

DRAFT



City of Bellevue

2013 Wastewater System Plan

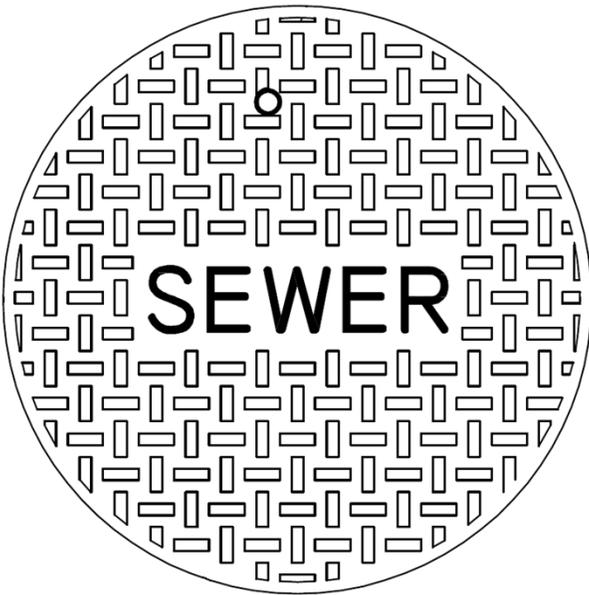


DRAFT



City of Bellevue
2013

Wastewater System Plan

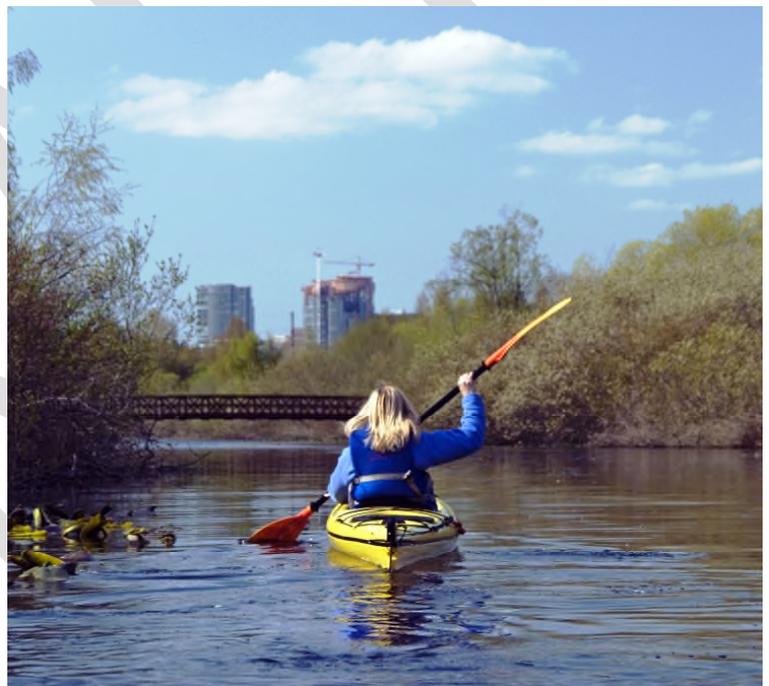


Executive Summary

The City of Bellevue (the City) wastewater utility service area includes the entire City of Bellevue, the Cities of Clyde Hill and Medina, the Towns of Hunts Point and Yarrow Point, and small adjacent portions of the City of Issaquah (South Cove area) and unincorporated King County. Since the founding of the original Bellevue Sewer District on Meydenbauer Bay in 1952, the utility has protected water quality and public health, while facilitating economic vitality, desirable neighborhoods and significant growth.

The 2013 Wastewater System Plan (the Plan) reflects back on more than a decade of change since Bellevue's 2002 Wastewater Comprehensive Plan, while charting a course to navigate the challenges ahead. The Plan addresses aging of infrastructure, system expansion to accommodate development, revised polices and practices, newly available analytical data, finances, revised forecasting of growth, and recommended improvements.

The Plan has been prepared as a General Sewer Plan in conformance with Washington Department of Ecology criteria, as defined in WAC 173-240-050.



Recreation in Mercer Slough, with Construction Crane in Background

The Plan provides a basis for capital improvement planning for the next 6 years. The Plan also forecasts anticipated needs within the next 20 years and for ultimate system build-out based on land use zoning.

The City has consulted with Bellevue's Environmental Services Commission (ESC) in public meetings for review and direction of the Plan at key points of Plan development, including policy clarifications, evaluation criteria, results analysis and recommendations. The ESC advises Bellevue City Council on utilities planning and related topics, and is comprised of seven residents from within the city's service area.

Policies

The City prepared and adopted Bellevue's Comprehensive Plan (City Ordinance No. 5570, November 29, 2004) as required by the Washington State Growth Management Act (GMA). Consistent with the GMA, Bellevue's Comprehensive Plan policies require the Utilities Department to anticipate and facilitate growth. Specifically:

POLICY UT-4. Base the extension and sizing of [Utilities] system components on the land use plan of the area. System capacity will not determine land use.

POLICY ED-21. Continue to identify, construct and maintain infrastructure systems and facilities required to promote and sustain a positive economic climate. Anticipate needs and coordinate city infrastructure investments with economic development opportunities.

The Utility's performance is measured in part on its responsiveness to zoning and development activity.

This Wastewater System Plan is consistent with Bellevue's Comprehensive Plan policies, and serves as the functional plan to implement those policies. Furthermore, the Wastewater System Plan itself defines Utilities-specific policies. These Utilities-specific policies, found in Chapter 2, focus on:

- Customer Service
- Service Area
- Water Quality
- Regional Policy Interface
- Financial Policies

Minor changes have been made to several policies since the 2002 Plan. Significant policy changes since the 2002 Plan include:

- Inflow & Infiltration (I&I) policy language has been made clearer and more concise.
- A new policy regarding City participation in regional policy development has been added. This new policy was added to guide Bellevue's role in influencing regional decision-making in the interests of the City and Bellevue's rate payers.

System Infrastructure

Bellevue's sewer system includes approximately 525 miles of sewer mains, 130 miles of service stubs (within public rights of way), 18.7 miles of "lake line" sewer pipe, 10 flush stations, 36 pump stations, and 14,360 manholes.

Since the 2002 Plan, the City has continued to improve its system assessment and understanding, through systematic video inspection, flow monitoring, and other investigative techniques that are best practices for utility asset management. System infrastructure is also observed during regular cleaning and flushing, and in response to customer complaints. While the system overall is well-maintained and functional, recent information has indicated several emerging challenges for the wastewater system:

- **Lake Line Condition.** The City's lake lines are sewer pipes that follow the shorelines of Lake Washington and Lake Sammamish, underwater and in some cases on land adjacent to the lakes. Two issues have emerged that indicate a need to replace the oldest sections of this piping soon:
 - Assessment of asbestos cement lake line pipes in Meydenbauer Bay revealed significant deterioration of this piping in some locations. These are some of the first pipes installed in the original Bellevue Sewer District, circa 1952. It is anticipated that unacceptable structural failures of these pipes could occur within about 10-15 years if they are not replaced or rehabilitated.
 - Overflows have occurred upstream of lake line piping, due to reduced lake line capacity from sedimentation. Due to relatively flat installation, these pipes are particularly susceptible to sedimentation and require daily flushing.

Replacement of the lake lines is expected to be technically challenging, environmentally sensitive, and relatively very expensive compared to other sewer projects. It is anticipated that no single solution will work at all locations, such that a variety of options may be needed based on site-specific factors. Stakeholder input will be critical to making final decisions. Any option selected will impact entire neighborhoods and require consensus among diverse interest groups.

CIP Plan No. S-58 – Sewer Lake Line Replacement Program has been created to evaluate lake line replacement options, and is recommended to continue.

- **Inflow and Infiltration (I&I).** Flow monitoring data from King County's 2002 I&I study and subsequent investigations revealed that stormwater and groundwater flows into Bellevue's wastewater system are significantly higher than previously assumed. If not mitigated, these I&I flows could cause downstream capacity problems, increase the potential risk of overflows, and necessitate additional capital investments. The Plan recommends targeted investigation and reduction of I&I.

- **Storm Frequency and Vulnerabilities.** The City's experiences in wind storms, ice storms, prolonged power outages and other extreme weather events in 2006, 2007 and 2010 provided valuable experience to guide the Plan.
 - **Storm Frequency.** The frequency and severity of extreme weather events that resulted in one or more sewer overflows in the system have increased since the 2002 Plan. Subsequently, some locations that were perceived to have an acceptable risk of overflow only during extreme (greater than 20-year frequency) events could be more susceptible, given changing event-frequencies. The City has always investigated known overflows, but now recognizes that the frequency of overflows could increase if nothing is done. The Plan recommends I&I investigation and reduction (where feasible), and capacity improvements where necessary to manage the risk of overflows.
 - **Storm Vulnerabilities.** Recent storms have validated the City's utility emergency management procedures, but also revealed some vulnerabilities in the wastewater system. The City's strategy to equip critical pump stations with permanent on-site backup power has worked well. However, utility staff found it difficult to access less critical pump stations with portable generators when roads were blocked by downed trees, ice and other obstacles. Difficulty accessing these pump stations subsequently increased overall response times. The Plan recommends more pump stations be equipped with permanent on-site backup power.
- **Asbestos Cement Pipe Failures.** The City's potable water distribution system has experienced a high rate of asbestos cement (AC) pipe failures, relative to other pipe materials. Subsequently, an AC water main replacement program has been implemented by the water utility. Bellevue's wastewater system also has some AC piping. AC gravity sewer piping has a lower criticality and consequence of failure, because they are not pressurized. However, there are some AC force mains (pressurized pipes) in the City's wastewater system that are now perceived by the City to have a high consequence of failure. The Plan recommends establishing a program to inspect and prioritize replacement of AC force mains.

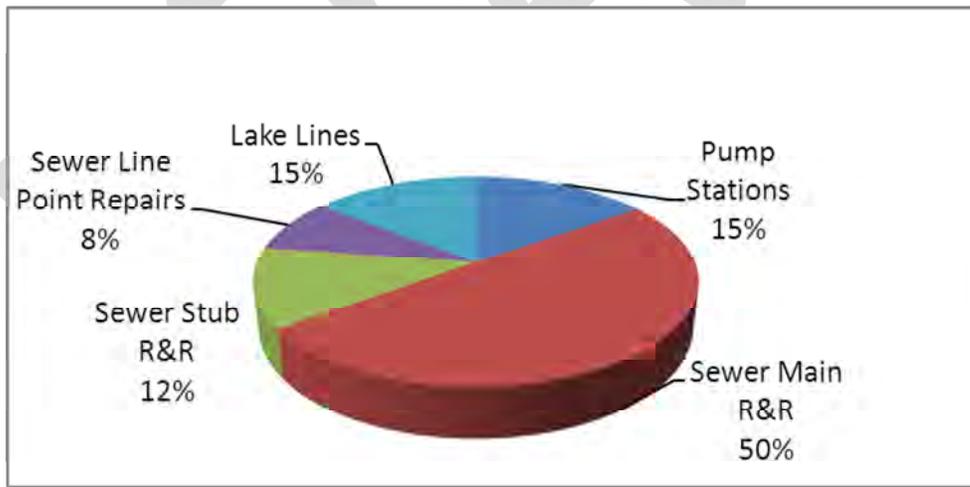
Asset Management

Bellevue's wastewater infrastructure is aging. Planning for system renewal and replacement (R&R) is necessary to ensure adequate long-term financing and to manage the risk of system failures.

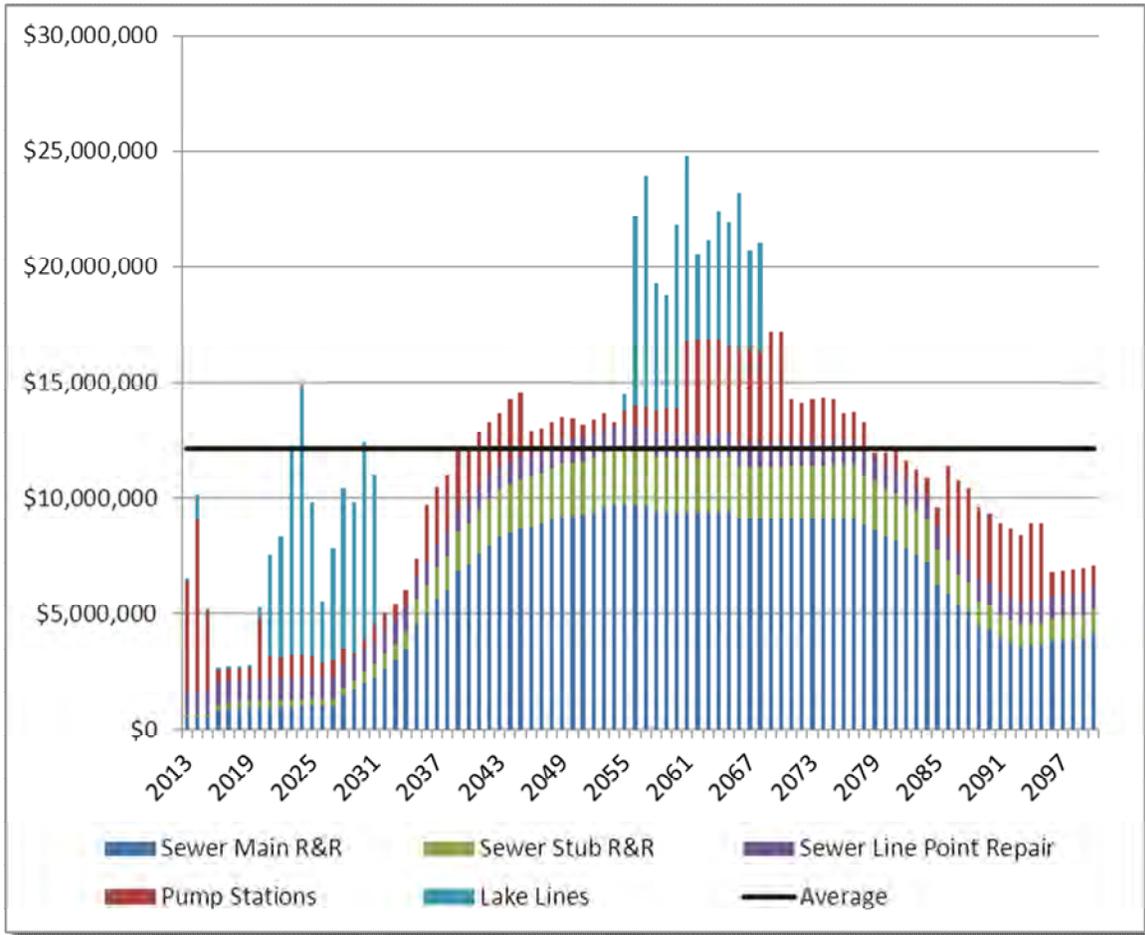
Bellevue's Utilities Department has established a strong long-term financial position, by incorporating the five core components of the EPA asset management framework:

1. Determine The Current State of the Assets
2. Define Service Levels
3. Determine Asset Criticality and Risk
4. Determine Best Operating and Maintenance (O&M) and Capital Improvement Program (CIP) Strategies to Minimize Life Cycle Costs
5. Determine Funding Strategy

Based on industry standards for asset life expectancy, as well as local factors specific to the City's wastewater system, Bellevue has developed a schedule of annual costs for funding anticipated R&R projects through the year 2100.



Projected 75-Year Wastewater System R&R through 2087



Projected R&R Needs through 2100

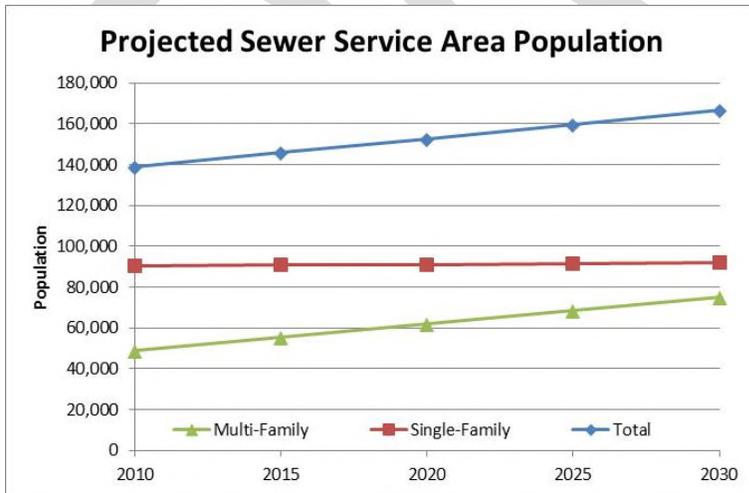
Growth and Development

Bellevue’s sewer service area experienced significant population growth throughout the 2000’s, particularly in downtown Bellevue. Although the recession slowed growth in 2008-2009, Bellevue’s service area population continues to expand and is projected to surpass 166,000 by 2030. Most of this growth will occur Downtown and in the Bel-Red Corridor.



Recent Downtown Development

To estimate future wastewater flows, the Wastewater System Plan uses population and land use projections developed by the Bellevue Planning and Community Development Department. The projections consider the Bellevue Comprehensive Land Use Plan, and are consistent with Puget Sound Regional Council data and forecasts, and U.S. census data. Population and sewage flow projections consider ultimate growth within the City’s urban growth boundary limits, in accordance with GMA requirements.



In addition to population growth from within, Bellevue’s sewer utility service system has grown since 2002 through expansion of the service area boundaries. In 2003, Bellevue assumed Coal Creek Utility District’s water and sewer infrastructure located inside Bellevue City limits. The service area was also extended in the Cougar Mountain area to the Urban Growth Boundary. The Plan reflects these changes, as shown in Figure 1.

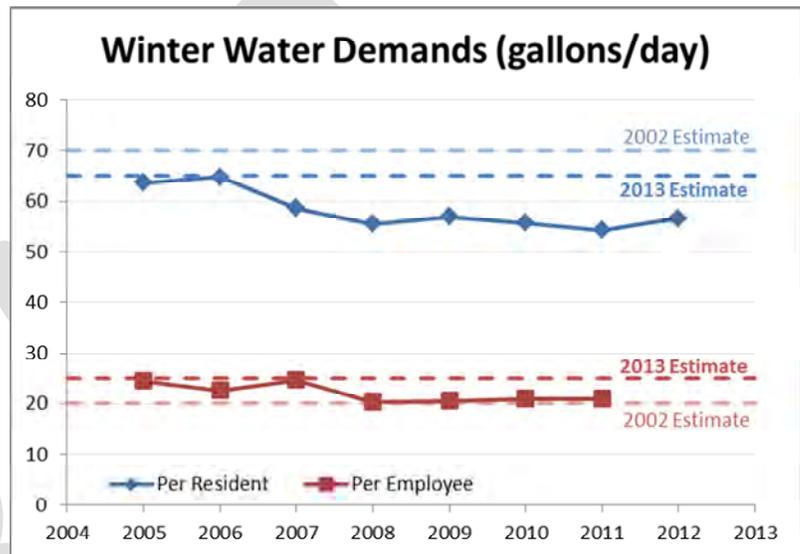
Population and employment projections are used to evaluate the system’s ability to meet future needs, and form the basis of recommendations for capacity expansion projects.

System Hydraulic Analysis

Computer modeling is used to evaluate the system's current hydraulic capacity and its ability to meet projected capacity requirements. The criteria used to determine future flows were reviewed as part of this plan update.

The City's criteria for projecting sanitary wastewater flows and analyzing system hydraulics are generally conservative, and have not been significantly modified. However, some changes have been made to reflect new data or avoid excessively conservative results:

- Water Usage Changes.** Winter drinking water billing records are used to estimate sanitary wastewater flows. Since the 2002 Plan, Bellevue's peak year winter residential demands have decreased from 70 gallons/day/capita (gpcd) to 65 gpcd, while commercial demands per employee have increased from 20 gpd to 25 gpd.



- Mixed-Use Zoning.** Special criteria are used to estimate future wastewater flows in areas zoned for mixed-use properties. This is necessary to develop realistic flow estimates, because the City's normal criteria (assume maximum potential buildout allowed) would result in overly-conservative estimates that indicate excessive future capital facility sizing needs. Mixed-use properties are unique in that future developers dictate the ratio of residential/commercial floor space, which cannot be predicted by the City. This affects re-zoned areas in Downtown and the Bel-Red Corridor in particular.
- Peaking Factors.** The peaking factor used for sanitary flows was reduced from 4.0 to 2.0, reflecting the peak observed in actual diurnal water usage.
- Inflow and Infiltration (I&I).** Modeled I&I flows have been increased to reflect flow monitoring data, which indicated higher I&I than previously assumed.
- Modeling Software.** The City switched hydraulic modeling programs from HYDRA to SWMM, to reduce cost and convert to a more standardized platform.

Recommended System Improvements

Recommended sewer system improvements fall into three general categories:

- **Existing System Capacity Improvements.** These projects address known or potential system capacity or reliability problems in the existing system.
- **System Capacity Expansion to meet Planned Growth.** These projects and programs address projected system capacity problems due to forecasted future development.
- **Infrastructure Renewal and Replacement:** These projects and programs are intended to reduce the number and severity of system failures due to age.

Ongoing annual improvement programs and one time projects recommended to maintain, rehabilitate, and upgrade the City’s existing infrastructure over the next 6 years are summarized in the tables below.

Recommended Ongoing Capital Improvement Programs

CIP Plan Number	Program Description	Approximate Annual Budget (2013 dollars)*
S-16	Sewage Pump Station Improvements	\$480,000
S-24	Sewer System Pipeline Rehabilitation*	\$1,687,000
S-30	Sewer Service Extensions	\$399,000
S-32	Minor Capital Improvement Projects	\$148,000
S-58	Sewer Lake Line Replacement Program*	\$113,000
S-66	Sewer System Pipeline Replacement	\$1,040,000
	TOTAL ANNUAL COSTS	\$3,867,000

* See Table 9-1 for footnotes

Recommended and Currently Funded Capital Improvement Projects

CIP Plan Number	Project Description	Approx. Total Budget*	Approx. Schedule for Completion
S-52	East CBD Trunk Capacity Improvements	\$2,894,000	2015
S-53	Bellefield Pump Station Capacity Improvement	\$9,984,000	2016
S-59	Add On-site Power at Sewer Pump Stations	\$1,228,000	2020
S-60	Wilburton Sewer Capacity Upgrade	\$5,322,000	2016
S-61	Midlakes Pump Station Capacity Improvements*	\$4,001,000	TBD ²
S-63	Utility Facilities for 120th Ave NE Segment II	\$1,170,000	2016
	TOTAL	\$24,600,000	

* See Table 9-3 for footnotes

Proposed projects and programs (not currently funded) to address emerging issues are shown below. These projects are identified in Chapter 7, System Hydraulic Analysis, and are summarized later in Chapter 9.

Proposed Proposed Projects and Investigational Activities

Program Description	Estimated Total Funding Required (2013 dollars)
Flow Monitoring to Corroborate Computer Model Results *	\$120,000
I&I Investigations *	\$855,000
Asbestos Cement Force Main Replacement at Lake Hills #6 and Lake Hills #12 Pump Stations *	\$1,500,000
TOTAL ANNUAL COSTS	\$2,475,000

* See Table 9-3 for footnotes

Finances

The City has a sound financial base that can finance the recommended capital improvements. Bond ratings from Moody's Investors Service and Standard and Poor's indicate a high level of confidence in the ability of the City's utilities to repay debt obligations, if needed. The sewer utility currently has no outstanding debt.

Conclusion

The 2013 Wastewater System Plan identifies the risks and opportunities of the City's wastewater system, and lays the groundwork for continued economic expansion, excellent quality of life, and sustained growth and development over a 20-year planning horizon.

This Page is Intentionally Blank

Contents

Chapter 1 - Introduction

1.1	Purpose.....	1-1
1.2	Regulatory Compliance.....	1-1
1.3	Wastewater System History	1-2
1.4	Organizational Structure	1-6
1.5	Definitions.....	1-9
1.6	Abbreviations	1-13

Chapter 2 – Wastewater Utility Policies

2.1	Wastewater Utility Policies Background	2-2
2.2	General Policies	2-3

Chapter 3 – System Planning Considerations

3.1	Introduction	3-1
3.2	Geographical Description.....	3-1
3.3	Neighboring Jurisdictions	3-6
3.4	Regional System and Sewage Treatment	3-9
3.5	Land Use	3-9
3.6	Water Systems.....	3-10
3.7	Population and Employment Projections	3-11
3.8	Water Reclamation.....	3-13

Chapter 4 – Flow Projections

4.1	Introduction	4-1
4.2	Wastewater Flow.....	4-1
4.3	Infiltration and Inflow	4-12
4.4	Flow Projection Summary.....	4-15

Chapter 5 – Existing System

5.1	Introduction	5-1
5.2	Wastewater Drainage Basins.....	5-1
5.3	Physical Facilities.....	5-2
5.4	System Reliability	5-9
5.5	Hydraulic Operations	5-9
5.6	Wastewater System Maps	5-13

Chapter 6 – System Renewal and Replacement

6.1	Asset Management Program Framework	6-1
6.2	Condition Assessment	6-2
6.3	Service Levels	6-6
6.4	Renewal and Replacement	6-7
6.5	Renewal and Replacement Funding Strategy	6-15

Chapter 7 – System Hydraulic Analysis

7.1	Introduction	7-1
7.2	Modeling Approach	7-1
7.3	Modeling Results and Recommendations	7-3

Chapter 8 – Operations and Maintenance

8.1	Routine Operations.....	8-1
8.2	Records and Data Management.....	8-3
8.3	Preventive Maintenance	8-5
8.4	Fats Oils and Grease/Industrial Waste Program.....	8-8
8.5	Emergency Procedures	8-10
8.6	Maintenance-Driven Capital Projects	8-11

Chapter 9 – Recommended System Improvements

9.1	Basis for Cost Estimates.....	9-2
9.2	Project Funding	9-3
9.3	Recommended Future Projects	9-5
9.4	Existing System Capacity Improvements.....	9-5
9.5	System Capacity Expansion to meet Planned Growth	9-9
9.6	Infrastructure Renewal and Replacement.....	9-12
9.7	System Improvements Since 2002	9-16

Chapter 10 - Financial Information

10.1	Current Financial Status	10-1
10.2	Financial Outlook.....	10-1
10.3	Funding for Capital Improvement Projects	10-5
10.4	Funding for Pipeline Renewal and Replacement	10-5
10.5	Current Debt Status	10-8
10.6	Credit Worthiness	10-8
10.7	Cost Per Service	10-11

Appendices

A	SEPA Documentation	A
B	Adjacent Purveyor Agreements.....	B
C	Sewer Utility Ordinances and Code	C
D	Completed CIP	D
E	Future CIP	E
F	Existing Trunk Sewers	F

Tables

3-1	Population and Employee Density	3-11
3-2	Residential Population Projections for the Wastewater System Service Area.....	3-12
3-3	Residential Population and Employment by Basin	3-14
3-4	Current Development as % of 2030 Projected Development	3-15
4-1	Population Densities for Residential Development.....	4-3
4-2	Equivalent Population Densities for Commercial Development.....	4-5
4-3	Downtown (DNTN) Land Use	4-7
4-4	Estimated I&I by Basin	4-14
4-5	Comparison of Eastside Communities.....	4-15
4-6	Average and Peak Flows Per Basin.....	4-16
4-7	2030 Projected Flows Per Basin	4-17
5-1	Sewer Basin Pipe Inventory	5-3
5-2	Pump Stations.....	5-5
5-3	Flush Stations	5-7
6-1	Lake Line Materials and Lengths	6-4
7-1	Basins with Potential Capacity Problems	7-4
8-1	Certified Sewer Utility Maintenance Services Staff.....	8-2
8-2	Permitted Industrial Dischargers.....	8-9
9-1	Currently Funded Ongoing Capital Improvement Programs.....	9-3
9-2	Currently Funded Capital Improvement Projects	9-4
9-3	Proposed Projects.....	9-5
9-4	Capital Improvement Projects/Programs Recommended in the 2002 Plan.....	9-17
9-5	Capital Improvement Projects Proposed in the 1999 CCUD Plan.....	9-18
9-6	Capital Improvement Projects Not Identified in 2002 Plan.....	9-18
10-1	Sewer Utility Fund Revenues, Expenses & Reserve Balances by Year 2007 - 2011	10-3
10-2	Sewer Utility Fund Forecasted Revenues, Expenses & Reserve Balances 2012 - 2016....	10-4
10-3	Sewer Utility Renewal and Replacement Account Forecasted Revenues, Expenses & Fund Balances 2012 - 2019	10-7
10-4	City of Bellevue Waterworks Utility Comparative Balance Sheet.....	10-9
10-5	City of Bellevue Waterworks Utility Combined Operating Statement (Year Ending December 31)	10-10
10-6	Cost Per Service	10-11
10-7	Forecasted Cost Per Service	10-12

Figures

1-1	Historical Sewer Districts	1-2
1-2	1948 Map Showing Original Bellevue Sewer District.....	1-2
1-3	1956 Map Showing Annexation of Clyde Hill, Medina, Hunts Point and Yarrow Point.....	1-3
1-4	KCWTD Conveyance and Treatment Facilities.....	1-4
1-5	Current Bellevue Sewer Basins, with Former Coal Creek Basin	1-5
1-6	City of Bellevue Utilities Organizational Chart	1-7
3-1	Non-Sewered Parcels.....	3-2
3-2	City of Bellevue Topography and Streams.....	3-3
3-3	Sewer Service Area	3-5
3-4	Comprehensive Plan for Ultimate Development.....	3-9
3-5	Current Generalized Zoning	3-9
3-6	Transportation Analysis Zone	3-10
3-7	Drinking Water Facilities.....	3-10
3-8	Draft Water Reclamation Checklist	3-13
4-1	Estimated Per Capita Sanitary Wastewater Flow	4-2
4-2	Downtown (DNTN) Zoning and Design Districts	4-9
4-3	Bellevue-Redmond Corridor Zoning.....	4-10
4-4	Bellevue-Redmond Sewer Basins.....	4-11
5-1	Sewer Basins.....	5-1
5-2	Typical View of Exposed Portion of Lake Line Sewer.....	5-6
5-3	Debris Removed from a Portion of Meydenbauer Bay Lake Line Sewer.....	5-8
6-1a	Typical Video Inspection.....	6-3
6-1b	Video Showing Failed Joint with Infiltration	6-3
6-2	Lake Line Locations and Pipe Materials.....	6-4
6-3	Meydenbauer Bay Lake Line Deterioration.....	6-5
6-4	Estimated Renewal and Replacement Needs 2013 through 2100	6-9
6-5	Breakdown of Wastewater System Renewal and Replacement Costs 2013 - 2087	6-9
6-6	Projected Renewal and Replacement Fund Balance	6-16
9-1	Recommended Locations for Flow Monitoring and I&I Investigation.....	9-8
9-2	Recommended Capacity Improvements	9-11
10-1	Generalized Flow of the Utility's Revenues and Expenses	10-6

CHAPTER 1

Introduction

This 2013 Wastewater System Plan (the Plan) updates the City of Bellevue (the City) 2002 Comprehensive Wastewater Plan, which was adopted in September 2002. The Plan pertains to the City of Bellevue Utilities Department's wastewater utility (the Utility). The Utility owns and operates public wastewater facilities in the Cities of Bellevue, Issaquah, Medina and Clyde Hill, the Towns of Yarrow Point and Hunts Point, the Village of Beaux Arts, and a small portion of unincorporated King County.

The plan addresses the following changes which have occurred since the City's 2002 Comprehensive Wastewater Plan was adopted:

- Updates and changes to wastewater utility policies
- Revised ultimate buildout conditions due to zoning and land use changes.
- Revised service area population projections and flow forecasts
- Revised infiltration and inflow flow projections
- Re-evaluation of infrastructure renewal and replacement needs
- Updated recommendations

1.1 Purpose

The general purpose of this plan is to evaluate the existing wastewater system, identify current and future needs, and develop a plan to meet those needs. Additionally, this plan is intended to:

- Disseminate information and develop consensus among stakeholders
- Document wastewater utility-specific policies
- Serve as a reference document for Utility staff and for partner utilities
- Comply with, and demonstrate conformance with applicable regulations

1.2 Regulatory Compliance

The Plan complies with General Sewer Plan requirements of the Washington State Department of Ecology (WAC 173-240-050) and King County (KCC 28.84.050 and 13.24), and where applicable complies with the Puget Sound Water Quality Management Plan.

The City prepared and adopted Bellevue's Comprehensive Plan (City Ordinance No. 5570) as required by the Washington State Growth Management Act (GMA). This Wastewater System Plan is consistent with the City's Comprehensive Plan.

The City follows the State Environmental Policy Act (SEPA) requirements for capital projects, where applicable. Appendix A provides documentation of SEPA compliance for this Plan.

The City complies with the National Environmental Policy Act (NEPA) where applicable. NEPA typically does not apply to the City's wastewater projects, since none of the City's wastewater funding comes from federal sources. Since the 2002 Plan, the City's interaction with NEPA for wastewater projects has been limited to U.S. Army Corps of Engineers permits for work related to lake line inspection and construction below ordinary high water in Lake Washington.

1.3 Wastewater System History

Since World War II, Bellevue's wastewater system has grown along with the residential areas on the east side of Lake Washington. Originally the area was served by the Bellevue Sewer District, the Lake Hills Sewer District, the Eastgate Sewer District, and Coal Creek Utility District, as shown in Figure 1-1. The wastewater service area is bounded by Kirkland and Redmond to the north, Newcastle and Cougar Mountain Regional Wildland Park to the south, Lake Washington to the west, and Lake Sammamish and Issaquah to the east.



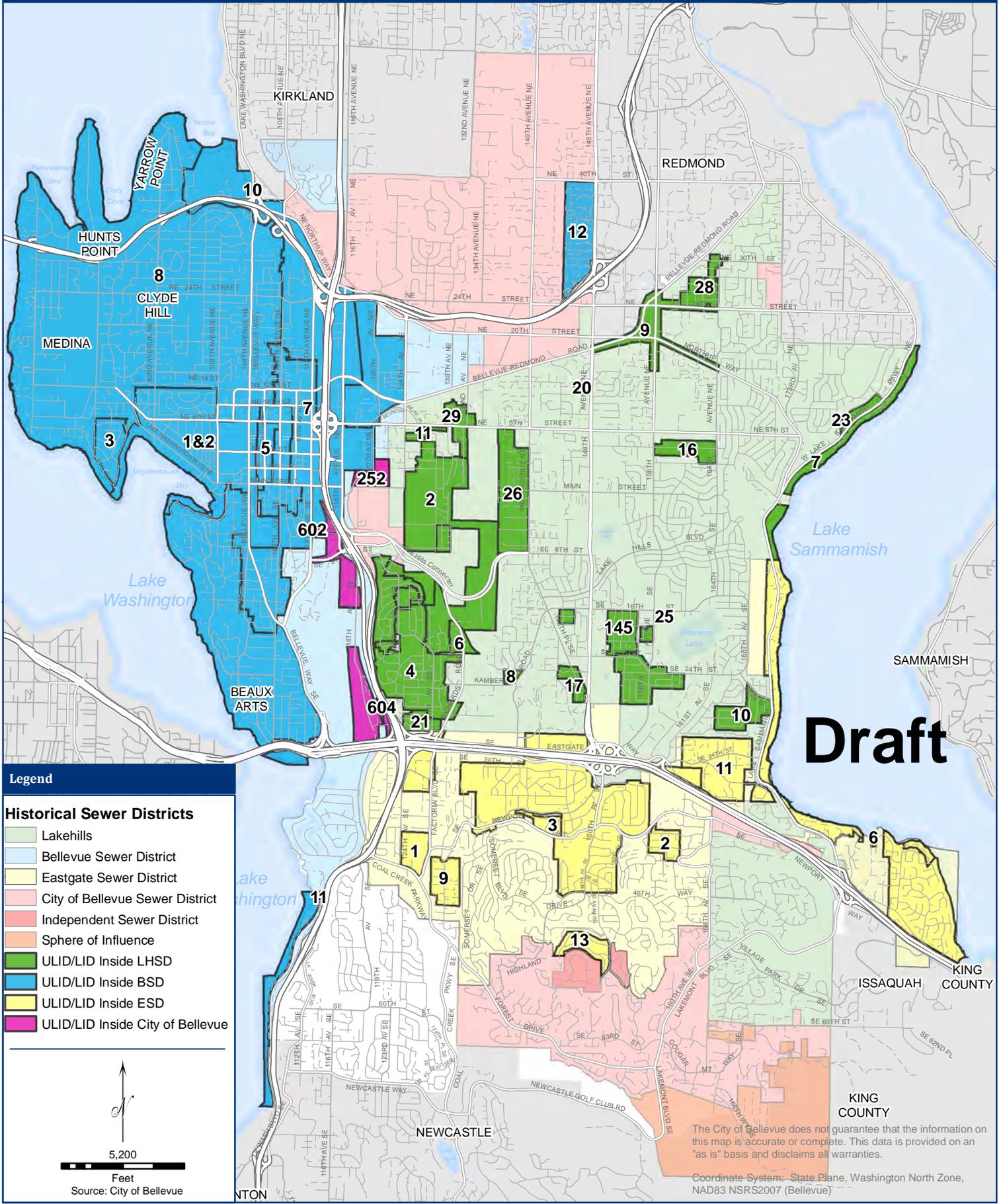
Figure 1-2: 1948 Map Showing Original Bellevue Sewer District (Puget Sound Regional Archives)

The Bellevue Sewer District was formed in 1948, and served the vicinity of Meydenbauer Bay (See Figure 1-2). It was a separate entity that actually pre-dates the City of Bellevue. The Bellevue Sewer District service area grew to include western portions of what is now the City of Bellevue, as well as what is now the cities of Clyde Hill, Medina, Hunts Point and Yarrow Point (See Figure 1-3). Originally, flows from Bellevue Sewer District were discharged to Lake Washington. Following the formation of King County Wastewater Treatment Division (KCWTD), flows were diverted to KCWTD's Renton treatment plant.

The City of Bellevue incorporated in 1953. Prior to this, the area was unincorporated King County. In response to deteriorating water quality in Lake Washington, the Municipality of

Historical Sewer Districts

Figure 1-1



Draft

Legend

Historical Sewer Districts

- Light Green: Lakehills
- Light Blue: Bellevue Sewer District
- Yellow: Eastgate Sewer District
- Pink: City of Bellevue Sewer District
- Orange: Independent Sewer District
- Grey: Sphere of Influence
- Dark Green: ULID/LID Inside LHSD
- Medium Blue: ULID/LID Inside BSD
- Yellow: ULID/LID Inside ESD
- Magenta: ULID/LID Inside City of Bellevue

5,200
Feet
Source: City of Bellevue

The City of Bellevue does not guarantee that the information on this map is accurate or complete. This data is provided on an "as is" basis and disclaims all warranties.

Coordinate System: State Plane, Washington North Zone, NAD83 NSRS2007 (Bellevue)

Metropolitan Seattle (“Metro”, now the King County Wastewater Treatment Division, KCWTD) was formed in 1958 to address certain regional planning concerns, including sewage conveyance and treatment. KCWTD built two treatment plants (Renton and West Point), and acquired some existing assets from utility districts.

Lake Hills Sewer District served eastern portions of what is now the City of Bellevue, and operated its own wastewater treatment plant near the north end of Lake Sammamish. In 1964, KCWTD acquired the Lake Hills wastewater treatment plant. Following construction of KCWTD’s Hollywood Pump Station (in Redmond) and new conveyance facilities, KCWTD abandoned the Lake Hills plant in the 1970’s and routed wastewater from the Lake Hills area to KCWTD’s West Point Treatment Plant.¹ Figure 1-4 shows KCWTD’s conveyance and treatment facilities in relation to Bellevue.

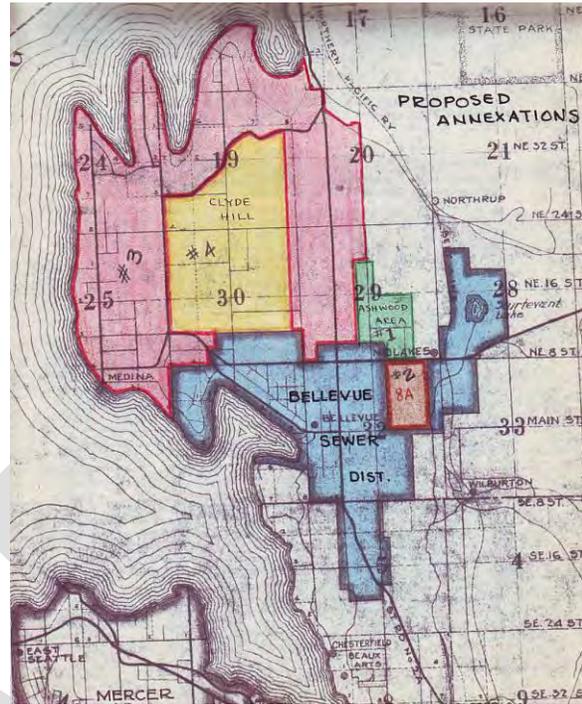


Figure 1-3: 1956 Map Showing Annexation of Clyde Hill, Medina, Hunt’s Point and Yarrow Point into Bellevue Sewer District (Puget Sound Regional Archives)

In the early 1970’s, the City of Bellevue assumed the Bellevue Sewer District and the Lake Hills Sewer District, and incorporated them into the City government. The objective of these acquisitions was to provide uniform wastewater service throughout the City. The Bellevue Sewer District also included areas outside of the City of Bellevue that remain part of the City of Bellevue’s wastewater system service area (Clyde Hill, Medina, Hunts Point and Yarrow Point). An agreement between the City of Bellevue and Bellevue Sewer District stipulated that the City provide equitable services to the District customers whether they were inside or outside of Bellevue's city limits.²

More recently, Bellevue’s city limits grew to include most of the area served by the Eastgate Sewer District, and in January of 1995 the City assumed all assets and operation of the Eastgate Sewer District. This area includes portions of southeastern Bellevue near the southern end of Lake Sammamish and Interstate 90.

¹ HDR/Brown and Caldwell. King County Conveyance System Improvement Project, North Sammamish Subregional Planning Area, Final Task 210/220/230 Report. October 2003. http://your.kingcounty.gov/dnrp/library/wastewater/csi/1999-2003/LkSamm_N/210-220-230_report.pdf

² City of Clyde Hill. <http://www.clydehill.org/community-resources/emergency-services/>

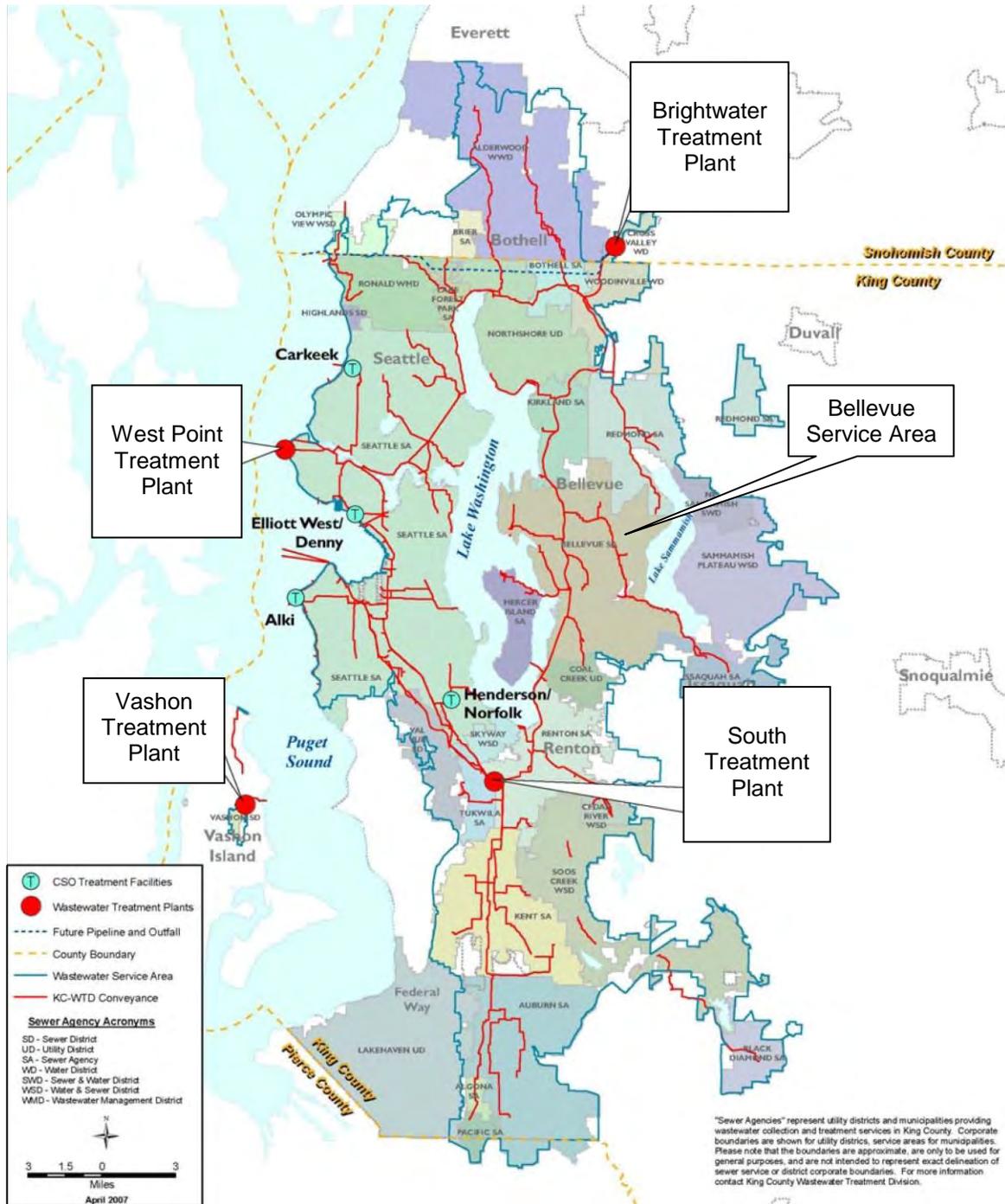
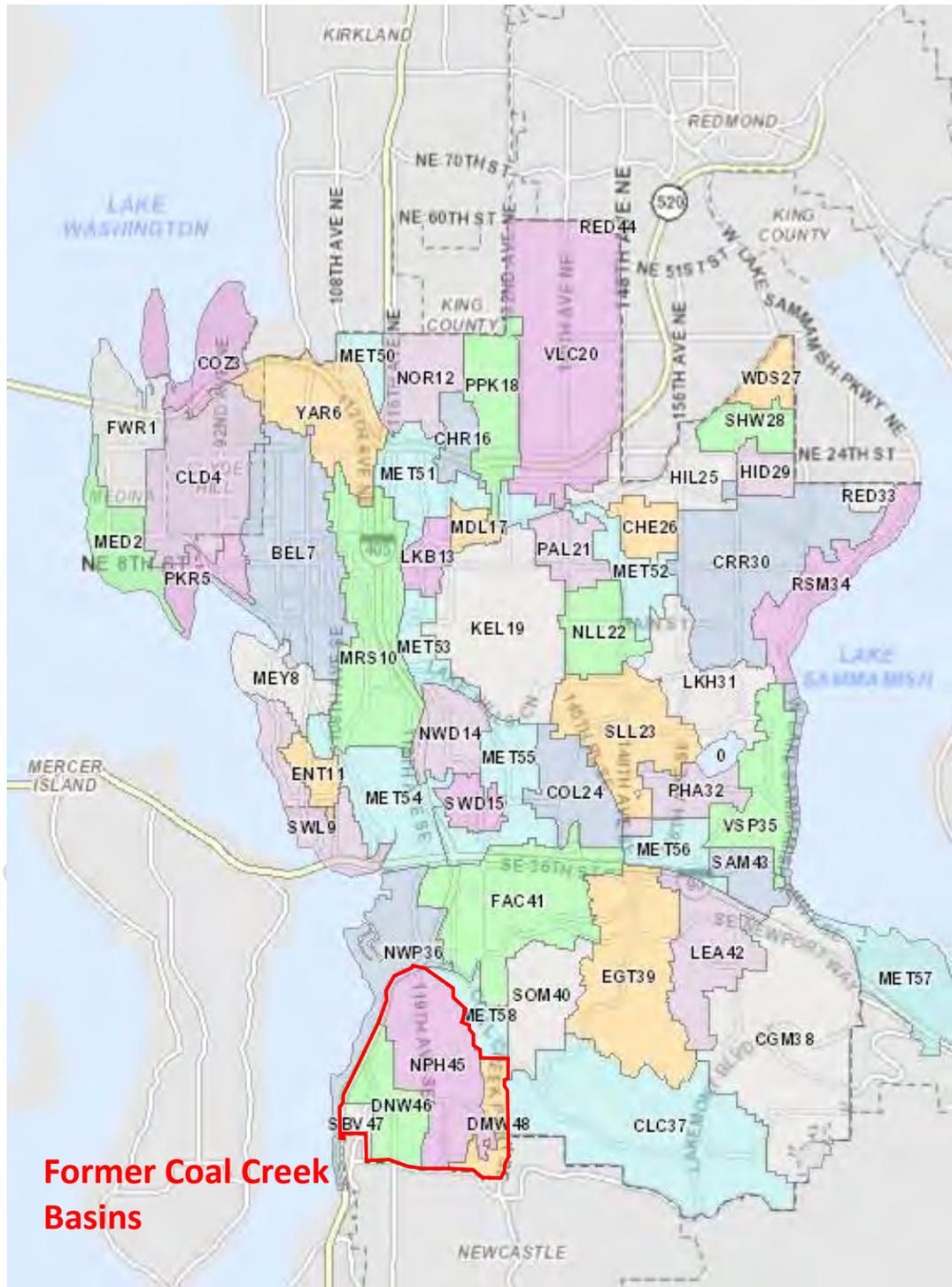


Figure 1-4: KCWTD Conveyance and Treatment Facilities (Courtesy of KCWTD)

In 2003, the City assumed the portion of Coal Creek Utility District within Bellevue city limits, as shown in Figure 1-5. This extension of the City’s wastewater service area was consistent with Bellevue’s Comprehensive Plan policy that all publicly owned utility systems within the city limits should be owned and operated by the City, unless circumstances dictate otherwise.



**Former Coal Creek
Basins**

Figure 1-5: Current Bellevue Sewer Basins, with Former Coal Creek Basins

1.4 Organizational Structure

The Utility is administered by the City of Bellevue Utilities Department, whose overall management is provided by the Director and Deputy Director. The Director's office is the Utility's primary point of contact for the City Manager, City Council and the Environmental Services Commission. In addition to general management duties, the Director is responsible for reviewing regional and state legislative issues and for implementing policy.

The Utilities Department is separated into three divisions, as listed below. Each Division is led by an Assistant Director, who reports to the Director:

- Resource Management and Customer Service
- Engineering
- Operations and Maintenance

An organization chart for the Utilities Department is shown in Figure 1-6.

