. Other work which may be required, such as repair or replacement of portions of the water mains of the project shall be billed and paid in the proportions set out in the agreement of December, 1970, for sharing the capital cost for the facility repaired or replaced.

(c) For the work referred to in this paragraph, Water District 81 shall be reimbursed for its actual expense plus 10% for general overhead. The use of its equipment shall be charged at the current rental rate used by District 81 in its cost accounting, and its actual payroll cost for the employee's time, including all payroll taxes and fringe benefits. A schedule of current hourly rates for employees and equipment is attached as Schedule A of this agreement.

11. Effective date. The effective date of this agreement is September 1, 1972, and the component agencies shall be billed and shall reimburse Water District 81 for the recurring expense and any non-recurring expense which occurred from that date forward at the rate set out in this agreement.

Dated June 1, 1973.

CITY OF KIRKLAND

By _____
Mayor

By _____
Clerk

KING COUNTY WATER DISTRICT NO. 81

By _____
President

By _____
Secretary

CITY OF BELLEVUE

By _____
City Manager

SCHEDULE A

HOURLY RATES FOR PERSONNEL AND EQUIPMENT

The present hourly rates for personnel and equipment of Water District 81, as referred to in paragraph 10, are as follows:

Personnel:	Hourly Rate
Manager	$8.80
Utility Serviceman I	5.15
Utility Serviceman II	4.90
Utility Serviceman III	4.60
Foreman	6.80
Accountant	5.00
Equipment:	
Dump truck	2.50
Van	1.75
Pickup	2.00
Backhoe	8.00
Pipe pusher	2.00
Ditch pump	1.00
Tamper	1.00
Cut-off saw	1 00

SCHEDULE B

FIXED MONTHLY EXPENSE

The initial rate of the fixed monthly expenses referred to in paragraph 9 of this agreement are as follows:

Administration by Water District 81	$150.00
Rental of Water District 81 Administration Bldg.	20.00
Seattle Master Meter Charge	410.00
Leased Telephone Circuits, Telemetry System	93.35
Rental of Water Storage Tank Site	50.50
	$723.85

Notes:

The amount shown for rental of the administration building is an estimated amount to reimburse District 81 for the use of its building in the administration of the project.

The amount shown as rental of the water storage tank site represents one-twelfth of the annual rental provided by the prior agreement of December 1, 1970.

The routine services which will be performed by Water District 81 for the monthly administration charge of $150.00, together with the present estimated time required and the present estimated cost to Water District 81, which figures are shown for illustration only, are as follows:

Period	Operation	Time Required	Estimated Cost
Daily	Administration	1/2 hr.	$ 4.40
	Scan charts, record meter readings, adjust ink flow, monitor demand adjust flow control	1 hr.	6.80
Semi-monthly	Change charts	3/4 hr.	5.10
Monthly	Meter reading	1 hr.	4.60
	Accounting	2 hrs.	10.00
	Billing, posting	1/2 hr.	3.00

SCHEDULE C

OTHER MAINTENANCE EXPENSE

The following items of maintenance will normally be performed annually or at such other period as shall be determined by the Control Board:

- Draw down reservoir for inspection and touch up as necessary.
- Inspect, test and adjust five pressure regulating valves.
- Inspect, test and adjust five air-vac valves.
- Inspect, test and adjust two altitude valves.
- Inspect, test and adjust one flow control valve.
- Test and calibrate five meters.
- Test and calibrate telemetry functions.

The following items of maintenance will be performed as needed and as authorized by the Control Board:

- Reservoir and vault painting.
- Adjustment of valve boxes.
- Overhauling meters, pressure regulating valves, altitude valves, flow control valves, air-vac valves and butterfly valves.
- Repair of telemetry components.

457-3

FILED NO. 8252
CITY OF BELLEVUE
DATE 5-21-83
CITY CLERK
O. Cpmel
Res. 16. 4163

AMENDMENT TO JOINT WATER STORAGE AND DISTRIBUTION PROJECT AGREEMENTS

King County Water District No. 81, City of Kirkland and City of Bellevue, all municipal corporations, do hereby agree as follows:

1. Purpose. The City of Kirkland, King County Water District No. 81 and King County Water District No. 99 entered into an agreement for the joint construction of a water reservoir, telemetering system and certain distribution mains, dated December 1, 1970 and entitled "Agreement for Construction of Water Storage and Distribution Project" (herein called the Joint Construction Agreement). The improvements contemplated by the Joint Construction Agreement were completed, and the City of Bellevue succeeded to the interest of King County Water District No. 99. The parties hereto then entered an agreement to provide for the maintenance and operation of the jointly constructed facilities dated June 1, 1973 and entitled "Agreement for Joint Maintenance and Operation of Water Storage and Distribution Project" (herein called the Joint Operating Agreement).

The City of Seattle has announced its intention to reduce the minimum hydraulic gradient in its supply line serving the jointly constructed facilities. This action necessitates the construction of a pumping station and transmission lines so that sufficient water pressure can be generated to regularly refill the jointly constructed water reservoir.

The City of Bellevue does not wish to contribute to the cost of the necessary pumps and other improvements, since it does not regularly

draw down and use water from the water reservoir. Though its predecessor envisioned using the water reservoir in regular customer service, the City of Bellevue has not utilized the jointly constructed storage facilities significantly in its daily distribution of water to customers. However, the City of Bellevue desires to maintain its interest in the jointly constructed facilities and to utilize the water storage facility for emergency or back-up purposes.

The parties, therefore, intend to amend their Joint Construction Agreement and Joint Operating Agreement to excuse the City of Bellevue from participation in the costs of a new pumping station and transmission lines, to modify provisions for use of the water reservoir by the City of Bellevue to conform with present practice and to provide for reasonable service charges for the few customers of the City of Bellevue receiving water through the jointly constructed facilities.

2. Construction of New Pumping Station and Transmission Lines. The City of Kirkland and King County Water District No. 81 may construct and operate a new pumping station and transmission lines to serve the jointly constructed water reservoir. The costs and management of such construction and operation shall be undertaken by the City of Kirkland and King County Water District No. 81 pursuant to such separate agreements as they may reach. The City of Bellevue shall not participate in or contribute to the construction or operation of such projects.

3. Use of Joint Facilities. Paragraph 5 of the Joint Construction Agreement is hereby amended to provide that the City of Bellevue's use of and right to draw water from the jointly constructed water reservoir is limited to emergency or back-up use in the event of the break in a main, major fire or other unusual occurrence, not general to the area served by the parties, subject to the provisions of paragraph, 4 below.

Unless otherwise agreed between them, the City of Kirkland and King County Water District No. 81 shall be entitled to share equally the benefit of the storage facility in their daily operations.

4. Sale of Water to Bellevue. Approximately fifty Bellevue customers receive water through the jointly constructed facilities. The District shall continue to sell the City of Bellevue water to serve these customers and future new hookups in their vicinity. Notwithstanding any provisions in the Joint Construction Agreement or Joint Operation Agreement to the contrary, the City of Bellevue shall henceforth pay the District for water sold to it a sum equal to the District's cost of purchase of the water plus forty-six percent (46%) thereon, plus a pro-rata share (based on the ration of the amount of water sold the City of Bellevue to the total amount of water purchased from the City of Seattle by the District) of the expenses or charges to the District for demand charges, purveyor committee dues or contributions, legal expenses, capital improvements, conservation or emergency surcharges or other assessments by the City of Seattle, which are due from the District under its long term supply contract with the City of Seattle.

5. Future Maintenance and Repair. The parties acknowledge that the water reservoir must be repainted no later than 1985 and that the estimated cost of such work is $250,000. The cost of repainting the water reservoir and other costs of maintenance and repair of the jointly operated water reservoir, telemetery and distribution mains shall be governed by the Joint Operating Agreement and Joint Facilities Agreement and shall be shared by the parties pursuant to the formulas contained therein, which is presently:

City of Kirkland	50%
City of Bellevue	13.4%
Water District No. 81	36.6%

457-6

6. Effect. Except as expressly modified by this writing or by other written agreements between or among the parties, the Joint Operating Agreement and Joint Construction Agreement shall remain in full force and effect.

DATED: 4/1/83

CITY OF KIRKLAND

BY: _____
City Manager

BY: _____
Clerk

KING COUNTY WATER DISTRICT NO. 81

BY: Roger A. Crocker
President, Board of Commissioners

BY: Leo F. How
Secretary, Board of Commissioners

CITY OF BELLEVUE

BY: _____
City Manager

BY: Marie L. O'Connell
Clerk

APPROVED AS TO FORM:

Assistant City Attorney

ORIGINAL

1354-RES
5/27/2005

CITY OF BELLEVUE, WASHINGTON

RESOLUTION NO. 7197

A RESOLUTION authorizing and directing the City Manager to execute the Agreement for Water Distribution Between the City of Bellevue and the City of Redmond, effective January 1, 2004.

WHEREAS, the City of Bellevue and the City of Redmond entered into a water distribution agreement in 1972, as amended in 1998, that established terms for water service and jointly owned and used facilities; and

WHEREAS, under the 1998 agreement, Redmond paid Bellevue for water purchases that Bellevue made from Seattle for Redmond's service area; and

WHEREAS, the Cascade Water Alliance (Cascade) was formed in April 1999 pursuant to an Interlocal Contract for the purpose of providing water supply to meet the growing demands of its members, including Bellevue and Redmond; and

WHEREAS, the Agreement for Water Distribution recognizes that Bellevue and Redmond now pay Cascade Water Alliance directly for water supply; now therefore,

THE CITY COUNCIL OF THE CITY OF BELLEVUE, WASHINGTON, DOES RESOLVE AS FOLLOWS:

Section 1. The City Manager or his designee is hereby authorized and directed to execute the amended Agreement for Water Distribution Between the City of Bellevue and the City of Redmond, effective January 1, 2004, a copy of which Agreement has been given Clerk's Receiving No. 37669.

Passed by the City Council this 6th day of June, 2005, and signed in authentication of its passage this 6th day of June, 2005.

(SEAL)

Connie B. Marshall
Connie B. Marshall, Mayor

Attest:

Myrna L. Basich
Myrna L. Basich, City Clerk

CR# 37669 DATE 6-8-05 LOC 05-487
Res 7197

AGREEMENT FOR WATER DISTRIBUTION BETWEEN THE CITY OF BELLEVUE AND THE CITY OF REDMOND

This Interlocal Agreement is made and entered into by and between the City of Bellevue, hereinafter referred to as "Bellevue", a municipal corporation of the State of Washington, and the City of Redmond, hereinafter referred to as "Redmond", a municipal corporation of the State of Washington.

WHEREAS, there currently exists an Interlocal Agreement dated November 6, 1998, between Bellevue and Redmond, providing for the operation of a water supply and distribution system within the service areas specified in said agreement; and

WHEREAS, Bellevue and Redmond are members of Cascade Water Alliance (Cascade) which is now the wholesale water supplier for the cities; and

WHEREAS, it is necessary and desirable to enter into a new Interlocal Agreement between Bellevue and Redmond which updates the respective duties and responsibilities of said cities with respect to distribution of water supplied by Cascade within the respective service areas of said cities; and

WHEREAS, it is in the interests of the public served by both Bellevue and Redmond to enter into a new Interlocal Agreement;

NOW, THEREFORE, it is covenanted and agreed as follows:

1. **Purpose**. The purpose of this Interlocal Agreement is to provide for the respective responsibilities and obligations of Bellevue and Redmond to provide for the operation and maintenance of water supply facilities within the common service area set forth in the Agreement.
2. **Joint-use/Ownership Distribution Mains**. The existing watermains listed below are to be classified as joint-use/ownership. Each city shall have a 50 percent (50%) ownership of these joint-use/ownership mains. The city identified as having responsibilities for each

watermain is responsible for all maintenance and operation of the watermain, including mainline valves, hydrants and hydrant piping. Each city is responsible for maintenance and repair of its own individual service lines (including saddles, corporation stops and any valves) and any mainline connection to a joint-use/ownership main. The cost of replacement of a joint-use/ownership main shall be shared equally between each city. The city identified as having responsibility for each joint-use/ownership main shall have the authority to determine when the joint-use/ownership main needs to be replaced. Each city shall provide at least two years notice of any scheduled replacement to the other city so budget impacts can be planned for.

Joint-Use/Ownership Distribution Mains:

A. Existing watermain on 148th Avenue NE between NE 20 Street and NE 51st Street - City of Bellevue's responsibility.

B. Existing watermain on NE 20th Street and Bellevue-Redmond Road from 148th Avenue NE to 156th Avenue NE – City of Redmond's responsibility.

C. Existing watermain on 156th Avenue NE from Bellevue-Redmond Road to NE 28th Street – City of Redmond's responsibility.

Joint-Use/Ownership Transmission Mains:

The existing watermains listed below were constructed pursuant to an "Agreement for Construction, Operation and Maintenance of Joint-Use Storage and Pumping Facility" dated September 28, 1990. The ownership in these mains is 56% Bellevue and 44% Redmond according to the terms of that Agreement.

- Existing transmission main on NE 40th Street between the Seattle meter at 140th Avenue NE and the joint-use pump station and reservoir.

This section is not intended to amend the terms of said Agreement but to document the water mains constructed under the terms of said Agreement.

3. **Service Area**. Redmond and Bellevue have established their common service area boundary to be as shown on Exhibit 1. Each city shall be the direct provider of water service within its service area boundary except for those properties shown on Exhibit 1 or defined by subsequent amendment to this Agreement.

Unless otherwise agreed, ownership and water service responsibilities for any non-joint-use watermains, services and customers are placed with the city in which they exist.

Within the Redmond service area there are herby established "direct read meter areas" and a "master meter area". The boundaries for direct read meter areas are shown on Exhibit 1. Remaining areas within Redmond with water delivered under this Agreement are in the master meter area.

Within the Bellevue service area there is hereby established a "direct read meter area" as shown on Exhibit 1 for water delivered by Redmond.

4. <u>Metering</u>

A. Master Meter Areas

1) Redmond. Redmond shall operate and maintain three master meters to measure the quantity of water entering the Redmond master meter area. The location of the meters are as follows:

a. NE 40th Street between SR 520 and 156th Avenue NE.

b. 156th Avenue NE between NE 31st Street and NE 36th Street.

c. NE 24th Street between 171st Avenue NE and 173rd Avenue NE.

The meters shall be maintained to provide 98 percent (98%) accuracy for a flow range between 50 gpm and 1,000 gpm.

2) Bellevue. Bellevue shall operate and maintain one master meter to measure the quantity of water leaving the Redmond master meter area. The location of the meter is as follows:

a. Bellevue-Redmond Road between NE 32nd Street and NE 35th Street. The meter shall be maintained to provide 98 percent (98%) accuracy for a flow range between 50 gpm and 1,000 gpm.

3) Ownership/Maintenance. Each city shall own its respective master meters and shall provide routine operation and maintenance.

B. Direct Read Meter Areas.

1) Redmond. The City of Redmond shall construct, operate, and maintain individual service meters to all water users to measure the quantity of flow consumed in the Redmond direct read meter area. These meters shall be the standard distribution meters used by the City of Redmond.

2) Bellevue. The City of Bellevue shall construct, operate, and maintain individual service meters to all water users to measure the quantity of flow consumed in the Bellevue direct read meter area. These meters shall be the standard distribution meters used by the City of Bellevue.

3) Ownership/Maintenance. Each city shall own all individual service meters in its service area and shall provide routine operation and maintenance.

C. Calibration and Replacement of Meters. All meters two (2) inches and smaller shall be replaced after 20 years of service from the time of installation. All meters three (3) inches and larger shall be calibrated at regular intervals to provide for proper measurement of water usage. Meters shall be calibrated according to the following schedule:

1) Master Meters: The first quarter of every odd numbered year.
2) All meters three (3) inches and larger: Every five (5) years.

The cost of meter calibration or replacement shall be paid by the owner of the meter. Any meter with accuracy limits which do not meet or exceed those listed in the latest edition of the AWWA Manual M6 under "Accuracy Limits for Removal from Service" shall be replaced by the owner of the meter. Each city shall provide a calibration and replacement report to the other city on an annual basis.

5. **Interconnection or Extensions with Other Parts of Redmond Water Systems**. Redmond agrees not to interconnect the water system within the direct read meter areas to other parts of its water system or customers outside the direct read meter areas without the written (or oral, in case of emergency) approval of Bellevue.

6. **Distribution of Water**. Any restriction of the distribution of water to Redmond shall be on an equitable basis in relation to the service provided to Bellevue customers in the general vicinity.

7. **Water Consumption Reporting**.

A. Determining consumption. Redmond shall read the individual service meters in the Redmond direct read meter areas. All meters shall be read monthly or bi-monthly. The Redmond direct read meter area consumption shall be determined by summing the consumption of all individual service meters then multiplying the total by 1.11. (The factor is to provide for unaccounted system losses of 10% of the total direct meter area usage.)

Redmond shall read the Redmond master meters monthly and the Bellevue master meter monthly. The total master meter consumption shall be determined by summing the totalized flow of the three Redmond master meters and subtracting the totalized flow of the Bellevue master meter.

Bellevue shall read the individual service meters in the Bellevue direct read meter areas. All meters shall be read monthly or bi-monthly. The Bellevue direct read meter area consumption shall be determined by summing the consumption of all individual service meters then multiplying the total by 1.11. (The factor is to provide for unaccounted system losses of 10% of the total direct meter area usage.)

B. Reporting Consumption. Each city shall report to the other city and to Cascade the total individual service meter consumption and the calculated direct read meter area

consumption. Redmond shall report to Bellevue and Cascade the master meter totalized flow. Each city shall report consumption data to the other city on a quarterly basis. Each city may request a report of the other city listing all meters within the direct meter area. This report shall be provided to the other city for its use in verifying that all direct read metered consumption is being reported.

8. **Old Water Allowance**. To the extent there is any current or future benefit from "old water" provisions of prior Seattle Water Purveyor Contracts the following "old water" allowances are hereby allocated from Bellevue's water usage to Redmond (hundreds of cubic feet):

	Month	Cumulative
January	17,656	17,656
February	17,235	34,891
March	14,686	49,577
April	18,425	68,002
May	16,794	84,796
June	23,462	108,258
July	22,386	130,644
August	29,010	159,654
September	29,897	189,551
October	27,946	217,497
November	23,128	240,625
December	20,667	261,292
	261,292	

9. **Responsibility for Damages, Repair and Replacement**. Redmond and Bellevue shall each be separately responsible for maintenance, repair and replacement of those facilities which are solely owned by such city. In the event of damages, repair, replacement, and maintenance of joint-use watermains where each city has a 50 percent (50%) ownership of such main pursuant to Section 2 of this Agreement, the cities shall each contribute to the cost of such repair, replacement, or maintenance on a 50/50 percent basis. To the extent that any joint ownership main is damaged in whole or part by the negligent activities of one of the cities, the city so causing such damage shall, in addition to its obligation to pay 50 percent (50%) of the cost of repair, replacement, or maintenance pursuant to the preceding

paragraph, also pay the same percentage of the remaining expense as its degree of negligence bears to 100 percent (100%).

10. **Liability/Hold Harmless**. Bellevue shall indemnify, defend, and hold harmless Redmond, it officers, agents, and employees, from and against any and all claims, losses, or liability, including attorneys fees, arising from injury or death to persons or damage to property occasioned by any act, omission, or failure of Bellevue, its officers, agents, and employees, in the performance of this Agreement. With respect to the performance of this Agreement and as to claims against Redmond, its officers, agents, and employees, Bellevue expressly waives its immunity under Title 51 of the Revised Code of Washington, the Industrial Insurance act, for injuries to its employees and agrees that the obligation to indemnify, defend and hold harmless provided for in this paragraph extends to any claim brought by or on behalf of any employee of Bellevue. This paragraph shall not apply to any damage resulting from the negligence of Redmond, its agents, and employees. To the extent any of the damages referenced by this paragraph were caused by or resulted from the concurrent negligence of Redmond, its agents, or employees, this obligation to indemnify, defend and hold harmless is valid and enforceable only to the extent of the negligence of Bellevue, its officers, agents, and employees.

Redmond shall indemnify, defend and hold harmless Bellevue, its officers, agents, and employees, from and against any and all claims, losses, or liability, including attorneys fees, arising from injury or death to persons or damage to property occasioned by any act, omission, or failure of Redmond, its officers, agents and employees, in the performance of this Agreement. With respect to the performance of this Agreement and as to claims against Bellevue, its officers, agents, and employees, Redmond expressly waives its immunity under Title 51 of the Revised Code of Washington, the Industrial Insurance Act, for injuries to its employees and agrees that the obligation to indemnify, defend and hold harmless provided for in this paragraph extends to any claim brought by or on behalf of any employee of Redmond. This paragraph shall not apply to any damage resulting from the negligence of Bellevue, its agents, and employees. To the extent any of the damages referenced by this paragraph were caused by or resulted from the concurrent negligence of

Bellevue, its agents, or employees, this obligation to indemnify, defend and hold harmless is valid and enforceable only to the extent of the negligence of Redmond, its officers, agents, and employees.

11. **Dispute Resolution**. Each city shall designate representatives for the purposes of administering this Agreement and resolving disputes arising from this Agreement. Each city shall notify the other in writing of its designated representatives. Each city may change its designated representatives on notice to the other.

    Disputes that cannot be resolved by the representatives designated herein shall be referred to the chief executive officer of each city for mediation and/or settlement. If not resolved by them within sixty (60) days, either city, or both of them, may file a demand for arbitration, in which event the issues shall be submitted to an arbitrator acceptable to both parties and the matter shall be arbitrated pursuant to the rules and procedures of the American Arbitration Association. The decision of the arbitrator shall be final and binding on both cities.

12. **Modification of Agreement**. This Agreement may only be modified in writing signed by both cities.

13. **Severability**. If any provision of this Interlocal Agreement shall be held invalid, such invalidity shall not affect the other provisions of this Agreement which could be given effect without the invalid provision, and to this end the provisions of this Agreement are declared to be severable.

14. **Effective Date**. This agreement shall take effect on January 1, 2004.

15. **Repeal**. Upon the effective date of this agreement, the previous Interlocal Agreement dated November 6, 1998 between Bellevue and Redmond is no longer in effect.

HEREBY AGREED TO AND ACCEPTED on this the 8 day of June, 2005.

CITY OF BELLEVUE

By: _____
for Steve Sarkozy, City Manager

Approved as to form:

By: Patrice Cole
Assistant City Attorney

CITY OF REDMOND

By: _____
Rosemarie Ives, Mayor

Approved as to form:

By: _____
City Attorney

JUN - 8 2005
Contracting Service

ORIGINAL

FILED NO. 26379
CITY OF BELLEVUE
DATE 4/6/98
CITY CLERK'S OFFICE

AGREEMENT FOR WHOLESALE WATER SUPPLY BETWEEN THE CITY OF BELLEVUE AND THE CITY OF REDMOND

This Interlocal Agreement is made and entered into by and between the City of Bellevue, hereinafter referred to as "Bellevue", a municipal corporation of the State of Washington, and the City of Redmond, hereinafter referred to as "Redmond", a municipal corporation of the State of Washington.

WHEREAS, there currently exists an Interlocal Agreement dated July 19, 1990, between Bellevue and Redmond, providing for the operation of a water supply and distribution system within the service areas specified in said agreement; and

WHEREAS, it is necessary and desirable to enter into a new Interlocal Agreement between Bellevue and Redmond which updates the respective duties and responsibilities of said cities with respect to distribution of water supply within the respective service areas of said cities; and

WHEREAS, it is in the interests of the public served by both Bellevue and Redmond to enter into a new Interlocal Agreement;

NOW, THEREFORE, it is convenanted and agreed as follows:

1. Purpose. The purpose of this Interlocal Agreement is to provide for the respective responsibilities and obligations of Bellevue and Redmond to provide for the construction, operation, and maintenance of water supply facilities within the common service area set forth in this Agreement.

2. Joint-use/Ownership Watermains. The existing watermains listed below are to be classified as joint-use/ownership. Each city shall have a 50 percent (50%) ownership of the joint-use/ownership mains. The city identified as having responsibility for each watermain is responsible for all maintenance and operation of the watermain, including mainline valves, hydrants and hydrant piping. Each city is responsible for maintenance and repair of its own individual service lines (including saddles, corporation stops and any valves) and any mainline connection to a joint-use/ownership main. The cost of replacement of a joint-use/ownership main shall be shared equally between each city. The city identified as having responsibility for each joint-use/ownership main shall have the authority to determine when the joint-use/ownership main needs to be replaced. Each city shall provide at least two years notice of any scheduled replacement to the other city so budget impacts can be allotted for.

Joint-Use/Ownership Watermains:

A. Existing watermain on 148th Avenue between NE 20 Street and NE 51st Street - City of Bellevue's responsibility.

B. Existing watermain on NE 20th Street and Bellevue-Redmond Road from 148th Avenue NE to 156th Avenue NE - City of Redmond's responsibility.

C. Existing watermain on 156th Avenue NE from Bellevue-Redmond Road to NE 28th Street - City of Redmond's responsibility.

3. Service Area. Redmond and Bellevue have established their common service area boundary to be as shown on Exhibit 1. Each city shall be the direct provider of water service within its service area boundary except for those properties shown on Exhibit 1 or defined by subsequent amendment to this Agreement.

Unless otherwise agreed, ownership and water service responsibilities for any non-joint-use watermains, services and customers are placed with the city in which they exist.

Within the Redmond service area there are hereby established "direct read meter areas" and a "master meter area". The boundaries for direct read meter areas are shown on Exhibit 1. Remaining areas within Redmond and supplied by Bellevue are in the master meter area.

Within the Bellevue service area there is hereby established a "direct read meter area" as shown on Exhibit 1 for water supplied by Redmond.

4. Metering

A. Master Meter Areas

1) Redmond. Redmond shall construct, operate, and maintain three master meters to measure the quantity of water entering the Redmond master meter area. The location of the meters shall be as follows:

a. NE 40th Street between SR 520 and 156th Avenue.

b. 156th Avenue NE between NE 31st Street and NE 36th Street.

c. NE 24th Street between 171st Avenue and 173rd Avenue.

The meters shall be designed to provide 98 percent (98%) accuracy for a flow range between 50 gpm and 1,000 gpm.

2) Bellevue. Bellevue shall construct, operate, and maintain one master meter to measure the quantity of water leaving the Redmond master meter area. The location of the meter shall be as follows:

a. Bellevue-Redmond Road between NE 32nd Street and NE 35th Street.

The meter shall be designed to provide 98 percent (98%) accuracy for a flow range between 50 gpm and 1,000 gpm.

3) Ownership/Maintenance. Each city shall own its respective master meters and shall provide routine operation and maintenance.

B. Direct Read Meter Areas.

1) Redmond. The City of Redmond shall construct, operate, and maintain individual service meters to all water users to measure the quantity of flow consumed in the Redmond direct read meter area. These meters shall be the standard distribution meters used by the City of Redmond.

2) Bellevue. The City of Bellevue shall construct, operate, and maintain individual service meters to all water users to measure the quantity of flow consumed in the Bellevue direct read meter area. These meters shall be the standard distribution meters used by the City of Bellevue.

3) Ownership/Maintenance. Each city shall own all individual service meters in its service area and shall provide routine operation and maintenance.

C. Calibration of Meters. All meters shall be calibrated at regular intervals to provide for proper measurement of water usage. Meters shall be calibrated according to the following schedule:

1) Master Meters	January of even numbered years
2) Individual service meters in direct read areas:	
a. over 2 inches	Every 5 years
b. 2 inches and smaller	Every 10 years

The cost of meter calibration shall be paid by the owner of the meter. Any meter with accuracy limits which do not meet or exceed those listed in the latest edition of the AWWA Manual M6 under "Accuracy Limits for Removal from Service" shall be replaced by the owner of the meter.

5. Flushing Allowance. An allowance for actual water used for watermain and tank flushing as stipulated in the water purveyor contract, dated November 1981, between Bellevue and Seattle will be credited to Redmond; provided, however, that Redmond shall furnish Bellevue a certified statement of actual flushing water used by measurement, or calculated by formula acceptable to Bellevue.

6. Interconnection or Extensions with Other Parts of Redmond Water Systems. Redmond agrees not to interconnect the water system within the direct read meter areas, to other parts of its water system or customers outside the direct read meter areas without the written (or oral, in case of emergency) approval of Bellevue.

7. Supply of Water. Any restriction of the supply of water to Redmond shall be on an equitable basis in relation to the service provided to other customers of the water system in the general vicinity.

If noncompatible water sources are used in the future, the city desiring to make the change shall negotiate such change with the other city. To change may result in cross ties being installed at the changing city's expense.

8. Cost of Water. Water Purveyor Rate. It is agreed that the Water Purveyor's rate to be charged to Redmond shall be the rate charged by the City of Seattle. The City of Seattle rate shall be computed to include: Old and new water costs, any demand charges that are related to or caused by Redmond, seasonal charges, conservation charges or any other charge applied by the City of Seattle.

In addition to the water rate charge, Redmond shall pay a fixed monthly charge of $2,800 per month in 1998 dollars to recover administrative overhead costs by Bellevue plus $165 fixed monthly meter charges from Seattle. The fixed monthly charge is based on a report entitled *Redmond Wholesale Water Overhead Charge Calculation* dated 5 June 1998 by Financial Consulting Solutions Group, Inc. (FCSG). The meter charges are based on 44% of the Seattle meter charges to Bellevue for the NE 40th inlet meter.

Bellevue may adjust the fixed monthly charges to account for the increased meter charges by Seattle, inflation, and increased administrative costs. Adjustments shall be based on the same approach used in the analysis completed by FCSG.

9. Billing.

A. Determining Usage. Redmond shall read the individual service meters in the Redmond direct read meter area. All meters shall be read monthly or bi-monthly. The Redmond direct read meter area usage shall be determined by summing the usage of all individual service meters then multiplying the total by 1.111. (The factor is to provide for unaccounted system losses of 10.0 % of the total direct meter area usage.)

Redmond shall read the Redmond master meters monthly and the Bellevue master meter monthly. The total master meter usage shall be determined by summing the usage of the three Redmond master meters and subtracting the usage of the Bellevue master meter.

Bellevue shall read the individual service meters in the Bellevue direct read meter area. All meters shall be read monthly or bi-monthly. The Bellevue direct read meter area usage shall be determined by summing the usage of all individual service meters then multiplying the total by 1.111. (The factor is to provide for unaccounted system losses 10.0% of the total direct meter area usage.)

B. Reporting Usage. Each city shall report to the other city within 30 days of meter reading the total individual service meter usage and the calculated direct read meter area usage from this report shall include a list of all individual meters and accounts and usages in January of each year. Each city shall

prepare a report, listing all meters within the direct meter area which shall highlight any meters added or deleted within the previous calendar year. This report shall be provided to the other city for its use in verifying that all metered usage is being reported. This report shall also identify which meters were calibrated within the calendar year. Redmond shall report to Bellevue within 30 days of reading the master meter usage.

C. Payment. Redmond shall submit a monthly payment to Bellevue based on water volume read for the specific billing period. The Bellevue direct read meter area usage shall be shown and deducted from the Redmond direct read meter area usage to determine the Redmond payment amount. Submitted with the payment shall be a report listing the water usage of all the individual and master meters for the specific billing.

10. Old Water Allowance. The following is Redmond's old water consumption allowances, based on water usage from January, 1979 through December, 1981. Any consumption in excess of the allowance shall be classified as new consumption and charged under Seattle's Growth Charge rate:

	Month	Cumulative
January	17,656	17,656
February	17,235	34,891
March	14,686	49,577
April	18,425	68,002
May	16,794	84,796
June	23,462	108,258
July	22,386	130,644
August	29,010	159,654
September	29,897	189,551
October	27,946	217,497
November	23,128	240,625
December	20,667	261,292
Yearly Total	261,292	

11. Responsibility for Damages, Repair and Replacement. Redmond and Bellevue shall each be separately responsible for maintenance, repair and replacement of those facilities which are solely owned by such city. In the event of damages, repair, replacement, and maintenance of joint-use watermains where each city has a 50 percent (50%) ownership of such main pursuant to Section 2 of this Agreement, the cities shall each contribute to the cost of such repair, replacement, or maintenance on a 50/50 percent basis.

To the extent that any joint ownership main is damaged in whole or part by the negligent activities of one of the cities, the city so causing such damage shall, in addition to its obligation to pay 50 percent of the cost of repair, replacement, or maintenance pursuant to the preceding paragraph, also pay the same percentage of the remaining expense as its degree of negligence bears to 100 percent.

12. Liability/Hold Harmless. Bellevue shall indemnify, defend, and hold harmless Redmond, its officers, agents, and employees, from and against any and all claims, losses, or liability, including attorneys fees, arising from injury or death to persons or damage to property occasioned by any act, omission, or failure of Bellevue, its officers, agents, and employees, in the performance of this Agreement. With respect to the performance of this Agreement and as to claims against Redmond, its officers, agents, and employees, Bellevue expressly waives its immunity under Title 51 of the Revised Code of Washington, the Industrial Insurance Act, for injuries to its employees and agrees that the obligation to indemnify, defend and hold harmless provided for in this paragraph extends to any claim brought by or on behalf of any employee of Bellevue. This paragraph shall not apply to any damage resulting from the negligence of Redmond, its agents, and employees. To the extent any of the damages referenced by this paragraph were caused by or resulted from the concurrent negligence of Redmond, its agents, or employees, this obligation to indemnify, defend and hold harmless is valid and enforceable only to the extent of the negligence of Bellevue, its officers, agents, and employees.

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13. Dispute Resolution. Each city shall designate representatives for the purposes of administering this Agreement and resolving disputes arising from this Agreement. Each city shall notify the other in writing of its designated representatives. Each city may change its designated representatives on notice to the other.

Disputes that cannot be resolved by the representatives designated herein shall be referred to the chief executive officer of each city for mediation and/or settlement. If not resolved by them within sixty (60) days, either city, or both of them, may file a demand for arbitration, in which event the issues shall be submitted to an arbitrator acceptable to both parties and the matter shall be arbitrated pursuant to the rules and procedures of the American Arbitration Association. The decision of the arbitrator shall be final and binding on both cities.

14. Modification of Agreement. This Agreement may only be modified in writing signed by both cities.

15. Severability. If any provision of this Interlocal Agreement shall be held invalid, such invalidity shall not affect the other provisions of this Agreement which could be given effect without the invalid provision, and to this end the provisions of this Agreement are declared to be severable.

16. Effective Date. This agreement shall take effect on January 1, 1999.

17. Repeal. Upon the effective date of this agreement, the previous Interlocal Agreement dated July 19, 1990 between Bellevue and Redmond is no longer in effect.

HEREBY AGREED TO AND ACCEPTED on this the 6th day of Nov, 1998.

CITY OF BELLEVUE

By: Linda M. Barton
Steve Bauer, City Manager

Approved as to form:

By:
Assistant City Attorney

CITY OF REDMOND

By: Rosemarie Ives
Rosemarie Ives, Mayor

Approved as to form:

By:
City Attorney

EXHIBIT 1
SERVICE AREA BOUNDARY AND DIRECT READ METER AREAS

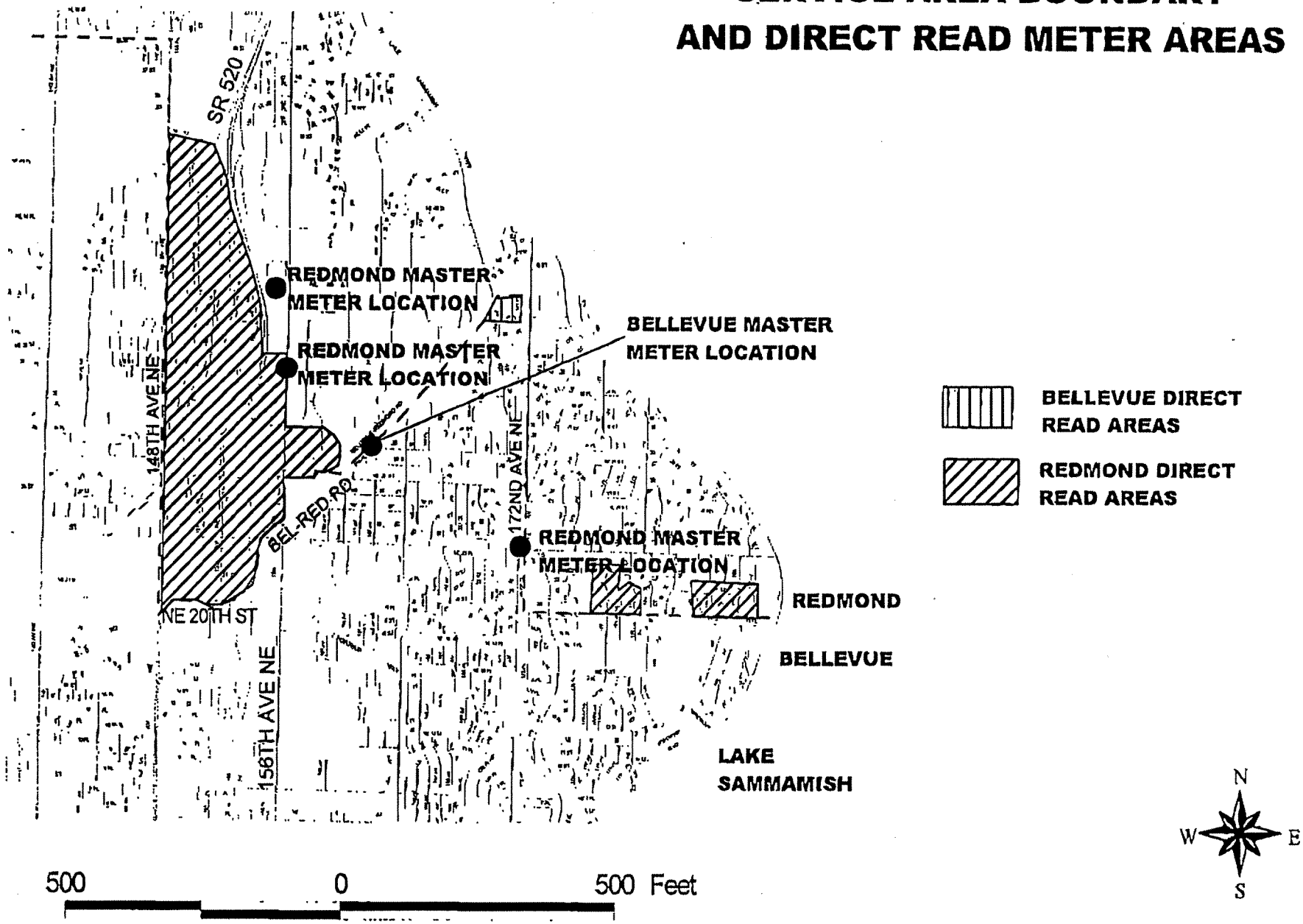

EXHIBIT 2

5 June 1998

To: Barbara Shosten, Bellevue Utilities Department

From: Tracey Dunlap, Senior Project Manager TKD
Manuel Teodoro, Financial Consultant MT

Re: Redmond Wholesale Water Overhead Charge Calculation

FCS Group, Inc. is pleased to submit this updated calculation of the Redmond wholesale water overhead charge. In 1988, FCS Group performed the analysis that established the $0.042 per hundred cubic feet (ccf) charge that Redmond currently pays Bellevue to cover the overhead costs related to wholesale supply. Ten years later, this update employs a similar but more streamlined analysis to establish an overhead charge that more accurately reflects today's overhead costs. Rather than calculating a Redmond overhead charge independently, we sought to integrate the Redmond overhead calculation with the City's revised Water Rate Model. This memorandum relates our recommendations, briefly describes our methodology, and outlines instructions for updating the analysis for setting future charges.