1.4.1. Resource Management and Customer Service Division

The Assistant Director for Resource Management and Customer Service manages the sections responsible for the Department's financial management, public outreach, solid waste management, and customer service. These functions include all utility billings, customer information system management, customer accounts and services. In addition, this division provides payroll and personnel management for the Utilities Department, coordinates bi-annual budget development and monitoring, performs rate forecasting, and manages accounts payable and receivable.

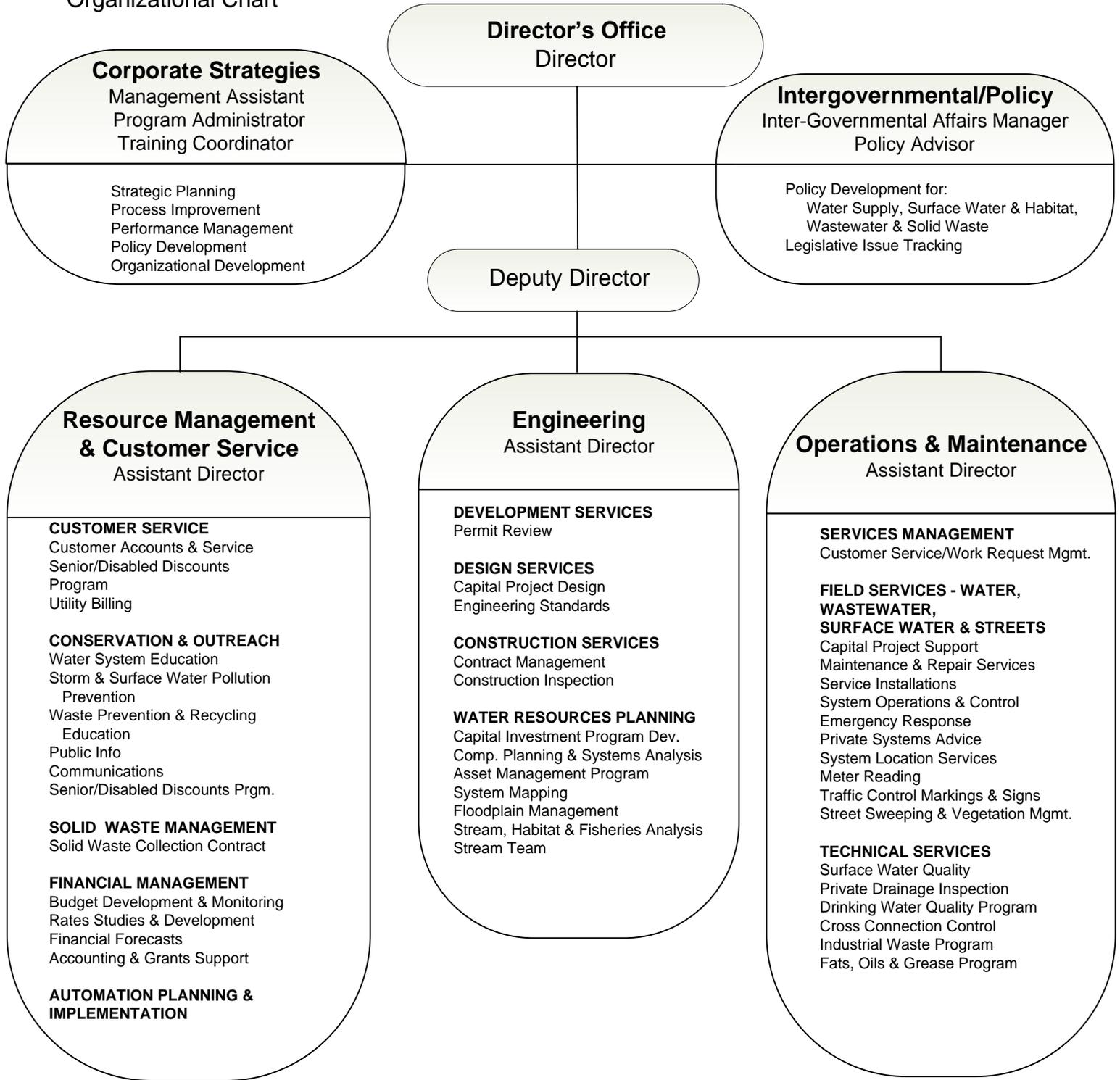
1.4.2. Engineering Division

The Assistant Director for Engineering is responsible for management of the water, wastewater, and storm drainage system planning, mapping, design, construction, and development review functions. This division is divided into four sections :

- The Water Resources Planning Section is responsible for watershed planning, utility system planning, asset management programs, hydraulic modeling, mapping and data management. This section develops the Utility's Capital Investment Program (CIP) and system functional plans. This section also reviews and evaluates developer requests to determine their effect on system operation.

Figure 1-6: City Of Bellevue Utilities Organizational Chart

CITY OF BELLEVUE UTILITIES
Sewer Utility Fund, Storm & Surface Water Utility Fund
Water Utility Fund, Solid Waste Fund



- The Design Section is responsible for capital project design and management. Design of projects is performed primarily by consultants, in order to effectively manage the City's internal CIP work program workload. Some minor work requiring rapid response is done by in-house design staff. The design section maintains and updates the Utilities Engineering Design Standards.
- The Construction Inspection Section manages construction work for the department to assure timely and efficient completion of projects. This section also provides inspection services to ensure City and developer built utility projects are installed and constructed according to approved design plans and specifications.
- The Development Review Section conducts permit reviews and administers other development processes, requiring coordination within Utilities and other City departments. The section also manages and staffs the utility desk at the Permit Center, which is the first contact for customer service and information on development requests. The Development Section is responsible for approving developer extension designs for construction.

1.4.3. Operations and Maintenance Division

The Assistant Director of Operations and Maintenance manages the maintenance and operations of all public utilities, including water, wastewater, and storm drainage. The Water, Wastewater, Storm Drainage Operations Manager oversees the day-to-day operations of the water and wastewater utilities, and the Wastewater Operations Superintendent supervises all crews assigned to maintenance and operation of the wastewater system. Maintenance staff members are encouraged to pursue training to expand their job skills. Washington Wastewater Collection Personnel Association certification is required for all skilled worker job classifications. A list of certified wastewater maintenance personnel positions is provided in Chapter 8.

The Operations and Maintenance (O&M) Division is charged with operating the system and providing preventive maintenance. The O&M Division monitors and assesses the condition of infrastructure to minimize failures and extend the life of wastewater system components. It also provides water quality regulatory compliance and code enforcement, and works to ensure the integrity of the existing infrastructure during development and redevelopment. The division investigates and corrects any actual failures, provides emergency response, responds to illegal discharges, and responds to customers who report system problems. Typical system problems include pipeline blockage or collapse and power outage. Regular operations and maintenance procedures are outlined in Chapter 8.

1.5 Definitions

The following section contains a glossary of some of the terms used in this document:

Average dry weather flow. The average rate of flow during a dry weather flow day.

Basin. Sub-division of the city wastewater network draining to a discrete point such as a KCWTD interceptor, major city trunk, pump station, or neighboring jurisdiction.

CBD. Bellevue's Central Business District, now referred to as Downtown.

Debt Service Coverage. The ratio of total revenue for water, wastewater and storm drainage services after deducting operating and maintenance expenses to the average annual payment required to service all outstanding Utility Department debt.

Domestic Waste. Sanitary wastewater produced by normal residential activities.

Drain Fields. An underground region, downstream of a septic tank, that allows for the microbial breakdown of wastewater contaminants.

Dry weather flow. Wastewater flow during periods of little or no rainfall. Rates of flow exhibit hourly, daily, and seasonal variations. A certain amount of infiltration may also be present. See also "Average Dry Weather Flow" and "Peak Dry Weather Flow."

Easement. A grant or authorization by a property owner of the use of any designated portion of land by the public generally or by a corporation, or persons for specified purposes.

Effluent. Wastewater that leaves residential, commercial, and industrial properties and enters the wastewater system.

HYDRA. Sanitary sewer hydraulic modeling and flow routing software, produced by Pizer, Inc.

Hydrogen sulfide. A potentially toxic and lethal gas (chemical symbol H₂S) produced in sewers by anaerobic decomposition. Detectable in low (less than 0.01 percent) concentrations by its characteristic "rotten egg" odor, it deadens the sense of smell in higher concentrations or after prolonged exposure. Respiratory paralysis and death may occur quickly at concentrations as low as 0.07 percent by volume in air. Hydrogen sulfide is a hazard for collection system maintenance staff and can lead to deterioration of concrete and other pipe materials through corrosion.

Industrial Waste. Wastewater generated by commercial and industrial customers. Customers include restaurants, Laundromats, service stations, and manufacturing facilities.

Infiltration. The quantity of ground water that leaks into the wastewater collection system from the surrounding soil. Common points of entry include broken pipes and defective joints in the pipe or in walls of manholes. Infiltration may result from sewers being laid below the ground water table or from saturation of the soil by rain or irrigation water.

Inflow. Rainwater which enters the collection system through roof drain connections, catch basin connections, and holes in the tops of manhole covers in flooded streets. Inflow is generally distinguished from infiltration by the rapidity with which inflow begins and ends after a period of rainfall. Infiltration, on the other hand, may persist for an extended period after a rainfall.

Interceptor. A sewer that receives flow from a number of main or trunk sewers, force mains, etc. WDOE requires that the minimum peak design flow for interceptor sewers should be not less than 250 percent of the average day wet weather design flow.

Intertie. A connection point between two wastewater systems that allows for the movement of wastewater from one municipality to another.

Latecomer Agreement. A contract that provides for the reimbursement of costs to developers who construct facilities that directly benefit other properties.

Level of Service. Qualitative measure of the operational conditions of a wastewater system.

Main. A sewer that receives flow from one or more submains. Also referred to as "trunk." WDOE requires that the minimum peak design flow should be not less than 250 percent of the average day wet weather design flow.

Maximo. Software used for municipal maintenance management.

Metro. Former name of King County Wastewater Treatment Division (KCWTD)

Multi Family Unit. A building designed to house two or more families living independently of each other.

O&M. Operations and Maintenance.

PCD. City of Bellevue Department of Planning and Community Development.

Points Communities. Incorporated communities west and northwest of Bellevue including Medina, Hunts Point, Yarrow Point, and Clyde Hill.

Peaking-factor. Ratio of peak sanitary flow to the average sanitary flow over a 24 hour period, used in hydraulic modeling.

Pipe Bursting. Trenchless pipe replacement where a new pipe is pulled through an existing pipe. The existing pipe bursts and the new pipe is then connected to the system and made available for service.

PSRC. Puget Sound Regional Council.

Revised Code of Washington (RCW). Document which consists of statutes passed by the state legislature.

Right of Way (ROW). All public streets and property dedicated to public use for streets together with public property reserved for public utilities, transmission lines and extensions, walkways, sidewalks, bikeways or equestrian trails.

Saturation density. Population densities at ultimate buildout used throughout this document. This condition was assumed to occur in the year 2020, except for DNTN where the ultimate buildout condition is more long term.

Septic systems. On site treatment system for domestic sewage, utilized for individual residences not connected to the city's sanitary sewer system, consisting of a septic tank and drainfield.

Sewer Stub. That portion of the side sewer in the right-of-way or easement dedicated to the utility.

Sewerage. A complete system of piping, pumps, basins, tanks, unit processes, and appurtenances for the collection, transporting, treating, and discharging of wastewater. Term is declining in use, generally being replaced by "sewer system" or "wastewater facility".

Side Sewer. A conduit extending from the public sewer main to the connection with a building's plumbing system..

Single Family Unit. A building occupied exclusively by one family, except where a valid accessory dwelling unit registration has been approved.

Slip Lining. Trenchless pipe rehabilitation where a new smaller pipe is inserted into an existing failing pipe. The new pipe is connected to the existing system and made available for service.

Sub-basin. Sub-division of sewer network basin to cover the area connected to a specific reach of modeled trunk sewer generally associated with an area of consistent land use zoning.

Surcharging. Gravity pipe flow condition where the hydraulic gradeline is above the crown of the pipe, causing flow volumes based on pressure differential rather than gravity.

SWMM. Hydraulic modeling software developed and maintained by the United States Environmental Protection Agency.

Trunk. A sewer that receives flow from one or more submains. Also referred to as "main."

Washington Administrative Code (WAC). Document which consists of regulations adopted by the state to carry out the RCW.

Wastewater. Water-carried wastes from residences, businesses, institutions, and industrial establishments, together with such ground and storm waters have entered the system unintentionally through infiltration or inflow.

Wet weather flow. Wastewater flow during or following periods of moderate to heavy rainfall. Inflow may increase the wet weather flow to a rate many times greater than the dry weather flow, and unless provided for in sewerage design, can produce hydraulic overloads resulting in wastewater overflows to streets or water courses.

1.6 Abbreviations

BMP	Best Management Practices
BSMS	Bellevue Sewer Maintenance System (city's planning department sewer data management software)
CB	Community Business
CCTV	Closed Circuit Television Zoning Designations
CCUD	Coal Creek Utility District
cfs	Cubic feet per second
CIP	Capital Investment Program
CIPP	Cured In Place Pipe
DNTN	Downtown
DNTN-O-1	Downtown Office - District 1
DNTN-O-2	Downtown Office - District 2
DNTN-R	Downtown Residential
DNTN-MU	Downtown Multiple Use District
DNTN-OLB	Downtown Office and Limited Business
DNTN-OB	Downtown Old Bellevue
EmpPSF	Employees per square foot
ENR-CCI	<i>Engineering News Record</i> - Construction Cost Index
EPA	United States Environmental Protection Agency
FOG	Fats, oils and grease
GC	General Commercial
GIS	Geographical Information System
GMA	Growth Management Act
gpad	Gallons per acre per day
gpcd	Gallons per capita per day
gpm	Gallons per minute
I/I	Infiltration/Inflow
KCWTD	King County Wastewater Treatment Division
LI	Light Industrial
LID	Local Improvement District
MF-L	Multiple Family - Low
MF-M	Multiple Family - Medium
MF-H	Multiple Family - High
mgd	Million gallons per day
NB	Neighborhood Business
O	Office
OLB	Office and Ltd. Business
OR	Occupancy Rate
O&M	Operation and Maintenance
OSHA	Occupational Safety and Health Administration
PDWF	Peak Dry Weather Flow

PEqPA	Population Equivalent Per Acre
PO	Professional Office
PWWF	Peak Wet Weather Flow
R&R	Renewal and Replacement
RCP	Reinforced concrete pipe
RCW	Revised Code of Washington
ROW	Right of Way
SF-L	Single Family - Low
SF-M	Single Family - Medium
SF-H	Single Family - High
SWMM	Hydraulic modeling software developed and maintained by the United States Environmental Protection Agency
TAZ	Transportation Analysis Zone
TDH	Total Dynamic Head
ULID	Utility Local Improvement District
WAC	Washington Administrative Code
WDOE	Washington State Department of Ecology
WO	Work Orders
WWSP	City of Bellevue Wastewater System Plan

CHAPTER 2

Wastewater Utility Policies

The City's wastewater system is administered according to Bellevue City Code Chapter 24.04, the wastewater utility code. The Code establishes responsibility and legal authority for the City's rates, permit fees and connection fees, charges to outside users, connection charges, developer extensions, interlocal agreements, programs and enforcement.

Bellevue's City Comprehensive Plan, last amended and adopted in February 2009, establishes a broad framework of goals to guide subsequent policy decision making. The Utilities Element of the Comprehensive Plan is consistent with that framework, and highlights in particular the city's goals of protecting the natural environment, pursuing a strong and diverse local economy, and providing needed community services and facilities. To that end, the major goals of the Utilities Element are:

1. To promote and encourage the development and maintenance of all utilities at the appropriate levels of service to accommodate the City of Bellevue's projected growth.
2. To promote and encourage the provision of reliable utility service in a way that balances the public's concern about safety and health impacts of utility infrastructures, consumers' interest in paying no more than a fair and reasonable price for the utility's product, Bellevue's natural environment and the impacts that utility infrastructures may have on it, and the community's desire that utility projects be aesthetically compatible with surrounding land uses.
3. To process permits and approvals for utility facilities in a fair and timely manner and in accord with development regulations which encourage predictability.
4. To encourage new technology that improves utility services and reliability while balancing health and safety, economic, aesthetics, and environmental factors.

Policies specific to all city-managed utilities, including wastewater, water, storm drainage, and solid waste management, are also defined within the Utilities Element, and are not restated here. Those specific policies led to development of wastewater system policies that govern various facets of wastewater utility operations that comprise this chapter. A brief description of the five broad Utility System Plan policy categories is provided below. The first four policy categories are grouped together and identified in this chapter as General Policies. These policies are specific to Bellevue's Wastewater Utility. The Financial Policies category comprises the fifth major policy group. The financial policies apply to all

three Bellevue waterworks utilities (water, wastewater and storm drainage), and are reviewed and revised biannually as part of the City's budget process.

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

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

Water Quality. These policies explain the obligations of King County, the Bellevue Wastewater Utility and the customer regarding water quality issues related to the wastewater system.

Regional. This policy defines Bellevue's role concerning regional, state and federal wastewater policies and requirements that impact Bellevue.

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

2.1 Wastewater Utility Policies Background

These wastewater utility policies were initially developed in 1993 by a committee comprised of department management, staff, and a representative of the former Eastgate Sewer District. The committee investigated current city and industry practice, financial impacts and liability, and utility customer expectations. Other long-standing operational policies and financial policies were reviewed by utility management. A discussion of pertinent policy issues was then included in the 1994 Bellevue Comprehensive Sewer Plan, and each subsequent update.

The general policies have been reviewed and updated by Utilities Department management and the Environmental Services Commission as part of each subsequent wastewater system plan update. The policies in this document (excluding the financial policies) were reviewed by the Environmental Services Commission on October 4, 2012. Financial policies are reviewed, updated and adopted by Council as part of each bi-annual budget. The financial policies were last reviewed by the Environmental Services Commission as part of the 2013-14 budget update, on May 3, 2012 and adopted by City Council on December 3, 2012. This chapter contains the current wastewater utility policies.

2.2 General Policies

2.2.1 Customer Service Policies

2.2.1.1 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, the environment, or the operation of the Wastewater Utility system. The plan will also address issues related to preparation, mitigation and long term system recovery to ensure the orderly and full restoration of the wastewater system after an emergency.

Discussion:

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

The emergency response plan focuses on preparedness for major disasters, such as an earthquake or flood, and on system response and recovery. It is not intended to address minor isolated system interruptions such as those caused by isolated main failures, blockages, and power outages. Standard operating procedures have been established to address these minor interruptions.

The emergency response plan complies with applicable RCW and WAC requirements. There are no King County contractual requirements for an emergency preparedness plan. The plan defines the Utility's role in Bellevue's city-wide Emergency Operations Plan.

Reconstruction of damaged infrastructure should be to current codes and standards, and should be consistent with current Wastewater System 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.

2.2.1.2 Sewer System Ownership and Maintenance

The utility assumes ownership and responsibility for the structural integrity of all sewers, mainlines, and side sewers within public rights-of-way and easements dedicated to the utility, except to the extent that private ownership is otherwise indicated as a matter of record. Private property owners continue to own and be responsible for the construction, maintenance, protection and repair of that portion of the side sewer located on private property and any side sewer appurtenances, such as check valves (Sewer Utility Code 24.04.115). Private property owners also are responsible for any maintenance or repair associated with the misuse of utility-owned side sewers and mains.

Discussion:

The policy is consistent with the common customer perception that they own only that portion of the side sewer on their property, and it clarifies the customer responsibility for maintenance associated with system misuse (i.e. blockages).

The policy is consistent with the city's right-of-way use ordinance, which effectively prohibits privately owned facilities within public rights-of-way. It is also consistent with the franchise agreements the city has for areas within the service area that are outside Bellevue's corporate limits, in unincorporated King County, and the Points communities. The policy helps to assure that any work done in the right-of-way conforms to the standards of the local jurisdictions (for example, all work done within King County road right-of-way must be performed in accordance with the current King County Road Standards).

Initial attempts to clear side sewer blockages remain the property owner's responsibility. The utility will become involved only if cleaning/clearing attempts by the property owner's contractor fail, suggesting that the problem may be located within the utility-owned sewer system. If the required repair is the result of a blockage, damage from vegetation on private property (including easements), damage from property owner-installed vegetation (private landscaping) in the right-of-way, or any other problem associated with private misuse of the line, then the responsible property owner will be liable for damages and for costs associated with repair and maintenance.

For utility-owned pipes, costs for repairs associated with structural integrity, such as cracking or collapse, poor original construction, impacts from construction within the right-of-way, or root intrusion from City-maintained landscaping in the right-of-way are the responsibility of the utility. Costs to repair or maintain utility-owned pipes as a result of private misuse are the responsibility of the pertinent property owner.

Utility ownership of side sewers within rights-of-way increases utility control over the integrity of the collection system. This is beneficial for regional infiltration and inflow

reduction programs, since a significant proportion of infiltration has been shown to occur in side sewers.

2.2.1.3 Service Reliability and Infrastructure Investment

The Utility shall invest resources as necessary to construct, maintain and renew sewer system infrastructure and equipment such that Utility customers are provided consistent, reliable service.

Discussion:

The utility shall provide sufficient maintenance and use appropriate operation practices to maintain or enhance the existing level of wastewater service. Where operation and maintenance procedures are not sufficient or cost effective, capital projects shall be scheduled and funded to replace or rehabilitate wastewater facilities.

The utility recognizes that over the long-term system renewal and replacement rather than increased maintenance response provides:

- More reliable customer service.
- Increased protection of the environment.
- Reduced likelihood of property damage and disruption to the community.

Consequently, the utility is committed to maintaining a strong capital investment plan that stresses continued high quality system performance. An example is the on-going sewer rehabilitation program. The utility attempts to maximize the useful life of facilities and infrastructure by actively monitoring for problems, staying up-to-date on industry studies and research in this area, and by developing criteria for system replacement and renewal.

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

- Emergency power capability is provided at all pump stations.
- To the extent practicable, equipment redundancy is provided (i.e., provide facilities to pump maximum flow rates, even with one pump out of service).

2.2.1.4 Inflow and Infiltration Monitoring and Reduction

The Utility should reduce or eliminate Inflow and Infiltration (I & I) where it is a cost effective means of resolving a capacity problem within the City's wastewater system.

Discussion:

The Wastewater Utility will investigate areas where it suspects that I & I may be contributing to a capacity problem within Bellevue's wastewater system. It will monitor these areas to quantify I & I. Where high I & I is confirmed, the Utility will attempt to identify the sources so that removal or reduction of I & I can be evaluated as a cost effective means of addressing the capacity problem. The Utility will also work in cooperation with regional efforts to quantify and reduce I & I, if cost effective, with the goal of reducing demand on regional transmission and treatment facilities.

In most cases where I & I is a significant problem, the primary contributor is infiltration sources such as ground water entering through leaky pipes and manholes. Infiltration sources are typically very difficult to identify and eliminate. However, inflow sources such as direct connections of storm or surface water drainage systems to the City's wastewater system are generally easy to identify and are strictly prohibited by City Code. Therefore Inflow sources must be eliminated whenever these connections are identified. The owner of a storm or surface water drainage system illegally connected to the City's wastewater system is responsible for the elimination of that connection.

The city's primary concern with I & I is related to the ability of Bellevue's wastewater system to convey those flows; a secondary concern is wasted energy and resources to pump the flows prior to discharge. If sufficient system capacity is available, the cost of I & I reduction is generally difficult to justify at the local level. The Utility also recognizes that regional transmission and treatment facilities as well as energy costs are impacted by local system I & I flows. The Utility will therefore cooperate with regional efforts to determine if I & I reduction is a cost effective means of reducing the increasing demand on regional facilities.

2.2.2 Service Area Policies

2.2.2.1 Redevelopment Thresholds for Payment of Connection Charges

The Utility shall collect allocated costs for system improvements from benefited properties if such property undergoes a substantial remodel or more significant improvement, or if an improvement creates a significant impact to downstream system capacity. For this policy, properties which undergo cumulative improvements from the time the charge is established which meet either condition are included. Authority to require payment, even in the case where no sewer permit or developer extension is required, is included in the sewer code.

Discussion:

The costs of system improvements constructed or planned by the city are allocated to benefited properties proportionately, to recoup all engineering and construction costs. "Fair share" fees are determined based on area and permitted density of development (zoning), since these parameters determine the sewer capacity that could be required by any property. The assessment is therefore based on the **capacity available** to a property, rather than the **actual capacity used** or required by development on the property.

Minor tenant improvements generally do not require substantial additional wastewater capacity, and so do not trigger payment of the fees. However, development or substantial remodel at a site implies some use of the additional wastewater capacity available to a site, and shall require full payment. Collection of a partial fee based on the proportion of available capacity actually used generally would not be appropriate since the utility would likely never recoup full cost, and the balance would be supported by the general rate base.

Land Use Code (LUC) 20.50.044 defines "Remodeling, Substantial" as construction which increases the floor area of an existing building or structure by at least 20 percent. It is a threshold that triggers many significant land use, street, and other utility requirements. Small improvements taken together can create a significant impact on capacity, hence the cumulative recommendation of the policy.

Properties are liable for full payment of all connection fees, regardless of whether they were initially developed, under-developed, or subsequently rezoned, since the charges are based on the sewer capacity that is or will be available to the property. Fees for any specific system improvement will only be collected once, regardless of the number of times the property redevelops. Direct facility charges are separate from, and in addition to capital recovery charges, latecomer agreements and other charges defined in the sewer code.

2.2.2.2 Septic Systems

New Septic Systems - In addition to King County requirements, the Utility should require connection to the City wastewater system where practical. Where it is not practical, septic systems should be allowed provided there are no negative health or environmental impacts and if the owner agrees to connect to the City system when it becomes available.

Existing Septic Systems - Existing septic systems should be allowed to remain in service, provided that there are no health or environmental impacts.

Discussion:

The King County Health Department regulates the use of septic systems in King County, including Bellevue. Minimum design standards for septic systems are established by the state. The county may impose more stringent requirements at its discretion. The county requires new development to connect to public sewers if the development is within the

urban growth area. The county also requires existing development that is within 200 feet of a public sewer to connect when repair or modification to the on-site septic system becomes necessary.

The county interest in regulating systems is to protect human health. In addition to health risks, failing septic systems can have an adverse effect on ground water quality in the form of phosphorus and nitrogen build-up.

Both state and county regulations imply the preference of a municipally owned collection system over privately owned septic systems in urban growth areas. However, the regulations make no attempt, other than the 200-foot requirement, to establish economic parity between the two options. Further, the regulations do not consider the likelihood of a municipally-owned collection system being installed at some future date. This policy addresses these issues and allows homeowners and the city to work cooperatively to determine which system can best serve the homeowner and/or the surrounding neighborhood, as well as the timing of proposed system extensions.

The county regulates existing systems by responding to known or reported cases of improperly functioning or failing systems. Generally these systems are only identified by odor or visual evidence of surface sewage. Failing systems must connect to a collection system when practical, install a new system or rehabilitate the existing system to county standards. The two most likely causes of failing septic systems are improper use and failure to pump out sludge build-up at regular intervals. Proper use and regular pumping of septic systems are the most cost effective ways of protecting the ground water resource. This maintenance also prevents costly repairs or replacement of the septic systems by homeowners.

2.2.2.3 Service Extension

Wastewater system service extension by Bellevue will be considered, provided the area to be served is within the City's existing wastewater service area and the extension of service is consistent with adopted annexation policies. Service extension by Bellevue 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 wastewater service area coincides with the sphere of influence boundary.

This policy is consistent with the Utilities Element of the City Comprehensive Plan, which states that service should be extended provided land use considerations are met and all costs are recovered. (Policy UT-7 and UT-8).

Property owners are responsible for extending wastewater 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. Wastewater system extensions must be constructed to current city standards.

2.2.2.4 Bellevue Initiated Assumption of Sewer Districts

Bellevue will seek to assume the operation of a sewer 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.

2.2.3 Water Quality Policies

2.2.3.1 Effluent Pretreatment Requirements

All non-domestic utility customers should be required to implement Best Management Practices (BMPs) to ensure effluent meets established standards.

Discussion:

Requirements for biological, chemical or mechanical pretreatment devices or other on-site system improvements are related to the quality and quantity of the effluent produced rather than some threshold amount of redevelopment occurring on a site. Any proposed tenant or site improvement creates an opportunity for review of potential effluent quality impacts. Where detrimental impacts exist, the utility should impose requirements which will result in effluent quality that meets established local, county, state, and federal standards. The utility recognizes that BMPs mean requiring implementation of the Most Practical Technology; that is, the most appropriate technology for any given circumstance.

Existing customers who are not proposing system improvements are still obliged to practice BMPs. A proactive approach involving education and training in the use of biotechnology or other technologies should be used wherever such technology is likely to preclude damage to Bellevue's collection and pumping systems. Enforcement actions by the utility should be

authorized by the city sewer code and taken whenever a violation is discovered if compliance is not otherwise obtained.

To date the program has focused on non-domestic users, since KCWTD standards don't apply to residential customers. Generally, for fats oils and grease (FOG) problems, this has meant food handling and automotive types of businesses. If there is potential for a significant benefit to be realized by implementing pretreatment in high density residential locations, a pilot program could be developed to measure the effectiveness of such measures.

2.2.3.2 Industrial Discharge Monitoring

Bellevue will continue to rely on King County to regulate and enforce industrial discharges. Bellevue's focus will be to protect the local system components. Consequently, Bellevue should retain Code authority as necessary to protect the integrity of the local sewer system.

Discussion:

The City is responsible for the construction, maintenance and operation of all local sewerage facilities and for all costs incident to the collection and delivery of sewage to King County. Bellevue is obligated by contract with King County to deliver all sewage and industrial waste collected by the City, and King County is obligated to accept the sewage delivered for treatment and disposal subject to such reasonable rules and regulations as may be adopted by the King County Council. Those rules are contained in King County Code Title 28. Because King County is the permitted discharger of treated wastewater into state and federal waters, it is the only agency authorized to enforce federal and state standards for industrial users (all non-domestic). Ordinance 11034 specifically excludes participant local agencies who collect domestic and industrial waste and convey such waste to King County, from the discharge requirements, thus limiting the City's liability for discharge in violation of regulations.

As owner of the collection system which delivers waste to King County, Bellevue should actively monitor the impact of regulated sewage on the local system and should be authorized to take enforcement action when necessary. Program activities currently include continuing the polar/non-polar FOG monitoring program, reviewing summary reports of King County monitored discharge, and periodically inspecting sewer mains which receive industrial effluent.

Bellevue should continue to rely on King County as principal enforcer of state and federal standards. King County is made aware of any suspected discharge violations. Where violations have occurred that are detrimental to the local system, Bellevue notifies King County to take appropriate enforcement action. Bellevue should take any necessary steps to protect the integrity of the local system and must have the code authority to do so.

2.2.4 Regional Policy

The Utilities Department shall seek to:

- **Accomplish the City's environmental goals to promote a healthy environment, public safety and a strong economy, essential to maintaining the city's and region's quality of life;**
- **Ensure reasonable and prudent fiscal policies on behalf of ratepayers;**
- **Ensure regional, state and federal requirements are fiscally prudent and achievable; and**
- **Maintain local control and flexibility in policy/program implementation.**

The Utilities Department's role is to develop proposed guiding principles/interests for Council approval. Pursuant to Council direction, the Utilities Department role in monitoring, influencing, developing and implementing regional, state, and federal wastewater requirements, policies and programs may include:

- **Influencing legislation through lobbying and written/verbal testimony;**
- **Participating in rule-making;**
- **Reviewing technical documents;**
- **Serving on regional forums and coalitions, advisory committees and work groups; and**
- **Providing technical and staff support for Council members serving on regional, state, or federal wastewater committees.**

Discussion:

The Utilities Department has participated in the development and implementation of regional, state, and federal wastewater requirements, policies and programs for a number of reasons:

- The City has a direct interest in helping shape regional, state and federal wastewater mandates because they affect utility costs, can result in rigid programs that preclude more creative or effective local ones, or can result in requirements that are impossible to meet.
- The City has been looked to as a significant stakeholder with regard to the updating and revision of regional and state wastewater requirements and therefore has had an opportunity to serve as a technical resource and participant in shaping requirements, policy and programs to benefit the City.
- The City benefits from learning about the experiences and technical expertise of others.

The Utilities Department's role in developing regional, state, and federal requirements, policies and programs varies from influencing legislation, rules, and policy to sharing technical information and participating in technical peer review groups, advisory panels, and joint studies. Through its involvement, the Utilities Department seeks to achieve the City's goals while keeping down costs to utility rate payers and maintaining local control and flexibility.

2.2.5 Financial Policies

Combined Waterworks Utility Financial Policies are provided on the following pages, as adopted by Bellevue City Council on December 3, 2012 (Ordinance No. 6086).

CHAPTER 3

System Planning Considerations

3.1 Introduction

Information relevant to wastewater planning includes service area boundaries, density of existing developments, agreements with neighboring sewer districts, and expectations for future development. This chapter describes system planning considerations as they relate to identifying sewer infrastructure needs for the City of Bellevue.

The City's Comprehensive Plan complies with the requirements of the Growth Management Act (GMA). This Wastewater System Plan (a General Sewer Plan per WAC 173-240-050) allows for wastewater system growth consistent with the City's Comprehensive Plan, and therefore the GMA.

3.2 Geographical Description

Bellevue's wastewater system is bounded on the north by Redmond and Kirkland, by Lake Washington to the west, by Lake Sammamish to the East, and by Coal Creek Utility District and Issaquah to the south. The service area includes the entire City of Bellevue, the Cities of Clyde Hill and Medina, the Towns of Hunts Point and Yarrow Point, and small adjacent portions of the City of Issaquah (South Cove area) and unincorporated King County.

In most areas, Bellevue is developed and not expected to experience significant new development on vacant land. Some limited vacant and/or undeveloped land exists at the base of Cougar Mountain in southeastern Bellevue, with some other vacant parcels distributed throughout the City. However, there are areas in Bellevue with potential for redevelopment. The Downtown district (DNTN) was rezoned in 1981 which significantly increased allowable population and employment densities. The Bel-Red Corridor was rezoned in 2009 to allow higher density residential and commercial development. There are also smaller scale zoning changes which periodically occur and can effect wastewater planning.

The Eastgate/I-90 Corridor and Wilburton areas are two other areas with significant redevelopment potential and possible rezoning. Should rezones occur, there would likely be development potential in these areas as well.

Significant sections of the City currently use septic systems. These areas include portions of the Bridle Trails neighborhood in northern Bellevue, areas near Cougar Mountain (southeastern Bellevue), and the Coal Creek area.

The ultimate collection system will therefore consist primarily of the existing system, plus any extensions to currently vacant land or areas served by septic systems in Bridle Trails, near Coal Creek, and on or near Cougar Mountain.

3.2.1 Septic Systems

Septic systems within the service area are under the purview of King County Public Health Department. However, Bellevue Utilities attempts to monitor the location of septic systems in order to understand the potential future wastewater service extension needs.

Figure 3-1 shows an approximation of septic sites. The locations of septic sites were estimated by mapping the parcels that house water customers but do not have a wastewater billing account, resulting in a total of approximately 1,500 sites. Estimated vacant parcels are also shown, to identify other parcels that may require wastewater service in the future.

The City has not performed any recent studies to determine the effect of septic areas on potential surface or ground water quality in Bellevue. If an area is believed to have a failing septic site, Bellevue investigates to determine if there is an illicit discharge to surface waters. If so repairs or maintenance are required by the septic system's owner. Typically one or two systems are investigated each year.

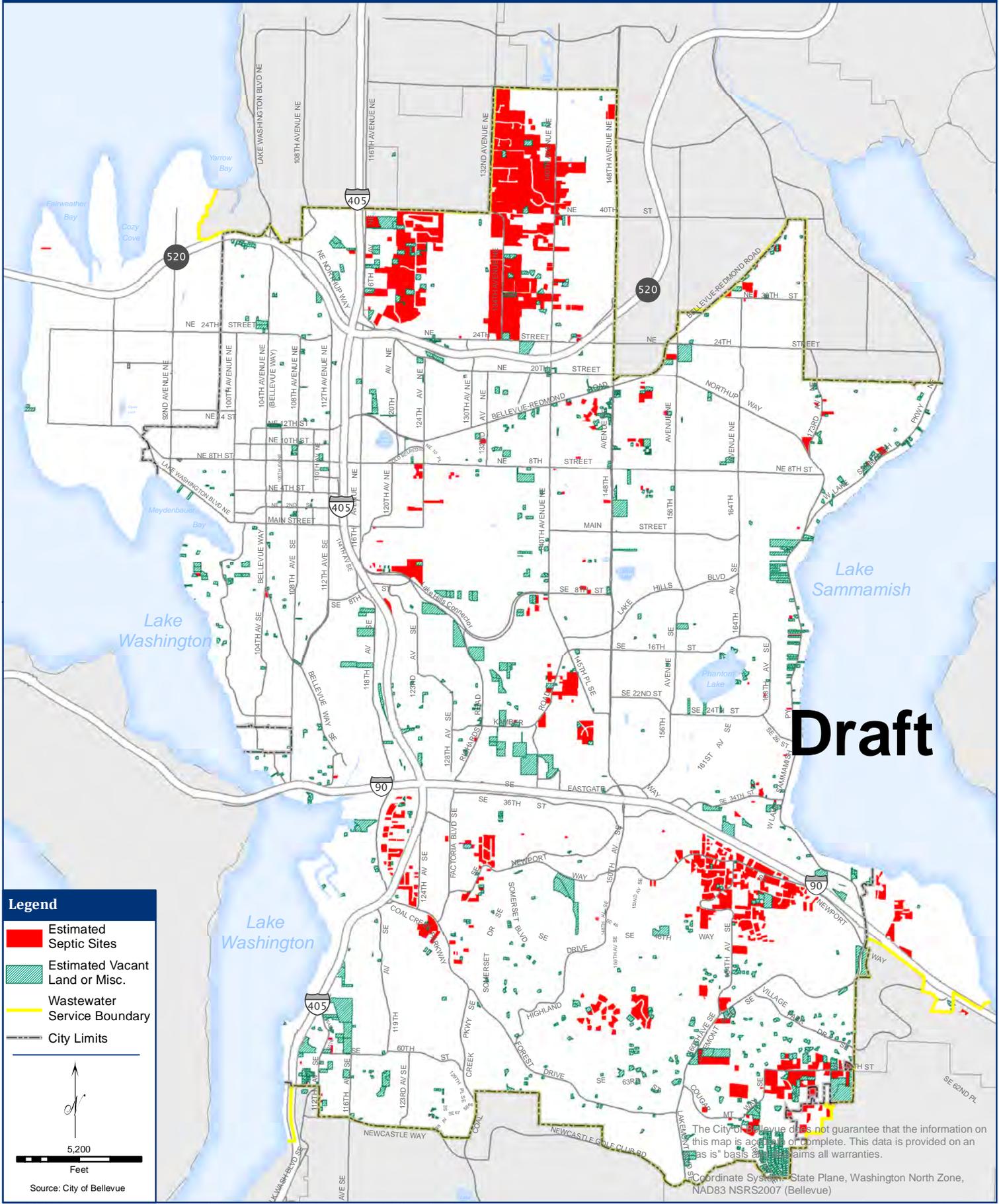
Bellevue Ordinance No. 4232, adopted February 22, 1991, prohibits any new buildings from connecting to septic systems except by variance. Since that time, only 16 variances have been approved to allow septic systems. Variance applications require a King County approved septic system design; a map identifying any potable water sources, surface water, and known ground water on the site; an appraisal of the fair market value of the property; and a temporary service agreement requiring connection to sanitary sewer when service becomes available. The Utilities Department Director or her designee approves or denies variance applications. An appeals process with a Hearing Examiner is available.

The exception to Bellevue's septic system policies is the Bridle Trails neighborhood, which has a wastewater policy (S-BT-33) specific to that geographic subarea that allows but does not require connection to or extension of the sanitary sewer until otherwise necessary for public health reasons. This neighborhood is located north of NE 24th Street and east of 116th Avenue NE, near the border with Kirkland and is distinguished on figure 3-1 by its high density of septic systems.

The wastewater Capital Investment Program (CIP) allocates funds annually to extend sewer service to areas where septic systems are failing or new service is needed. The cost of system

Non-Sewered Parcels

Figure 3-1



Draft

Legend

- Estimated Septic Sites
- Estimated Vacant Land or Misc.
- Wastewater Service Boundary
- City Limits

Scale: 5,200 Feet

Source: City of Bellevue

The City of Bellevue does not guarantee that the information on this map is accurate or complete. This data is provided on an "as is" basis and we disclaim all warranties.

Coordinate System: State Plane, Washington North Zone, NAD83 NSRS2007 (Bellevue)

extension is repaid by benefited properties through proportionate connection charges. The system capacity analysis of each sewer basin assumes eventual connection of all septic and currently unsewered properties to the sewer system. Specific locations of sewer extensions will be determined during the design phase of each project.

The Utility performs education as needed to encourage proper management of existing septic systems. The focus is on educating septic system owners on appropriate care and maintenance to maximize the performance and life of existing drain fields. The city participates in County workshops on this subject as they arise. Owners of septic systems within Bellevue are notified of the workshops by mail.

3.2.2 Topography and Streams

The City of Bellevue is part of the larger Puget Sound drainage basin. Located in the Washington State Cedar/Sammamish Water Resource Inventory Area, stormwater originating in Bellevue either drains to Lake Sammamish east of the city or Lake Washington to the west. Lake Sammamish itself is a tributary to Lake Washington via the Sammamish River. Lake Washington drains to the Puget Sound via the Lake Washington Ship Canal (Ship Canal) at Montlake, then to Lake Union, and eventually through the Hiram M. Chittenden Locks (Ballard Locks) in Seattle to the Puget Sound.

The storm and surface water system in Bellevue is totally separated from the sanitary sewer system. The storm and surface water system consists of a series of open streams, a network of pipes, storage facilities, lakes, ponds, wetlands, collection, and treatment facilities all in a mix of public and private ownership. As described in the City's original Drainage Master Plan (KCM-WRE/YTO 1976), the mosaic of public and private drainage system components work together to perform the system's critical functions of stormwater conveyance, flood protection, and environmental protection.

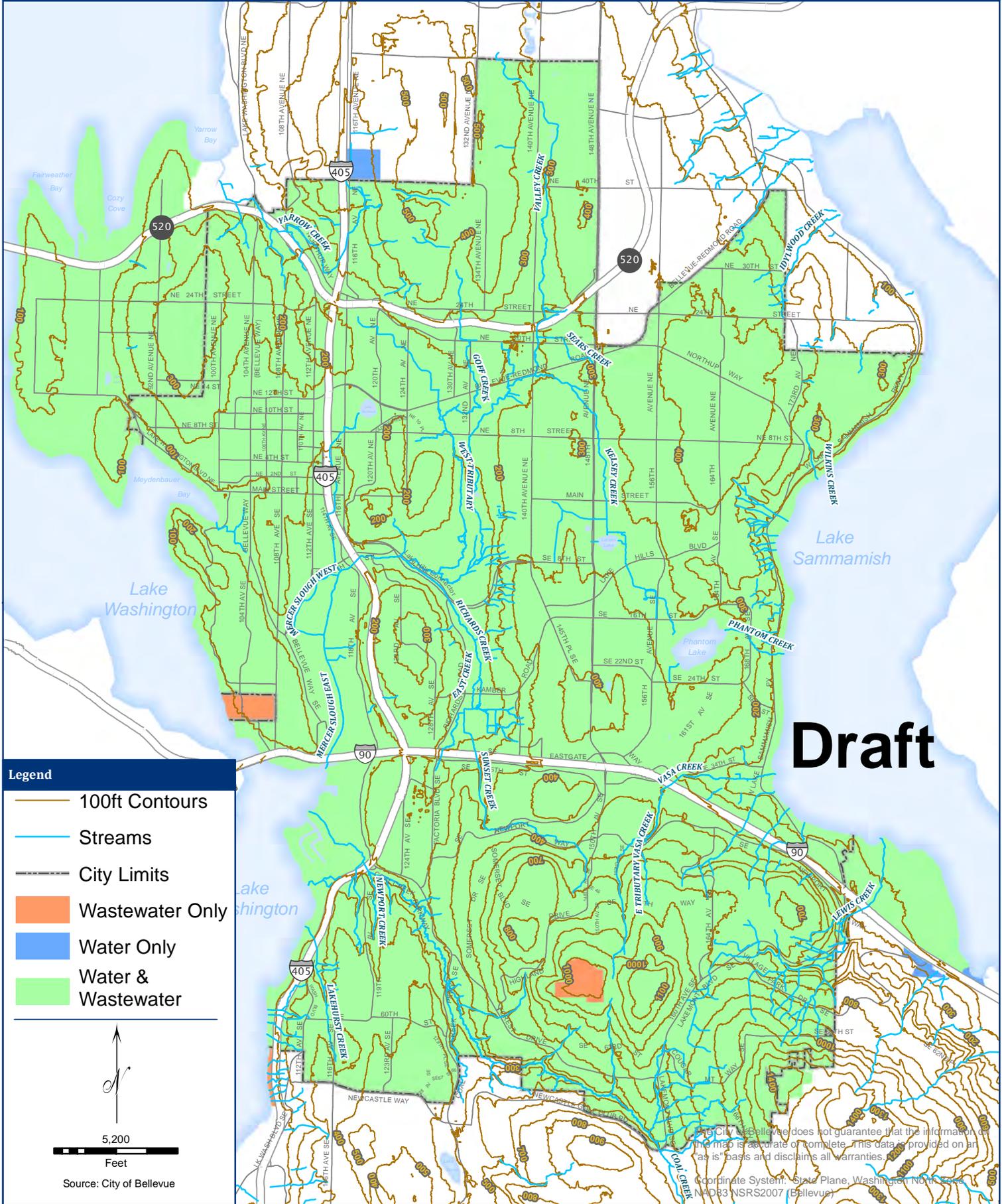


Historic logging in western Washington created long-term impacts to streams and watersheds.

Bellevue's storm and surface water system is a result of the topography, current and historic land uses, regulations, and geology of the area. The city covers approximately 32 square miles. There are about 82 miles of streams within the Bellevue city limits alone (not including neighboring cities in Bellevue's wastewater service area); and 3 small lakes (Larsen Lake, Lake Bellevue, and Phantom Lake). Figure 3-2 shows the topography and open channel stream system in Bellevue's wastewater service area.

City of Bellevue Topography and Streams

Figure 3-2



Draft

Legend

-  100ft Contours
-  Streams
-  City Limits
-  Wastewater Only
-  Water Only
-  Water & Wastewater



5,200
Feet

Source: City of Bellevue

The City of Bellevue does not guarantee that the information on this map is accurate or complete. This data is provided on an "as is" basis and disclaims all warranties.

Coordinate System: State Plane, Washington North Zone
NAD83 NSRS2007 (Bellevue)

3.2.3 Geology and Soils

The geology of the study area is an important factor to be considered in the development of a comprehensive wastewater plan. The soils and geologic formations encountered may affect the selection of pipeline routes, the design, and the methods of construction. These considerations directly influence project costs.

The Puget Sound region's geology and soils are derived from periods of glaciation that have occurred over the past thousands of years, the most recent being the Vashon Ice Age. The topography of the study area is typical of the central Puget Sound region, characterized by the moderately rolling terrain. The Frasier Glacier's advance and retreat defined the basic land forms and deposited the area's basic soils. As the glacier advanced, new hills and valleys were carved out of the previous landscape. The glaciers carried with them material that they removed. As the glaciers moved forward and then receded, these new materials were deposited as glacial till and outwash. Subsequent weathering, organic deposition, and stream action produced the soils that now overlie the older glacial soils.

The area north of Interstate 90 (I-90) is generally composed of soils of the Alderwood association. These soils are moderately well drained gravelly, sandy loams that range from 24 to 40 inches deep. Beneath the topsoil is consolidated glacial till. The area south of I-90 is generally soil of the Beausite-Alderwood association. This association is composed of about 55 percent Beausite soils and 30 percent Alderwood soils. Beausite soils are gravelly sandy loams that have sandstone at a depth of 25 to 40 inches.

The Alderwood association soils are generally suitable for development and sewer construction. They tend to have a seasonally high water table, which influences pipe material selection to reduce infiltration. Although Beausite-Alderwood association soils are suitable for development and sewer construction, potential sewer routes may have to be investigated for the presence of bedrock.

Several areas of the study area, mainly near Mercer Slough and around Larsen and Phantom Lakes, are classified as Seattle association. This soil is mucky peat and provides no structural support for pipelines. Mercer Slough is the largest peat deposit in King County, covering more than 500 acres. Any sewers constructed in this type of soil would need to be placed on piling, and may require additional measures to counteract buoyant forces.

Coal mining in King County dates from the 1860's. The Coal Creek and Newcastle areas were actively mined for coal as recently as 1963. Currently, abandoned coal mines exist throughout the area. Many but not all of the mine locations and mine conditions are publicly recorded or documented. In areas where mining has occurred there is potential for trough subsidence, which can lead to property damage. In addition, where the mine workings were relatively close to the surface, there is also a risk of sink hole development. Bellevue has land use regulations designed to mitigate potential safety hazards on property in affected areas.

3.2.4 Service Area

The Utility's wastewater service area contains approximately 37 square miles of land between Lake Washington and Lake Sammamish. In addition to the City of Bellevue, the service area includes the Cities of Medina and Clyde Hill, the Towns of Yarrow Point and Hunt's Point, the Village of Beaux Arts, a small portion of the City of Issaquah (South Cove area), and two small portions of unincorporated King County. The Utility also serves small portions of Kirkland, Redmond, and Newcastle through interlocal service agreements. City limits and surrounding communities are shown in Figure 3-3.

Except for a few joint-use and KCWTD-owned facilities, Bellevue owns, operates, and maintains the entire public wastewater system within the service area, both inside and outside the Bellevue city limits. The southwestern section of Bellevue's city limits, which used to be serviced by the Coal Creek Utility District, was assumed by the City in 2003.