Recommendations

Based on the analysis embedded in the revised Water Rate Model, we recommend that Bellevue levy a fixed monthly overhead charge to Redmond for provision of supply. Bellevue should continue to pass on to the City of Redmond all direct supply costs (i.e., Bellevue's cost of purchased water) associated with Redmond. Based on the 1998 budget data currently entered in the Water Rate Model, our calculations derive a 1998 fixed monthly charge of approximately $2,800 for Redmond (about $33,600 annually). For purposes of comparison, our recommended monthly overhead charge equals approximately $0.068 per ccf, based on Redmond's 1997 total volume usage. Of course, as an integrated part of the Water Rate Model, future Redmond charges may change as part of Bellevue's routine rate-setting process. Moreover, the exact charge depends upon whether Bellevue chooses to join the Cascade Water Alliance (CWA) or retains Seattle as its source of purchased water.

A fixed overhead charge enjoys three advantages over the existing volume charge: (1) a fixed overhead charge would remain valid whether or not Bellevue chooses to join the CWA; (2) a fixed charge recognizes the fact that virtually all of the overhead costs associated with Redmond supply do not vary with volume flow in any given year; and (3) a fixed charge is a more stable source of revenue for Bellevue (and a stable cost for Redmond).

FINANCIAL CONSULTING SOLUTIONS GROUP, INC.
10612 NE 154th AVE NE ■ REDMOND, WA 98052 ■ VOICE: 425-867-1802 ■ FAX: 425-867-1937 ■ www.fcsgroup.com

Methodology

Overhead Costs. The Redmond overhead charge is based on an allocation of Bellevue's indirect overhead costs associated with supply of water to Redmond. The analysis begins by identifying Bellevue's budgeted indirect overhead costs for water, found in accounts 4440-013 (Water General Administration) and 4440-014 (Water Engineering Administration).[1] The attached *REDMOND* spreadsheets reflect the budget subtotals by expense category for these functions. Subtotals within these accounts are adjusted down by deducting those line items not associated with wholesale supply to Redmond. The table below identifies the line items excluded:

Budget Items Excluded from Redmond Wholesale Overhead Base

Budget Code	Item	Remarks
4440-013 Water General Administration		
442	Legal Notices	Legal notices not relevant to Redmond service.
471-475	*[Various Utilities]*	Utilities for rental building; not allocable to Redmond.
481	Street Light Maintenance.	No street lighting provided to Redmond.
498	Tax/Service Rebate	Benefits apply to Bellevue retail customers only.
530	Taxes & Assessments	City of Bellevue tax costs not allocable to Redmond.
531	Franchise Fees	Franchise fees not allocable to Redmond.
920-922	Direct Overhead -Mail Costs.	Mailings are not associated with Redmond service.
924	Direct Overhead -Graphics	Graphics serve no Redmond function.
925	Direct Overhead -Word Processing	Word processing serves no Redmond function.
926	Direct Overhead -Copy Center	Copy center does not serve Redmond function.
924	Direct Overhead -Long Distance	Redmond requires negligible long distance costs.
928	Direct Overhead - Special Lines	Special lines serve telemetry systems for Bellevue retail customers.
929	Direct Overhead - PC Installation	Redmond service does not require new computers.
932	Direct Overhead - Property Services	Property services are not associated with Redmond service.
941	EERF Maintenance	EERF are radio system costs associated with retail service.
950	Interfund Facility Services	Landscaping costs for pumping facilities. Not associated with Redmond service
4440-014 Water Engineering Administration		
442	Legal Notices	Legal notices not relevant to Redmond.

[1] The other administrative account, 4440-017 Services and Systems, which includes utility billing, is excluded since Redmond generates its own retail payment invoices.

Allocation. All remaining costs within these accounts are apportioned to Redmond according to a calculated allocation factor, seen in the upper-right corner of the attached *REDMOND* spreadsheet. In the original 1988 Redmond rate analysis, FCS Group allocated the majority of costs to Redmond according to its proportion of total utility revenues.. Although that approach provides a reasonable allocation basis, it is somewhat circular in logic, since the revenue derived from Redmond was set as a function of the revenue it was expected to generate.

In this update, FCS Group uses a more refined logic that avoids circularity. Since Bellevue provides only wholesale supply services to Redmond, the overhead allocation factor calculation determines the cost of purchased water (from Seattle or CWA) as a proportion of total utility costs. Under a CWA scenario, Bellevue's costs for RCFCs are deducted from purchased water amount allocable to Redmond, because RCFCs are levied against Bellevue only for customer growth within Bellevue. Thus, Bellevue's RCFC costs have no impact on Redmond's allocation. Following this methodology, the calculated ratio of purchased water costs to total utility costs for 1998 was about 35.0%. The remaining 65.0% of costs are not associated with supply and therefore are not allocable to Redmond. Next, we calculated Redmond's billable volume consumption of purchased water as a proportion of Bellevue's total purchased water (from Seattle or CWA).[2] For 1998, the calculated ratio of Redmond purchased water to total purchased water was about 6.5%. Thus, purchased water comprises only 35.0% of Bellevue's total costs and Redmond accounts for just 6.5% of that total water purchased. The product of these two ratios–calculated at 2.265% with CWA and 2.259% with Seattle for 1998–is a reasonable basis for allocation of Bellevue's overhead costs to Redmond. These results are roughly comparable to the 2.17% allocation factor developed using the revenue ratio method in 1988.

Overhead Costs Allocated to Redmond. Multiplying the adjusted budgeted overhead costs by the allocation function described above produces the Redmond overhead cost for each budget sub-category. The total of these products equals Redmond's annual overhead rate revenue requirement. As noted above, the Water Rate Model allows calculation of the Redmond overhead charge under either Seattle or CWA supply scenarios. However, the CWA will not begin supplying water until the year 2000. Therefore, for the years 1998 and 1999, the CWA purchased water costs are equal to Seattle purchased water costs plus some minor CWA administrative charges. 2000 is the first full CWA billing year.

The calculated Redmond portion of overhead costs for 1998 was approximately $33,600, or about $2,800 monthly. When this overhead charge is structured as a fixed monthly charge, Redmond's monthly bill is simply its share of total purchased water costs (a function of volume if from Seattle, a function of peak demand if from CWA), plus the monthly overhead markup. If water is purchased from Seattle, a portion of the fixed meter charge for the N.E. 40th meter also applies. For 1998, the average total monthly cost to Redmond would be $44,018 assuming a CWA supply, and $43,630 assuming a Seattle supply.

---

[2] Billable consumption is actual metered consumption plus an adjustment for line loss. In 1998, the adjustment was +12.5% of total metered volume.

Updating the Redmond Charge

The calculation of the Redmond overhead charge is set up as a discrete portion of Bellevue's revised Water Rate Model, located on a new worksheet entitled *REDMOND*. Revising the overhead charge calculation is very simple. The main portion of the model drives the allocation factor in the upper-right corner, and the allocation process is fully structured within the *REDMOND* page. The only hard-keyed inputs necessary to update the overhead charge are budget data. In order to revise the charge, the operator needs only a copy of the published water utility budget for the "target year."[3] The budgeted amounts for the deducted line items noted in the table above should be entered in the "Utility Revenue Requirement" column as appropriate. After the budget data are completed, the operator should enter the total annual meter charge paid to Seattle for the N.E. 40th meter at the bottom of the *REDMOND* page. When this input is complete, the computer will automatically calculate a new Redmond fixed overhead charge and integrate the new charge into the main portion of the model.

Thank you for the opportunity to assist the City with this update. Please contact us with any questions at (425) 867-1802.

[3] The target year is always two years beyond the most recent update input year in the main model, found on the *SUMMARY* page. For this study, the last update input year was 1996, so the target year was 1998.

City of Bellevue
Water Rate Model
Calculation of Redmond Overhead Mark-Up

REDMOND Page 1
Last Edit: 05-Jun-98

Assumed Wholesale Supplier: Seattle Public Utilities

Calculation of Redmond Allocation Factor:	
Total Utility Cost:	$15,078,718
Purchased Water Cost:	5,271,723
Less: RCFC Cost (if CWA Supply)	0
Purchased Water Cost less RCFCs	5,271,723
Purchased Water as % of Total Cost:	34.961%
Redmond Volume:	496,890
Total Volume:	7,691,473
Redmond Vol. as % of Total Vol.:	6.460%
(% Purchased Water Cost) x (% Redmond Volume) =	2.259%

Allocation of Overhead Expenses

1998 Budgeted General Administrative Expenditures - #4440 - 013	Utility Revenue Req.	Percent Redmond Allocation	Redmond Revenue Req.	Notes
63410 Administration - General				
63410 100 Personal Services	$229,129			Water General Administrative cost, then allocated by % of flow.
Less: Adjustments	0			
63410 100 Subtotal, Personal Services	$229,129	2.26%	$5,175	Allocated by % of flow times % of purchased water costs for total utility.
63410 200 Personnel Benefits	55,768			
Less: Adjustments	0			
63410 200 Subtotal, Personnel Benefits	$55,768	2.26%	1,260	Allocated by % of flow times % of purchased water costs for total utility.
63410 300 Supplies	7,661	2.26%	173	Allocated by % of flow times % of purchased water costs for total utility.
63410 400 Other Services/Charges	338,420			
Less: 63410 442 Legal Notices	(1,050)			Notices not relevant to wholesale.
63410 471 Electricity	(1,050)			Utilities for rental building; not water-related.
63410 472 Natural Gas	(2,900)			Utilities for rental building; not water-related.
63410 473 Water Billings	(300)			Utilities for rental building; not water-related.
63410 474 Sewer Billings	0			Utilities for rental building; not water-related.
63410 475 Drainage Billings	(1,260)			Utilities for rental building; not water-related.
63410 481 Street Lighting Maintenance	(58,400)			Street lighting not allocable to wholesale.
63410 498 Tax/Service Rebate	(86,500)			Not allocable to wholesale.
63410 400 Subtotal, Other Services/Charges	186,960	2.26%	4,223	Allocated by % of flow times % of purchased water costs for total utility.
63410 500 Intergovernmental Services & Taxes	393,300			
Less: 63410 530 Taxes & Assessments	(312,900)			Not allocable to wholesale.
63410 531 Franchise Fees	(72,200)			Not allocable to wholesale.
63410 500 Subtotal, Intergovernmental Services & Fees	8,200	2.26%	185	
63410 600 Capital Outlays	0	0.00%	0	Not allocable to wholesale.
63410 800 Interfund Service Payments	896,027			
Less: 63410 920 Direct Overhead-First Class Mail	(7,005)			Not allocable to wholesale.
63410 921 Direct Overhead-Bulk Mail	(6,113)			Not allocable to wholesale.
63410 922 Direct Overhead-Mail Contract	(1,087)			Not allocable to wholesale.
63410 924 Direct Overhead-Graphics	0			Not allocable to wholesale.
63410 925 Direct Overhead-Word Processing	(400)			Not allocable to wholesale.
63410 926 Direct Overhead-Copy Center	(2,100)			Not allocable to wholesale.
63410 927 Direct Overhead-Long Distance	(1,076)			Not allocable to wholesale.
63410 928 Direct Overhead-Special Lines	(26,592)			Not allocable to wholesale.
63410 929 Direct Overhead-PC Installs	0			Not allocable to wholesale.
63410 932 Direct Overhead-Property Services	(69,242)			Not allocable to wholesale.

SEP.30.2003 3:38PM COR FW STORM ENG NO.769 P.14

63410 [illegible]	EERF Maintenance Charges (Radio System)			Radio system costs not allocable to wholesale.
63410 [illegible]	Interfund Facility Services (Facilities Labor Costs)			Not allocable to wholesale.
63410 900	*Interfund Service Payments*	827,128	2.26%	18,661 Allocated by % of flow times % of purchased water costs for total utility.
63420 [illegible]	Administration Consolidation	0	0.00%	0 Not allocable to wholesale.
	Subtotal, General Overhead Revenue Req.:	$3,026,305	0.98%	$29,697

1998 Budgeted Engineering Admin. Expenditures - #4440 - 011

		Utility Revenue Req.	Percent Redmond Allocation	Redmond Revenue Req.	
63410 [illegible]	Administration Overhead				
63410 100	Personal Services	$128,057			
Less: [illegible]	Adjustments	[illegible]			
63410 100	*Subtotal, Personal Services*	$128,057	2.26%	$2,892	Allocated by % of flow times % of purchased water costs for total utility.
63410 200	Personnel Benefits	30,951			
Less: [illegible]	Adjustments	[illegible]			
63410 200	*Subtotal, Personnel Benefits*	30,951	2.26%	699	Allocated by % of flow times % of purchased water costs for total utility.
63410 300	Supplies	10,000	2.26%	226	Allocated by % of flow times % of purchased water costs for total utility.
63410 400	Other Services/Charges	2,286			
Less: [illegible]	Legal Notices	(100)			Notices not relevant to wholesale.
63410 400	*Subtotal, Other Services/Charges*	2,286	2.26%	52	Allocated by % of flow times % of purchased water costs for total utility.
63410 900	Interfund Service Payments	4,330	2.26%	98	Allocated by % of flow times % of purchased water costs for total utility.
	Subtotal, Engineering Overhead Revenue Req.:	$175,730	2.26%	$3,967	
	Total Overhead Revenue Requirement:	$3,202,035	1.05%	$33,664	
	Seattle Meter Charge for N.E. 40th Meter	$4,500	44.00%	$1,980	Allocated by % of Redmond ownership in joint facilities.

Redmond Monthly Overhead Charge:	$2,805.32	*(For purposes of comparison:)* *(Est. per ccf):* $0.0677
Annual Redmond Purchased Water Cost: (Assuming Seattle supply)	$487,921	
Annual Seattle Meter Charge:	$1,980	
Average Monthly Redmond Wholesale Costs: (Water cost plus Overhead Charge plus Meter Charge, assuming Seattle Supply)	$43,630	

City of Bellevue

Water Rate Model

Calculation of Redmond Overhead Mark-Up

Calculation of Redmond Allocation Factor:	
Total Utility Cost:	$15,232,220
Purchased Water Cost:	5,340,288
Less: RCFC Cost (if CWA Supply)	0
Purchased Water Cost less RCFCs	5,340,288
Purchased Water as % of Total Cost:	35.059%
Redmond Volume:	496,890
Total Volume:	7,691,473
Redmond Vol. as % of Total Vol.:	6.460%
(% Purchased Water Cost) x (% Redmond Volume) =	2.265%

REDMOND Page 1
Last Edit: 05-Jun-98

Assumed Wholesale Supplier: Cascade Water Alliance

Allocation of Overhead Expenses

1998 Budgeted General Administrative Expenditures - #4440 - 013	Utility Revenue Req.	Percent Redmond Allocation	Redmond Revenue Req.	Notes
63410 [illegible] Administration - General				
63410 100 Personal Services	$229,129			Water General Administrative cost, then allocated by % of flow.
Less: [illegible] Adjustments	0			
63410 100 Subtotal, Personal Services	$229,129	2.26%	$5,190	Allocated by % of flow times % of purchased water costs for total utility.
63410 200 Personnel Benefits	65,768			
Less: [illegible] Adjustments	0			
63410 200 Subtotal, Personnel Benefits	$65,768	2.26%	1,263	Allocated by % of flow times % of purchased water costs for total utility.
63410 300 Supplies	7,681	2.26%	174	Allocated by % of flow times % of purchased water costs for total utility.
63410 400 Other Services/Charges	336,420			
Less: 63410 442 Legal Notices	(1,050)			Notices not relevant to wholesale.
63410 471 Electricity	(1,050)			Utilities for rental building; not water-related.
63410 472 Natural Gas	(2,800)			Utilities for rental building; not water-related.
63410 473 Water Billings	(300)			Utilities for rental building; not water-related.
63410 474 Sewer Billings	0			Utilities for rental building; not water-related.
63410 475 Drainage Billings	(1,260)			Utilities for rental building; not water-related.
63410 481 Street Lighting Maintenance	(56,400)			Street lighting not allocable to wholesale.
63410 490 Tax Service Rebate	(88,500)			Not allocable to wholesale.
63410 400 Subtotal, Other Services/Charges	186,960	2.26%	4,234	Allocated by % of flow times % of purchased water costs for total utility.
63410 500 Intergovernmental Services & Taxes	393,600			
Less: 63410 630 Taxes & Assessments	(121,600)			Not allocable to wholesale.
63410 631 Franchise Fees	(72,200)			Not allocable to wholesale.
63410 500 Subtotal, Intergovernmental Services & Fees	8,200	2.26%	186	
63410 600 Capital Outlays	6,000	0.00%	0	Not allocable to wholesale.
63410 900 Internal Service Payments	996,027			
Less: 63410 920 Direct Overhead--First Class Mail	(7,505)			Not allocable to wholesale.
921 Direct Overhead--Bulk Mail	(8,113)			Not allocable to wholesale.
922 Direct Overhead--Mail Contract	(1,087)			Not allocable to wholesale.
923 Direct Overhead--Graphics	0			Not allocable to wholesale.
925 Direct Overhead--Word Processing	(400)			Not allocable to wholesale.
926 Direct Overhead--Copy Center	(2,100)			Not allocable to wholesale.
927 Direct Overhead--Long Distance	(1,076)			Not allocable to wholesale.
928 Direct Overhead--Special Lines	(20,592)			Not allocable to wholesale.
929 Direct Overhead--PC Installs	0			Not allocable to wholesale.
932 Direct Overhead--Property Services	(63,242)			Not allocable to wholesale.

63410 050	EERF Maintenance Charges (Radio System)	(15,425)		Radio system costs not allocable to wholesale.
63410 050	Interfund Facility Services (Facilities Landscaping)	(45,659)		Not allocable to wholesale.
63410 900	*Interfund Service Payments*	827,128	2.26%	18,734 Allocated by % of flow times % of purchased water costs for total utility.
63420	Administration / Conservation	0	0.00%	0 Not allocable to wholesale.
	Subtotal, General Overhead Revenue Req.:	$3,026,305	0.98%	$29,780

1998 Budgeted Engineering Admin. Expenditures - #4440 - 011		Utility Revenue Req.	Percent Redmond Allocation	Redmond Revenue Req.	
63410	Administration / General				
63410 100	Personnel Services	(128,057)			
	Less: Prior Year Adjustments	$0			
63410 100	*Subtotal, Personnel Services*	$128,057	2.26%	$2,900	Allocated by % of flow times % of purchased water costs for total utility.
63410 200	Personnel Benefits	30,951			
	Less: Prior Year Adjustments	$0			
63410 200	*Subtotal, Personnel Benefits*	30,951	2.26%	701	Allocated by % of flow times % of purchased water costs for total utility.
63410 300	Supplies	10,000	2.26%	226	Allocated by % of flow times % of purchased water costs for total utility.
63410 400	Other Services/Charges	2,386			
63410 442	Legal Notices	(100)			Notices not relevant to wholesale.
63410 400	*Subtotal, Other Services/Charges*	2,286	2.26%	52	Allocated by % of flow times % of purchased water costs for total utility.
63410 900	Interfund Service Payments	4,336	2.26%	98	Allocated by % of flow times % of purchased water costs for total utility.
	Subtotal, Engineering Overhead Revenue Req.:	$175,730	2.26%	$3,978	
	Total Overhead Revenue Requirement:	$3,202,035	1.05%	$33,758	
	Seattle Meter Charge for N.E.40th Meter	$4,500	44.00%	$1,980	Allocated by % of Redmond ownership in joint facilities.

Redmond Monthly Overhead Charge:	$2,813.17	*(For purposes of comparison:)* *(Est. per ccf):* *$0.0679*
Annual Redmond Purchased Water Cost: (Assuming CWA supply)	$492,474	
Annual Seattle Meter Charge:	$1,980	
Average Monthly Redmond Wholesale Costs: (Water cost plus Overhead Charge, assuming CWA)	$44,018	

SEP.30.2003 9:31AM CUR PW STUDY ENG NO.105 P.11

fcsg

facsimile TRANSMISSION

DATE: 7/23/98 TIME: 1:50 PAGES (including cover sheet): 2

TO: Larry Southwick, Bellevue Util, fax: 452-5214

TO: _____, fax: _____

TO: _____, fax: _____

TO: _____, fax: _____

FROM: Tracey Dunlap ; FCS Group, Inc. Fax. No. (425) 867-1937

SUBJECT: Summary Table - Redmond Charge

MESSAGE:

☐ For approval ☑ For your use ☐ As requested ☐ For review & comment by: _____

☐ Approved as noted ☐ Returned for corrections ☐ Original documents to follow via _____

As discussed.

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FINANCIAL CONSULTING SOLUTIONS GROUP, INC.
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City of Bellevue
Water Rate Model
Redmond Charge Summary
(With Seattle Public Utilities Water Supply)

Cost Element	Annual	Monthly
Overhead Cost	$33,664	$2,805
Purchased Water Cost	487,921	40,660
Seattle Meter Charge	1,980	165
TOTAL	$523,565	$43,630

FILED NO. 15182
CITY OF BELLEVUE
DATE 9/28/90
DEPUTY CITY CLERK Shawn Mast

ORIGINAL

Res. 5227

AGREEMENT FOR CONSTRUCTION, OPERATION AND MAINTENANCE OF JOINT-USE WATER STORAGE AND PUMPING FACILITY

This Agreement is made and entered into pursuant to the provisions of the Interlocal Cooperation Act Chapter 39.34 RCW, by and between the City of Bellevue (hereinafter called "Bellevue"), and the City of Redmond (hereinafter called "Redmond"), both municipal corporations of the State of Washington.

WHEREAS, each of the parties has a present and future need for water storage which, if a joint-use storage and pump facility is not constructed would require construction of separate storage and pumping facilities by each party, and

WHEREAS, Bellevue and Redmond desire to work cooperatively in the construction, operation and maintenance of joint-use water storage facilities because of the opportunity for reduced costs and reduced adverse environmental impacts as compared to the construction of separate water storage and pumping facilities, now, therefore,

In consideration of the mutual covenants contained herein, the parties agree to participate in the construction, operation and maintenance of joint-use water storage and pump station facilities pursuant to the following terms and conditions:

1. Purpose

This Agreement is intended to set forth the terms and conditions upon which Bellevue and Redmond agree to cooperate for the purpose of the construction, operation and maintenance of the joint-use water storage and pumping facility.

2. Administration of Agreement

Bellevue shall be the lead agency charged with responsibility for administration of this Agreement. The specific responsibilities of the parties are set forth hereinafter.

3. Scope of Work

For the purpose of this agreement, the project shall include acquisition of site, construction engineering and construction work related to the water storage structure, pump station building, pumps, pipelines and other appurtenances associated with the storage and pump station facilities.

4. Land Procurement

Bellevue has acquired real property at 4075 148th Avenue NE for the construction of the water reservoir and pump station mentioned herein. Redmond shall share in the cost of such acquisition. Redmond shall pay Bellevue 44% of the cost of said property within 45 days of receipt of invoice from Bellevue for acquisition of the property by Bellevue, in consideration of conveyance of a 44% undivided interest in the real property as provided in paragraph 8 below.

5. Construction

The City of Bellevue shall take all necessary steps to provide for the construction, including construction administration and inspection, of the reservoir and pump station, subject to written approval of the design, plans and specification, and construction by the City of Redmond in accordance with this Agreement; Redmond agrees not to unreasonably withhold such approval.

Bellevue has previously furnished Redmond with the plans and specifications for review and approval by Redmond at three stages in the final design. The first stage was when the final design was fifty percent (50%) complete, the second stage was when the final design was ninety percent (90%) complete, and the third stage was when the final design was one hundred percent (100%) complete. Each stage was approved by Redmond.

Bellevue shall be the contracting "owner" with the contractor and shall be responsible for all phases of the construction and completion of the reservoir and pump station in accordance with the approved plans. Bellevue shall coordinate and keep Redmond informed of the contractor's progress during construction. Upon completion of the work in accordance with the approved plans and the satisfactory testing of the reservoir and pump station, Bellevue shall notify Redmond of the date and time of the final construction inspection. Such notice shall be furnished to Redmond in writing, two weeks before the date of final construction inspection. Redmond personnel may accompany the Bellevue personnel on final inspection for purposes of creating a final checklist (punchlist) for the construction contractor to complete. Upon satisfactory completion by the contractor of the checklist (final punch list), Redmond shall furnish its written approval of the construction to Bellevue. Bellevue's acceptance of the work shall be by Motion by the Bellevue City Council. A copy of such Motion shall be furnished to Redmond.

Bellevue shall furnish Redmond with a copy of the advertisements for bids and shall make available bids received for review by Redmond. Bellevue shall recommend the award of a contract to the bidder regarded by Bellevue as the lowest and best bidder. Bellevue shall provide Redmond with a copy of the contract and notice to proceed and approval thereof by Bellevue.

6. Sharing of Costs

The Bellevue Parks Department shall contribute $150,000 to this project to offset increased construction cost to locate the reservoir on the north parcel of land versus the land fronting NE 40th. The remaining costs shall be shared between Bellevue and Redmond.

Bellevue shall be responsible for paying all of the costs of; land procurement, construction of the reservoir and pump station for which it shall receive reimbursement from Redmond of forty four (44%) percent of that amount (minus the $150,000 received from Bellevue Parks Department). Redmond's estimated share of the cost is $1,650,000.00. A copy of the current cost estimate of $3,750,000.00 dated December 1989 is attached for reference. Both Bellevue and Redmond shall maintain separate accounting of its costs associated with the construction of the pump stations. The effective starting date for such accounting for the purposes of cost sharing shall be the date of bid advertisement.

An itemization of the costs for the purposes of calculating the shared cost amounts between Bellevue and Redmond associated with the construction of the reservoir and pump station, consist of the following items:

- Total Consultant fees for labor and expenses for construction administration assistance, startup assistance, construction management, construction inspection and/or other directly related assistance as may be required during the construction period for the reservoir and pump station, shall be shared costs.

- Total construction costs including approved change order extras for the reservoir and pump station shall be shared costs.

- Total labor and expenses incurred after the bid advertisement date by both Bellevue and Redmond associated with construction review, inspection, and administration shall be shared costs.

- Cost of Land

Any future LID assessments to the reservoir and pump station property located at 4075 148th Avenue NE shall be borne by each of the parties in the same percentages as aforementioned.

7. Method of Payment

Bellevue will prepare and forward a monthly invoice to Redmond for its share of costs for construction of the reservoir and pump station, together with a copy of the bills/invoices received by Bellevue from its consultants, contractors, and other third parties for costs for construction for the Project. Redmond

shall pay such costs within forty-five (45) days of receipt of invoice from the City. Redmond shall provide Bellevue with an accounting of its costs chargeable to the Project and Bellevue shall pay or offset such allowable expenses within forty-five (45) days of receipt thereof. If Redmond fails to make full invoice payment within said forty-five (45) days, then penalty interest shall accrue on the unpaid amount at the daily Seattle First National Bank Prime Interest Rate in effect at such time. Bellevue shall account for such penalty interest and include the interest amount on the following monthly invoice.

8. Ownership and Rights

Bellevue shall obtain ownership of the reservoir and pump station along with all the piping and appurtenances. In consideration of Redmond's payment of 44% of the cost of the reservoir and pump station and the real property on which they are situated, Bellevue conveys and Redmond accepts a 44% interest in the property, reservoir and pump station, and all piping and appurtenances. Bellevue shall provide a statutory warranty deed, bill of sale, and all other documents required to evidence conveyance of title to Redmond.

9. Operation and Maintenance

Bellevue shall be responsible for providing necessary personnel, material and supplies, for the proper operation and maintenance of the reservoir and pump station after they are put into service. The operation and maintenance of the reservoir and pump station shall include, but not be limited to the following: Weekly site visits by maintenance staff, test, repair, replacement or overhauling of any pump, motor, pipeline valve, or telemetry component, normal record keeping, maintaining grounds on the site, periodic draw downs of reservoir for inspection, inspection and routine maintenance of system components as recommended by manufacturers, reservoir and pump station painting, meter calibrations and operations of reservoir and pump station in conjunction with flow monitoring. The costs for providing the proper operation and maintenance shall be shared by the parties in accordance with the aforementioned percentages; provided any scheduled maintenance shall not exceed $5,000, unless Redmond has consented to and approved in writing such maintenance item. In addition, the cost of electrical energy required to operate the reservoir and pump station shall be borne in the aforementioned percentages by Bellevue and Redmond.

Bellevue shall maintain a separate labor work order number for operation and maintenance of the reservoir and pump station to record all Bellevue staff work on the reservoir.

Bellevue will prepare and forward a monthly invoice to Redmond, together with a copy of the current electric bill and copies of any charges by third parties associated with operation and maintenance for the period for which Redmond is invoiced.

Redmond shall remit invoice payment to Bellevue within forty-five (45) days after receipt of invoice. If Redmond fails to make full invoice payment within said forty-five (45) days, then penalty interest shall accrue on the unpaid amount at the daily Seattle First National Bank Prime Interest Rate in effect at such time. Bellevue shall account for such penalty interest and include the interest amount on the following monthly invoice.

10. Pump Station Change

Bellevue or Redmond may change the pump size in the pump station as reasonably required subject to the prior approval of the other party which shall not be unreasonably withheld. The terms of such changes shall be negotiated between Bellevue and Redmond at such time as pump station change becomes necessary.

11. Salvage

Should the useful life of either the reservoir or pump station become obsolete, and salvage operations become desirable for whatever reason, Bellevue or Redmond shall make proposal of said disposition to the other party, and obtain written acceptance of this proposal from other party before conducting salvage operations. The costs and benefits of a salvage operation to either of the reservoir or pump station including the land shall be shared in the aforementioned percentages.

12. Indemnity

Bellevue agrees to defend, save harmless, and indemnify Redmond from and against any and all claims and demands for injury or death to persons and/or damage to property arising out of the operation and maintenance of the reservoir and pump station by Bellevue except as may be caused by the acts and negligence of Redmond, its agents, servants, or employees, or through acts of nature.

Bellevue agrees to defend, save harmless, and indemnify Redmond from and against any and all claims for injury or death to persons and for damage to property arising out of the construction of the reservoir and pump station except as may be caused by the acts and negligence of Redmond, its agents, servants, or employees, or through acts of nature.

Bellevue's consultant shall be required to maintain professional liability insurance with limits of not less than $1,000,000.00 and have Redmond named as additional insured.

13. Assignability

This agreement shall be binding upon all successors and assignees of the parties, who must be public agencies.

14. Amendments

Either party may request in writing the other party to consider an amendment to this Agreement. If the amendment is mutually acceptable to both parties said Agreement shall be made in writing, signed by both parties and attached to this Agreement.

15. Filing of Agreement

Pursuant to Chapter 39.34 RCW, a copy of this Agreement shall be filed with the Bellevue City Clerk, Redmond City Clerk, Records and Elections and the Secretary of State.

Dated this 28th day of September, ~~1988~~ 1990.

CITY OF BELLEVUE

By Pam Bissonnette
Phillip Kushlan, City Manager

APPROVED AS TO FORM:

By
Richard Kirkby
Assistant City Attorney

CITY OF REDMOND

By Doreen Marchione
Doreen Marchione, Mayor

APPROVED AS TO FORM:

By
Larry C. Martin
City Attorney

WJ/llm
D8/89-0186

EXHIBIT A

CONSTRUCTION COST ESTIMATE
December 89

City of Bellevue/City of Redmond
NE 40th Reservoir and Pump Station

1)	Land Costs	-	$ 344,137
2)	Construction Engineering		
	I - Consultant Services (JMM)	-	$ 270,000
	II - Cities Staff Admin.	-	$ 40,000
3)	Construction Cost (Based on ENR Index (Seattle) of 4748)	-	$3,095,863
	TOTAL ESTIMATED CONSTRUCTION COST	-	$3,750,000

BELLEVUE'S SHARE (55%) - $2,100,000
REDMOND'S SHARE (44%) - $1,650,000

D11/90-0298

1367-RES
6/3/2005

ORIGINAL

CITY OF BELLEVUE, WASHINGTON

RESOLUTION NO. 7212

A RESOLUTION authorizing execution of a Water Facilities Agreement between the cities of Bellevue and Issaquah.

THE CITY COUNCIL OF THE CITY OF BELLEVUE, WASHINGTON, DOES RESOLVE AS FOLLOWS:

Section 1. The City Manager or his designee is authorized to execute a Water Facilities Agreement between the cities of Bellevue and Issaquah, a copy of which Agreement has been given Clerk's Receiving No. 38205.

Passed by the City Council this 20th day of June, 2005, and signed in authentication of its passage this 20th day of June, 2005.

(SEAL)

Connie B. Marshall
Connie B. Marshall, Mayor

Attest:

Myrna L. Basich
Myrna L. Basich, City Clerk

WATER FACILITIES AGREEMENT BETWEEN
CITY OF BELLEVUE
AND CITY OF ISSAQUAH

CR# 38205 DATE 09.19.05 Loc 05.739 PO 510799
Res 7212

THIS AGREEMENT is made by and between the City of Bellevue, a municipal corporation, in King County, Washington ("Bellevue"), and the City of Issaquah, a municipal corporation, in King County, Washington ("Issaquah") for the purposes set forth herein.

RECITALS

WHEREAS, the areas of Glacier Ridge (including Montreux) and Lakemont Triangle are within the City of Issaquah (shown on Exhibit A); and

WHEREAS, Issaquah currently serves these areas for water supply through two interties with Bellevue located at SE 42nd and SE Newport Way, and SE 60th and 180th Avenue SE; and

WHEREAS, Issaquah plans to serve a portion of Glacier Ridge with water supplied through a third, future intertie with Bellevue located near Cougar Mountain Drive and 180th Avenue SE; and

WHEREAS, in order to serve Glacier Ridge and Lakemont Triangle, Issaquah uses portions of Bellevue's transmission, distribution, pumping and storage facilities; and

WHEREAS, Issaquah and Bellevue are both members of Cascade Water Alliance and receive wholesale water supply from Cascade Water Alliance; and

WHEREAS, Cascade Water Alliance has provided service points of delivery to Issaquah along its transmission main located in Newport Way; and

WHEREAS, Issaquah needs portions of some of Bellevue's facilities (such as reservoirs, pump stations, and transmission mains) to supply water to Glacier Ridge (including Montreux) and Lakemont Triangle areas; and

WHEREAS, Bellevue has agreed to allow use of its system by Issaquah to deliver water supply to Issaquah's Glacier Ridge and Lakemont Triangle areas;

NOW, THEREFORE, for good and valuable consideration, the receipt and adequacy of which is acknowledged, Bellevue and Issaquah agree as follows:

1. This Agreement supercedes and replaces all other agreements for wholesale water supply service between Issaquah and Bellevue.

2. Bellevue shall allow Issaquah to use portions of its water utility facilities as defined in this Agreement for delivery of water supply to the City of Issaquah at the existing interties and one future intertie located at: 1.) SE 42nd and SE Newport Way and 2.) SE 60th and 180th Avenue SE and 3.) near Cougar Mountain Drive and 180th Avenue SE (future intertie).

3. This Agreement allows the use of Bellevue's system by Issaquah to allow delivery of water supply to a limited area of Issaquah's water service area. The number of Equivalent Residential Units (ERU's) to be served within Lakemont Triangle (through the Newport Way intertie) shall not exceed 400 (600 Multi-family units). The number of ERU's to be served within Glacier Ridge (through the SE 60th intertie) shall not exceed 700 ERU's total, with no more than 150 ERU's of the 700 total being supplied water through the future intertie on or near Cougar Mountain Drive. An ERU shall be defined as being equal to one for each single family detached dwelling and shall be based on a mutually agreeable formula for all other uses.

4. Bellevue shall provide a maximum fire flow of 2500 gallons per minute at the SE 60th and 180th Avenue SE connection and 2000 gallons per minute at the SE 42nd and SE Newport Way connection and 1500 gallons per minute at the future connection near Cougar Mountain Road and 180th Avenue SE. It is understood that the actual rate of flow at the point of use is dependent upon the hydraulic behavior of the distribution system between the connection points and the point of use and Bellevue therefore makes no representation with regard thereto.

5. Issaquah agrees to pay Bellevue its fair share of the capital costs of the existing facilities (previously constructed by Bellevue) included on Exhibit B. The cost of these existing facilities will be recovered as a connection fee of $1,098 for each ERU that is served by the Newport Way connection, $3,761 for each ERU that is served by the SE 60th connection, and $5,767 for each ERU that is served by the future Cougar Mountain Drive connection. These fee amounts are for all new connections made in 2005 and will be adjusted annually by an amount equal to the percent annual change in the Consumer Price Index for All Urban Consumers (CPI-U) for the Seattle Metropolitan Area. These fees will be collected by Issaquah and paid to Bellevue in the manner described in paragraph 9 of this Agreement.

6. The future facilities included on Exhibit B are to be provided in response to development activity in the area supplied by the future connection near Cougar Mountain Drive and 180th Avenue SE, hence the cost of constructing these facilities is Issaquah's responsibility and is dependent upon developer contributions and construction.

7. Bellevue shall own and maintain all facilities within its service area that are jointly used by Bellevue and Issaquah.