Figure 1 of the Executive Summary shows the significant changes in the service area since the 2002 Comprehensive Wastewater Plan. With the adoption of this 2013 Plan update, the sewer service area will include these changes, and the wastewater service area boundaries will be as shown in Figure 3-3. Changes include:

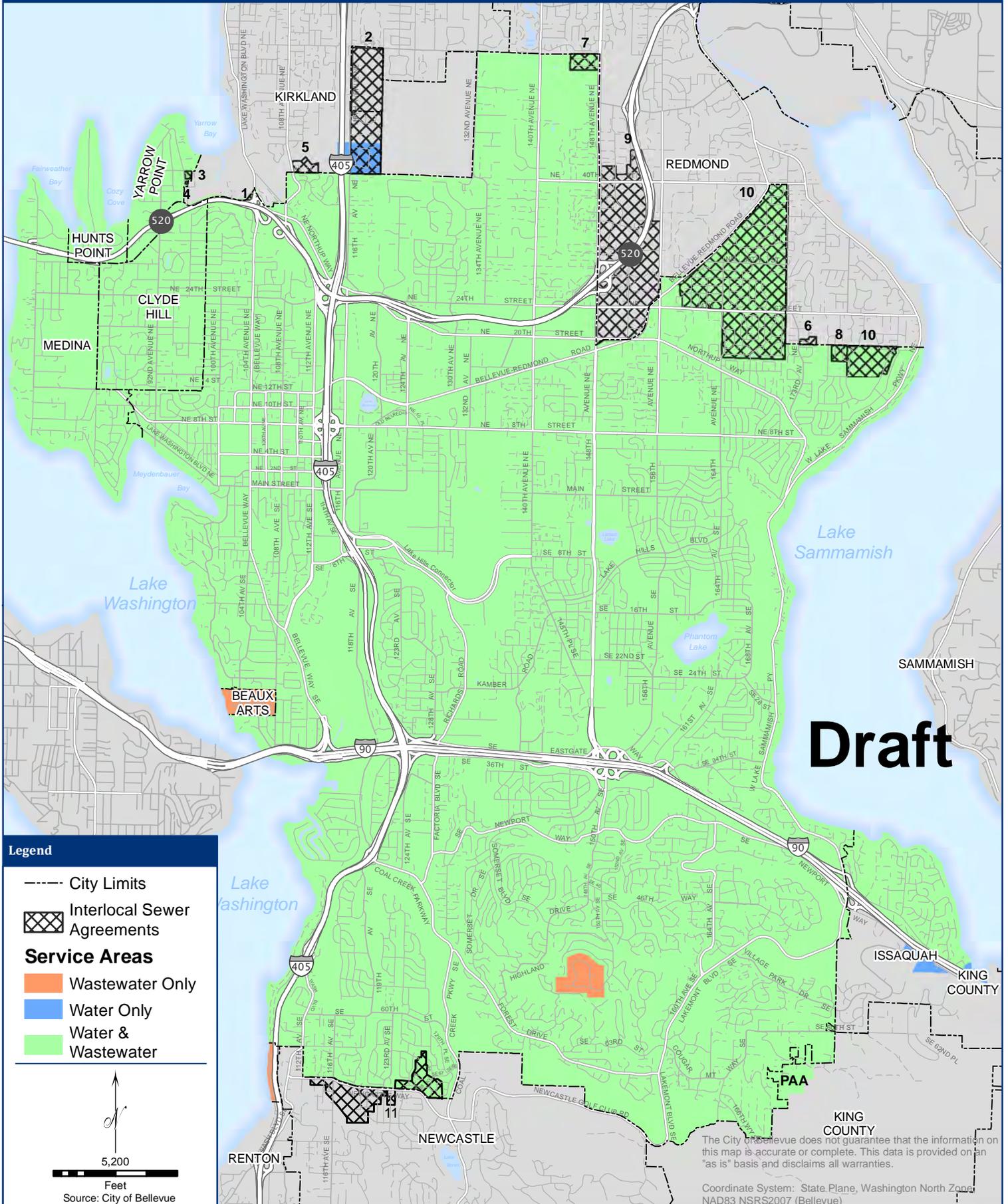
- Areas of the Coal Creek Utility District within the City of Bellevue were assumed by Bellevue Utilities in 2003. These areas have been added to the wastewater service area.
- The southern extent of the service area was expanded in the Newcastle area to match Bellevue City Limits in Coal Creek Park.
- A southeastern portion of the service area on Cougar Mountain was removed, to stay within the urban growth boundary, consistent with the Growth Management Act.
- Two small, currently unsewered areas were incorporated in the City of Bellevue in 2012. These are the Hilltop Community (along SE 55th St) and a nearby area along 153rd Ave SE in the southern portion of Bellevue, both of which are served by septic systems. Due to their isolated location, at the top of a hill, surrounded by Bellevue's wastewater service area, they cannot add sanitary sewer service without connecting to Bellevue's wastewater system.

Bellevue's service area includes the South Cove neighborhood in the City of Issaquah. This area encompasses less than 400 acres at the southern end of Lake Sammamish, west of Lake Sammamish State Park and north of I-90. Other areas of Issaquah area served by the City of Issaquah.

There are two areas of unincorporated King County within the City's wastewater service area. The first area includes customers on Ripley Lane, along the Lake Washington shore at the southwest corner of the service area. The second area is on Cougar Mountain, outside Bellevue city limits, but within the urban growth boundary.

Sewer Service Area

Figure 3-3



Draft

Legend

- City Limits
- ▨ Interlocal Sewer Agreements
- Service Areas**
- Wastewater Only
- Water Only
- Water & Wastewater

5,200
Feet
Source: City of Bellevue

The City of Bellevue does not guarantee that the information on this map is accurate or complete. This data is provided on an "as is" basis and disclaims all warranties.

Coordinate System: State Plane, Washington North Zone NAD83 NSRS2007 (Bellevue)

When an unsewered part of the Utility's service area requests an extension of wastewater system, there are several factors which will impact the extension. The location of nearby features such as streams or lakes, and existing streets are all taken into account during planning. The City considers geographic data for these features, as well as the local topography and water supply and distribution facilities, to determine how best to provide service.

3.3 Neighboring Jurisdictions

The Utility's wastewater service area is adjacent to several agencies which provide wastewater service. These include the Cities of Kirkland and Redmond to the north, and Coal Creek Utility District, the City of Renton, and the City of Issaquah to the south. In some instances interlocal agreements have been made with these agencies to share facilities to better serve customers.

Franchise agreements are entered for areas where the City of Bellevue provides wastewater service outside Bellevue city limits but within the Utility's service area. The City has such agreements with the towns of Clyde Hill, Hunt's Point, Yarrow Point, Beaux Arts Village, and the City of Medina. A similar agreement with King County (November 1995) covers several areas in the southeast portion of the service area. That agreement expires in 2020.

Neighboring jurisdictions, and areas covered under interlocal agreements, are illustrated on Figure 3-3. A brief discussion of each interlocal agreement is included below. The agreements are included in appendix B.

3.3.1 Agreements with Kirkland

- #1 Kirkland and Bellevue jointly use the sanitary sewer main within the Points Drive right-of-way and beneath SR520. The understanding between the cities was signed May 24, 1989. Kirkland owns and maintains the portion of the line north of SR 520 and Bellevue owns and maintains the portion of the line under and south of SR 520.
- #2 An interlocal agreement was signed September 19, 1984, for Bellevue to accept sewage flow from approximately 220 acres of Kirkland west of I-405 and east of Bridle Trails State Park between NE 60th Street and NE 40th Street (Bellevue corporate limit). Kirkland owns the sanitary sewer facilities within this area for all purposes, including customer service charges and maintenance.
- #3 & #4 Bellevue signed temporary agreements on July 28, 1980, to serve two properties in Kirkland located on the corporate limit line between Kirkland and Yarrow Point (served by Bellevue). The agreements will remain in force until Kirkland extends facilities to the area. As long as the affected customers are connected to the city's wastewater system, they are treated as Bellevue customers for all purposes,

including the billing and collection of service charges. Both properties are connected directly to the existing Bellevue sewer line. One property is approximately two acres located south of NE 40th Street and east of 95th Avenue NE. The other property is an area of approximately one quarter-acre located east of 95th Avenue NE about 130 feet north of NE 38th Street.

- #5 Thirteen acres in the Watershed Park area of Kirkland, just east of 108th Avenue NE adjacent to the city, drain to the Bellevue sewer system under an interlocal agreement signed January 28, 1979. The sanitary sewer facilities in this area are the property of the City of Kirkland for all purposes, including customer service charges and maintenance.

3.3.2 **Agreements with Redmond**

- #6 On June 6, 1990, the city signed a letter of understanding and approval to accept sewage flows from approximately four and one-half acres in Redmond. This area is located at NE 20th Street, east of 173rd Avenue NE. The sanitary sewer facilities are the property of the City of Redmond for all purposes, including customer service charges and maintenance.

- #7 An interlocal agreement was signed April 28, 1986, for Redmond to accept sewage flow from approximately thirteen acres of Bellevue west of 148th Avenue NE and south of NE 60th Street (Bellevue corporate limit). Bellevue owns the sanitary sewer facilities within this area for all purposes, including customer service charges and maintenance.

- #8 The City of Redmond agreed to allow and accept the necessary connections to provide service for approximately ten acres of property located in Bellevue. The property is located between NE 18th Street and NE 20th Street (Bellevue corporate limit). It includes the adjacent lots on both sides of 178th Avenue NE and 179th Avenue NE. Bellevue owns the sanitary sewer facilities within this area for all purposes, including customer service charges and maintenance. The agreement was signed by Bellevue November 15, 1981.

- #9 A joint-use agreement was signed, effective May 13, 1971, for the sanitary sewer trunk on Bellevue-Redmond Road from about 315 feet upstream of Bellevue manhole 25-113 to the KCWTD manhole number RO3-22 at 143rd Avenue NE. This trunk serves about 293 acres of Redmond northeast of Bel-Red Road and 148th Avenue NE and Bellevue's Highland (25) basin. The city owns this joint-use facility and is responsible for operation and maintenance.

- #10 An agreement, dated February 23, 1968, established four joint-use facilities in Redmond which convey sewage flows from Bellevue to the KCWTD Lake Hills

Trunk through Redmond. The Agreement is significant in scope, and should be updated to reflect current operation.

The City of Redmond owns the joint-use facilities named in this agreement, and is responsible for their operation and maintenance. Each city bills the customers within its jurisdiction. The following joint-use lines are covered by this agreement:

- The North area (Ardmore) trunk facility drains Bellevue's Sherwood Forest (28) basin and flows east into Redmond at NE 29th Place on 172nd Avenue NE.
- The Braeburn general facility in Redmond conveys flow from 10th Ave. NE and 184th Ave. NE adjacent to Tam-O-Shanter golf course in basin 33. Flow leaves Bellevue in a northerly direction across NE 20th Street at 182nd Avenue NE and 183rd Avenue NE.
- The Sherwood Elementary trunk line serves Bellevue's Hidden Hills (29) basin. Flow travels east out of Bellevue across 172nd Avenue NE at NE 24th Street.
- The 172nd Avenue NE trunk sewer conveys flow north from the centerline of NE 40th Street out of Bellevue's Woodside (27) basin.

In addition, Redmond customers can be served by existing boundary facilities owned by the city. Redmond will pay a proportionate charge of the cost of the facility providing sewer service. This agreement also provides that future joint-use facilities can be planned, constructed, and connected as appropriate under the terms and provisions of this agreement.

3.3.3 Agreements with Coal Creek Utility District

- #11 The portion of the Coal Creek Utility District (CCUD) within Bellevue city limits was assumed on December 31st, 2003. Both Bellevue and CCUD agreed to accept wastewater flows from the other party in specified areas on the border between Bellevue and CCUD. Any future land use zoning changes which would require additional capacity would be paid for by the party proposing the change.

3.3.4 Agreements with Issaquah

An agreement, dated April 17th, 1990, established a joint-use facility (in Bellevue) to convey sewage flows from the Lakemont Triangle area through Bellevue to the King County Issaquah Interceptor. Issaquah has since annexed the Lakemont Triangle and built facilities to convey Lakemont Triangle flows through Issaquah's system and directly to King County's interceptor. Bellevue no longer receives flows from Issaquah relating to this agreement.

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 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). Bellevue's remaining PAA (Cougar Mountain PAA) corresponds to the City's service area in unincorporated King County on Cougar Mountain, shown on Figure 3-3.

3.4 Regional System and Sewage Treatment

The City has contracted with King County Wastewater Treatment Division (KCWTD) for treatment and disposal of all sewage flows generated within the Utility's wastewater service area through the year 2036. KCWTD operates and maintains the regional sewage collection system, and is responsible for the adequacy of treatment. All of the Utility's wastewater flows eventually discharge to KCWTD regional trunks and interceptors within or adjacent to Bellevue's wastewater service area. Most of Bellevue's sewage leaves the City via the East Side Interceptor, with a portion leaving via the Lake Hills Trunk, and a small portion leaving via the Lake Sammamish Interceptor. Wastewater discharged into the Lake Hills Trunk is eventually treated at King County's Brightwater Treatment plant in Woodinville. All other wastewater from the City is treated at King County's South Treatment plant in Renton. King County facilities to which Bellevue sewers discharge are shown in Figures 1-3 and 5-1.

3.5 Land Use

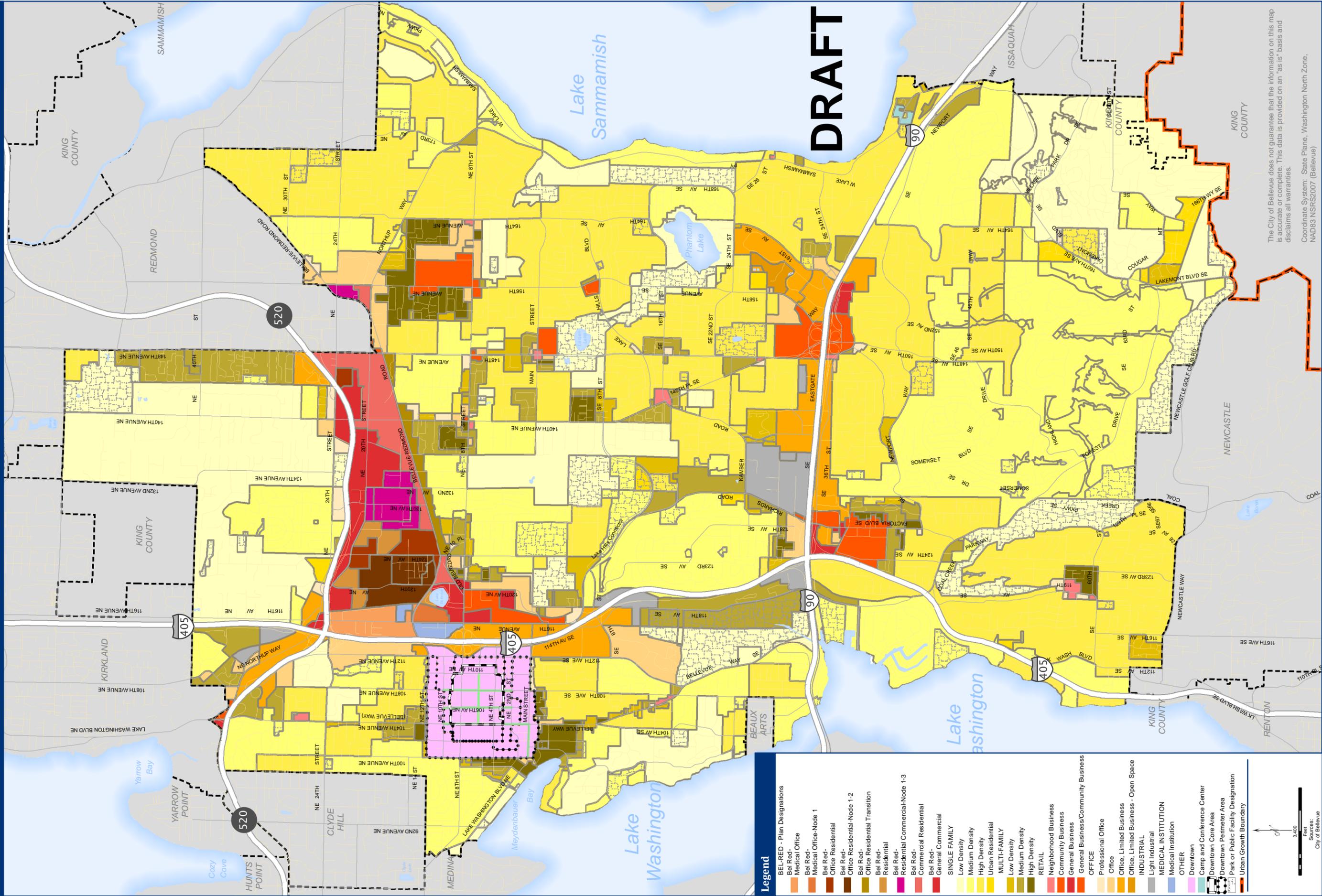
Projected land use for future development in the Utility's service area, as provided by the appropriate local planning authorities, was used in preparation of the Plan. The Plan addresses current land use and future land use direction.

Land use within the City of Bellevue is governed by the City of Bellevue Comprehensive Plan. Figure 3-4 illustrates the City of Bellevue's comprehensive land use plan for future development. The density of development permitted in each land use designation throughout the entire sewer service area is specified in the zoning ordinances of the City and of other municipalities in the service area (not shown) and King County. The Plan assumes that land use in Medina, Clyde Hill, Yarrow Point, and Hunt's Point will continue to be single-family residential.

Figure 3-5 illustrates the City of Bellevue's existing zoning. Over the past several years, all zoning within the Bellevue city limits has been brought into conformance with the City's Comprehensive Land Use Plan, as required by the Growth Management Act. For other municipalities (not shown), including Medina, Clyde Hill, Yarrow Point, and Hunt's Point, zoning is predominantly single-family residential.

Comprehensive Plan for Ultimate Development

Figure 3-4



Legend

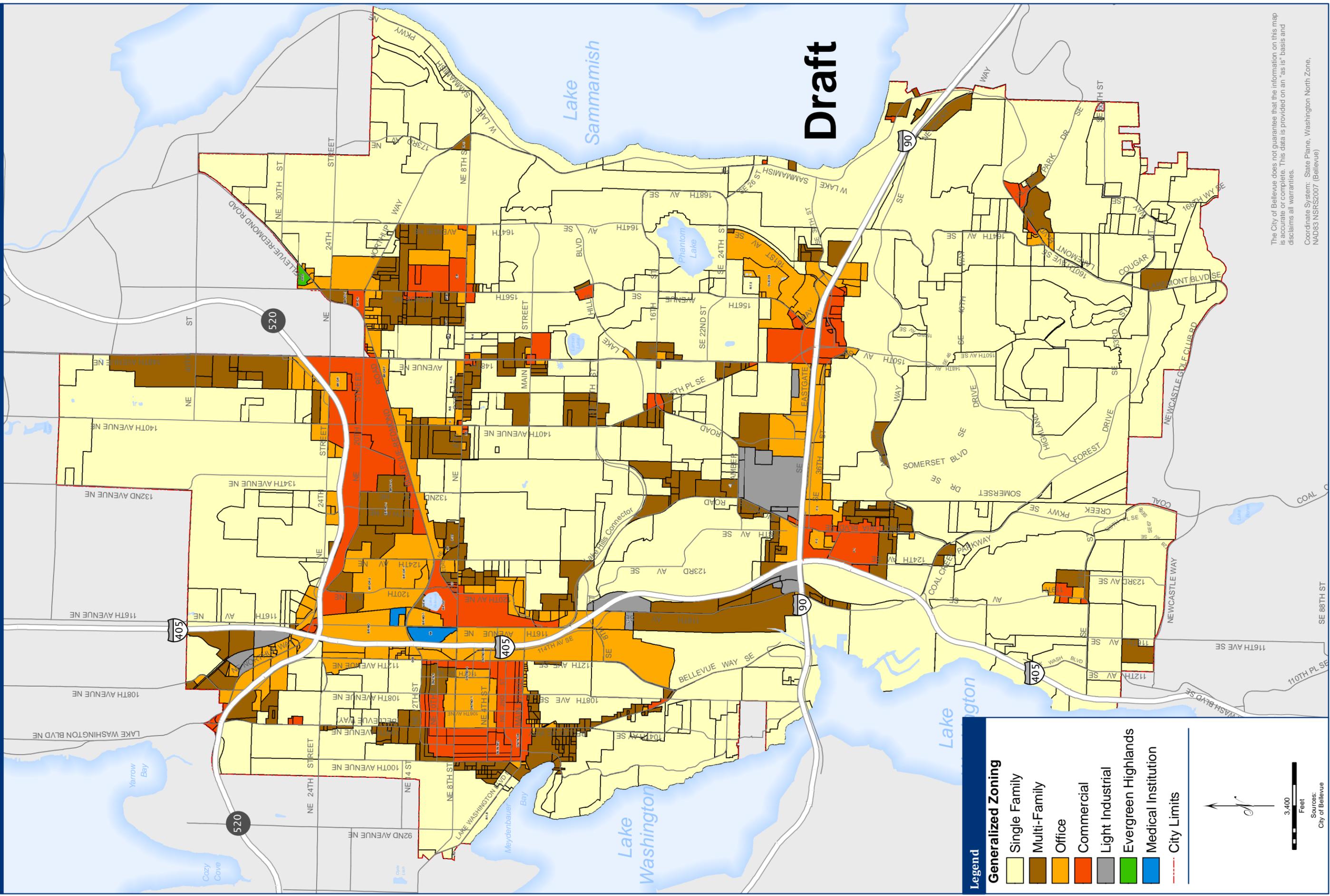
- BEL-RED - Plan Designations
 - Bel Red - Medical Office
 - Bel Red - Medical Office-Node 1
 - Bel Red - Office Residential
 - Bel Red - Office Residential-Node 1-2
 - Bel Red - Office Residential-Transition
 - Bel Red - Residential
 - Bel Red - Residential Commercial-Node 1-3
 - Bel Red - Commercial Residential
 - Bel Red - General Commercial
- SINGLE FAMILY
 - Low Density
 - Medium Density
 - High Density
 - Urban Residential
- MULTI-FAMILY
 - Low Density
 - Medium Density
 - High Density
- RETAIL
 - Neighborhood Business
 - Community Business
 - General Business
 - General Business/Community Business
- OFFICE
 - Professional Office
 - Office
 - Office, Limited Business
 - Office, Limited Business - Open Space
- INDUSTRIAL
 - Light Industrial
- MEDICAL INSTITUTION
 - Medical Institution
- OTHER
 - Downtown
 - Camp and Conference Center
 - Downtown Core Area
 - Downtown Perimeter Area
 - Park or Public Facility Designation
 - Urban Growth Boundary

Scale: 0 to 3,400 Feet
 Sources: City of Bellevue

The City of Bellevue does not guarantee that the information on this map is accurate or complete. This data is provided on an "as is" basis and disclaims all warranties.
 Coordinate System: State Plane, Washington North Zone, NAD83 NRSR2007 (Bellevue)

Current Generalized Zoning

Figure 3-5



Legend

- Generalized Zoning
- Single Family
- Multi-Family
- Office
- Commercial
- Light Industrial
- Evergreen Highlands
- Medical Institution
- City Limits



Sources:
City of Bellevue

The City of Bellevue does not guarantee that the information on this map is accurate or complete. This data is provided on an "as is" basis and disclaims all warranties.
Coordinate System: State Plane, Washington North Zone, NAD83 NRSR2007 (Bellevue)

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. These discrepancies are not significant for the purpose of projecting sewage flows and forecasting system capacity needs. The two unincorporated areas are on Ripley lane in northwest Renton (along the shore of Lake Washington), and on Cougar Mountain. 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.

There has been one major land use zoning change since 2002, which was the result of a plan for redevelopment of the Bel-Red area. This area is in central Bellevue, just north of Bel-Red Road and south of SR-520. The area previously only allowed commercial and industrial uses, but now allows mixed use commercial and residential development. This rezone will result in much higher employment and population densities within the area.

3.6 Water Systems

The City's water utility service area and major drinking water facilities are shown in Figure 3-7.

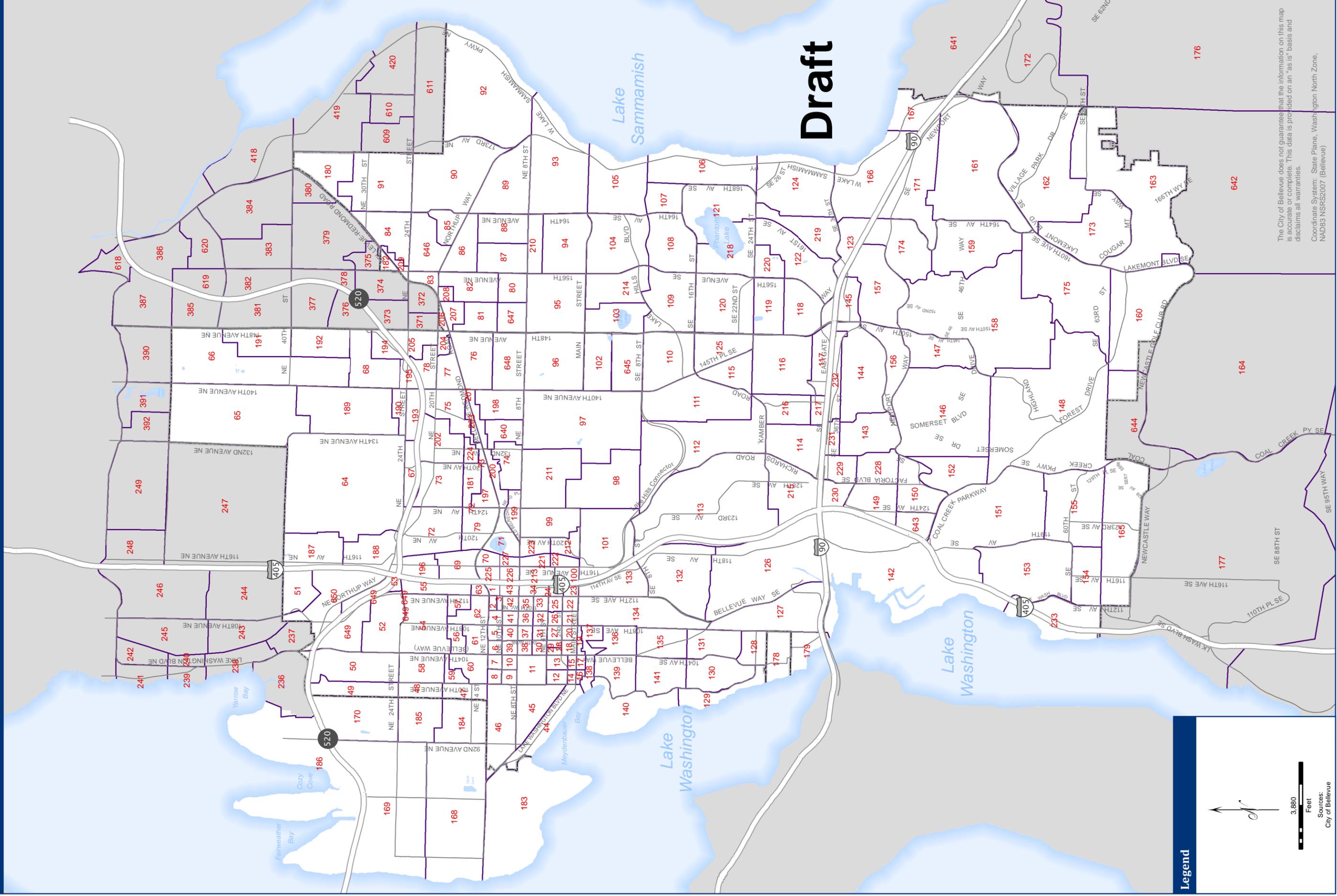
The City of Bellevue has no drinking water treatment plants, and purchases its drinking water from Seattle Public Utilities through Cascade Water Alliance. However, the City currently maintains four of its own wells for emergency water supply.

Three other public water utilities own infrastructure within the City's wastewater service area. Seattle Public Utilities owns regional water transmission pipelines in Bellevue, as well as Eastside Reservoir. King County Water District #117 serves customers in the Hilltop Community in south Bellevue, and operates its own drinking water well, with an emergency intertie to Bellevue's water system. The Town of Beaux Arts Village operates its own drinking water system, consisting of one normal operating well, a second well for emergency supply, and an emergency intertie to Bellevue's water system.

All of the City of Bellevue's drinking water reservoirs are above-grade, however Seattle Public Utilities owns and operates a buried reservoir (Eastside Reservoir) within the City of Bellevue for regional water supply. Eastside Reservoir is located on a hill and meets Washington State Department of Health regulations for grading, stormwater runoff and wastewater separation.

Transportation Analysis Zones

Figure 3-6



Legend

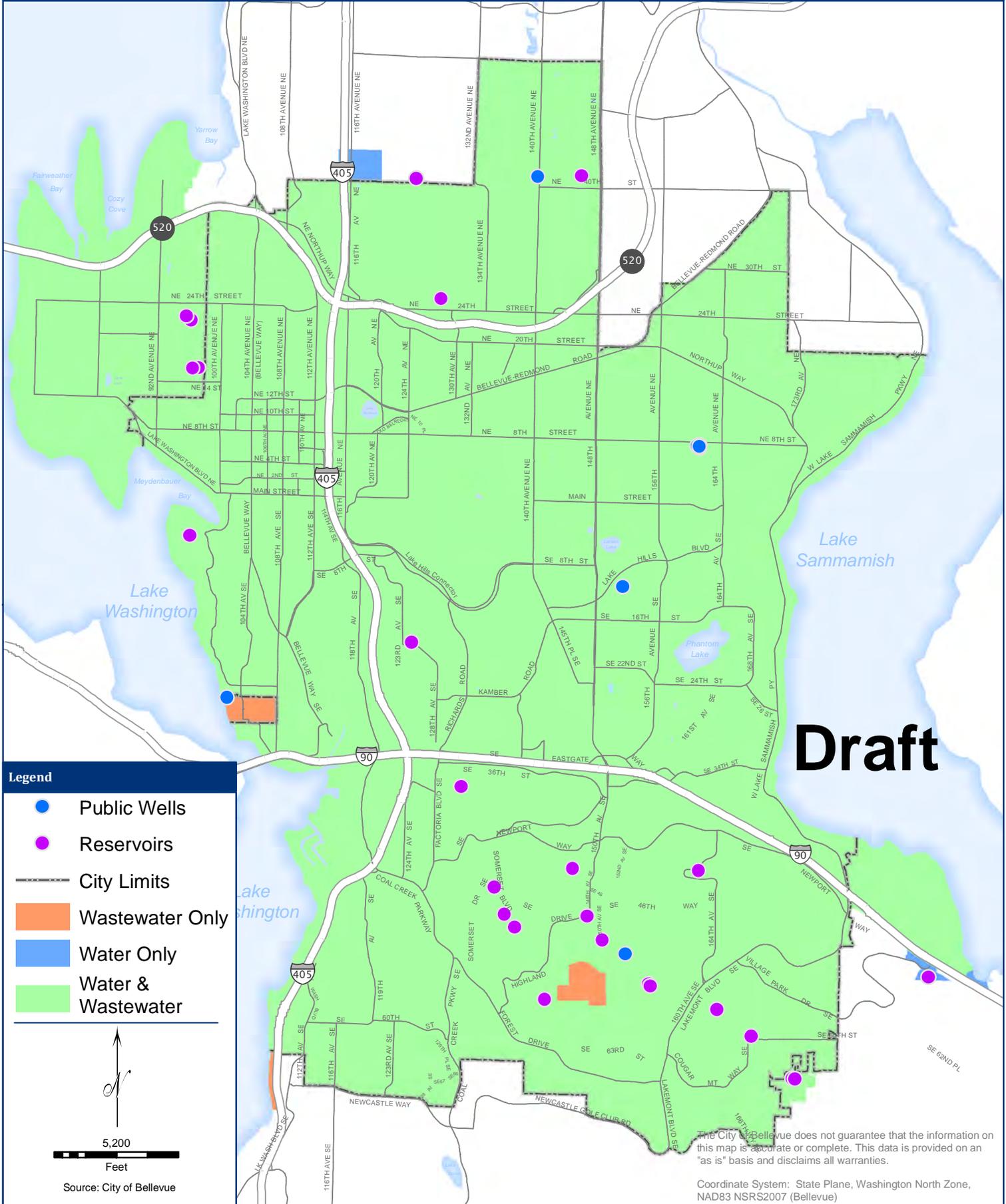


3,880 Feet
Sources:
City of Bellevue

The City of Bellevue does not guarantee that the information on this map is accurate or complete. This data is provided on an "as is" basis and disclaims all warranties.
Coordinate System: State Plane, Washington North Zone, NAD83 NSRS2007 (Bellevue)

Drinking Water Facilities

Figure 3-7



Draft

- Legend**
- Public Wells
 - Reservoirs
 - City Limits
 - Wastewater Only
 - Water Only
 - Water & Wastewater



5,200
Feet

Source: City of Bellevue

The City of Bellevue does not guarantee that the information on this map is accurate or complete. This data is provided on an "as is" basis and disclaims all warranties.

Coordinate System: State Plane, Washington North Zone, NAD83 NSRS2007 (Bellevue)

3.7 Population and Employment Projections

Population and employment projections within the City’s wastewater service area were provided by the City of Bellevue’s Department of Planning and Community Development (PCD). PCD’s projections are based on the Puget Sound Regional Council’s 2006 Small Area Forecast for population, households, and employment. The Puget Sound Regional Council’s (PSRC) 2013 forecast products were not available in time to be incorporated into this Plan, but the new forecast is not anticipated to significantly change sewer planning analyses.

PSRC allocates projected growth in Forecast Analysis Zones (FAZs) throughout the region. Thirteen of PSRC’s FAZs intersect the City’s wastewater service area.

PCD allocates projected growth within each FAZ to the City’s smaller Transportation Analysis Zones (TAZs), based on where capacity and demand exist on a local level. About 243 of PCD’s TAZs intersect the City’s wastewater service area. Each TAZ is a geographic area containing essentially homogenous land use, with roadways as boundaries in most cases. Figure 3-6 illustrates the TAZs within the wastewater service area.

To estimate population within each TAZ, the Planning Department applied household size estimates for single-family and multi-family households in different areas of the City drawn from the U.S. Census Bureau’s 2006-2010 American Community Survey. To known quantities of single- and multi-family units. Building square footage for different types of commercial development was used as the basis for estimating current and future employment within commercial areas. Average household sizes and employees per square foot are summarized in Table 3-1.

Table 3 - 1: Population and Employee Density

Land Use Category	Employee per Ksqft ^a		Persons per Household	Percent Vacancy	
	DNTN ^b	Non-DNTN		DNTN	Non-DNTN
Existing (2012):					
Office	3.7	3.1	—	10.0	10.0
Retail	3.7	2.6	—	10.0	10.0
Industrial	1.6	1.6	—	10.0	10.0
Residential					
Single-Family	—	—	2.7	—	4.0
Multi-Family	—	—	2.0	—	9.0

^aKsqft = one thousand square feet.

^bDNTN = Downtown District

Based on existing zoning PCD estimates that saturation densities will be realized within the City by the year 2030 for all areas except the Downtown District (DNTN and the Bel-Red

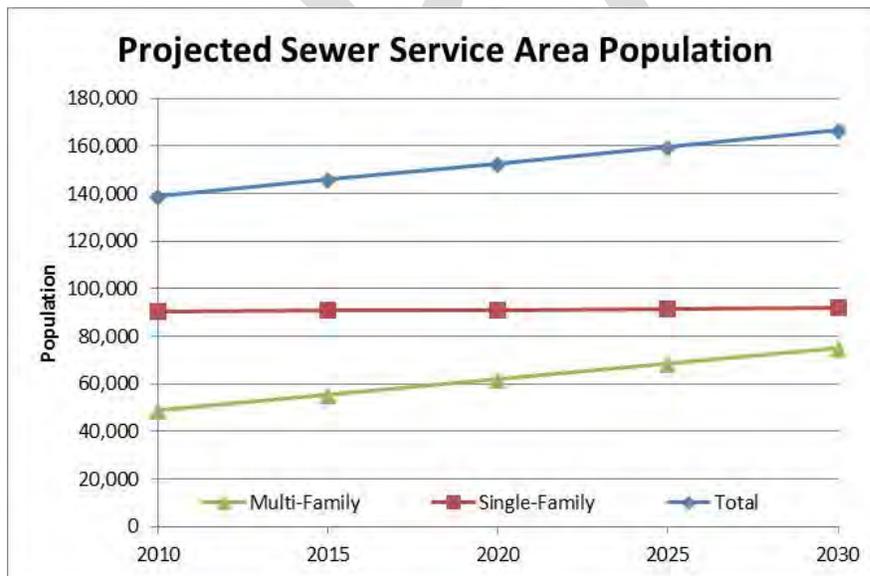
subarea As zoning updates are made consistent with the Eastgate/Factoria subarea additional development capacity may be available in that area as well. Saturation densities for the DNTN are assumed to occur by the year 2050.

The Growth Management Act requires the city to plan for growth and therefore has several impacts on the city's utility system, including requiring an inventory of existing facilities and determining their capacity to accommodate growth. All of Bellevue's service area and the area within Bellevue's sphere of influence are within designated urban areas. The rural/urban growth boundary is generally to the east. Population and employment figures for each TAZ were the best available information when this portion of this comprehensive plan was prepared.

Projections indicate a total residential population increase from 2012 to 2030 of approximately 23,000 for the wastewater system service area, which translates into an annual increase of approximately 0.87%. Projected total service area populations are shown in Table 3-2.

Table 3 - 2: Residential Population Projections for the City of Bellevue Wastewater System Service Area

Year	2010	2015	2020	2025	2030
Multi Family Population	48,618	55,182	61,746	68,310	74,874
Single Family Population	90,290	90,671	91,052	91,433	91,813
Total	138,908	145,853	152,797	159,742	166,687



Current estimates and 2030 projections of population and employment are shown by sewer basin in Table 3-3. PCD developed the basin-specific forecasts by overlaying the separate TAZ and basin geometry in ArcGIS software, and using appropriate software tools to allocate the data.

The current level of development as a percentage of projected 2030 development is shown in Table 3-4. Bellevue's sewer basins are shown in Figure 1-3 and Figure 5-1.

3.8 Water Reclamation

The City recognizes the importance of developing alternative resources for certain types of water use, where appropriate. City Comprehensive Plan policy UD-13 requires the use of recirculating or recycled water for decorative fountains, and some commercial car-washes in the city are known to employ “gray water” recycling systems.

The City has completed a draft of King County’s Water Reclamation Checklist, which will be required for the City of Bellevue 2015 Water System Plan. The draft Checklist is shown in Figure 3-8. The City’s largest water customers are not potential reclaimed water users, because they require potable water for human consumption (beverage and food production) or for sanitary purposes (hospital facilities, swimming pools, etc).

The City is aware of emerging trends in urban design, such as on-site domestic water recycling. Bellevue has not yet been approached with proposals to build and operate these systems, but the City anticipates that developers will express interest in these systems as part of Bel-Red and Downtown re-development. The City’s Comprehensive Plan explicitly promotes and encourages green infrastructure, but no policies relating specifically to on-site water recycling have been developed. The City will consider this topic as part of its 2015 Water System Plan.



King County

Water Reclamation Evaluation Checklist For Systems with 1,000 or more Connections

The County and State recognize that changing conditions could initiate a need to respond in new ways to future water quality standards, wastewater discharge requirements, take advantage of advances in treatment technologies and/or allow our region to be positioned to respond to changes associated with climate change and population growth.

In 2003, Chapter 90.46 of the Revised Code of Washington (RCW) was amended to require public water systems serving 1,000 or more connections to evaluate opportunities for reclaimed water when completing their water system plans. Please use this checklist to meet King County consistency requirements in responding to this legislation.

Water System Name: BELLEVUE, CITY OF
Date: March 19, 2014 (DRAFT)
PWS ID# 05575
Contact: D. LANE (425) 452-6865

Please use this checklist, including the inventory template, to ensure that your water system plan includes sufficient information about opportunities for reclaimed water and your system's efforts to develop those opportunities. If a question is not applicable or the information is unavailable, then answer, "unknown" or "n/a." King County will consider the checklist completed if each answer is filled in with the best available information, even if the utility states that it is not aware of any reclaimed water opportunities within its service area.

1. Identifying Potential Future Demand for Reclaimed Water: King County maintains a database and map of potential reclaimed water users for evaluating future projects. Please use the template below, or similar table, to provide information to assist King County in further researching these potential uses.

• **Large Utility Water Users** (choose one):

- Attached is an inventory of twenty large (above 20,000 gallons/month on average), non single-family residential, water users served by our utility that have a potential for reclaimed water use, or
- Attached is an inventory of our utility's top twenty water users, or
- The information requested is unknown or not available.

Additional Comments: _____

• **Large Self Suppliers** (choose one):

- Attached is an inventory of large, self-supplied water users within our water utility's service boundaries - especially those near wastewater treatment plants, mainlines, outfalls, and pump stations or similar reclaimed water facilities), or
- The information requested is unknown or not available.

Additional Comments: _____

• **Other** (choose one):

- Attached is an inventory of other water users (such as those that are clustered near one another and could be served by a single system) that may be likely candidates for reclaimed water use, or
- The information requested is unknown or not available.

Additional Comments: Potential reclaimed water users are few and are identified on Page 3.

2. **Environmental Commitment:** Are you a city/town, or providing water service to a city/town, that has made commitments within resource management plans, salmon recovery plans, or other environmental initiatives for which there is a potential opportunity for using reclaimed water to assist in meeting commitments? (choose one)

Yes, here are plans that have potential for reclaimed water use in our service area to meet the above commitments:
The City of Bellevue Comprehensive Plan has generalized language that promotes and encourages green infrastructure and resource conservation where appropriate.

The information requested is unknown, not available.
Additional Comments: _____

3. **Identifying Areas of Potential Use of Reclaimed Water for Environmental Benefit:**

Below are *examples* of uses of reclaimed water **that comply with State, Federal and other reclaimed water environmental, health and safety standards**. All of these uses are currently in effect somewhere in Washington State. To the best of your knowledge, are any of these potential uses for reclaimed water applicable to your area?

River Augmentation (choose one):

Yes, our water rights are limited by instream flows. For more information, King County may contact: _____

The information requested is unknown, or not available.
Additional Comments: Bellevue purchases regional water supplied by the Cedar and Tolt watersheds.

Groundwater Recharge (choose one):

Yes, we withdraw water from an aquifer that is in a groundwater management area, or from a declining aquifer, where water levels may need to be replenished or to maintain aquifer storage. For more information, King County may contact: _____

The information requested is unknown, or not available.
Additional Comments: Bellevue currently maintains wells only for emergency water supply.

Water Rights Mitigation (choose one):

Yes, our area is pursuing, or planning to pursue, new or additional water rights, and there may be an opportunity to use reclaimed water for mitigation of those new water rights. For more information, King County may contact: _____

The information requested is unknown, or not available.
Additional Comments: _____

Potential Areas of Environmental Need (choose one):

Yes, parts of our service area include potential environmental enhancement locations, such as wetlands enhancement, aquifer recharge, stream flow augmentation, that might be candidates for reclaimed water use. For more information, King County may contact: _____

The information requested is unknown, or not available.
Additional Comments: _____

4. **Local Reclaimed Water Legislation:** If water reclamation is mandated for this water system through local government agreement, contract, local regulations, ordinances, or other mechanisms, please provide a copy of the governing mechanism (choose one).

Yes, local legislation exists in our area in support of reclaimed water use. The following relevant legislation is attached (please list titles of documents):

No water reclamation legislation exists, or is known to exist, at a local level in our service area.

5. **Coordination with Local Wastewater Utility:** Include a brief description of your interactions with any wastewater or reclaimed water utility (King County or other) adjacent to your service area to evaluate any potential opportunities to develop reclaimed water (choose one).

Describe if applicable:
The City participates in the regional Metropolitan Water Pollution Abatement Advisory Committee (MWPAAC) and has advised on King County's Reclaimed Water Comprehensive Plan.

None. Additional Comments: _____

Template for Inventory of Water Users and Identification of Potential Reclaimed Water Users

Site Owner or Site Name	Site Address (for general mapping purposes)	Estimated Annual Water Use	Water uses not requiring potable water ¹	Is this a Potential Reclaimed Water Customer?
FOOD & BEVERAGE PRODUCTION	BEL-RED NEIGHBORHOOD	122298 (CCF)	Toilets	No
FOOD & BEVERAGE PRODUCTION	BEL-RED NEIGHBORHOOD	105914 (CCF)	Toilets	No
FOOD & BEVERAGE PRODUCTION	BEL-RED NEIGHBORHOOD	45771 (CCF)	Toilets	No
RETAIL	DOWNTOWN	42506 (CCF)	Toilets, Decorative Fountains	No
HEALTH & FITNESS CLUB	BRIDLE TRAILS NEIGHBORHOOD	37643 (CCF)	Toilets, Irrigation	Yes
OFFICES	EASTGATE NEIGHBORHOOD	35035 (CCF)	Toilets, Irrigation	Yes
HOSPITAL FACILITIES	BEL-RED NEIGHBORHOOD	31716 (CCF)	Toilets, Irrigation	Yes
APARTMENTS	CROSSROADS NEIGHBORHOOD	30637 (CCF)	Toilets	No
APARTMENTS	CROSSROADS NEIGHBORHOOD	27811 (CCF)	Toilets	No
HOTEL	WEST BELLEVUE NEIGHBORHOOD	25057 (CCF)	Toilets	No
APARTMENTS	CROSSROADS NEIGHBORHOOD	24805 (CCF)	Toilets	No
APARTMENTS	COUGAR MTN / LAKEMONT NEIGHBORHOOD	23713 (CCF)	Toilets, Irrigation	Yes
HOTEL	DOWNTOWN	21909 (CCF)	Toilets	No
HEALTH & FITNESS CLUB	WEST BELLEVUE NEIGHBORHOOD	21740 (CCF)	Toilets, Irrigation	Yes
HOTEL	DOWNTOWN	21399 (CCF)	Toilets	No
APARTMENTS	BRIDLE TRAILS NEIGHBORHOOD	17594 (CCF)	Toilets, Irrigation	Yes
CONDOMINIUMS	DOWNTOWN	17496 (CCF)	Toilets, Irrigation	Yes
CONDOMINIUMS	DOWNTOWN	17125 (CCF)	Toilets, Irrigation	Yes
RETAIL	DOWNTOWN	16265 (CCF)	Toilets	No
APARTMENTS	CROSSROADS NEIGHBORHOOD	16181 (CCF)	Toilets, Irrigation	Yes

¹ See Washington State Reclamation and Reuse Standards, September 1997, Section 1, Articles 1-5 for allowable uses of reclaimed water.
<http://www.ecv.wa.gov/PROGRAMS/WQ/reclaim/standards.html>

Table 3-3: Residential Population and Employment by Basin

ID	Basin Name	Code	Residential Population				Employment		
			SF 2012	SF 2030	MF 2012	MF 2030	2010	2030	Change
1	Fairweather	FWR1	1,445	1,457	0	0	53	57	4
2	Medina	MED2	986	1,001	0	0	174	176	2
3	Cozy Cove	COZ3	1,383	1,384	11	11	7	7	0
4	Clyde Hill	CLD4	3,038	3,071	0	0	228	228	0
5	Parker	PKR5	1,053	1,061	0	0	21	21	0
6	Yarrow Bay	YAR6	1,635	1,640	924	1,391	3,744	4,048	304
7	Bellevue	BEL7	3,096	3,097	9,721	18,615	30,224	52,667	22,443
8	Meydenbauer	MEY8	1,162	1,162	485	509	148	181	33
9	Sweyolocken	SWL9	1,879	1,887	0	0	36	36	0
10	Mercer Slough	MRS10	1,414	1,414	4,547	6,190	27,218	33,783	6,565
11	Enatai	ENT11	620	621	0	0	102	228	125
12	Northup	NOR12	477	477	0	0	180	187	7
13	Lake Bellevue	LKB13	3	3	632	1,881	3,007	8,247	5,240
14	North Woodridge	NWD14	1,178	1,178	0	0	147	147	0
15	South Woodridge	SWD15	895	895	382	398	90	195	105
16	Cherry Crest	CHR16	547	549	61	303	631	661	30
17	Midlakes	MDL17	3	3	0	860	1,898	2,070	173
18	Pikes Peak	PPK18	1,287	1,290	0	221	1,659	1,930	271
19	Kelsey Creek	KEL19	2,486	2,520	924	962	533	596	63
20	Valley Creek	VLC20	1,829	1,829	5,659	6,015	5,836	6,832	996
21	Palisades	PAL21	384	384	2,831	3,081	843	948	106
22	N Larsen Lake	NLL22	861	861	1,688	1,955	1,235	1,449	214
23	S Larsen Lake	SLL23	2,761	2,761	1,779	1,947	710	732	23
24	College Hill	COL24	1,188	1,188	323	535	2,822	4,142	1,321
25	Highland	HIL25	210	210	1,800	3,338	4,288	5,755	1,467
26	Chevy Chase	CHE26	729	729	2,428	2,465	138	190	51
27	Woodside	WDS27	1,152	1,153	0	0	0	0	0
28	Sherwood Forest	SHW28	1,422	1,426	0	0	22	24	2
29	Hidden Hills	HID29	1,248	1,249	0	0	137	137	0
30	Crossroads	CRR30	6,495	6,497	2,159	2,573	2,873	3,472	599
31	Lake Hills	LKH31	3,147	3,148	59	59	817	839	22
32	Phantom Lake	PHA32	1,053	1,063	9	9	1,129	1,253	124
33	Redmond	RED33	234	234	0	64	0	0	0
34	Rosemont	RSM34	1,993	1,995	157	157	0	0	0
35	Vasa Park	VSP35	2,260	2,290	0	0	1,212	1,215	3
36	Newport	NWP36	1,624	1,626	139	872	27	30	4
37	Coal Creek	CLC37	5,091	5,091	414	414	0	0	0
38	Cougar Mountain	CGM38	4,585	4,652	1,119	1,119	689	786	98
39	Eastgate	EGT39	5,130	5,130	218	252	814	964	150
40	Somerset	SOM40	2,525	2,525	0	0	406	406	0
41	Factoria	FAC41	2,374	2,390	2,312	3,397	10,635	14,140	3,505
42	Leawood	LEA42	2,369	2,424	37	37	603	686	83
43	Sammamish	SAM43	1,222	1,336	323	323	22	22	0
44	Redmond	RED44	163	163	0	0	0	0	0
45	Newport Hills	NPH45	4,229	4,229	746	746	496	685	189
46	DNW	DNW46	1,642	1,642	43	43	120	125	5
47	South Bellevue	SBV47	239	239	0	0	0	0	0
48	DMW	DMW48	514	514	0	0	15	15	0
50	Metro 50	MET50	285	285	683	711	315	315	0
51	Metro 51	MET51	42	42	284	2,533	5,103	6,723	1,620
52	Metro 52	MET52	1,007	1,007	724	1,879	2,426	2,831	405
53	Metro 53	MET53	16	16	598	666	1,869	1,988	119
54	Metro 54	MET54	861	862	635	724	235	347	112
55	Metro 55	MET55	701	701	1,639	1,659	1,742	2,758	1,016
56	Metro 56	MET56	0	0	273	457	7,486	7,643	156
57	Metro 57	MET57	2,795	2,828	489	489	34	35	1
58	Metro 58	MET58	330	330	54	54	96	96	0
	Total		89,299	89,761	47,305	69,912	125,296	173,049	47,754

Table 3-4: Current Development as % of 2030 Projected Development

ID	Basin Name	Total Area	Residential		Commercial		Other
			Area (acres)	% of 2030 development	Area (acres)	% of 2030 development	
1	Fairweather	407	294	99%	11	94%	102
2	Medina	295	236	98%	11	99%	48
3	Cozy Cove	371	294	100%	8	100%	69
4	Clyde Hill	747	538	99%	50	100%	159
5	Parker	189	168	99%	3	100%	19
6	Yarrow Bay	586	266	92%	116	92%	203
7	Bellevue	943	454	55%	239	57%	250
8	Meydenbauer	255	192	100%	9	82%	55
9	Sweyolocken	364	253	98%	4	100%	107
10	Mercer Slough	850	176	78%	290	81%	384
11	Enatai	125	84	98%	2	45%	39
12	Northup	335	244	97%	41	96%	49
13	Lake Bellevue	134	20	34%	146	36%	-32
14	North Woodridge	273	141	100%	11	100%	121
15	South Woodridge	140	115	100%	8	46%	17
16	Cherry Crest	142	86	75%	46	95%	10
17	Midlakes	86	15	0%	78	92%	-7
18	Pikes Peak	376	266	79%	75	86%	35
19	Kelsey Creek	943	428	96%	66	89%	449
20	Valley Creek	1363	803	96%	211	85%	349
21	Palisades	211	143	105%	62	89%	6
22	N Larsen Lake	286	148	100%	80	85%	58
23	S Larsen Lake	608	324	96%	48	97%	236
24	College Hill	354	173	93%	144	68%	37
25	Highland	333	96	55%	202	75%	34
26	Chevy Chase	166	137	94%	21	73%	8
27	Woodside	140	95	99%	10	-	35
28	Sherwood Forest	194	129	99%	4	94%	62
29	Hidden Hills	133	103	99%	51	100%	-21
30	Crossroads	1018	681	96%	156	83%	181
31	Lake Hills	465	306	100%	51	97%	108
32	Phantom Lake	237	147	100%	111	90%	-21
33	Redmond	57	24	81%	10	-	24
34	Rosemont	375	261	100%	0	-	114
35	Vasa Park	412	256	97%	52	100%	104
36	Newport	459	275	71%	5	88%	179
37	Coal Creek	1196	713	97%	53	-	429
38	Cougar Mountain	1414	720	97%	65	88%	630
39	Eastgate	832	573	94%	72	84%	187
40	Somerset	387	265	100%	54	100%	67
41	Factoria	906	354	67%	314	75%	238
42	Leawood	484	321	99%	45	88%	119
43	Sammamish	260	206	89%	8	100%	47
44	Redmond	19	13	100%	4	-	1
45	NewportHills	660	448	91%	55	72%	157
46	DNW	306	143	95%	26	96%	137
47	South Bellevue	56	31	96%	0	-	24
48	DMW	151	58	97%	59	100%	34
50	Metro 50	99	71	116%	24	100%	3
51	Metro 51	339	32	14%	291	76%	16
52	Metro 52	569	148	57%	146	86%	275
53	Metro 53	178	35	86%	72	94%	71
54	Metro 54	508	126	94%	55	68%	328
55	Metro 55	389	151	100%	83	63%	156
56	Metro 56	207	24	100%	169	98%	13
57	Metro 57	456	277	99%	2	97%	177
58	Metro 58	152	61	97%	8	100%	83

This Page is Intentionally Blank

CHAPTER 4

Flow Projections

4.1 Introduction

Flow projections are used to identify sewers that may have insufficient capacity at ultimate flow conditions. The information used as the basis for developing these flow projections is presented in this chapter. The City's hydraulic model of the wastewater system uses this information to calculate anticipated peak flows in each pipe when the tributary area reaches ultimate development.