8. Issaquah shall own and maintain all facilities that are solely used for service to Issaquah, regardless of the location of the facilities. Bellevue shall not tap into any Issaquah water main without Issaquah's written approval. Such approval shall not be unreasonably withheld.

9. Issaquah agrees to pay Bellevue's applicable standard connection fees for each ERU that is served. These fees will be collected by Issaquah on a unit by unit basis at the time that water service is requested. An annual payment will be made to Bellevue representing the connection fees that were colleted during the preceding twelve month period. The annual payment shall be made on or near December 31st of each year that new connections are added. A letter report shall accompany the payment, which includes an accounting of the connections added during the year.

10. Issaquah shall read both the master meter located on SE 60th and the future master meter located on or near Cougar Mountain Drive monthly and shall report consumption to Cascade Water Alliance.

11. Issaquah shall sum the bi-monthly consumption on the retail meters in the Lakemont Triangle area and add 10% (to address water losses in the system) and report that as consumption to Cascade Water Alliance. The metering devices shall be periodically calibrated in accordance with manufacturer's specifications to guarantee accuracy. If, due to water quality considerations, Issaquah needs to periodically flush its main, Issaquah shall install a metered flushing station to record consumptions.

12. Issaquah shall pay Cascade Water Alliance for the wholesale water it receives through these interties.

13. Upon execution of this Agreement Issaquah shall pay Bellevue $24,000 for the use of its facilities listed in this Agreement for 2004 and $24,500 for 2005. For subsequent years, the previous year's payment shall be adjusted annually by an amount equal to the percent annual change in the Consumer Price Index for All Urban Consumers (CPI-U) for the Seattle Metropolitan Area, and the amount due shall be paid in equal monthly installments.

14. Whenever possible, Bellevue will notify Issaquah 4 years in advance of when the renewal or replacement of capital facilities necessary under this Agreement is anticipated. Issaquah's fair share contribution for construction capital shall be determined by the percentage share listed in Exhibit C for each facility under this Agreement.

15. Bellevue agrees that the delivery of water to the point of connections will meet the same standards of reliability, rate of flow, and quality that it provides to its retail customers.

16. Issaquah is currently studying the possibility of annexing the South Cove area in accordance with its adopted land use plan. Bellevue currently is providing water service to this area. At the time of annexation, Bellevue is interested in Issaquah taking the service responsibility for South Cove. Upon annexation, Bellevue and Issaquah agree to negotiate an amendment to this Agreement to create an additional supply intertie and to wheel water on behalf of Cascade Water Alliance to serve this area.

17. Cascade Water Alliance shall be made aware of any planned modifications to any of the connections and shall be approved by Cascade Water Alliance if, as part of the modifications, a new connection is planned on the Cascade Water Alliance system.

18. When Issaquah discontinues use of any part of Bellevue's facilities identified in this Agreement by providing supply from a different location then the annual costs paid to Bellevue will be renegotiated based upon the logic used to determine the costs identified in this Agreement.

19. In the event that Issaquah or Bellevue withdraws from Cascade Water Alliance or Cascade Water Alliance dissolves, Issaquah and Bellevue will renegotiate this Agreement for continued delivery of water as necessary.

20. **Dispute Resolution.** Each City shall designate representatives for the purposes of administering this Agreement and resolving disputes arising from this Agreement. Each City shall notify the other in writing of its designated representatives. Each City may change its designated representatives by written notice to the other.

    Disputes that cannot be resolved by the representatives designated herein shall be referred to the chief executive officer of each City for mediation and/or settlement. If the executive officers are unable to reach settlement, the cities agree to mediate in good faith before a mutually acceptable mediator, with costs of the mediation to be shared equally between the cities. In the event a settlement cannot be reached through mediation, either party may bring an action in King County Superior Court to enforce any provision of this Agreement.

21. **Liability/Hold Harmless.** Bellevue shall indemnify, defend, and hold harmless the City of Issaquah, its officers, agents and employees, from and against any and all claims, losses or liability, including attorneys' fees, arising from injury or death to persons or damage to property occasioned by any act, omission or failure of Bellevue, its officers, agents and employees, in the performance of this Agreement. With respect to the performance of this Agreement and as to claims against Issaquah, its officers, agents and employees, Bellevue expressly waives its immunity under Title 51 of the Revised Code of Washington, the Industrial Insurance Act, for injuries to its employees and agrees that the obligation to indemnify, defend and hold harmless provided for in this paragraph extends to any claim brought by or on behalf of any employee of Bellevue. This paragraph shall not apply to any damage resulting from the negligence of Issaquah, its agents, and employees. To the extent any of the damages referenced by this paragraph were caused by or resulted from the concurrent negligence of Issaquah, its agents or employees, this obligation to indemnify, defend and hold harmless is valid and enforceable only to the extent of the negligence of Bellevue, its officers, agents, and employees.

Issaquah shall indemnify, defend, and hold harmless the City of Bellevue, its officers, agents and employees, from and against any and all claims, losses, or liability, including attorneys' fees, arising from injury or death to persons or damage to property occasioned by any act, omission or failure of Issaquah, its officers, agents and employees, in the performance of this Agreement and as to claims against Bellevue, its officers, agents and employees, Issaquah expressly waives its immunity under Title 51 of the Revised Code of Washington, the Industrial Insurance Act, for injuries to its employees and agrees that the obligation to indemnify, defend and hold harmless provided for in this paragraph extends to any claim brought by or on behalf of any employee of Issaquah. This paragraph shall not apply to any damage resulting from the negligence of Bellevue, its agents, and employees. To the extent any of the damages referenced by this paragraph were caused by or resulted from the concurrent negligence of Bellevue, its agents or employees, this obligation to indemnify, defend and hold harmless is valid and enforceable only to the extent of the negligence of Issaquah, its officers, agents and employees.

22. **Effective Date.** This Agreement is effective upon the date of the last signature below.

Approved as to Form
Bellevue Legal Counsel

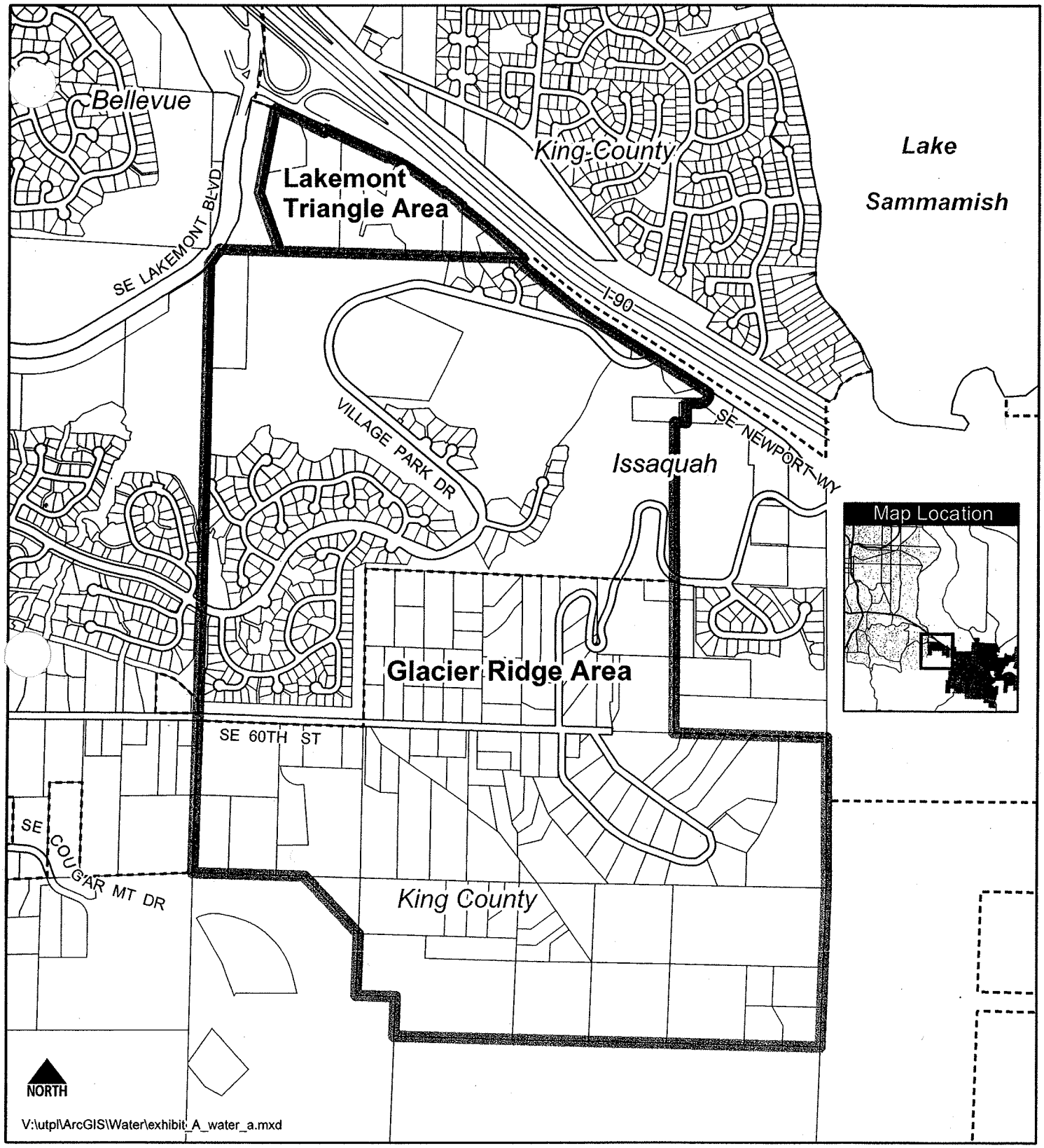
By Patricia Cole
Its Assist. City Attorney
Dated 6-13-05

CITY OF BELLEVUE ("Bellevue")

By
Its Deputy City Manager
Dated 9/15/05

Issaquah Legal Counsel
By
Its
Dated 9/6/05

CITY OF ISSAQUAH ("Issaquah")
By
Its Mayor
Dated 9/6/05



of Bellevue
Department
GIS Services

Plot Date: 5/11/2005

Exhibit A

Glacier Ridge & Lakemont Triangle Areas of Issaquah

This map is a graphic representation derived from the City of Bellevue Geographic Information System. It was designed and intended for City of Bellevue staff use only; it is not guaranteed to survey accuracy. This map is based on the best information available on the date shown on this map. Any reproduction or sale of this map, or portions thereof, is prohibited without express written authorization by the City of Bellevue.

NOTE: If you have specific questions concerning information contained on this map, please contact the sponsoring department as shown on this map.

This material is owned and copyrighted by the City of Bellevue.

EXHIBIT B

LIST OF FACILITIES NEEDED TO SUPPLY WATER
TO THE NEWPORT WAY CONNECTION WITH ISSAQUAH

1. Parksite Reservoir (520 Elevation) – 2.0 MG
2. Newport Reservoir (520 Elevation) – 3.0 MG
3. 3 Regional Supply Inlet Stations (Eastgate, SE 28th, and 161st SE Inlets)
4. 3,000 lf of 24" Pipe (Located in Newport Way between 161st SE and 163rd SE; and in 163rd SE and 164th Way between Newport Way and the Newport Reservoir)
5. 7,500 lf of 16" Pipe (Located in 148th SE and under I-90 between the SE 28th Inlet and SE 36th; and in 161st SE and under I-90 between Newport Way and a point just north of Eastgate Way; and in an easement between Newport Way and the Parksite Reservoir)
6. 17,200 lf of 12" Pipe (Located in SE 28th and easements roughly paralleling I-90 between the SE 28th Inlet and 161st SE; and in Newport Way between 163rd SE and the Newport Way Issaquah Connection; and in Newport Way between 145th SE and 150th SE; and in 145th SE, SE 42nd Place, 146th SE, Eastgate Drive and 148th SE between Newport Way and SE 36th; and in 150th SE, SE 38th and SE 36th from Newport Way to 148th)

LIST OF FACILITIES NEEDED TO SUPPLY WATER
TO THE SE 60TH CONNECTION WITH ISSAQUAH

1. Newport Pump Station (pumps from 520 Elevation to 850 Elevation)
2. 850 Elevation 12" Transmission Main (between the Newport Pump Station and the Cougar Mountain #1 Pump Station and Reservoir)
3. Cougar Mountain #1 Pump Station (pumps from 850 Elevation to 1150 Elevation)
4. 1150 Elevation 12" Transmission Main (between the Cougar Mountain #1 Pump Station and Reservoir to the Cougar Mountain #2 Pump Station and Reservoir)
5. Cougar Mountain #2 Reservoir (1150 Elevation) – 1.05 MG
6. 1150 Elevation Issaquah 12" Transmission Main (between the Cougar Mountain #2 Reservoir and the SE 60th Issaquah Connection)
7. 1150 Elevation Water Meter, Vault, Appurtenances (SE 60th Issaquah Connection)
8. Second Source of Supply Facilities for the SE 60th Issaquah Connection

LIST OF ADDITIONAL FACILITIES NEEDED TO SUPPLY WATER
TO THE FUTURE COUGAR MOUNTAIN ROAD CONNECTION WITH ISSAQUAH

1. Cougar Mountain #2 Pump Station (pumps from 1150 Elevation to 1465 Elevation) - existing facility
2. 1465 Elevation 12" Transmission Main (between the Cougar Mountain #2 Pump Station and Reservoir and the Cougar Mountain #3 Pump Station and Reservoir) - existing facility
3. Cougar Mountain #3 and 3A Reservoirs (1465 Elevation Reservoirs) – 2.0 MG and 0.3 MG – existing facility
4. 1465 Elevation Issaquah Transmission Main (between the Cougar Mountain #3 Reservoir and the Cougar Mountain Drive Issaquah connection) – future facility
5. 1465 Elevation Water Meter, Vault, and Appurtenances (Cougar Mountain Drive Issaquah Connection) – future facility

Exhibit C

Bellevue/Issaquah Percentage Use of Joint Use Facilities

Based on the number of Equivalent Residential Units (ERU's) served

For the Area Identified in the 2/6/90 Lakemont Triangle Interlocal Agreement

Exhibit B of the 2/6/90 agreement identifies Bellevue regional facilities that provide water service to this area and estimates that 6372 ERU's in Bellevue are served by these facilities (Issaquah ERU not included).
The 2/6/90 agreement allows 600 MF Units to be served in Issaquah. 600 MF x 0.62 MF/SF = 372 ERU.
Therefore, the facilities identified in Exhibit B benefit each city by the following percentage breakdown:

6372	Bellevue ERU's served	94.48 % of Total ERU's
372	Issaquah ERU's served	5.52 % of Total ERU's
6744	TOTAL	

For the Area Identified in the 4/18/01 Glacier Ridge Interlocal Agreement

Number of ERU's served in each pressure zone

Bellevue	Issaquah	Pressure Zone	Data Source
1300 ERU	0 ERU	850 ft. HGL	1995 Newport P.S. Capacity Check Calculations
979 ERU	0 ERU	1000 ft. HGL	1999 Cougar Mt. Storage Requirement Calculations
1439 ERU	550 ERU	1150 ft. HGL	1999 Cougar Mt. Storage Requirement Calculations
555 ERU	0 ERU	1300 ft. HGL	1999 Cougar Mt. Storage Requirement Calculations
402 ERU	150 ERU	1465 ft. HGL	1999 Cougar Mt. Storage Requirement Calculations
169 ERU	0 ERU	1575 ft. HGL	1999 Cougar Mt. Storage Requirement Calculations

Newport Pump Station (520 zone to 850 zone)

4844	Bellevue ERU's served	87.37 % of Total ERU's
700	Issaquah ERU's served	12.63 % of Total ERU's
5544	TOTAL (850 through 1575 zones)	

850 Zone 16"/12" Transmission Main (Newport P.S. to Cougar Mt. #1 P.S. & Res.)

Approximate length of this pipe: 3,500 ft. of 16" 5,200 ft. of 12"

4844	Bellevue ERU's served	87.37 % of Total ERU's
700	Issaquah ERU's served	12.63 % of Total ERU's
5544	TOTAL (850 through 1575 zones)	

850 Zone to 1150 Zone Cougar Mt. #1 Pump Station

3544	Bellevue ERU's served	83.51 % of Total ERU's
700	Issaquah ERU's served	16.49 % of Total ERU's
4244	TOTAL (1000 through 1575 zones)	

1150 Zone Cougar Mt. #2 Reservoir (1.0 MG)

Actual storage required by this reservoir's direct service area is approx. 1.77 MG*.
0.30 MG of this storage is for fire flow (2500 gpm for 2 hrs.) and benefits each City equally.

3544	Bellevue ERU's served	83.51 % of Total ERU's
700	Issaquah ERU's served	16.49 % of Total ERU's
4244	TOTAL (1000 through 1575 zones)	

Percentage share of storage adjusted to account for fire storage being shared equally (50% each):

77.83 % Bellevue [(83.51% x 1.47 MG + 50% x 0.30 MG) / 1.77 MG]
22.17 % Bellevue [(16.49% x 1.47 MG + 50% x 0.30 MG) / 1.77 MG]

1150 Zone 12" Transmission Main (Cougar Mt. #1 P.S. to Cougar Mt. #2 P.S & Res.)

Approximate pipe length: 1,300 ft

3544	Bellevue ERU's served	83.51 % of Total ERU's
700	Issaquah ERU's served	16.49 % of Total ERU's
4244	TOTAL (1000 through 1575 zones)	

1150 Zone 12" Issaquah Transmission Main (1150 Reservoir to Issaquah Supply Meter)

Approximate pipe length: 4600 ft

Since this main also provides benefit to Bellevue customers, it will be considered to benefit each city equally.

50 % Bellevue
50 % Issaquah

1150 Zone second supply to Issaquah (required by this Interlocal agreement)

This additional supply is provided by the following facilities:

1465 Zone to 1300 Zone PRV (vault contains a 6" and a 2" PRV)
Approximately 1500 ft. of pipe in the 1300 Zone
1300 Zone to 1150 Zone PRV (vault contains a 6" and a 2" PRV)
Approximately 1800 ft. of pipe in the 1150 Zone

Since these facilities also provide benefit to Bellevue customers, they will be considered to benefit each city equally.

50 % Bellevue
50 % Issaquah

1150 Zone to 1465 Zone Cougar Mt. #2 Pump Station

1126	Bellevue ERU's served	88.24 % of Total ERU's
150	Issaquah ERU's served	11.76 % of Total ERU's
1276	TOTAL (1300 through 1575 zones)	

1465 Zone Cougar Mt. #3 Reservoirs (2.0 MG & 0.3 MG)

Actual storage required by this reservoir's direct service area is approx. 1.53 MG*.
0.18 MG of this storage is for fire flow (1500 gpm for 2 hrs.) and benefits each City equally.

1126	Bellevue ERU's served	88.24 % of Total ERU's
150	Issaquah ERU's served	11.76 % of Total ERU's
1276	TOTAL (1300 through 1575 zones)	

Percentage share of storage adjusted to account for fire storage being shared equally (50% each):

83.74 % Bellevue [(88.24% x 1.35 MG + 50% x 0.18 MG) / 1.53 MG]
16.26 % Bellevue [(11.76% x 1.35 MG + 50% x 0.18 MG) / 1.53 MG]

1465 Zone 12" Transmission Main (Cougar Mt. #2 P.S, to Cougar Mt. #3 P.S & Res.)

Approximate pipe length: 3,400 ft

1126	Bellevue ERU's served	88.24 % of Total ERU's
150	Issaquah ERU's served	11.76 % of Total ERU's
1276	TOTAL (1300 through 1575 zones)	

Future 1465 Zone 8" Issaquah Transmission Main (1465 Reservoir to Issaquah Supply Meter)

Approximate expected pipe length: 900 ft

Since this main is also expected to provide benefit to Bellevue customers,
it will be considered to benefit each city equally.

50 % Bellevue
50 % Issaquah

*** Note: Some of the storage required by the 1150 reservoir service area is located in the 1465 reservoirs.**

1100-RES
1/2/2004

ORIGINAL

CITY OF BELLEVUE, WASHINGTON

RESOLUTION NO. 6952

A RESOLUTION authorizing execution of an Interlocal Agreement for purchase of water supply system improvements and maintenance and operations between King County Water District No. 1 and the City of Bellevue.

THE CITY COUNCIL OF THE CITY OF BELLEVUE, WASHINGTON, DOES RESOLVE AS FOLLOWS:

Section 1. The City Manager or his designee is hereby authorized to execute an Interlocal Agreement for purchase of water supply system improvements and maintenance and operations between King County Water District No. 1 and the City of Bellevue, a copy of which Agreement has been given Clerk's Receiving No. 35121.

Passed by the City Council this 20th day of January, 2004, and signed in authentication of its passage this 20th day of January, 2004.

(SEAL)

Connie B. Marshall
Connie B. Marshall, Mayor

Attest:

Myrna L. Basich
Myrna L. Basich, City Clerk

04-138

REC NO. 35121
CITY OF BELLEVUE
DATE 1/21/04
M-TORNOO
CITY CLERK'S OFFICE

INTERLOCAL AGREEMENT
for
PURCHASE OF WATER SUPPLY, SYSTEM IMPROVEMENTS
AND MAINTENANCE & OPERATIONS
BETWEEN KING COUNTY WATER DISTRICT NO. 1 AND THE CITY OF BELLEVUE

CCO FILE# 04-138
ORS 6952

THIS AGREEMENT is made and entered into by and between King County Water District No. 1, a municipal corporation in King County, Washington, hereinafter referred to as "District" and the City of Bellevue, a municipal corporation in King County Washington, hereinafter referred to as "Bellevue" or "City."

THE PURPOSE AND INTENT of this Agreement is to provide for the maintenance and operation of the District's water system by the City, leading to the eventual assumption of the District's water facilities and service area by the City and the dissolution of the District. Water is to be supplied by the City from its sources, which will allow the sale of the District-owned well site preserve lands. The parties to this Agreement intend to work cooperatively on all administrative matters and legislation that may be required.

I. RECITALS

A. The District provides water supply and distribution service to a geographic area lying entirely within the boundaries of the Town of Yarrow Point, Washington. The District serves approximately two hundred eleven (211) mainly residential customers. Water is supplied from wells on District-owned property that lies within the City of Kirkland. The water is then piped from the well site, down to the shores of Lake Washington and through a submarine water line on the bed of the lake to the District service area. The water is then chlorinated and pumped into the District's distribution system and two water storage reservoirs. The District's water distribution system is around 50 years old and generally of smaller size than current standards. There are no customer water meters. Billing is on an annual, flat fee basis. The District's water supply is adequate in quantity and safe in quality but recently promulgated State of Washington water supply regulations make such a water supply more difficult to protect and operate.

B. The City provides water supply and distribution services to City residents and businesses, and to adjacent communities including the remainder of the Town of Yarrow Point not served by the District. The City water supply is currently provided by the Cascade Water Alliance from City of Seattle sources.

C. There is an intertie between the water distribution systems of the two parties that currently provides for emergency water supply from the City to the District. Provisions have been made within that intertie for future installation of a larger water meter to allow for supplementary water supply for improved fire protection, if subsequently agreed upon.

D. The parties have statutory authority to enter into this Interlocal Agreement. Current State statutes do not provide the authority for the City to assume ownership of the District system at this time. Legislation to amend statutes to allow such an assumption will be pursued by the parties.

E. City policy is supportive of supplying water to and ultimately assuming the District, provided that the District's water distribution system is brought up to a condition level that is comparable to that of the City. City policy also provides that the City will not subsidize provision of water service to other jurisdictions.

THEREFORE, in consideration of the terms and conditions contained herein, the parties mutually agree as follows:

II. TERMS OF AGREEMENT

A. Operations and Maintenance of District System. After (1) District completion of the water system improvements pursuant to this Agreement, (2) Bellevue receipt of approval to provide water supply to the District, and (3) District isolation of the District's wells, transmission line and reservoirs from the District's water system, the City shall operate and maintain the District's water supply system in accordance with this Agreement and applicable laws and regulations. By operating and maintaining the District water system, the City will treat the system as an integral part of its own water system, on matters and responsibilities such as operations, maintenance, capital improvements, water system management, water quality management, development review, enforcement, customer services, and other programs in the City water service area.

B. Water Supply Approval. Bellevue shall use its best efforts to obtain approval of its wholesale water supplier to provide water to the District. If Bellevue fails to obtain such approval within one year of the effective date of this Agreement, either party may terminate this Agreement by filing written notice with the other party. The rights and duties of the parties under this Agreement shall be stayed until such approval; provided, that the parties may at their option proceed with design and planning of the system improvements described in this Agreement pending such approval. The City shall give the District monthly written reports on its progress in obtaining such approval.

C. Improvements to District System. Upon receipt of the proceeds of the sale of the District-owned property in the City of Kirkland, the District shall initiate and complete the system improvements and actions described in this paragraph. The District shall pay for all costs related to such improvements and actions. All system improvements performed by the District or under the District's direction shall be reviewed and approved by the City and be done in accordance with City standards.

1. The District shall add and replace sufficient District system water mains so that the weighted average age by length of the distribution mains is equal to or newer in age

than mains within Bellevue's current water system, which is 31 years. All District water mains made from materials other than asbestos cement or ductile iron shall be replaced, unless otherwise approved by the City.

2. Water meters and meter boxes shall be installed at each District customer service. Meters shall be sized per applicable building official requirements. Where required by Bellevue adopted standards, fire protection system meters shall be provided and installed.

3. The District water system shall be upgraded to maintain a minimum of 1,000 gallons per minute fire flow at all hydrants on 91st, 92nd, 94th, and 95th Avenues NE. All other hydrants in the District system shall be upgraded as necessary to maintain a minimum of 1,000 gallons per minute fire flow or to meet the requirements of the Fire Marshal, whichever is less.

4. The District shall be responsible for having approved backflow prevention assemblies per City standards installed on all known cross connections.

5. The District shall isolate the District's water source, transmission line, and reservoirs from the District's water distribution system.

Bellevue shall decide upon and fund any further system improvements.

Upon mutual agreement of the City and District, the City may provide engineering services to complete District system improvements as required under Section II. C. of this Agreement. Should the City provide these services, the District shall reimburse the City for such services.

D. Temporary Water Supply. If the District's water supply is interrupted during the construction and testing of system improvements required under this Agreement, the City shall provide water supply on a temporary basis in accordance with the existing intertie agreement, entitled "Letter of Understanding—Addendum to D.E. Agreement, Emergency Intertie with Bellevue Water System," between the District and the City.

E. Fees and Charges. The District agrees to pay the City or other designated agencies the following fees and charges, which will be due at the time that the City undertakes operation and maintenance of the District's system.

1. The appropriate amount of Capital Recovery Charges (CRC) as required by City ordinances for all new City residential customers to buy into a fair share of the City's capital facilities that provide water supply and distribution. The amount to be paid will be based on the sum of all charges that would normally accrue to each individual service.

2. Funds to be added to existing Bellevue operating and capital replacement reserves in an amount prorated based upon the number of equivalent residential units in the District as compared to existing funds in such reserve accounts divided by the existing number of equivalent residential units served by the City.

3. Cascade Water Alliance (CWA) Regional Capital Facilities Charges (RCFC) current at the time of payment for each single family equivalent unit as specified in City Ordinance No. 5427.

F. Cascade Water Alliance Membership. If Bellevue cannot represent District customer interests in the CWA, the District shall become a member of the CWA and the City shall pay for the District's CWA administrative dues.

G. Customer Billing. Upon commencement by the City of operation and maintenance of the District's water system, the City will bill each individual District customer account on the same rate schedule as a Bellevue customer, except that all bills will be sent to the District. If practical such bills shall be provided in an electronic format. The District will be responsible for paying the City all charges for customers of the District. Payment shall be due the City within 45 days of receipt of a bill. A late charge of 1% per month shall accrue for any past due payments. The District will convey all City billing information to each customer. Any District subsidy of customer bills shall be structured so that customer charges increase with increased usage in a manner that encourages water conservation.

H. District Supply Facilities. Prior to City operation and maintenance of the District's water system, the District shall isolate the District's wells, transmission line and reservoirs from the District's water system. Within five years of the effective date of this Agreement the District shall:

1. Decommission District wells, unless the District has transferred responsibility for decommissioning the wells to a purchaser of the property on which the wells are located.

2. Demolish/remove District reservoirs and transmission lines from the wells to the District system.

Facilities shall be decommissioned in accordance with requirements of the appropriate regulatory agencies. When the District sells the property on which the wells and reservoirs are located, the District shall cause all liabilities for the facilities and properties to be transferred to the new owners, including any obligations for hazardous waste mitigation.

I. Implementation of Bellevue Programs. The District shall adopt any necessary resolutions and/or legally assign responsibilities to allow Bellevue programs to be implemented and carried out within the District. Such programs shall be the same as those that are implemented within the water service area of the City. Such programs shall include but not be

limited to: water conservation, shortage management, water quality monitoring, cross connection control, development review, and enforcement. Consistent with Title 57 RCW, the District shall adopt any City water codes, standards, and written practices for application within the District.

J. Liability for Damage Indemnity and Hold Harmless. Each party shall protect, defend, indemnify and save harmless the other, its officers, officials, employees and agents, while acting within the scope of their employment as such, from any and all costs, claims, judgments, and/or awards of damages, arising out of, or in any way resulting from, each party's own negligent acts or omissions. Each party agrees that its obligations under this paragraph extend to any claim, demand and/or cause of action brought by, or on behalf of, any of its employees or agents. For this purpose, each party, by mutual negotiation, hereby waives, with respect to the other party only, any immunity that would otherwise be available against such claims under the Industrial Insurance provisions of Title 51 RCW. If any party incurs any judgment, award, and/or cost arising therefrom, including attorneys' fees, to enforce the provisions of this paragraph, all such fees, expenses, and costs shall be recoverable from the responsible party to the extent of that party's culpability. After the City takes over operations and maintenance of the District's distribution system per Section IIA, the City shall be liable for any claims or damages arising from such operations and maintenance. The District shall retain all liability not assigned to the City, including but not limited to third party liabilities resulting from:

1. The transition of service from the District to the City's supply system.

2. Construction of upgrades to the District water supply system as required by this Agreement.

3. Ownership and management of the District wells, transmission line, reservoirs, and real property.

4. Leaks or breaks in the District water supply system water mains that have not been replaced after the effective date of this Agreement.

5. Prior and future actions of the District commissioners and agents other than Bellevue.

K. Assumption of the District. The District and Bellevue shall jointly pursue state legislation to authorize Bellevue to assume ownership of the District system. After the effective date of such legislation and upon disbursement of all cash assets of the District, the District and Bellevue shall proceed with the full assumption of the District by Bellevue. If such legislation is not enacted within twenty years after Bellevue commences operation and maintenance of the District's water system, the parties would need to amend or extend this Agreement for Bellevue to continue providing water supply, maintenance and operations, and other services to the District.

L. Dissolution of District. After assumption as provided for in paragraph K, the District and Bellevue shall jointly petition for dissolution of the District pursuant to RCW 35.13A.080, or if such statute is no longer in effect, pursuant to any statute providing for dissolution of the District that is selected by the District and Bellevue.

M. Agreement Modifications. This Agreement constitutes the entire agreement of the parties with respect to the subject matter of the Agreement and may be modified only by an agreement in writing signed after due authorization by both parties.

N. Notices. Notices given or any documents to be delivered by either party to the other party shall be delivered in person or mailed and addressed to the respective parties at the following addresses, unless otherwise directed by the proper party as identified below:

To District at:
Bob Trimble, President
King County Water District No. 1
4626 - 95th Avenue NE
Yarrow Point, WA 98004-1320

To City at:
Lloyd Warren, Director
Utilities Department
City of Bellevue
301 - 116th Avenue SE, Suite 305
P.O. Box 90012
Bellevue, WA 98009-9012

O. Invalidated Provisions. If any provision of this Agreement is held to be invalid by the final judgment of a court of competent jurisdiction, the remainder of the Agreement shall be unaffected and shall remain in full force and effect.

P. Effective Date. This Agreement shall take effect on the fifth day after approval by the legislative bodies of both parties and due execution as set forth below.

Q. Signatures. This Agreement may be signed in counterparts and, if so signed, shall be deemed as one integrated document.

KING COUNTY WATER DISTRICT NO. 1, Yarrow Point, Washington

By: _____ President
Dated: 1/23/04

By: _____ Secretary
Dated: 1/23/04

Approved as to form:

Attorney for King County Water District No. 1

CITY OF BELLEVUE, WASHINGTON

By: _____
Deputy City Manager

Dated: 1/29/2004

Approved as to form:

Asst. City Attorney

CASCADE WATER ALLIANCE

RESOLUTION NO. 2004-04

A RESOLUTION OF THE BOARD OF DIRECTORS OF CASCADE WATER ALLIANCE, A WASHINGTON NONPROFIT CORPORATION, AUTHORIZING THE CITY OF BELLEVUE TO PROVIDE WATER SUPPLY TO KING COUNTY WATER DISTRICT NO. 1

WHEREAS, the Cascade Water Alliance ("Cascade"), is a Washington Nonprofit Corporation composed of municipal corporations which is organized pursuant to the Interlocal Cooperation Act (Chapter 39.34 RCS) for the purpose of providing water supply to meet the growing demands of its members and the region; and

WHEREAS, Cascade has negotiated a declining block contract with the City of Seattle with respect to the purchase of water supply; and

WHEREAS, Cascade supplies water to its Members according to the terms and conditions of its contract with the City of Seattle and the Cascade Interlocal Contract (the Interlocal); and

WHEREAS, the City of Bellevue, a Member of Cascade, has negotiated an agreement with King County Water District No. 1 to provide water supply to that Water District from the City of Bellevue's share of the Cascade Block, a copy of which is attached hereto; and

WHEREAS, King County Water District No. 1 has agreed to pay a Regional Capital Facilities Charge (RCFC) for each District connection and to pay the rates and charges imposed by Bellevue; and

WHEREAS, the Interlocal requires that the Board of Directors of the Cascade Water Alliance approve all sales by a Member to non-members of water supplied to the Member by Cascade.

NOW THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE CASCADE WATER ALLIANCE, as follows:

(1) The City of Bellevue is authorized to supply King County Water District No. 1 with water supplied by the Cascade Water Alliance according to the terms and conditions of the interlocal agreement attached hereto; provided that, the Board of Directors of the Cascade Water Alliance must approve amendments to that agreement; and

(2) Demand Shares and total connected CERUs for the City of Bellevue shall be adjusted, beginning in 2005, to take into account water supplied to King County Water District No. 1.

ADOPTED AND APPROVED by the Board of Directors of the Cascade Water Alliance at its regular meeting thereof held on the 18 day of FEBRUARY 2004.

CASCADE WATER ALLIANCE

ATTEST:

Michael A. Gagliardo

Grant Degginger, Chair

Jim Haggerton, Vice Chair

Members

Yes 7

No 0

Demand Share

Yes 99 %

No 0 %

FEB 2 6

ORIGINAL

FILED NO. 26095
CITY OF BELLEVUE
DATE 8/10/98
M. Beck
CITY CLERK'S OFFICE Res 6231

ASSUMPTION AGREEMENT

THIS AGREEMENT is made and entered into to be effective as of the 3rd day of August, 1998, by and between Water District No. 17, King County, Washington, a municipal corporation in King County, Washington, hereinafter referred to as "District," and the City of Bellevue, a municipal corporation in King County, Washington, hereinafter referred to as "City."

RECITALS

A. The District provides water supply and distribution service to a geographic area lying entirely within the territory of the Town of Hunts Point and geographically portrayed on Exhibit A attached hereto and by this reference incorporated herein. The City is authorized by Chapter 35.13A RCW to assume jurisdiction and ownership of District properties, facilities and equipment, and to assume and pay all District obligations if this is mutually agreed by the City and the District.

B. The assumption by the City of the District's obligations and its water supply and distribution system has been discussed by the parties for years, and enabling legislation, Chapter 426, Laws of 1997, has been secured. The City, the District and their respective consultants and staffs have completed a review and analysis of specific issues relating to the assumption of the District's facilities and obligations by the City. Based on the recommendations and conclusions of those consultants and staffs, and with construction work under way in the District's Local Improvement District No. 1, upgrading the District's water supply and distribution system to conform with City standards, the City and District have concluded that the City's assumption of the District's water supply and distribution system and obligations should now proceed.

C. The proposed assumption of the District system by the City is consistent with the Growth Management Act which supports the City as the most appropriate provider of urban services including water supply and distribution services.

50025481.03

D. The proposed assumption and merger of operations meets the criteria and objectives of the Boundary Review Board for approval of this assumption pursuant to Chapter 35.13A RCW and Chapter 36.93 RCW.

E. The City and District now agree to proceed with the City's assumption of the District's system and obligations pursuant to Chapter 35.13A RCW in accordance with this agreement as specifically set forth hereafter.

THEREFORE, in consideration of the terms and conditions contained herein, the parties mutually agree as follows:

1. Definition of Terms. Wherever the following terms shall be used in this Agreement they shall have the following meaning unless otherwise specifically indicated in the context in which they appear:

(a) "Assessment" shall mean a charge levied in a Utility Local Improvement District or Local Improvement District for special benefits conferred by the construction of public water supply and distribution facilities, and shall include interest and any penalties thereon.

(b) "Assumption Date" shall mean the date fixed pursuant to Section 2(d) of this Agreement when the City assumes control of the operation of the System and instruments adequate to convey all the District's facilities and other property to the City are placed in escrow by the District.

(c) "City" shall mean the City of Bellevue, a municipal corporation, acting by and through its City Council unless such authority shall be lawfully delegated to other officers or unless other officers are expressly indicated herein.

(d) "Connection Charge" or "Meter Charge" shall mean a charge for the connection of properties to public water supply and distribution facilities.

(e) "District" shall mean Water District No. 17, King County, Washington, a municipal corporation, acting by and through its Board of Commissioners unless such authority shall be lawfully delegated to other officers or unless other officers are expressly indicated herein.

(f) "Service Charge" or "Water Service Charge" shall mean a monthly or other periodic charge for the use of water facilities and water. Both the District and the City currently bill their respective customers on a bi-monthly basis.

(g) "System" shall mean all water supply and distribution facilities heretofore installed or acquired by the District or by the City, or hereafter installed or acquired by the District or by the City pursuant to this Agreement.

(h) "Title Transfer and Dissolution Date" shall mean that date fixed pursuant to Section 4 of this Agreement when the escrowed conveyance instruments are delivered to the City, the City assumes all of the obligations of the District, and the District is dissolved by order of the Superior Court.