There are two primary flow components in the wastewater system. The first component is wastewater (sanitary and industrial) flow, which is made up of all flows generated by domestic, commercial and industrial activities. The second component is infiltration and inflow (I&I), which consists of groundwater (infiltration) and surface water (inflow) that finds its way into the wastewater system. Each of these components is discussed in more detail below (Section 4.2 – Wastewater Flow, Section 4.3 – I&I).

4.2 Wastewater Flow

Population and employment projections and land use data provide the basis for estimating future sanitary and industrial flows within the service area. The method used to project future populations is described in Chapter 3. All modeling flow projections are based on the Bellevue Comprehensive Land Use plan, except for rare cases involving large parks and golf courses that are zoned residential. These areas are modeled assuming zero flow, since redevelopment is considered extremely unlikely.

To develop sanitary flow projections, the volume of wastewater generated per person must be estimated. Flow projections are then established for each land use category based on the type and density of development.

Figure 4-1 shows actual recent wet season per capita water consumption in Bellevue's water service area, and related demand projections from the 2002 Wastewater Comprehensive Plan. Wet season water use provides a good estimate of wastewater flows under existing development conditions, since it can be generally assumed that nearly all of the water used is discharged into the wastewater system.

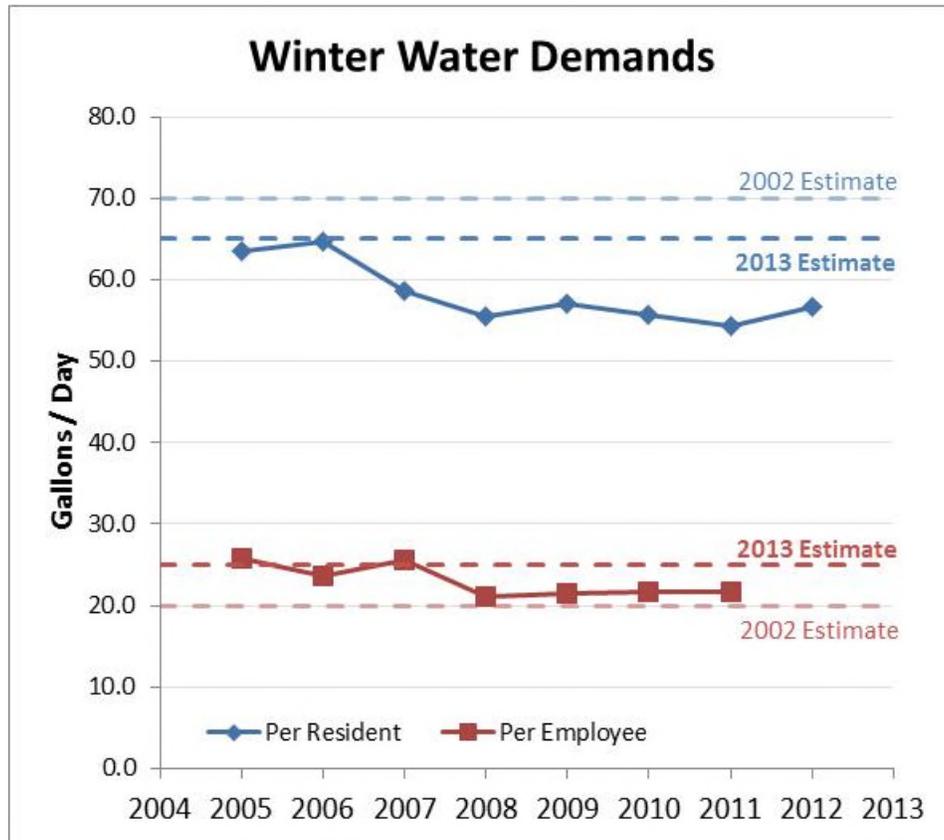


Figure 4-1: Estimated Per Capita Sanitary Wastewater Flow

The general trend since the 2002 Comprehensive Wastewater Plan has been significantly lower residential per capita consumption, but higher consumption per employee. However, based on the general stabilization of demands between 2008-2012 (evident in Figure 4-1), future sanitary wastewater flows and concentrations are projected to be stable for the purpose of sewer planning (no additional conservation).

4.2.1 Residential Area Flow Projections

A per-capita flow of 65 gallons per capita per day (gpcd) is assumed for the purpose of this WWSP. This reflects a reduction from the unit flow factor of 70 gpcd used in the 2002 Bellevue Comprehensive Wastewater Plan. The reason for this reduction is explained below.

To update the unit flow factor, wet season residential water use data obtained from the City’s potable water billing system for the months of December through May, 2005-2012 were divided by the residential population served. These billing records reflect actual usage over the period (roughly) from October through March, given the lag from usage to billing with a bi-monthly billing schedule. The lowest-demand billing months are consistently March-May (reflecting actual water usage in January-March), but averaged billing records

over the larger six month wet season are used to smooth out discrepancies between the number of days in billing periods and actual calendar days per month.

Updated wet season water usage data indicated a wet season unit flow factor of slightly less than 65 gpcd. This reduced volume (compared to the 2002 Plan) may be partially a result of improved conservation efficiencies, effects of the recent economic recession, and an increase in the percentage of overall residential population residing in multi-family housing. The 2006 Bellevue Water Comprehensive Plan established that per-capita water use for multi-family residences is significantly lower than for single-family.

Table 4-1 shows the population density for each residential land use within the City of Bellevue, based on information provided by the City’s Department of Planning and Community Development (PCD). The land use designations shown in this table are taken from Bellevue’s Comprehensive Plan. For each land use (SF & MF), there are multiple zoning designations (L, M & H). The highest zoning density allowed under each land use designation was used to determine ultimate population density, and then to project ultimate flows.

Table 4 - 1: Population Densities for Residential Development

Land Use Category	People Per Unit	Units Per Acre	Population Equivalent Per Acre	Description
SF-L	2.7	1.8	4.86	Single Family - Low
SF-M	2.7	3.5	9.45	Single Family - Medium
SF-H	2.7	5.0	13.50	Single Family - High
MF-L	2.0	15.0	30.00	Multi-family – Low
MF-M	2.0	20.0	40.00	Multi-family – Medium
MF-H	2.0	30.0	60.00	Multi-family – High

Residential Flows generated in Bellevue’s Downtown District (DNTN), Bel-Red Corridor and other parts of city planned for redevelopment are uniquely different from other areas and are discussed separately in Sections 4.2.3 and 4.2.4.

Bellevue’s wastewater model uses the population equivalent per acre from Table 4-1 and the unit flow volume of 65 gpcd to calculate sanitary flow projections. The persons per unit for single family and multi-family land use categories have changed slightly since the 2002 plan. Single family density has slightly decreased while multi-family density has slightly increased.

4.2.2 Commercial Area Flow Projections

Current winter commercial water use data obtained from the City’s utility billing was divided by the number of employees served, resulting in a unit flow factor of 25 gallons per capita per day (gpcd). A unit flow factor of 20 gpcd was used in the 2002 Bellevue

Comprehensive Wastewater Plan. This change could be a result of a change in employee behavior or hours, or a result of changing business types within Bellevue. Commercial flows for most commercial zonings in the City will therefore be based on an average discharge of 25 gpcd.

Commercial flows generated in Bellevue's Downtown District (DNTN), Bel-Red Corridor and other parts of city planned for redevelopment are uniquely different from other areas and are discussed separately in Sections 4.2.3 and 4.2.4.

Most commercial zoning categories allow for the construction of hotels and motels, which produce much higher wastewater flow rates than other commercial land uses. Since commercial areas generally contain relatively few hotels/motels, and all other development density assumptions are conservative, the flow projections developed as part of this Plan do not attempt to account specifically for the high wastewater flows generated by hotels/motels. It is impossible to anticipate specifically where these types of developments will occur. To assume they could occur at every commercially zoned location would be overly conservative and result in numerous unnecessary system capacity upgrades. It is therefore possible that future hotel/motel types of development may create capacity problems within the wastewater system. The capacity impacts of these developments should be individually evaluated each time a proposal of this type comes into the City for review.

Table 4-2 shows the employee and the equivalent population density for each commercial land use category within the City of Bellevue, excluding DNTN, based on information provided by the City's Planning Department. The land use categories shown in this table are taken from Bellevue's zoning designation map, which is consistent with Bellevue's Comprehensive Plan.

The calculations for commercial area equivalent population densities involve the Floor Area Ratio (FAR). FAR is a ratio of the gross floor area of a building and net site area for a parcel within a given zoning category. For example, if a parcel is 10,000 square feet, and the allowed FAR is .35, then the maximum allowed floor area of the building would be 3,500. This ratio combined with the previously discussed employee per square foot data and the flow rates for residents and employees allows us to determine the population equivalent per acre for commercial development in the city. FAR used in the 2002 Comprehensive Wastewater Plan was compared to actual development from 2002-2012. For all zoning categories except one, actual development was either fairly close to the previous prediction, or there was too small of a sample to make a conclusion. For the OLB zoning category, nine recent developments had an average FAR of about 1.1, which is significantly higher than the previous prediction, and suggests a fundamental change in the types of development being built in OLB zones. Therefore, for modeling purposes the OLB zone FAR was increased to 1.1 for this plan update.

Table 4 - 2: Equivalent Population Densities for Commercial Development

Land Use Category	Floor Area Ratio	Employees Per Square Foot	PEqPA ¹	Description
F-1	0.5	0.0031	25.96	Community Business Zoning Designation
F-2	0.6	0.0031	31.16	Office & Ltd. Business Zoning Designation
F-3	1.26	0.0031	65.44	Office & Ltd. Business Zoning Designation
PO	0.35	0.0031	18.17	Professional Office Zoning Designation
O	0.35	0.0031	18.17	Office Zoning Designation
OLB	1.1	0.0031	57.13	Office and Ltd. Business Zoning Designation
NB	0.35	0.0031	18.17	Neighborhood Business Zoning Designation
CB	0.35	0.0031	18.17	Community Business Zoning Designation
GC	0.35	0.00285	16.71	General Commercial Zoning Designation
LI	0.35	0.0016	9.382	Light Industrial Zoning Designation

Note: 1. Formulation used is $[FAR * EmpPSF * 43560 \text{sq.ft./acre} * (25/65)]$. The ratio 25:65 is applied to calculate the residential population equivalent for commercial data.

The City’s hydraulic model uses the population equivalents per acre from Table 4-2 for non-residential zoning categories, excluding the DNTN. The population equivalents per acre have increased from those used in the 2002 Bellevue Comprehensive Wastewater Plan in all cases, and will therefore result in higher hydraulic model flow projections for all non-residential zoning categories. This increase is due to the commercial unit flow factor increasing.

4.2.3 Downtown District Flow Projections

The Downtown District (DNTN), formerly referred to as the Central Business District (CBD), is roughly defined as the area bordered by NE 12th Street to the north, Main Street to the south, Interstate 405 to the east, and 100th Avenue NE to the west.

From 2000 to 2010 the number of housing units within the Downtown increased from 2,230 in 2000 to 7,151 in 2010, an increase of 4,921 units or 220 percent. Continued residential development is projected to occur with the number of units doubling again by 2030. Certain zones within the Downtown (DNTN-R and DNTN-MU) are projected to experience higher concentrations of residential development than other zones (DTN-O1 and DNTN-O2), which are projected to have higher concentrations of commercial development. In DNTN-R zones development is generally envisioned as residential units above retail, whereas within the DNTN-MU zone development is envisioned to include more of a mix of office and residential uses with residential and office towers adjacent to one another. Within multiple use zones, there is inherent uncertainty about the relative proportion of commercial and residential uses. City planners project a range between 20 to 40 percent commercial development in mixed-use zones, which yields an equivalent population of approximately

300 to 330 persons per acre. Within DNTN-O1 and DNTN-O2 planners project about 80 percent of the area will be developed in commercial uses. In contrast, if the area developed as fully residential, the equivalent population would be 365 persons per acre, which would generate significantly higher wastewater flows. Analysis done for the 2002 Wastewater System plan determined that recent development in the DNTN has an average projected population equivalent density that is 82% of the potential maximum.

In order to assess the appropriateness of the 2002 flow projections, forty-two recent DNTN proposed and constructed developments were analyzed. The projects were well distributed among DNTN zoning categories, except for DNTN-OB and DNTN-OLB. A total population equivalent for each proposal was calculated based on:

- Total number of residential living units and the total number of square feet planned for office, retail and other uses.
- Residential population and employee density numbers (shown in Table 3-1.)
- Projected wastewater flows of 25 gpcd for employees and 65 gpcd for the residential population as identified earlier in this chapter.

The resulting population equivalents were then compared to the population equivalents used in the 2002 Plan for each zoning category. The analysis indicated that some categories should have an increased population equivalent. The categories DNTN-O-2 and DNTN-Perimeter A had an increased population equivalent. Zoning category DNTN-OB had too small of a sample size to make conclusions, so the population equivalent density is based on the similarly zoned DNTN-MU.

One development along Bellevue Way south of NE 8th Street was not included in calculating the average zone wide population equivalents, because of its disproportionately large scale. This project had almost double the projected population equivalent density for its zoning. A condition of such large developments is that any wastewater capacity issues must be addressed by the developer in the project planning phase, and any necessary local sewer upgrades are paid by the developer, which was done in this case. Anticipated flow from this project is represented in the system model as a point load.

High rise residential developments create significantly higher wastewater flows than office space and create major point loads on the wastewater collector system. Because we cannot predict the precise location and size of these high rise residential developments, it is possible that such projects will create local capacity problems within the wastewater system. The capacity impacts of such developments should be individually evaluated each time such a proposal is made. Any necessary local system improvements are required as condition of approval for such developments.

While there has been an increase in high rise residential development in the DNTN since the 2002 Comprehensive Wastewater Plan, there are still relatively few compared to other development uses. Therefore, DNTN developments will be monitored, and if necessary,

the DNTN PEqPA will be updated accordingly in the future updates as more development data become available.

Figure 4-2 illustrates DNTN zoning districts. Table 4-3 identifies corresponding residential equivalents used for each zone.

Table 4 - 3: DNTN Land Use

Land Use	PEqPA ¹	Description
DNTN-O-1³	400	DNTN Office - District 1 Zoning Designation
DNTN-O-2³	280	DNTN Office - District 2 Zoning Designation
DNTN-R	365	DNTN Residential Zoning Designation
DNTN-MU	365	DNTN Multiple Use District Zoning Designation
DNTN-OLB	200	DNTN Office and Limited Business Zoning Designation
DNTN-OB	365 ²	DNTN Old Bellevue Zoning Designation
DNTN Perimeter A (regardless of zoning)	280	

Notes:

1. PEqPA (Population Equivalent Per Acre) formulation used is $[FAR * EmpPSF * 43560 \text{ SF/acre} * OR * (25/65)]$. The ratio 25:65 is applied to calculate the residential population equivalent for commercial data.
2. Due to small sampling number, the recommended PEqPA is based on similarly zoned DNTN-MU.
3. PEqPA numbers shown do not include any residential towers. Residential towers are included as a point load in the system model to the degree that the tower exceeds the local PEqPA.

4.2.4 Bel-Red and Other Re-developing Areas

As a result of the significant rezoning in 2009, the Bel-Red Corridor has zoning categories unique from the rest of the City. Figure 4-3 shows the new zoning in the Bel-Red Corridor.

The effect of the Bel-Red rezone is that an area which was historically commercial and light industrial now allows high density residential development. This change increases the potential wastewater flows, but also adds uncertainty for projecting future population density and flow distribution, since population growth will be primarily determined by economic conditions, rather than by caps on density (as in a commercial or industrial zone). Projects in basins affected by the rezone have been evaluated for wastewater system capacity on a case-by-case basis as developments are proposed. This process works currently because much of the Bel-Red area has small sewer basins (shown in Figure 4-4) with only one or two, relatively short trunk lines that flow directly into nearby King County mains or interceptors. As more developments are proposed, it will be possible to determine the approximate amount and distribution of future flows, and the basin models will be adjusted to account for the flow expected from each new development.

The Eastgate/I-90 Corridor and Wilburton area are two other areas with significant redevelopment potential and possible rezoning. Should rezones occur, there would likely be a change in the population equivalent density in these areas. The City's planning department provided information regarding expected additional development for this analysis. Wherever flow demand may be higher than expected, the system was modeled assuming an additional point load, to identify potential capacity constraints that could occur with future demand.

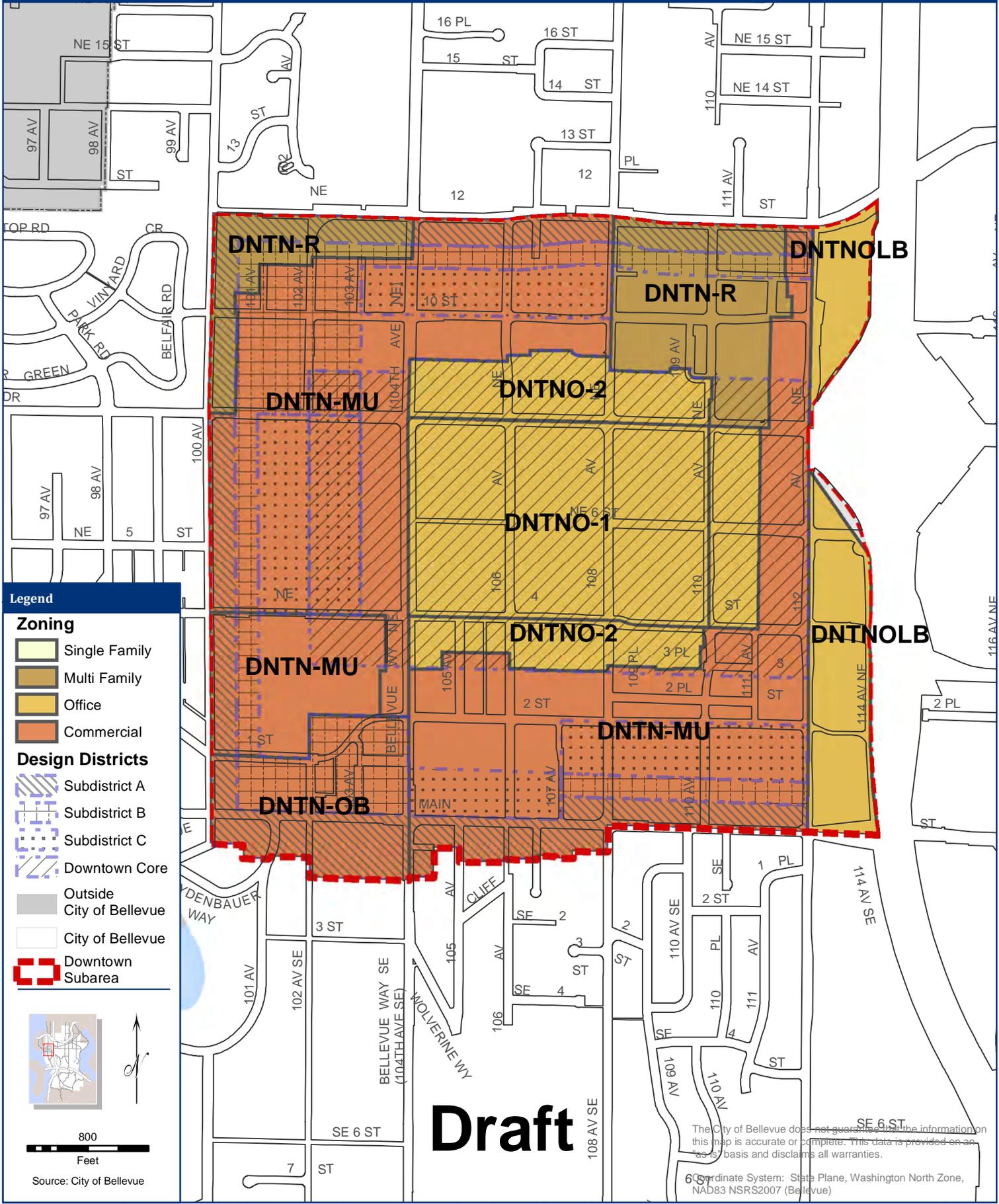
4.2.5 Peak Flow Determination

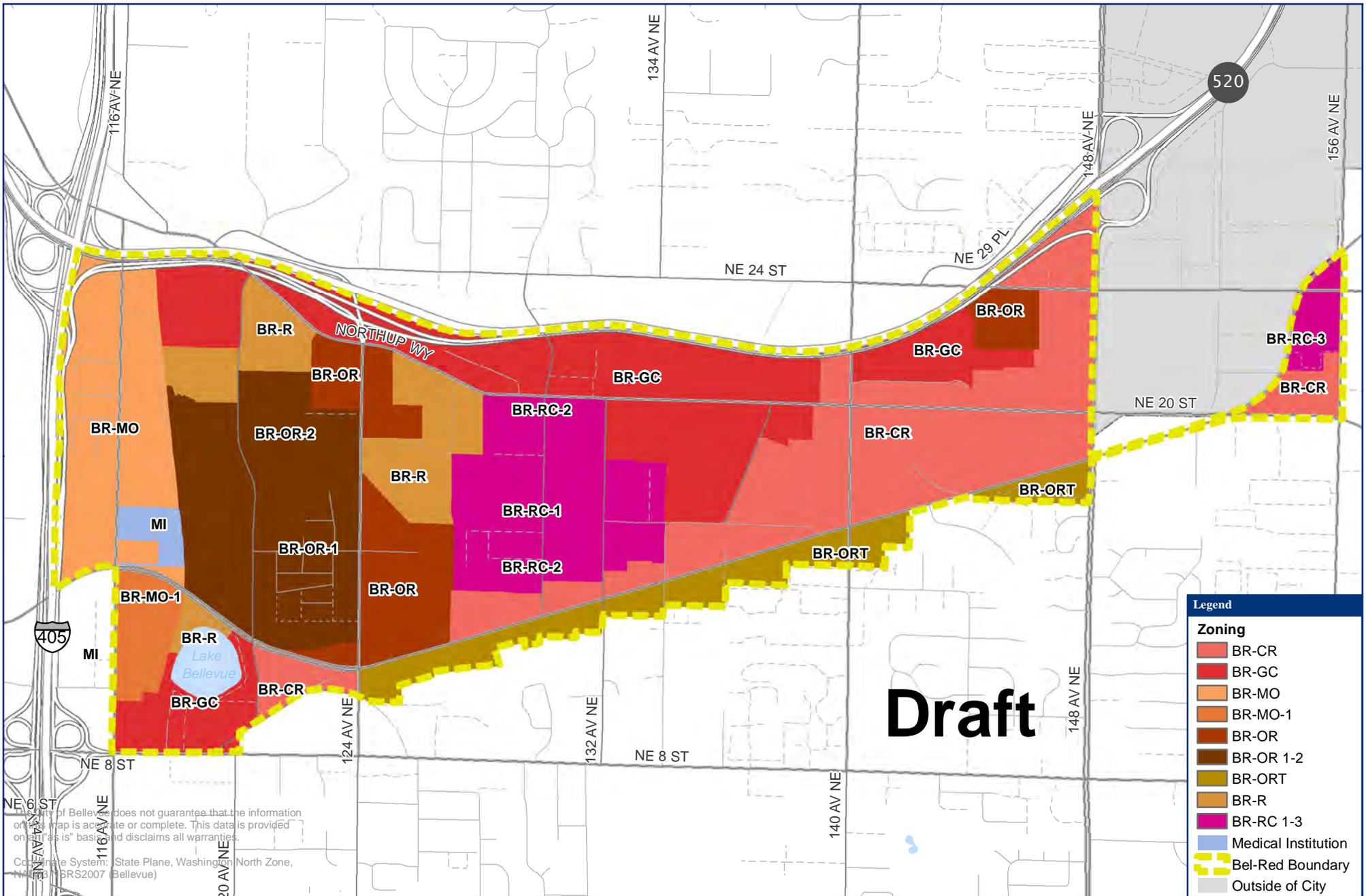
The 2002 Comprehensive Wastewater Plan used a peaking factor method to estimate peak flows over a 24 hour period. That method involves multiplying average flow by a factor of 2.5 to 4.0, depending on the size of the upstream tributary area, to estimate peak flow. The peaking factor method is generally conservative, but there was insufficient flow data to justify a less conservative method. For this plan update, additional flow data is available as a result of extensive flow monitoring by King County. Therefore, a more accurate diurnal curve was used to predict peak flows.

A diurnal curve applies different multipliers to average daily flow throughout a 24 hour period, based on actual observed flow. For residential areas, the curve has two peaks, one in the morning and one in the afternoon. Commercial areas have one peak with a longer plateau in the middle of the day, and much lower flow during non-working hours. The use of a diurnal curve is consistent with the Washington State Department of Ecology (WDOE) sewer design guidelines. The curves were designed using dry day flow measurements from the King County I&I study. WDOE allows using peak flow derived from a diurnal curve if it is calculated using observed flow.

DNTN Zoning and Design Districts

Figure 4-1





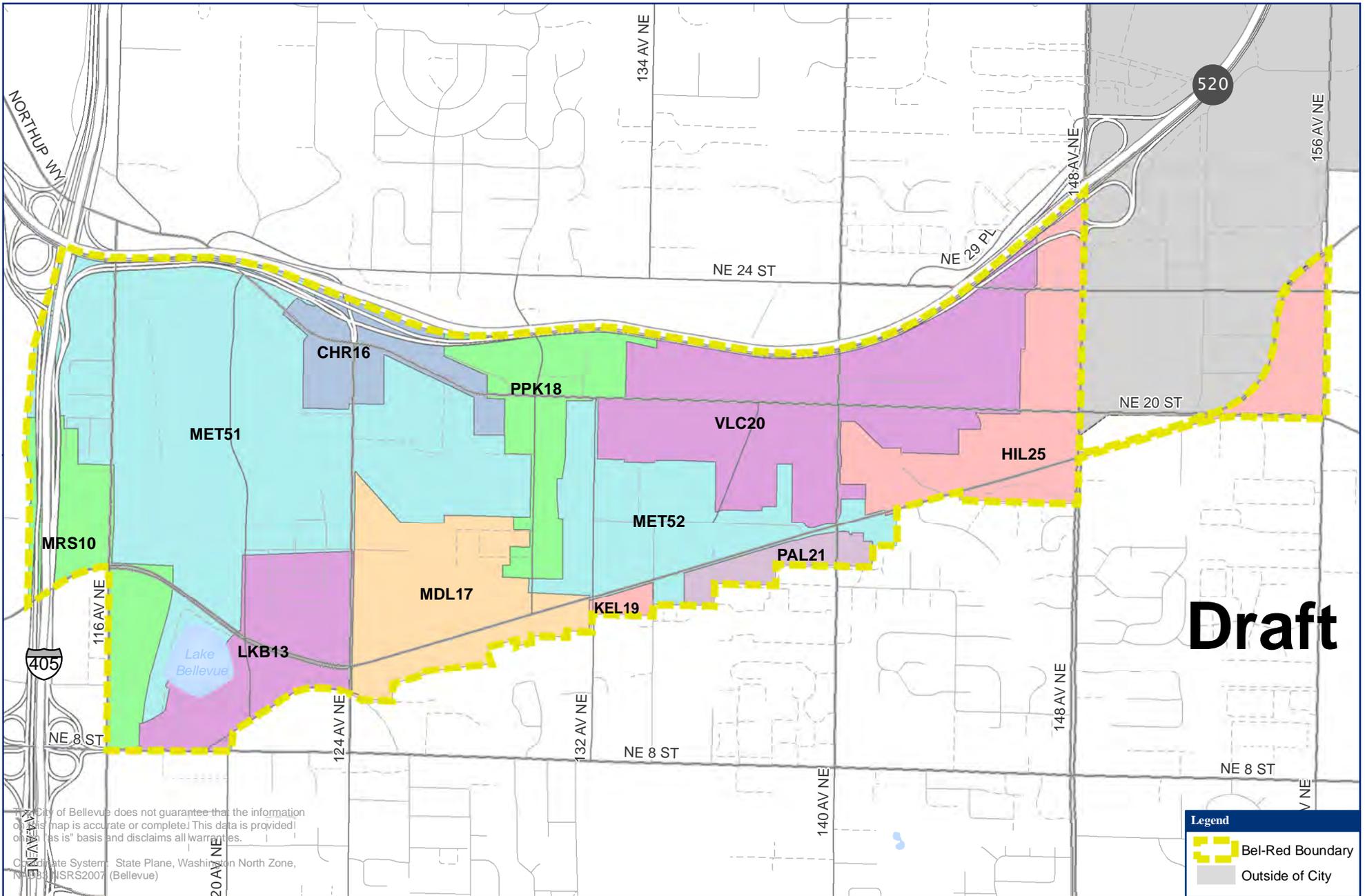
City of Bellevue does not guarantee that the information on this map is accurate or complete. This data is provided on a "as is" basis and disclaims all warranties.
 Coordinate System: State Plane, Washington North Zone, NAD83 (SRS2007 (Bellevue))



Bellevue-Redmond Corridor Zoning

Figure 4-2





Bellevue - Redmond Sewer Basins

Figure 4-3



4.3 Infiltration and Inflow

Ideally, all surface water and groundwater is kept out of the wastewater system. Depending on the quality of construction, the age and condition of the pipe, and the presence of unauthorized surface water connections, surface and ground water enters the system. This water is known as inflow and infiltration (I&I). I&I is measured and described in this plan in units of gallons per acre per day (gpad).

I&I is highly variable, and depends not only on the factors related to the sewer physical condition as noted above, but also on the depth of groundwater, storm intensity and duration, and other parameters. Figure 6-1b shows an extreme example of infiltration at a failed joint in high groundwater conditions.

4.3.1 2002 King County Flow Monitoring Study

King County Wastewater Treatment Division (KCWTD) conducted a flow monitoring study throughout their service area in 2002 to quantify the volume of I&I entering the regional collection and treatment system. Of the approximately 800 flow monitors deployed throughout the region, about 100 were located within the City of Bellevue, in the City's sewer mains. These meters tracked the flow through 'mini basins', sections of the wastewater system that contained approximately 20,000 linear feet of pipe, each draining through one manhole. Data from that study provided much more accurate estimates for I&I peak and base flows than was available historically.

The KCWTD data was not available for the 2002 Wastewater Plan update. For that study, flow measurements from 1994 were used. Basin-specific I&I were estimated between 0 and 5,700 gpad. The King County flow measurements data indicates basin-specific thirty-minute peak I&I rates of between 900 and 12,000 gpad. The city-wide average 30 min peak I&I rate is 3,800 gpad. Basin by basin I&I rates can be seen on table 4-4. The data in table 4-4 is what was used to estimate I&I in the hydraulic model. I&I city wide is now known to be higher than was previously assumed, which will lead to higher flow projections, and some pipes that were previously thought to be sufficiently designed may not have sufficient capacity.

4.3.2 2010 King County Flow Monitoring Study

The 2010 KCWTD flow monitoring study deployed approximately 50 meters located along KCWTD interceptors within the City of Bellevue. The data indicates basin-specific thirty-minute peak I&I rates of between 600 and 7,000 gpad. The city-wide average 30 min peak I&I rate estimated by the study is 3,300 gpad. Basin by basin I&I rates can be seen on Table 4-4.

However, data from the 2010 King County study is inconclusive for 20 City of Bellevue basins due to missing data or other complicating factors, as noted in table 4-4. Therefore, for the purpose of hydraulic analysis, the City is currently using the 2002 I&I data and not the 2010 data.

Some of the complicating factors include methodology changes that designated parcels with large sewer mains as unsewered solely based on land use, and significant discrepancies between basin boundary delineation.

4.3.3 I&I Investigation and Reduction

Bellevue's contract with KCWTD establishes a standard I&I rate: I&I should not exceed 1,100 gpad for any wastewater system constructed after 1961. This standard has not been enforced in practice, because measured flow comes from systems that include both new and old pipes, and because every jurisdiction that has a similar agreement with King County currently exceeds this standard. The vast majority of basins in Bellevue exceed this standard; most have more than double the 1,100 gpad target rate.

The City has performed only limited flow monitoring in several basins since the completion of the 2002 Comprehensive Wastewater Plan, primarily to investigate areas of Bellevue's Downtown District during dry weather flows, or in support of capital projects to verify design criteria. The King County study data provided significantly more data for current and projected flows throughout much of the system, and indicated that I&I is a more significant problem in Bellevue than had previously been recognized.

King County's flow monitoring data, as well as localized data obtained by the City have been incorporated into Bellevue's basin hydraulic models for improved model accuracy. The improved modeling has helped pinpoint areas which might be at risk of overflows as population increases and pipes age and deteriorate.

The city currently does not have a plan to systematically reduce I&I, however where specific problems related to high I&I are observed, those are addressed through targeted I&I investigation. Basins that have significant risk of capacity problems or overflows due to I&I are identified in Chapter 7. The Plan recommends significant, targeted I&I investigation and reduction, along with additional flow monitoring in Chapter 9. These recommended programs will address the highest priority areas of I&I.

Other programs in place also reduce I&I as a matter of course, through pipeline renewal and replacement, and repair of localized defects. Pipeline rehabilitation and replacement programs are discussed in Chapter 9. The City's sewer video inspection program (described in Chapter 8) inspects approximately 10% of the City's sewer mains each year, prioritizing high risk pipes. The sewer inspection program identifies structural defects to be repaired, and is directly responsible for repairing about 120 pipe defects per year. These programs should reduce I&I, although the degree that I&I is reduced is unknown.

Table 4 - 4: Observed I&I by Basin

Basin	Basin Name	2002 KC Study		2010 KC Study	
		I&I in GPAD	I&I in GPM	I&I in GPAD	I&I in GPM
1	Fairweather	5,506	1,050	2,851	805
2	Medina	3,247	495	2,851	585
3	Cozy Cove	1,867	400	2,851	734
4	Clyde Hill	2,532	775	2,851	1,479
5	Parker	6,157	870	3,959	550
6	Yarrow Bay	3,404	973	***	***
7	Bellevue	4,734	2,587	***	***
8	Meydenbauer	3,275	464	***	***
9	Sweyolocken	2,455	405	*	*
10	Mercer Slough	6,820	2,379	4,157	1,667
11	Enatai	***	***	***	***
12	Northup	2,223	120	*	*
13	Lake Bellevue	11,945	828	*	*
14	North Woodridge	3,410	419	4,121	783
15	South Woodridge	3,880	458	4,121	400
16	Cherry Crest	1,040	72	1,083	72
17	Midlakes	1,087	172	*	*
18	Pikes Peak	2,114	382	753	138
19	Kelsey Creek	4,827	1,404	*	*
20	Valley Creek	2,099	657	*	*
21	Palisades	3,683	450	3,335	425
22	N Larsen Lake	4,617	527	3,174	426
23	S Larsen Lake	2,862	766	2,899	782
24	College Hill	1,405	159	*	*
25	Highland	2,007	369	1,933	385
26	Chevy Chase	4,513	387	4,693	384
27	Woodside	2,297	170	3,601	349
28	Sherwood Forest	1,527	161	3,601	486
29	Hidden Hills	4,193	417	3,601	332
30	Crossroads	4,806	2,625	*	*
31	Lake Hills	4,500	947	4,579	987
32	Phantom Lake	1,696	83	579	27
33	Redmond	***	***	3,601	143
34	Rosemont	3,681	681	3,737	974
35	Vasa Park	4,223	902	3,951	867
36	Newport	4,491	542	*	*
37	Coal Creek	3,545	1,689	*	*
38	Cougar Mountain	3,324	1,401	*	*
39	Eastgate	4,771	2,286	3,919	2,410
40	Somerset	10,202	2,376	2,808	755
41	Factoria	3,674	1,509	3,012	1,546
42	LEA	***	***	3,919	1,318
43	Sammamish	3,728	537	2,341	424
44	Redmond	2,909	342	***	***
45	Newport Hills	1,837	734	1,743	799
46	DNW	2,233	240	1,430	304
47	South Bellevue	***	***	***	***
48	DMW	***	***	6,973	732
50	MET+	***	***	***	***
51	MET+	***	***	***	***
52	MET+	***	***	***	***
53	MET+	***	***	***	***
54	MET+	***	***	***	***
55	MET+	***	***	***	***
56	MET+	***	***	***	***
57	MET+	***	***	***	***
58	MET+	***	***	***	***

* Inconclusive Data, ***Data incomplete or unavailable

+ Flow monitoring in MET basins is insufficient to estimate basin-wide I&I due to numerous independent connections to KCWTD interceptors

4.4 Flow Projection Summary

Future population, employment and sewage flow projections were developed based on Bellevue’s most recently adopted Comprehensive Plan and zoning regulations with regards to allowable residential units per acre and commercial FAR. Average household sizes, employees per square foot, and commercial/residential ratio assumptions were taken from most recent available data sources. Similar information from the cities of Medina, Hunt's Point, and Clyde Hill was incorporated for areas Bellevue serves outside the City’s planning area.

Table 4-5 summarizes the numbers that form the basis for projected ultimate flows. Table 4-5 also provides a comparison of these numbers with those used by neighboring jurisdictions as identified in their most recent comprehensive wastewater plans.

Table 4 - 5: Comparison of Eastside Communities

Planning Criteria	Bellevue	Bellevue 2002	Kirkland	Redmond	Issaquah	Coal Creek U.D.
Residential Flow (gpcd)	65	70	103	58&69	47&68	61
Persons/SF Unit	2.7	2.8	2.3	2.53	2.66	2.6
Flow/SF Unit (gpd)	176	196	237	175	204	159
Persons/MF Unit	2.0	1.8	1.94	2.07	1.85	1.8
Flow/MF unit (gpd)	130	126	200	120	135	110
Sq.Ft./Employee	285&375	250	---	---	520	---
Flow/Employee (gpcd)	25	20	8-20	---	83	---
Peaking Factor	2.0	2.5 - 4.0	2.0	---	---	2.5 - 4.0
Inflow/Infiltration (gpad)	Estimated based on nearby flow monitoring	1,100	1,100, observed	1,100, observed	1,100, 2,000	1,100

Tables 4-6 and 4-7 summarize the estimated and projected flows per basin in 2012 and 2030, based on the planning data presented in Chapter 3 and the I&I and per capita flow criteria described in Chapter 4. Flows shown in these tables reflect reasonably expected sanitary wastewater flows based on official population projections. These tables are not intended for the purpose of sizing or designing wastewater facilities; more conservative assumptions discussed previously should be used for those purposes.

Table 4 - 6: 2012 Average and Peak Flows Per Basin⁺

Basin	Average Daily Sanitary Flow (gpm)	Peak Sanitary Flow (gpm)	Peak I&I (gpm)	Total Peak Flow (gpm)
1	66	132	1,050	1,182
2	48	95	495	590
3	63	126	400	526
4	141	282	775	1,057
5	48	96	870	966
6	182	363	973	1,336
7	1,113	2,225	2,587	4,812
8	77	154	464	618
9	85	171	405	576
10	750	1,500	2,379	3,879
11	30	60	77*	137
12	25	49	120	169
13	82	164	828	992
14	56	112	419	531
15	59	118	458	576
16	39	77	72	149
17	34	67	172	239
18	87	175	382	557
19	163	327	1,404	1,731
20	441	882	657	1,539
21	160	320	450	770
22	137	274	527	801
23	217	435	766	1,201
24	118	236	159	395
25	167	333	369	702
26	145	290	387	677
27	52	104	170	274
28	65	129	161	290
29	59	118	417	535
30	441	883	2,625	3,508
31	159	318	947	1,265
32	68	136	83	219
33	11	21	35*	56
34	97	194	681	875
35	123	247	902	1,149
36	80	160	542	702
37	248	497	1,689	2,186
38	270	539	1,401	1,940
39	256	512	2,286	2,798
40	121	242	2,376	2,618
41	399	799	1,509	2,308
42	119	239	296*	535
43	70	140	537	677
44	7	15	342	357
45	233	467	734	1,201
46	78	156	240	396
47	11	22	34*	56
48	23	47	92*	139
50	49	99	60*	159
51	105	210	207*	417
52	121	242	196*	394
53	61	121	109*	230
54	72	143	311*	454
55	136	273	238*	511
56	145	289	126*	415
57	149	298	279*	577
58	19	38	93*	131
Total (gpm)	8,380	16,760	37,319	54,079
Total (mgd)	12	24	54	78

+ Tributary flows from neighboring jurisdictions and sewer districts are not included

* Due to lack of 2002 I&I study data, the I&I for these basins was assumed based on 1,100 gpad and 80% sewered area.

Table 4 - 7: 2030 Projected Flows Per Basin^{+Δ}

Basin	Average Daily Sanitary Flow (gpm)	Peak Sanitary Flow (gpm)	Peak I&I (gpm)	Total Peak Flow (gpm)
1	67	133	1,050	1,183
2	48	96	495	591
3	63	126	400	526
4	143	285	775	1,060
5	48	97	870	967
6	207	414	973	1,387
7	1,894	3,789	2,587	6,376
8	79	157	464	621
9	86	172	405	577
10	930	1,860	2,379	4,239
11	32	64	77*	141
12	25	50	120	170
13	228	456	828	1,284
14	56	111	419	530
15	62	123	458	581
16	50	100	72	172
17	75	150	172	322
18	216	432	382	814
19	167	335	1,404	1,739
20	473	945	657	1,602
21	173	346	450	796
22	152	305	527	832
23	225	450	766	1,216
24	150	299	159	458
25	260	520	369	889
26	147	295	387	682
27	52	104	170	274
28	65	130	161	291
29	59	117	417	534
30	470	939	2,625	3,564
31	159	319	947	1,266
32	70	140	83	223
33	13	27	35*	62
34	97	194	681	875
35	124	249	902	1,151
36	113	227	542	769
37	248	497	1,689	2,186
38	274	548	1,401	1,949
39	260	519	2,286	2,805
40	121	242	2,376	2,618
41	507	1,013	1,509	2,522
42	123	246	296*	542
43	75	151	537	688
44	7	15	342	357
45	236	473	734	1,207
46	78	157	240	397
47	11	22	34*	56
48	23	47	92*	139
50	50	101	60*	161
51	233	466	207*	673
52	179	359	196*	511
53	65	131	109*	240
54	78	155	311*	466
55	154	309	238*	547
56	153	307	126*	433
57	150	301	279*	580
58	19	38	93*	131
Total (gpm)	10,326	20,652	37,319	57,971
Total (mgd)	15	30	54	84

+ Tributary flows from neighboring jurisdictions and sewer districts are not included.

Δ Flows are for current zoning, and do not account for proposed zoning changes that are not yet adopted (e.g. Wilburton re-zones)

* Due to lack of 2002 I&I study data, the I&I for these basins was assumed based on 1,100 gpad and 80% sewered area.

CHAPTER 5

Existing System

5.1 Introduction

This chapter identifies physical facilities within the Bellevue wastewater system and discusses their operation. Bellevue's wastewater system is entirely separate from the storm and surface water collection system.

The wastewater system is well mapped, inspected, and maintained. There are no known connections between or conflicts with sources of water supply or storm water conveyance.

5.2 Wastewater Drainage Basins

Bellevue's wastewater service area is divided into basins for the purpose of system study and analysis. Basin boundaries take into account logical system extensions into currently unsewered areas. Bellevue's basins and KCWTD's interceptors are shown in Figure 5-1. Each basin has an assigned name and number. The basin names, ID numbers and name abbreviations are shown in Table 5-1. Since adoption of the 2002 Comprehensive Wastewater Plan, the City has assumed the portion of the Coal Creek Utility District within Bellevue City limits. As a result there are four new basins in the wastewater system.

The collection system is divided into 43 major drainage basins and 14 minor basins. The major basins are all hydraulically modeled to evaluate capacity issues. They generally drain to either a single connection point along KCWTD's regional collection system or to a major Bellevue pump station.

The minor basins consist of relatively short sewer mains with numerous connections to regional interceptors. These "basins" actually function as a group of localized sub-basins that are considered as one basin for simplicity. These short mains either discharge to the City of Redmond's system (Basins 33 and 44), Coal Creek Utility District's system (Basin 47 and 48) or to numerous locations along KCWTD's regional trunks and interceptors (Basins 46 and 50 through 58).

5.3 Physical Facilities

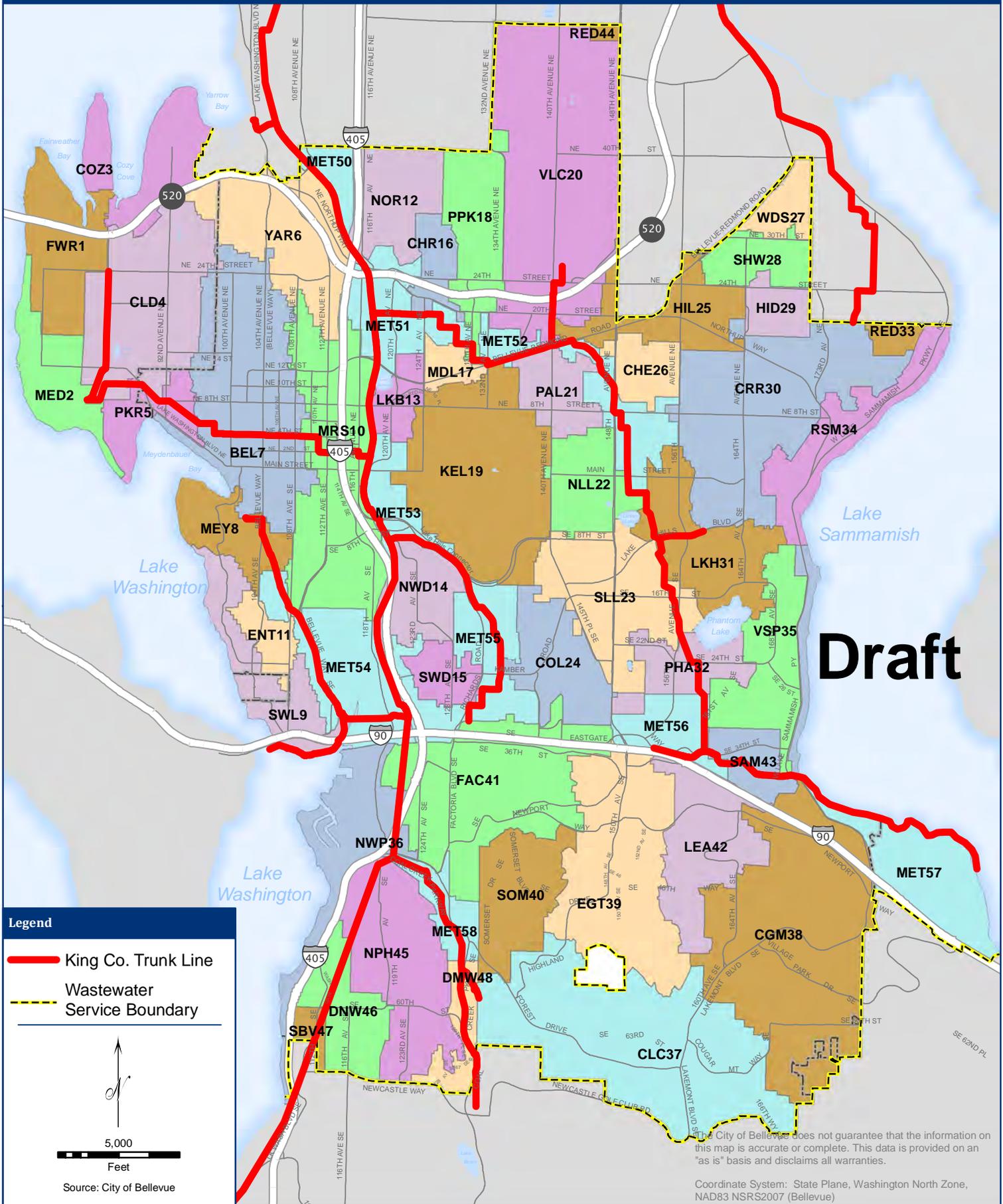
The collection system consists of approximately 525 miles of sewer mains, ten flush stations, and thirty six pump stations. In addition, the City takes responsibility for the portions of the sewer service lines that lie within the public right-of-way. These sewer service “stubs” are estimated to total approximately 130 miles. Length of sewers and number of manholes in each basin are listed in Table 5-1.