2. Assumption and Dissolution Process.

(a) Preparation for Assumption and Dissolution. The City and the District are authorized pursuant to RCW 35.13A.070 to enter into contracts relating to the rights, powers, duties and obligations of the City and the District, with regard to the use and ownership of District property and other matters relating to the assumption of the District by the City. Therefore, the City and the District agree to the assumption of the District in its entirety by the City consistent with and pursuant to the terms of this Agreement, any amendments thereto, and Chapter 35.13A RCW, subject to the approval of such assumption by the Washington State Boundary Review Board ("BRB") of King County and the Superior Court of the State of Washington for King County on substantially the terms and conditions contained herein.

(b) Boundary Review Board Notices of Intent. The City and the District agree to cooperatively pursue the assumption and dissolution of the District by the City in accordance with the terms set forth in this Agreement and the procedures set forth in Chapter 35.13A RCW, Chapter 36.93 RCW and other applicable statutes. The City shall file with the BRB a notice of intent to assume and dissolve the District pursuant to Chapter 36.93 RCW. The District by resolution has expressed its intention to not request that the BRB invoke jurisdiction. The District agrees that it will not file a request for review of the assumption with the BRB, on the condition that the assumption proceeds in accordance with the terms of this Agreement and any amendments thereto. Following the filing of the City's notice of intent as referenced above, in the event BRB jurisdiction to review the proposed assumption is invoked, the City and the District shall coordinate, prepare and present testimony to the BRB regarding the proposed assumption and take all actions necessary to obtain timely BRB approval of the assumption of the District.

(c) Dissolution of District. In the event that the BRB approves the assumption of the District, the City and the District shall cooperatively pursue the prompt dissolution of the District by court order as provided by Chapter 35.13A.080 RCW. After the Assumption Date and until the dissolution of the District, the District Board of Commissioners shall continue to operate and function to effect the dissolution of the District.

(d) Assumption Date. In the event the BRB invokes jurisdiction and subsequently approves the assumption of the District, the Assumption Date for the purposes of this Agreement shall be the date established by the BRB when such assumption shall be effective. In the event the BRB does not invoke jurisdiction, the assumption is deemed approved and the Assumption Date shall be November 1, 1998. If the BRB does not invoke jurisdiction, the City will assume full physical operation and control of the District System effective at midnight on October 31, 1998

(e) Escrow for Conveyance Instruments. On or before the Assumption Date, the District shall establish an escrow at an institution acceptable to the City and deposit therein appropriate instruments to convey to the City all of the District's facilities and other property, both real and personal, except the District's Local Improvement Fund, District No. 1, which shall be transferred to the City as provided in Section 9. At the same time, the District

shall provide instructions to the escrow institution for the delivery of all such conveyance instruments to the City immediately upon the Title Transfer and Dissolution Date when the City shall assume and agree to pay in accordance with their terms all District liabilities.

3. Distribution of District Assets and Liabilities and Dissolution of District. The parties agree that on the Title Transfer and Dissolution Date, the City shall acquire all of the District's assets, except the Local Improvement Fund, District No. 1, and shall further assume and be obligated to pay all of the District's debts and liabilities. Such assumption and acquisition of District assets and liabilities shall occur as follows:

(a) Consistent with the Laws of the State of Washington and pursuant to this Agreement, all of the right, title and interest of the District in and to all real property interests, contract rights, franchises, easements, water system facilities and appurtenances thereto, equipment and vehicles, personal property, cash, accounts receivable, investments and choses in action of all kinds, except the Local Improvement Fund, District No. 1, which shall be in existence at the Assumption Date, as defined herein, shall be conveyed, transferred and quit claimed by District to the City. The City shall pay nothing to the District in exchange for the property described herein, with the mutual covenants of this Agreement constituting good and sufficient consideration for the conveyances contemplated by the Agreement. . It is further mutually agreed and recognized by the parties that all assets which the City may acquire pursuant to this Agreement shall remain subject to all presently outstanding indebtedness of the District. It is further agreed that the assets which the City shall acquire pursuant to this Agreement shall further be subject to the rights of other individuals and entities including, but not limited to all persons residing within the District whose property now or hereafter located within the District is served by the District's water supply system, and parties with whom the District may have existing contracts.

(b) The City shall assume, effective on the Title Transfer and Dissolution Date, and pay in accordance with their terms, all obligations and liabilities of the District outstanding on that date. This shall necessarily include but shall not be limited to paying and securing payment of the principal of and interest on the District's then outstanding Local Improvement District No. 1 Bond Anticipation Note (Line of Credit), in accordance with the

terms thereof. The City agrees to pay all ordinary and necessary expenses of the District incurred up to and including the date of formal dissolution of the District.

(c) Prior to confirmation of the final assessment roll in its Local Improvement District No. 1, which shall be accomplished before the Title Transfer and Dissolution Date, the District shall by resolution convert such LID into a Utility Local Improvement District (ULID) called Utility Local Improvement District No. 1.

(d) After the Title Transfer and Dissolution Date, the City shall issue its water and sewer revenue bonds secured by the net revenue of the City's System and utility local improvement assessments, including the assessments to be levied in the District's Utility Local Improvement District No. 1, or otherwise provide the money to duly pay and redeem the District's interim financing of the design and construction of the improvements in such utility local improvement district in the form of the Local Improvement District No. 1, Bond Anticipation Note (Line of Credit), issued January 29, 1998, in the principal amount of not to exceed $500,000, bearing interest at 7.25% per annum, due January 29, 1999, and subject to prepayment at any time.

(e) District contracts outstanding on the Title Transfer and Dissolution Date, not otherwise specifically provided for herein, shall be assumed by the City including but not limited to the following:

1) Construction Contract. City shall assume and perform all the District's rights and responsibilities with reference to the contract between the District and Underground Specialties, Inc., for the construction of improvements in Local Improvement District No. 1.

2) Miscellaneous District Contracts. City shall assume District's rights and responsibilities under any other contracts not otherwise specifically provided for in this Agreement.

3) Future Agreements. The District shall not enter into any new agreements after the Assumption Date, without the City being a party to such agreement.

From the date of execution of this Agreement until the date of assumption, the parties hereto agree to continue to cooperate fully on matters of mutual interest including the making of District contracts.

4. Court Proceedings, Title Transfer and Dissolution Date and Dissolution of the District. In accordance with the terms of this Agreement, the parties shall petition the Superior Court of the State of Washington for King County upon or before the confirmation by District resolution of final assessments in Local Improvement District No. 1, and no later than the Assumption Date, for an order approving and directing the proposed transfer of District assets, and assumption of indebtedness and obligations by the City after a hearing if necessary and appropriate findings. The court order to be sought and supported by the parties shall also approve this Agreement, prescribe the time of the transfer of assets and liabilities, thereby establishing the Title Transfer and Dissolution Date, and dissolving the District as of that date. The respective costs and expenses of such court proceedings shall be borne by the parties. It is the intention of the parties that the transfer of assets, assumption of liabilities and District dissolution contemplated by the Agreement should occur as soon as reasonably possible, and in any event, no later than December 31, 1998.

5. District Records and Execution of Documents. From the effective date of this Agreement, the City shall have access to all records in District's possession pertaining to the construction of the System, schedules of water service charges and connection charges and charges in lieu of assessment heretofore made by the District. The District shall likewise furnish to the City all records of water connections which have been made by the District, historical water consumption and payment records for all customers served by the District, as-built drawings of water mains and facilities, all documents listed under Section 3(e), and such other documents as the City may require to carry out the terms of this Agreement. Any cost pertaining to the transfer or duplication of such records shall be borne by City. The parties hereto agree to approve and execute any and all documents including bills of sale, deeds, assignments of interests and rights as necessary to convey, transfer or assign District's assets, rights, interests, and liabilities to the City as provided in this Agreement.

6. Operation and Maintenance of District's System. From and after the Assumption Date, the City shall maintain and operate all of the System facilities, and other facilities and equipment now or hereafter constructed as necessary to continue to furnish water supply and distribution service to all customers served by the System. From and after the Assumption Date, the City shall operate and maintain the System as a part of the City's water system, in the manner provided by law. The City shall, for the life of those facilities of the District which serve persons and properties located within the District but outside of the City, make such facilities available to serve all persons and properties consistent with all agreements previously entered into by the District. The City shall provide water supply and distribution service to all portions of the District, equal in all respects to that provided to residents of the City.

7. Personnel Employment and Compensation. There are no District employees entitled to protection from reductions in force or to other benefits under this Agreement by virtue of such employment.

8. Utility Rates Charges and Regulations. The parties agree that from and after the Assumption Date that the City shall provide water supply and distribution service within the District, on the same basis as water service is provided to other City customers in accordance with the City's respective ordinances, resolutions, regulations and codes relating to the provision of water service as adopted and enforced by City. The City shall impose service charges, assessments, connection charges or other miscellaneous fees within the District's service area at no higher rate than the rate charged for the same "class of service" rendered within or without portions of the City. The term "class of service" shall have the meaning as set forth in RCW 35.92.010 or as such statute may be amended.

9. District Funds. From and after the Assumption Date the District's existing Local Improvement Fund, District No. 1, from which the District's outstanding Local Improvement District No. 1, Bond Anticipation Note (Line of Credit) is payable, shall continue to be held by the King County Treasurer (King County Department of Finance) and invested or applied to the payment of such note, in accordance with written directions given from time-to-time by the City,

until such time as said note shall have been paid in full. The City shall assure that all required deposits into such fund out of the assessments when collected in such Local Improvement District, are duly made in accordance with prior resolutions and agreements of the District. The City shall be responsible for any statutory fees and costs of the King County Treasurer (King County Department of Finance) for providing said services. Segregations of assessments requested after the Assumption Date shall be reviewed by the City and the King County Treasurer (King County Department of Finance) who is thereafter authorized to honor segregations approved by the City. When the above-referenced note has been paid and retired in accordance with its terms, any remaining money in the Local Improvement Fund, District No. 1, shall be paid to the City.

All cash in the District's Maintenance Fund or other funds, after payment of or provision for payment of all warrants drawn thereon prior to the Assumption Date, shall be thereafter paid by the King County Treasurer (King County Department of Finance) to the City on the Title Transfer and Dissolution Date.

10. District Commissioners' Indemnification. From and after the Transfer and Dissolution Date, the City shall assume all duties, obligations and liabilities of the District and its Commissioners, as provided by Chapter 35.13A RCW. The City shall indemnify, defend and hold the District and its Commissioners harmless from any claim or liability arising directly or indirectly from the District's or Commissioner's alleged performance or failure to perform District duties prior to the Title Transfer and Dissolution Date, including indemnification for all reasonable attorney's fees and costs incurred therein; provided, that the City's duty to indemnify, defend and hold the Commissioners and the District harmless shall only apply to claims or liabilities arising out of the District's and/or Commissioner's performance or failure of performance of duties in good faith.

11. Liability for Damage Indemnity and Hold Harmless.

(a) City agrees to indemnify, defend and hold harmless the District and its officers, employees, agents, and consultants, from any and all claims, actions, liabilities,

losses, costs, or expenses, including costs of any lawsuit and attorneys' fees, relating to any asset or liability assumed pursuant to this Agreement, arising out of any negligent or wrongful act or omission of the City resulting from or in any way connected with the responsibilities or obligations the City may have pursuant to this Agreement.

(b) From and after the Assumption Date, the City shall be solely liable for all damages or claims made in connection with or arising out of the operation, maintenance, construction, repair or replacement of any asset or liability assumed by the City pursuant to this Agreement, irrespective of the date on which the damage or claim accrued or arose.

12. District Representation and Warranty: District Insurance.

(a) To the best of the District Commissioners' knowledge, there are no outstanding or possible claims against the District which could involve or presently involve the District in litigation.

(b) The District agrees to maintain all insurance it carries as of the effective date of this Agreement, including auto, casualty, liability, errors and omissions, and public employee and elected officials bonding, in full force and effect from the effective date of this Agreement until the Title Transfer and Dissolution Date. Thereafter, the District agrees to cooperate with the City and complete, approve, and execute any applications or other documents required to obtain, extend, and/or renew District insurance coverage as required by the City and to add the City an insured on any such insurance coverage or policies, including but not limited to the purchase of a "tail" for the public officials errors and omissions coverage with the premium being paid by City.

13. Costs of Assumption. It is understood and agreed by and between the parties hereto that each party shall assume and pay its own costs in reviewing and analyzing issues relating to the assumption of District by City and in finalizing the assumption process.

14. Entire Agreement. This Agreement constitutes the entire agreement of the parties with respect to the subject matter hereof and may be modified only by an agreement in writing signed after due authorization by both parties hereto.

15. Notices. Any notice to be given or any documents to be delivered by either party to the other party shall be delivered in person or mailed by certified mail and addressed to the respective parties at the following addresses, unless otherwise directed by certified mail addressed to the proper party as identified below.

To City of Bellevue at:	Director of Utilities, City of Bellevue 301 - 116th Avenue S.E., #230 P.O. Box 90012 Bellevue, Washington 98009-9012
To District at:	Ernest Norehad, M.D. 12815 120th Avenue N.E. Kirkland, WA 98034

16. Severability. If any provision of this Agreement is held to be invalid by the final judgment of a court of competent jurisdiction, the remainder of the Agreement shall be unaffected and shall remain in full force and effect.

17. Effective Date. This Agreement shall take effect on the date first above written upon approval by the City Council of the City of Bellevue and by the Board of Commissioners of Water District No. 17, King County, Washington, and due execution as set forth below.

18. Execution in Counterparts. This Agreement may be signed in counterparts and, if so signed, shall be deemed one integrated document.

CITY OF BELLEVUE

By Lynda M. Barton
Its _____
Dated _____

50025481.03

Approved as to form:

OFFICE OF THE BELLEVUE CITY ATTORNEY

By _____
Its _____
Dated _____

WATER DISTRICT NO. 17, KING COUNTY, WASHINGTON

By _____ By _____
President Secretary

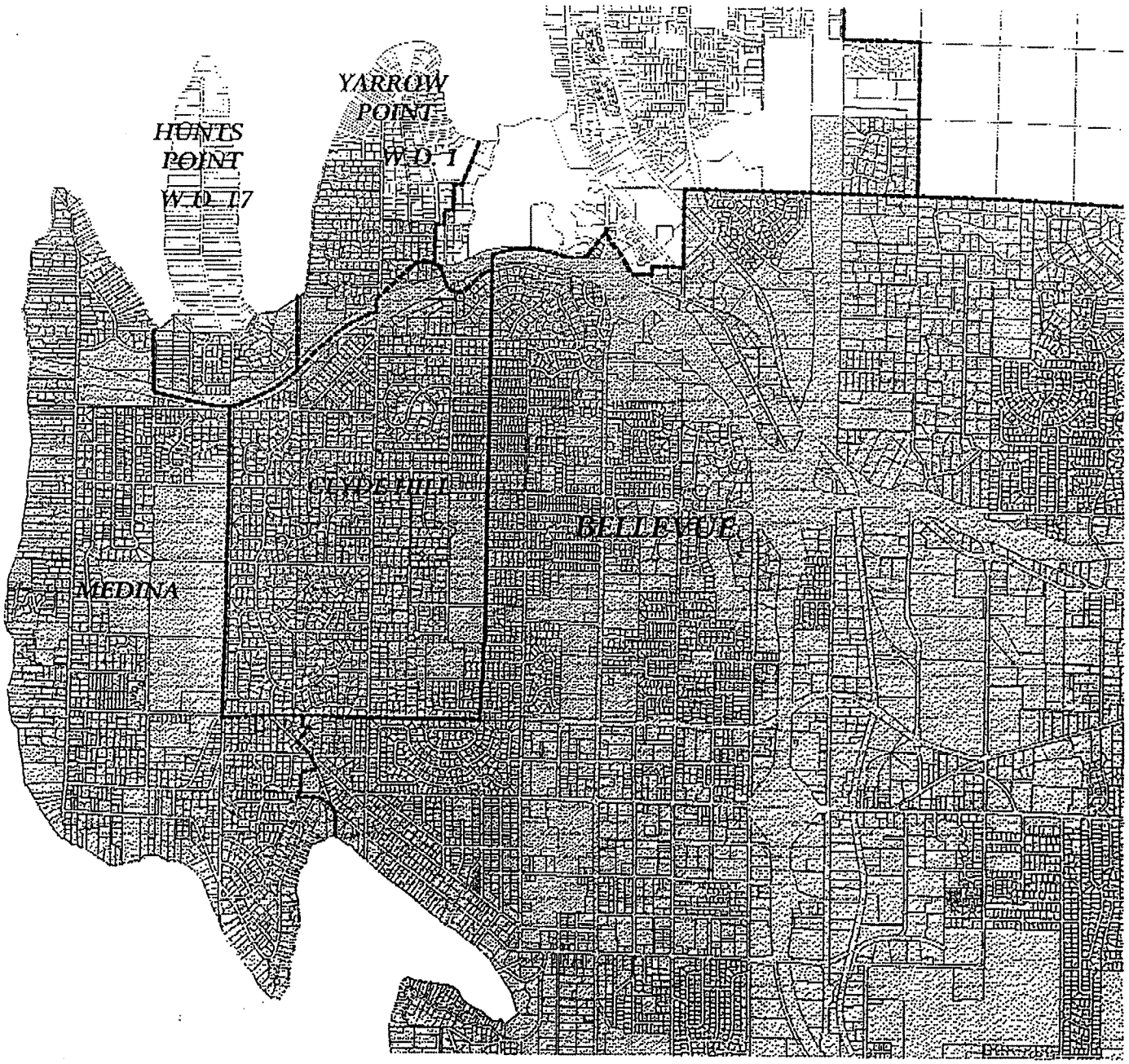
Dated 8/1/98 Dated 8-1-98

Approved as to form:

FOSTER PEPPER & SHEFELMAN PLLC
COUNSEL FOR WATER DISTRICT NO. 17
KING COUNTY, WSHINGTON

By _____
Dated 8-1-98

50025481.03



BELLEVUE WATER SERVICE AREA

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BELLEVUE & WATER DISTRICT SERVICE AREAS

EXHIBIT A

JULY 30, 1998

April 20, 1979

Beaux Arts Village
2701 - 107th Avenue SE
Bellevue, Washington, 98004

Attention: Terry Monaghan

Re: Emergency Service Connection

Dear Terry:

The City of Bellevue will consider your 6-inch emergency water service as a fire standby meter, and you will be billed in accordance with Ordinance 2659, ie $17.00 bimonthly. All water actually used will be billed at the rate of $0.372 per 100 cubic feet through this meter. The two inch meter will be billed at $27.60 bimonthly, up to 1000 cubic feet at no extra charge.

As we have previously discussed, the meter registration must be changed from reading in gallons to reading in cubic feet. During periods of scheduled down time on your system, we request that you notify us in advance.

Sincerely,

CITY OF BELLEVUE
PUBLIC WORKS DEPARTMENT

Walter E. Davis, Jr., Manager
Water & Sewer Utility Division

cc: Billing Department

WED/ic

EXECUTIVE ORIGINAL

WATER EMERGENCY AGREEMENT

THIS AGREEMENT made this 20 day of ~~April~~ MAY, 1958 between HILLTOP COMMUNITY, INC., a Washington corporation, and HORIZON VIEW COMPANY, INC., a Washington corporation

W I T N E S S E T H :

WHEREAS, the corporations which are parties to this agreement are basically composed of members who reside in adjacent communities, and desire to set up a procedure for the mutual benefit and protection of their members in the event of an emergency caused by the failure of either of their water systems,

NOW, THEREFORE, it is hereby agreed:

"Emergency procedure" shall mean the procedure set forth in "Situation 1" or "Situation 2", as the case may be, described in the document headed "Emergency Procedures" which is attached hereto and made a part hereof.

"Unit" shall mean a completed and occupied residence in the community of either corporation.

"Emergency" shall mean the failure of the water system of either corporation, but in no event shall an emergency exist unless one of the corporations cannot supply a minimum quantity of water to its members without depleting its normal water storage. For the purposes of this agreement, 200 gallons per day per unit shall be considered such a minimum quantity. It is understood that if the minimum quantities (200 gallons per unit per day) cannot be supplied as the result of the draining of lines, the checking of pumps, and other maintenance which is reasonably required an emergency condition shall exist. It is further understood that the inability of either corporation to furnish such minimum quantity as the result of overdemand on its well and/or pump, due to the fact that the well and/or pump are not adequate to provide such minimum for the number of units in its community, shall not constitute an emergency.

"The representative" as used in this agreement shall mean the chairman of the utility committee of each corporation, or, in the case of his unavailability the president of the corporation, or, in the case of his unavailability, any other officer of the corporation.

"Water system" shall mean the system wholly owned and operated solely by Hilltop Community, Inc. and the "Horizon A" water system wholly owned and operated solely by Horizon View Company, Inc., except as is set forth in Situation 3 hereto attached, wherein "storage" is included.

(2) In the event that the representative of either corporation determines that an emergency exists, he shall notify the representative of the other corporation, who shall immediately and without delay put into effect the appropriate emergency procedure, at the time specified by the other representative.

(3) During an emergency, both corporations agree that none of their members will use any water for irrigation or the sprinkling of lawns or shrubs or the filling of swimming pools, and that the use of water in both communities shall be confined to necessary domestic use only, except as otherwise specifically agreed by the representatives.

(4) It is agreed that the corporation which causes an emergency procedure to be put into effect shall reimburse the other corporation for the reasonable cost of the water used during the period of the emergency. Because the exact use of water during an emergency cannot be measured, the parties agree that the use of water during an emergency shall be compensated for on the basis of 23¢ per unit per day.

(5) In the event that an emergency should continue for a period beyond 30 days, it is agreed that, as to that particular emergency only, the provisions of this agreement shall no longer be binding, the emergency procedure shall be terminated as of the end of the 30th day, and further action, if any,

will be determined by negotiation between the corporations.

(6) Each of the parties agree that if it causes an emergency procedure to be put into effect, it will proceed with all due diligence and will use its best efforts to terminate the emergency condition as soon as possible in order to restore normal water service for the other party, and will furnish a progress report to the other party every five days during the emergency.

(7) If either party asserts (a) that an emergency as declared by the other is not necessary or is not within the restricted definition of "emergency" as defined herein, or (b) that the other party has failed to comply with Paragraph 6 hereof, or (c) that the other party has failed to comply with Paragraph 3 hereof, it shall have no legal recourse except to submit the matter to arbitration, in accordance with the procedure hereinafter described, and if it prevails in any of such assertions in arbitration, may recover a sum equal to 50¢ per unit per day for each day during which the emergency procedure has been in effect, although a necessary emergency, or an emergency as defined herein, has not existed in fact, or during which the other party has failed to comply with Paragraph 6 or Paragraph 3 hereof, as the case may be. The corporations shall be liable for such penalties even though the acts causing imposition thereof are the acts of one or more individuals residing in the community, and even though such acts are contrary to instructions or directions by the corporation.

(8) All disputes, differences, demands or controversies that may arise between the parties hereto shall be submitted to and be determined and settled by arbitration as follows:

Either corporation may, by written notice to the other, appoint an arbitrator. No person who is a member of either of the corporations hereto, or a member of the respective communities involved, or who has any financial interest, direct or

indirect, in either of the said corporations or communities, shall be qualified to act as an arbitrator. Within 10 days after the receipt of such written notice, the other corporation shall, by written notice to the former, appoint another arbitrator. In default of such second appointment within said time, the arbitrator first appointed shall be the sole arbitrator. When any two arbitrators have been appointed as aforesaid, they shall, if possible, appoint a third arbitrator. If said arbitrators are unable to agree, said third arbitrator shall be appointed by the presiding judge of the Superior Court for King County, Washington. The award and decision of the majority of the arbitrators shall be final and binding upon the parties hereto and judgment may be entered thereon in any court having jurisdiction. Such award and decision shall include the fixing of the expenses of the arbitration and the assessment of the same against either or both of the parties hereto.

Nothing herein shall prevent the parties hereto from compromise or settlement of any controversy, dispute, difference or demand prior to or during arbitration.

(9) This agreement shall remain in full force and effect until the expiration of a period of 180 days following the date that written notice of revocation is given by one of the parties hereto to any officer of the other party. It is specifically agreed, however, that each party shall have a continuing obligation to allow the other party to have a permanent connection to its well and pump for emergency use only, and until adequate repairs can be made in a reasonable time; and it is agreed that the right to have, maintain and use such permanent connections shall not be subject to cancellation except by mutual agreement.

IN WITNESS WHEREOF the parties hereto have signed this

agreement on the day and year first above written.

HILLTOP COMMUNITY, INC.

By D. V. Brown
President

Franklin L. Waterman
Secretary

HORIZON VIEW COMPANY, INC.

By Joseph M. Salemi
President

Russell W. Mumford
Secretary

I. Situation: Trouble at Hilltop well, pump or line from well to valve "D" (see detail "D").

Aim: To provide Hilltop with water from Horizon View pump & well.

Procedure: (Follow sequence stepwise)

1. Be sure Hilltop pump is to "Manual" and off.
2. Close valve 'D" (detail "C").
3. Open valve 'B' (detail "B").
4. Close valve "A" (detail "A").
5. Open valve "C" (detail "C").

Result: Both communities will be using water from Hilltop tank supplied by Horizon View pump. Horizon View storage will be held immobile to avoid running Hilltop tank over and to provide fire coverage.

II. Situation: Trouble between valve "C" (detail "C") and Hilltop tank.

Procedure: No emergency sequence is possible to provide outside water. This is entirely a Hilltop emergency problem.

III. Situation: Trouble at Horizon View well, pump, storage or line to valves "H" or "A" (detail "A").

Aim: To provide Horizon View with water from Hilltop system.

Procedure: (Follow sequence stepwise)

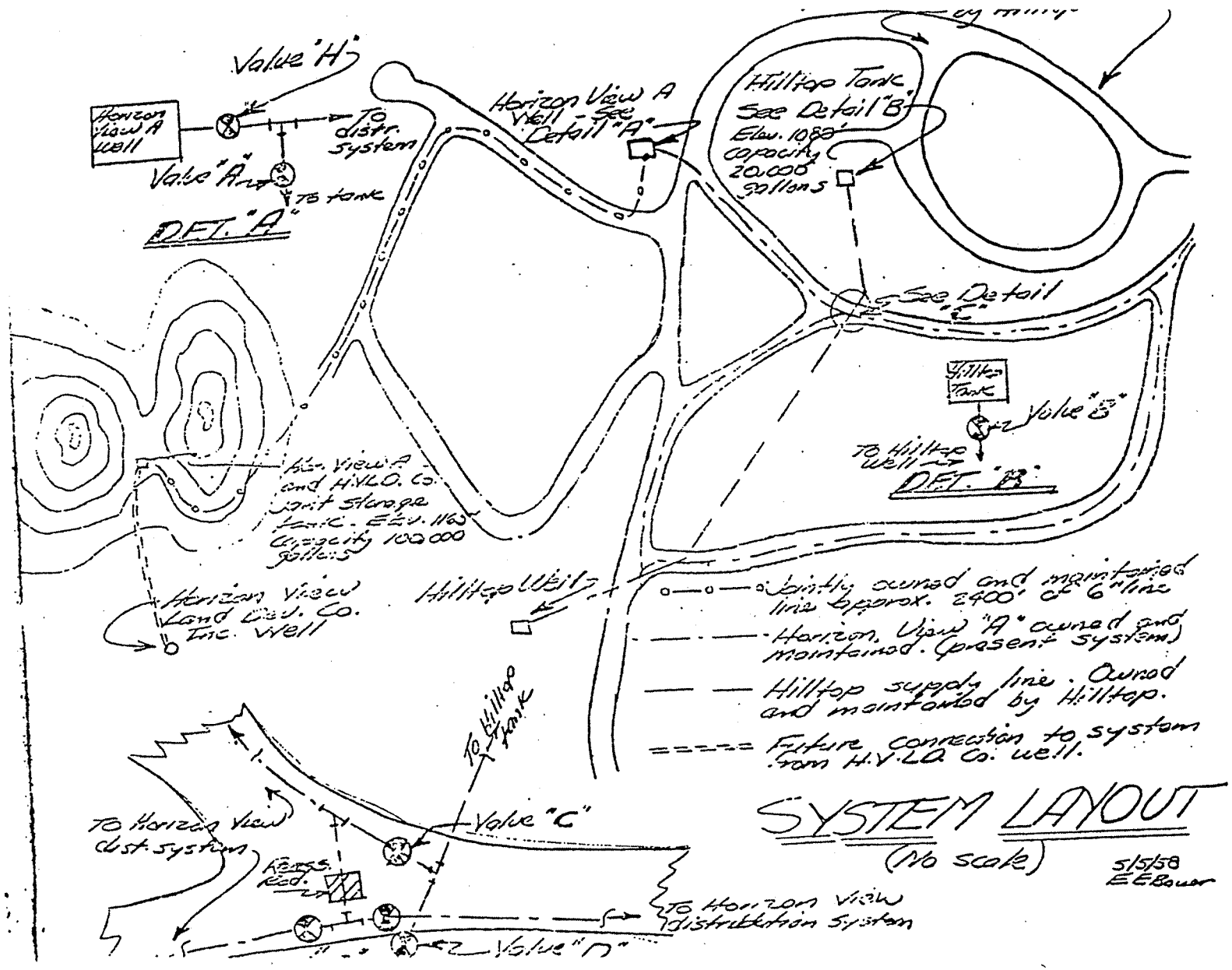
1. Be sure Horizon View pump is turned off.
2. Close valve "A" (detail "A").
3. Open valve "C" (detail "C") and valve "B" (detail "B").

Result: Both communities will be using water from Hilltop tank supplied by Hilltop pump.

IV. Situation: Trouble at reduction valve (detail "C"), in Horizon View distribution lines below reduction valve, or between valve "C" (detail "C") and valves "A" or "H" (detail "A").

Procedure: No emergency procedure possible to provide outside water. This is entirely a Horizon View emergency problem.

V. Possible Future Situation: When and if Hilltop community adds a line by-passing the Hilltop storage and pressure tanks, and in the event of a failure in either tank, the by-pass can be opened and water supplied directly from the Hilltop system from the Horizon View pump and well. Details of procedure to be added at the time the by-pass is completed.


Valve "H"
Horizon View A well
To distr. system
Valve "A"
To tank
DET. "A"
Horizon View A Well - See Detail "A"
Hilltop Tank See Detail "B" Elev. 1080' capacity 20,000 gallons
See Detail "C"
Hilltop Tank
Valve "B"
To Hilltop well
DET. "B"
Hor. View A and H.V.L.D. Co. Joint Storage Tank. Elev. 1160 Capacity 100,000 gallons
Horizon View Land Dev. Co. Inc. Well
Hilltop Well
Jointly owned and maintained line approx. 2400' of 6" line
Horizon View "A" owned and maintained. (present system)
Hilltop supply line. Owned and maintained by Hilltop.
Future connection to system from H.V.L.D. Co. well.
To Hilltop tank
Valve "C"
To Horizon View dist. system
Kings Rd.
To Horizon View distribution system
Valve "D"
SYSTEM LAYOUT
(No scale)
5/5/58
E.E.Bauer

King County Water District #117
Attn: Philip A. Hardin, Ph.D. 453-4503
5315 - 148th Avenue SE
Bellevue, Washington 98006

December 1, 1989

Mr. Mike Brownlee
Department of Public Works & Utilities
City of Bellevue
P. O. Box 90012
Bellevue, Washington 98009

Dear Mr. Brownlee:

Thank you for the time to review the procedures for opening the interconnection valve at SE 50th Street between the our water system and Bellevue's. The notification procedure we will follow will be:

- In the event of a fire or other emergency we will open the valve and notify Bellevue water/sewer maintenance at the phone number below as soon as practical.

- In non-emergency situations, we will call the Bellevue water/sewer emergency number (455-7840) to request the valve be opened. I understand that a Bellevue representative will be available 24 hours a day, 7 days a week, and that the valve will be opened within two hours of the call being placed.

- The valve closing will be coordinated using the same phone number.

We will use this procedure unless we agree on a change or KCWD #117 and Bellevue agree on a different procedure for the proposed interconnection on SE 55th street.

Thank you again for your time and consideration in defining this working arrangement to update our previous agreement.

Yours very truly,

Philip A. Hardin, Ph.D.
Commissioner, KCWD #117

PAH:c

\L002.BVE

APPENDIX C

Water Utility Ordinances and Codes

WP0438C-ORD
03/30/95

CITY OF BELLEVUE, WASHINGTON

ORDINANCE NO. 4751

AN ORDINANCE relating to the Water Utility of the City of Bellevue; repealing Chapter 24.02 of the Bellevue City Code; repealing Ordinance No. 2241; adopting a new Water Utility Code; adding a new Chapter 24.02 to Title 24 of the Bellevue City Code; and establishing an effective date.

THE CITY COUNCIL OF THE CITY OF BELLEVUE, WASHINGTON, DOES ORDAIN AS FOLLOWS:

Section 1. Chapter 24.02 of the Bellevue City Code and Sections 24.02.010 through 24.02.290 inclusive are hereby repealed.

Section 2. Ordinance No. 2241 is hereby repealed.

Section 3. A new Chapter 24.02 is hereby added to Title 24.02 of the Bellevue City Code, to be entitled the "Water Utility Code" and to read as follows:

Chapter 24.02

WATER UTILITY CODE

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24.02.010 Title

This Chapter shall be known as the Water Utility Code and shall be referred to herein as the "code."

24.02.020 Purpose

The purpose of this code is to: provide for the planning, design, construction, use, maintenance, repair and inspection of public and private water systems; establish programs and regulations to assure the quality of the water in such systems as well as provide for the efficient and conservative use of such water; and provide for the enforcement of the provisions of this code.

24.02.030 Territorial Application

This code shall be in effect throughout the Utility Service Area, as defined in Section 24.02.050(V).

24.02.040 Construction-Intent

This code is enacted as an exercise of the police power of the City of Bellevue to protect and preserve the public health, safety and welfare; its provisions shall be liberally construed to accomplish this purpose.

It is expressly the purpose of this code to provide for and to promote the health, safety and welfare of the general public and not to create or otherwise establish or designate any particular class or group of persons who will or should be especially protected or benefitted thereby.

It is the specific intent of this code to place the obligation of compliance upon the owner/operator. Nothing contained in this code is intended to be or shall be construed to create or form the basis for liability on the part of the City of Bellevue, its Utility, officers, employees or agents for any injury or damage resulting from the failure of the owner or operator of any private system to comply with the provisions of this code, or by reason or in consequence of any act or omission in connection with the implementation or enforcement of this code by the City of Bellevue, its Utility, officers, employees or agents.

24.02.050 Definitions

The following words and phrases, when used in this code, shall have the following meanings:

A. "As-Built" - A final drawing of the actual installation of structures, materials and equipment.

B. "Backflow" - The flow of contaminated water or other liquids, gases or substances into the potable water supply.

C. "Backflow Prevention Assembly" - An assembly which prohibits the backflow of water into the potable water supply.

D. "Connection Charges" - Charges imposed as a condition of providing Utility service so that each connecting property bears its equitable share of the costs of the public water system and of the costs of facilities that benefit the property. Connection charges include the general facilities charge and direct facilities charges.

E. "Cross-Connection" - Any physical arrangement in a public or private water system or plumbing system where the potable water supply is connected, directly or indirectly, with a real or potential source of contamination.

F. "Cross-Connection Control" - A backflow prevention assembly, air gap or other control designed to prevent backflow from a cross-connection.

G. "Director" - The Director of the Bellevue Utilities Department, or his/her designated representative, or other person designated by the City Manager.

H. "Emergency" - Any natural or human-caused event or set of circumstances which disrupts or threatens to disrupt or endanger the operation, structural integrity or safety of the public water system; constitutes an immediate health hazard to the potability of the Utility's water supply or endangers the health and safety of the public; or otherwise requires immediate action by the Utility.

I. "Engineering Standards" - The City of Bellevue Utility Engineering Standards which include minimum requirements for the design and construction of water, storm and surface water drainage and sanitary sewer facilities.

J. "Fire Hydrant Assembly" - A fire hydrant and the piping and valve to connect it to a water main.

K. "Fire Sprinkler System" - A privately-owned and maintained system used for fire extinguishment only, including piping and appurtenances inside and outside a building but excluding fire hydrant assemblies.

L. "Irrigation Systems" - Any means of applying water to landscaped areas.

M. "Low-volume Irrigation Systems" - Automatic irrigation systems, such as drip systems, micro-spray bubblers and soaker hoses that apply water directly to the root zone(s) of landscape plants only, in contrast to irrigation systems, such as those with overhead or broadcast nozzles, that apply water to all surfaces within the landscape.

N. "Potable Water System"- Any part of the public water system or of a private water system that carries potable water.

O. "Private Water System" - Any part of the water system that is not part of the public water system.

P. "Property Owner" - Any individual, company, partnership, joint venture, corporation, association, society or group that owns or has

a contractual interest in the subject property or has been authorized by the owner to act on his/her behalf.

Q. "Public Water System" - All pipes, pump stations, reservoirs, valves and appurtenances that are owned by the Utility for the delivery of potable water. The public water system does not include those facilities located on the customer side of meters, or the customer side of backflow prevention assemblies on meterless fire services and serving individual properties.

R. "Service Connection" - See Water Service.

S. "Redevelopment" - Any site improvement that requires installation of water facilities greater than two inches in diameter to meet fire and/or domestic water pressure and flow requirements, or relocation of such existing facilities, except that facilities for the sole purpose of upgrading a backflow prevention assembly or retrofiting an internal fire sprinkler system are exempt. Construction of any new building(s) or any property subdivision is defined as new development rather than redevelopment, regardless of prior use of the site.

T. "Unsafe Condition" - Any condition on any premises, or in any private water system thereon, that is a hazard to public health or safety, that does or may impair or impede the operation or functioning of any portion of the public water system, or that may cause damage thereto.

U. "Utility" - The Water Utility component of the Waterworks Utility of the City of Bellevue, administered as a part of the Bellevue Utilities Department, pursuant to Chapter 3.38 of the Bellevue City Code.

V. "Utility Service Area" - That service area defined in the East King County Coordinated Water Supply Plan (EKCCWSP) adopted by King County in June 1990, and approved by the City Council pursuant to Resolution No. 5249, and as may be expanded through subsequent interlocal agreements, annexations and special utility district assumptions.

W. "Water Emergency" - That period of time during which water is not available or its availability is limited due to shortages in supply, interruptions in the water transmission or distribution systems,

contamination of water supplies, or other conditions where use restrictions or prohibitions are necessary in order to efficiently and effectively safeguard the safety and health of the general public and to provide water for essential public uses.

X. "Water Facility" - Any facility for the conveyance or storage of water and related appurtenances, whether part of the public water system or a private water system that is connected to or intended to be connected to the public water system.

Y. "Water Main" - A water pipe that is part of the public or private water system used for the transmission and distribution of potable water, excluding service connections, fire hydrant assemblies and fire sprinkler systems.

Z. "Water Service" - Also called a service, water service connection or service connection. The pipe and appurtenances used to provide potable water to an individual building or irrigation system, including the water service line (the pipe extending from the water main to the meter setter), meter setter, meter box, meter and miscellaneous fittings.

AA. "Water System" - The entire water system within the Utility service area comprised of the public water system and the private water system.

BB. "Water System Plan" - The Water System Comprehensive Plan for the Utility as adopted by Resolution No. 5576, as now or hereafter amended.

24.02.060 Authority of the Utility

The Utility, by and through its Director, shall have the authority to:

A. Develop, adopt and carry out procedures as needed to implement this code and to carry out other responsibilities of the Utility, including, but not limited to, procedures pertaining to the billing and collection of water consumption charges, water service charges and all other fees and charges imposed pursuant to this code, and procedures for periodic adjustment of fees and charges imposed pursuant to this code.

B. Prepare and update, as needed, Engineering Standards to establish minimum requirements for the design and construction of water facilities and requirements for protecting existing facilities during construction. The Engineering Standards shall be consistent with this code and adopted City policies.

C. Administer and enforce this code and all procedures relating to the planning, acquisition, design, construction, inspection, maintenance, management, operation and alteration of the public water system, including capital improvements, and relating to the design, construction and inspection of private water systems.

D. Enter into any contracts pursuant to chapter 35.91 RCW, the Municipal Water and Sewer Facilities Act, including contracts which provide for the reimbursement of owners constructing facilities (Latecomer Agreements) and agreements with private property owners for the extension of the public water system (System Extension Agreements).

E. Advise the City Council, City Manager and other City departments and commissions on matters relating to the Utility.

F. Initiate and manage programs to further the water quality requirements and objectives of the Utility including inspection of public and private property to identify and eliminate potential sources of contamination of the public water system and including inspection of backflow prevention assemblies installed to separate or isolate premises from the public water system.

G. Develop and implement programs and restrictions related to water use, including the comprehensive water conservation program, landscape water budgeting requirements, irrigation system design and performance requirements, and a water shortage contingency plan to be implemented during water shortages caused by weather or by system failure.

H. Prepare and recommend the water system plan referenced in Section 24.02.070, and revisions thereto, for adoption by the City Council and implementation by the Utility.

I. Carry out other responsibilities as required by this code or other City codes, ordinances or regulations consistent with the Bellevue Comprehensive Plan.

J. Shut off water to any Utility customer who is violating any provision of this code to the extent permitted by law.

K. Perform or direct the performance of financial review and analysis of the Utility's revenues, expenses, indebtedness, rates and accounting and recommend budgets, rates and financial policy for adoption by the City Council.

24.02.065 Duty to Serve

The Utility is responsible for providing water service to all customers within the Utility service area subject to the requirements of this code, other provisions of the Bellevue City Code and applicable state law. This responsibility is separate from contractual obligations to provide water service outside the Utility service area.

24.02.067 Service Interruptions

Notwithstanding Section 24.02.065, the Utility does not guarantee that water will be continuously available within the Utility service area. Water may be temporarily unavailable due to a system failure, emergency, construction or maintenance or other unforeseen circumstance.

24.02.070 Water System Plan

A water system plan, also referred to as the City's Water Comprehensive Plan, shall be developed by the Utility for review and adoption by the City Council as required by state law. The Utility shall recommend supplements or updated plans for adoption by the City Council as needed.

24.02.080 Emergency Plan

The Utility will prepare and update an emergency plan, as required by state law, as part of the City's Emergency Operation Plan, for review and adoption by the City Council.

24.02.090 Water Shortage Contingency Plan

The Utility shall develop, maintain and implement as necessary, a Water Shortage Contingency Plan to respond to anticipated or actual water supply shortages resulting from weather conditions, regional water system failure and/or local public water system failure. The Director is authorized to implement the Water Shortage Contingency Plan at such times as the City's water supply is threatened by or experiencing a water supply shortage. Within the framework of the Water Shortage Contingency Plan, the Director may impose restrictions and/or limitations on the use of water by type of use, customer class or geographic area depending upon the nature and extent of the water supply shortage. A rate surcharge may be imposed pursuant to Section 24.02.270(E).

24.02.100 Connections or Modifications to the Water System

Connections or modifications to the public water system or to a private water system, including, but not limited to, extension of water mains, new service, meter size, location and grade changes, and temporary connections to a fire hydrant, shall be allowed only if:

A. Approval has been received from the Utility. See Section 24.02.120; and

B. All applicable requirements of this code and Utility procedures have been met; and

C. All applicable Engineering Standards have been met or alternate standards have been approved by the Utility as substantially equal; and

D. The property owner has paid all applicable fees and charges; and

E. The water is delivered from the Utility to the user via a meter owned by the Utility, except for fire sprinkler systems over two inches in diameter and except for authorized temporary use of fire hydrants through adapters under two inches in diameter; and

F. Any private wells serving the property are disconnected from the potable water supply; and

G. Any existing non-reusable water services are abandoned; and

H. The property is within the Utility service area or within an area served by the Utility through agreement with another jurisdiction.

24.02.115 System Ownership

A. Utility Ownership of Water Facilities.

1. The Utility owns all water facilities in public right-of-way and in easements dedicated to and accepted by the Utility, up to and including the meter, except to the extent that private ownership is otherwise indicated as a matter of record. Such facilities typically include:
   a. Meters and all facilities connecting meters with water mains.
   b. Water mains.
   c. Fire hydrant assemblies.
   d. Reservoirs, pumping stations, inlet meters, pressure reducing valve stations and other appurtenances intended to serve the general public.
   e. The valve separating the public water system from a private fire sprinkler system.

2. The Utility may acquire existing private facilities, provided that:
   a. Ownership of the facility would provide a public benefit; and
   b. Necessary and appropriate property rights are offered by the property owner at no cost to the Utility; and
   c. The facility substantially meets current Engineering Standards, as determined by the Utility, or is brought up to current Engineering Standards by the owner; and
   d. The Utility has adequate resources to maintain the facility; and
   e. The facility is transferred to the Utility by bill of sale at no cost to the Utility.

24.02.120 Permits/Approvals

A. General. The Utility shall administratively determine submittal requirements for all Utility permits and approvals.

B. Application for Water Service. An application for water service is required to initiate a new or upgraded connection to the public water system or a meter set that is two inches in diameter or smaller.

C. Water System Extension Agreement.

1. The property owner and the Utility shall enter into a Water System Extension Agreement whenever any of the water facilities that must be installed to serve the property are greater than two inches in diameter. The Water System Extension Agreement shall provide for the property owner to build all the water facilities needed to serve the property. These facilities may include meters and water services of any size, fire hydrant assemblies, fire sprinkler systems, water main extensions and/or other system components.

2. The Utility shall approve constructed facilities as complete once the facilities have been built according to the approved plans and specifications, as confirmed by Utility inspectors; as-built drawings have been completed as specified in the Engineering Standards; and all applicable fees and charges have been paid.

3. The property owner shall be required to provide surety devices, in a form approved by the City: for water system extensions in City right-of-way; for connections to the water main during construction and for a one-year warranty period following acceptance by the City.

4. When a Water System Extension Agreement is required to serve a proposed building, the Utility will not sign off on the building permit until the System Extension Agreement has been initiated. When a Water System Extension Agreement is required to relocate a water main from under a proposed building, the Utility will not sign off on the building permit until the system extension has been completed and has been accepted by the Utility, unless the building permit is conditioned to require relocation prior to site construction.

D. Approval for Single Fire Hydrant Installation. The Utility may allow relocation or upgrade of a single fire hydrant through an administrative process rather than through a Water System Extension Agreement, provided that proof of insurance and a surety

device acceptable to the Utility are furnished to the Utility and all review and inspection fees are paid. A one-year warranty period shall be required.

E. Fire Hydrant Use Permit. A Fire Hydrant Use Permit is required to use water provided through fire hydrants. Each Fire Hydrant Use Permit expires at the end of the calendar year and must be renewed annually. A Fire Hydrant Use Permit will be issued only if the applicant demonstrates need and agrees in writing to the following conditions:

1. Water may be drawn from the fire hydrant only through hydrant meters or adapters owned by the Utility, except the customer may supply his/her own hydrant adapter for tank lot sales.

2. Truck or tank backflow assemblies for tank lot sales are subject to Utility approval. The customer must pass a Utility cross-connection inspection prior to permit issuance.

3. Persons issued Fire Hydrant Use Permits must:
   a. Return Utility-owned equipment in good condition by the date specified and compensate the Utility for any loss or damage.
   b. For tank lot sales, the customer must report the number of tank lots purchased.

4. The Utility may suspend Fire Hydrant Use Permits during water emergencies.

F. Temporary Lawn Watering Permit. A Temporary Lawn Watering Permit is required to water new lawns during a water shortage when a partial or total ban on lawn watering has been imposed pursuant to the City's Water Shortage Contingency Plan. Such a permit may be issued only for lawns planted no more than 60 days prior to the imposition of the temporary lawn watering ban. The permit allows such lawns to be watered at the minimum rate necessary to establish and maintain the turf. Overseeding does not constitute a new lawn for purposes of this permit.

G. Approvals for Landscape Water Budgets and Irrigation System Design. When required by Section 24.02.200 and/or Section 24.02.205, the owner's landscape and/or irrigation designer shall

submit calculations and certification statements for Utility review and approval.

H. Other Permits. It is the property owner's responsibility to identify and obtain all permits/approvals required for any proposed work.

I. Temporary Water Service Agreement. Any single-family residential property owner may request temporary water service if permanent facilities, that is, facilities that meet all code requirements (such as for system gridding) are not available. The Utility may provide temporary single-family residential water service through a Temporary Water Service Agreement, which shall:

1. Calculate and collect the property owner's "fair share" costs for installing permanent water facilities. When the property is not fully developed and therefore is subject to redevelopment, the City shall collect only the developed portion's fair share cost at that time. When the property redevelops, the property owner must build the permanent water facilities, or if they are already built, must pay the remaining fair share costs. If a private property owner builds the permanent facilities, he/she will be paid the fair share costs that were collected under the Temporary Water Service Agreement plus accrued interest. Interest will be at a rate set by the City treasurer consistent with how interest rates are set for connection charges. Total interest may not exceed the principal amount of the charge.

2. Establish a time limit for connecting to the permanent service once it is available.

3. Indicate that the Temporary Water Service Agreement does not guarantee the availability of water for fire protection.

4. Specify that the agreement is a covenant which runs with the land and is binding on the owners and their successors.

5. Be recorded with King County against the property on which the facilities are located.

24.02.125 Demolition or Removal of Structures

Any property owner who plans to demolish or remove any structure connected to the public water system shall notify the Utility and complete a utility abandonment form prior to the commencement of such work. The Utility will determine whether the water service can be re-used (if sufficiently sized for the new use). If the inspector determines that the water service cannot be reused, the property owner must pay for abandonment or upgrade of the water service through a Water Service application or through a Water System Extension Agreement for new site improvements.

24.02.130 Engineering and Design Requirements

A. General.

1. The property owner is responsible for water system design.

2. The water system designer must be a civil engineer licensed in the State of Washington and qualified by both experience and educational background in the design of water facilities.

3. Engineering and design shall conform to the Engineering Standards.

4. Water facilities in a designated Coal Mine Area are subject to additional design requirements; see the Coal Mine Area Subdivision, Development and Building Permit Regulations adopted by Resolution No. 5712.

B. Water Facility Requirements

1. Whenever property is developed or redeveloped in any way such that water demand or use is altered, new water facilities are required whenever necessary to:

   a. Meet fire flow and other fire protection requirements, including the number and location of fire hydrants and fire sprinkler components, as determined by the Fire Marshal's Office of the jurisdiction in which the project is located.
   b. Meet domestic and irrigation flow requirements. See the Engineering Standards.

c. Meet pressure requirements. See the Engineering Standards.
d. Replace or relocate existing facilities as required or authorized by the Utility.

2. Whenever property is developed or redeveloped, water mains shall be extended through and to the extremes of the property being developed as required by the Utility when needed for the orderly extension or efficient gridding of the public water system.

C. Water Service Design.

1. Water services shall be sized in accordance with the Uniform Plumbing Code. Combination domestic/fire services shall be sized to meet the greater of the two demands, subject to approval by the Fire Marshal and, for projects within the Bellevue City limits, the Department of Community Development.

2. Each separate building is required to have its own water service, except detached garages, sheds and guest houses on the same single-family residential parcel.

D. Utility Separation Requirements. Water lines shall be separated from other Utilities in order to avoid hazardous conditions and to provide adequate space for alterations and repairs. See the utility separation requirements contained in the Engineering Standards.

E. Electrical Service Grounding. Service connections or water utility distribution system piping shall not be used for grounding of electrical systems or for the maintenance, integrity or continuity of any grounding attachment or connection.

F. Cross Connection Control. All connections to the public water system shall comply with the backflow prevention requirements of Section 24.02.190.

24.02.140 Installation Responsibility

A. Utility Installation.

1. The Utility shall install meters two inches or less in diameter provided the owner pays all applicable costs, fees and charges pursuant to Section 24.02.250.

2. The Utility shall install water services two inches and smaller in diameter, where services are not provided through a Water System Extension Agreement pursuant to Section 24.02.120(C), provided the owner agrees to pay all costs, fees and charges pursuant to Section 24.02.250.

B. Property Owner Installation. The property owner shall install all water facilities required by this code to serve the property when any of the required facilities are larger than two inches in diameter. Installation shall be through a Water System Extension Agreement. See Section 24.02.120(C).

C. Costs. The property owner shall be responsible for all installation costs regardless of whether the work is done by the Utility or by the owner, provided that:

1. If the Utility requires a property owner to oversize a water facility for reasons other than fire protection purposes or to adequately serve the owner's property, the Utility will compensate the property owner for the difference in cost between the normally-sized water facility and the over-sized water facility, based on the lowest of three bids from reputable licensed contractors furnished by the property owner.

2. An owner who constructs a water system extension that directly benefits a property in addition to the owner's may request a Latecomer Agreement in order to be reimbursed from benefitting properties that connect to the extension during the agreement's duration. See Section 24.02.150 regarding Latecomer Agreements.

3. If the City chooses to install water facilities to facilitate development, coordinate with other City projects, or for other Utility purposes, it may recover its costs, including interest, through a connection charge.

24.02.150 Latecomer Agreements

A. General. The Utility may enter into any contracts authorized by chapter 35.91 RCW, the Municipal Water and Sewer Facilities Act, including contracts which provide for the reimbursement of property owners constructing public facilities, commonly known as Latecomer Agreements.

B. Requesting a Latecomer Agreement. A property owner may request a Latecomer Agreement if the owner constructs a public water facility that benefits property in addition to the owner's property and it is not feasible for the owner to include such other property owner in the Water System Extension Agreement. The request must be made in writing and unit costs must be provided before the Utility accepts the facility.

C. Zone of Benefit. The Utility will determine what properties benefit from the public water facility and shall be subject to the Latecomer Agreement.

D. Method of Cost Allocation. The Utility will determine the method of cost allocation used.

E. Recording. The Utility will record the Latecomer Agreement with King County against the benefitting properties, at the property owner's expense.

F. Cost to Latecomer. As a condition of connection to the public water facility, each latecomer shall pay, at the time of connection, his/her pro-rata share of the construction costs of the water facility, which are determined by the Utility and specified in the Latecomer Agreement. Construction costs shall include but are not limited to design, installation, inspection, construction management, interest and the Utility's project management costs.

G. Agreement Duration. Latecomer Agreements may be in effect for up to 15 years following acceptance of the water facility.

H. Forwarding Latecomer Payment. While the Latecomer Agreement is in effect, the Utility will collect the latecomer payments and forward them to the property owner who paid for the water facility, as specified in the agreement.

24.02.160 Water Easement Requirements

A. When Required. An easement is required whenever a public water facility will be built on private property and whenever a private water facility will be built on property owned by a different private party.

B. Requirements. All of the following requirements shall be met before the City will accept and approve any easement:

1. Clear title in the grantor shall be demonstrated; and

2. The easement shall be consistent with utility clearance standards and setback standards and with other utilities or easements. The Utility may require the easement to exclude other utilities and uses if necessary to protect the public water system and shall contain provisions for long-term maintenance; and

3. The easement shall provide access to the facility for repair and maintenance. When deemed necessary by the Utility, the easement shall contain provisions for long-term maintenance; and

4. The easement must prohibit all structures within the easement area except those which can readily be removed by the structure's owner at the owner's expense when access to the water facility is required by the Utility. If such structures are in the easement, an agreement with the Utility to remove the structure on request shall be recorded; and

5. The easement dimensions and other requirements shall be consistent with the Engineering Standards.

C. Costs. The property owner shall pay all costs of providing or obtaining and recording the easement.

D. Relinquishment of Easement. An easement granted to the Utility may be relinquished only if the Utility determines it is no longer needed and the City Council authorizes the relinquishment.

24.02.170 Construction Requirements

When constructing or modifying water facilities, compliance is required with this code, the Engineering Standards, the approved permit, plans and specifications, the terms of any Water System Extension Agreement, the recommendations of the manufacturer of the materials or equipment used and any applicable local, state or federal requirements.

24.02.175 Construction and Warranty Inspections and Tests

A. Construction/Installation Inspection.

1. All projects involving construction of new water facilities, or connections or modifications to an existing water system, are subject to Utility inspection to ensure compliance with the code and permit/approval conditions. As a condition of permit issuance, the applicant shall consent to inspection and testing.

2. Newly installed water facilities shall be inspected, tested, and documentation completed according to the Engineering Standards and procedures.

3. Newly installed or relocated backflow prevention assemblies shall be inspected, tested, and certified pursuant to the requirements of Section 24.02.190(D).

4. The quality, taste and odor of water drawn from new water mains shall be the same as the quality, taste and odor of water in the existing facility classed as acceptable for use by the Utility. Should the water not be acceptable in quality, taste or odor, required steps as approved by the Utility shall be taken to attain acceptable water quality standards.

B. Warranty Inspections and Tests. Facilities and equipment accepted by the Utility under specific warranties may be reinspected at the Utility's discretion and, if necessary, re-tested prior to the expiration of the warranty period.

24.02.180 Water Quality Programs

A. General Requirements. The Utility shall initiate and carry out any water quality testing, monitoring, maintenance, corrective activities or other activities necessary to ensure that the City's public drinking water meets or exceeds drinking water standards and other requirements of Chapter 246-290 of the Washington Administrative Code, the Washington State Health Department's *Rules that Govern Group A Public Water Systems*, the Federal *Safe Drinking Water Act* and any other applicable federal, state or local requirement for public drinking water, as now or hereafter amended.

B. Implementation of Water Quality Programs. To maintain water quality in the most effective and efficient manner, the Utility may initiate, implement and carry out any required or necessary water quality testing, monitoring, maintenance, or corrective activities or programs locally, jointly with the Seattle Water Department, jointly with other state water purveyors; or jointly with other federal, state or local agencies having jurisdiction within the City's water service area.

24.02.190 Cross Connection Abatement and Control

A. General.

1. The Utility shall initiate and carry out a Cross Connection Abatement and Control Program in conformance with state law by establishing and maintaining minimum requirements for the installation, inspection, testing, certification and maintenance of backflow prevention assemblies. The program shall meet the minimum requirements of WAC 246-290-490 and the latest edition of the Uniform Plumbing Code adopted by the City.

2. The Utility hereby adopts by reference the standards and requirements of WAC 246-290-490, as now or hereafter amended.

B. Approved Backflow Prevention Assemblies. Only those backflow prevention assemblies and controls identified in the most recent current edition of *Approved Cross Connection Control Assemblies*, published by the Washington State Department of Health, shall be approved for installation.

C. New or Upgraded Cross-Connection Control Requirements.

1. In situations where there is an existing water service or use and the water supply is protected from cross connection by a nonconforming backflow prevention assembly (i.e., an assembly that does not meet the current standards and requirements of WAC 246-290-490 or this code), the existing nonconforming backflow prevention assembly shall, at the owner's risk, be allowed to remain in service only if:

   a. At the time the backflow prevention assembly was installed the assembly was a state-approved backflow prevention assembly; and
   b. At the time the backflow prevention assembly was installed its installation was approved by the City as appropriate for the degree of hazard; and
   c. The backflow prevention assembly does not meet the criteria for upgrading as required in Section 24.02.190(C)(2).

2. All existing nonconforming backflow prevention assemblies shall be replaced and upgraded to current standards at such time as any of the following conditions exist:
   a. The assembly fails to operate properly;
   b. The assembly fails required annual testing and certification;
   c. The assembly requires continual and excessive repair or maintenance;
   d. The degree of hazard at the premise increases from that which existed at the time the assembly was installed; or
   e. The water service, fire sprinkler system or plumbing are, or have been, modified.

3. When the Utility discovers previously unknown and/or unprotected cross connections, the Utility shall notify the property owner of the cross connection, the degree of hazard, and the cross-connection abatement and control measures required. The property owner shall make provision to implement all required abatement and control measures within the time frame specified by the Utility subject to the enforcement provisions of Section 24.02.250 or state law.

D. Inspection, Testing and Certification Requirements.

1. All newly installed or relocated backflow prevention assemblies shall be inspected, tested and certified by the Utility, except that newly installed irrigation system backflow prevention assemblies may be tested by a certified private Backflow Prevention Assembly Tester following City inspection of assembly installation.

2. All backflow prevention assemblies shall be inspected, tested and certified annually by the Utility or a private Backflow Prevention Assembly Tester certified by the Washington State Department of Health.

E. Costs and Fees. The property owner shall be responsible for paying all Utility costs and fees associated with the installation, inspection, testing, certification, repair, replacement or upgrade of backflow prevention assemblies. See Section 24.02.250 regarding fees.

24.02.200 Water Conservation

A. General. The Utility is authorized to develop and implement a water conservation program to further the water conservation objectives of the Utility. The program shall encourage the wise and efficient use of water throughout the service area at all times.

B. Waste of Water. The waste of water supplied by the Utility is prohibited at all times. Waste of water includes, but is not limited to: continuous application of water to lawns or landscaping which results in excessive puddling or runoff of water, failure to repair leaking water service lines and irrigation systems, application of water to impervious surfaces other than for cleaning purposes, and all other applications of domestic water which do not result in a beneficial use of the City's public water supply.

24.02.205 Landscape Water Budgeting Requirements

A. Applicability. The water budgeting requirements of this Section 24.02.205 shall apply to new or modified landscaping whenever new or modified landscaping is required by the Land Use Code or proposed by the property owner except that the following shall be exempt from such requirements.

1. Single-family residential lots; provided, that community area landscaping installed by the developer is not exempt.

2. Any project with a total landscape area of less than 500 square feet. If a project is constructed in phases, the total landscape area shall include the total area of all phases.

3. Those portions of a site irrigated with water that is not supplied by the Utility.

4. Turf portions of public athletic facilities where turf provides a playing surface and turf portions of public access land used for purposes of public recreation and activities, such as but not limited to outdoor assemblies, picnicking, unstructured sports fields and sunbathing. However, this exemption applies only if the applicant submits a statement designating such turf areas and specifying additional water needs above the irrigation water budget. The additional irrigation water needs shall be based upon the evapotranspiration information for the turf-grass species or species mix designated for the turf area.

5. Those portions of privately owned properties where athletic and recreation facilities, as identified by Section 24.02.205(A)(4), are installed for use by the general public. However, this exemption applies only if the applicant submits a statement designating such area(s) as open to the public.

B. Water Budget Requirements. For each proposed landscape design not exempted by Section 24.02.205(A), a State registered Landscape Architect, Washington Certified Nurseryman (WCN) or Washington Certified Landscaper (WCL) shall certify that the estimated annual water use will not exceed the irrigation water budget, as calculated pursuant to the methodology contained in the Engineering Standards. Copies of the supporting calculations shall be submitted to the Utility.

C. Landscape Management. All landscaped areas designed to meet water budget requirements shall be installed, operated and maintained such that the allowed annual water use is not exceeded.

24.02.210 Irrigation System Design and Performance Requirements

A. Applicability. The requirements of this Section 24.02.210 shall apply to all proposed new irrigation systems that will be connected to the public water system, except that the requirements do not apply to the following:

1. Single family residences; provided, that community area landscaping installed by the developer is not exempt.

2. Any project with a total landscaped area of less than 250 square feet. If a project is phased, the total landscape area includes all phases.

B. Irrigation Efficiency Requirements.

1. The irrigation system must be designed to have a minimum average distribution uniformity of 0.625 or greater.

2. The irrigation system must comply with the irrigation system design requirements in the Engineering Standards.

C. Location Restrictions.

1. Only low-volume irrigation systems may be installed in landscape strips less than five feet wide or in any parking lot landscape.

2. Irrigation systems shall not be installed in turf strips less than five feet wide; in areas of turf where slopes exceed 3:1; in landscape berms exceeding a slope of 1:1; or in turf areas in right-of-way medians, curb strips or parking lots, with the exception that in right-of-way medians and curb strips, up to 5% of the landscape may be irrigated turf so long as all other requirements are met and the turf provides a functional use for pedestrians.

D. Design and Installation Certification. Irrigation systems shall: be designed by a State registered Landscape Architect, State licensed professional engineer, or Irrigation Association Certified Irrigation Designer (IACID); pass an audit by an Irrigation Association Certified Landscape Irrigation Auditor (IACLIA); and be certified as being

designed, installed and operating at a minimum average distribution uniformity of 0.625 or greater.

E. Manual Watering. Manual watering is permitted provided it meets the intent of the irrigation system requirements and overspray is minimized.

24.02.215 Maintenance of Water System

The Utility has responsibility for maintenance of the public water system unless otherwise provided by agreement, local ordinance or state law. Owners of private water systems are solely responsible for maintenance and operation of such private systems.

24.02.220 Existing System Inspections

The Utility may enter private property at all reasonable times to conduct inspections, tests or to carry out other duties imposed by the code, provided the Utility shall first obtain consent from the property owner or person responsible for the premises upon presentation of proper credentials to that person. If entry is refused or cannot be obtained, the Director shall have recourse to every remedy provided by law to secure entry.

24.02.230 Interconnection with Adjacent Water Systems

The Utility may provide water service to adjacent public or private water systems when needed in case of failure of physical system components such as pump failure or a reservoir out of service or similar temporary circumstance, where facilities exist for such interconnection. In such case, the Utility shall bill for and be paid for the water used pursuant to the established rate structure. All requirements of this code regarding water quality shall be met. The Utility shall not serve as a backup supply source to neighboring water systems in case of well failure or other supply disruption unless the neighboring system compensates the Utility under separate contractual agreement as a backup supply source, or unless the neighboring water system becomes a permanent Utility customer, and makes payment of all appropriate fees and charges.

24.02.240 Regulations of Other Agencies

A. General. The responsibility for determining the existence and application of local, state and federal laws and regulations pertaining

to water facilities and water use remains solely with the affected property owner.

B. Regulations of King County and Other Cities and Towns. Utility customers outside the City of Bellevue are subject to City of Bellevue requirements related to water utilities unless more stringent requirements of the local jurisdiction in which such customers are located are applicable. Multiple

24.02.250 Fees for Permits/Approvals/Specific Services

A. General.

1. The Director shall develop for City Council review and adoption a schedule of fees and charges for all permits and other specific services provided by the Utility, including:

   a. Water System Extension Agreements.
   b. Water service and meter installation, modifications or repairs.
   c. Fire Hydrant Use Permits.
   d. Backflow prevention assembly inspections and tests.
   e. Disconnections of unauthorized connections.
   f. Turn-on and turn-off services.
   g. Inspections.
   h. Abandonment of existing non-reusable water services.
   i. Temporary Lawn Watering Permits during water shortages.
   j. Miscellaneous maps, plans, drawings, copies and documents provided by the Utility.

2. The fees referenced in this section are in addition to applicable rates for water service and connection charges.

B. Fee Amount. The fee amount for each permit, approval or specific service shall cover all the Utility costs associated with that permit, approval or service, including all of the following that apply:

1. Labor, including any and all time spent on engineering, plan review, installation, properly abandoning any existing facilities, site restoration, inspection, testing, certification, as-builting of the project and legal review. Inspections and other work

requested beyond normal working hours are charged based on the Utility's overtime pay practices.

2. Fees for materials or equipment issued by the Utility, such as water services and meters.

3. Refundable deposits for Utility-owned equipment such as fire hydrant wrenches and adapters.

4. Expenses including, but not limited to, supplies (not including office supplies), materials, equipment and tool rental, applicable state and federal taxes and any fees for permits the Utility must obtain.

5. Water use, in the case of Fire Hydrant Use Permits, or estimated water use in the case of unauthorized connections.

6. Overhead, at a rate to be established by the Utility pursuant to written procedures.

C. Fee Schedule. The Director may adjust the schedule of fees and charges without further City Council action to the extent necessary to reflect actual changes in the Utility's cost of providing the service.

24.02.260 Connection Charges

A. General.

1. The Utility shall collect connection charges in order that each connecting property shall bear its equitable share of the cost of the public water system.

2. Connection charges shall be paid:

a. Before a property is allowed to connect to the public water system.
b. At the time of re-development of the property, if connection charges apply that have not yet been paid such as charges for new facilities that directly benefit the property.

3. Connection charges that have been paid as a result of prior development activities or through participation in an L.I.D. or U.L.I.D. will not be re-assessed.

4. The Utility may enter into contracts with the owners of existing single-family residences and with the owners of redevelopment projects that meet criteria specified by the Utility for payment of connection charges over time instead of as a lump sum. The Utility will charge interest at a rate set by the City treasurer on any outstanding debt covered by a payment contract. A contract shall be payable in full at the time of closing upon sale of the property.

B. General Facilities Charge. The Utility shall assess and collect a general facilities connection charge so that each property owner bears his/her equitable share of the cost of the public water system. Right-of-way and unirrigated non-building tracts are exempt from the general facilities charge. The general facilities charge shall be three hundred and twenty dollars ($320) per acre or fraction thereof. For parcels less than 11000 square feet in area, the minimum charge shall be eighty dollars ($80) per parcel. The City Council may modify these charges pursuant to the most recently adopted water consumption and service rate ordinance.

C. Direct Facilities Charges.

1. In addition to the General Facilities Charge assessed pursuant to Section 24.02.260(B), the Utility shall collect direct facilities charges from property owners that directly benefit from Utility-built or privately-built water service facilities, except property owners who previously paid their fair share through an L.I.D. or U.L.I.D. Facilities that may be covered in a direct facilities charge include, but are not limited to, lines built from the water main to the property line, fire hydrant assemblies, pump stations, reservoirs and distribution and transmission mains.

2. The direct facilities charge is the property owner's equitable share of the established costs of the facilities he/she benefits from. The equitable share shall include interest charges applied from the date of construction acceptance of the facility until the property connects, or for a period not to exceed ten years, whichever is less, at a rate commensurate with the rate of

interest applicable at the time of construction of the facility to which the property owner is seeking to connect but not to exceed ten percent per year: provided, that the aggregate amount of interest shall not exceed the equitable share of the cost of the facility allocated to such property owner.

3. The facilities' costs shall be allocated to benefitting property owners based on the number of single family equivalents. The Director may, however, make such allocation based on front footage or other reasonably based methodology if the Director determines that such alternate basis or methodology better assures equitable sharing of cost by all properties benefitting from the facilities.

D. Administrative Procedures. The Director is authorized to adopt administrative procedures for the purpose of administering the provisions of this Section 24.02.260.

24.02.270 Water Rates

A. General. The City Council shall establish rates for water service and consumption which are in addition to connection charges and fees for specific services. The City may establish classifications of customers or service, using any method or methods authorized by law.

B. Rate Basis. Water rates shall be based on revenue requirements necessary to cover all costs of the Utility, as authorized by the City Council by the adoption of the annual budget and subsequent amendments and shall be guided by adopted financial policies and bond covenants.

C. Rate Adjustments. Rates shall be evaluated periodically as part of the review and adoption of the annual budget. Rate adjustments shall be recommended as needed to meet revenue requirements. The recommendation shall consider equity, adequacy, costs and other factors allowed by law.

D. Billing and Collection. The Utility shall develop and implement procedures and systems pertaining to the billing and collection of water service charges and fees in accordance with state law.

E. Rate Relief. The City Council may establish water rate relief measures for specific customer classes as authorized by state law.

F. Rate Surcharge. Upon the City Manager's declaration of a water shortage emergency pursuant to the City's adopted Water Shortage Contingency Plan, the Utility may impose a rate surcharge of 10 percent, without further City Council action.

24.02.280 Violations/Penalties

A. Civil violation: Any violation of any of the provisions of this code constitutes a civil violation as provided for in Bellevue City Code Chapter 1.18, for which a monetary penalty may be assessed and abatement may be required as provided therein. The City shall seek compliance through the civil violations code if compliance is not achieved through this code.

B. Destruction of Notice: It shall be unlawful for any person to remove, mutilate, destroy, or conceal any notice issued and posted by the Director pursuant to this code.

Section 4. If any portion of this ordinance, or its application to any person or circumstance, is held invalid, the validity of the ordinance as a whole, or any other portion thereof, and its application to other persons or circumstances, shall not be affected.

WP0438C-ORD
03/30/95

Section 5. This ordinance shall take effect and be in force thirty days after its final passage.

PASSED by the City Council this 3rd day of April, 1995, and signed in authentication of its passage this 3rd day of April, 1995.

(SEAL)

Donald S. Davidson, DDS, Mayor

Approved as to form:

Richard L. Andrews, City Attorney

Richard L. Kirkby, Assistant City Attorney

Attest:

Myrna L. Basich, City Clerk

Published April 7, 1995

WP0459C-ORD
06/27/95

ORIGINAL

CITY OF BELLEVUE, WASHINGTON

ORDINANCE NO. 4783

AN ORDINANCE creating utility capital replacement accounts for the Water, Sewer and Storm and Surface Water Utilities within the Utility Capital Investment Fund for the purpose of accumulating funding for long term replacement of utility facilities.

WHEREAS, the Utilities 1995 Cost Containment Study prepared by Financial Consulting Solutions Group, Inc. (FCSG) recommends that current utility rates recover from the ratepayers amounts which at a minimum are equal to the depreciated value of the original cost of utility facilities and at a maximum are amounts equal to the replacement value of utility infrastructure; and

WHEREAS, FCSG recommends that utility funds not needed for current expenditure be placed in a replacement account to be used in the future in combination with current revenues and/or debt financing to replace capital facilities nearing the end of their useful life; and

WHEREAS, implementation of FCSG's recommendations would promote intergenerational rate equity and provide more stable rates to customers over the long term; and

WHEREAS, the Council desires to make an initial, 1995 deposit of $600,000 in savings from the Water Fund into the new capital replacement account for the Water Utility; now, therefore,

THE CITY COUNCIL OF THE CITY OF BELLEVUE, WASHINGTON, DOES ORDAIN AS FOLLOWS:

Section 1. The purpose of this ordinance is to establish capital facilities replacement accounts within the Utility Capital Investment Fund in order to assure a future funding source for replacement of utility facilities nearing the end of their useful life. The City Council will determine each year, as part of the adoption of the utilities operating budgets, how much, if any, utility revenue during the upcoming year shall be designated for transfer to a replacement account. The City Council may also authorize the receipt of other funds directly into these capital facility replacement accounts. Once deposited the funds will accumulate with interest. The decision regarding when and how to utilize such accumulated funds for the replacement of utility facilities will be made as part of the Utility Comprehensive Plans and Utility Capital Investment Program approval process.

ORIGINAL

WP0459C-ORD
06/27/95

Section 2. The following new accounts are established in the Utility Capital Investment Fund:

Capital Facilities Replacement Account - Sewer
Capital Facilities Replacement Account - Water
Capital Facilities Replacement Account - Storm and Surface Water

Section 3. There is hereby authorized the 1995 transfer from the Water Utility Operating Fund to the Capital Facilities Replacement Account - Water the amount of $600,000.

Section 4. This ordinance shall take effect and be in force five days after its passage and legal publication.

PASSED by the City Council this 24th day of July, 1995, and signed in authentication of its passage this 24th day of July, 1995.

(SEAL)

Donald S. Davidson, DDS, Mayor

Approved as to form:

Richard L. Andrews, City Attorney

Richard L. Kirkby, Assistant City Attorney

Attest:

Myrna L. Basich, City Clerk

Published July 28, 1995

0679-ORD
12/5/2003

ORIGINAL

CITY OF BELLEVUE, WASHINGTON

ORDINANCE NO. 5506

AN ORDINANCE amending the Utilities Codes, Bellevue City Code Title 24, as recommended by the Environmental Services Commission, to implement the results of the Development Services initiative and simplify, streamline, clarify and reduce the regulations relating to development of the water, sewer and storm and surface water facilities in the City and, wherever possible, improve the ease of use thereof by citizens, developers, and City staff.

WHEREAS, the City's Development Services Initiative has identified a number of changes that should be made to the City's Utilities Codes, Title 24 of the Bellevue City Code, in order to simplify, streamline, clarify and reduce the regulations relating to development of the water, sewer and storm and surface water facilities of the City; and

WHEREAS, the Environmental Services Commission has reviewed the changes and has determined that they will improve the ease of use of the Codes by citizens, developers and City staff and has recommended that they be made; and

WHEREAS, the City Council concurs in the recommendations of the Environmental Services Commission; now, therefore,

THE CITY COUNCIL OF THE CITY OF BELLEVUE, WASHINGTON, DOES ORDAIN AS FOLLOWS:

Section 1. Sections 24.02.020, .050, .060, .100, .120, .130, .140, .170, .175, .200, .205, and 260 of the Bellevue City Code (Water Utility Code) are hereby amended to read as follows:

24.02.020 Purpose.

The purpose of this code is to: provide for the planning, security, design, construction, use, maintenance, repair and inspection of public and private water systems; establish programs and regulations to assure the quality of the water in such systems as well as provide for the efficient and conservative use of such water; and provide for the enforcement of the provisions of this code.