Table 5-2 indicates the location of each pump station, the basin it serves, whether it has on-site power generation capability, the number of pumps within each pump station, and some pump characteristics. Table 5-3 indicates the location of each flush station.

DRAFT

Sewer Basins

Figure 5-1



The City of Bellevue does not guarantee that the information on this map is accurate or complete. This data is provided on an "as is" basis and disclaims all warranties.

Coordinate System: State Plane, Washington North Zone, NAD83 NSRS2007 (Bellevue)

Table 5 - 1: Sewer Basin Pipe Inventory

Basin Name	ID	Basin Code	Total No. of manholes	Total (ft)	Unknown Diameter (ft)	Length of Gravity Sewer (ft)											
						<8"	8"	10"	12"	14"	15"	16"	18"	20"	21"	24"	27"
Fairweather	1	FWR	195	46524	597	5050	34504	5438	935	0	0	0	0	0	0	0	0
Medina	2	MED	137	35962	462	2517	29713	666	2604	0	0	0	0	0	0	0	0
Cozy Cove	3	COZ	179	46769	694	4117	41958	0	0	0	0	0	0	0	0	0	0
Clyde Hill	4	CLD	503	102276	76	8510	80551	3434	3061	117	0	0	0	0	4780	1747	0
Parker	5	PKR	156	32172	240	2070	29862	0	0	0	0	0	0	0	0	0	0
Yarrow Bay	6	YAR	324	63739	0	4564	49895	4896	3949	0	435	0	0	0	0	0	0
Bellevue	7	BEL	680	139483	331	2915	100755	6453	9588	845	4151	100	10812	0	415	3118	0
Meydenbauer	8	MEY	177	39798	8	5292	30549	150	888	336	2575	0	0	0	0	0	0
Sweyolocken	9	SWL	230	57714	456	5611	44119	5306	0	0	0	0	0	0	0	0	2222
Mercer Slough	10	MRS	440	84681	395	9778	51306	5214	5157	0	2706	1182	3676	1303	395	3569	0
Enatai	11	ENT	91	19437	142	2645	13717	2933	0	0	0	0	0	0	0	0	0
Northup	12	NOR	48	10846	0	520	7759	0	2377	0	190	0	0	0	0	0	0
Lake Bellevue	13	LKB	73	11971	30	496	8941	0	0	0	2442	0	62	0	0	0	0
Woodridge	14	WDR	146	29903	0	322	27960	1621	0	0	0	0	0	0	0	0	0
Sewer District	15	SWD	119	24770	0	463	24307	0	0	0	0	0	0	0	0	0	0
Cherry Crest	16	CHR	80	16609	0	249	15635	100	625	0	0	0	0	0	0	0	0
Midlakes	17	MDL	23	6607	0	0	5165	1442	0	0	0	0	0	0	0	0	0
Pikes Peak	18	PPK	207	36766	40	1412	35264	0	50	0	0	0	0	0	0	0	0
Kelsey Creek	19	KEL	384	78774	50	2456	71411	1918	1587	0	1352	0	0	0	0	0	0
Valley Creek	20	VLC	481	91271	0	210	80206	7531	2608	0	270	0	446	0	0	0	0
Palisades	21	PAL	149	26732	361	589	24545	1237	0	0	0	0	0	0	0	0	0
N Larsen Lake	22	NLL	138	28124	0	869	25342	1613	300	0	0	0	0	0	0	0	0
S Larsen Lake	23	SLL	361	72654	0	3792	60112	1912	5175	0	0	0	1663	0	0	0	0
College Hill	24	COL	191	32260	0	1209	30719	264	68	0	0	0	0	0	0	0	0
Highland	25	HIL	172	33206	368	595	30368	0	1875	0	0	0	0	0	0	0	0
Chevy Chase	26	CHE	170	27628	24	523	27081	0	0	0	0	0	0	0	0	0	0
Woodside	27	WDS	134	23278	0	0	23278	0	0	0	0	0	0	0	0	0	0
Sherwood Forest	28	SHW	129	27847	30	411	27406	0	0	0	0	0	0	0	0	0	0
Hidden Hills	29	HID	114	22935	0	0	22935	0	0	0	0	0	0	0	0	0	0
Crossroads	30	CRR	712	150609	266	4774	124439	1299	100	0	5796	0	13935	0	0	0	0
Lake Hills	31	LKH	285	60723	15	8179	47455	1085	3989	0	0	0	0	0	0	0	0
Eastgate	32	PHA	96	21910	0	487	17819	1893	1711	0	0	0	0	0	0	0	0

Basin Name	ID	Basin Code	Total No. of manholes	Total (ft)	Unknown Diameter (ft)	Length of Gravity Sewer (ft)											
						<8"	8"	10"	12"	14"	15"	16"	18"	20"	21"	24"	27"
Redmond	33	RED	19	4350	98	0	4252	0	0	0	0	0	0	0	0	0	0
Rosemont	34	RSM	245	50047	573	2704	46748	0	22	0	0	0	0	0	0	0	0
Vasa Park	35	VSP	293	57500	0	2628	52232	770	1254	0	616	0	0	0	0	0	0
Newport	36	NWP	165	39831	542	1821	37468	0	0	0	0	0	0	0	0	0	0
Coal Creek	37	CLC	992	143887	0	1754	128384	3839	2007	978	6925	0	0	0	0	0	0
Cougar Mtn.	38	CGM	1036	149950	1042	372	129243	4387	7832	0	4353	258	2463	0	0	0	0
Eastgate	39	EGT	754	136705	0	0	124147	6248	4032	0	1786	0	0	0	0	492	0
Somerset	40	SOM	372	68005	0	447	60542	5005	2011	0	0	0	0	0	0	0	0
Factoria	41	FAC	618	108224	584	664	89764	11726	3207	0	473	1781	25	0	0	0	0
Leahwood	42	LEA	336	53174	0	56	45584	0	4393	0	3141	0	0	0	0	0	0
Sammamish	43	SAM	235	40746	103	986	35135	2831	1097	594	0	0	0	0	0	0	0
Redmond	44	RED	19	2615	0	0	2615	0	0	0	0	0	0	0	0	0	0
Newport Hills	45	NPH	391	89833	148	2246	73613	13524	302	0	0	0	0	0	0	0	0
DNW	46	DNW	210	33880	0	521	27934	3446	1930	0	0	49	0	0	0	0	0
South Bellevue	47	SBV	66	7967	0	36	7931	0	0	0	0	0	0	0	0	0	0
DMW	48	DMW	63	15234	4648	0	9864	134	588	0	0	0	0	0	0	0	0
METRO	50	MET	77	12340	93	108	12054	85	0	0	0	0	0	0	0	0	0
METRO	51	MET	102	16858	0	677	14501	951	729	0	0	0	0	0	0	0	0
METRO	52	MET	176	30186	38	744	29404	0	0	0	0	0	0	0	0	0	0
METRO	53	MET	79	9955	0	79	9479	174	223	0	0	0	0	0	0	0	0
METRO	54	MET	159	26604	110	5011	21293	190	0	0	0	0	0	0	0	0	0
METRO	55	MET	175	29413	0	1396	27922	95	0	0	0	0	0	0	0	0	0
METRO	56	MET	64	10279	32	73	10174	0	0	0	0	0	0	0	0	0	0
METRO	57	MET	328	54957	0	406	54132	317	102	0	0	0	0	0	0	0	0
METRO	58	MET	61	8624	0	0	8624	0	0	0	0	0	0	0	0	0	0
TOTAL			14359	2705142	12596	1033 54	230811 5	110127	76376	2870	37211	3370	33082	1303	5590	8926	2222

* The basin name "METRO" is used for basins with numerous unconnected short sewers that each discharge separately to a KCWTD interceptor. This does not imply KCWTD ownership of the sewers, except for the interceptor. Other basins discharge to KCWTD interceptors, but typically only in one location.

5.3.1 Pump Stations

The City’s pump stations operate based on local control with remote SCADA monitoring at the Bellevue Service Center. Pump Stations are listed in Table 5-2.

Table 5 - 2: Pump Stations

Pump Station Name	Basin	Address	On-site Power ¹	Rating Point ²		No. of Pumps	Installed Capacity GPM ³	Volts
				GPM	TDH			
Cedar Terrace	YAR 6	3229 115th Avenue NE	No	200	24'	2	400	240
Yarrow Point	COZ 3	9000 NE 42nd Street	No	323	18'	2	646	208
Cozy Cove	COZ 3	3268 Hunt's Point Rd	Yes	325	18'	3	975	480
Hunt's Point	COZ 3	4344 Hunt's Point Rd	No	300	17'	2	600	208
Fairweather Basin	FWR 1	3003 Fairweather Pl NE	Yes	325	52'	3	975	480
Evergreen East	FWR 1	3448 Lake Ln (NE 78 th Pl)	No	300	14'	2	600	208
Evergreen West	FWR 1	3603 Evergreen Point Rd	No	300	16'	2	600	208
Lakecrest	MED 2	1823 73rd Avenue NE	No	300	17'	2	600	208
Medina City Hall	MED 2	501 Evergreen Point Rd	Yes	350	67'	2	700	208
Parkers ⁴	PAR 5	9011 Lk Wash Blvd NE	No	425	144'	3	1,275 ⁽⁴⁾	480
Grange	BEL 7	9927 Meydenbauer Wy	Yes	350	84'	2	700	480
Meydenbauer	MEY 8	9931 Shoreland Dr SE	No	285	59'	2	570	240
Killarney	SWL 9	2177 Killarney Wy SE	No	425	11'	2	850	240
Newport Pump	NWP 36	73 Skagit Key	Yes	693	134'	2	1,386	480
Newport Lift	NWP 36	68 Cascade Key	Yes	359	17'	2	718	480
Bagley	NWP 36	4400 Lk Wash Blvd SE	No	229	40'	2	458	240
Pleasure Point	NWP 36	5600 Pleasure Pt Rd SE	No	125	11'	2	250	240
South Ridge	SBV 47	6216 108th Ave SE	No	85	125	2	170	480
Kimberlee Park	DNW 46	11001 SE 56th SE	No	350	175'	2	700	480
Lake Heights	NPH 45	4425 Lk Wash Blvd SE	No	120	63'	2	240	480
Bellefield ⁵	MRS 10	1400 112nd Avenue SE	Yes	950 ⁵	46'	3	2,850	480
Midlakes ⁵	MDL 17	12700 Bel-Red Rd	Yes	800 ⁵	45'	2	1,600	240
Palisades	PAL 21	13630 NE 13th St	No	165	64'	2	330	480
Wilburton	MRS 10	1331 118th Avenue SE	No	350	42'	2	700	480
Emerald Ridge	MET 50	3080 118th Avenue SE	No	280	90'	2	560	480
Eastgate #1	SAM 43	2442 W Lk Samm Pkwy SE	Yes	424	14'	2	848	240
Eastgate #2	SAM 43	1802 W Lk Samm Pkwy SE	Yes	300	13'	2	600	240
Lake Hills #4	LKH 31	16035 SE 9th St	No	400	65'	2	800	480
Lake Hills #6	LKH 31	16358 SE 16th St	No	145	64'	2	290	480
Lake Hills #7	VSP 35	16280 SE 24th St	No	220	60'	2	440	480
Lake Hills #12	RSM 34	365 W Lk Samm Pkwy SE	Yes	750	251'	4	3,000	480
Lake Hills #16	RSM 34	254 W Lk Samm Pkwy NE	No	400	78'	2	800	480
Lake Hills #17	RSM 34	628 W Lk Samm Pkwy NE	No	245	11'	2	490	240
Lake Hills #18	RSM 34	1082 W Lk Samm Pkwy NE	No	245	11'	2	490	240
Lake Hills #19	RSM 34	1830 W Lk Samm Pkwy NE	No	245	11'	2	490	240
Lakemont	CGM 38	5392-176 Place SE	Yes	200	21'	2	400	480

1. As of 2013. Additional pump stations are scheduled to have on-site power installed as part of CIP No. S-59. Those stations will be identified as part of future preliminary design work.
2. Design rating point per manufacturer’s pump curves. Actual performance may differ due to impeller wear.
3. Installed capacity based on rating points for one pump only; not corrected for additional downstream head loss with multiple pumps running (actual installed capacity is less)
4. Parkers, a.k.a. Lake Washington Pump Station has two high-capacity pumps and one 2-speed low/high-capacity pump. The two high-capacity pumps are rated at 425 gpm each while operating in parallel (850 gpm total). The third, 2-speed pump is capable of functioning as a flush station pump (in low speed) or a third redundant high-capacity pump (in high speed).
5. Bellefield and Midlakes Pump Station capacity expansion projects are currently in design. Capacities shown are for existing pump stations.

5.3.2 Lake Lines and Flush Stations

The Lake Washington and Lake Sammamish shorelines and adjacent upland areas are served by lakeshore collector pipes known as “lake lines”. By preventing discharge of raw sewage into Bellevue’s lakes, the lake lines provide a tangible benefit to all Bellevue citizens, neighboring jurisdictions, and the environment. Beginning from their installation in the 1950s, the lake lines were part of a regional strategy that markedly improved Lake Washington water quality, including reduced odor, enhanced visibility, and reduction of excessive phosphorus and algae growth (<http://www.kingcounty.gov/>, “The Lake Washington Story”).

The lake lines are sewers constructed either in the lake or below the nearby shore. There are approximately 18.7 miles of lake lines, including roughly 14.6 miles along Lake Washington, and 4.1 miles along Lake Sammamish.

Wastewater flows by gravity from the areas served to the lake lines. At the downstream end of the lake lines, pump stations lift flow to the gravity sewer system above the shore.



Figure 5-2: Typical View of Exposed Portion of Lake Line Sewer

The lake lines are susceptible to sedimentation because they generally have only nominal slope, and in some locations are flat or have low spots. Low-pressure pump stations known as “flush stations” are installed at the upstream end of the lake lines to pump lake water

through the piping, to increase flow velocities and provide some scouring to clear sediments. Bellevue’s flush stations are listed in Table 5-3.

Table 5 - 3: Flush Stations

Flush Station	Also Known As	Basin	Address	No. of Pumps	Capacity (GPM)	Total Dynamic Head	Voltage
#1	Yarrow Bay F.S.	COZ 3	4620 95 th Ave NE	1	240	21’	240
#2	Hunts Point F.S.	COZ 3	3261 Hunts Point Road	1	240	21’	240
#3	Long F.S.	FWR 1 / MED 2	2441 Evergreen Point Rd.	2	240	21’	240
#4	King F.S.	MED 2	8875 Groat Point Drive	1	240	21’	240
#5	Thurston F.S.	PAR 5	8925 Groat Point Drive	1	240	21’	240
#6	Ellis F.S.	MEY 8	903 SE Shoreland Drive	1	240	21’	240
#7	Cragin F.S.	SWL 9	1175 96 th Ave Se	1	240	21’	240
#8	Ripley F.S.	NWP 36	70011 Ripley Lane	1	240	21’	240
#9	Sunrise Cove F.S.	RSM 34	546 W. Lk. Sammamish Pkwy SE	1	375	10’	240
#10	Eastgate F.S.	SAM 43	562 W. Lk. Sammamish Pkwy SE	1	300	9’	240

Although the flush stations provide nightly flow to move sediment, accumulation of debris in the lake lines is still a problem. Figure 5-3 shows approximately 100 five-gallon buckets of debris that was removed from a section of approximately 500-feet of lake line pipe along Meydenbauer Bay.

The accumulation of debris has been known to limit the capacity of the pipe and cause overflows. Overflows occur in lake line piping at a frequency out of proportion with lake line length. Lake lines account for approximately 3.5% of the sewer mains length in the system, but approximately 20% of overflows from 2009-2011.



Figure 5-3: Debris Removed from a Portion of Meydenbauer Bay Lake Line Sewer

The oldest Lake Washington lake lines and flush stations were installed in the early 1950s by Bellevue Sewer District (now part of the City), and some pre-date incorporation of the City of Bellevue. These facilities are aging, and do not meet current design standards for gravity pipeline slopes or lake water intake depth (for flush station intakes). However, they have served to convey sewage from the shoreline and adjacent upland properties for decades, and helped to significantly improve lake water quality after their installation.

5.4 System Reliability

Much of the City's wastewater collection system conveys flow downhill by gravity. Continued reliable operation of this gravity system is addressed by various maintenance activities described in Chapter 8.

There are also a number of areas within Bellevue's system that require the use of pump stations and force mains to move wastewater flows from one place to another and ultimately to the KCWTD regional collection system and treatment. The use of pumps and motors provides an increased opportunity for the system operation to break down due to mechanical failure or power loss. The following provisional practices help to ensure the continued reliable operation of Bellevue's pumping facilities:

- Each station is equipped with at least two pumps (installed capacity). Each pump station was originally designed with redundant capacity to convey the peak design flow with one pump out of service (firm capacity). Due to increased I&I over time, the following pump stations now require all pumps to be running (installed capacity) to convey peak flows: Cozy Cove, Fairweather, Newport Lift, Yarrow Point, Hunts Point, Parkers, Bagley, and Pleasure point. Redundancy needs will be weighed as part of pump station prioritization criteria in the pump station evaluation currently underway.
- All stations can be powered by one of the Utilities portable generators in the event of a power outage.
- Critical stations have permanent on-site emergency power generators that automatically provide power in the event of a power outage. These locations are indicated in table 5-2.
- Permanent on-site power is being added at several pump stations on a prioritized, ongoing basis, as described in Chapter 9.
- All pump stations are continually monitored with telemetry for pump failure, power failure, high wet well, and/or overflow alarms.
- Pump stations are regularly operated and maintained as described in Chapter 8.

5.5 Hydraulic Operations

The following section describes in general terms how and at what locations Bellevue's wastewater is delivered to KCWTD's regional collection system.

5.5.1 Basins Served by KCWTD's Medina Trunk and Force Main

Fairweather Pump Station delivers all of the flow from **Basin 1** to **Basin 4**. All of the flows from **Basin 3** are also delivered to **Basin 4** via the Cozy Cove Pump Station. **Basins 1 and 3** flows enter at the top of the Medina trunk via **Basin 4** sewer mains. **Basin 4** flows enter the trunk at numerous locations along its entire length. Immediately prior to the Medina

trunk reaching KCWTD's Medina Pump Station, flows from **Basin 2**, (via Bellevue's Medina City Hall Pump Station) and **Basin 5** (via the Parkers Pump Station) enter the trunk. All flows collected by the Medina Trunk are pumped by KCWTD's Medina Pump Station through the Medina Force Main to the Eastside Interceptor.

5.5.2 Basins Served by KCWTD's Bellevue Trunk

Sewage from **Basin 7** and **Basin 8** flows by gravity to KCWTD's Bellevue Pump Station, which pumps those flows through the Bellevue Force Main into the Bellevue Trunk. All flows from **Basin 10** are pumped into the trunk by Bellevue's Bellefield Pump Station. **Basin 11** sewage flows by gravity into this Trunk. All flows collected by the Bellevue Trunk are pumped by KCWTD's Swayolocken Pump Station to the Eastside Interceptor. Sewage from **Basin 54** enters the Bellevue Trunk at several locations along its length, as well as directly into the Eastside Interceptor near the Swayolocken Pump Station discharge point.

5.5.3 Basins Served by KCWTD's Enatai Interceptor

The Enatai Interceptor conveys flows from Mercer Island to KCWTD's Swayolocken Pump Station, which pumps to the Eastside Interceptor. Sewage from Bellevue's **Basin 9** flows by gravity into the Enatai Interceptor prior to its discharge to the Swayolocken Pump Station.

5.5.4 Basins Served by KCWTD's Factoria Trunk

All flows into the Factoria Trunk are by gravity. **Basin 41** flows enter at the upstream end of the trunk. **Basin 15** flows are the next to enter, then **Basin 24**, followed by both **Basin 14** and **Basin 19** which enter at the same point approximately halfway down the trunk. Sewage from **Basin 55** also enters this trunk at various locations along its entire length. All flows collected by this trunk are discharged to the Eastside Interceptor.

5.5.5 Basins Served by KCWTD's Issaquah Interceptor

The Issaquah Interceptor conveys sewage from the South Lake Sammamish, Vasa Park, Cougar Mountain, and Issaquah areas to KCWTD's Sunset Pump Station. Sewage from **Basin 38** flows to this interceptor by gravity at two separate points. Sewage from **Basin 57** also flows to this interceptor by gravity and enters at various locations along its length. **Basin 35** and **Basin 43** flow by gravity directly to the Sunset Pump Station, which pumps all the flows collected by the Issaquah Interceptor up to the Heathfield Pump Station, which pumps the flow to the Eastgate Trunk.

Basin 38 is also served by the South Vasa trunk, an 18” trunk sewer that crosses I-90 and connects to the Issaquah interceptor. The city recently transferred ownership of the South Vasa trunk sewer to KCWTD, because the upstream tributary area grew to surpass KCWTD’s threshold for ownership.

5.5.6 Basins Served by KCWTD’s Eastgate Trunk

All four basins discharging directly into the Eastgate Trunk do so by gravity. Sewage flows from both **Basin 39** and **Basin 42** enter at the upstream end of the Eastgate Trunk. Flows from **Basin 56** enter at various locations along the upper half of this trunk, followed by **Basin 32**. All the sewage collected by this trunk is discharged directly to the Lake Hills Interceptor.

5.5.7 Basins Served by KCWTD’s Lake Hills Interceptor

Approximately one-third of **Basin 30** enters at the upstream end of the Lake Hills Interceptor by gravity and via KCWTD’s Lake Hills Boulevard Siphon. Sewage from the Eastgate Trunk, **Basin 23** and **Basin 31** also enters at the upstream end of the Lake Hills Interceptor by gravity. Moving downstream along the interceptor, **Basin 22** flows, and then **Basin 26** flows enter the interceptor by gravity. **Basin 25**, which also transports sewage from an area of Redmond under an interlocal agreement, discharge into this interceptor. Farther downstream, **Basin 21** and the joint use Valley Creek Interceptor (shared by KCWTD and Bellevue) both discharge by gravity to the Lake Hills Interceptor at the same location. The Valley Creek Interceptor conveys sewage flows from **Basin 20**. Next, **Basin 17** (via the Midlakes Pump Station) and **Basin 18** (by gravity) connect to the interceptor at the same point. The last basin to flow into this interceptor is **Basin 16** (by gravity). Sewage from **Basin 52** flows by gravity into the interceptor at various locations. All of the sewage collected by the Lake Hills Interceptor is discharged directly to the Eastside Interceptor. Sewage from **Basin 51** discharges at several locations to both the Lake Hills Interceptor and the Eastside Interceptor near the point where the two meet.

5.5.8 Basins Served by KCWTD’s Coal Creek Trunk

Sewage from **Basin 37** and **Basin 40** flows by gravity into the upstream end of the Coal Creek Trunk. **Basin 58** enters the trunk at various locations. Sewage from the eastern part of **Basin 48** flows by gravity into the Coal Creek Trunk. The Coal Creek Trunk discharges directly to the Eastside Interceptor.

5.5.9 Basins Served by KCWTD’s Eastside Interceptor

Sewage from **Basin 6** flows by gravity into Kirkland and through joint-use sewer mains (shared by Kirkland and Bellevue) to KCWTD’s Yarrow Bay Pump Station, which pumps directly to the Eastside Interceptor. Sewage from **Basin 12**, **Basin 13**, **Basin 50**, and **Basin**

53 flows by gravity directly into the Eastside Interceptor at several locations. **Basin 36** flows are pumped via the Newport Pump Station directly into the Eastside Interceptor. Sewage from **Basin 46** flows to the interceptor both by gravity, and from the Kimberlee Park pump station. Sewage from **Basin 45** flows to the interceptor by gravity, near where the interceptor merges with the Coal Creek Trunk. Sewage from **Basin 47** and the western part of **Basin 48** flow by gravity into the Coal Creek Utility District system and ultimately to the Eastside Interceptor.

5.5.10 Basins Served by KCWTD's Lake Hills Trunk

Sewage from **Basin 27**, **Basin 28**, **Basin 29**, and **Basin 33** flows by gravity into Redmond, through joint-use sewer mains (shared by Redmond and Bellevue) to KCWTD's Lake Hills Trunk. All flows from **Basin 34** are pumped, via Pump Station #12, into the west portion of Basin 30. Approximately two-thirds of **Basin 30** flows directly to the upstream end of the Lake Hills Trunk by gravity. All of the sewage collected by the Lake Hills Trunk is discharged to KCWTD's Lake Sammamish Interceptor.

5.5.11 Basins Served by KCWTD's Lake Sammamish Interceptor

Sewage from **Basin 44** flows into the City of Redmond's wastewater system and eventually to KCWTD's Lake Sammamish Interceptor.

CHAPTER 6

System Renewal and Replacement

This chapter addresses issues related to the aging and corresponding deterioration of the wastewater system infrastructure. Bellevue Utilities uses industry standard asset management practices to proactively identify system renewal and replacement (R&R) needs and to establish policies and programs to address those needs in a timely and cost effective manner.

6.1 Asset Management Program Framework

System renewal and replacement is predicated on asset management principles. Bellevue Utilities has a formal asset management program that follows the Environmental Protection Agency's asset management framework. The asset management program's purpose is to manage the Utilities infrastructure assets so that service levels required by regulators and expected by customers are met at optimal cost and minimal risk.

Bellevue Utilities has incorporated the five core components of the EPA asset management framework, as explained briefly here, and in more detail later in this chapter:

1. Determine The Current State of the Assets

An inventory of the assets is maintained. The inventories include age, location, condition, estimate of remaining useful life and renewal and/or replacement cost. The inventories are updated when new or missing data becomes available. Maximo is used for the computerized maintenance management system (CMMS) software. Other commercial software such as CUES Granite XP and specially developed data bases are used to augment Maximo with asset condition data.

2. Define Service Levels

Service level goals are defined which are consistent with regulatory requirements and customer expectations. High level service level indicators and more detailed asset performance indicators are monitored and compared to defined targets. The number of overflows per 100 miles of sewer main is the example of a high level service level. Tracking of assets failures by the type of the asset and failure cause is an example of more detailed performance indicators that are tracked.

3. Determine Asset Criticality and Risk

Asset criticality is determined on the basis of the failure consequences. A triple bottom line approach is considered to determine criticality. Economic, environmental and social costs are included. Condition information along with the performance of similar assets is used to estimate failure probability. Risk is the product of the failure consequences and failure probability.

4. Determine Best Operating and Maintenance (O&M) and Capital Improvement Program (CIP) Strategies

Asset condition data and asset criticality/risk are used to help identify and refine O&M and CIP strategies that are consistent with meeting the service level targets. Life cycle cost analyses are used to determine the lowest cost alternatives. Alternatives can include increased or different maintenance, repairing some component of the asset, rehabilitating the asset, asset replacement or some combination of the alternatives.

5. Determine Funding Strategy

Bellevue Utilities strives to maintain rate equity, uniformity and stability for funding of infrastructure renewal and replacement. During years of low renewal and replacement expenditures, contributions are made to the fund. The fund will be drawn down during periods of above average renewal and replacement expenditures to stabilize rate increases. R&R funds should not be used for rate relief. Debt should not be used, except to provide rate stability in the event of significantly changed circumstances, such as disasters or external mandates. New connections are assessed appropriate charges to recover the Utility's costs to provide service to benefitted customers.

6.2 Condition Assessment

Bellevue Utilities has an active condition assessment program. Condition assessment is used to help identify current renewal and replacement needs and to forecast future needs. The purpose of the condition assessment program is to identify assets that must be repaired, renewed, replaced or maintained in a different manner in order to provide the desired function. Condition assessment activities include the closed circuit television inspection of sewer mains and stubs, visual and mechanical inspection of pump station facilities and a lake line condition assessment program. Additionally, maintenance, failure and claims information is used to identify trends and potential issues.

6.2.1 Condition Assessment – Pipelines and Manholes

Bellevue Utilities videos approximately 70 miles of its sewer pipelines, about 10% of the pipeline inventory, each year. Approximately 50% of the video footage is performed to:

- inspect sewer pipelines in streets that will be overlaid or where other street improvements are planned;
- assess preventive maintenance effectiveness and schedules;
- verify that preventive maintenance contractors have performed their contracted work;
- respond to customer requests

The remaining (roughly) 50% of video work is programmatic visual inspection of sewer pipelines (mains and stubs) in the system. Prioritized based on criticality and risk, each sewer main and the stubs off of each main are videoed every 5, 10 or 20 years. The most critical sewer lines (approximately 30 miles of pipe), defined as those lines where failure would not be acceptable due to either system importance or potential effects on other systems such as Olympic Pipeline, are videoed every 5 years. The roughly 100 miles of high risk (probability of failure multiplied by consequence of failure) pipe is videoed every 10 years. The remaining sewer pipelines (roughly 400 miles) are videoed every 20 years.

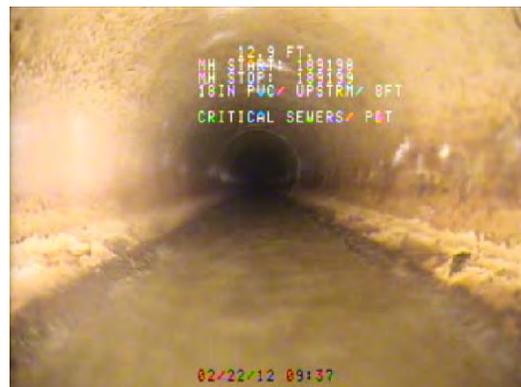


Figure 6-1a: Typical video inspection

The City began targeted video inspection of sewer pipes in the 1990’s. The programmatic approach to ensure that all pipelines are videoed on a regular schedule began in 2012. Through 2012, approximately 77 percent of the gravity sewer mains have been videoed.

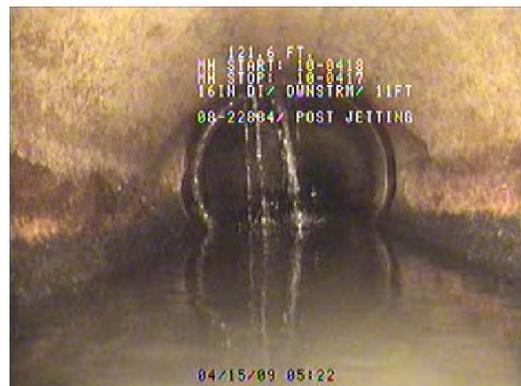


Figure 6-1b: Video showing failed joint with infiltration

Pipeline defects are identified and rated in accordance with the National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP) standard. Defects that require repair are prioritized on the basis of risk.

Manholes are visually inspected by Operations and Maintenance crews. To date, inspection results and a consultant recommendation have indicated that a separate manhole renewal and

replacement program is not necessary, and that the manholes can be considered part of the piped system for renewal and replacement purposes. O&M crews have an annual goal of inspecting 1/3 of the system's manholes.

6.2.2 Condition Assessment – Lake Lines

Because the lake lines are located along the Lake Washington and Lake Sammamish shorelines, condition assessment is difficult. There are not many manholes that can be used to access the lake lines. The flat slope of the lines is conducive to debris accumulation. The combination of the lack of CCTV camera access points and debris makes closed circuit television and other types of remote inspection impractical for most lake line sections.

There are approximately 14.6 miles of lake line piping in and along Lake Washington, and roughly another 4.1 miles of lake lines in Lake Sammamish. The Lake Washington lake lines were mostly installed in the 1950's, and primarily include AC and cast iron pipe. The Lake Sammamish lake lines were installed in the 1960's, and are primarily cast and ductile iron. Figure 6-2 shows the lake line pipe materials and approximate locations. Table 6-1 shows the total length of each pipe material.

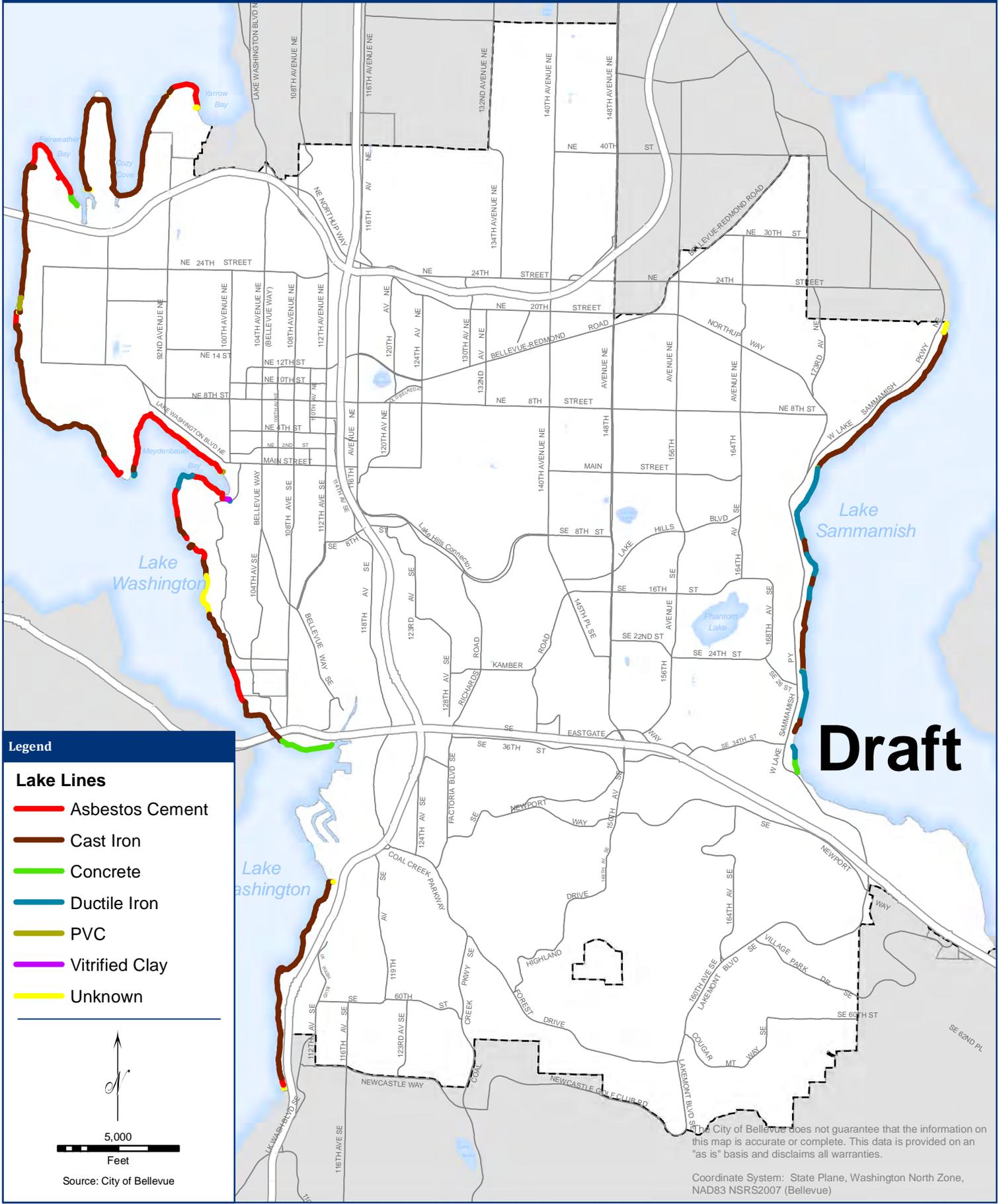
Table 6-1, Lake Line Materials and Lengths

Material	Length (Feet)	Length (Miles)
Asbestos Cement	19,077	3.61
Cast Iron	62,200	11.8
Concrete	3,429	0.65
Ductile Iron	10,027	1.90
PVC	559	0.11
Vitrified Clay	324	0.06
Unknown	3,234	0.61
Total	98,850	18.7

Pipe failures or blockages in the lake lines can cause sewage releases directly into the lakes, threatening sensitive shoreline habitat, closing beaches and interrupting service to homeowners.

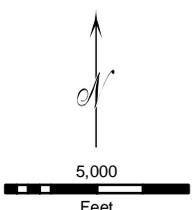
Lake Line Locations and Pipe Materials

Figure 6-2



Legend

- Lake Lines**
- Asbestos Cement
 - Cast Iron
 - Concrete
 - Ductile Iron
 - PVC
 - Vitrified Clay
 - Unknown



Source: City of Bellevue

The City of Bellevue does not guarantee that the information on this map is accurate or complete. This data is provided on an "as is" basis and disclaims all warranties.

Coordinate System: State Plane, Washington North Zone, NAD83 NSRS2007 (Bellevue)

During a 2007 video inspection of lake line pipe near Meydenbauer Bay (in Lake Washington), a segment of pipe was discovered where the crown of the pipe had completely eroded away. Subsequently, the City hired a consultant to evaluate the condition of the lake lines in and near the bay. The piping along Meydenbauer Bay is AC pipe installed in the 1950's, with cast iron fittings, wyes, and cleanouts. Destructive testing revealed that while some portions of the Meydenbauer Bay lake line are in good condition, other sections (particularly sections on land near the Bellevue Marina) had deteriorated to the point of failure. In addition, some sections of lake line piping had reduced capacity due to sediment and debris inside the pipe. Furthermore, due to the apparent fragility of the pipe, O&M staff have been advised not to jet clean the lake



Figure 6-3: Meydenbauer Bay Lake Line Deterioration

lines in Meydenbauer Bay, which could exacerbate sedimentation. In general, the investigation determined that some portions of the AC lake lines may be approaching the end of their useful life, and that a wider evaluation to support appropriate asset management decisions was advised.

Following lake line assessment in Meydenbauer Bay, the City retained another consultant to assess all of the lake lines along Lake Washington. This evaluation started in 2010 and is currently underway. The primary inspection mode is laboratory analysis of pipe coupons to determine how much deterioration has occurred and to forecast when deterioration might

require replacement. An attempt to more accurately map the lines and identify potential high points where hydrogen sulfide may have accumulated has been so far largely unsuccessful.

Elsewhere along Lake Washington (outside of Meydenbauer Bay), the Yarrow Point, Cozy Cove and Evergreen East pump stations (near Kirkland) are believed to have overflowed into Lake Washington during storm events, due to the combination of insufficient capacity in the downstream lake lines and high upstream I&I during storm events. In addition to the ongoing lake line assessment, I&I investigations in these areas is also recommended (see Chapter 9).

The Lake Sammamish lake lines, which are newer than the Lake Washington lake lines and primarily cast and ductile iron, will be assessed after the Lake Washington investigation is complete.

6.2.3 Condition Assessment – Pump and Flush Stations

All pump and flush stations are inspected monthly by O&M crews. Additionally, consultants evaluated the stations and proposed renewal and replacement recommendations in 1986 and 1992. Based on the recommendations developed in these reports, a series of pump station rehabilitation projects were completed. Since 1984, all pump stations except for Lake Heights and Wilburton have been rehabilitated (Lake Heights and Wilburton pump stations are scheduled for upgrade as part of CIP Plan No. S-16, as described in Chapter 9).

It has been almost 25 years since many stations were rehabilitated. Bellevue Utilities is currently beginning a new wastewater pump condition assessment study. The study will take an asset management-focused approach to pump station evaluation, using a more formalized life cycle cost analysis to analyze renewal and replacement alternatives. Both short and long-term renewal and replacement needs will be forecasted as part of the condition assessment process.

6.3 Service Levels

The primary metric used to define wastewater system service level is the number of wastewater overflows. An overflow is defined as whenever wastewater flows out of Bellevue Utilities' collection system to a location other than KCWTD's collection/treatment system. Overflow examples include backups into buildings and residences, overflows through manhole lids, and flows diverted into the environment. From 2000 through 2007, typically 20 to 30 overflows occurred each year. In 2001 and 2007, more than 30 overflows were recorded each year. In 2007, maintenance practices such as jetting and root sawing schedules were adjusted and the number of overflows since 2007 has been reduced to between 10 and 20 per year.

An overflow target has not yet been set. The number of overflows experienced since 2007 is low when compared to similarly sized wastewater utilities, even though few other utilities have

lake lines systems similar to Bellevue's. Also, many other utilities do not take responsibility for side sewer maintenance and replacement like Bellevue does. Although the number of overflows is down, condition assessment findings and recent capacity related overflows (during wet weather events) suggest increased overflows in the future unless infrastructure rehabilitation and replacement keeps up with the deterioration of infrastructure as it ages (recommendations for renewal and replacement are in Chapter 9).

In addition to the total number of overflows, several additional performance indicators are tracked, including:

- The causes of overflows and the type of asset responsible for overflows
- The number and amount of damage claims paid to customers as a result of sewer system failures
- The number and severity of sewer system defects identified by CCTV

Although not all of the performance indicators that are tracked directly measure customer service, they are precursors of conditions that influence customer service. The performance indicators can be used to influence asset management strategies and decisions to prevent drops in customer service levels.

6.4 Renewal and Replacement

The City recognized in the 1990's that asset renewal and replacement would be a significant future cost. Bellevue City Council established capital facilities replacement accounts to address R&R needs by ordinance (#4783) in 1995. Additional information on R&R policies can be found in the Waterworks Utility Financial Policies (Chapter 2) and in Chapter 10.

The City is now focusing on refinement of forecasted R&R needs based on condition assessment, asset criticality, capacity (forecasted growth) and coordination with other projects.

Asset repair, renewal or replacement is needed when the asset can no longer function in the manner needed to meet the Utility's service level targets. The optimal repair, renewal or replacement strategy is determined with life cycle cost analyses that consider the triple bottom line – economic, environmental and social costs and benefits.

The average age of Bellevue's wastewater system infrastructure is over 50 years old. Although some facilities will last more than 100 years, other facilities such as asbestos cement sewer mains and prefabricated metal pump stations will require replacement in as little as 50 to 60 years after installation. Although continuing growth must still be accommodated, the emphasis for Bellevue Utilities capital investment has shifted from growth-related capacity projects toward meeting renewal and replacement needs to maintain customer service levels.

The major wastewater asset classes are wastewater pipelines, lake lines, and pump and flush stations. Wastewater pipelines include on-land sewer collection mains, force mains, sewer stubs (or portion of the sewer service lines that lie within public rights-of-way), and manholes. Lake lines are comprised of approximately 19 miles of sewer mains, located along the shorelines of Lake Washington and Lake Sammamish, which serve lakefront residences and adjacent upland areas. The third asset class consists of pump and flush stations, used to pump wastewater up from low lying areas or to flush the relatively flat, low pressure lake lines.

The cost to replace all wastewater system assets is estimated to approach \$1.5 billion. Technologies such as trenchless pipe rehabilitation will lessen the actual cost renewal and replacement cost somewhat. Still, approximately \$1 billion is projected to be needed to renew and replace existing wastewater system infrastructure over the 75 period from 2013 through 2087.

A current estimate of the wastewater system renewal and replacement needs based on asset class and forecast replacement timing is presented in Figure 6-4. As Figure 6-5 shows, the majority of the renewal and replacement needs will be related to wastewater mains and service stubs.

Forecasted funding needs and utility rates are periodically refined, and will be adjusted following ongoing studies, including the Lake Washington lake line condition assessment and wastewater pump station evaluation.

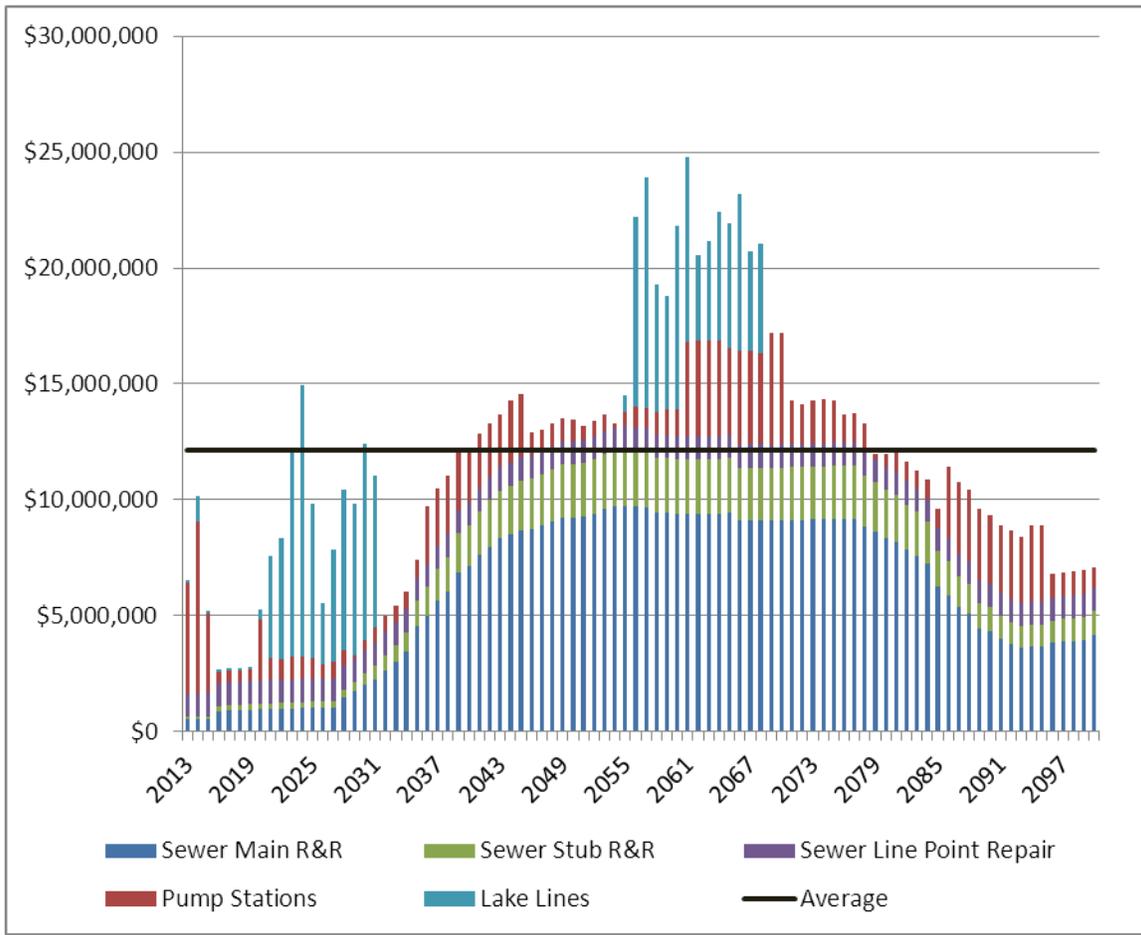


Figure 6-4. Estimated Renewal and Replacement Needs 2013 through 2100

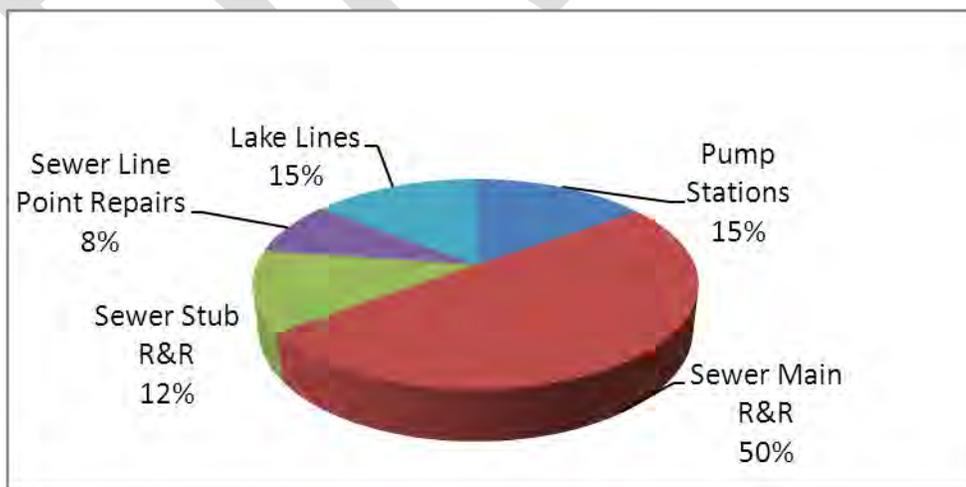


Figure 6-5. Breakdown of Wastewater System Renewal and Replacement Costs From 2013 through 2087

6.4.1 Renewal and Replacement – Wastewater Pipelines and Manholes

For long term planning purposes, sewer pipeline renewal and replacement forecasts are based on pipe material, age and diameter. There is variability and uncertainty in how long the different pipe types will last. Bellevue assumes the following average service lives for sewer pipes, as recommended by engineering consultants and in general accordance with current industry expectations (does not include lake lines):

- 150 year average life
 - PVC pipe
 - Cast iron pipe 12 inches diameter and larger
 - Ductile iron pipe 12 inches diameter and larger
 - Vitrified clay pipe
 - Polyethylene pipe
- 100 year average life
 - Concrete Pipe
 - Cast iron pipe less than 12 inches diameter
 - Ductile iron pipe less than 12 inches diameter
- 75 year average life
 - Cured in place pipe (rehabilitated pipe)
 - Unknown material

It is assumed that pipe renewal and replacement needs will occur uniformly in the period that starts 25 years before the average service life and ends 25 years after the average service life. The wastewater stubs are assumed to be renewed or replaced when the mains are replaced.

Bellevue's forecast estimates that 75% of the sewer mains can be rehabilitated with trenchless cured in place pipe (CIPP). The other 25% is assumed to require open trench replacement. Because CIPP reduces the diameter and capacity of the existing host pipe, CIPP is assumed to be feasible only once for any given pipeline. Pipe replacement is required for CIPP once it reaches the end of its service life.

Other trenchless technologies may also be employed, but would need to be evaluated on a case-by-case basis. Pipe bursting may only be feasible for existing concrete pipe. Slip-lining reduces the pipe diameter substantially, and may only be feasible for rehabilitating pipes that have excessive existing capacity.

The current planning-level estimated unit cost used by the City for replacement of a typical 8-inch main is \$480 per foot. For re-lining pipes, the City currently assumes roughly \$120/lineal foot for 8"-12" diameter pipe and \$150/lf for 15"-18". Site-specific factors such as soil type, groundwater depth, depth of pipe, pipe location (ROW or private land), installation method, etc will cause variation in the installed unit costs for pipe. However, the City uses one average unit cost (including a significant contingency) for simplicity in planning level estimates. More

detailed cost estimates are developed during the preliminary design phase for each project, to account for site-specific factors, with a smaller level of contingency.

Larger diameter pipe replacement costs are assumed to scale in proportion to the pipe diameter. Although this assumption produces reasonable estimates for 12-inch and smaller diameter pipe, it may overstate the costs for larger diameter pipe. Although the cost estimates for larger diameter pipe will be refined, these refinements will have minimal effect on the overall renewal and replacement forecasts since almost 90% of the mains are 8-inches in diameter and more than 95% of the mains are 12-inches in diameter or smaller.