24.02.050 Definitions.

The following words and phrases, when used in this code, shall have the following meanings:

A. "As-built" means a final drawing of the actual installation of structures, materials and equipment.

B. "Backflow" means the flow of contaminated water or other liquids, gases or substances into the potable water supply.

C. "Backflow prevention assembly" means an assembly which prohibits the backflow of water into the potable water supply.

D. "Capital recovery charge" means a monthly charge imposed on improvements, developments, redevelopments or existing structures that place additional demand on each utility system after January 1, 1997. The capital recovery charge shall be based on an allocation of the utility plant-in-service costs plus interest and the number of single family equivalents served by each utility. (Ord. 4951 1, 2, 1996; Ord. 4751 3, 1995.)

E. "Connection charges" means charges imposed as a condition of providing utility service so that each connecting property bears its equitable share of the costs of the public water system and the utility's share of the cost of any regional water supply system and of the costs of facilities that benefit the property. Connection charges include latecomer charges, capital recovery charges, regional water supply system charges and direct facilities charges.

F. "Cross-connection" means any physical arrangement in a public or private water system or plumbing system where the potable water supply is connected, directly or indirectly, with a real or potential source of contamination.

G. "Cross-connection control" means a backflow prevention assembly, air gap or other control designed to prevent backflow from a cross-connection.

H. "Director" means the director of the Bellevue utilities department, or his/her designated representative, or other person designated by the city manager.

I. "Emergency" means any natural or human-caused event or set of circumstances which disrupts or threatens to disrupt or endanger the operation, structural integrity or safety of the public water system; constitutes an immediate health hazard to the potability of the utility's water supply or endangers the health and safety of the public; or otherwise requires immediate action by the utility.

J. "Engineering standards" means the city of Bellevue utility engineering standards which include minimum requirements for the design and construction of water, storm and surface water drainage and sanitary sewer facilities.

K. "Fire hydrant assembly" means a fire hydrant and the piping and valve to connect it to a water main.

L. "Fire sprinkler system" means a privately owned and maintained system used for fire extinguishment only, including piping and appurtenances inside and outside a building but excluding fire hydrant assemblies.

M. "Irrigation systems" means any means of applying water to landscaped areas.

N. "Low-volume irrigation systems" means automatic irrigation systems, such as drip systems, micro-spray bubblers and soaker hoses that apply water directly to the root zone(s) of landscape plants only, in contrast to irrigation systems, such as those with overhead or broadcast nozzles, that apply water to all surfaces within the landscape.

O. "Potable water system" means any part of the public water system or of a private water system that carries potable water.

P. "Private water system" means any part of the water system that is not part of the public water system.

Q. "Property owner" means any individual, company, partnership, joint venture, corporation, association, society or group that owns or has a contractual interest in the subject property or has been authorized by the owner to act on his/her behalf.

R. "Public water system" means all pipes, pump stations, reservoirs, valves and appurtenances that are owned by the utility for the delivery of potable water. The public water system does not include those facilities located on the customer side of meters, or the customer side of backflow prevention assemblies on meterless fire services and serving individual properties.

S. "Service connection" see "water service".

T. "Redevelopment" means any site improvement that requires installation of water facilities greater than two inches in diameter to meet fire and/or domestic water pressure and flow requirements, or relocation of such existing facilities, except that facilities for the sole purpose of upgrading a backflow prevention assembly or retrofitting an internal fire sprinkler system are exempt. Construction of any new building(s) or any property subdivision is defined as new development rather than redevelopment, regardless of prior use of the site.

U. "Regional water supply system" means any existing or planned water supply facilities or other assets which are owned by a regional water supply agency and which are utilized to provide water supply to the Utility. (Ord. 5427 12, 2002)

V. "Unsafe condition" means any condition on any premises, or in any private water system thereon, that is a hazard to public health or safety, that does or may impair or impede the operation or functioning of any portion of the public water system, or that may cause damage thereto.

W. "Utility" means the water utility component of the waterworks utility of the city of Bellevue, administered as a part of the Bellevue utilities department, pursuant to Chapter 3.38 BCC.

X. "Utility service area" means that service area defined in the East King County Coordinated Water Supply Plan (EKCCWSP) adopted by King County in June 1990, and approved by the city council pursuant to Resolution No. 5249, and as may be expanded through subsequent interlocal agreements, annexations and special utility district assumptions.

Y. "Water emergency" means that period of time during which water is not available or its availability is limited due to shortages in supply, interruptions in the water transmission or distribution systems, contamination of water supplies, or other conditions where use restrictions or prohibitions are necessary in order to efficiently and effectively safeguard the safety and health of the general public and to provide water for essential public uses.

Z. "Water facility" means any facility for the conveyance or storage of water and related appurtenances, whether part of the public water system or a private water system that is connected to or intended to be connected to the public water system.

AA. "Water main" means a water pipe that is part of the public or private water system used for the transmission and distribution of potable water, excluding service connections, fire hydrant assemblies and fire sprinkler systems.

BB. "Water service" (also called a service, water service connection or service connection) means the pipe and appurtenances used to provide potable water to an individual building or irrigation system, including the water service line (the pipe extending from the water main to the meter setter), meter setter, meter box, meter and miscellaneous fittings.

CC. "Water system" means the entire water system within the utility service area comprised of the public water system and the private water system.

DD. "Water system plan" means the water system comprehensive plan for the utility as adopted by Resolution No. 6273, as now or hereafter amended.

24.02.060 Authority of the utility.

The utility, by and through its director, shall have the authority to:

A. Develop, adopt and carry out procedures as needed to implement this code and to carry out other responsibilities of the utility, including, but not limited to, procedures pertaining to the billing and collection of water consumption charges, water service charges and all other fees and charges imposed pursuant to this code, and procedures for periodic adjustment of fees and charges imposed pursuant to this code.

B. Prepare and update, as needed, engineering standards to establish minimum requirements for the design and construction of water facilities and requirements for protecting existing facilities during construction. The engineering standards shall be consistent with this code and adopted city policies.

C. Administer and enforce this code and all procedures relating to the planning, acquisition, security, design, construction, inspection, maintenance, management, operation and alteration of the public water system, including capital improvements, and relating to the design, construction and inspection of private water systems.

D. Enter into any contracts pursuant to Chapter 35.91 RCW, the Municipal Water and Sewer Facilities Act, including contracts which provide for the reimbursement of owners constructing facilities (latecomer agreements) and agreements with private property owners for the extension of the public water system (system extension agreements).

E. Advise the city council, city manager and other city departments and commissions on matters relating to the utility.

F. Initiate and manage programs to further the water quality requirements and objectives of the utility including inspection of public and private property to identify and eliminate potential sources of contamination of the public water system and including inspection of backflow prevention assemblies installed to separate or isolate premises from the public water system.

G. Develop and implement programs and restrictions related to water use, including the comprehensive water conservation program, landscape water budgeting requirements, irrigation system design and performance requirements, and a water shortage contingency plan to be implemented during water shortages caused by weather or by system failure.

H. Prepare and recommend the water system plan referenced in BCC 24.02.070, and revisions thereto, for adoption by the city council and implementation by the utility.

I. Carry out other responsibilities as required by this code or other city codes, ordinances or regulations consistent with the Bellevue comprehensive plan.

J. Shut off water to any utility customer who is violating any provision of this code to the extent permitted by law.

K. Perform or direct the performance of financial review and analysis of the utility's revenues, expenses, indebtedness, rates and accounting and recommend budgets, rates and financial policy for adoption by the city council.

24.02.100 Connections or modifications to the water system.

Connections or modifications to the public water system or to a private water system, including, but not limited to, extension of water mains, new service, meter size, location and grade changes, abandonment or removal of any structure connected to the public water system, and temporary connections to a fire hydrant, shall be allowed only if:

A. Approval has been received from the utility, see BCC 24.02.120; and

B. All applicable requirements of this code and utility procedures have been met; and

C. All applicable engineering standards have been met or alternate standards have been approved by the utility as substantially equal; and

D. The property owner has paid all applicable fees and charges; and

E. The water is delivered from the utility to the user via a meter owned by the utility, except for fire sprinkler systems over two inches in diameter and except for authorized temporary use of fire hydrants through adapters under two inches in diameter; and

F. Any private wells serving the property are disconnected from the potable water supply; and

G. Any existing nonreusable water services are abandoned; and

H. The property is within the utility service area or within an area served by the utility through agreement with another jurisdiction.

24.02.120 Permits – Approvals.

A. General. The utility shall administratively determine submittal requirements for all utility permits and approvals.

B. Application for Water Service. An application for water service is required to initiate a new or upgraded connection to the public water system or a meter set that is two inches in diameter or smaller.

C. Water System Extension Agreement.

1. The property owner and the utility shall enter into a water system extension agreement whenever any of the water facilities that must be installed to serve the property are greater than two inches in diameter. The water system extension agreement shall provide for the property owner to build all the water facilities needed to serve the property. These facilities may include meters and water services of any size, fire hydrant assemblies, fire sprinkler systems, water main extensions and/or other system components.

2. The utility shall approve constructed facilities as complete once the facilities have been built according to the approved plans and specifications, as confirmed by utility inspectors; as-built drawings have been completed as specified in the engineering standards; and all applicable fees and charges have been paid.

3. The property owner shall be required to provide surety devices, in a form approved by the city: for water system extensions in city right-of-way; for connections to the water main during construction and for a one-year warranty period following acceptance by the city.

4. When a water system extension agreement is required to serve a proposed commercial or multi-family building, the utility will not sign off on the building permit until the system extension agreement has been initiated. When a water system extension agreement is required to relocate a water main from under a proposed building, the utility will not sign off on the building permit until the system extension has been completed and has been accepted by the utility, unless the building permit is conditioned to require relocation prior to site construction.

D. Approval for Single Fire Hydrant Installation. The utility may allow relocation or upgrade of a single fire hydrant through an administrative process rather than through a water system extension agreement, provided that proof of insurance and a surety device acceptable to the utility are furnished to the utility and all review and inspection fees are paid. A one-year warranty period shall be required.

E. Fire Hydrant Use Permit. A fire hydrant use permit is required to use water provided through fire hydrants. Each fire hydrant use permit expires at the end of the calendar year and must be renewed annually. A fire hydrant use permit will be issued only if the applicant demonstrates need and agrees in writing to the following conditions:

1. Water may be drawn from the fire hydrant only through hydrant meters or adapters owned by the utility, except the customer may supply his/her own hydrant adapter for tank lot sales.

2. Truck or tank backflow assemblies for tank lot sales are subject to utility approval. The customer must pass a utility cross-connection inspection prior to permit issuance.

3. Persons issued fire hydrant use permits must:

a. Return utility-owned equipment in good condition by the date specified and compensate the utility for any loss or damage.

b. For tank lot sales, the customer must report the number of tank lots purchased.

4. Tank trucks may only draw water from fire hydrants designated by the Utility for this purpose.

5. The utility may suspend fire hydrant use permits during water emergencies or if the customer violates any of the conditions listed under 24.02.120 E.

F. Approvals for Landscape Water Budgets and Irrigation System Design. When required by BCC 24.02.200 and/or 24.02.205, the owner's landscape and/or irrigation designer shall submit calculations and certification statements for utility review and approval.

G. Other Permits. It is the property owner's responsibility to identify and obtain all permits/approvals required for any proposed work.

H. Temporary Water Service Agreement. Any single-family residential property owner may request temporary water service if permanent facilities, that is, facilities that meet all code requirements (such as for system gridding) are not available. The utility may provide temporary single-family residential water service through a temporary water service agreement, which shall:

1. Calculate and collect the property owner's "fair share" costs for installing permanent water facilities. When the property is not fully developed and therefore is subject to redevelopment, the city shall collect only the developed portion's fair share cost at that time. When the property redevelops, the property owner must build the permanent water facilities, or if they are already built, must pay the remaining fair share costs. If a private property owner builds the permanent facilities, he/she will be paid the fair share costs that were collected under the temporary water service agreement plus accrued interest. Interest will be at a rate set by the city treasurer consistent with how interest rates are set for connection charges. Total interest may not exceed the principal amount of the charge.

2. Establish a time limit for connecting to the permanent service once it is available.

3. Indicate that the temporary water service agreement does not guarantee the availability of water for fire protection.

4. Specify that the agreement is a covenant which runs with the land and is binding on the owners and their successors.

5. Be recorded with King County against the property on which the facilities are located.

24.02.130 Engineering and design requirements.

A. General.

1. The property owner is responsible for water system design.

2. The water system designer must be a civil engineer licensed in the state of Washington and qualified by both experience and educational background in the design of water facilities.

3. Engineering and design shall conform to the engineering standards.

4. Water facilities in a designated coal mine area are subject to additional design requirements; see the coal mine area subdivision, development and building permit regulations adopted by Resolution No. 5712.

B. Water Facility Requirements.

1. Whenever property is developed or redeveloped in any way such that water demand or use is altered, new water facilities are required whenever necessary to:

a. Meet fire flow and other fire protection requirements, including the number and location of fire hydrants and fire sprinkler components, as determined by the fire marshal's office of the jurisdiction in which the project is located.

b. Meet domestic and irrigation flow requirements. See the engineering standards.

c. Meet pressure requirements. See the engineering standards.

d. Replace or relocate existing facilities as required or authorized by the utility.

2. Whenever property is developed or redeveloped, water mains shall be extended through and to the extremes of the property being developed as required by the utility when needed for the orderly extension or efficient gridding of the public water system.

C. Water Service Design.

1. Water services shall be designed in accordance with the engineering standards.

2. Each separate building is required to have its own water service, except detached garages, sheds and guest houses on the same single-family residential parcel.

D. Cross-Connection Control. All connections to the public water system shall comply with the backflow prevention requirements of BCC 24.02.190.

24.02.140 Installation responsibility.

A. Utility Installation.

1. The utility shall install meters two inches or less in diameter provided the owner pays all applicable costs, fees and charges pursuant to BCC 24.02.250.

2. The utility may install water services two inches and smaller in diameter,

where services are not provided through a water system extension agreement pursuant to BCC 24.02.120(C), provided the owner agrees to pay all costs, fees and charges pursuant to BCC 24.02.250.

B. Property Owner Installation. The property owner shall install all water facilities required by this code to serve the property when any of the required facilities are larger than two inches in diameter. The property owner may install water services two inches and smaller in diameter upon approval by the Utility. Installation shall be through a water system extension agreement. See BCC 24.02.120(C).

C. Costs. The property owner shall be responsible for all installation costs regardless of whether the work is done by the utility or by the owner, provided that:

1. If the utility requires a property owner to oversize a water facility for reasons other than fire protection purposes or to adequately serve the owner's property, the utility will compensate the property owner for the difference in cost between the normally-sized water facility and the oversized water facility, based on the lowest of three bids from reputable licensed contractors furnished by the property owner.

2. An owner who constructs a water system extension that directly benefits a property in addition to the owner's may request a latecomer agreement in order to be reimbursed from benefiting properties that connect to the extension during the agreement's duration. See BCC 24.02.150 regarding latecomer agreements.

3. If the city chooses to install water facilities to facilitate development, coordinate with other city projects, or for other utility purposes, it may recover its costs, including interest, through a connection charge. (Ord. 4751 3, 1995.)

24.02.170 Construction requirements.

A. General. When constructing or modifying water facilities, compliance is required with this code, the engineering standards, the approved permit, plans and specifications, the terms of any water system extension agreement, the recommendations of the manufacturer of the materials or equipment used and any applicable local, state or federal requirements.

B. Safety Requirements. Utility staff will perform inspections only if shoring and other site conditions conforms with WISHA safety standards and other safety requirements, as applicable.

C. Failure to Complete Work or Meet Requirements.

1. The utility may complete water facility construction begun by a property owner or contractor, or take steps to restore the site (such as backfilling trenches and restoring the public way) if the work does not meet the requirements of this code, the engineering standard and other applicable utility requirements, the contractor or person doing the work fails to rectify the problem following notification

by the utility; and the work, in the opinion of the utility, constitutes a hazard to public safety, health or the public water system.

2. Utility costs incurred pursuant to the preceding BCC 24.02.170(C)(1) shall be calculated pursuant to BCC 24.02.250(B) and charged to the owner or contractor in charge of such work. The permittee shall pay the utility immediately after written notification is delivered to the responsible parties or posted at the location of the work. Such costs shall constitute a civil debt owing to the utility jointly and severally by such persons who have been given notice as herein provided. The debt shall be collectable in the same manner as any other civil debt owing the utility.

3. If in the opinion of the Director, the work being performed is not in accordance with these codes or Engineering Standards and the permittee is unwilling to change or correct the deficiencies, the Director may issue a stop work order until the deficiencies are corrected.

24.02.175 Construction and warranty inspections and tests.

A. Construction/Installation Inspection.

1. All projects permitted or approved by the Utility under a Water System Extension Agreement or other permit are subject to utility inspection to ensure compliance with the code and permit/approval conditions. As a condition of permit issuance or extension agreement, the applicant shall consent to inspection and testing.

2. Newly installed water facilities shall be inspected, tested, and documentation completed according to the engineering standards and procedures.

3. Newly installed or relocated backflow prevention assemblies shall be inspected, tested, and certified pursuant to the requirements of BCC 24.02.190(D).

4. The quality, taste and odor of water drawn from new water mains shall be the same as the quality, taste and odor of water in the existing facility classed as acceptable for use by the utility. Should the water not be acceptable in quality, taste or odor, required steps as approved by the utility shall be taken to attain acceptable water quality standards.

B. Warranty Inspections and Tests. Facilities and equipment accepted by the utility under specific warranties may be reinspected at the utility's discretion and, if necessary, retested prior to the expiration of the warranty period.

24.02.200 Water conservation.

Waste of Water. The waste of water supplied by the utility is prohibited at all times. Waste of water includes, but is not limited to: continuous application of water to lawns or landscaping which results in excessive puddling or runoff of water, failure to repair leaking water service lines and irrigation systems, application of water to

impervious surfaces other than for cleaning purposes, and all other applications of domestic water which do not result in a beneficial use of the city's public water supply.

24.02.205 Landscape and irrigation water budgeting requirements.

A. Applicability. The water budgeting requirements of this section shall apply to new or modified landscaping whenever new or modified landscaping is required by the Land Use Code or proposed by the property owner except that the following shall be exempt from such requirements.

1. Single-family residential lots; provided, that community area landscaping installed by the developer is not exempt.

2. Any project with a total landscape area of less than 500 square feet. If a project is constructed in phases, the total landscape area shall include the total area of all phases.

3. Those portions of a site irrigated with water that is not supplied by the utility.

4. Turf portions of public athletic facilities where turf provides a playing surface and turf portions of public access land used for purposes of public recreation and activities, such as but not limited to outdoor assemblies, picnicking, unstructured sports fields and sunbathing. However, this exemption applies only if the applicant submits a statement designating such turf areas and specifying additional water needs above the irrigation water budget. The additional irrigation water needs shall be based upon the evapotranspiration information for the turf-grass species or species mix designated for the turf area.

5. Those portions of privately owned properties where athletic and recreation facilities, as identified by BCC 24.02.205(A)(4), are installed for use by the general public. However, this exemption applies only if the applicant submits a statement designating such area(s) as open to the public.

B. Water Budget Requirements. For each proposed landscape design not exempted by BCC 24.02.205(A), a state-registered landscape architect, Washington certified nurseryman (WCN) or Washington certified landscaper (WCL) shall certify that the estimated annual water use will not exceed the irrigation water budget, as calculated pursuant to the methodology contained in the engineering standards. Copies of the supporting calculations shall be submitted to the utility.

C. Landscape Management. All landscaped areas designed to meet water budget requirements shall be installed, operated and maintained such that the allowed annual water use is not exceeded.

D. All proposed new irrigation systems that will be connected to the public water system shall be designed in accordance with the engineering standards.

24.02.260 Connection charges.

A. General.

1. The utility shall collect connection charges in order that each connecting property shall bear its equitable share of the cost of the public water system and the Utility's share of the cost of any regional water supply system providing water supply to the utility.

2. Connection charges shall be paid:

a. Before a property is allowed to connect to the public water system.

b. At the time of re-development of the property, if connection charges apply that have not yet been paid such as charges for new facilities that directly benefit the property.

3. Connection charges that have been paid as a result of prior development activities or through participation in an LID or ULID will not be reassessed.

4. The utility may enter into contracts with the owners of existing single-family residences and with the owners of redevelopment projects that meet criteria specified by the utility for payment of connection charges over time instead of as a lump sum. The utility will charge interest at a rate set by the city treasurer on any outstanding debt covered by a payment contract. A contract shall be payable in full at the time of closing upon sale of the property.

B. Direct Facilities Charges.

1. The utility shall collect direct facilities charges from property owners that directly benefit from utility-built or privately-built water service facilities, except property owners who previously paid their fair share through an LID or ULID. Facilities that may be covered in a direct facilities charge include, but are not limited to, lines built from the water main to the property line, fire hydrant assemblies, pump stations, reservoirs and distribution and transmission mains.

2. The direct facilities charge is the property owner's equitable share of the established costs of the facilities he/she benefits from. The equitable share shall include interest charges applied from the date of construction acceptance of the facility until the property connects, or for a period not to exceed 10 years, whichever is less, at a rate commensurate with the rate of interest applicable at the time of construction of the facility to which the property owner is seeking to connect but not to exceed 10 percent per year; provided, that the aggregate amount of interest shall not exceed the equitable share of the cost of the facility allocated to such property owner.

3. The facilities' costs shall be allocated to benefitting property owners based on the number of single family equivalents. The director may, however, make such allocation based on front footage or other reasonably based methodology if the director determines that such alternate basis or methodology better assures equitable sharing of cost by all properties benefitting from the facilities.

C. Administrative Procedures; Adjustment of Charges. The director is authorized to adopt administrative procedures for the purpose of administering the provisions of this section, and to adjust the charges established by subsections A and B, above, from time to time to reflect the actual cost of the facilities for which the charges are made.

Section 2. Sections 24.02.125 and 24.02.210 of the Bellevue City Code (Water Utility Code) are hereby repealed.

Section 3. Sections 24.04.020, .050, .100, .120, .130, .140, .160 and .170 of the Bellevue City Code (Sewer Utility Code) are hereby amended to read as follows:

24.04.020 Purpose.

The purpose of this code is to: provide for the planning, security design, construction, use, maintenance, repair and inspection of public and private sanitary sewer systems; establish programs and regulations to provide for the appropriate use of such systems; and provide for the enforcement of the provisions of this code.

24.04.050 Definitions.

The following words and phrases, when used in this code, shall have the following meanings:

A. "As-built" means a final drawing of the actual installation of the structures, materials and equipment.

B. "Connection charges" means charges imposed as a condition of providing utility service so that each connecting property bears its equitable share of the costs of the public sewer system and of the costs of facilities that benefit the property. Connection charges include latecomer charges, capital recovery charges and direct facilities charges.

C. "Director" means the director of the Bellevue utilities department, or his/her designated representative or other person designated by the city manager.

D. "Emergency" means any natural or human-caused event or set of circumstances which disrupts or threatens to disrupt or endanger the operation, structural integrity, or safety of the public sewer system; endangers the health and safety of the public; or otherwise requires immediate action by the utility.

E. "Engineering standards" means the city of Bellevue utility engineering standards which include minimum requirements for the design and construction of water, storm and surface water drainage and sanitary sewer facilities.

F. "FOG" means fats, oils and grease.

G. "Industrial waste" means any liquid, solid or gaseous substance or combination thereof, resulting from any process of industry, manufacturing, commercial food processing, business, trade or research, including development, recovering or processing of natural resources.

H. "Licensed side sewer contractor" means any person, partnership, corporation or association duly qualified and competent to do work incident to the construction or repair of side sewers under permits issued under this code and who shall have been duly licensed by the utility.

I. "Nonpolar fats" means fats, oils or grease of animal or vegetable origin.

J. "Polar fats" means fats, oils or grease of mineral origin.

K. "Pretreatment device" means any approved device, structure, system or method used and maintained for the purpose of bringing a waste stream within acceptable limits and standards of quality prior to its discharge to the public sewer system.

L. "Private sewer system" means any part of the sewer system that is not part of the public sewer system as defined in the code.

M. "Property owner" means any individual, company, partnership, joint venture, corporation, association, society or group that owns or has a contractual interest in the subject property or has been authorized by the owner to act on his/her behalf.

N. "Public sewer system" means the sanitary sewer system owned and operated by the utility.

O. "Residential structure" means a single-family or duplex structure.

P. "Sewage" means waste discharged from the sanitary facilities of buildings and including industrial wastes.

Q. "Sewer facility" means any facility for the conveyance or storage of sewage, whether part of the public sewer system or a private sewer system, that is connected to or intended to be connected to the public sewer system.

R. "Sewer main" means a pipe designed or used to transport sewage, excluding side sewers.

S. "Sewer pretreatment" means the treatment of industrial waste before discharge to the public sewer system.

T. "Sewer service" means providing for the disposal of sewage from a structure into the public sewer system.

U. "Sewer system plan" means the sewer system comprehensive plan for the utility, as adopted by Resolution No. 5827, as now or hereafter amended.

V. "Side sewer" means a conduit extending from the public sewer main to the connection with a building's plumbing system.

W. "Side sewer stub" means that portion of the side sewer in the right-of-way or easement dedicated to the utility.

X. "Structure" means any building that contains facilities for the disposal of sewage.

Y. "Unsafe condition" means any condition on any premises, or in any private sewer system thereon, that is a hazard to public health or safety, that does or may impair or impede the operation or functioning of any portion of the public sewer system or that may cause damage thereto.

Z. "Utility" means the sewer utility component of the waterworks utility of the city of Bellevue, administered as a part of the Bellevue utilities department, as provided by Chapter 3.38 BCC.

AA. "Utility service area" means that service area defined on the map filed with the city clerk under Clerk's Receiving No. 8893, and as may be expanded through subsequent interlocal agreements, annexations and special utility district assumptions.

BB. "Capital recovery charge" means a monthly charge imposed on improvements, developments, redevelopments or existing structures that place additional demand on each utility system after January 1, 1997. The capital recovery charge shall be based on an allocation of the utility plant-in-service costs plus interest and the number of single family equivalents served by each utility.

24.04.100 Connections or modifications to the sewer system.

A. Connection to the Sewer System Required.

1. All structures which contain facilities for the disposal of sewage shall connect to the public sewer system unless a variance is granted pursuant to BCC 24.04.100(B). Where sanitary sewer service is not available and is required, the utility may require the property owner to install a sewer main extension.

2. Connections or modifications to the sewer system, including, but not limited to, the installation or repair of sewer mains or side sewers, and abandonment or removal of any structure connected to the public sewer system shall occur only if:

a. Approval has been received from the utility (see BCC 24.04.120); and

b. All applicable requirements of this code and utility procedures have been met; and

c. All applicable engineering standards have been met or alternative standards have been approved by the utility as substantially equal; and

d. The property owner has paid all applicable fees and charges; and

e. Any existing on-site sewage disposal facilities are disconnected in accordance with health department requirements; and

f. The property is within the utility service area or within an area served by the utility through agreement with an adjacent jurisdiction.

B. Variance from the Sewer Connection Requirement.

1. Any property owner may apply for a variance from the sewer connection requirement to allow for an on-site septic disposal system.

2. The director shall approve a variance only if all of the following decision criteria are met:

a. The property is more than 200 feet or such other distance as may be required by King County Board of Health On-Site Sewage Regulations, via dedicated easements and/or right-of-way from the existing public sewer system or, in the case of subdivisions, the exterior boundary of the subdivision is more than 660 feet, measured in the same manner, from the existing public sewer system; and

b. The proposed septic system will not have an adverse environmental effect on potable water wells, ground water, streams or other surface bodies of water; and

c. The proposed septic system is in compliance with all applicable federal, state and local health and environmental regulations; and

d. The cost of providing sewer service to the structure will result in an economic hardship. Economic hardship is defined as an unrecoverable cost equal to or exceeding 20 percent of the fair market value of a building site with utilities in place on which the structure is to be located.

3. Any variance issued by the director shall be subject to the following conditions:

a. The applicant must obtain King County health department approval of the septic tank system and must obtain any other permits which may be required by law for such system; and

b. The applicant shall record an agreement, in a form approved by the city and referred to herein as "agreement to connect," with the King County department of records and elections. Such agreement shall require payment of all connection charges at the time of actual connection to the system. The agreement shall be a covenant which runs with the land and is binding on the owners and successors in interest of the property. The agreement shall provide that the structure shall be connected to the public sewer system at such time as the system is available and that the property owner will not protest the formation of any future LID or ULID for extension of a sewer system that would serve the property. The sewer system shall be deemed available for purposes of this requirement whenever the structure can be connected to the system by an extension of 330 feet or less or, in the case of a subdivision, the boundary of the subdivision can be reached by an extension of 660 feet or less from the system.

4. The applicant may appeal a decision of the director denying a variance application pursuant to the Process II appeal procedures of LUC 20.35.250.

24.04.120 Permits – Approvals.

A. General. The utility shall administratively determine submittal requirements for all utility permits and approvals.

B. Side Sewer Permit.

1. A side sewer permit is required to construct a side sewer and/or to make any additions, repairs or connections to an existing side sewer.

2. A side sewer permit application must be made by the property owner or his/her licensed sewer contractor.

3. Side sewer permits for commercial projects, including multifamily structures, may be issued as part of the sewer system extension agreement, if one is required, pursuant to BCC 24.04.120 (C)(1). The side sewer can be installed as part of the sewer system extension agreement and shall be put in use only after acceptance by the utility of the system extension.

4. Side sewer permits for lots in subdivisions and short plats will be issued only after sewer main extensions have been accepted by the city.

5. Side sewer permits shall expire 12 months from date of issuance.

C. Sewer System Extension Agreement.

1. The property owner and the utility shall enter into a sewer system extension agreement whenever an extension to an existing sewer main is required pursuant to BCC 24.04.100(A)(1) or 24.04.130(B)(2).

2. The utility shall approve constructed facilities as complete once the facilities have been built according to the approved plans and specifications, as confirmed by utility inspectors, as-built drawings have been completed as specified in the engineering standards and all applicable fees and charges have been paid.

3. The property owner shall be required to provide surety devices, in a form approved by the city, for sewer system extensions in city right-of-way, for connections to the sewer main during construction and for a one-year warranty period following acceptance by the city.

4. When a sewer system extension agreement is required to serve a proposed commercial or multi-family building, the utility will not sign off on the building permit until the system extension agreement has been initiated. When a sewer system extension agreement is required to relocate a sewer main from under a proposed building, the utility will not sign off on the building permit until the system extension has been completed and accepted by the utility, unless the building permit is conditioned to require relocation prior to site construction.

D. Temporary Sewer Service Agreement. Any single-family residential property owner may request temporary sewer service if permanent facilities, that is, facilities that meet all code requirements such as for system extension, are not available. The utility may provide temporary single-family residential service through a temporary sewer service agreement which shall:

1. Calculate and collect the property owner's fair share costs for installing permanent sewer facilities. When the property is not fully developed and therefore is subject to redevelopment, the city shall collect only the fair share cost for the developed portion at that time. When the property is redeveloped, the property owner shall build the permanent sewer facilities, or if they are already built, shall pay the remaining fair share costs. If a private property owner builds the permanent facilities, he/she will be paid the fair share costs that were collected under the temporary sewer service agreement plus accrued interest. Interest will be at a rate set by the city treasurer consistent with how interest rates are set for connection charges. Total interest may not exceed the principal amount of the charge.

2. Establish a time limit for connecting to the permanent service once it is available.

3. Specify that the agreement runs with the land and is binding on the owners and their successors.

4. Be recorded with King County against the property on which the facilities are located.

E. Pump Station Agreement. Prior to construction of a privately owned sewer pump station other than for a single-family residence or serving a single-family lot, the property owner shall enter into a pump station agreement with the utility that sets forth the owner's maintenance and emergency responsibilities.

F. Agreement to Connect. When a variance to allow a septic system is granted, an "agreement to connect" must be recorded pursuant to BCC 24.04.100(B)(3).

G. Contractors shall be licensed in accordance with Washington State requirements and shall be registered with the City of Bellevue Tax Office.

H. Other Permits. It is the property owner's responsibility to identify and obtain all permits/approvals required for any proposed work.

24.04.130 Engineering and design requirements.

A. General.

1. The property owner is responsible for sewer system design.

2. The sewer system designer must be a civil engineer licensed in the state of Washington and qualified by both experience and educational background in the design of sewer facilities.

3. Engineering and design shall conform to the engineering standards.

4. Sewer facilities in a designated coal mine area are subject to additional design requirements. See the coal mine area subdivision, development, and building permit regulations adopted by Resolution No. 5712.

B. Sewer Facility Requirements.

1. Whenever property is developed or redeveloped in any way such that sewage discharge is changed in content or volume, new sewer facilities are required whenever necessary to:

a. Meet hydraulic capacity requirements. See the engineering standards; or

b. Replace existing facilities that need to be relocated; or

c. Meet industrial waste pretreatment requirements pursuant to BCC 24.04.213.

2. Whenever property is developed or redeveloped, sewer mains shall be extended through and to the extremes of the property being developed, as required by the utility, when needed for the orderly extension of the public sewer system.

C. Side Sewer Design.

1. A maximum of four residential structures may be connected to a single side sewer.

2. Where physical conditions render compliance with utility side sewer requirements impracticable, the utility may require compliance insofar as is reasonably possible provided that the property owner execute and deliver to the utility an instrument, in a form furnished by the utility, agreeing to hold harmless and indemnify the utility and the city of Bellevue for any damage or injury resulting from such installation. The utility may require that such instrument be recorded against the property with the King County office of records and elections.

D. Pump Stations and Lifts.

1. Pump stations shall be permitted only for service to those properties which the director determines cannot reasonably be served by conventional gravity sewers.

2. In any structure in which the plumbing is too low to permit gravity flow to the designated connection point, the sewage shall be lifted by artificial means. When only the lower floor of a structure is too low for gravity flow, the sewage from the upper floors must flow by gravity.

24.04.140 Installation responsibility.

A. Property Owner Installation. The property owner shall be responsible for the installation of all sewer facilities required by this code. Installation shall be through a sewer system extension agreement or side sewer permit. See BCC 24.04.120.

B. Costs. The property owner shall be responsible for all installation costs regardless of whether the work is done by the utility or by the owner, provided that:

1. If the utility requires a property owner to oversize a sewer facility for reasons other than to adequately serve the owner's property, the utility will compensate the property owner for the difference in cost between the normally sized sewer facility and the oversized sewer facility, based on the lowest of three bids from reputable licensed contractors furnished by the property owner.

2. A property owner who constructs a sewer system extension that directly benefits property in addition to the owner's may request a latecomer agreement in order to be reimbursed by benefiting properties that connect to the extension during the agreement's duration. See BCC 24.04.150 regarding latecomer agreements.

3. The city may choose to install sewer facilities to facilitate development, coordinate with other city projects or for other utility purposes and may recover its costs, including interest, through a connection charge.

24.04.160 Sewer easement requirements.

A. When Required. An easement is required whenever:

1. A public sewer facility will be built on private property; or

2. A private sewer facility will be built on property owned by a different private party; or

3. A side sewer will serve two or more properties.

B. Requirements. All of the following requirements shall be met before the city will accept and/or approve any easement:

1. Clear title in the grantor shall be demonstrated; and

2. The easement shall be consistent with utility clearance standards and setback standards and with other utilities or easements. The utility may require the easement to exclude other utilities and uses if necessary to protect the public sewer system; and

3. The easement shall provide access to the facility for repair and maintenance. When deemed necessary by the utility, the easement shall contain provisions for long-term maintenance. Easements for side sewers serving more than one property must specify responsibility for costs of maintenance, repair and access; and

4. The easement shall prohibit all structures except those which can readily be removed by the structure's owner at the owner's expense when access to the sewer facility is required by the utility. If such structures are in the easement, an agreement with the utility to remove the structure on request shall be recorded; and

5. The easement dimensions and other requirements shall be in accordance with the engineering standards.

C. Costs. The property owner shall pay all costs of providing or obtaining and recording the easement.

D. Relinquishment of Easement. An easement granted to the utility may be relinquished only if the utility determines it is no longer needed and the city council authorizes the relinquishment.

24.04.170 Construction requirements.

A. General. When constructing or modifying sewer facilities, compliance is required with this code, the engineering standards, the approved permit, plans and specifications, the terms of any sewer system extension agreement, the recommendations of the manufacturer of the materials or equipment used and any applicable local, state or federal requirements.

B. Safety Requirements. Utility staff will perform inspections or hole-cuts only if shoring and other site conditions conforms with WISHA safety standards and other safety requirements, as applicable.

C. Failure to Complete Work or Meet Requirements.

1. The utility may complete sewer facility construction begun by a property owner or contractor, or take steps to restore the site (such as backfilling trenches and restoring the public way) if the work does not meet the requirements of this code, the engineering standard and other applicable utility requirements, the contractor or person doing the work fails to rectify the problem following notification by the utility; and the work, in the opinion of the utility, constitutes a hazard to public safety, health or the public sewer system.

2. Utility costs incurred pursuant to the preceding BCC 24.04.170(C)(1) shall be calculated pursuant to BCC 24.04.250(B) and charged to the owner or contractor in charge of such work. The permittee shall pay the utility immediately after written notification is delivered to the responsible parties or posted at the location of the work. Such costs shall constitute a civil debt owing to the utility jointly and severally by such persons who have been given notice as herein provided. The debt shall be collectable in the same manner as any other civil debt owing the utility.

3. If in the opinion of the Director, the work being performed is not in accordance with these codes or engineering standards and the permittee is unwilling to change or correct the deficiencies, the Director may issue a stop work order until the deficiencies are corrected.

D. Additional Side Sewer Construction Requirements.

1. Side sewers may be constructed only by the following:

a. Contractors licensed in accordance with BCC 24.04.120(G);

b. Property owners working on their own property;

2. The side sewer permit shall be readily available at the job site at all times. No inspections will be completed if the permit is not available.

3. Connection shall be made to the wye or tee or side sewer stub designated at the time the side sewer permit is issued unless written permission to

do otherwise is obtained from the utility. If the designated stub cannot be found, the utility will install one at the utility's expense. The utility shall not be responsible for costs incurred by the owner/contractor when looking for the stub.

24.04.260 Connection charges.

A. General.

1. The utility shall collect connection charges, in order that each connecting property shall bear its equitable share of the cost of the public sewer system.