CIPP renewal costs are estimated to be 50% of the open trench replacement costs. CIPP is assumed to have an average life of 50-75 years.

6.4.1.1 Sewer Stubs

By policy, Bellevue Utilities is responsible to maintain, rehabilitate and/or replace that portion of side sewers (sewer stubs) that lie within public rights-of-way or in an easement dedicated to the utility, except in cases of sewer misuse by a customer (discharged grease, debris, etc), or when private ownership is otherwise indicated as a matter of record. Sewer stubs are difficult to maintain because most do not have cleanouts, so the only way to access the stubs is through the sewer main. Bellevue Utilities has been unable to locate side sewer maintenance equipment such as root saws that can be launched from the sewer main. Consequently, maintenance activities such as root sawing that are routine for sewer mains cannot be performed on side sewers and expensive points repairs must be done instead.

6.4.1.2 Manholes

A 2012 consultant review of the wastewater rehabilitation and replacement forecast assumptions and methodology suggested that because Bellevue has a cooler, less humid climate and has not experienced extraordinary issues with manhole deterioration, a separate manhole rehabilitation and replacement program will likely not be needed. Manhole rehabilitation or replacement should be addressed when the connecting sewer mains are rehabilitated or replaced.

6.4.1.3 Wastewater Pipeline Renewal and Replacement Programs

Through 2012, sewer pipeline renewal and replacement was funded entirely through Program S-24, Sewer System Pipeline Rehabilitation. Although the funding was used primarily to make point repairs to mains and stubs, occasionally an entire run of sewer main would need to be relined or replaced. The relining or replacement costs severely impact the resources available for point repairs. Consequently, the backlog of needed point repairs grew. An Operations and Maintenance repair crew was added in 2011, to make most point repairs that are no more than 14 feet deep and that do not require traffic control. The O&M repair crew has stabilized the repair back log. There is variability in the number of defects that is identified each year and the

number of repairs that can be made through S-24. The long term adequacy of the current defect repair resources is being assessed.

The frequency and/or severity of defects on some sewer pipelines makes relining or replacement more cost-effective from a life cycle costs comparison than continuing to make individual point repairs. Consequently, a new program, S-66, Sewer System Pipeline Replacement, began in 2013. Initially, this program will fund rehabilitation or replacement of one-half to one mile of sewer main per year. As the pipeline inventory ages, relining or replacement will become the least life cycle cost alternative for more sewer mains and funding for this program will need to increase.

6.4.2 Renewal and Replacement – Lake Lines

Some background on the lake lines and existing conditions is provided in Chapter 5, but a more detailed assessment of the Lake Washington lake lines is currently underway.

Preliminary condition assessment, failure history and maintenance records suggest that the approximately four miles of asbestos cement lake lines located in Lake Washington may be at or near the end of its service life. Although the inability to effectively remove debris in the lake lines has already caused an elevated frequency of overflows in these pipes, it is anticipated that unacceptable structural failures of these pipes could occur within about 10-15 years if they are not replaced or rehabilitated. Additional asbestos lake line samples will likely need to be analyzed before replacement needs and schedules can be more precisely determined.

A comprehensive replacement strategy that considers the interdependence of adjacent lake line sections needs to be developed for the lake lines in each lake, and for each lake line segment. Each segment of lake line between flush stations will likely need to be replaced all at once, because the flush stations function to flush the entire segment before the wastewater is pumped to the gravity system. The site-specific nature of each lake line segment creates uncertainty about which replacement alternative and which lake line materials would be most appropriate for each segment.

Lake line systems such as Bellevue's are not very common, so estimating renewal and replacement costs is difficult. Based on a project in Mercer Island where the lake lines were replaced with new in-lake pipes, replacement is estimated to be on the order of \$1,500 per foot. A replacement cost of \$1,500 per foot implies that the total cost to replace the lake lines in both Lake Washington and Lake Sammamish will approach \$150 million.

Lake line replacement costs and scheduling will significantly impact wastewater system R&R resource needs. Currently, subject to the results of the Lake Washington lake line condition assessment results, it is anticipated that the asbestos cement and older cast iron lake lines that are primarily located in Lake Washington will be replaced from 2021 through 2031. The newer

ductile iron lake lines which are located in Lake Sammamish would be replaced from 2055 to 2068.

The first Lake line replacement project is funded by Program S-58, Sewer Lake line Replacement Program. Approximately 1100 feet of asbestos cement lake line in Meydenbauer Beach Park will be replaced in approximately 2016, pending re-design of the park by the Parks Department.

6.4.3 Renewal and Replacement – Pump and Flush Stations

For forecasting purposes, pump stations are assumed to require renewal every 25 years. The pump station long term replacement forecast for mechanical and electrical equipment assumes a service life of 100 years for reinforced concrete stations and 50 years for prefabricated stations. The service life estimates and renewal and replacement cost estimates will be modified to reflect the station-specific findings of pump station evaluations now underway. In addition to normal rehabilitation issues such as deterioration, equipment obsolescence and safety, pump station modifications may need to consider hydraulic capacity and emergency power requirements.

Eighteen stations are approaching or have reached the 25 year mark since they were last rehabilitated. These stations will likely require rehabilitation in the near future. Sewer pump station rehabilitation and replacement is funded through Program S-16, Sewer Pump Station Improvements.

Table 6-2, Proposed Pump Station Rehabilitation Schedule¹

Pump Station	Installed	Most Recent Rehab	Next Rehab ²
Wilburton	1978	---	2016
Cedar Terrace	1985	---	2017
Lake Hills #17	1966	1987	2017
Lake Hills #18	1966	1987	2018
Lake Hills #19	1966	1987	2018
Parkers	1952	1987	2019
Cozy Cove	1960	1988	2019
Evergreen East Lift	1960	1988	2020
Evergreen West Lift	1960	1988	2020
Fairweather Basin	1960	1988	2021
Hunt's Point Lift	1960	1988	2021
Lake Hills #6	1988	1988	2022
Lake Hills #7	1988	1988	2022
Lake Crest Lift	1960	1988	2023
Medina City Hall	1960	1988	2023
Newport Lift	1964	1988	2024
Newport Pump	1964	1988	2024
Yarrow Point Lift	Unk	1988	2025
Lake Hills #4	1991	1991	2025
Grange	1993	1993	2026
Lake Hills #16	Unk	1994	2026
Lakemont	1994	1994	2027
Palisades	1968	1994	2027
Bagley ³	1968	1995	2028
Killarney	1966	1995	2028
Meydenbauer	1960	1995	2029
Pleasure Point	1968	1996	2029
Eastgate #1	1968	2000	2030
Eastgate #2	1968	2000	2031
Lake Hills #12	1963	2003	2032
Kimberlee Park	1993	2007	2036
Southridge		2007	2036
Emerald Ridge	1982	2011	2037
Lake Heights	1948	---	2015
Midlakes ³	2015	N/A	2040
Bellefield ³	2015	N/A	2041

1. Schedule is based on a recommended increase in rehabilitation frequency to 2 pump stations per year, as part of CIP S-16. Current funding allows for roughly 1 pump station per year.
2. An engineering consultant is currently evaluating all pump stations installed or rehabilitated more than 10 years ago. The results of this evaluation will be used to change pump station priority to account for actual physical conditions, parts obsolescence, failure consequences and capacity problems.
3. Existing pump station will be replaced with a new pump station (in lieu of rehabilitation)

Table 6-2, Proposed Flush Station Rehabilitation Schedule¹

Pump Station	Installed	Most Recent Rehab	Next Rehab ²
Flush Station 3	1999	1999	2030
Flush Station 9	1975	2000	2031
Flush Station 10	1968	2000	2032
Flush Station 1	early 1960's	2003	2033
Flush Station 2	early 1960's	2003	2033
Flush Station 4	early 1960's	2003	2034
Flush Station 6	mid 1960's	2003	2034
Flush Station 7	mid 1960's	2003	2035
Flush Station 8		2003	2035
Flush Station 5	approx 1955	2014	2039

1. Schedule is based on a recommended increase in rehabilitation frequency to 2 pump stations per year, as part of CIP S-16. Current funding allows for roughly 1 pump station per year.
2. An engineering consultant is currently evaluating all pump stations installed or rehabilitated more than 10 years ago. The results of this evaluation will be used to change pump station priority to account for actual physical conditions, parts obsolescence, failure consequences and capacity problems.

6.5 Renewal and Replacement Funding Strategy

The City of Bellevue has financial policies in place to fund the planned renewal and replacement (R&R) of its sewage collection system (see Chapter 2). In order to provide as much intergenerational equity as feasible with respect to paying for asset renewal and replacement, Bellevue Utilities maintains a renewal and replacement fund. The objective is to contribute to the renewal and replacement when renewal and replacement needs are below average and to withdraw from the fund when the needs are above average.

A consultant recently reviewed the Bellevue Utilities renewal and replacement funding forecasts and funding adequacy. The consultant concluded that, in general, the renewal and replacement service life expectancies and cost estimates were in line with industry standards. Specific recommendations for improving the forecasts that will be implemented include:

- Use wastewater pipe replacement cost data developed by King County for the larger diameter pipelines when Bellevue does not have significant cost data

- Estimate sewer stub replacement costs on a “per stub” basis instead of using a percentage of the main replacement cost
- Refine pump station costs so they are based on station size and criticality. Base expected pump station service life on station type (e.g., 100 years for reinforced concrete stations, 50 years for prefabricated package stations) until station-specific studies are completed

Because the majority of the renewal and replacement forecast costs are for smaller diameter sewer mains, implementation of these recommendations is not expected to significantly affect the long range forecast. A more significant impact would be any changes to timing of the lake line replacements driven by new information identified by the condition assessments.

The consultant recommended that if the Bellevue Utilities wishes to avoid sharp rate hikes and debt financing, a commitment must be made to continue making contributions to the R&R fund and not to defer contributions. Figure 6-6 shows the projected renewal and replacement fund balance over time, providing that the commitment to maintaining generational equity is maintained.

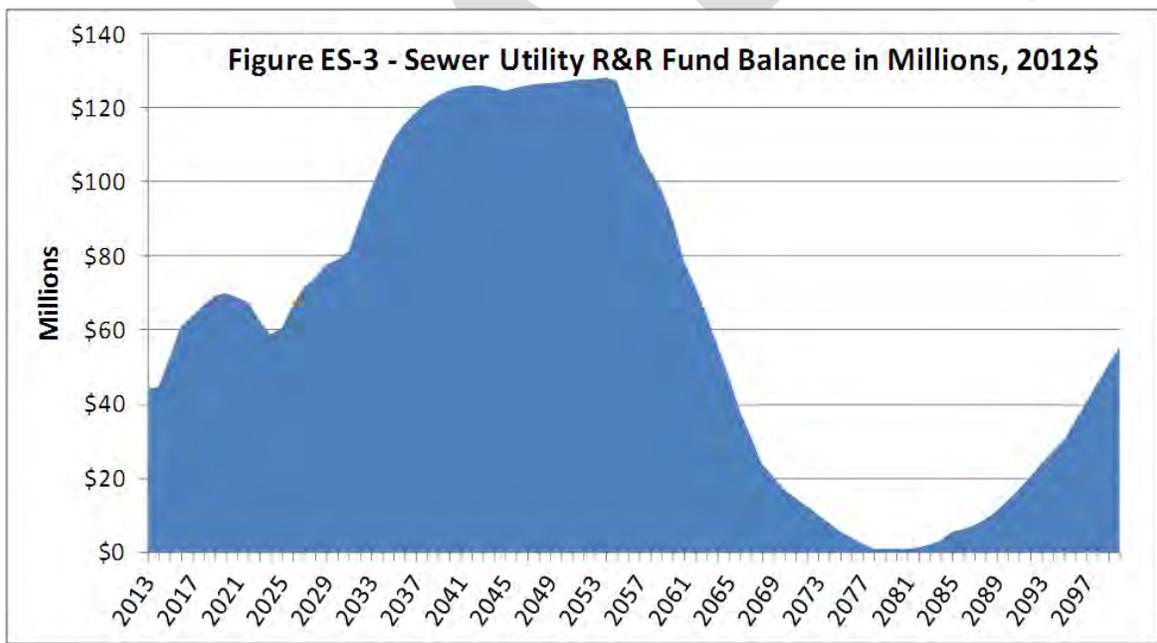


Figure 6-6. Projected Renewal and Replacement Fund Balance

CHAPTER 7

System Hydraulic Analysis

7.1 Introduction

The City of Bellevue uses The United States Environmental Protection Agency's Storm Water Management Model (SWMM) modeling software to hydraulically analyze flow and capacity in the wastewater system. As part of this Wastewater System Plan update, the hydraulic modeling efforts included re-examining the modeling criteria and assumptions, followed by analysis of pertinent sewer basins and recommendations for improvements.

Modeling analysis and results are summarized below. Discussion of flow-related criteria and assumptions can be found in Chapters 3 and 4, and recommendations for improvements are listed in Chapter 9.

7.2 Modeling Approach

The City models its sewer system to identify pipes that may have capacity problems as sewage flows increase with population growth and system aging over time. Bellevue uses a conservative approach to forecasting flows, to allow early identification of potential capacity constraints, and to avoid under-sizing new piping for a 100+ year design life. The following is a summary of the most significant modeling criteria used:

- Model for ultimate flows at build-out, meaning all properties are assumed to be developed to their maximum potential density based on zoning.
- Assume an occupancy rate of 100% for both commercial and residential development.
- Undeveloped properties are assumed to develop to the highest density allowed under the Bellevue Comprehensive Land Use Plan.
- Use I&I flow data estimated from King County's 2002 I&I study, plus 28% to account for additional flow as pipes continue to age.
- City of Bellevue Sanitary Sewer Engineering Standard S3-01.4 is used as the criteria for analyzing pipe capacity:
 - For existing piping, potential capacity problems are identified where pipes are at least 75% full at peak flow.
 - New pipes are designed to be 50% full at forecasted peak flows.

If the model predicts pipe capacity problems using these conservative parameters, further investigation is done to confirm or refute the likelihood of future capacity problems. This process allows for identifying and prioritizing areas for further analysis, while helping to avoid unnecessary capital expense. Subsequent investigation consists primarily of:

- Flow monitoring to determine actual current flows and estimate I&I influence, and
- Examining the remaining practical development potential of the tributary area to forecast actual anticipated flows over time.

The remaining practical development potential is based on forecasting by PCD and the Puget Sound Regional Council. Typically this assumes that only 90% occupancy and 75% of redevelopment potential is realized recognizing that not every property is developed to the highest use allowed by underlying zoning.

Further investigation is performed in areas zoned for mixed-use buildings as development is proposed, because the ratio of residential to commercial development has a significant impact on flow projections. This ratio is determined by future developers and cannot be known in advance. This affects the downtown area in particular, but also affects the Bel-Red corridor due to recent re-zoning in that area. Initial assumptions made by the City for long-range planning (prior to development proposals) are discussed in Chapter 3.

7.2.1 Modeled Trunks and Basins

Because Bellevue has a minimum pipe diameter standard of 8 inches, the upper reaches of the conveyance system provide ample capacity for peak flows. Therefore, only trunk lines (pipes which collect flow from other pipes) where flow capacity could be an issue are modeled. The wastewater conveyance system consists of approximately 525 miles of sewer pipe ranging in size up to 24 inches, of which about 90 percent are 8 inches or less. Approximately 18 percent of the system's pipes have been modeled.

The study area is divided into 57 basins as described in Chapter 5. Several of these basins contain only short pipe runs that drain relatively small areas. Because of minimum pipe size and slope standards, these pipes provide ample capacity for peak flows and are not modeled. The "minor" basins are 33, 44, 47, 48, 50, 51, 52, 53, 54, 55, 56, 57, and 58.

Each of the 44 remaining wastewater basins (the "major" basins) is further divided up into sub-basins to facilitate sanitary sewer flow generation in the hydraulic model. Each sub-basin is defined such that it contains a single land use category, and so that its entire geographic area drains to a single modeled pipe.

7.3 Modeling Results and Recommendations

The 2002 Comprehensive Wastewater Plan provided detailed hydraulic analysis results for the 42 major wastewater basins in the City's service area at the time (prior to acquiring additional basins from Coal Creek Utility District). Capacity improvements were recommended in three areas – a trunk line in basin 7, a trunk line and pump station in basin 10, and a trunk line in basin 25. Since 2002, the improvements in basin 7 and 25 have been completed. The improvements in basin 10 (CIP S-52 and S-53) were delayed pending route selection for Sound Transit's East Link light rail project (due to potential conflicts), but are now in design. All of the parameters used to determine wastewater flows were revisited as part of the development of this Plan update. Chapter 4 contains a discussion of those parameters. The hydraulic model's depiction of the piping system, and the sub-basin characteristics, boundaries and flow entry points to the system were reviewed.

In developing this plan, the hydraulic model's depiction of the piping system and sub-basin characteristics, boundaries and flow entry points to the system were reviewed. As a result of this review, the model files required some modification. The switch to SWMM was made because it was determined to be more cost efficient than HYDRA. Model files were converted from the HYDRA model to SWMM format, which resulted in minimal changes to analysis results. The effectiveness of SWMM should be occasionally reevaluated as new features are added to the program or new needs arise.

Basins were considered as having a potential capacity problem if the SWMM model predicted overflowing or significant surcharging in the basin. (Significant surcharging was defined as multiple nodes surcharging more than 1 ft above crown of pipe) Potential capacity problems were identified in 23 of the 44 modeled basins. These basins are listed in Table 7-1. After identifying basins with potential capacity problems, these basins were analyzed by comparing the model results to actual flow that had been observed through flow monitoring. Further investigation was determined to be necessary in 11 of the 23 basins. These 11 basins were discussed with engineering and operations & maintenance staff, and recommendations were developed taking into account the model results, observed flow, and field experience.

Table 7 - 1: Basins with Potential Capacity Problems

Basin Number	Further Investigation Recommended	Recommendation
1	Y	Capacity Improvements and I&I Investigation
2	N	---
3	Y	Capacity Improvements and I&I Investigation
4	N	---
5	N	---
7	Y	Flow Monitoring
10	N	Capacity Improvements and I&I Investigation
19	Y	Flow Monitoring
20	Y	I&I Investigation and Flow Monitoring
22	Y	No Action Required
23	N	---
25	N	---
30	N	---
31	Y	Capacity Improvements and I&I Investigation
34	Y	No Action Required
35	Y	Flow Monitoring
36	Y	Capacity Improvements and I&I Investigation
37	N	---
38	N	---
39	Y	I&I Investigation
40	Y	I&I Investigation
41	Y	I&I Investigation
42	N	---

7.3.1 Basins Requiring No Action

Although it was determined that further investigation would be required for basins 22 and 34, this investigation concluded that no action would be necessary. This was due to either the model being conservative when estimating pipe capacity, or flow monitoring being sufficiently higher than predicted flow combined with no issues of surcharging or flooding from field experience and observations.

7.3.2 Basins Requiring Flow Monitoring

Flow monitoring is recommended in basins 7, 19, 20 and 35. Generally, these areas are a concern because of the inconclusive model results and King County flow monitoring results. More information is needed to confirm whether there is a problem that needs to be addressed. In these particular areas, there have been no field observations of surcharge, or the problem is expected 5+ years in the future. Flow monitoring will help verify modeling results and determine if these pipes will require capacity improvements. These basins are discussed in detail below.

7.3.2.1 Basin 7

There are two pipe sections in Basin 7 (downtown) that the model predicts may not have sufficient capacity at build out.

The first section runs underneath 100th Ave NE, along the western side of the basin, collecting flows from the residential areas next to downtown. These are 8 inch concrete pipes with a slope of about 1%. The model shows surcharging of 5-10 feet, and the water level comes to about 2-3 feet from the surface level. About 500 GPM of the 650 GPM total flow is I&I in the model, however there has not been flow monitoring done on this section of pipe. Flow monitoring will confirm whether the pipe is currently or will become under capacity, and whether reducing I&I or capacity improvements will be necessary.

The second section of pipes are near the south end of the basin on Bellevue Way SE just south of Main St, and carry about 1500 GPM of wastewater. These pipes are 15 inch concrete pipes with a slope of about .15%. The model shows surcharging of less than 1 foot in the model at build out. Flow monitoring will help calibrate the model in this trunk in the quickly growing, high density downtown area.

7.3.2.2 Basin 19

Basin 19 includes a trunk line that runs north-south in the vicinity of Glendale Golf Course and Kelsey Creek. This trunk line is predicted to have insufficient capacity at buildout in the model, based on conservative assumptions. The trunk is mostly 10-12 inch pipe of an unknown material with a slope of .5%-1%. This is an area that is fairly close to build out.

The model predicts flooding of about 100,000 gallons at four nodes, and surcharging of 5 to 10 feet in many places. However, field crews have not observed any flooding or surcharging issues, and

there have been no reported overflows. Flow monitoring should confirm or deny if there is a capacity shortage, and will help to calibrate the model for future predictions.

7.3.2.3 Basin 20

A 3,000 foot section of sewer main located along Valley Creek in Basin 20 (Bridle Trails neighborhood) is estimated to be at capacity during a peak storm event, based on flow monitoring results. However, no known sewer overflows have been observed. The section has an estimated capacity of about 350-400 GPM at the flattest segment, based on pipe size and slope, and peak flow was observed at approximately 390 GPM.

At this time, level sensing is recommended to monitor for potential surcharging, and longer-term, more comprehensive flow monitoring is recommended to refine I&I estimates and verify previous studies.

7.3.2.4 Basin 35

Basin 35 includes a section of pipe along West Lake Sammamish Parkway SE that is predicted to have inadequate capacity in buildout conditions. The model predicts one node flooding about 6,000 gallons and surcharging of about 5 feet. These pipes have about a .5% slope. Near Vasa Park the pipe reduces from 15-inch PVC upstream down to 10-inch AC downstream before discharging into KCWTD's interceptor, in an area where overflows are difficult to detect. Flow and surcharge level monitoring is recommended to determine if overflows are occurring.

7.3.3 Basins Requiring I&I Investigation

I&I investigation is recommended in basins 1, 3, 10, 20, 31, 36, 39, 40 and 41. This should generally consist of finding sources of I&I, the approximate amount of I&I from each source, and evaluating the costs and benefits of resolving the sources of I&I compared to a capital project to increase capacity. Any I&I investigation will include some sort of flow monitoring.

7.3.3.1 Basins 1 and 3

Basins 1 and 3 have had several confirmed overflows at pump stations over the last 5 years. These overflows generally occur due to insufficient capacity in the flat lake lines which serve as trunk lines for the basins. Basins 1 and 3 have an I&I rate of about 5,500 gallons per acre per day (gpac) and 2,000 gpac respectively. Additionally, field reports at various pump stations in the basins show that the I&I accumulates very quickly. This suggests that a significant portion of the I&I is coming from either unauthorized roof drainage or other surface water sources as opposed to water that must first infiltrate through the ground before it can enter a cracked pipeline. Because of the high I&I rate and the speed at which it occurs, an I&I investigation is recommended to determine if a reduction of I&I would be a more cost efficient solution than a capital project at preventing overflows.

7.3.3.2 Basin 20

Although no known overflows have been observed in Basin 20, the Valley Creek sewer main is believed to be at full capacity during peak storm events, as described above.

In addition to flow monitoring, I&I investigations are recommended to determine if peak flows can be effectively reduced, to mitigate the potential risk of overflows and avoid the need for capacity improvements.

7.3.3.3 Basin 31

Portions of Basin 31 are believed to be at full capacity during peak storm events, based on flow monitoring data and estimated pipe capacity. In addition to now receiving re-routed discharge flows from Pump Station No. 4 (described below), significantly high I&I has been observed in Basin 31 (including upstream of (Pump Station No. 4).

Although no known overflows have been observed in Basin 31, I&I investigations are recommended to determine if a cost-efficient near-term solution can be found to reduce the potential risk of overflows in Basin 31, until Pump Station No. 4 flows can be re-routed.

7.3.3.4 Basin 36

Pipes downstream of Newport lift station in Basin 36 do not have sufficient capacity to handle flow from the lift station during large enough storm events, resulting in multiple overflows into Lake Washington in the last five years. The basin wide I&I rate is about 2500 GPM. About 300 GPM of flow is I&I and 100 GPM is sanitary into Newport lift station. Pipes downstream of the pump station have a capacity of about 350 GPM. An I&I investigation is recommended to determine if a reduction of I&I would be a more cost efficient solution than a capital project at preventing overflows.

7.3.3.5 Basins 39, 40 and 41

Basin 39 has had overflows into private property due to under capacity pipes and excessive I&I twice in the last 5 years, during major storm events. The I&I rates in these basins are 4,000 and 5,000 gpad respectively. To help prevent these overflows, a high flow bypass was installed in 2011.

While there have been no overflows since the bypass was installed, the model predicts surcharging of about 5 feet at most nodes downstream of the bypass, which comes within 1 foot of surface level.

A small section of Basin 39 has been previously tested for I&I, and some unauthorized connections have been resolved. An I&I investigation into the areas of Basin 39 and 41 which are upstream of the bypass or the outlet of the bypass will determine if the bypass is sufficient to prevent overflows, and determine if any I&I is coming from unauthorized connections.

The 2001 King County I&I investigation indicated very high I&I in Basin 40 (approximately 10,000 gpad), however the 2010 study did not replicate these findings (roughly 1,800 gpad estimated). It is

recommended that further study be conducted to establish predictable flows with a higher degree of confidence, to allow better calibration of the hydraulic model.

7.3.4 Basins Requiring Capacity Improvements

Some form of capital project is recommended in the following basins, to address apparent existing capacity problems. Additional capacity improvements in other basins may also be required, contingent upon results of flow monitoring and I&I investigations described above.

7.3.4.1 Basins 1 and 3

Known overflows have occurred in Basins 1 and 3, as described above. If I&I investigations do not indicate a more cost-effective alternative, then capacity improvements will be required to avoid future overflows into Lake Washington.

7.3.4.2 Basin 10

Recommended improvements to address capacity problems due to anticipated development in Basin 10 include the following existing CIP projects:

- East CBD Trunk Capacity Improvements (Existing CIP Plan No. S-52)
- Bellefield Pump Station Capacity Improvements, Phase II (Existing CIP Plan No. S-53)
- Wilburton Sewer Capacity Upgrade (Existing CIP Plan No. S-60)

These projects are necessary due to planned growth in the eastern portion of downtown (east of approximately 108th Ave NE/SE) and recently re-zoned land in the Wilburton area (particularly along 116th Ave NE/SE).

7.3.4.3 Basin 31

At least twenty years ago, the Pump Station No. 4 discharge was diverted to Basin 31 from Basin 30. The diversion was requested by KCWTD because there was insufficient capacity in the KCWTD Lake Sammamish Interceptor that collects Basin 30 flows. KCWTD has indicated that they intend to increase the capacity in the Lake Sammamish Interceptor, but this project was recently delayed for at least several more years.

The diversion caused two problems for the City of Bellevue. The first problem is that sedimentation now occurs in Bellevue's 18-inch pipeline in Basin 30, which used to be downstream of the pump station and no longer carries sufficient flow to flush debris. This pipeline now requires frequent cleaning by O&M staff. The second problem is that, although no known overflows have occurred, Basin 31 is now believed to be flowing at roughly full capacity during periods of peak I&I.

It is recommended that the City re-route the Pump Station No. 4 discharge back to Basin 30 when KCWTD's Lake Sammamish Interceptor again has adequate capacity. Re-diversion should alleviate both the Basin 30 sedimentation problem and the Basin 31 capacity problem. Re-diversion would require changes in valve positioning, inspection of the old force main to verify that it is in adequate condition, potentially some pipe rehabilitation, and confirmation that the pumps at Pump Station No. 4 can handle the increased head. In addition, Pump Station No. 4 was last rehabilitated in 1991, so rehabilitation is expected to be needed again within the next five to ten years.

7.3.4.4 Basin 36

Known overflows have occurred in Basin 36, as described above. If I&I investigations do not indicate a more cost-effective alternative, then capacity improvements will be required to avoid future overflows into Cascade Key and Lake Washington.

This Page is Intentionally Blank

CHAPTER 8

Operations and Maintenance

This chapter discusses current City of Bellevue wastewater utility operations and maintenance programs. A description of the Utilities Department's organizational structure, including the role of the Operations & Maintenance Division is provided in Chapter 1.

8.1 Routine Operations

Routine operations involve the development and analysis of procedures to ensure that wastewater system facilities are operated properly and are functioning efficiently. When local system failures occur for any reason, the Utility's practice is to work continuously until proper system function is restored. Dedicated staff members are on call 24 hours a day so that necessary repairs to the system can be made promptly.

The City maintains a catalog of standard operating procedures to assure efficient and consistent practices.

8.1.1 Annual Maintenance Plan

The Operations and Maintenance Division prepares an annual maintenance plan that describes various tasks and how much of each task is expected to be performed in that year. The plan is also used as an analysis tool for evaluating the services provided, appropriate levels of service, and necessary resources. The maintenance plan provides improved workload forecasting. Long term uses for the plan include analysis of multi-year trends and management self-audits.

8.1.2 Safety

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

Safety procedures meet or exceed all OSHA, state, and federal standards of the industry for maintenance and construction. Safety legislation is tracked by the City's Risk Management

Office assuring compliance interdepartmentally. Routine safety meetings are held every month to review hazards and responses with an emphasis on accident prevention and safety awareness. All maintenance personnel attend these meetings.

Table 8-1, Certified Wastewater Utility Maintenance Services Staff

Current # of Positions	Title	Certification	Level
1	Operations Manager		
1	Utilities Assistant Director – O&M		
1	Operations Manager (Water, Wastewater, Storm Drainage)		
1	Wastewater Operations Superintendent	WWCPA	I
1	Senior Engineering Technician	WWCPA	II
1	Crew Leader	WWCPA	II
1	Crew Leader	WWCPA	I
1	Technical Specialist Pump Ops.	WWCPA	III
2	Technical Specialist Pump Ops.	WWCPA	I
1	Technical Specialist Condition Assessment	WWCPA	II
1	Technical Specialist Condition Assessment	WWCPA	I
1	Lead Worker Programs	WWCPA	I
1	Skilled Worker	WWCPA	II
8	Skilled Worker	WWCPA	I
1	Maintenance Worker	WWCPA	I
2	Maintenance Worker		

Note: WWCPA = Washington Wastewater Collection Personnel Association.

8.1.3 Urgent Problem Response

Utility staff are available on standby 24 hours per day to respond to urgent problems according to prescribed standard operating procedures. These problems include unexpected pipeline or equipment failure, localized pipeline restrictions, sanitary sewer overflows, and lines accidentally dug up by a contractor.

8.1.4 Power Outage Response

On-site backup generators are installed at 12 pump stations, based on a historical assessment of where continuous service was determined to be the most critical. This assessment (in 1990) evaluated the frequency, magnitude and causes of overflows, and prioritized facilities based on where the associated costs and impacts to the community provided the most value. At this time, approximately 50% of the City's wastewater pumping capacity has on-site backup power.

For the remaining pump stations, portable generators are used as a backup power source, and typically provide power within ninety minutes of notification of power failure.

Permanent on-site power is proposed to be added at an additional 3 pump stations as part of the City's current CIP Plan, as described in Chapter 9. The additional generators will free up staff resources in the event of a City-wide power outage where ice, fallen trees, or other hazards make portable generator access to remote pump stations difficult. They will improve the Utility's ability to maintain customer service, and reduce the opportunity for sewage overflows due to power outages.

8.1.5 Security

The Sewer Utility has instituted multiple security measures to manage the potential risks of vandalism and sabotage.

Security for the wastewater utility's SCADA network is provided by isolating the system, controlling access, regularly scanning internal and external drives, and similar measures. The SCADA system has no internet connectivity, to preclude opportunity for system hacking. Credentials are required both to physically access the SCADA computers, and to log into the system. File transfer to/from the system is only allowed on USB drives that have been scanned and certified "clean" by the Utility's telemetry security group.

Physical security is provided at the wastewater utility's sites through locks, intrusion alarms, and other measures. Alarms are sent to pagers as well as to the SCADA system.

8.2 Records and Data Management

The Operations and Maintenance Division uses the Maximo electronic database system as a tool to capture and process information about the wastewater system and the activities associated with its operations and maintenance. Maximo has two basic functions: workload planning and performance reporting. The Maximo system allows tracking of labor and equipment needs in terms of work orders for a particular task or group of tasks throughout the year. Maximo is used as a guide to project financial and manpower requirements and the frequency of maintenance events. Maximo is also used to record failure information. A list of wastewater task items is used to track work performed.

8.2.1 Record Keeping

A record of all maintenance and work order requests is retained in the Maximo program. Each task item has a budget and is tracked for manpower and resource requirements quarterly. Work Orders track the cause of problems and are linked to other work plan categories for department labor and resource management. When crews perform Work Orders, files are checked for previous responses to identify the history at the location or asset. If discrepancies are found on as-built drawings, corrections are reviewed and plotted as redlines on existing maps and records, and then sent to the Utility's mapping staff for revision. Hard copy as-builts of Utility facilities are scanned and saved to a network drive. They are available to the public in the City's Permit Center.

Video records of sewer inspections are stored in the city's the Electronic Content Management System, and linked to Granite XP software by the asset number for each pipe, for easy retrieval. Granite XP is a user interface software program that is used to view sewer inspection videos.

8.2.2 System Operation and Performance Data

Telemetry data from pump station events are transmitted to the SCADA (Supervisory Control and Data Acquisition) system in the city's telemetry center. An additional SCADA computer is located in the Wastewater section. This data includes the operational status of each pump and generator and the status of various station alarms, wet well levels, pump set points and lead/lag pump alternation throughout the sewer system. The time of each change in status is recorded. This allows tracking of pump and generator run times, the duration of alarm conditions, and when alarms are acknowledged by an operator. The data reporting software provides access to the detailed data for the previous week. Other reporting options produce summaries of the data on an hourly or daily basis for any time period stored on the system. Information telemetered from all pump stations began to be stored on the system during 1992. Currently all data received since 1992 is available for creating reports or for data analysis

The City's telemetry data management system can be accessed to obtain pump station operation data tables, trending historical data and current on-line data. The utility maintains up-to-date pump station operations manuals that document system operation. This data is used to help evaluate actual system performance under a variety of operational conditions.

8.2.3 Work Requests and Customer Complaints

Requests for work are generated from three different sources. Roughly one quarter come from citizens, about half come from City staff, and the remainder are for preventive maintenance activities. All work request data is tracked using the Utility's maintenance management information system (Maximo).

The most common work requests from citizens are related to sewer backups, requests for information, and private companies notifying the Utility that they have cleared a customer's side sewer blockage into the main. Customers are notified of planned work or the results of their request by phone or field contact.

The City receives very few odor complaints. Three wastewater pump stations (Bellefield, Bagley and #12) are equipped with odor control facilities. The only known sewer system odor problem occurs infrequently on NE 4th Street, above KCWTD's Medina Force Main, and only when KCWTD's nearby odor control facility is off-line. The odor control facility is located where the Medina Force Main drains to KCWTD's Eastside Interceptor (near Main Street and 116th Ave NE), and odor is generally not detectable on NE 4th Street when the facility is operating.

Work requests are scheduled by a crew leader according to priority. Urgent request response is immediate. Secondary priority response is typically within forty-eight hours.

8.2.3.1 Locates

Underground sewer line locations are identified on request to prevent damage by contractors. Personnel operate on an on-call basis for emergency response. Locates are marked in the field based on Utility maps and as-builts, and existing records are updated with new information when new systems are added or discrepancies are discovered.

8.2.3.2 Investigative Tasks

Investigative tasks include video inspection of pipes, flow monitoring, dye testing and smoke testing. Since these tasks are primarily used to identify structural problems and defects, investigate I & I, and provide general condition assessment of the sewer system, they are addressed in Chapter 6, System Renewal and Replacement.

8.3 Preventive Maintenance

Regular inspection and maintenance of system components such as pump and flush stations, manholes, pipelines, and lakelines are scheduled to prevent equipment failure. In general, repairs or maintenance are made to equipment on scheduled visits to a facility, provided the work can be done without interrupting facility operation. Other repairs are scheduled for a later time, when impact on the system can be minimized. Regular inspection and cleaning is scheduled for manholes and pipelines to prevent blockages or structural failure.

8.3.1 Pump Stations

All pump stations are on a monthly maintenance schedule. Inspection and wet well maintenance is performed the first ten business days of each month and scheduled repairs and maintenance activities are performed during the remainder of the month. At each visit, maintenance personnel perform routine minor repairs, clean and lubricate pumps, controls, and all pumping appurtenances. Wet wells are hosed down several times until sludge and debris are discharged. Pump run hours and amp/cycles are recorded in an inspection log.

Telemetry equipment is maintained and tested by simulating alarms, running tests on telemetering boxes and verifying telemetry headquarters alarms. Telemetry output is reviewed daily for early warning of problems likely to result in an alarm, and pre-emptive action is taken if necessary.

Pumps are scheduled for internal cleaning whenever monthly inspection or telemetry records indicate a significant reduction in performance. Typically, three to four pumps in the system are lifted each week for cleaning. Other periodic maintenance includes exercising auxiliary power generators and checking odor control equipment.

Maintenance personnel carry written inspection and maintenance procedure checklists for most other processes. Inspection information is currently maintained in hard copy files and tracked by the Maximo system to provide a record of maintenance costs and to identify trends.

8.3.2 Flush Stations

Flush stations are maintained in the same manner as other pump stations. Flush stations are checked monthly to see that pumps, motors, dehumidifiers, and the 24-hour clock are working properly. The 24-hour clock controls operation of the flush station. The flush stations are not currently linked to the telemetry system; however, cell phone communication provides remote control of on/off capabilities.

Replacement of flush station inlet screens was proposed as a maintenance activity in 2003, to mitigate the risk of pulling debris or wildlife through the pumps. This potential improvement was abandoned because Washington Department of Fish and Wildlife indicated it would trigger a requirement to extend the inlets farther into the lakes, to a minimum 20-foot depth, at an estimated cost of \$500,000 per flush station. Since that time, flush station operational impacts from inlet debris have been less than anticipated, and are handled on a case-by-case basis by contracted divers when needed.

8.3.3 Pipelines

Where specific problems are identified, pipelines are cleaned by rodding, flushing, biotreatment, and/or high pressure jet-rodding (jetting). Rodding removes stoppages in sewer lines using power mechanical equipment, hand rods, or an electric snake. Flushing runs large volumes of water through mainlines to scour pipe walls where sedimentation or grease solidification has occurred due to low scouring velocities and where jetting is impossible due to radical directional changes in pipeline or the presence of low slope side sewer connections. Jetting cleans out trapped debris with a high-pressure, high-velocity water hose.

The inspection/cleaning schedule for each pipeline depends on its history of problems and its associated criticality. Pipelines that are susceptible to blockage, for example those with very low slope which are subject to grease accumulation and sedimentation, are scheduled for frequent visual inspections and cleaning. Most of these pipelines are serviced once a month; some are serviced quarterly. Other examples of pipelines requiring frequent inspections include those pipelines downstream from industrial sites or apartment complexes with high flow volumes, lines in easements, lines with extensive root intrusion, and pipelines in critical locations with poor access.

8.3.4 Special Pipelines

Special case pipelines include lake lines, siphons, and force mains. All of these lines have limited access, complicating preventive maintenance activities.

Lake lines are very low slope lines located along the shores of Lake Washington and Lake Sammamish. The lake lines collect sanitary flow from lakeshore properties and adjacent upland areas. Flush stations are used to push the sewage collected by these lines to a series of lift and pump stations due to the relatively flat piping installation. These flows are eventually pumped into the gravity sewer system. Lake lines are cleaned primarily on an immediate response basis, but several lake lines are on a regular cleaning schedule due to past observed overflows and/or tendency for sedimentation. Cleanouts are opened and visually inspected for grease buildup. Changes in accessibility are recorded.

Siphons are serviced monthly. Grease and sediment are removed from the dosing chamber where one exists. Force mains are checked only when a problem is suspected.

8.3.5 Manholes

Manhole inspections are included as part of an ongoing manhole survey program. All manholes are visually inspected for structural defects, system problems, and accessibility. The goal is to visually inspect one-third of the system annually. Certain “critical” manholes near streams, lakes, and other critical area buffers are surveyed on a more frequent basis. This continuing

program of inspections allows the City to maintain manholes in good condition, increase personnel familiarity with the system, and decrease the City's liability.

Inspection information is recorded in the City's Maximo database, including manhole condition, work completed, and work needed. If defects or grease accumulations are identified, maintenance is scheduled. Manholes are cleaned if there is evidence of surcharging. An automated manhole survey checklist is used to assure consistent investigation and identification of items that will need repair.

8.4 Fats, Oils and Grease/Industrial Waste Program

The City takes a proactive approach to reducing the problems of fats, oils and grease (FOG) in the system. The objectives of the FOG program are to keep non-sewage discharges out of the system, identify the responsible party once they have entered the system and correct the behavior or require pretreatment through escalating enforcement. FOG discharges include polar fats from animal waste and non-polar fats such as oils from automobiles. These objectives are achieved by requiring pretreatment systems to be installed at businesses that generate these discharges. These facilities are installed and maintained by the waste producers with periodic City inspection. Pretreatment systems are required by Bellevue's Sewer Code through the development review process.

Table 8-2 lists the industrial dischargers located in Bellevue that are permitted by the King County Industrial Waste Program (KCIW). In general the discharge characteristics are similar to that of any gas station remediation site or dairy/soda manufacturing in that there is a potential for caustics or a pH that has the potential to contribute to premature degradation of the collection system. KCIW enforces conditions of discharge permits to ensure discharges do not adversely affect local or regional systems.

Through a cooperative agreement with the Building Authority, the installation, sizing, and approval of FOG pretreatment systems is determined by Utilities water quality staff and inspected by Utilities staff or by plumbing inspectors from the City's Development Services Department. The program's focus is on commercial facilities, food service and automotive establishments. Once equipment is installed customers are sent an annual notice reminding them of maintenance needs and requesting the details be voluntarily submitted to the Utilities. The information is managed in a database.

Table 8-2, Permitted Industrial Dischargers

Business Name	Permit Type	Business Type	Address
Cummings and Lutes LLC dba Arscenia	LETTER OF AUTHORIZATION	PHOTO PROCESSING	13037 BEL-RED ROAD, SUITE 100
King County WTD - Eastgate Interceptor Rehabilitation Project	LETTER OF AUTHORIZATION	CONSTRUCTION DEWATERING	160TH AVENUE SE TO 154TH AVENUE SE
L & M Services	LETTER OF AUTHORIZATION	GENERAL TYPE	1600 132ND AVENUE NE SUITE 150
Sound Transit - East Link Geotechnical Investigation	LETTER OF AUTHORIZATION	CONSTRUCTION DEWATERING	110TH AVENUE NE AND 6TH STREET
Avalon Bay Communities Inc. - Avalon Square	MAJOR DISCHARGE AUTHORIZATION	GROUNDWATER REMEDIATION - PETROLEUM	10410 NE 2ND STREET
Bellevue, City of - Decant Facility (120thNE)	MAJOR DISCHARGE AUTHORIZATION	DECANT STATION	120 TH NE & BELLEVUE-REDMOND ROAD
Bellevue, City of - Decant Facility (NE 6thStreet)	MAJOR DISCHARGE AUTHORIZATION	DECANT STATION	NE 6TH STREET & 148TH AVE NE
Bellevue, City of - Eastgate Landfill	MAJOR DISCHARGE AUTHORIZATION	SOLID WASTE - LANDFILL	150TH AVE SE & SE 26TH STREET
Bellevue, City of - Eastgate Maintenance Yard	MAJOR DISCHARGE AUTHORIZATION	DECANT STATION	4001 135TH AVENUE SE
Evered Motors Inc.	MAJOR DISCHARGE AUTHORIZATION	GROUNDWATER REMEDIATION -PETROLEUM	420 116TH AVE NE
ExxonMobil Oil Corporation - Site 7-4090 (DA4042)	MAJOR DISCHARGE AUTHORIZATION	GROUNDWATER REMEDIATION - PETROLEUM	10122 NE 8TH STREET
ExxonMobil Oil Corporation - Site 99-BLV (DA4177)	MAJOR DISCHARGE AUTHORIZATION	GROUNDWATER REMEDIATION - PETROLEUM	1500 145TH PLACE SOUTHEAST
Metro Transit Bellevue Base	MAJOR DISCHARGE AUTHORIZATION	TRANSPORTATION FACILITY	1790 - 124TH AVENUE NE
Metro Transit East Base	MAJOR DISCHARGE AUTHORIZATION	TRANSPORTATION FACILITY	1975 - 124TH NE
Safeway Inc. - Bread Plant	MAJOR DISCHARGE AUTHORIZATION	FOOD PROCESSING-BAKERY	2100 120TH AVENUE NE
Bellevue Park II LLC Construction Site	MINOR DISCHARGE AUTHORIZATION	CONSTRUCTION DEWATERING	10203 NE FIRST STREET
Overlake Hospital Medical Center	MINOR DISCHARGE AUTHORIZATION	HOSPITAL	1035 116TH AVENUE NE
Bellevue, City of - Fire Department Training Center	NO CONTROL DOCUMENT REQUIRED	GENERAL TYPE	1838 116TH AVENUE NE
JBC Designs	NO CONTROL DOCUMENT REQUIRED	GENERAL TYPE	13411 NE 20TH
Coca-Cola Bottling Company of Washington	PERMIT	FOOD PROCESSING-SOFT DRINKS	1150 124TH AVENUE NE
King County SWD - Factoria Transfer Station	PERMIT	SOLID WASTE - TRANSFER FAC	13800 SE 32ND ST.
Safeway Inc. - Beverage Plant	PERMIT	FOOD PROCESSING-SOFT DRINKS	1500 124TH AVE NE
Safeway Inc. - Milk and Ice Cream Plant	PERMIT	FOOD PROCESSING-DAIRY	1723 124TH AVENUE NE

Grease problems are handled through a combination of regularly scheduled sewer main cleaning activities and targeted education and enforcement of known or suspected grease producing dischargers. Bellevue’s sewer code provides authority to require customers who generate fats, oils, and grease to install pretreatment units at their establishments.

Water quality and maintenance staff routinely coordinate to maintain clean lines and identify problem waste producers. Interactive GIS mapping is being developed to help identify and prioritize education and enforcement of pretreatment requirements. This GIS mapping will collate information from maintenance activities into a visual representation of grease issues, help determine grease producing areas, and program effectiveness.

8.4.1 Industrial Waste/Other Prohibited Discharges

Other prohibited discharges include sediments and pollutants from construction dewatering or industrial discharges, as well as, chemicals, rags or debris (“ragging”). King County Industrial Waste, as the lead approval agency, works with Utilities staff in a cooperative program to review and approve the discharge location and volume for construction dewatering. Ragging issues and other illegal discharges are generally identified by maintenance personnel and referred to the Water Quality section for education and enforcement.

8.5 Emergency Procedures

The prioritized emergency response objectives of the wastewater utility are to 1) protect life, 2) protect health and safety; property; and 3) protect the environment.

The City has an Emergency Operations Plan which defines emergency management organization, responsibilities, and procedures for all City functions in the event of an emergency or disaster. The plan provides for coordinated response to emergencies among all City departments, as well as with county, state and federal agencies, and adjacent jurisdictions. The City’s plan is supplemented by the Utilities Department’s Emergency Response Book (aka Red Book). This book describes how Bellevue Utilities Department staff will respond 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.

Wastewater 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 first attempts to locate any problems such as obstructed sewer mains that are reported by either the public or by utility personnel sent out to assess the system. Utility personnel also perform critical site assessments and report any damage. The Assistant Director for Operations and Maintenance is responsible for implementing the Utility’s emergency response program.

8.6 Maintenance-Driven Capital Projects

Areas of recurring operation or maintenance problems are regularly discussed and evaluated for consideration of possible design improvements or capital investment projects to address them. Potential projects may be identified in prioritization studies/meetings, asset management condition assessments, and other forums.

Potential projects are discussed at monthly meetings of the department's Technical Team, which is comprised primarily of lead staff from the Engineering and Operations/Maintenance Divisions. The Technical Team evaluates the appropriateness of proposed capital project solutions based on staff research and recommendations.

Capital project alternatives are evaluated using life cycle cost analyses that consider the economic, environmental and social costs and benefits. Criteria considered when determining if a capital project is the appropriate way to address a particular problem include:

- Ability of the capital project to resolve the problem so that expected customer service levels are provided;
- Claims history associated with the problem and the estimated effect of the capital project on future claims;
- Expected maintenance costs with and without the capital project implementation;
- Capital project cost;
- Environmental and social costs and benefits of the capital project; and
- Availability of other options for reducing the maintenance effort;

Most of the capital project recommendations that result from this process are constructed under either the City's pipeline renewal and replacement CIP program (which is discussed in more detail in Chapter 9), or the Minor Capital Improvement Program, intended to resolve unanticipated system issues that are not too large in scope.

This Page is Intentionally Blank

CHAPTER 9

Recommended System Improvements

Recommended wastewater system improvements fall into three general categories:

- **Existing System Capacity Improvements.** These projects address known or potential system capacity or reliability problems in the existing system.
- **System Capacity Expansion to meet Planned Growth.** These projects and programs address projected system capacity problems due to forecasted future development.
- **Infrastructure Renewal and Replacement:** These projects and programs are intended to reduce the number and severity of system failures due to age.

Within each of these categories, some projects and programs are recommendations that are currently funded in the City's Capital Investment Program (CIP), while others are proposed new recommendations to address emerging issues. Specific recommendations are listed below:

- Recommended Programs and Improvements to address capacity concerns in the existing system:
 - Flow Monitoring to corroborate Model Results (New Program)
 - I&I Investigations (New Program)
 - Add On-site Power at Sewer Pump Stations (Existing CIP Plan No. S-59)
 - Capacity Projects if I&I Investigation does not Resolve Capacity Concerns:
 - Newport Capacity Improvements (New Project)
 - Fairweather Basin Capacity Improvements (New Project)
 - Cozy Cove Basin Capacity Improvements (New Project)
 - Other Basins as indicated
- Recommended System Capacity Expansion to meet Planned Growth:
 - Sewer Service Extensions Program (Existing CIP Plan No. S-30)
 - East CBD Trunk Capacity Improvements (Existing CIP Plan No. S-52)
 - Bellefield Pump Station Capacity Improvements, Phase II (Existing CIP Plan No. S-53)
 - Wilburton Sewer Capacity Upgrade (Existing CIP Plan No. S-60)
 - Midlakes Pump Station Capacity Improvement (Existing CIP Plan No. S-61)
 - Utility Facilities for 120th Ave NE Segment 2 (Existing CIP Plan No. S-63)

- Recommended Infrastructure Renewal and Replacement:
 - Downtown Park Sewer Pipe Replacement (Proposed for existing CIP S-66)
 - Asbestos Cement Force Main Replacement Program (Proposed New CIP Program)
 - Sewage Pump Station Improvements (Existing CIP Plan No. S-16)
 - Sewer System Trunk Rehabilitation Program (Existing CIP Plan No. S-24)
 - Minor Capital Improvement Projects (Existing CIP Plan No. S-32)
 - Sewer Lake Line Replacement Program (Existing CIP Plan No. S-58)
 - Sewer System Pipeline Replacement (Existing CIP Plan No. S-66)

Allocated funding and/or estimated costs, as well as a summary of each recommended project and program are provided below.

In addition to current recommendations, the status of projects recommended in the 2002 Bellevue Comprehensive Wastewater Plan and the 1999 CCUD Comprehensive Sewer Plan are summarized below and in Appendix D.

Bellevue's Sewer Utility Capital Investment Program (CIP) is a separate, Council-adopted document that prioritizes projects and identifies project funding for a 7-year period. The CIP provides for orderly system 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 every two years, concurrent with the City's operating budget development. The 2013-2019 CIP is included in Appendix E.

9.1 Basis for Cost Estimates

Cost estimates in this Plan are "planning level" estimates and, as such, have been prepared without detailed engineering data. The cost estimates presented reflect the "most probable" capital cost. Actual project costs can be expected to vary by as much as +50 percent to -30 percent. Project costs estimates vary due to design changes made during preparation of final engineering plans and specifications, and as a result of changes in the cost of materials, labor, and equipment.

The capital cost includes the estimated construction cost, the construction contingency, state and local sales tax, and costs for administrative, engineering, financial and legal services. Costs for land and rights-of-way were not included in this analysis. The construction contingency is an allowance for undefined items. This allowance is intended to cover costs that are almost certain to be incurred and therefore is an integral part of the estimate.

Costs cited in this report are based on preliminary layouts of the proposed projects and are stated in 2013 dollars.

9.2 Project Funding

Currently funded CIP projects and programs are presented in Tables 9-1 and 9-2, with detailed information provided in Appendix E. These program and project funding levels are consistent with the City’s currently adopted (2013-2019) CIP. 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 the 7-year CIP, with detailed funding sources and project scheduling, every 2 years. The most current Council-adopted 7-year CIP plan should be referenced to determine actual project commitment schedules. During each update, all proposed CIP projects are evaluated against specific criteria and available resources, they are then prioritized, funded, and scheduled accordingly.

The City funds several ongoing capital programs with annual funding allocations. The annual budgets for these projects were established based on the City’s experience and/or studies to determine anticipated needs. Table 9-1 lists ongoing programs with average anticipated annual funding. These on-going capital programs are also summarized later in Chapter 9 and in Appendix E.

Table 9-1, Currently Funded Ongoing Capital Improvement Programs

CIP Plan Number	Program Description	Approximate Annual Budget (2013 dollars)¹
S-16	Sewage Pump Station Improvements	\$480,000
S-24	Sewer System Pipeline Rehabilitation ²	\$1,687,000
S-30	Sewer Service Extensions	\$399,000
S-32	Minor Capital Improvement Projects	\$148,000
S-58	Sewer Lake Line Replacement Program ³	\$113,000
S-66	Sewer System Pipeline Replacement	\$1,040,000
	TOTAL ANNUAL COSTS	\$3,867,000

1. Funding increases annually to account for inflation.
2. S-24 funding is currently funded at approximately \$1,176,000 in 2013, but \$1,687,000 annually thereafter.
3. S-58 is currently funded at approximately \$1,194,000 in 2013 and \$651,000 in 2014 to replace approximately 1,300-feet of lake line in Meydenbauer Bay, but \$113,000 annually thereafter is budgeted for ongoing condition assessment.

Table 9-2 lists recommended singular capital projects (not ongoing programs) that are currently funded, with the total funding currently allocated to each. These projects are also summarized later in Chapter 9 and in Appendix E.

Table 9-2, Currently Funded Capital Improvement Projects

CIP Plan Number	Project Description	Approx. Total Budget^{1,2}	Approx. Schedule for Completion
S-52	East CBD Trunk Capacity Improvements	\$2,894,000	2015
S-53	Bellefield Pump Station Capacity Improvement	\$9,984,000	2016
S-59	Add On-site Power at Sewer Pump Stations	\$1,228,000	2020
S-60	Wilburton Sewer Capacity Upgrade	\$5,322,000	2016
S-61	Midlakes Pump Station Capacity Improvements ³	\$4,001,000	TBD ²
S-63	Utility Facilities for 120th Ave NE Segment II	\$1,170,000	2016
	TOTAL	\$24,600,000	

1. Only the project costs incurred by the City of Bellevue's Sewer Utility are shown.
2. Total budget for specific (not ongoing) capital projects is not adjusted to 2013 dollars. Budget for future years is added as future dollars without applying the discount rate.
3. The Midlakes pump station capacity improvements construction schedule will be determined based on actual Bel-Red corridor growth, to maximize asset life of the existing pump station. Design of the capacity improvements is scheduled for 2014.

9.3 Recommended Future Projects

Proposed projects and programs (not currently funded) to address emerging issues are shown in Table 9-3. These projects are identified in Chapter 7, System Hydraulic Analysis, and are summarized later in Chapter 9.

Table 9-3, Proposed Projects and Investigational Activities

Program Description	Estimated Total Funding Required (2013 dollars)
Flow Monitoring to Corroborate Computer Model Results ¹	\$120,000
I&I Investigations to Optimize Efficiency of Capital Investment ²	\$855,000
Asbestos Cement Force Main Replacement Program; Initially at Lake Hills #6 and Lake Hills #12 Pump Stations ³	\$1,500,000
TOTAL	\$2,475,000

1. Assumes 6 months of continuous flow monitoring at 6 locations, plus purchase of one portable manhole depth recorder.
2. Assumes 30,000-ft of I&I investigation in each of 8 basins (240,000-ft total). Does not include the City’s costs for community education and I&I elimination programs.
3. Assumes 3,000-ft of 8” pipe at Pump Station No. 12 and 800-ft of 8” pipe at Pump Station No. 6

9.4 Existing System Capacity Improvements

The projects and programs described below address known or potential system capacity or reliability problems in the existing system.

9.4.1 Flow Monitoring to Corroborate Computer Model Results

There are a few areas in the system where surcharging or overflows have not been observed, but where hydraulic modeling results indicate there may be capacity problems. These areas are shown in Figure 9-1 and include:

- In Bellevue Way, south of Main Street to SE 3rd Street (Basin 7)
- In 100th Ave NE, from Main Street to NE 8th Street (Basin 7)
- Kelsey Creek and Glendale Golf Course (Basin 19)
- Vasa Park, near discharge to King County interceptor (Basin 35)
- Bridle Trails, along Valley Creek between NE 48th St and NE 37th St (Basin 20)

Flow monitoring and manhole depth measurement are recommended to determine whether capacity problems actually exist in these locations, or if the hydraulic modeling assumptions are too conservative. Flow monitoring would also allow more accurate calibration of peak flows, and ascertain whether I & I is a significant source of capacity constraints.

9.4.2 I&I Investigations

Sewer mains or pump stations have experienced surcharging in some areas where flow monitoring or other observations suggest relatively high I&I. The source and magnitude of I&I should be investigated through smoke testing, dye testing, video inspection, and other measures. The goal of I&I investigations would be to identify and alleviate I&I and potentially reduce surcharging to the point that costly capacity improvements might be avoided. This program would implement and be consistent with the Utility's Inflow and Infiltration Monitoring and Reduction policy, as described in Chapter 2.

O&M staff report anecdotally that I&I may spike quickly in these areas following the start of rain, which implies inflow (improper, direct connection of sump pumps and drains) may be a larger factor than infiltration (groundwater leaks into pipes and manholes).

Areas recommended for I&I investigations are shown in Figure 9-1 and include the following:

- Basin 31
- Basins 39, 40 and 41 (Eastgate/Somerset/Factoria)
- Newport (Basin 36)
- Near Cozy Cove, Evergreen East, and Yarrow Point Pump Stations (Basins 1 and 3)
- Wilburton (Basin 10)

Public education and involvement will be critical, to help locate and correct improper connections to the sanitary sewer. Although the City has code authority to assess fines if necessary, a collaborative approach that involves working with homeowners to understand the consequences of I&I and identify and disconnect improper sump pump, roof drain and parking lot connections is generally a more effective strategy.

9.4.3 Fairweather and Cozy Cove (Basins 1 and 3) Capacity Improvements

If I&I investigation does not yield sufficient, cost effective flow reduction, then capital projects to increase sewer capacity in the Fairweather and Cozy Cove basins will be needed. These improvements may entail increased capacity at Yarrow Point, Cozy Cove, and/or Evergreen East Pump Stations, as well as increased lake line pipe sizing. The scope and priority of capacity improvements would be refined following I&I investigations.

9.4.4 Newport Capacity Improvements

If I&I investigation does not yield sufficient, cost effective flow reduction, then capital projects to increase sewer capacity in the Newport area will be needed. Pipelines downstream of Newport Lift Station do not have sufficient capacity to handle flow from the lift station during large storms. During extreme events (when I&I is highest), this piping overflows and sewage is conveyed through the storm system to Cascade Key and Lake Washington.

9.4.4.1 Add On-site Power at Sewer Pump Stations

This project will add on-site power generation capability at three high priority pumping stations which currently rely on portable generators during power outages. Specific locations will be selected based on analysis of the likelihood and consequence of sewage overflows, giving consideration to volume of base flow versus wet well capacity; proximity to surface water bodies; and geographic distance from portable equipment.

Twenty-three of Bellevue's thirty-eight pump and lift stations rely on portable power generation equipment during extended power outages. As a result, staff and equipment resources have been stretched during large storm events with massive losses of power, such as during and following the December 2006 windstorm.

On-site generation would more readily prevent sewage overflows, comply with DOE and DOH regulations, protect the City from violations of the NPDES Municipal Stormwater Permit, minimize closures of public and private beaches, minimize public health and safety risks, and free up staff for other storm response.

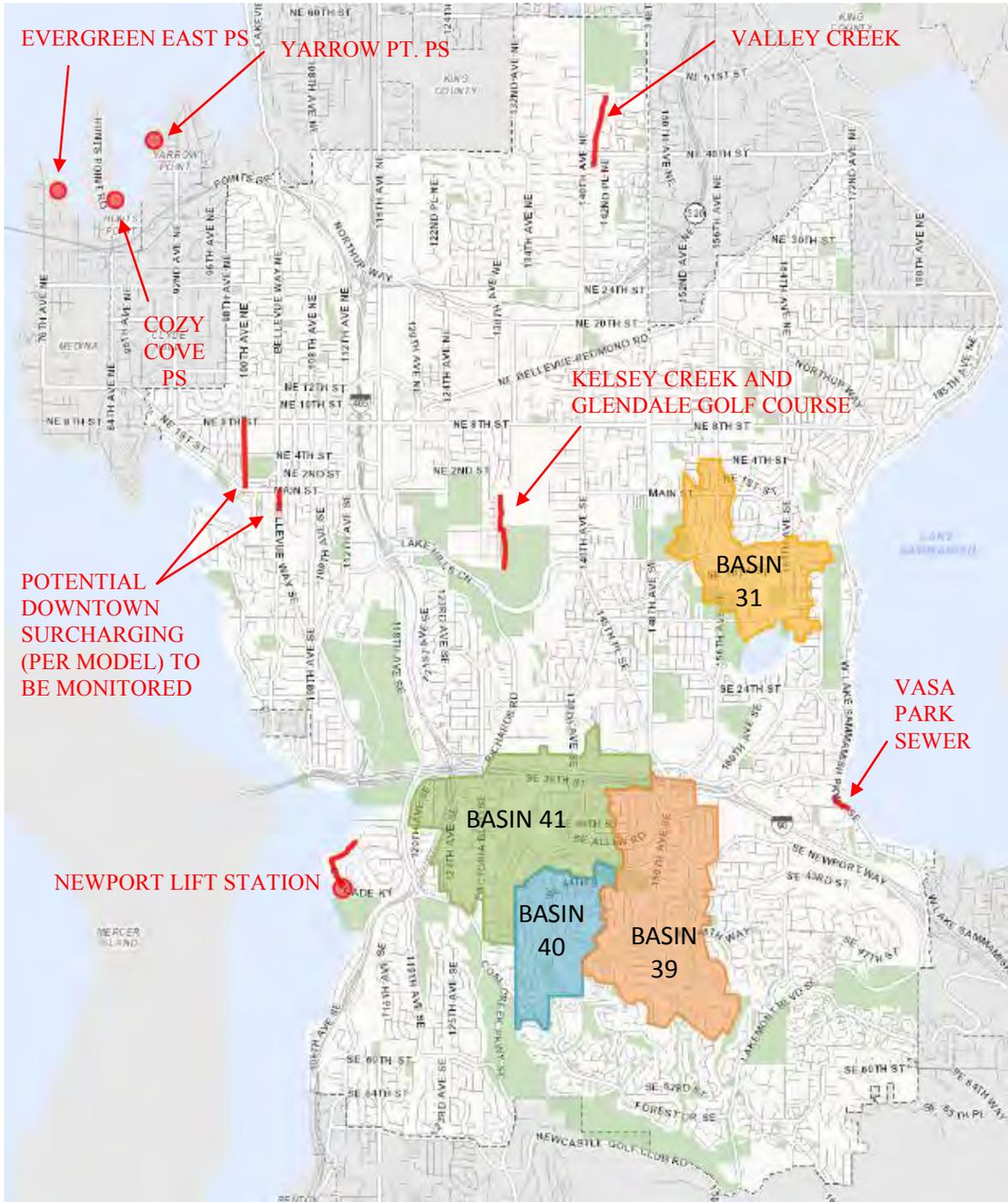


Figure 9-1: Recommended Locations for Flow Monitoring and/or I&I Investigation

9.5 System Capacity Expansion to meet Planned Growth

The projects and programs below address projected system capacity constraints due to forecasted future development. Except for the first program which may occur throughout the service area, project locations are illustrated in Figure 9-2. Project costs for capacity projects are recovered from benefitting properties as they are redeveloped.

These projects are consistent with City Comprehensive Plan Policy UT-4, which indicates utility system capacity should not determine land use. The current wastewater system capacity would limit Wilburton redevelopment.

9.5.1 Sewer Service Extensions Program

Bellevue's ongoing Sewer Service Extensions Program is funded by CIP Plan #S-30. Past projects completed as part of this program are listed in Table D-3.

This program facilitates orderly extension of the sewer system, which local, county, and state policies encourage, and provides an affordable option for customers who might otherwise not be able to develop their property. Projects are typically constructed in areas where the City is approached by affected property owners or in conjunction with other Utility or roadway construction. Each project requires majority support of affected property owners, except when health or safety is at risk. The program eliminates dependence on septic systems by providing sewer service. It reduces costs and disruption to communities when constructed in conjunction with other projects.

Property owner interest fluctuates annually, resulting in some years with no construction, and other years with substantial new construction. As the sewer system approaches build-out, fewer requests for sewer system extension are anticipated. Benefited properties pay their share of the project costs through connection charges when they connect.

9.5.2 East CBD Trunk Capacity Improvements

This project will replace approximately 1,600 feet of sewer pipe in 112th Ave NE with larger diameter pipelines to convey sewage generated from planned growth in the eastern side of downtown Bellevue (generally east of 110th Ave NE). This project (Bellevue CIP Plan #S-52) has been delayed (see Section 9.4), but is now moving forward following a decision on Sound Transit's East Link light rail alignment.

9.5.3 Bellefield Pump Station Capacity Improvements (Phase II)

Phase II of the Bellefield Pump Station Expansion is needed to provide adequate capacity for ultimate development on the eastern side of downtown Bellevue. The project includes construction of a new pump station and force main, followed by demolition of the existing pump station. Project design is proceeding. The project is funded under CIP Plan #S-53.

9.5.3.1 Wilburton Sewer Capacity Upgrade

This project will replace up to approximately 4,200 feet of existing 12-inch and 16-inch diameter pipe with larger diameter pipe to provide sufficient capacity for anticipated upstream development. Design alternatives which achieve similar objectives will be evaluated during pre-design.

This project is needed to provide sufficient sewer capacity to allow planned re-development within the Wilburton area. This redevelopment involves changing land uses from primarily automobile sales lots to office, retail, multi-family residential, and hotels, that require more sewer capacity. Portions of the existing trunk are currently at capacity. Redevelopment that would increase sewer flows to this trunk line cannot be allowed until the trunk capacity is increased.

Subsequent I&I investigation is also recommended as listed below. I&I investigation is recommended to avoid surcharging and prolong the useful life of the downstream 16-inch diameter pipe in SE 8th Street, which was installed circa 1983.

9.5.3.2 Midlakes Pump Station Capacity Improvements

The existing station can pump 800 gallons of sewage/day (gpd), just sufficient for the light industrial zoning in the area it has served since its original construction in 1968. Planned development in the Bel-Red Corridor includes residential housing and retail shops which will generate much more sewage. A limited amount of redevelopment can occur before the pump station capacity must be increased, to avoid significant risk of sewage overflow to the West Tributary of Kelsey Creek.

This project will increase the station capacity to 1,100 gpd, sufficient until 2030, depending on the rate of re-development. Design is proposed for completion in 2014. Construction could be completed as early as 2016, however it may be deferred until actual building permits for the Bel-Red corridor indicate a near-term need for expanded capacity. That portion of the project cost associated with replacing the existing capacity would not be collected from connection charges to re-developing properties, since the station would require significant retrofit to replace old facilities and equipment even without expansion.

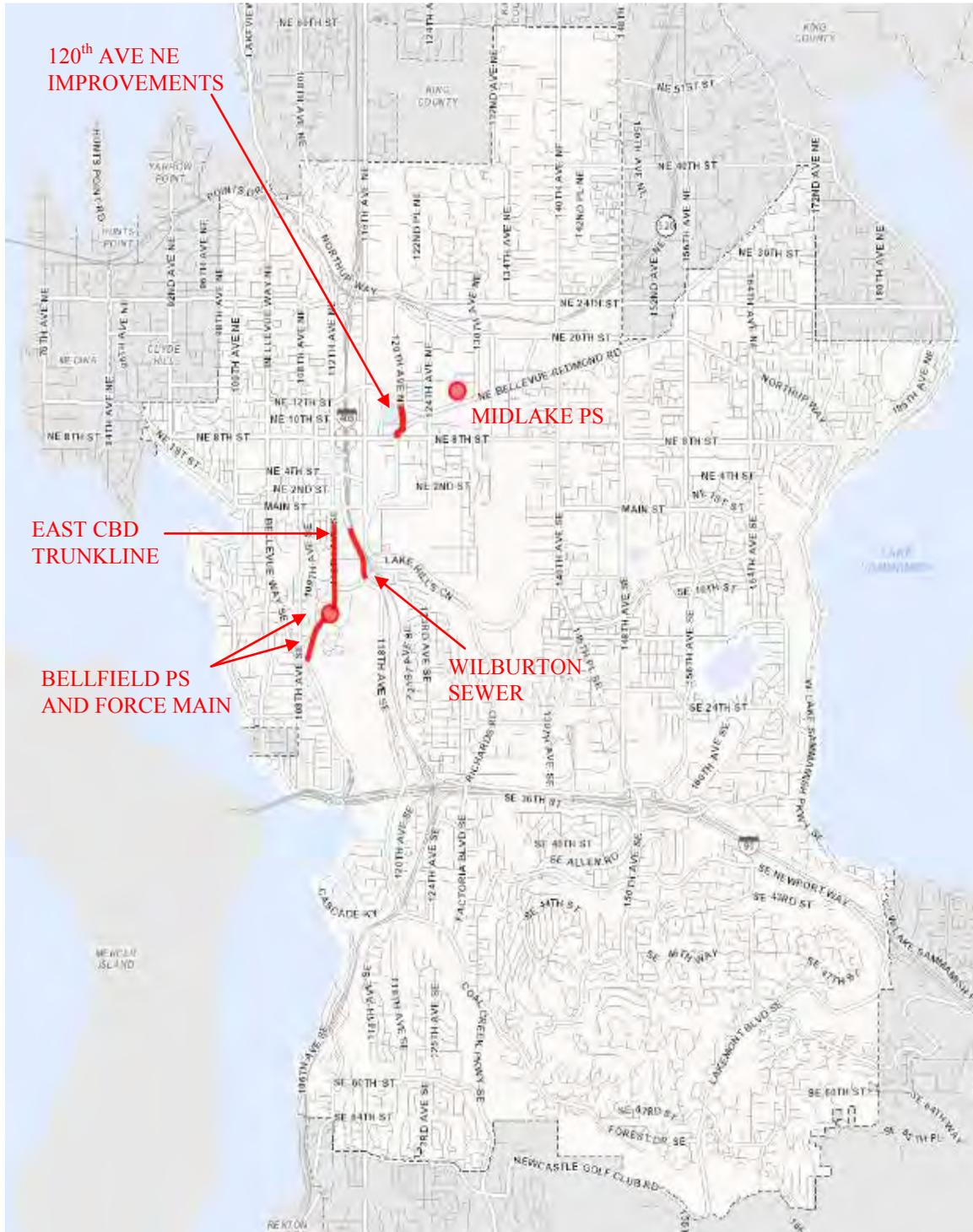


Figure 9-2: Recommended Capacity Improvements

9.5.4 Sewer Facilities for 120th Ave NE Improvements (Segment 2)

Much of 120th Avenue NE is currently without sewer facilities. Commercial and residential development along the street will require sewer facilities be constructed in the street, to obtain sewer service. Collaboration with the Transportation Department will occur to ensure the design and construction are completed in coordination with the street design.

This project will design and construct new sewer pipe in 120th Ave NE in conjunction with City street improvements, where needed to provide sewer service for redevelopment of adjacent properties. The project will be completed in segments. Segment 2 is from NE 8th St to NE 12th St and will construct approximately 700 feet of 15-inch or 18-inch pipe. Segment 3 (CIP Plan No. 65) had also been funded, but has been deleted when further analysis showed that a new sewer main would not be needed in that section.

9.5.5 Other Projects Driven by Development

This plan does not attempt to identify every capital improvement needed to serve all potential individual developments within the study area. Specific onsite or offsite capacity improvements that are needed as a result of local development activity (such as high-rise residential developments) are generally outside the scope of this sewer system plan.

Wastewater system improvements that are constructed solely to facilitate specific development projects are funded by the developer. Where the project also includes upgrade or replacement of existing infrastructure, the City may participate in the portion of the project related to upgrading existing facilities. Some potential projects include:

- Sound Transit East Link Light Rail (multiple locations)
- Proposed Bellevue Square expansion
- Spring District Development in Bel-Red Corridor
- High Density Mixed-Use and Residential Redevelopment Downtown or in the Bel-Red Corridor

9.6 Infrastructure Renewal and Replacement

The projects and programs described below are intended to reduce the number and severity of system failures due to age.

The City's current policy is to establish sewer rates so that adequate funds will be available to address anticipated R&R needs as they occur. The cost-effectiveness of funding these R&R expenditures through rates has been analyzed using the Utility's rate model. A discussion of this program's impact on rates can be found in Chapter 10, Financial Information.

9.6.1 Downtown Park Sewer Replacement

A sewer pipeline through the middle of Downtown Park has adequate capacity for current flows, but has experienced significant sulfur damage and will require replacement soon. The pipeline consists of approximately 950-ft of 8” concrete pipe, flowing from NE 4th St due south to the corner of NE 1st St & 102nd Ave NE.

The pipe is located in a highly visible and popular public recreation area, and will impact park visitors. It passes beneath a public fountain, multiple other water features, the middle of the park lawn, and the park’s southern parking lot. Due to the sensitive site location, it is anticipated that significant public involvement may be necessary.

9.6.2 Asbestos Cement Force Main Replacement

Many pump stations pump to old force mains, some of which are made of asbestos cement (AC) pipe. AC pipe deteriorates faster than other types of force mains in Bellevue’s system. Based on deterioration observed in Bellevue Utilities’ gravity sewer mains, the AC force mains may be approaching the end of their useful life.

The consequence of failure of a sewer force main break is high. The condition of AC force mains should be evaluated in the near future and replaced if necessary. There are eight pump stations with AC force mains. The two highest consequence force mains are listed below:

- Lake Hills Pump Station No. 12 delivers 258 feet of head to an 8-inch AC force main installed in 1963. This force main is about 3000 feet long.
- Lake Hills Pump Station No. 6 pumps to a 4-inch force main with about 65 feet of head. This force main pipeline alignment goes through private property and is buried very near to (and possibly underneath) houses adjacent to Phantom Lake. This force main is about 800 feet long.

The Utility should develop a strategic asset replacement strategy for force mains. The first tasks would be to assess the force main condition, estimate the remaining life of the piping and estimate replacement costs. After the assessment phase, CIP S-66 could be expanded to include force mains, or a new CIP program could be created, focused exclusively on force main replacement. Prioritization of force main replacement should be based on the estimated consequences and probability of failure.

9.6.3 Sewage Pump Station Improvements Program

Bellevue’s ongoing Sewage Pump Station Improvements Program is funded by CIP Plan #S-16. Projects completed as part of this program since 2001 are listed in Table D-1. The next scheduled projects are:

- Wastewater Pump Station Condition Assessment Study
- Sewer Pump Station Wet Well Rehabilitation
- Lake Heights Sewer Pump Station Rehabilitation
- Wilburton Sewer Pump Station Rehabilitation

It has been approximately 28 years since the first stations were rehabilitated as part of this program. Pump station equipment is generally considered to have a useful life of approximately 25 years. The 2013 Wastewater Pump Station Condition Assessment will provide an updated, comprehensive evaluation of the condition of pump stations that have not been upgraded in approximately ten years or more. The assessment will allow for continued proactive funding, and for future investment consistent with best asset management principles.

9.6.4 Sewer System Pipeline Rehabilitation Program

Bellevue's ongoing Sewer System Pipeline Rehabilitation Program is funded by CIP Plan #S-24. Projects completed as part of this program since 2001 are listed in Table D-2.

An estimate of future pipeline Renewal and Replacement (R&R) needs and the annual expenditures to address them was developed as part of the City's asset management program. These estimates will be revised as better and/or more complete information becomes available. Details about the development of annual cost estimates for this program can be found in the System Renewal and Replacement chapter of this plan, Chapter 6.

9.6.5 Minor Capital Improvement Projects

Bellevue's ongoing program of Minor Capital Improvement Projects is funded by CIP Plan #S-32.

Minor capital projects are identified when new information or changing circumstances identify an unanticipated system problem that can best be addressed by a small capital project, generally under \$50,000. This program allows for the timely correction of minor system deficiencies and maintenance issues as they arise. The program facilitates efficient and proactive maintenance of the sewer system.

Occasionally, an issue is identified that requires a more significant capital project to address than the normal funding level for this program can accommodate. When these types of significant projects are identified, a new capital project is recommended to address them. Examples of past projects completed by this program since 2001 are shown in Table D-4.

9.6.6 Sewer Lake Line Replacement Program

Bellevue's ongoing Sewer Lake Line Replacement Program is funded by CIP Plan #S-58. This program began in 2009, and consists of two parts.

- 1) One-time replacement of approximately 1,300 feet of sewer pipe currently buried under Meydenbauer Bay with an on-shore buried pipe.
- 2) Ongoing assessment of the remaining 19+ miles of lakelines to determine remaining life expectancies, recommend maintenance practices to maximize the remaining life, and to develop design strategies, priorities, and replacement schedules.

The long term program will include condition assessment to determine remaining life expectancies and maintenance recommendations, and will include preliminary engineering studies to identify and evaluate replacement options for specific reaches of pipe.

Replacement of the lake lines is expected to be technically challenging, environmentally sensitive, and relatively very expensive compared to other sewer projects. It is anticipated that no single solution will work at all locations, such that a variety of options may be needed based on site-specific factors. Stakeholder input will be critical to making final decisions. Any option selected will impact entire neighborhoods and require consensus among diverse interest groups.

Several replacement alternatives will be considered for each reach of pipe, but no recommendations have yet been made. It is likely that some solutions will work in some locations but not in others, depending upon cost, local stakeholder concerns, and other factors. Poor lake line accessibility and potential recreational and environmental impacts make renewal and replacement of the lake lines very difficult.

Additional discussion of lake line replacement is provided in Chapters 5 and 6.

9.6.7 Sewer System Pipeline Replacement

This pipeline replacement program is differentiated from the Sewer System Pipeline Rehabilitation Program. The replacement program will replace sewer pipes throughout the service area. Initiated in 2013, the current budget is sufficient to replace or re-line 0.5 to 0.75 miles of sewer pipe per year. The pipes replaced would be those where life cycle cost analyses indicate replacement is a more economical solution than continuing to make point repairs. Replacement methods may include trenchless rehabilitation techniques such as cured-in-place pipe, and pipe bursting, and/or open trench replacement. This program will compliment S-24, Sewer System Pipeline Rehabilitation, which focuses on making point repairs to extend the useful life of sewer pipes. Adding this program is consistent with the Asset Management Program strategy to meet expected and required customer service levels at the lowest life cycle cost.

Many of the City's sewer pipes are over 60 years old, and approaching the end of their useful life. Many pipes have required multiple repairs to prevent new and/or respond to reported sewage overflows. Several miles of sewer pipe have been identified where the cost to repair, maintain and/or rehabilitate the pipes exceeds the cost to replace the pipeline. As the system ages more will be identified.

This program's current funding level will not provide the resources for a long term sustainable level of pipeline replacement. However, it allows Bellevue Utilities to replace pipelines that have clearly reached the end of their useful economic life. The proposed replacement rate of up to 0.75 miles of pipe per year implies that sewer pipe system-wide would need to last an average of more than 650 years, much longer than the EPA's recommendation of 100 years. While sufficient for now, the annual program budget will eventually need to increase to meet asset management program goals. Ultimately, a sustainable rate of replacement will need to approach five to six miles per year. More information on forecasted funding needs for sewer system pipeline replacement is provided in Chapter 6.

9.7 System Improvements Since 2002

The City's 2002 Comprehensive Wastewater Plan outlined a program of improvements to Bellevue's sewer system. Those projects are listed in Table 9-4 along with the year they were completed. A brief discussion of each of these projects is provided in Appendix D.

Table 9-4, Capital Improvement Projects/Programs Recommended in the City’s 2002 Comprehensive Wastewater Plan

Project Description	CIP Plan Number	Proposed Schedule in 2002 plan	Year Completed
Sewage Pump Station Improvements ^{1,2}	S-16	2002-2008	Ongoing
Bellefield Pump Station Interim Expansion (Phase I) ¹	S-47	2002-2008	2003
Upper Vasa Creek Erosion Control/Slope Stabilization ^{1,3}	S-32	2002-2008	2011
Sunset Creek Channel Improvements ¹	S-49	2002-2008	2003
New Bogline Lift Station ^{1,4}	S-50	2002-2008	Cancelled
Auxiliary Power Upgrades at Sewage Pump Stations ¹	S-51	2002-2008	2003
Sewer System Trunk Rehabilitation Program ^{1,2}	S-24	Ongoing	Ongoing
Sewer Service Extensions Program ^{1,2}	S-30	Ongoing	Ongoing
Minor Capital Improvement Projects ^{1,2}	S-32	Ongoing	Ongoing
West CBD Trunk Capacity Improvements	S-54	2015	2012
East CBD Trunk Capacity Improvements	S-52	2010	In Design
Bellefield Pump Station Capacity Improvements (Phase II)	S-53	After 2010	In Design

1. These projects were shown in Table 9-3 of the 2002 Bellevue Comprehensive Sewer Plan.
2. Sub-projects completed under ongoing programs are shown in Tables 9-2, 9-3, 9-4 and 9-5
3. Upper Vasa Creek Erosion Control/Slope Stabilization was completed as part of the Minor Capital Improvement Projects program
4. Reasons for cancellation given in appendix D

Tables D-1 through D-4 in Appendix D show the sub-projects completed under the Sewage Pump Station Improvements Program S-16, Sewer System Trunk Rehabilitation Program S-24, Sewer Service Extensions Program S-30, and Minor Capital Improvement Projects S-32.

In addition, Coal Creek Utility District's 1999 Comprehensive Sewer Plan identified recommended improvements in the portion of CCUD’s service area that was transferred to Bellevue in 2003. Those projects are listed in Table 9-5. A brief discussion of each of these projects is provided in Appendix D.

Table 9-5, Capital Improvement Projects Proposed in the 1999 CCUD Plan

Project Description	Proposed Schedule	Year Completed
Canyon Creek Interceptor Replacement	2001*	Not Complete
Newport Hills Interceptor Capacity Improvements	As Required	Deferred
Abandon Gaupholm Lift Station	As Required	Deferred

*These projects were shown in Table 8-2 of the 1999 Coal Creek Utility District Comprehensive Sewer Plan.

Additional sewer facility improvement projects (not identified in the City's 2002 Plan or the 1999 CCUD Plan) have also been funded and completed or deleted since the 2002 Plan. These projects are summarized in Appendix D, and are listed in Table 9-6.

Table 9-6, Capital Improvement Projects Not Identified in 2002 Plan

Project Description	Proposed Schedule	Year Completed
WSDOT I-405/S.R. 520 Braids Sewer Relocation (CIP Plan No. S-55)	2009-2013	2011
WSDOT S.R. 520 Expansion Sewer Relocation (CIP Plan No. S-56)	2013-2020	2013
Upgrade Wastewater Telemetry System (CIP Plan No. S-57)	2009-2010	2011
Design of Sewer Facilities for NE 15th Multi Modal Corridor (CIP Plan No. S-62) ¹	2012-2012	Cancelled

1. Reasons for cancellation given in appendix D

Additional sewer facility improvement projects (not identified in the 2002 Plan or the 1999 CCUD Plan) have been funded since the 2002 Plan and are ongoing. Additional information on these projects is shown in Table 9-1 and Table 9-2. These include:

- Sewer Lake Line Replacement Program (CIP Plan No. S-58)
- Add On-site Power at Sewer Pump Stations (CIP Plan No. S-59)
- Wilburton Sewer Capacity Upgrade (CIP Plan No. S-60)
- Midlakes Pump Station Capacity Improvement (CIP Plan No. S-61)
- Utility Facilities for 120th Ave NE Improvements, Segment 2 (CIP Plan No. S-63)

Another project, Utility Facilities for 120th Ave NE Improvements, Segment 3 (CIP Plan No. S-65) was recommended and funded since the 2002 Plan, but has since been deleted for the reason described under the Segment 2 project.

CHAPTER 10

Financial Information

The City has a sound financial base that can finance the recommended capital improvements. Bond ratings from Moody's Investors Service and Standard and Poor's indicate a high level of confidence in the ability of the City's utilities to repay debt obligations, if needed. The sewer utility currently has no outstanding debt, and current sewer rates fully fund capital, operating and reserve (for future repair and rehabilitation) budgets.

The City has adopted financial policies by ordinance, as provided in Chapter 2. These policies guide the stewardship and investment of funds, use of debt, system expansion, connection and cost recovery, customer rates, and reserves for repair and rehabilitation.

10.1 Current Financial Status

Table 10-1 summarizes actual cash-basis revenues, expenses, and fund balances for the sewer utility for the most recent five-year period. Over the past five years, the utility fund balance, which represents total unexpended resources carried forward to future years, increased from \$6.3 million at the beginning of 2007 to a current balance of \$10.2 million at the end of 2011. During 2007 through 2011, a total of \$30.0 million was transferred to the Utility Capital Improvement Fund to finance necessary capital project expenses. These transfers represent approximately 15 percent of total sewer utility expenses for the five-year period.

10.2 Financial Outlook

Table 10-2 presents a projection of annual utility revenues, expenses, and fund balances for the next five years, based on the 2012 Preliminary Forecast amounts and changes expected to occur in various categories over the subsequent four-year period as a result of new customers, general inflation, and other related factors. This type of forecast is routinely used by utility staff in developing rate adjustment proposals and assessing the impact of changing budget assumptions on future rate requirements.

Some key assumptions that were used in forecasting the future annual revenues and expenses that appear in Table 10-2 are outlined below:

1. A reduction in total sewer utility customers/wastewater volumes will equal -0.1 percent per year for 2012 through 2016. This adjustment will bring projected sewer utility revenues in line with historical averages.
2. Other revenue sources will grow by 2.6 percent per year, based on historical average trends.
3. The current Sewer Utility forecast includes KCWTD projected rate increases from the 2012-2018 King County Wastewater Treatment Division Financial Plan, including a 10.4% rate increase in 2013, 11.1% in 2015, 1.1% in 2017 and 0.7% in 2018. As per our financial policies, City of Bellevue Sewer rates for the forecast period include pass through costs from KCWTD.
4. Personnel cost will increase by an annual rate of 5.0% for 2012-2016, Other Maintenance and Operations Expenses (excluding personnel) are projected to increase 8.8% for the same time frame.
5. The utility currently has no outstanding debt obligations. No future debt financing or annual debt service expenses are assumed in this forecast.
6. Sewer rate increases are projected each year from 2012-2016 to cover the impact of anticipated KCWTD rate increases and the cost of local program operations.

Table 10-1
City of Bellevue
Sewer Utility Fund
Revenues, Expenses & Reserve Balances by Year
2008 Through 2012

	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
Beginning Reserve Balance	\$8,900,069	\$8,268,468	\$9,516,013	\$7,489,893	\$10,240,623
Annual Revenues:					
Sewer Service	\$35,481,657	\$39,071,467	\$41,191,652	\$45,249,261	\$46,714,391
Interest/Other Revenues	\$1,869,888	\$1,666,525	\$1,594,414	\$1,608,507	\$2,026,776
Sub-Total	<u>\$37,351,545</u>	<u>\$40,737,992</u>	<u>\$42,786,066</u>	<u>\$46,857,768</u>	<u>\$48,741,167</u>
Annual Expenditures:					
KCWTD	\$21,287,416	\$23,741,308	\$24,039,818	\$27,232,055	\$27,456,575
Utility Tax Expense	\$2,121,750	\$2,350,007	\$2,571,636	\$2,789,640	\$2,928,580
Transfers to CIP	\$7,386,717	\$5,899,403	\$6,482,124	\$6,316,849	\$12,788,518
Other M&O Expense	\$7,187,264	\$7,502,312	\$11,653,194	\$7,768,494	\$8,212,853
Sub-Total	<u>\$37,983,146</u>	<u>\$39,493,030</u>	<u>\$44,746,772</u>	<u>\$44,107,038</u>	<u>\$51,386,526</u>
Asset Replacement Account	\$1,514,398	\$1,788,238	\$1,748,666	\$806,433	\$1,285,803
Ending Reserve Balance	<u>\$6,754,070</u>	<u>\$7,725,192</u>	<u>\$5,806,641</u>	<u>\$9,434,190</u>	<u>\$6,309,461</u>
	\$8,268,468	\$9,513,430	\$7,489,893	\$10,240,623	\$7,595,264

Notes: All Revenues, Expenses & Reserves were obtained via JDE report: **YTD Budget Variance by Fund** with the Account Level of Detail set at "8".

Table 10-2
City of Bellevue
Sewer Utility Fund
Forecasted Revenues, Expenses & Reserve Balances by Year
2013 Through 2017

	2013	2014	2015	2016	2017
	Preliminary Forecast				
Beginning Reserve Balance					
Asset Replacement Account					
Sub-Total	\$8,260,000	\$8,089,213	\$8,752,527	\$6,257,815	\$7,255,544
Annual Revenues:					
Sewer Service	\$49,740,765	\$51,662,125	\$56,558,041	\$58,858,634	\$62,415,527
Interest/Other Revenues	\$1,764,152	\$3,815,728	\$1,941,685	\$2,010,452	\$2,113,444
Sub-Total	\$51,504,917	\$55,477,853	\$58,499,726	\$60,869,086	\$64,528,971
Annual Expenditures:					
KCWTD	\$30,164,847	\$30,011,584	\$33,258,592	\$33,270,940	\$34,953,144
Utility Tax Expense	\$2,201,333	\$2,197,630	\$2,198,897	\$2,200,039	\$2,202,277
Transfers to CIP	\$9,369,404	\$10,074,985	\$11,918,675	\$12,665,452	\$14,632,561
Other O&M Expense	\$9,940,121	\$12,530,340	\$13,618,274	\$11,734,925	\$12,269,995
Sub-Total	\$51,675,705	\$54,814,539	\$60,994,438	\$59,871,356	\$64,057,977
Asset Replacement Account					
Ending Reserve Balance	\$1,828,045	\$2,178,899	\$189,277	\$689,792	\$1,338,326
	\$6,261,168	\$6,573,628	\$6,068,538	\$6,565,752	\$6,388,212
	\$8,089,213	\$8,752,527	\$6,257,815	\$7,255,544	\$7,726,538

Notes: All Forecasted Revenues, Expenses & Reserves were obtained via the Sewer Financial Model - 2013-14 Prelim Updated file located in the following drive: K:\SECURED\BUS_ADMIN - FINANCE\FORECASTS\PRELIMSEWER.

10.3 Funding for Capital Improvement Projects

Tables 9-2 and 9-3 show the estimated costs of capital projects and existing annual levels for ongoing capital improvement programs recommended in this comprehensive plan for the next 7 years. Based on project timing estimates, comprehensive plan recommendations can be financed at existing Capital Investment Program (CIP) funding levels by reassessing the timing and prioritization of projects in the current Capital Investment Program Plan during the city's next update. Significant acceleration of ongoing programs for system extension or trunk rehabilitation could require additional allocations from increased rates or other sources. System enhancements to comply with new state or federal regulations could also require increased CIP allocation.

To the degree that CIP funding is an important element of the Utility's annual budget and rate decisions, future funding levels may be subject to change depending on Council actions taken to address differences between annual sewer revenues and program costs, discussed in the "Financial Status" section of this chapter.

10.4 Funding for Pipeline Renewal and Replacement

Financial policies adopted in 1995, and then revised in 1998 & 2004, 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.

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. Table 10-3, shows the projected balances in the account from 2012-2019.

Capital Recovery Charges are temporary charges that apportion an equitable share of historical capital investment to new customers, who have not funded long-term capital projects but benefit from the existing system. Direct Facility Connection Charges are one-time charges collected from property owners that directly benefit from new utility- or privately-built facilities, unless they have previously paid their fair share through a LID or ULID.

Figure 10-1 shows the generalized flow of the Utility’s revenues and expenses.

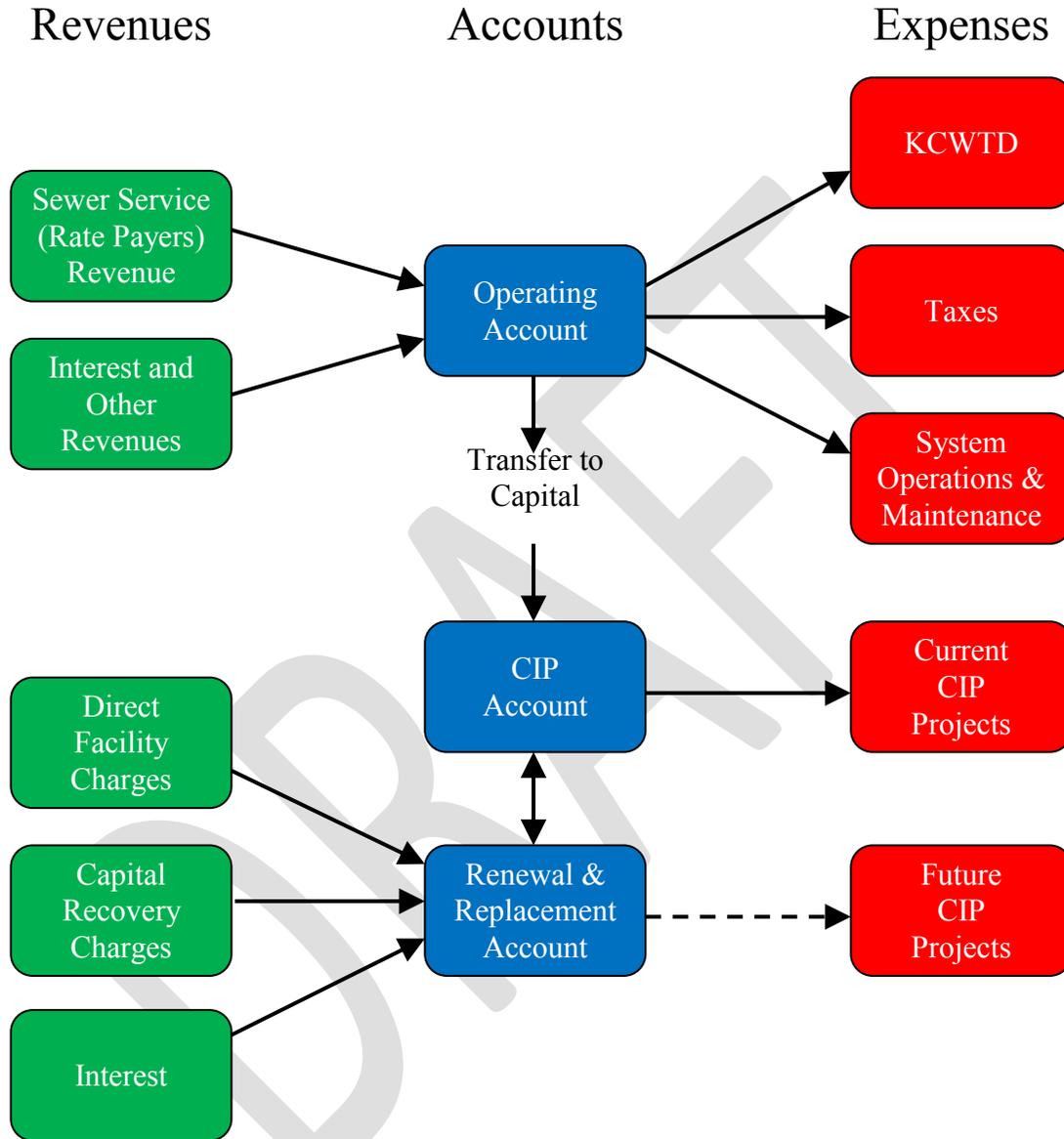


Table 10-3
City of Bellevue
Sewer Utility Renewal and Replacement Account
Forecasted Revenues, Expenses & Fund Balances by Year
2012 Through 2019

	Preliminary 2013	Estimate 2014	Estimate 2015	Estimate 2016	Estimate 2017	Estimate 2018	Estimate 2019	Estimate 2020
Beginning Fund Balance	\$47,234,273	\$49,627,880	\$44,422,440	\$42,624,393	\$52,318,509	\$64,234,076	\$76,661,916	\$90,559,593
Annual Revenues:								
Direct Facility Charges	\$134,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Capital Recover Charges	\$762,071	\$775,490	\$766,717	\$719,552	\$643,559	\$547,419	\$405,104	\$266,028
Contribution from Rates/Other Sources	\$1,110,088	\$0	\$0	\$8,262,492	\$10,106,482	\$10,471,461	\$11,820,358	\$17,458,148
Interest on Investments	\$387,449	\$376,201	\$348,187	\$712,072	\$1,165,526	\$1,408,960	\$1,672,215	\$1,903,804
Sub-Total	\$2,393,607	\$1,151,691	\$1,114,904	\$9,694,116	\$11,915,567	\$12,427,840	\$13,897,677	\$19,627,980
Annual Expenditures:								
Renewal & Replacement Projects	\$0	\$1,925,000	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$0	\$4,432,131	\$2,912,951	\$0	\$0	\$0	\$0	\$10,366,755
Sub-Total	\$0	\$6,357,131	\$2,912,951	\$0	\$0	\$0	\$0	\$10,366,755
Ending Reserve Balance	\$49,627,880	\$44,422,440	\$42,624,393	\$52,318,509	\$64,234,076	\$76,661,916	\$90,559,593	\$99,820,818

Notes: All Revenues, Expenses & Reserves were obtained via the Forecast models for the applicable years (2012 - from the 2011-12 model, 2013-19 - from the 2013-14 model) located in the following drive: K:\SECURED\IBUS_ADMIN - FINANCE\2013-2014 BUDGET\FORCASTS\PRELIMSEWER FINANCIAL MODEL - 2013-14 PRELIM (FORCAST P5-R&R). Added \$1,996,409 to 2012 Contribution from Rates/Other Sources to make 2012 Ending Reserve Balance equal 2013 Beginning Reserve Balance.

10.5 Current Debt Status

Presently the sewer utility has no outstanding debt obligations. The last debt issue sold to finance prior sewer capital project construction costs was paid off in 1991.

10.6 Credit Worthiness

While operated 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.

Bonds issued by the "Waterworks Utility," although primarily related to storm and surface water capital financing needs, have earned very positive evaluation of credit worthiness based on factors that include financial position, reserve levels, and debt service coverage, for the three utilities as a whole.

The "Waterworks Utility" currently has a bond rating of "Aa1" from Moody's Investors Service. Ratings at this level indicate a strong degree of confidence by the rating agency in the ability of the City's utilities to repay related debt obligations. The Sewer Utility has no immediate plans to issues 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 combined comparative balance sheet and operating statement for the Waterworks Utility for the 5-year period from 2007 through 2011 are provided in Tables 10-4 and 10-5 on the following pages.

Debt service shown on Tables 10-4 and 10-5 are related to the storm and surface water bonds noted above. The sewer utility has no outstanding debt.

**Table 10-4
City of Bellevue
Waterworks Utility
Comparative Balance Sheet**

	2008	2009	2010	2011	2012
(\$1,000's)					
Assets:					
Current Assets	\$41,899	\$36,362	\$34,016	\$40,226	\$37,133
Restricted Assets	\$60,602	\$77,334	\$92,078	\$101,887	\$123,541
Deferred Debits	\$362	\$293	\$213	\$204	\$191
Net Property, Plant & Equipment	\$225,449	\$234,585	\$245,864	\$251,817	\$258,260
Total Assets	\$328,312	\$348,574	\$372,171	\$394,134	\$419,125
Liabilities:					
Current Liabilities (Payable from Current Assets)	\$2,531	\$2,992	\$2,339	\$2,777	\$5,190
Current Liabilities (Payable from Restricted Assets)	\$1,159	\$1,120	\$57	\$42	\$42
Long-Term Liabilities	\$2,191	\$1,297	\$1,231	\$1,243	\$1,253
Total Liabilities & Deferred Credits	\$5,881	\$5,409	\$3,627	\$4,062	\$6,485
Fund Equity:					
Contributed Capital	\$223,109	\$233,308	\$245,705	\$251,714	\$258,194
Retained Earnings	\$99,322	\$109,857	\$122,839	\$138,358	\$154,446
Total Fund Equity	\$322,431	\$343,165	\$368,544	\$390,072	\$412,640
Total Liabilities & Fund Equity	\$328,312	\$348,574	\$372,172	\$394,134	\$419,125

Notes: All Assets, Liabilities and Fund Equity numbers were obtained via the CAFR reports for the applicable years. CAFR reports are posted on the following link: http://www.bellevuewa.gov/financial_reports.htm

Table 10-5
City of Bellevue
Waterworks Utility
Combined Operating Statement
(Year Ending December 31)

	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
(\$1,000's)					
Operating Revenue:					
Service Charges & Fees	\$79,276	\$86,878	\$92,867	\$98,200	\$103,357
Other Revenue	\$2,761	\$1,415	\$1,450	\$1,741	\$2,274
Total Operating Revenue	\$82,037	\$88,293	\$94,317	\$99,941	\$105,631
Non-Operating Revenue	\$4,203	\$2,125	\$1,470	\$3,014	\$2,430
Total Revenue & Income	\$86,240	\$90,418	\$95,787	\$102,955	\$108,061
Operating Expenses:					
Administrative & General	\$16,806	\$16,639	\$17,991	\$19,028	\$20,184
Maintenance & Operations	\$45,462	\$51,964	\$55,352	\$58,204	\$60,436
Miscellaneous	\$6,274	\$6,345	\$4,750	\$7,896	\$10,125
Total Operating Expenses	\$68,542	\$74,948	\$78,093	\$85,128	\$90,745
Available for Debt Service:	\$29,643	\$29,151	\$31,148	\$34,252	\$37,457
Actual Debt Service:	\$706	\$1,917	\$1,118	\$0	\$0
Debt Service Coverage:	41.98	15.21	27.86	NA	NA

Notes: Operating Revenue/Operating Expense all obtained from the STATEMENT OF REVENUES, EXPENSES AND CHANGES IN FUND NET ASSETS PRO PRETARY FUNDS schedule located within the CAFR reports obtained from Finance. Available for Debt Service/Actual Debt Service Coverage numbers obtained from SCHEDULE OF REVENUE BOND COVERAGE schedule (table 17) located within the CAFR report obtained from Bob Early also located in Finance.