2. Connection charges shall be paid before a property is allowed to connect to the public sewer system. Connection charges not previously paid, such as charges for new facilities that directly benefit the property, shall be paid when the property undergoes, either at one time or cumulatively through more than one project, a substantial remodeling as defined in Land Use Code Section 20.50.040 or more substantial improvement or if an improvement or cumulative improvements significantly impact downstream system capacity.

3. Connection charges that have been paid as a result of development activities on the property or through participation in an LID or ULID will not be reassessed.

4. The utility may enter into contracts with the owners of existing single-family residences and with the owners of redevelopment projects that meet criteria specified by the utility for payment of connection charges over time instead of as a lump sum. The utility will charge interest, at a rate set by the city treasurer on any outstanding debt covered by a payment contract. A contract shall be payable in full at the time of closing upon sale of the property.

B. Direct Facilities Charges.

1. The utility shall assess and collect direct facilities charges from property owners that directly benefit from utility-built or privately-built sewer facilities, except property owners who previously paid their fair share through an LID or ULID. Facilities that may be covered in a direct facilities charge include, but are not limited to, stubs built from the sewer main to the property line, pump stations and mains.

2. The direct facilities charge is the property owner's equitable share of the established costs of the facilities he/she benefits from. The equitable share shall include interest charges applied from the date of construction acceptance of the facility until the property connects, or for a period not to exceed 10 years, whichever is less, at a rate commensurate with the rate of interest applicable at the time of construction of the facility to which the property owner is seeking to connect but not to exceed 10 percent per year; provided, that the aggregate amount of interest shall not exceed the equitable share of the cost of the facility allocated to such property owner.

3. The facilities' costs shall be allocated to benefitting property owners based on the number of single family equivalents. The director may, however, make such allocation based on front footage or other reasonably based methodology if the director determines that such alternate basis or methodology better assures equitable sharing of cost by all properties benefitting from the facilities.

C. Administrative Procedures; Adjustment of Charges. The director is authorized to adopt administrative procedures for the purpose of administering the provisions of this section, and to adjust the charges established by subsections A and B, above, from time to time to reflect the actual cost of the facilities for which the charges are made.

Section 4. Section 24.04.125 of the Bellevue City Code (Sewer Utility Code) is hereby repealed.

Section 5. Sections 24.06.020, .050, .060, .075, .090, .100, .115, .120, .130, .140, .160, .170, .175, .185, .195, .220, .260 and .280 of the Bellevue City Code (Storm and Surface Water Utility Code) are hereby amended to read as follows:

24.06.020 Purpose.

The purpose of this code is: to provide for the planning, security, design, construction, use, maintenance, repair and inspection of the public and private storm and surface water system; to establish programs and regulations to assure the quality of the water in such system, to preserve the integrity of the system, and to minimize the chance of flooding; and to provide for the enforcement of the provisions of this code. This code supplements other city ordinances and regulations regarding protection of the storm and surface water system, including but not limited to the wetland and riparian corridor regulations included in Land Use Code Part 20.25H, the Sensitive Area Overlay District.

24.06.050 Definitions.

The following words and phrases, when used in this code shall have the following meanings:

A. Area of Special Flood Hazard means the land in the Floodplain subject to a one percent or greater chance of flooding in any given year as calculated in the Storm and Surface Water Utility Code, Chapter 24.06 BCC.

B. "As-built" means a final drawing of the actual installation of structures, materials and equipment.

C. "Best management practice" (BMP) means those physical, structural and/or managerial practices that, when used individually or in combination, prevent or reduce pollution of water. BMPs include, but are not limited to, structural solutions covered by the terms "best available technology" (BAT) and "all known available and reasonable methods of treatment" (AKART).

D. "Capital recovery charge" means a monthly charge imposed on improvements, developments, redevelopments or existing structures that place additional demand on each utility system after January 1, 1997. The capital recovery charge shall be based on an allocation of the utility plant-in-service costs plus interest and the number of single family equivalents served by each utility.

E. "Comprehensive drainage plan" means the latest version of the city of Bellevue comprehensive drainage plan as adopted by the city council.

F. "Connection charges" means charges imposed as a condition of connecting to the utility system so that each connecting property bears its equitable share of the costs of the public drainage system and of the costs of facilities that benefit the property. Connection charges include latecomer charges, capital recovery charges and direct facilities charges.

G. "Conveyance System" means that part of the storm and surface water system that conveys runoff from any portion of public right-of-way.

H. "Detention facility" means an above or below ground facility, such as a pond or vault, that temporarily stores storm water runoff and subsequently releases it at a slower rate than it is collected by the drainage facility. There is little or no infiltration of stored storm water.

I. "Director" means the director of the Bellevue utilities department, or his/her designated representative, or other person designated by the city manager.

J. "Drainage system" see "storm and surface water system."

K. "Emergency" means any natural or human-caused event or set of circumstances that disrupts or threatens to disrupt or endanger the operation, structural integrity or safety of the drainage system; or endangers the health and safety of the public; or otherwise requires immediate action by the utility.

L. "Engineering Standards" means the city of Bellevue utility engineering standards which include minimum requirements for the design and construction of water, storm and surface water drainage and sanitary sewer facilities.

M. "Flood insurance rate map" (FIRM) means the Flood Insurance Study map delineating the Area of Special Flood Hazard effective December 1, 1978, that was prepared by the Federal Insurance Administration for the city, or as subsequently amended or revised by the Federal Emergency Management Agency. The map accompanies the engineering report "Flood Insurance Study – City of Bellevue, Washington."

N. "Hydroperiod" means the seasonal occurrence of flooding and/or soil saturation; encompasses the depth, frequency, duration and seasonal pattern of inundation.

O. "Land disturbing activity" means any activity that results in a change in the existing soil cover (both vegetative and nonvegetative) and/or the existing soil topography. Land disturbing activities include, but are not limited to, demolition, construction, clearing, grading, filling and excavation.

P. "Large parcel new development" means new development that includes the creation or addition of 5,000 square feet or more of new impervious surface and/or land disturbing activity of one acre or more within a 12-month period, except for the following:

1. Individual, detached single-family residences;

2. Individual, detached duplex residences;

3. Commercial agriculture;

4. Forest practices regulated under WAC Title 222 other than Class IV general forest practices that are conversions from timber land to other uses.

Q. "Maintenance standards" means city of Bellevue utility maintenance standards which include minimum requirements for maintaining drainage facilities so they function as intended and provide water quality protection and flood control.

R. Maximum Extent Practicable, or "MEP" means the use of best management practices that are technically and financially achievable and is the technically sound and financially responsible, non-numeric criteria (standard of compliance) applicable to all municipal stormwater discharges through the implementation of "best management practices."

S. "One hundred-year, 24-hour storm" (100-year, 24-hour storm) means a storm with a 24-hour duration with a 0.01 probability of exceedance in any one year.

T. "Pollution" means the contamination or other alteration of the physical, chemical, or biological properties of any natural waters including change in temperature, taste, color, turbidity, or odor of the waters, or the discharge of any liquid, gaseous, solid, radioactive, or other substance into any such waters as will or is likely to create a nuisance or render such waters harmful, detrimental, or injurious to the public health, safety, or welfare, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses, or to livestock, wild animals, birds, fish or other aquatic life, *per RCW 90.48.20.*

U. "Procedure" means a procedure adopted by the utility, by and through the director, to implement this code, or to carry out other responsibilities as may be required by this code or other codes, ordinances, or resolutions of the city or other agencies.

V. "Property owner" means any individual, company, partnership, joint venture, corporation, association, society or group that owns or has a contractual interest in the subject property or has been authorized by the owner to act on his/her behalf.

W. "Private system or private drainage facility" means any element of the storm and surface water system which is not a part of the public drainage system as defined in this code.

X. "Public storm and surface water system, or public drainage system" means those elements of the storm and surface water system maintained and operated by the city:

1. Located on property owned by the city or in public right-of-way; or

2. Located on property on which the city has an easement, license or other right of use for utility purposes.

Y. "Redevelopment" means, on an already developed site, the creation or addition of impervious surfaces; structural development including construction, installation, or expansion of a building or other structure; and/or replacement of impervious surface that is not part of a routine maintenance activity; and land disturbing activities associated with structural or impervious development.

Z. "Runoff control BMPs" means BMPs that are intended to control or manage the rate and/or quantity of storm water runoff.

AA. "Source control BMPs" means BMPs that are intended to prevent pollutants from entering storm and surface water.

BB. "Storm and surface water system," also referred to as the drainage system, means the entire system within the city, both public and private, naturally existing and manmade, for the drainage, conveyance, detention, treatment or storage of storm and surface waters. However, facilities directly associated with buildings or structures such as foundation drains, rockery/retaining wall drains, gutters and downspouts or groundwater are not considered parts of the storm and surface water system.

CC. "Stream" means any and all surface water routes generally consisting of a channel having a bed, banks, and/or sides in which surface waters flow in draining from higher to lower land, both perennial and intermittent; and including intervening artificial components.

DD. "Unsafe condition" means any condition on any premises which is a hazard to public health or safety that does or may impair or impede the operation or functioning of any portion of the public drainage system or which may cause damage thereto.

EE. "Utility" means the storm and surface water utility component of the waterworks utility of the city of Bellevue, administered as part of the Bellevue utilities department, as provided by Chapter 3.38 BCC.

FF. "Water quality design storm" means a six-month return period, 24-hour duration storm.

GG. "Zone A" means the Area of Special Flood Hazard (ASFH), except coastal V Zones, shown on a community's Flood Insurance Rate Map (FIRM). There are five types of A Zones:

A: ASFJ where no base flood elevation is provided.

A#: Numbered A Zones (e.g., A7 or A14), ~~ASFH~~ where the FIRM shows a base flood elevation in relation to NGVD.

AE: ASFH where base flood elevations are provided. AE Zone delineations are now used on new FIRMS instead of A# Zones.

AO: ASFH with sheet flow, ponding, or shallow flooding. Base flood depths (feet above grade) are provided.

AH: Shallow flooding ASFH . Base flood elevations in relation to NGVD are provided.

HH. "Zone V" means the special flood hazard area subject to coastal high hazard flooding. There are three types of V Zones: V, V#, and VE and they correspond to the A Zone designations.

24.06.060 Authority of the utility.

The utility, by and through its director, shall have the authority to:

A. Develop, adopt and carry out procedures as needed to implement this code and to carry out other responsibilities of the utility, including, but not limited to, procedures pertaining to the billing and collection of monthly drainage charges and procedures for periodic adjustment of fees and charges imposed pursuant to this code.

B. Prepare and update as needed engineering standards to establish minimum requirements for the design and construction of drainage facilities and requirements for protecting existing facilities during construction. The engineering standards shall be consistent with this code and adopted city policies.

C. Administer and enforce this code and all procedures relating to the planning, acquisition, security, design, construction and inspection of new storm and surface water facilities and relating to the regulation of storm and surface water system alterations.

D. Enter into any contract pursuant to Chapter 35.91 RCW, the Municipal Water and Sewer Facilities Act, including contracts which provide for the reimbursement of owners constructing facilities (latecomer agreements) and agreements with private property owners for the extension of the drainage system (system extension agreements).

E. Prepare, update, administer and enforce as needed maintenance standards to establish minimum requirements for the maintenance of drainage facilities so they function as intended, protect water quality and provide flood control.

F. Develop and implement a program that includes administration, inspection and enforcement of private drainage facilities to ensure continued compliance of drainage facilities with this code.

G. Advise the city council, city manager and other city departments and commissions on matters relating to the utility.

H. Prepare, revise as needed, recommend and implement a comprehensive drainage plan for adoption by the city council. Prepare basin plans and other studies that are approved in the utility's adopted budget.

I. Administer the Area of Special Flood Hazard area provisions of this code.

J. Develop a storm water management program, as required by state and/or federal agencies for review and adoption by the city council.

K. Establish and implement programs to protect and maintain water quality and to manage storm water runoff within the storm and surface water system in order to maintain compliance to the maximum extent practicable with applicable water quality standards established by state and/or federal agencies as now or hereafter adopted.

L. Perform or direct the performance of financial review and analysis of the utility's revenues, expenses, indebtedness, rates and accounting and recommend budgets, rates and financial policy for adoption by the city council.

M. Carry out such other responsibilities as required by this code or other city codes, ordinances or regulations consistent with the Bellevue comprehensive plan.

N. Conduct public education programs related to protection and enhancement of the drainage system.

O. Develop and implement a program that includes administration, inspection and enforcement of new or modifications to public or private drainage facilities for activities listed under BCC 24.06.120 and BCC 24.06.130A to ensure continued compliance of drainage facilities with this code. Repair or replacement of private drainage facilities in kind are exempt from this program unless applicable under other portions of the code.

24.06.075 Studies and basin plans.

The utility may conduct studies and may develop basin plans. Plan recommendations which impact development or land use regulations shall be reviewed and adopted by the city council. Upon adoption, such plan recommendations shall supersede the requirements of this code, provided that the basin specific requirements provide an equal or greater level of water-quality and runoff control protection.

24.06.090 Area of Special Flood Hazard

A. Adoption of Flood Insurance Study and Flood Insurance Rate Map. The flood insurance study and the flood insurance rate map, dated December 1, 1978, and as subsequently amended and revised by the Federal Emergency Management Agency, prepared for the city by the Federal Insurance Administration, are hereby adopted by reference.

B. Map Adjustment. The utility shall adjust special flood hazard area boundaries on the flood insurance rate map if:

1. The adjustment is first approved by the Federal Insurance Administration and a new boundary is established; or

2. A letter of map amendment is received from the Federal Emergency Management Agency.

C. Records. The utility shall:

1. Maintain for public inspection a record of the elevations provided by the department of community development pursuant to Land Use Code Section 20.25H.110(A)(3)(b); and

2. Maintain for public inspection a record of certification indicating the specific elevation (datum as defined in Engineering Standards) to which such structures are flood proofed; and

3. Maintain a copy of the notification required by BCC 24.06.090(C)(1) with a record of all variance actions, including justification for their issuance, and report such variances issued in the annual report submitted to the Federal Insurance Administration; and

4. When base flood elevation has not been provided, obtain, review and reasonably utilize any base flood elevation and floodway data available from a federal, state or other source in order to administer the city's special flood hazard area standards, regulations and ordinances; and

D. Compliance. All development, redevelopment, subdivision, short subdivision and planned unit development applications shall comply with this code and with the requirements of Land Use Code Section 20.25H.110(A).

E. Watercourse Relocation Notice. The utility shall notify, in riverine situations, adjacent communities and the Department of Ecology prior to any alteration or relocation of a watercourse and shall submit copies of such notification to the Federal Insurance Administrator. The flood-carrying capacity within the altered or relocated portion of any watercourse shall be maintained.

24.06.100 Connections or modifications to the drainage system.

Connections or modifications to the public drainage system or modifications to a private drainage system that are applicable under BCC 24.06.130 A., and abandonment or removal of any structure connected to the public storm system shall be allowed only if:

A. Approval has been received from the utility (see BCC 24.06.120); and

B. All applicable requirements of this code and utility procedures have been met; and

C. All applicable engineering standards have been met or alternative standards have been
approved by the utility as substantially equal; and

D. The property owner has paid all applicable fees and charges.

24.06.115 Facility ownership.

A. The utility owns all elements of the storm drainage system in public right-of-way and in easements or tracts dedicated to and accepted by the utility, except to the extent private ownership is indicated as a matter of record.

B. The utility may accept ownership (or other property rights) and responsibility for privately built drainage facilities when all of the following conditions are met:

1. Ownership of the facility by the utility would provide a public benefit; and

2. Necessary and appropriate property rights are offered by the property owner at no cost; and

3. The facility substantially meets current engineering standards, as determined by the utility, or is brought up to current engineering standards by the owner; and

4. There is access for utility maintenance in accordance with criteria provided in the engineering standards; and

5. The utility has adequate resources to maintain the facility; and

6. In the case of runoff control facilities, the facility serves a residential subdivision or short plat (rather than a commercial property); and

7. The facility is transferred to the utility by bill of sale at no cost to the city.

24.06.120 Permits – Approvals.

A. General.

1. The utility shall administratively determine submittal requirements for the various utility permits/approvals.

2. When a drainage connection permit or drainage system extension agreement is required, it shall require the property owner to build all the drainage facilities needed to serve the property including, but not limited to, conveyance systems, runoff treatment best management practices, detention facilities and other system components.

3. When a drainage connection permit or drainage system extension agreement is required to provide drainage facilities for a commercial or multi-family proposed building, the utility will not sign off on the building permit until the drainage connection permit has been issued or the drainage system extension agreement has been initiated. When a drainage connection permit or drainage system extension agreement is required to relocate a drainage facility from under a proposed building, the utility will not sign off on the building permit until the replacement drainage work has been completed and accepted by the utility, unless the building permit is conditioned to require relocation prior to site construction.

B. Drainage Connection Permit.

1. A drainage connection permit is required to connect to or modify the public drainage system or modify a private drainage system for activities listed under BCC 24.06.130 A, unless a drainage system extension agreement is required pursuant to BCC 24.06.120(C)(1) or unless the work is specifically covered under another permit such as a Clearing and Grading or Right-of-Way Use Permit.

2. A drainage connection permit application must be made by the property owner or his/her licensed and bonded contractor.

3. Drainage connection permits for lots in subdivisions and short plats will be issued only after the drainage extension, if one is required, is accepted by the city.

4. Drainage connection permits expire 12 months from the date of issuance.

C. Drainage System Extension Agreement.

1. The property owner and the utility shall enter into a drainage system extension agreement whenever new development or redevelopment involves any of the following:

a. Detention or other runoff control facilities; or

b. Runoff treatment facilities, other than spill control structures; or

c. Work on the public drainage system or within the right-of-way except for the following:

- lateral connections to the public drainage system
- limited conveyance system modifications such as catchbasins, manholes
- culverts for new driveways that can be covered under a drainage connection permit or another permit such as a Clearing and Grading or Right-of-Way Use Permit.

d. Work on private drainage systems that could be covered under another permit such as a Building or Clear and Grade Permit.

2. The utility will accept constructed facilities as complete once the facilities have been built according to the approved plans and specifications, as confirmed by utility inspectors; as-built drawings have been completed as specified in the engineering standards; and all applicable fees and charges have been paid.

3. The property owner shall be required to provide surety devices, in a form approved by the city, for drainage system extensions during construction and for a one-year warranty period following acceptance.

D. Contractors. Contractors shall be licensed in accordance with Washington State requirements and shall be registered with the City of Bellevue Tax Office.

E. Other Permits. It is the property owner's responsibility to identify and obtain all permits/approvals required for any proposed work, such as any approvals required by the Washington State Department of Fish and Wildlife, the Washington State Department of Ecology and the Army Corps of Engineers.

24.06.130 Engineering and design requirements.

A. Applicability. The engineering and design requirements of this section shall apply to the following:

1. All new development and redevelopment is subject to the engineering and design requirements of BCC 24.06.130(B), (C), (D) and (J).

2. Large parcel new development, as defined in BCC 24.06.050, is subject to all of the engineering and design requirements of this section, except that wetland discharge and recharge requirements (BCC 24.06.130(H)) apply only if the site discharges directly to a wetland. The requirements apply to the entire tax lot or lots being developed.

3. Redevelopment of 5,000 square feet or greater within a 12-month period is subject to all of the engineering and design requirements of this section, except that wetland discharge and recharge requirements (BCC 24.06.130(H)) apply only if the site drains directly to a wetland. The requirements apply only to the portion of the site being developed except that source controls (BCC 24.06.130(F)) shall be applied to the entire site, including adjoining parcels if they are part of the project.

4. Redevelopment on a site that is larger than one acre and has 50 percent or more impervious surface or that discharges to a receiving water with a water quality problem that is documented in a basin plan or other study or plan adopted by the city council shall also submit a schedule to implement the following for the entire site, including adjoining parcels if they are part of the project, to the maximum extent practicable:

a. Runoff control (BCC 24.06.130(E)); provided the site drains to a stream, either directly or indirectly;

b. Runoff treatment BMPs (BCC 24.06.130(G));

c. Wetland discharge and recharge requirements (BCC 24.06.130(H)); provided the site drains to a wetland;

d. Off-site analysis and mitigation (BCC 24.06.130(I));

e. An operation and maintenance plan (BCC 24.06.130(K)).

5. Source control BMPs and runoff treatment BMPs shall be required whenever changes to the use of property occur that could generate significant pollutants as identified in the engineering standards and are subject to the engineering and design requirements of BCC 24.06.130 (B), (C) and (D).

6. Any modifications to existing runoff control or treatment systems or the Conveyance System shall be subject to the engineering and design requirements of BCC 24.06.130 (B), (C) and (D). Repair and replacement of private drainage facilities in kind are exempt.

B. General.

1. The property owner is responsible for drainage design and performance of their private drainage facilities.

2. The drainage designer must be a civil engineer licensed in the state of Washington, unless this requirement is waived in writing by the utility.

3. Engineering and design shall conform to the engineering standards.

4. The utility may impose, on any development or redevelopment, requirements that differ from the requirements of this section based on adopted basin plans or other studies adopted by the city council, provided that such alternative requirements provide an equal or greater level of protection than the requirements of this section.

5. Subject to approval by the utility, the property owner may contribute to runoff-control or runoff-treatment facilities that serve multiple sites in lieu of providing such facility(s) on-site.

C. Site Drainage.

1. General. All development and redevelopment shall provide for the control of storm water runoff so as to minimize impact to downstream properties.

2. Discharge Locations.

a. The property owner shall maintain natural drainage patterns and discharge drainage in a manner and location that existed prior to undertaking land/runoff altering activities, to the maximum extent practicable, unless the utility determines alterations would be beneficial and would not cause adverse impacts.

b. Drainage that originates within a structure, as defined by the Uniform Building Code, must be discharged to the sanitary sewer.

3. Energy Dissipation. Adequate energy dissipation is required at all drainage discharge points to prevent erosion and shall be designed per the Utility's Engineering Standards.

4. Conveyance requirements for public or private drainage systems . The property owner shall:

a. Accommodate existing storm water runoff from upstream properties. Downstream property owners are obligated according to Washington State case law, to receive and convey waters that are historically tributary to their property.

b. Use gravity conveyance, unless downslope conditions make gravity systems not feasible according to criteria in the engineering standards.

c. For large parcel new development and for redevelopment of 5,000 square feet or greater, extend drainage conveyance to the extremes of the property being developed or redeveloped when the utility determines such extension is needed for the orderly extension of the drainage system.

d. Design conveyance that, in conjunction with runoff control pursuant to BCC 24.06.130(E), accommodate runoff from a 100-year, 24-hour storm, using methods contained in the engineering standards.

e. Ensure that improvements do not reduce or constrict the conveyance capacity or storage volume of existing drainage systems, including natural streams.

5. Drainage Pipe Setbacks. Pipes shall be set back from other utilities and buildings, and buildings shall be set back from existing pipes, as required by the engineering standards.

D. Sensitive Area Protection and Work in Streams.

1. The property owner shall:

a. Protect open channel conveyance that are within riparian corridors, as defined in the Land Use Code.

b. Comply with Land Use Code requirements related to the protection of sensitive areas, including riparian corridors, wetlands, coal mine areas, steep slopes and special flood hazard areas. See Land Use Code Part 20.25H.

c. Where stream bridging is allowed by the Land Use Code, design the bridge to ensure hydraulic capacity and to protect water quality as specified in the engineering standards.

d. Where relocation or piping of a Type C riparian corridor is allowed, provide hydraulic capacity pursuant to BCC 24.06.130(C)(4) and provide the same or better water quality protection.

2. If a developing or redeveloping property is contributing to an existing water quality or capacity problem within an on-site stream which could be improved through planting riparian vegetation, adding energy dissipation at outfalls, extending roof and footing drains to protect sensitive slopes, or removing yard debris and rubbish from stream banks, such measures shall be required.

E. Runoff Control.

1. Applicability. Runoff control is required as specified in BCC 24.06.130(A), except that properties within the Meydenbauer Drainage Basin are exempt from this requirement to the extent provided pursuant to Ordinance No. 3372.

2. Runoff Control for Sites That Drain to a Stream. When runoff control is required for a site that drains either directly or indirectly to a stream, such control shall be provided by detention or infiltration, as specified below:

a. Detention is an approved method of providing runoff control for all sites that drain to a stream. Such detention facilities shall be designed in accordance with the following (refer to the engineering standards for design details):

i. The post-development peak runoff rate from a two-year, 24-hour storm shall not exceed 50 percent of the existing peak runoff rate from a two-year, 24-hour storm.

ii. The post-development peak runoff rate from a 100-year, 24-hour storm shall not exceed the existing peak runoff rate from a 100-year, 24-hour storm.

iii. The post-development peak runoff rate from a 10-year, 24-hour storm shall not exceed the existing peak runoff rate from a 10-year, 24-hour storm.

iv. When calculating runoff control, the correction factor contained in Figure III-1.1 in the 1992 state Stormwater Management Manual for the Puget Sound Basin shall be used.

b. Infiltration systems shall be permitted for runoff control only if:

i. All of the site's drainage facilities are privately owned and maintained; and

ii. The site meets criteria in the engineering standards; and

iii. The facility is designed in accordance with the engineering standards.

3. Runoff Control for Sites That Do Not Drain to a Stream. When runoff control is required for a site that does not drain directly or indirectly to a stream, such control shall be provided as specified below:

a. Detention is an approved method of providing runoff control for all sites that do not drain to a stream. Such detention facilities shall be designed pursuant to BCC 24.06.130(E)(2)(a), except that it is not necessary to limit the post-development peak runoff rate from a two-year, 24-hour storm to 50 percent of the existing peak runoff rate from a two-year, 24-hour storm.

b. Infiltration may be used for runoff control on sites that do not drain to a stream only if there is no reasonable alternative and can meet criteria in the engineering standards. If an infiltration facility is used, the requirements in BCC 24.06.130 (E)(2)(b) shall apply.

c. Runoff control may be provided by conveying the runoff from a 100-year storm from the site directly to Lake Washington or Lake Sammamish. If this approach is used, conveyance shall be designed to carry the runoff from a 100-year,

24-hour design storm from the entire basin that drains to the system, considering full development potential of that basin, providing such capacity is not considered oversizing pursuant to BCC 24.06.140(B)(1).

F. Source Control BMPs. When required by BCC 24.06.130(A), source controls shall be applied in accordance with the engineering standards to the maximum extent practicable.

G. Runoff Treatment BMPs. When runoff treatment is required by BCC 24.06.130(A) the property owner shall:

1. Provide runoff treatment BMPs to treat pollutants anticipated from the proposed land use.

2. Provide runoff treatment BMPs to treat nutrients, in addition to other pollutants, if the site drains to Phantom Lake, Larsen Lake or Lake Sammamish or the proposed land use otherwise warrants nutrient treatment.

3. Design runoff treatment BMPs to capture and treat the water quality design storm.

4. Select and design runoff treatment BMPs in accordance with the engineering standards. Infiltration BMPs shall be allowed only if the site conditions are appropriate and ground water quality is protected based on criteria in the engineering standards. All infiltration facilities and systems draining to them shall be privately owned and maintained.

H. Wetland Discharge and Recharge Requirements.

1. When wetland discharge and recharge requirements apply pursuant to BCC 24.06.130(A) the property owner shall, in addition to meeting the Land Use Code wetland protection requirements:

a. Maintain the hydroperiod and flows of existing site conditions to the extent necessary to protect the characteristic uses of the wetland. Methodology to determine existing hydroperiod is in the Utilities engineering standards.

b. Evaluate alternative discharge locations and maximize natural water storage and infiltration opportunities outside the wetland.

c. Apply BMPs to treat pollutants anticipated from the proposed land use.

2. Wetlands can be used to treat storm water only if the wetlands are constructed and managed for that purpose and only if constructed on sites that are not already wetlands.

3. Created wetlands that are intended to mitigate for loss of acreage, function and value shall not be designed to also treat storm water.

I. Off-Site Water Quality Analysis and Mitigation.

1. When an off-site analysis is required by BCC 24.06.130(A), the property owner shall conduct an analysis of the project's expected off-site water quality impacts. The analysis shall extend at least one quarter mile downstream from the project, and shall at a minimum, evaluate the following:

a. Excessive sedimentation.

b. Stream bank erosion.

c. Discharges to ground water contributing to recharge zones.

d. Violations of water quality standards.

e. Spills and discharges of priority pollutants.

2. In addition to meeting the requirements of this section, the property owner shall mitigate project impacts that are identified in the off-site analysis.

J. Off-Site Capacity Analysis. Where the rate or location of discharge will be changed by a proposed development, the utility may require the property owner to analyze the capacity of the receiving system. Analysis shall be in accordance with the requirements of the engineering standards. The property owner shall mitigate insufficient capacity impacts caused by the proposed development.

K. Operation and Maintenance. When required by BCC 24.06.130(A), the property owner shall provide an operation and maintenance plan for all proposed storm and surface water facilities and BMPs and identify the responsible party. The operation and maintenance plan must be consistent with the maintenance standards, where applicable, and must address facilities and conditions unique to the site.

24.06.140 Installation responsibility.

A. Property Owner Installation. The property owner shall install all drainage facilities as required by this code. Installation shall be through a drainage connection permit or a drainage system extension agreement as required in BCC 24.06.120.

B. Costs. All installation costs are the property owner's responsibility, except that:

1. If the utility requires a property owner to oversize a drainage facility, the utility will compensate the property owner for the difference in cost between the normally sized facility and the oversized facility, based on the lowest of three bids

furnished by the property owner from reputable licensed contractors.

2. An owner who constructs a public drainage system extension that directly benefits a property in addition to the owner's may request a latecomer agreement in order to be reimbursed from benefitting properties that connect to the extension during the agreement's duration. See BCC 24.06.150 regarding latecomer agreements.

3. The city may choose to install drainage facilities to facilitate development, coordinate with other city projects, or for other utility purposes, and may recover its costs, including interest, through a connection charge.

24.06.160 Drainage easement requirements.

A. When Required. An easement is required whenever a private drainage facility will be built on property owned by a different private party and whenever a private drainage facility will serve two or more properties that are not in common ownership or that will no longer be in common ownership following the sale of lots in a subdivision. In addition, public drainage facilities, including any drainage facilities that will be publicly maintained, shall be located in public right-of-way or drainage easements or tracts deeded to the utility.

B. Requirements. All of the following requirements shall be met before the utility will accept and/or approve any easement:

1. Clear title in the grantor shall be demonstrated; and

2. The proposed easement shall be compatible with utility clearance standards and setback standards and with other utilities or easements; and

3. The easement shall provide for access to the facility for repair and maintenance. When deemed necessary by the utility, the easement shall contain provisions for long-term maintenance; and

4. The easement shall prohibit all structures within the easement except those which can readily be removed by the structure's owner at the owner's expense when access to the drainage facility is required by the utility. If such structures are within the easement area, an agreement to remove the structures on request by the utility, approved by the city, shall be recorded; and

5. The easement dimensions and other requirements shall conform with the engineering standards.

C. Costs. The property owner shall pay all costs of providing or obtaining and recording the easement.

D. Relinquishment of Easement. An easement granted to the utility may be relinquished only if the utility determines it is no longer needed and the city council authorizes the relinquishment.

24.06.170 Construction requirements.

A. General. When constructing or modifying drainage facilities, compliance is required with this code, the engineering standards, the approved permit, plans and specifications, the terms of any drainage system extension agreement, the recommendations of the manufacturer of the materials or equipment used and any applicable local, state or federal requirements.

B. Safety Requirements. Utility staff will perform inspections only if shoring and other site conditions conform with WISHA safety standards and other safety requirements, as applicable.

C. Failure to Complete Work or Meet Requirements.

1. The utility may complete drainage facility construction begun by a property owner or contractor, or take steps to restore the site (such as backfilling trenches and restoring the public way) if the work does not meet utility requirements, the contractor or person doing the work fails to rectify the problem following notification by the utility, and the work, in the opinion of the utility, constitutes a hazard to public safety, health or the drainage system.

2. Utility costs incurred pursuant to subsection C1 of this section shall be calculated pursuant to BCC 24.06.250 (B) and charged to the owner or contractor in charge of such work. The permittee shall pay the utility immediately after written notification is delivered to the responsible parties or is posted at the location of the work. Such costs shall constitute a civil debt owed to the utility jointly and severally by such persons who have been given notice as herein provided. The debt shall be collectable in the same manner as any other civil debt owing the utility. In addition, if an assurance device was collected for the project, the city may collect the debt from the assurance device.

3. If in the opinion of the Director, the work being performed is not in accordance with these codes or the engineering standards and the permittee is unwilling to change or correct the deficiencies, the Director may issue a stop work order until the deficiencies are corrected.

C. Authorized Drainage Construction. Only the following persons are authorized to install drainage facilities:

1. Contractors licensed in accordance with BCC 24.06.120(D).

2. Property owners working on their own property.

D. Posting of Drainage Connection Permit. If a drainage connection permit is

required for the work, the permit shall be readily available at the job site to utility inspectors.

E. Location of Connection. Connection to the drainage system shall be made at a point approved by the utility.

F. As-Builts. An as-built plan of the site's drainage facilities shall be completed according to the requirements in the engineering standards prior to the city's acceptance of the improvements, issuance of a certificate of occupancy or final sign-off by utility inspectors.

24.06.175 Construction and warranty inspections and tests.

A. Construction/Installation Inspection. All projects permitted or approved by the Utility under a Drainage System Extension Agreement or a drainage connection permit are subject to utility inspection to ensure compliance with the code and permit/approval conditions. As a condition of permit issuance or extension agreement, the applicant shall consent to inspection and testing.

B. Warranty Inspections and Tests. Facilities and equipment accepted by the utility under specific warranties may be reinspected at the utility's discretion and, if necessary, retested prior to the expiration of the warranty period.

24.06.185 Maintenance of drainage facilities.

A. Maintenance Responsibility

1. The utility is responsible for maintaining public drainage facilities.

2. Owners of private drainage facilities, including but not limited to detention facilities, runoff treatment facilities and conveyance facilities, are responsible for the operation and maintenance of those facilities.

3. In new subdivisions and short plats, maintenance responsibility for private drainage facilities shall be specified on the recorded subdivision or short plat.

4. If a private drainage facility serves multiple lots and the responsibility for maintenance has not been specified on the subdivision plat, short plat or other legal document, maintenance responsibility shall rest with the homeowners association, if one exists, or otherwise with the properties served by the facility, or finally, with the owners of the property on which the facilities are located.

B. Maintenance Standards. Drainage facilities shall be maintained so that they operate as intended. Maintenance shall be in accordance with the utility's maintenance standards and in accordance with the project operation and maintenance plan, if one is developed pursuant to BCC 24.06.130(K).

24.06.195 Discharge of polluting matter.

A. Discharge of Polluting Matter Prohibited. No person shall discharge, either directly or indirectly, any organic or inorganic matter into the storm and surface water system that may cause or tend to cause water pollution, including but not limited to the following:

1. Petroleum products including but not limited to oil, gasoline, grease, fuel oil and heating oil;

2. Trash or debris;

3. Pet wastes;

4. Chemicals;

5. Paints;

6. Steam cleaning wastes;

7. Washing of fresh concrete for cleaning and/or finishing purposes or to expose aggregates;

8. Laundry wastes;

9. Soaps;

10. Pesticides, herbicides, or fertilizers;

11. Sanitary sewage;

12. Heated water;

13. Chlorinated water or chlorine;

14. Degreasers and/or solvents;

15. Bark and other fibrous material;

16. Antifreeze or other automotive products;

17. Lawn clippings, leaves, or branches;

18. Animal carcasses;

19. Sediment;

20. Acids or alkalis;

21. Recreational vehicle wastes;

22. Dyes (without prior permission of the drainage utility);

23. Construction materials;

24. Food waste.

B. Pavement Washing Prohibited. In addition to the prohibitions of BCC 24.06.195(A), washing of public or private streets and parking areas is not permitted unless all of the following conditions are met:

1. No other feasible alternative exists to remove the undesirable material; and

2. Prior written utility approval is obtained from the director; and

3. Facilities are provided to treat the wash water runoff and affected drainage facilities are cleaned.

C. Discharge of Pollutants – Liability for Expenses Incurred by the Utility. Any person responsible for pollutant discharge into the storm and surface water system who fails to immediately collect, remove, contain, treat or disperse such pollutant materials at the director's request shall be responsible for the necessary expenses incurred by the city in carrying out any pollutant abatement procedures, including the collection, removal, containment, treatment or disposal of such materials.

D. Source Control BMPs. To prevent discharge of polluting matter into the storm and surface water system, source controls shall be applied in accordance with the Surface Water Operation and Maintenance Standards for Public and Private Systems.

24.06.220 Existing private facility inspections.

A. Inspection Program. The director is authorized to develop and implement an inspection program for private drainage facilities within the city.

B. Right of Entry. An authorized representative of the utility may enter private property at all reasonable times to conduct inspections, tests or to carry out other duties imposed by the code, provided the utility shall first notify the property owner or person responsible for the premises. If entry is refused or cannot be obtained, the director shall have recourse to every remedy provided by law to secure entry.

24.06.260 Connection charges.

A. General.

1. The utility shall collect connection charges so that each developed property bears its equitable share of the cost of the public drainage system.

2. Connection charges shall be paid:

a. When property is changed from an undeveloped to a developed condition.

b. At the time of redevelopment of the property, if a direct facilities charge applies that has not yet been paid, such as a charge for a new facility that directly benefits the property.

3. Connection charges that have been paid as a result of prior development activities on the property or through participation in an LID or ULID will not be re-assessed.

4. The utility may enter into contracts with the owners of existing single-family homes and with the owners of redevelopment projects that meet criteria specified by the utility for payment of connection charges over time instead of as a lump sum. The utility will charge interest, at a rate set by the city treasurer, on any outstanding debt covered by a payment contract. A contract shall be payable in full at the time of closing upon sale of the property.

B. Direct Facilities Charges.

1. The utility shall collect direct facilities charges from property owners that directly benefit from utility-built or privately-built public drainage facilities, except property owners who previously paid their fair share through an LID or ULID.

2. The direct facilities charge is the property owner's equitable share of the established costs of the facilities he/she benefits from. The equitable share shall include interest charges applied from the date of construction acceptance of the facility until the property connects, or for a period not to exceed 10 years, whichever is less, at a rate commensurate with the rate of interest applicable at the time of construction of the facility to which the property owner is seeking to connect but not to exceed 10 percent per year; provided, that the aggregate amount of interest shall not exceed the equitable share of the cost of the facility allocated to such property owner.

3. The facilities' costs shall be allocated to benefitting property owners based on the number of single family equivalents. The director may, however, make such allocation based on front footage or other reasonably based methodology if the director determines that such alternate basis or methodology better assures equitable sharing of cost by all properties benefiting from the facilities.

4. Properties within the Meydenbauer Drainage Basin and properties within the Central Business District (CBD), lying between N.E. 2nd Street and N.E. 12th Street, are subject to a facilities charge in an amount and to the extent provided in Sections 4 and 5 of Ordinance No. 3372, as now or hereafter amended.

C. Administrative Procedures, Adjustment of Charges. The director is authorized to adopt administrative procedures for the purpose of administering the provisions of this section, and to adjust the charges established by subsections A and B, above, from time to time to reflect the actual cost of the facilities for which the charges are made.

24.06.280 Violations/Penalties

A. Civil violation: Any violation of any of the provisions of this code constitutes a civil violation as provided for in Bellevue City Code Chapter 1.18, for which a monetary penalty may be assessed and abatement may be required as provided therein. The City shall seek compliance through the civil violations code if compliance is not achieved through this code.

1. Pursuant to Bellevue City Code Chapter 1.18 and Section 24.06.195 (Discharge of Polluting Matter) of this Code, the Utility will issue a notice of civil violation without having attempted to secure voluntary correction as provided in BCC 1.18.030 under the following circumstances:

a. When an emergency exists;

b. When a repeat violation occurs;

(i) For discharge of polluting matter per this code, a repeat violation is defined as a violation of this regulation in any location by a "person responsible for the violation" (as defined in BCC 1.18.020) for which voluntary compliance previously has been sought two times within two years of the current violation or a notice of civil violation has been issued within two years of the current violation. This includes, but is not limited to, identification of discharge of polluting matter in response to pollutant spill reports, during routine inspection of privately maintained drainage facilities, visual observation of violations during routine work assignments, etc. Corrective action, in addition to ceasing discharge of polluting matter, can include, but is not limited to, implementing "housekeeping" or business practice changes that prevents the violation from occurring again, constructing or installing a structural facility or structural modifications to prevent the pollutant from entering the storm drainage system or surface water system, etc.

c. When the violation creates a situation or condition which cannot be corrected;

d. When the person knows or reasonably should have known that the action is in violation of a city regulation.

2. For repeat violations as defined in 24.06.280.A.1.b.(i.), a monetary penalty for the (3rd) violation (within 2 years) will be assessed per BCC 1.18.040 E (Monetary Penalty) and the "person responsible for the violation" can either pursue relief of the monetary penalty and required corrective actions pursuant to BCC 1.18 or the hearing will be cancelled if the monetary penalty is paid not less than 10 calendar days after the notice of civil violation is issued and the corrective actions are complete.

B. Destruction of Notice: It shall be unlawful for any person to remove, mutilate, destroy, or conceal any notice issued and posted by the director pursuant to this code.

Section 6. Section 24.06.125 of the Bellevue City Code (Strom and Surface Water Utility Code) is hereby repealed.

Section 7. This ordinance shall take effect and be in force five days after its passage and legal publication.

Passed by the City Council this 8th day of December, 2003, and signed in authentication of its passage this 8th day of December, 2003.

(SEAL)

Connie B. Marshall

Connie B. Marshall, Mayor

Approved as to form:

Richard L. Andrews

Richard L. Andrews, City Attorney

Attest:

Myrna L. Basich

Myrna L. Basich, City Clerk

Published December 12, 2003

0898-ORD
11/29/06

ORIGINAL

CITY OF BELLEVUE, WASHINGTON

ORDINANCE NO. 5704

AN ORDINANCE establishing revised charges for water service, water consumption, and water service for fire protection; repealing Ordinance No. 5573; and establishing an effective date.

WHEREAS, the Environmental Services Commission has reviewed the Water Utility budget and rate proposal, held a public hearing thereon and recommended approval of the proposal; and

WHEREAS, it is in the public interest to provide for the following schedule of revised charges for water service, water consumption and water service for fire protection for the Water Utility of the City of Bellevue; now, therefore,

THE CITY COUNCIL OF THE CITY OF BELLEVUE, WASHINGTON, DOES ORDAIN AS FOLLOWS:

Section 1. Charges Established. There are hereby established and shall be collected from each user of water service provided by the Water Utility of the City of Bellevue, charges for: water service, water consumption, and water service for fire protection as hereinafter provided.

Section 2. The meter service charges per bimonthly billing period for each user of water service shall be as follows:

A. Domestic Meters

Meter Size	Bimonthly Service Charge Per Meter in Operation	
	2007	2008
5/8" or ¾"	$22.90	$24.37
1"	$40.53	$43.13
1½"	$68.55	$72.94
2"	$105.38	$112.13
3"	$230.27	$245.03
4"	$339.16	$360.90
6"	$634.84	$675.53
8"	$987.61	$1,050.91
10"	$1,387.11	$1,476.02

ORIGINAL

B. Residential Combo Meters - Oversized domestic meters required in designated residential structures to provide fire sprinkler capability.

Combo Meter Size	Bimonthly Service Charge Per Meter in Operation	
	2007	2008
1½"	$27.03	$28.76
2"	$37.85	$40.28

C. Irrigation meters - City-owned meters that are used for measuring water used strictly for outside irrigation.

Irrigation Meter Size	Bimonthly Service Charge Per Meter in Operation	
	2007	2008
5/8" or ¾"	$19.95	$21.23
1"	$33.17	$35.30
1½"	$53.83	$57.28
2"	$81.81	$87.05
3"	$183.09	$194.82
4"	$265.47	$282.48
6"	$487.50	$518.75
8"	$751.85	$800.04
10"	$1,048.19	$1,115.37

Section 3. The water consumption charges per bimonthly billing period for each user of water service shall be as follows:

A. Single Family Residential

Cubic Feet Consumed	Charge Per Hundred Cubic Feet of Water	
	2007	2008
0 to 2,000	$2.28	$2.43
2,001 to 3,000	$3.15	$3.35
3,001 to 10,000	$4.05	$4.31
Over 10,000	$6.02	$6.41

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B. Multifamily Residential Structure or Facility

Cubic Feet Consumed	Charge Per Hundred Cubic Feet of Water	
	2007	2008
0 to 1,100	$2.74	$2.92
1,101 to 1,500	$3.07	$3.27
Over 1,500	$3.62	$3.85

1. For purposes of these charges, a "multifamily residential structure or facility" shall mean any residential structure or facility containing two or more dwelling units, including, but not limited to, duplexes, triplexes, apartment buildings, condominiums, and parcels containing two or more separate dwelling units served through a single meter, but shall not include hotels, motels or trailer parks.

C. Non-Residential

1. Where both irrigation and non-irrigation consumption is measured through the same meter, the water consumption charges shall be as follows:

Charged Per Hundred Cubic Feet Consumed	Charge Per Hundred Cubic Feet of Water	
	2007	2008
All non-summer consumption	$2.33	$2.48
All summer consumption Where summer consumption is defined in Subsection 3 below.	$3.27	$3.48

1. Where all irrigation consumption is measured through an irrigation meter, the water consumption charges for domestic water shall be as follows:

Charged Per Hundred Cubic Feet Consumed	Charge Per Hundred Cubic Feet of Water	
	2007	2008
All non-summer consumption	$2.33	$2.48
All summer consumption (Summer consumption is defined in Subsection 3 below.)	$2.94	$3.13

1. For purposes of these charges, summer consumption shall mean that volume recorded on two normal bimonthly meter readings during the months of July through October or readings during this period for other billing purposes, such as, but not limited to, customer changes.

ORIGINAL

D. Irrigation water consumption, for volumes measured by irrigation meters or other meter arrangements that can be used for measuring water used strictly for outside irrigation.

Cubic Feet Consumed	Charge Per Hundred Cubic Feet of Water	
	2007	2008
All irrigation consumption	$4.71	$5.01

Section 4. The fire service charges per bimonthly billing period shall be as follows:

A. Fire Standby Meters

Line Size	Bimonthly Service Charge	
	2007	2008
5/8" or ¾"	$12.53	$13.33
1"	$14.57	$15.50
1½"	$16.64	$17.71
2"	$22.33	$23.76
3"	$64.12	$68.23
4"	$79.61	$84.71
6"	$115.75	$123.17
8"	$157.03	$167.09
10"	$193.17	$205.55

B. Discontinued or Unconnected Fire Service. This fire protection charge shall be applied for structures or facilities that benefit from the City of Bellevue water system for fire protection service that are not otherwise being charged for water service pursuant to Section 2, Section 3 or Section 4A above. The equivalent meter size will be determined based on actual meter sizes for similar types and sizes of structures.

Meter Size Equivalent	Bimonthly Service Charge	
	2007	2008
5/8" or ¾"	$10.30	$10.96
1"	$14.71	$15.65
1½"	$22.09	$23.51
2"	$30.93	$32.91
3"	$54.53	$58.03
4"	$81.08	$86.28
6"	$154.79	$164.71
8"	$243.23	$258.82

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Meter Size Equivalent	Bimonthly Service Charge	
10"	$346.44	$368.64

Section 5. User Charges – Outside. The charges for each water service user outside the city or town limits of Bellevue, Clyde Hill, Hunts Point, Medina and Yarrow Point shall be the sum of the domestic meter service charge in Section 2 plus the appropriate water consumption charge or charges in Section 3 plus the fire service charges in Section 4.

Section 6. User Charges – Inside. The charges for each user inside the city or town limits of Bellevue, Clyde Hill, Hunts Point, Medina and Yarrow Point shall be the sum of the meter service charge in Section 2 plus the appropriate water service charge or charges in Section 3 plus the fire service charges in Section 4, all multiplied by the percentage indicated below for that city or town:

City or Town	Percentage
Bellevue	105.5573%
Clyde Hill	111.7687%
Hunts Point	107.3470%
Medina	100.0000%
Yarrow Point	105.5573%

provided that the percentages set forth above may be administratively adjusted by the Utility Department Director to reflect any increase or decrease in any franchise fee required to be paid to such city or town by the Utility.

Section 7. Severability. If any section of this ordinance or any portion of any section of this ordinance, or its application to any person or circumstances is held invalid, the remainder of the ordinance or the application of the provision to other persons and circumstances shall not be affected.

Section 8. Repeal. Ordinance No. 5421 is repealed effective January 1, 2007 provided, however, that any charges made for water service under Ordinance No. 5421 are not invalidated by the repeal of that ordinance.

Section 9. Effective Date. Sections 1-8 of this ordinance shall take effect on January 1, 2007, shall apply to service provided on and after that date and shall supersede all existing schedules of charges as of that date. The specific water service charges for 2007 shall take effect on January 1, 2007 and shall remain in effect through and including December 31, 2007. The specific water charges for 2008, as hereinbefore indicated, shall take effect on January 1, 2008 and shall remain in effect until amended by the City Council.

Section 10. This ordinance shall take effect and be in force five (5) days after passage and legal publication.

0898-ORD
11/29/06

ORIGINAL

Passed by the City Council this 11th day of December, 2006 and signed in authentication of its passage this 11th day of December, 2006.

(SEAL)

Grant S. Degginger, Mayor

Approved as to form:

Lori M. Riordan, City Attorney

Attest:

Myrna L. Basich, City Clerk

Published December 15, 2006

APPENDIX D

Adjacent Purveyor Review Comments

February 6, 2007

To: Mr. Randall Thompson P.E.

From: Dennis Fields, Cascade Water Alliance

Cc: Mike Brent, Cascade Water Alliance

Re: Cascade Water Alliance – Review of the City of Bellevue Draft Water Supply Plan

Below are Cascade's comments on the Draft City of Bellevue water Supply Plan.

Water Demand and Supply

The Draft City of Bellevue water Supply Plan is consistent with the Cascade Transmission and Supply Plan.

Conservation

Page 5-5, Table 5-2, the table is structured along DOH's guidelines, but it could include a line to indicate our public education via mass media (theater and bus advertisements). The table could also state that dye tablets, low-flow showerheads and aerators are offered to commercial and multifamily accounts as requested. Line 5 from the bottom references residential toilet rebates. This should be clarified to indicate that the rebates are for multi-family and commercial accounts and that free toilets are also offered.

Page 5 – 7, paragraph 6 discusses the Water Use it Wisely campaign and the Water Conservation Coalition. This is no longer relevant.

Page 5 – 19 and Table 5 – 6 discuss the long range conservation program. The text is fine, but the dates should be changed to 2008 – 2013 as that is the planning period.

CopyCenter

From: Thompson, Randall L.
Sent: Monday, January 29, 2007 11:24 AM
To: 'rich.donner@seattle.gov'
Cc: 'lisa.espinosa@seattle.gov'; Thompson, Randall L.
Subject: Bellevue's Draft Water Comprehensive Plan

Rich,

In our phone conversation of last week, you indicated that SPU would not be providing us with any written comments on our October 2006 Draft Water Comprehensive Plan. However, you did provide us with the following verbal comments:

1) Tables 6-2 and 6-3 each list 16 regional supply inlets. However, text at the beginning of chapter 6 says there are 14 SPU inlets and 1 Cascade inlet. We will revise then error in the text to be consistent with the tables.

2) The Hydraulic Profile in Chapter 6 does not show the Cascade inlet. We will add the Cascade inlet to the hydraulic profile.

3) You also noted that our inlet connections with SPU and Cascade are not listed in Table 3-3, which lists our interties. We will note that the regional supply inlets are not listed in this table, and refer to the reader to Table 6-2 for a listing of our regional supply inlets.

Thanks again for your comments,
- Randy

Randall L. Thompson, P.E.
Engineering Supervisor - Utility Systems Planning
City of Bellevue Utilities Dept. / Engineering Div.
P.O. Box 90012 ~ Bellevue, WA 98009-9012
phone: 425-452-6919 fax: 425-452-5286
e-mail: RLThompson@BellevueWA.gov

CopyCenter

From: Sheldon Lynne [SheldonL@ci.issaquah.wa.us]
Sent: Wednesday, January 31, 2007 4:22 PM
To: Thompson, Randall L.
Subject: RE: Bellevue's Draft Water Comprehensive Plan

Randy – I took a quick look at the section that deals with service and relations with Issaquah. Below are my comments.

Page 3-15 – The City of Issaquah:
2nd paragraph – Issaquah does receive water from CWA via the 24-inch transmission line from the Cascade's Seattle tap.

3rd paragraph – Issaquah has indicated that sometime in the future it may want to own and operate the facilities in the recently annexed area. At this time Issaquah is continuing to allow direct retail service to be provided by Bellevue. It's premature to make statements that Issaquah is anticipated to enter into an interlocal agreement in near future to transfer facilities and service in the Greenwood Pt/South Cove areas. It would be fair to say that the transfer is expected to occur at an undetermined time in the future.

Sheldon Lynne

** email is a public document subject to disclosure**

From: RLThompson@bellevuewa.gov [mailto:RLThompson@bellevuewa.gov]
Sent: Monday, January 29, 2007 11:22 AM
To: Sheldon Lynne
Cc: RLThompson@bellevuewa.gov
Subject: Bellevue's Draft Water Comprehensive Plan

Sheldon,

On November 3rd, 2006 you were sent a copy of Bellevue's Oct. 2006 Draft Water Comprehensive Plan for review. Comments on the draft plan were due December 8th, 2006. We did not receive any comments from Issaquah. If you would still like to provide us with written comments, we must receive them no later than Monday, February 5th, in order to assure that they are considered. Thank you.

- Randy

Randall L. Thompson, P.E.
Engineering Supervisor - Utility Systems Planning
City of Bellevue Utilities Dept. / Engineering Div.
P.O. Box 90012 ~ Bellevue, WA 98009-9012
phone: 425-452-6919 fax: 425-452-5286
e-mail: RLThompson@BellevueWA.gov

CopyCenter

From: Scott Thomasson [STHOMASSON@redmond.gov]
Sent: Wednesday, January 31, 2007 10:54 AM
To: Thompson, Randall L.
Subject: RE: Bellevue's Draft Water Comprehensive Plan

The only concern I have with the water system plan is the storage analysis. The report refers to Technical Appendix A that was not included in the plan so I could not evaluate the analysis so I may not fully understand your methodology. Redmond has chosen to use 400 gallons per residential equivalent for standby storage compared to Bellevue's choosing to use 200 gallons per residential equivalent. We do not consider the Seattle system to be as robust as you and we are much farther from the Cedar system. This would normally not be an issue however we do share supply meters and share storage ownership in a reservoir. The concern is that after Bellevue's customers use their 200 gallons they will start using the remaining portion of Redmond's 400 gallons. Also you will start using the regional storage in the Eastside reservoir sooner if a major water supply crisis starts to occur. The other factor is that when we start to wean ourselves from the Seattle supply and are on the end of a less than redundant supply system we will likely no longer be able to claim to have a two source supply. This is a conversation we should start having with Cascade and DOH so that we can start considering the likelihood of needing additional storage. We could find ourselves needing three to four times the storage we currently have. Storage sites are very hard to come by as there is little vacant land and many people do not want one next door to them. It takes many years to plan, design and build a water storage tank as Redmond and Bellevue did in the late 1980's. It may be appropriate to start developing the additional storage that will be needed over the next several decades.

Redmond's criteria show that we have a storage deficiency in the Overlake and View Point neighborhood's . Our water system plan shows how we can move water from our well service are to our Rosehill area and then to the View Point area in order to address this issue. We may have an opportunity with the abandonment of the Group Health Hospital site to acquire a piece of property on the top of the hill to build a storage tank. Redmond would be interested in partnering in the construction of this tank with Bellevue. This possibility may be something to include in your plan.

-----Original Message-----
From: RLThompson@bellevuewa.gov [mailto:RLThompson@bellevuewa.gov]
Sent: Monday, January 29, 2007 11:28 AM
To: Scott Thomasson
Cc: RLThompson@bellevuewa.gov
Subject: Bellevue's Draft Water Comprehensive Plan

Scott,

On November 3rd, 2006 you were sent a copy of Bellevue's Oct. 2006 Draft Water Comprehensive Plan for review. Comments on the draft plan were due December 8th, 2006. We did not receive any comments from Redmond. If you would still like to provide us with written comments, we must receive them no later than Monday, February 5th, in order to assure that they are considered. Thank you.

- Randy

Randall L. Thompson, P.E.
Engineering Supervisor - Utility Systems Planning
City of Bellevue Utilities Dept. / Engineering Div.
P.O. Box 90012 ~ Bellevue, WA 98009-9012
phone: 425-452-6919 fax: 425-452-5286
e-mail: RLThompson@BellevueWA.gov

CopyCenter

From: Tom Peadon [tpeadon@ccud.org]
Sent: Tuesday, January 30, 2007 4:44 PM
To: Thompson, Randall L.
Cc: Martyp@Paceengrs.Com; Larry Jones
Subject: RE: Bellevue's Draft Water Comprehensive Plan

Randy:
Thank you for the notice regarding the City of Bellevue's Draft Water Comprehensive Plan.
Coal Creek Utility District has reviewed the plan, and finds it somewhat general. Consequently we do not have specific comments on the plan.
The District requests a copy of "The Bellevue Water Utility's Capital Investment Program" (CIP), that is referred to in the plan.
Coal Creek is also interested in receiving any information or plans the City has regarding changes to the operations of the water system that impact the District's operation in any way.
We are also curious if there is an internal version to the plan that the City has prepared that may have more specific details of the water system. If such document exists, please provide us with a copy.
Thank you!
Tom Peadon

-----Original Message-----
From: RLThompson@bellevuewa.gov [mailto:RLThompson@bellevuewa.gov]
Sent: Monday, January 29, 2007 11:23 AM
To: tpeadon@ccud.org
Cc: RLThompson@bellevuewa.gov
Subject: Bellevue's Draft Water Comprehensive Plan

Tom Peadon,

On November 3rd, 2006 you were sent a copy of Bellevue's Oct. 2006 Draft Water Comprehensive Plan for review. Comments on the draft plan were due December 8th, 2006. We did not receive any comments from Coal Creek Utility District. If you would still like to provide us with written comments, we must receive them no later than Monday, February 5th, in order to assure that they are considered. Thank you.

- Randy Thompson

Randall L. Thompson, P.E.
Engineering Supervisor - Utility Systems Planning
City of Bellevue Utilities Dept. / Engineering Div.
P.O. Box 90012 ~ Bellevue, WA 98009-9012
phone: 425-452-6919 fax: 425-452-5286
e-mail: RLThompson@BellevueWA.gov

CopyCenter

From: Bob Trimble [bob.trimble@comcast.net]
Sent: Wednesday, November 08, 2006 9:38 PM
To: Thompson, Randall L.
Subject: Comp Plan Comments

Randall,

Nice work!

My major comment is that I am very happy that you are operating our system.

Bob Trimble, President
KCWD#1
4640 95th Ave NE
Yarrow Point, WA 98004-1301

Ph: 425-688-8743
Fx: 425-450-0793

UTRC water system plan review questions
City of Bellevue
2007

General Questions

Security: Information proposed to be withheld or review limited because of security concerns? Will Bellevue be supplying appendices re Emergency Preparedness? Other appendices? What has DOH said with regard to the Appendices and the need to include to meet DOH requirements?

DOH checklists: Completed and included? These need to be added.

King County Code requirements: Referenced? Need to include a reference to requirements of KC Code 13.24.

Climate change: Impacts discussed? Did not see any discussion; does Bellevue anticipate any, either on demand or supply sides?

SEPA checklist: Included? Does not appear to be included; please include.

UTRC focus areas

Population forecast

Consistency with GMPC "growth targets" for residential and employment: Appear to be consistent. Are the growth assumptions (0.35%/year) consistent with the Cascade TSP's forecasts?

Land use designations consistent w/KC terminology: Appear to be.

Maps describe UGA, other boundaries (corporate, service area): UGA does not appear to be in either Figures 3-3 or 3-4: please add. Please also add (or clarify) "future service area" boundary under East King CWSP (preferably on Figure 3-3). Please clarify text (see p. 2-9) re delivery of service outside of retail service area vs. "future service area" boundary under CWSP (i.e., obligation to provide service within future service area boundary). Need to explain or define Bellevue's understanding of "retail service area," and boundaries of retail service area (Figure 3-4) vs future service area under CWSP.

Demand

Conversion from population to connections/ERUs: Appears to be OK.

Supply/demand curve intersection: Please provide additional details re contingency plans if TPU water is not available; or is this the responsibility of Cascade?

Derivation of peak factors: Appears to be OK.

Forecasts with and without conservation: Need further explanation (see below re conservation).

If a Seattle customer, consistency w/SPU demand: N/A. But please provide comparison of demand and what is contained in Cascade TSP for Bellevue.

Supply

Ability to provide reliable water to customers: See above question re contingency plans in the event TPU water is not available in 2010. Also need a simple statement that Bellevue will be able to provide water to meet population growth allocated to it within King County.

Consistency w/SPU forecast for water supplied by SPU, if an SPU customer: N/A. Please state whether the supply forecast is the same as that within the Cascade TSP, or explain any differences.

SPU contract (quantities, rates): N/A.

Reasonable time frames for proposed new sources of supply: To be addressed in discussion of TPU supplies.

Adequate storage: Appears to be OK, including discussion of possible needs related to areas of growth.

Distribution problems (pressure, leaks): Appears to be OK. Very good job on analysis, and on system operation. Are there any distribution problems with Water Districts 1, 20, and/or 117? Have the issues with regard to Cougar Mountain been resolved?

Water rights

Claims, certificates, permits: Appears to be OK.

Primary vs. supplemental: Appears to be OK

Instream flow constraints: Appears to be OK

Sufficient to meet supply needs: Appears to be OK.

DOE opinion/comments on water rights assessment: Has Bellevue gotten Ecology comments? If so, please provide.

ID any potential issues with place/purpose of use: Per Section 5 of Municipal Water Law, is Bellevue claiming any changes in place of use?

Tribal issues: Have any tribes received, reviewed, or commented on the plan?

Conservation

Documented conservation measures: References to regional conservation program; please define (e.g., SPU 1%; current Cascade; projected Cascade?). Please describe relationship to Cascade conservation program (e.g. does it partially meet Bellevue's obligations, or completely meet?), and the conservation assumptions made in the Cascade TSP. Note also that the new DOH WUE rule will require Bellevue to adopt a conservation goal before the next iteration of the Water System Plan (see bottom of p. 4-9 in terms of conservation assumptions). Good discussion (Table 5-5) on conservation savings. Any thoughts on why commercial conservation savings are not as high as residential?

Consistency w/DOH guidance: Appears to be OK.

Aggressive pursuit (per KC Comp Plan): Good discussion of planned conservation program, and Table 5-6, linked with Cascade's CPS. Statements with regard to conservation (see p. 4-9) seem to imply that water conservation measures may not continue because of cost; is this correct? Good language on p. 5-2 re intent to meet substantive requirements and be proactive.

Rate structure (RCW 43.20.235): block rates, subsidies: Good block rate structure (p.5-11).

Cost-effective evaluation; measures not implemented (per Section 5(2) MWL) : Could not find this evaluation, as required by MWL and in DOH checklists; please provide or cite page. Are there cost-effective conservation measures that Bellevue has not implemented? (Not clear on p. 5-4).

Plans for WUE DOH rule compliance: Please describe if known.
Leakage rate and plans: Good discussion.
SPU regional plan: N/A.

Reclaimed Water

Identification of opportunities for reclaimed water (per MWL): Table 5-4 is good. King County anticipates continuing to work with Bellevue as one of the Cascade members on strategies to expand reclaimed water use.

Specific applications (golf courses, athletic fields): Table 5-4. Note that there may be more detailed data available from the Regional Water Supply Planning process' technical committee on reclaimed water.

Self-supplied users w/in service area
Coordination w/wastewater utility

KC Comp Plan

Level of service: consistent w/land use, and w/service area policies: See above.
Concurrency: See questions re delivery of service within UGA.

Resource management (esp groundwater—CARA, existence of exempt wells, impacts to streamflows): Identify issues, if any.

Other plans (e.g., watershed/salmon recovery): Bellevue should note its participation in the WRIA 8 process, and any commitments it has under the final recovery plan (or identify where this information is).

Service area approach/service area map changes: See above questions re maps.

Financial/capital facilities: See below questions re MWL implementation (duty to serve, timely and reasonable), and service within UGA.

Emergency Preparedness: Note that facilities maps (Chapter 6) may be needed by King County for public health and emergency purposes.

Others (list): None

Fire Code

Standards met (fire marshal; CWSP): No apparent issues.

Transportation

Reference to KC road standards: The plan should contain a reference to complying with current King County standards; we could not locate this statement.

Identification of emergency response numbers: These numbers should be included in the plan.

Planned work/coordination: No apparent issues.
ROW permits: See below.

Water quality

Treatment? Issues?: No apparent issues.

Source mixing? Will there be any issues associated with delivery of TPU water? Of delivery of other water via interties among Cascade members.

Provision of SDWA water quality report: No apparent issues. Does Bellevue anticipate providing its required Water Use Efficiency rule information within this annual report?

Fluoride: No apparent issues.

KC franchise

Current? Expiration date? Could not find the information; please provide. Is any portion of the Bellevue-Issaquah pipeline located within unincorporated King County; if so, who holds the franchise for the pipeline?

ROW permits needed? Are any King County right of way permits anticipated to be needed?

Other MWL issues

Duty to serve/timely and reasonable: Please describe Bellevue's understanding of the duty to serve under the MWL, and how it defines "timely and reasonable" service under both the MWL and the CWSP. Has Bellevue's policy with regard to assumption of other systems (p. 2-8) been reviewed in light of the new statutory duty to serve? Similarly, has the policy that requires proposed new developments to pay for extensions of service (p. 2-7) been reviewed in light of the "timely and reasonable" requirements under both the MWL and the CWSP?

Satellite management: Does Bellevue anticipate any potential water customers unable to receive water if Bellevue does not provide satellite management?

Group B's/exempt wells in service areas: Does Bellevue have data on these systems? Are there any plans to provide service to these systems and their customers if requested, or if they fail for some reason?

Change in POU/retail service area boundary: Is Bellevue requesting any change in the place of use of its water rights under Section 5 of the MWL?

Financial plan

Description of expenses/costs: No issues.

Basis for allocation of costs (e.g., "reasonable" general facility charges by water districts): No issues.

Concurrency: do capital facilities plans meet KC Comp Plan concurrency requirements in unincorporated areas: Please discuss plans to make water service available w/in UGA w/in next six years, per King County Comp Plan and Bellevue Comp Plan.

Consistency w/other plans

CWSP—service area boundaries, small systems, shared supplies: Note that CWSP WAC reference (p. 3-17) is incorrect and should be updated. Should reference (p. 3-18) Bellevue's intention to participate in CWSP process, per conditions attached to Cascade TSP approval, and November 2006 Cascade Board resolution.

GW Mgt Plans—participant? Please cite any discussion within the WSP, or provide a short explanation of their relevance to utility operations, or possible value in the future.

Emergency Response: coordination with King County Emergency Preparedness plans? Please provide the Red Book (p. 9-13), or a description of Bellevue's emergency response plan elements. King County may require further details as part of its countywide emergency response planning.

DOH and DOE comments: King County has received copies of the DOH comments. Please provide Ecology comments, if any.

King County Code and Comp Plan requirements for water system plans

<u>King County Code (KCC 13.24) [for reference only]</u>

General and water plan-specific: 13.24.010; 13.28

- **Applicable to special purpose districts (RCW Title 57) and water utilities distributing or obtaining water in unincorporated King County**
- **Consistency with King County Comprehensive Plan and Development regulations, and policies**
- **Infrastructure for existing and future service areas based on adopted land use map**
- **Review proposals for modified or expanded service areas based on compliance with utility's approved plan, and ability to meet duty to serve requirement**
- **Sufficient information to demonstrate the ability to provide service consistent with the requirements of all applicable statutes, codes, rules, and regulations**
- **Monitor and review effectiveness of purveyor conservation plans if within area covered by approved CWSP**

Consistency requirements: 13.24.060

- **State and local health requirements**
- **Creation and maintenance of logical service areas**
- **Elimination or prevention of duplicate facilities**
- **Promotion of most healthful and reliable services to the public**
- **Provision of service at a reasonable cost, and maximization of use of public facilities**
- **KC Comprehensive Plan, and other pertinent county adopted plans and policies**
- **Basinwide or multibasin water plans, sewerage plans, or both when approved by Ecology or DOH**
- **Applicable state water quality, water conservation, and waste management standards**
- **Water Resources Act (RCW 90.54)**
- **Growth Management Act (RCW 36.70A)**
- **Groundwater Management Plans**

- **Federally-approved habitat conservation plans and recovery plans under ESA**
- **Requirements for salmon recovery under RCW 77.85, and other plans, including regional water supply or water resource management plans**
- **Applicable requirements to evaluate opportunities for the use of reclaimed water under chapter 90.46 RCW**

<u>King County Comprehensive Plan</u>

U-140: infrastructure for residential developments within UGA must include public sewer
R-407: authorized conditions for sewers in rural towns
E-119: management and protection of water resources
E-120: integrate watershed plans with wastewater planning
E-123: protect and enhance surface waters, including Puget Sound
E-155: protect groundwater, and develop strategies to compensate or mitigate for losses
E-204: protect critical habitat
F-104: plan for provision of services to rural areas
F-105: work with cities and service providers to provide services
F-202: ensure adequate supply of public facilities to support communities
F-207: support rural levels of development and not facilitate urbanization
F-208: need to demonstrate planning for capital facilities in rural and unincorporated areas to meet GMA requirements
F-209: coordinate development of utility facilities
F-212: sewer utilities providing service in unincorporated KC develop capital facility plans consistent with GMA and KC Code
F-216: remedy deficiencies in areawide sewer service
F-233-235: develop regional water supply plan with a role for reclaimed water as a source of supply
F-239: KC partner with utilities to encourage best management practices and conservation through such means as developing reclaimed water, aggressive water conservation and reuse measures; support planned land uses with reliable service at minimum cost; encourage reclaimed water use, focused on large water users such as golf courses and cemeteries
F-245: within UGA, all development to be served by sewers, unless it would deny all reasonable use of property to single-family residence on single lot
F-246: within UGA, KC and sewer utilities shall prioritize replacement of on-site systems with sewers, including use of public funding options
F-247: parks w/in urban areas shall be served by tightlined sewers, if redesignated rural to urban on or after September 20, 2004
F-249: no public sewer expansions on rural and natural resource lands unless addressing specific public health and safety problems
F-250: sewer facilities not providing connections to rural areas may not be located in rural areas unless in an approved plan supported by a KC finding that it is technically necessary

F-251: on-site systems in rural and natural resource areas shall be designed, built, and operated as permanent systems
F-252: KC should monitor on-site systems with history of failure or possible failure, and data used to correct problems and prevent future ones
F-253: collective on-site systems may only be used in specified circumstances

APPENDIX E

Consistency Statement Letters

TOWN OF YARROW POINT
4030 - 95th Avenue N.E.
Yarrow Point, Washington 98004
Tel: (425) 454-6994 / Fax: (425) 454-7899

March 20, 2007

Randall L. Thompson
Engineering Supervisor- Utility Systems Planning
City of Bellevue Utilities Dept.
Engineering Division
P.O. Box 90012
Bellevue, WA
98009-9012

Dear Mr. Thompson:

Please excuse the delay in my responding to your request regarding that the Town of Yarrow Point review the Bellevue Draft Water Comprehensive Plan. The Town of Yarrow Point has reviewed the plan and does certify that:

1.) Bellevue's retail water service area is consistent with Yarrow Point's adopted comprehensive plan and adopted development regulations and policies.

2.) The growth projections used to forecast future water demand for Yarrow Point are consistent with Yarrow Point's adopted population and commercial growth projections.

3.) Bellevue's water utility policies (Chapter 2 of the Plan) are consistent with Yarrow Point's adopted comprehensive plan and development regulations.

If you have any questions please contact me at Yarrow Point Town Hall and again, thank you for your patience.

Sincerely,

Larry Howard
(Clerk/Treasurer)

Town of
Serving Our Residents
Hunts Point

3000 Hunts Point Road
Hunts Point, Washington 98004
425.455.1834 fax 425.454.4586
www.ci.hunts-point.wa.us

February 8, 2007

Randall L. Thompson, P.E.
Engineering Supervisor
Bellevue Public Utilities
P.O. Box 90012
Bellevue, WA 98009-9012

Re: Bellevue Water Comprehensive Plan Update

Dear Mr. Thompson:

We have reviewed in detail Bellevue's 2006 Draft Comprehensive Plan for consistency with the Comprehensive Plan of the Town of Hunts Point. Based upon that review we find that the Bellevue 2006 Draft Comprehensive Plan is consistent and congruent with the Comprehensive Plan of the Town of Hunts Point in the following areas:

> The Town of Hunts Point is entirely within the retail service area of the Bellevue Water Department.
>
> The Town of Hunts Point has stated in its Comprehensive Plan that the land area of the Town is entirely developed as residential property and the Town does not expect any increase and/or decrease in population as a result of this.
>
> Bellevue's water utility policies are consistent with the Town of Hunts Point's adopted comprehensive plan and development regulations.

Should you desire more information or you have questions, please contact me at (425) 455- 1834 or via e-mail at jackm@ci.hunts-point.wa.us.

Sincerely,

Jack V. McKenzie
Town Administrator

501 EVERGREEN POINT ROAD • P.O. BOX 144 • MEDINA, WA 98039-0144
TELEPHONE 425-454-9222 • FAX 425-454-8490 • POLICE 425-454-1332

February 23, 2007

Mr. Randall L. Thompson, P.E.
Engineering Supervisor – Utilities Systems Planning
City of Bellevue
PO Box 90012
Bellevue, WA 98009 9012

Re: ***Bellevue's Water Comprehensive Plan Update***

Dear Mr. Thompson:

I have reviewed a draft copy of Bellevue's Water Comprehensive Plan and can attest to the following on behalf of planning issues for the City of Medina:

1. Bellevue's retail water service area (Figure 3-4 on page 3-12 of the Plan) is consistent with Medina's adopted comprehensive plan and adopted development regulations and policies.
2. The growth projections used to forecast future water demand for Medina are consistent with Medina's adopted population and commercial growth projections.
3. Bellevue's water utility policies are consistent with Medina's adopted comprehensive plan and development regulations.

Feel free to contact me with any questions.

Sincerely,

Joseph Gellings, AICP
Director of Development Services

CITY OF
Clyde Hill

9605 NE 24th Street • Clyde Hill, Washington 98004
425-453-7800 • Fax: 425-462-1936 • www.clydehill.org

November 14, 2006

City of Bellevue
PO Box 90012
Utility Systems Planning Utilities Dept./Engineering Division
Bellevue, WA 98009-9012
ATTN: Randall Thompson, Engineering Supervisor

Dear Mr. Thompson,

I am in receipt of your letter asking for consistency certification regarding the City of Bellevue's 2006 Draft Water Comprehensive Plan. I've reviewed your letter and the sections of the Draft Plan you wanted compared to the City of Clyde Hill's Comprehensive Plan. However, I have not read the Draft Plan in its entirety. Based on that limited review the following is my certified response:

Overall Comment – The City of Clyde Hill's Comprehensive Plan does not embody the specific detail you may be seeking. However, the statements below are accurate representations of the City of Clyde Hill's policy regarding water service.

Service Area - Bellevue's retail water service area (Figure 3-4 on page 3-12 of the Plan) includes all the City of Clyde Hill and is therefore consistent with Clyde Hill's understanding of the service area.

Growth Projections - There were no specific references to the future water demand for Clyde Hill in the Draft Plan. Your letter suggests that the Draft Plan projects no appreciable growth within Clyde Hill. A projection of no appreciable growth is consistent with Clyde Hill's Comprehensive Plan projections (attached).

Water Policies - Bellevue's water policies (Chapter 2 of the Plan) seem to be consistent with Clyde Hill's water policy. The key document governing water policy with Bellevue and Clyde Hill is the February 1973 Water District No. 68 City of Bellevue Agreement. I have not cross referenced the Draft Policy with this agreement. If the two documents are consistent, then the Draft Plan is consistent with Clyde Hill's water policy as well.

I hope this will help complete the development of your water plan. If you need any additional help just ask.

Very truly yours,

M. Wasserman

Mitchell Wasserman
City Administrator

CC: George Martin, Mayor
Allan Newbill, PW Director/City Engineer