10.7 Cost Per Service

Bellevue sewer utility’s recent cost per service is provided in Table 10-6, and projected cost per service is shown in Table 10-7. This information only reflects the total sewer utility expenditures per total number of sewer connections, and does not account for variations in connection capacity or actual usage. This information is provided to comply with the requirements of WAC 173-240-050 and is not intended to reflect current or proposed sewer billing rates. These figures do not consider revenues from other sources, including fees related to new connections (direct facility charges and capital recovery charges), and interest.

The number of sewer accounts shown in Table 10-6 is based on actual billing data. The number of sewer accounts shown in Table 10-7 is extrapolated through 2016, assuming the same average annual growth rate in sewer accounts from 2007-2011.

Table 10 - 6: Cost Per Service

	2007	2008	2009	2010	2011
Number of Sewer Accounts	36,088	36,248	36,382	36,516	36,998
Debt Cost per Service	\$0	\$0	\$0	\$0	\$0
KCWTD Fee per Service	\$588	\$587	\$653	\$658	\$736
Tax per Service	\$60	\$59	\$65	\$70	\$75
CIP Transfer per Service	\$108	\$204	\$162	\$178	\$171
O&M Cost per Service	\$177	\$198	\$206	\$319	\$210
Total Expenditure per Service	\$934	\$1,048	\$1,086	\$1,225	\$1,192

Table 10 - 7: Forecasted Cost Per Service

	2012	2013	2014	2015	2016
Number of Sewer Accounts	37,031	37,223	37,416	37,610	37,804
Debt Cost per Service	\$0	\$0	\$0	\$0	\$0
KCWTD Fee per Service	\$742	\$810	\$802	\$884	\$880
Tax per Service	\$56	\$59	\$59	\$58	\$58
CIP Transfer per Service	\$227	\$252	\$286	\$317	\$351
O&M Cost per Service	\$247	\$270	\$338	\$366	\$314
Total Expenditure per Service	\$1,272	\$1,391	\$1,485	\$1,625	\$1,604

Detailed expenditures have not been projected beyond 2016, however Renewal and Replacement expenditures have been projected to 2100 (as described in Chapter 6) for the purpose of long-term asset management and appropriate funding.

Appendix A

SEPA



DEVELOPMENT SERVICES DEPARTMENT
 ENVIRONMENTAL COORDINATOR
 450 110th Ave NE
 BELLEVUE, WA 98009-9012

DETERMINATION OF NON-SIGNIFICANCE

PROPONENT: City of Bellevue Utilities Department

LOCATION OF PROPOSAL: Citywide

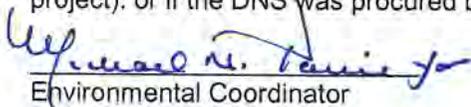
DESCRIPTION OF PROPOSAL: Review of the City of Bellevue Wastewater System Plan. The 2013 Wastewater System Plan (the Plan) is an update of Bellevue's 2002 Wastewater Functional Plan (previously titled 2002 Wastewater Comprehensive Plan). The Plan is a functional planning document that establishes wastewater policies designed to implement the City's *Comprehensive Plan*. The Plan provides direction on improvement, operation, and repair of the wastewater utility and is a tool for future planning of the system. Finally, it assists the City in compliance with federal, state, and regional regulations.

FILE NUMBERS: 13-131390-LM **PLANNER:** David Pyle

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 Development Services Department. 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 5:00 p.m. on _____.
- 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 **2/27/2014**.
- 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 5:00 p.m. on _____.

This DNS may be withdrawn at any time if the proposal is modified so as to have significant adverse environmental impacts; if there is significant new information indicating 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.


 Environmental Coordinator

2/13/2014
 Date

OTHERS TO RECEIVE THIS DOCUMENT:

- State Department of Fish and Wildlife / Stewart.Reinbold@dfw.gov; Christa.Heller@dfw.wa.gov;
- State Department of Ecology, Shoreline Planner N.W. Region / Jobu461@ecy.wa.gov; sepaunit@ecy.wa.gov
- Army Corps of Engineers Susan.M.Powell@nws02.usace.army.mil
- Attorney General ecyolyef@atg.wa.gov
- Muckleshoot Indian Tribe Karen.Walter@muckleshoot.nsn.us; Fisheries.fileroom@muckleshoot.nsn.us



**City of Bellevue
Development Services Department
Land Use Staff Report**

Proposal Name: City of Bellevue Wastewater System Plan

Proposal Address: Citywide

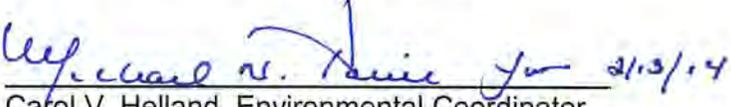
Proposal Description: The 2013 Wastewater System Plan (the Plan) is an update of Bellevue's 2002 Wastewater Functional Plan (previously titled 2002 Wastewater Comprehensive Plan). The Plan is a functional planning document that establishes wastewater policies designed to implement the City's *Comprehensive Plan*. The Plan provides direction on improvement, operation, and repair of the wastewater utility and is a tool for future planning of the system. Finally, it assists the City in compliance with federal, state, and regional regulations.

File Number: 13-131390-LM

Proponent: City of Bellevue Utilities Department
Contact: Doug Lane, 425-452-6865

Planner: David Pyle, Planner

**State Environmental Policy Act
Threshold Determination:** **Determination of Non-Significance**


Carol V. Helland, Environmental Coordinator
Development Services Department

Application Date: October 17, 2013
Notice of Determination Date: November 14, 2013
SEPA Comment Period Deadline: December 2, 2013
SEPA Appeal Deadline: February 27, 2014

For information on how to appeal a proposal, visit Development Services Center at City Hall or call (425) 452-6800. Comments on State Environmental Policy Act (SEPA) Determinations can be made with or without appealing the proposal within the noted comment period for a SEPA Determination. Appeal of the Decision must be received in the City's Clerk's Office by 5 PM on the date noted for appeal of the decision.

I. Proposal Description

The 2013 Wastewater System Plan (the Plan – Attachment 1) identifies the risks and opportunities of the City's wastewater system, and lays the groundwork for continued economic expansion, excellent quality of life, and sustained growth and development over a 20-year planning horizon. The City of Bellevue (the City) wastewater utility service area includes the Cities of Bellevue, Issaquah, Clyde Hill and Medina, and the Towns of Hunts Point and Yarrow Point. Since the founding of the original Bellevue Sewer District on Meydenbauer Bay in 1952, the utility has protected water quality and public health, while facilitating economic vitality, desirable neighborhoods and significant growth.

The 2013 Wastewater System Plan (the Plan) reflects back on more than a decade of change since Bellevue's 2002 Wastewater Functional Plan (titled 2002 Wastewater Comprehensive Plan), while charting a course to navigate the challenges ahead. The Plan addresses aging of infrastructure, system expansion to accommodate development, revised policies and practices, newly available analytical data, finances, revised forecasting of growth, and recommended improvements.

The Plan does not authorize construction and is not a Capital Improvement Plan (CIP). Rather, the Plan provides direction to the Utilities Department in how to manage the system to meet current and future needs. All future actions prompted by this Plan must demonstrate compliance with applicable codes and policies. Prior to construction of any repair, replacement, or expansion of the system construction permits are required and project level SEPA analysis may be necessary.

This Wastewater System Plan is consistent with Bellevue's Comprehensive Plan policies, and serves as the functional plan to implement those policies. Furthermore, the Wastewater System Plan itself defines Utilities-specific policies as subordinate to the City's Comprehensive Plan. These Utilities-specific policies, found in the Plan (Attachment 1 - Chapter 2), focus on:

- Customer Service
- Service Area
- Water Quality
- Regional Policy Interface
- Financial Policies

The Plan includes the following elements:

Asset Management

Planning for system renewal and replacement (R&R) is necessary to ensure adequate long-term financing and to manage the risk of system failures. Bellevue's Utilities Department has established a strong long-term financial position, by incorporating the five core components of the EPA asset management framework:

1. Determine Current State of the Assets
2. Define Service Levels
3. Determine Asset Criticality and Risk
4. Determine Best Operating and Maintenance (O&M) and Capital Improvement Program (CIP) Strategies to Minimize Life Cycle Costs
5. Determine Funding Strategy

Based on industry standards for asset life expectancy, as well as local factors specific to the City's wastewater system, Bellevue has developed a schedule of annual costs for funding anticipated R&R projects through the year 2100.

Growth and Demand

Bellevue's sewer service area experienced significant population growth throughout the 2000's, particularly in downtown Bellevue. Although the recession slowed growth in 2008-2009, Bellevue's service area population continues to expand and is projected to surpass 166,000 by 2030. Most of this growth will occur Downtown and in the Bel-Red Corridor.

To estimate future wastewater flows, the Wastewater System Plan uses population and land use projections developed by the Bellevue Planning and Community Development Department and computer modeling (described in the Plan – Attachment 1) to evaluate the system's current hydraulic capacity and its ability to meet projected capacity requirements. The projections consider the Bellevue Comprehensive Land Use Plan, and are consistent with Puget Sound Regional Council data and forecasts, and U.S. census data. Population and sewage flow projections consider ultimate growth within the City's urban growth boundary limits, in accordance with GMA requirements.

In addition to population growth from within, Bellevue's sewer utility service system has grown since 2002 through expansion of the service area boundaries. In 2003, Bellevue assumed Coal Creek Utility District's water and sewer infrastructure located inside Bellevue City limits. The service area was also extended in the Cougar Mountain area to the Urban Growth Boundary. Population and employment projections are used to evaluate the system's ability to meet future needs, and form the basis of recommendations for capacity expansion projects.

Regulatory Compliance

The Plan has been prepared in conformance with Washington Department of Ecology criteria, as defined in WAC 173-240-050, *Summary of Financial Health*, and provides a basis for capital improvement planning for the next 6 years. The Plan also forecasts anticipated needs within the next 20 years and for ultimate system build-out based on land use zoning.

The City has consulted with Bellevue's Environmental Services Commission (ESC) in public meetings for review and direction of the Plan at key points of Plan development, including policy clarifications, evaluation criteria, results analysis and recommendations. The ESC advises Bellevue City Council on utilities planning and related topics, and is comprised of seven residents from within the city's service area.

Current and Future System Infrastructure

Bellevue's sewer system includes approximately 525 miles of sewer mains, 130 miles of service stubs (within public rights of way), 18.7 miles of "lake line" sewer pipe, 10 flush stations, 36 pump stations, and 14,360 manholes.

Since the 2002 Plan, the City has continued to improve its system assessment and understanding, through systematic video inspection, flow monitoring, and other investigative techniques that are best practices for utility asset management. System infrastructure is also observed during regular cleaning and flushing, and in response to customer complaints. While the system overall is well-maintained and functional, recent information has indicated several emerging challenges for the wastewater system:

- **Lake Line Condition.** The City's lake lines are sewer pipes that follow the shorelines

of Lake Washington and Lake Sammamish, underwater and in some cases on land adjacent to the lakes. Two issues have emerged that indicate a need to replace the oldest sections of this piping soon:

- Assessment of asbestos cement lake line pipes in Meydenbauer Bay revealed significant deterioration of this piping in some locations. These are some of the first pipes installed in the original Bellevue Sewer District, circa 1952. It is anticipated that unacceptable structural failures of these pipes could occur within about 10-15 years if they are not replaced or rehabilitated.
- Overflows have occurred upstream of lake line piping, due to reduced lake line capacity from sedimentation. Due to relatively flat installation, these pipes are particularly susceptible to sedimentation and require daily flushing.

Replacement of the lake lines is expected to be technically challenging, environmentally sensitive, and expensive compared to other sewer projects. It is anticipated that no single solution will work at all locations, such that a variety of options may be needed based on site-specific factors. Stakeholder input will be critical to making final decisions. Any option selected will impact entire neighborhoods and require consensus among diverse interest groups. Capital Improvement Plan No. S-58 – Sewer Lake Line Replacement Program has been created to evaluate lake line replacement options, and is recommended to continue.

- **Inflow and Infiltration (I&I).** Flow monitoring data from King County's 2002 Infiltration study and subsequent investigations revealed that stormwater and groundwater flows into Bellevue's wastewater system are significantly higher than previously assumed. If not mitigated, these I&I flows could cause downstream capacity problems, increase the potential risk of overflows, and necessitate additional capital investments. The Plan recommends targeted investigation and reduction of I&I.
- **Storm Frequency and Vulnerabilities.** The City's experiences in wind storms, ice storms, prolonged power outages and other extreme weather events in 2006, 2007 and 2010 provided valuable experience to guide the Plan.
 - **Storm Frequency.** The frequency and severity of extreme weather events that resulted in one or more sewer overflows in the system have increased since the 2002 Plan. Subsequently, some locations that were perceived to have an acceptable risk of overflow only during extreme (greater than 20-year frequency) events could be more susceptible, given changing event-frequencies. The City has always investigated known overflows, but now recognizes that the frequency of overflows could increase if nothing is done. The Plan recommends I&I investigation and reduction (where feasible), and capacity improvements where necessary to manage the risk of overflows.
 - **Storm Vulnerabilities.** Recent storms have validated the City's utility emergency management procedures, but also revealed some vulnerabilities in the wastewater system. The City's strategy to equip critical pump stations with permanent on-site backup power has worked well. However, utility staff found it difficult to access less critical pump stations with portable generators when roads were blocked by downed trees, ice and other obstacles. Difficulty accessing these pump stations subsequently increased overall response times. The Plan recommends more pump stations be equipped with permanent on-

site backup power.

- **Asbestos Cement Pipe Failures.** The City's potable water distribution system has experienced a high rate of asbestos cement (AC) pipe failures, relative to other pipe materials. Subsequently, an AC water main replacement program has been implemented by the water utility. Bellevue's wastewater system also has some AC piping. AC gravity sewer piping has a lower criticality and consequence of failure, because they are not pressurized. However, there are some AC force mains (pressurized pipes) in the City's wastewater system that is now perceived by the City to have a high consequence of failure. The Plan recommends establishing a program to inspect and prioritize replacement of AC force mains.

Future Improvements

As Bellevue continues to grow the wastewater system must be improved to meet increased demand. Recommended sewer system improvements fall into three general categories:

- **Existing System Capacity Improvements.** These projects address known or potential system capacity or reliability problems in the existing system.
- **System Capacity Expansion to meet Planned Growth.** These projects and programs address projected system capacity problems due to forecasted future development.
- **Infrastructure Renewal and Replacement.** These projects and programs are intended to reduce the number and severity of system failures due to age.

Ongoing annual improvement programs and one time projects recommended to maintain, rehabilitate, and upgrade the City's existing infrastructure over the next 6 years are summarized in the Plan (Attachment 1).

II. Policies

The City prepared and adopted Bellevue's Comprehensive Plan (City Ordinance No. 5570, November 29, 2004) as required by the Washington State Growth Management Act (GMA). Consistent with the GMA, Bellevue's Comprehensive Plan policies require the Utilities Department to anticipate and facilitate growth. Specifically:

POLICY UT-4. Base the extension and sizing of [Utilities] system components on the land use plan of the area. System capacity will not determine land use.

POLICY ED-21. Continue to identify, construct and maintain infrastructure systems and facilities required to promote and sustain a positive economic climate. Anticipate needs and coordinate city infrastructure investments with economic development opportunities.

This Wastewater System Plan is consistent with Bellevue's Comprehensive Plan policies, and serves as the functional plan to implement those policies. Furthermore, the Wastewater System Plan itself defines Utilities-specific policies as subordinate to the City's Comprehensive Plan. These Utilities-specific policies, found in the Plan (Attachment 1 - Chapter 2), focus on:

- Customer Service
- Service Area
- Water Quality

- Regional Policy Interface
- Financial Policies

Minor changes have been made to several policies since the 2002 Plan. Significant policy changes (Attachment 1 -Chapter 2) since the 2002 Plan adoption include:

- Inflow & Infiltration (I&I) policy language has been made clearer and more concise.
- A new policy regarding City participation in regional policy development has been added. This new policy was added to guide Bellevue's role in influencing regional decision-making in the interests of the City and Bellevue's rate payers.

III. Public Notice and Comment

Application for project SEPA review was submitted on October 17, 2013. Following initial review of project documentation submitted, a notice of application and intent to issue DNS under the SEPA Optional Process was issued in the November 14, 2013 City Permit Bulletin and an initial comment period held open for 14 days. Comments were collected and a detailed review of environmental documentation completed.

Noticing for SEPA review has been completed as follows:

Application Date:	October 17, 2013
Public Notice (500 feet):	November 14, 2013
Minimum Comment Period:	December 2, 2013
Appeal period ends:	February 27, 2014

This Notice of SEPA Threshold Determination was published in the City of Bellevue weekly permit bulletin on February 13, 2014. There is a 14 day appeal period ending on February 27, 2014.

In response to the City's Weekly Permit Bulletin notice of application and notice of intent to issue DNS under the SEPA Optional DNS process only one comment was received from the Muckleshoot Indian Tribe Fisheries Division, although several comments were received in response to distribution of the Plan to other jurisdictions by Utilities Department staff. Additional outreach was also completed by the Utilities Department including City publications and an open house and the Plan was presented to the City of Bellevue Environmental Services Commission for review and comment.

Comments received have been focused on:

- **Aquatic Resources and Habitat:** Construction, operations, and repair can be impactful to aquatic resources. Mitigation of impacts to aquatic resources and habitat from sewer lake lines and linear river crossings should be required. This comment was made by Karen Walter of the Muckleshoot Indian Tribe Fisheries Division and is included as Attachment 2. Mitigation of these impacts is required through application of the City's Critical Areas requirements, Land Use Code section 20.25H.

- **Plan Content:** Comments from other jurisdictions including King County, Issaquah, Redmond, Coal Creek Utility District, Water District #117 (Hilltop Community), Beaux Arts, Hunts Point and Yarrow Point and the Environmental Services Commission on general Plan content. These comments were focused on plan details and were not related to plan impacts. These comments are included as Attachment 3.

IV. Environmental Review

Purpose and Need to which the Proposal is Responding

The Utilities Department is proposing updates to Bellevue's 2002 Wastewater Functional Plan (titled 2002 Wastewater Comprehensive Plan). Bellevue City Code section BCC 22.02.033 requires submittal of an environmental checklist and any relevant supporting materials for any proposal that is not deemed to be exempt from SEPA review as listed in BCC 22.02.032. This report summarizes the environmental consequences that could result from adoption of the proposed Wastewater System Functional Plan consistent with WAC 197-11-060(3).

Major Conclusions, Significant Areas of Controversy, and Uncertainty

The updated Plan includes a summary of actions needed to continue to operate the wastewater system, including repair and replacement of existing infrastructure to meet current use patterns, and improvement to meet increased demand. As operation, repair, and expansion of the system is implemented, decisions will be made as to the type of infrastructure being used, capacity, and location.

The following actions are contemplated with the Plan. These future actions will require construction and activity implementation in accordance with applicable policies and regulations:

- **Existing System Capacity Improvements.** These projects address known or potential system capacity or reliability problems in the existing system.
- **System Capacity Expansion to meet Planned Growth.** These projects and programs address projected system capacity problems due to forecasted future development.
- **Infrastructure Renewal and Replacement.** These projects and programs are intended to reduce the number and severity of system failures due to age.

Issues to be Resolved Including Environmental Choices to be Made Between Alternative Course of Action

One of the major areas of controversy or uncertainty for the system is with the system's lake lines that are located in Lake Washington and Lake Sammamish. A second area of uncertainty is with the wastewater system's crossing of surface water features (wetlands and streams) where potential impacts to aquatic habitat exist. A third is where the system is located within the City's Shoreline in areas subject to the requirements of the Shoreline Management Act and the City Shoreline Master Program. In addition to these it is probable that other areas of conflict will be identified. In each location or with each conflict decisions regarding system design, system location, and construction impacts must balance system needs with protection of sensitive resources. In all circumstances theories of mitigation sequencing must be applied and when impacts are unavoidable adequate mitigation provided.

SEPA Checklist/SEPA Threshold Determination

The applicant has provided a complete SEPA checklist (Attachment 4) supported by detailed analysis for review in demonstrating the no significant adverse environmental impact. Staff have reviewed the Plan, the checklist, and supporting documentation and have determined that, for the proposed non-project action, environmental review indicates no probability of significant adverse environmental impacts provided that applicable city codes and standards are implemented. Therefore, issuance of a Determination of Non-Significance pursuant to WAC 197-11-340 and Bellevue City Code 22.02.034 is appropriate.

Other adverse impacts that are less than significant may be mitigated pursuant Bellevue City Code 22.02.140, RCW 43.21C.060, and WAC 197-11-660.

Mitigation Measures

The lead agency has determined that the requirements for environmental mitigation have been adequately addressed in the development regulations and comprehensive plans adopted under Chapter 36.70A RCW and in other applicable local, state or federal laws or rules, as provided by RCW 42.21C.240 and WAC 197-11-158. As identified in this SEPA analysis, the City's Comprehensive Plan, Land Use Code, Clearing and Grading Code, Stormwater Code, and Transportation Code include provisions designed to avoid and minimize environmental impacts through design. When impacts are unavoidable, specific mitigation is prescribed by applicable codes and designed to offset impacts. Consequently, no specific SEPA mitigation measures are required for this Threshold Determination.

A. Earth

The actions of the Bellevue Utilities Department in implementing the Plan that affect earth include:

- Capital facilities construction which will involve earth displacement for installation and maintenance of publicly owned facilities. These project-specific actions will undergo separate SEPA project review (as needed) and are not included in this analysis.
- The operation of city-owned and privately-owned facilities to control the transport of effluent, preventing it from contaminating the surface water system.
- Measures implemented by city codes for private and public projects that include engineering requirements and design standards for infrastructure construction.
- Measures implemented by city codes for private and public projects that include site management practices requiring erosion control in order to keep pollutants, including sediment, out of the City's surface water system. Such programs are supported in the Plan, but are implemented by the Development Services Department as part of implementation of Clearing and Grading Permit requirements.

The construction, maintenance and operation of wastewater facilities that exceed clearing and grading permit (BCC 23.76) and critical area requirement (LUC 20.25H) thresholds will obtain necessary permit review and measures will be implemented that ensure earth resources are preserved and impacts are avoided or minimized.

Adoption of the Plan will not result in direct or indirect impacts on earth that will result in significant adverse impacts. For the most part, the Plan will result in beneficial impacts on earth.

B. Water

The actions of the Utilities Department in implementing the Plan that affect water include:

- Control of impervious surface and preservation of native forest cover, which influences the amount of runoff versus infiltration, addressed in policies that support LID.
- Source controls, which are measures that keep pollutants out of the stormwater runoff (for example, erosion control and spill containment). In general, source controls are specific to a given site while preventative measures are applied across the landscape.
- Head-of-the-pipe treatment, such as oil/water separators and sedimentation ponds that reduce the rate of discharge and remove pollutants from runoff before they enter the main stormwater conveyance system. Treatment is different from preventative measures; prevention avoids water quality problems.
- Preventative measures, which are limitations on the presence of such substances, and include reduction in use or prohibition of polluting materials, such as lead in gasoline and copper in brake pads or the reduction in cleared area from land development.
- There are a wide variety of federal, state and local programs that address water resources and water quality. The federal and state Clean Water Acts (CWA) include major policy direction for water quality. The City's NPDES municipal stormwater permit provides a mandate to implement policies of the CWA and also implements capital projects and other programs in addition to the mandates to improve surface water quality.

The construction, maintenance and operation of wastewater facilities that exceed clearing and grading permit (BCC 23.76) and critical area requirement (LUC 20.25H) thresholds will obtain necessary permit review and measures will be implemented that ensure water resources are preserved and impacts are avoided or minimized.

Adoption of the Plan will not result in direct or indirect impacts on water that will result in significant adverse impacts. In fact, the Plan will result in beneficial impacts on water through transport of effluent for treatment.

C. Plants and Vegetation

The actions of the Bellevue Utilities Department in implementing the Plan that affect plants include:

- Capital facilities construction which will involve earth displacement for installation of publicly owned facilities. These project-specific actions will undergo separate SEPA project review and are not included in this analysis. The restoration of disturbance associated with capital facility construction is required by Bellevue's clearing and grading code. If the work is within a regulated critical area, then restoration is required by the Land Use Code.
- Measures implemented by city codes for private and public projects that include preservation of native vegetation through LID in order to preserve more natural hydrologic patterns.

The construction, maintenance and operation of wastewater facilities and programs that exceed clearing and grading permit (BCC 23.76) and critical area requirement (LUC 20.25H) thresholds will obtain necessary permit review and measures will be implemented that ensure plant resources are preserved or restored.

Adoption of the Plan will not result in direct or indirect impacts on plants that will result in

significant adverse impacts. For the most part, the Plan will result in beneficial impacts on plants through proper planning and desing.

D. Animals

A major effect of wastewater management is on fish and other aquatic species. Potential adverse impacts of urban effluent are largely related to water quality. Enhanced wildlife habitat is one of the primary reasons for the Plan. The overall, cumulative impact of the Plan would be to reduce pollutant discharges to water or land (by reducing the frequency and severity of sewer overflows) and improved habitat overall. Impacts abated by the Plan include:

- Nutrients can result in excessive or accelerated growth of vegetation, such as algae. When algae die, they absorbs oxygen from the water during decomposition. This harms fish.
- Some hydrocarbon compounds in effluent are toxic to aquatic organisms at low concentrations.
- Metals are toxic to aquatic organisms and can bioaccumulate in fish.
- Synthetic organic compounds (adhesives, cleaners, sealants, solvents, etc.) cause harm to aquatic life.
- Maintenance practices (i.e. Lake Lines) may interrupt natural, habitat forming processes.

Programs in the Plan and existing policies that address these impacts include:

- Implementation of LID to preserve more natural hydrology
- Source reduction practices such as erosion control measures on new construction
- Operation and maintenance of city facilities and inspection of private facilities to implement maintenance standards and ensure proper system functions.
- Public education and outreach
- Public involvement and participation
- Capital projects
- Spill control and water quality response

Adoption of the Plan will not result in direct or indirect impacts on animals that will result in significant adverse impacts. In fact, the Plan will likely result in beneficial impacts through the conveyance of effluent for treatment.

E. Energy and Natural Resources

After completion of all recommended projects, the Plan would require energy and natural resources primarily to meet operations and maintenance needs. Ongoing operations & maintenance activities use fossil fuels in vehicles to transport maintenance crews and equipment to system infrastructure. Spare parts and/or replacement piping are used when needed for maintenance. Pump stations use electricity.

Operations & maintenance vehicles are well-maintained at Bellevue's Service Center to avoid leaks and optimize fuel economy. Maintenance crews only drive where needed to perform maintenance activities. Pumps are appropriately sized to provide reasonable efficiency in the pertinent operating conditions. The recommended pump station rehabilitations would improve efficiency to conserve energy.

Bellevue's economic incentive is to obtain the required construction quality for the minimum price. The market response to this economic incentive is to minimize the

resources used to build and maintain wastewater facilities. During design, engineers would optimize pump curves, earthwork quantities, concrete volumes and pipe sizes/lengths to meet the reliability and performance criteria with reasonable cost. During construction, the public bidding procedure requires the low-bid contractor to conserve resources as much as reasonable in order to earn a profit on the project(s).

Adoption of the Plan will not result in direct or indirect impacts on energy and natural resources that will result in significant adverse impacts.

F. Environmental Health

The overall, cumulative effects of the Plan would likely be decreased environmental hazards, due to reduced frequency and severity of sewer overflows and pollutant discharges. Sewage is the primary hazardous material associated with Bellevue's wastewater system. In general, no hazardous chemicals are kept at Bellevue's sewer facilities, except for diesel fuel for pump station on-site generators, and potassium permanganate and/or activated carbon for odor control systems at 2-3 lift station facilities. The Plan would add 3 diesel generators and may add new or upgraded odor control facilities (at replaced pump stations). For ongoing (permanent) maintenance activities, chemicals would be stored with double-containment where required. OSHA rules would be followed, and MSDS sheets and other pertinent information would be provided.

Some temporary environmental health hazards and risks could occur during specific projects, commensurate with typical construction-related hazards. These would include exposure to construction chemicals (epoxies, paints, concrete admixtures, curing compounds, diesel fuel and fumes, etc.) and common risks associated with construction. Each construction project would undergo its own separate project-specific SEPA process. During that process, more detailed and specific information would be provided. In general, the contractor for each project would be required to implement appropriate safety measures, develop and execute spill response plans in case of accidental discharge, and follow all applicable regulations and permit conditions.

Adoption of the Plan will not result in direct or indirect impacts on environmental health that will result in significant adverse impacts.

G. Land Use

The City of Bellevue's policies require the Utilities Department to support proposed land use and the City's Comprehensive Plan. The Plan is compatible with the City's Comprehensive Plan, as required by the City Council. See Comprehensive Plan policies UT-4 and ED-21.

Adoption of the Plan will not result in direct or indirect impacts on land use that will result in significant adverse impacts.

H. Transportation

Impacts on transportation from utility facilities are largely limited to transportation of construction materials and transportation related to routine maintenance of facilities and inspection. These activities generate relatively few trips compared to peak hour commuting.

Adoption of the Plan will not result in direct or indirect impacts on transportation that will result in significant adverse impacts.

I. Public Services and Utilities

The City has a sound financial base that can finance the recommended capital improvements. Bond ratings from Moody's Investors Service and Standard and Poor's indicate a high level of confidence in the ability of the City's utilities to repay debt obligations, if needed. The sewer utility currently has no outstanding debt.

Adoption of the Plan will not result in direct or indirect impacts on public services that will result in significant adverse impacts.

City of Bellevue Submittal Requirements

Attachment 4
SEPA Checklist **27a**

ENVIRONMENTAL CHECKLIST

10/17/13

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 Utilities Department
Contact Person: Douglas Lane, PE
Address: Utilities Department
City of Bellevue
PO Box 90012
Bellevue, WA 98009-9012
Phone: (425) 452-6865

City of Bellevue File Number 13-131390-LM
11/14/2013
2013 Wastewater System Plan
Program SEPA Checklist
SEPA Checklist Reviewed By:
David Pyle, Land Use Planner
425-452-2973 - dpyle@bellevuewa.gov

Proposal Title: City of Bellevue 2013 Wastewater System Plan

Proposal Location: N/A

Give an accurate, brief description of the proposal's scope and nature:

1. General description:

The City of Bellevue 2013 Wastewater System Plan (the Plan) is an update to the City of Bellevue's 2002 Comprehensive Wastewater Plan, as required by Washington Administrative Code WAC 173-240-050. The general purpose of the Plan is to evaluate the existing wastewater system, identify current and future needs, and develop a plan to meet those needs. Additionally, this plan is intended to:

- Disseminate information and develop consensus among stakeholders
- Document sewer utility-specific policies
- Serve as a reference document for Utility staff and for partner utilities
- Comply with, and demonstrate conformance with applicable regulations

Received
OCT 17 2013

Permit Processing
City of Bellevue

As part of planning to meet current and future needs, the Plan recommends specific programs and projects. The limited, generalized information that is currently known about these projects and programs is presented below. More detailed information would become available for each project during preliminary design studies, and provided in separate SEPA documentation for each specific project.

Recommended sewer system improvements fall into three general categories:

- **Existing System Capacity Improvements.** These projects address known or potential system capacity or reliability problems in the existing system.
- **System Capacity Expansion to meet Planned Growth.** These projects and programs address projected system capacity problems due to forecasted future development.
- **Infrastructure Renewal and Replacement.** These projects and programs are intended to reduce the number and severity of system failures due to age.

Within each of these categories, some projects are recommendations that are currently funded in the City's Capital Investment Program (CIP), while others are proposed new recommendations to address emerging issues. Specific projects are listed below, with information regarding environmental and community impacts provided in Table 1:

- *Recommended Improvements to address capacity concerns in the existing system:*
 - *Flow Monitoring Due to Model Results (New)*
 - *I&I Investigations (New)*
 - *Add On-site Power at Sewer Pump Stations (CIP Plan No. S-59)*
 - *Capacity Projects if I&I Investigation does not Resolve Capacity Concerns (New)*
 - *Newport Capacity Improvements (New Project)*
- *Recommended System Capacity Expansion to meet Planned Growth:*
 - *Sewer Service Extensions Program (CIP Plan No. S-30)*
 - *East CBD Trunk Capacity Improvements (CIP Plan No. S-52)*
 - *Bellefield Pump Station Capacity Improvements, Phase II (CIP Plan No. S-53)*
 - *Wilburton Sewer Capacity Upgrade (CIP Plan No. S-60)*
 - *Midlakes Pump Station Capacity Improvement (CIP Plan No. S-61)*
 - *Utility Facilities for 120th Ave NE Segment 2 (CIP Plan No. S-63)*
- *Recommended Infrastructure Renewal and Replacement:*
 - *Downtown Park Sewer Replacement (Proposed as part of CIP S-66)*
 - *Asbestos Cement Force Main Replacement Program (Proposed New CIP)*
 - *Sewage Pump Station Improvements (CIP Plan No. S-16)*
 - *Sewer System Trunk Rehabilitation Program (CIP Plan No. S-24)*
 - *Minor Capital Improvement Projects (CIP Plan No. S-32)*
 - *Sewer Lake Line Replacement Program (CIP Plan No. S-58)*
 - *Sewer System Pipeline Replacement (CIP Plan No. S-66)*

Table 1 – Specific Projects/Programs and Known Impacts*

Project or Program	Environmental Impacts of Recommended Project/Program*	Environmental Impacts if No Action Taken	Other Alternatives <u>Not</u> Recommended
Flow Monitoring Due to Model Results (New) [See Figure 1 for specific locations]	None	Potential for sewage overflows (pollution of water and land; potential private property damage and claims; violation of applicable laws) during heavy rainfall events; Potential to limit development/growth due to lack of available capacity (violation of City policy)	Perform capacity improvements without verifying model predictions (community impacts; large expense; ratepayer funds could be spent on projects that may not be necessary)
I&I Investigations (New) [See Figure 1 for specific locations]	Momentary discharge of smoke from sewers	Potential for sewage overflows (pollution of water and land; potential private property damage and claims; violation of applicable laws) during heavy rainfall events; Higher King County wastewater treatment costs to utility rate payers (due to higher flow); Potential to limit development/growth due to lack of available capacity (violation of City policy)	Perform capacity improvements without verifying model predictions (community impacts; large expense; ratepayer funds could be spent on projects that may not be necessary)
Newport I&I Investigations and Capacity Improvements (New) [See Figure 1 for location]	Short-term construction-related impacts (mitigated by BMPs) in existing roadway and/or pipeline easements during construction. No impacts would be anticipated after construction is complete.	Increased frequency and severity of sewage overflows from location of known discharge (pollution of water and land; potential private property damage and claims; violation of applicable laws)	Recommendation includes I&I investigations prior to capacity improvements. If capacity improvements are implemented without I&I investigations, then an opportunity to save costs and reduce the scope of the project could be missed.

Impacts shown are based on limited, planning-level information. Environmental studies, reports, and permits would be developed during the preliminary design phase of each project. More detailed information would be provided in a project-specific SEPA review at that time.

Table 1 – Specific Projects/Programs and Known Impacts*

Project or Program	Environmental Impacts of Recommended Project/Program*	Environmental Impacts if No Action Taken	Other Alternatives <u>Not</u> Recommended
<p>Add On-site Power at Sewer Pump Stations (CIP Plan No. S-59)</p>	<p>Brief periods of diesel emissions and noise during periodic maintenance and testing. Continuous diesel emissions and noise during power outages. Potentially marginal increase in stormwater runoff (mitigated by BMPs as required by code) due to construction of small generator building.</p>	<p>Potential for sewage overflows (pollution of water and land; potential private property damage and claims; violation of applicable laws) and unplanned shutoff of sewer service to upstream customers during power outages. City resources that could provide critical services elsewhere during emergency conditions would need to continue navigating downed trees, snow/ice, etc to bring portable generator to existing remote sites.</p>	<p>No other feasible alternatives (add on-site power or don't)</p>
<p>Sewer Service Extensions Program (CIP Plan No. S-30)</p>	<p>Short-term construction-related impacts (mitigated by BMPs) in existing roads and/or new pipeline easements during construction. No impacts would be anticipated after construction is complete.</p>	<p>Potential to limit development/growth due to lack of available capacity (violation of City policy and Growth Management Act); potential King County Dept of Public Health violations due to septic system failures (if homeowners cannot fully fund the extensions and delay connection)</p>	<p>Require property owners to fully-fund all sewer extensions (rather than the City) in all areas (similar to existing sub-area policy for Bridle Trails only), and allow property owner to then collect latecomer fees from future connections by other homeowners or developers; this makes connection to sewer unaffordable except to wealthy developers</p>
<p>East CBD Trunk Capacity Improvements (CIP Plan No. S-52) [This project accommodates downtown development] [See Figure 2 for location]</p>	<p>Short-term construction-related impacts (mitigated by BMPs) to increase pipe size in existing 112th Ave SE ROW during construction. No impacts would be anticipated after construction is complete.</p>	<p>Potential for sewage overflows (pollution of water and land; potential private property damage and claims; violation of applicable laws) during heavy rainfall events; Potential to limit development/growth due to lack of available capacity (violation of City policy)</p>	<p>No other feasible alternatives.</p>

Impacts shown are based on limited, planning-level information. Environmental studies, reports, and permits would be developed during the preliminary design phase of each project. More detailed information would be provided in a project-specific SEPA review at that time.

Table 1 – Specific Projects/Programs and Known Impacts*

Project or Program	Environmental Impacts of Recommended Project/Program*	Environmental Impacts if No Action Taken	Other Alternatives <u>Not</u> Recommended
<p>Bellefield Pump Station Capacity Improvements, Phase II (CIP Plan No. S-53) [This project accommodates downtown development] [See Figure 2 for location]</p>	<p>Short-term construction-related impacts (mitigated by BMPs) to replace existing pump station at existing site near Mercer Slough during construction. Nearby wetlands would be protected in accordance with City code. Significant pumping of high groundwater may be required to dewater excavations during construction. Impacts after construction would be limited to (1) on-site generator noise and emissions during periodic maintenance and during power outages, and (2) marginal increase in stormwater runoff, mitigated by new stormwater BMPs per current code.</p>	<p>Potential for sewage overflows (pollution of water and land; potential private property damage and claims; violation of applicable laws) during heavy rainfall events; Potential to limit development/growth downtown due to lack of available capacity (violation of City policy)</p>	<p>Build the needed additional capacity elsewhere, by finding a neighborhood amenable to hosting construction of a new sewage pump station, and acquiring new land (this is not considered politically feasible nor technically efficient, and would be significantly more expensive)</p>
<p>Wilburton Sewer Capacity Upgrade (CIP Plan No. S-60) [This project accommodates Wilburton rezoning and development] [See Figure 2 for location]</p>	<p>Short-term construction-related impacts (mitigated by BMPs) to increase pipe size in existing 114th Ave SE ROW during construction. No impacts would be anticipated after construction is complete.</p>	<p>Potential for sewage overflows (pollution of water and land; potential private property damage and claims; violation of applicable laws) during heavy rainfall events; Potential to limit development/growth due to lack of available capacity (violation of City policy)</p>	<p>No other feasible alternatives.</p>

Impacts shown are based on limited, planning-level information. Environmental studies, reports, and permits would be developed during the preliminary design phase of each project. More detailed information would be provided in a project-specific SEPA review at that time.

Table 1 – Specific Projects/Programs and Known Impacts*

Project or Program	Environmental Impacts of Recommended Project/Program*	Environmental Impacts if No Action Taken	Other Alternatives <u>Not</u> Recommended
<p>Midlakes Pump Station Capacity Improvement (CIP Plan No. S-61)</p> <p>[This project accommodates Bel-Red rezoning and development]</p> <p>[See Figure 2 for location]</p>	<p>Short-term construction-related impacts (mitigated by BMPs) to replace existing pump station at existing site during construction. After construction, impacts would include continued on-site generator noise and emissions (similar to the existing site) during periodic maintenance and during power outages, and (2) stormwater runoff mitigated by new stormwater BMPs per current code (compared to the existing, fully-paved site).</p>	<p>Potential for sewage overflows (pollution of water and land; potential private property damage and claims; violation of applicable laws) during heavy rainfall events; Potential to limit development/growth along Bel-Red corridor due to lack of available capacity (violation of City policy)</p>	<p>Build the needed additional capacity elsewhere, by finding a neighborhood amenable to hosting construction of a new sewage pump station, and acquiring new land (this is not considered politically feasible nor technically efficient, and would be significantly more expensive)</p>
<p>Utility Facilities for 120th Ave NE Segment 2 (CIP Plan No. S-63)</p> <p>[This project accommodates Bel-Red rezoning and development]</p>	<p>Short-term construction-related impacts (mitigated by BMPs) to increase pipe size in existing 120th Ave SE ROW during construction. No impacts would be anticipated after construction is complete.</p>	<p>Potential for sewage overflows (pollution of water and land; potential private property damage and claims; violation of applicable laws) during heavy rainfall events; Potential to limit development/growth due to lack of available capacity (violation of City policy)</p>	<p>No other feasible alternatives.</p>
<p>Downtown Park Sewer Replacement (Proposed as part of CIP S-66)</p>	<p>Short-term construction-related impacts (mitigated by BMPs) and some loss of park use along existing easement in the middle of Bellevue Downtown Park during construction. No impacts would be anticipated after construction is complete.</p>	<p>Potential for pipe failure due to age (unplanned shutoff of all sewer service to Bellevue Square Mall; sewer backups/overflows in Bellevue Square Mall); Potential to delay the proposed Bellevue Square expansion due to lack of available capacity (violation of City policy)</p>	<p>Abandon pipe and route all flows to Bellevue Way; this would disrupt sewer service to existing Bellevue Square tenants and require downstream improvements in Bellevue Way.</p>

Impacts shown are based on limited, planning-level information. Environmental studies, reports, and permits would be developed during the preliminary design phase of each project. More detailed information would be provided in a project-specific SEPA review at that time.

Table 1 – Specific Projects/Programs and Known Impacts*

Project or Program	Environmental Impacts of Recommended Project/Program*	Environmental Impacts if No Action Taken	Other Alternatives Not Recommended
Asbestos Cement Force Main Replacement Program (Proposed New CIP)	Short-term construction-related impacts (mitigated by BMPs) to rehabilitate or replace existing pipe roadways and/or existing easements. No impacts would be anticipated after construction is complete.	Potential for pressurized sewer pipe failure and sewer overflow due to age (unplanned shutoff of sewer service to upstream customers; pollution of water and land; potential private property damage and claims; violation of applicable laws)	Keep AC force mains on the same priority as gravity pipelines, despite greater consequence of failure, and delay inspection until failure.
Sewage Pump Station Improvements (CIP Plan No. S-16)	Short-term construction-related impacts (mitigated by BMPs) to rehabilitate or replace pumps and other components at existing pump station sites. No new impacts would be anticipated after construction is complete.	Potential for increased future maintenance; potential for sewer pump station failure and sewer overflow due to age (unplanned shutoff of sewer service to upstream customers; pollution of water and land; potential private property damage and claims; violation of applicable laws)	Increase funding for maintenance as equipment ages and hire additional staff.
Sewer System Trunk Rehabilitation Program (CIP Plan No. S-24)	Short-term construction-related impacts (mitigated by BMPs) to rehabilitate pipe in existing roadway ROW and/or existing easements during construction. No impacts would be anticipated after construction is complete.	Potential for sewer pipe failure due to age (unplanned shutoff of sewer service to upstream customers; sewer backups/overflows into homes; potential private property damage and claims; violation of applicable laws)	Pipe replacement as part of CIP Plan No. S-66 already has been or would also be evaluated (instead of rehabilitation); where rehabilitation is determined to be the more favorable alternative, pipe segments would be recommended for CIP Plan No. S-24.
Minor Capital Improvement Projects (CIP Plan No. S-32)	Unknown	Potential impacts vary depending on type of project.	Discontinue this existing program and prevent the utility from making important improvements as needs arise.

Impacts shown are based on limited, planning-level information. Environmental studies, reports, and permits would be developed during the preliminary design phase of each project. More detailed information would be provided in a project-specific SEPA review at that time.

Table 1 – Specific Projects/Programs and Known Impacts*

Project or Program	Environmental Impacts of Recommended Project/Program*	Environmental Impacts if No Action Taken	Other Alternatives <u>Not</u> Recommended
Sewer Lake Line Replacement Program (CIP Plan No. S-58)	Impacts vary; The Plan recommends further study prior to making recommendations. Potential impacts (depending on which alternative is selected) are temporary (during construction) but could include loss of recreational uses; significant disturbance to private waterfront property; in-lake construction and lake bed disturbance; etc	Increased frequency and severity of sewage overflows from locations of known illicit discharge (pollution of water and land; potential private property damage and claims; violation of applicable laws), both directly to Lake Washington and upstream in Medina, Hunts Point and Yarrow Point (due to lack of lake line capacity)	All alternatives are still being considered. No recommendation is made by the Plan, except to continue evaluations.
Sewer System Pipeline Replacement (CIP Plan No. S-66)	Short-term construction-related impacts (mitigated by BMPs) to replace pipe in existing roadway ROW and/or existing easements during construction. The Downtown Park sewer replacement would temporarily impact park recreation. No impacts would be anticipated after construction is complete.	Potential for sewer pipe failure due to age (unplanned shutoff of sewer service to upstream customers; sewer backups/overflows into homes; potential private property damage and claims; violation of applicable laws)	Pipe rehabilitation as part of CIP Plan No. S-24 already has been or would also be evaluated (instead of replacement); where replacement is determined to be the more favorable alternative, pipe segments would be recommended for CIP Plan No. S-66.

Impacts shown are based on limited, planning-level information. Environmental studies, reports, and permits would be developed during the preliminary design phase of each project. More detailed information would be provided in a project-specific SEPA review at that time.

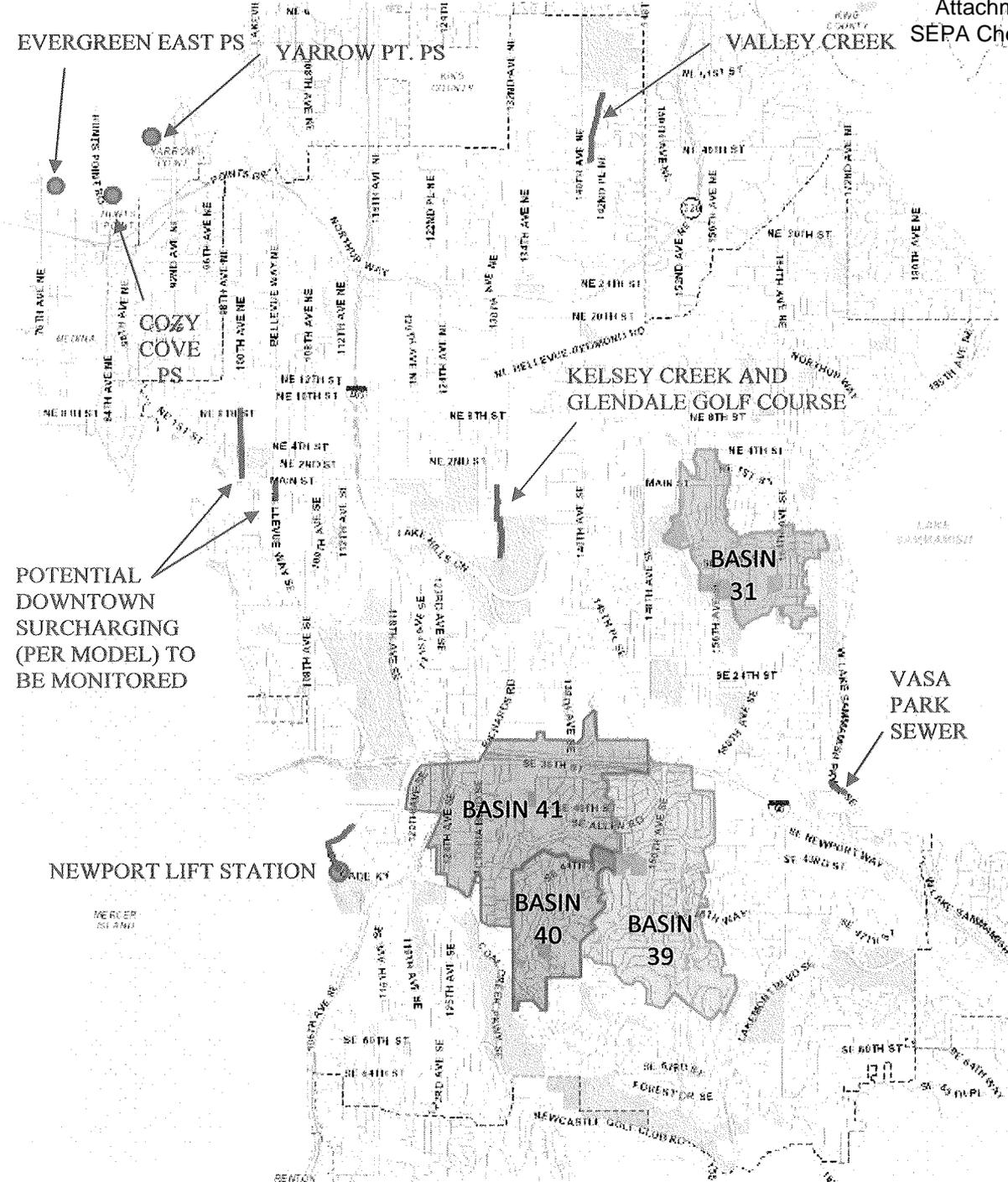


Figure 1: Recommended Locations for Flow Monitoring and I&I Investigation

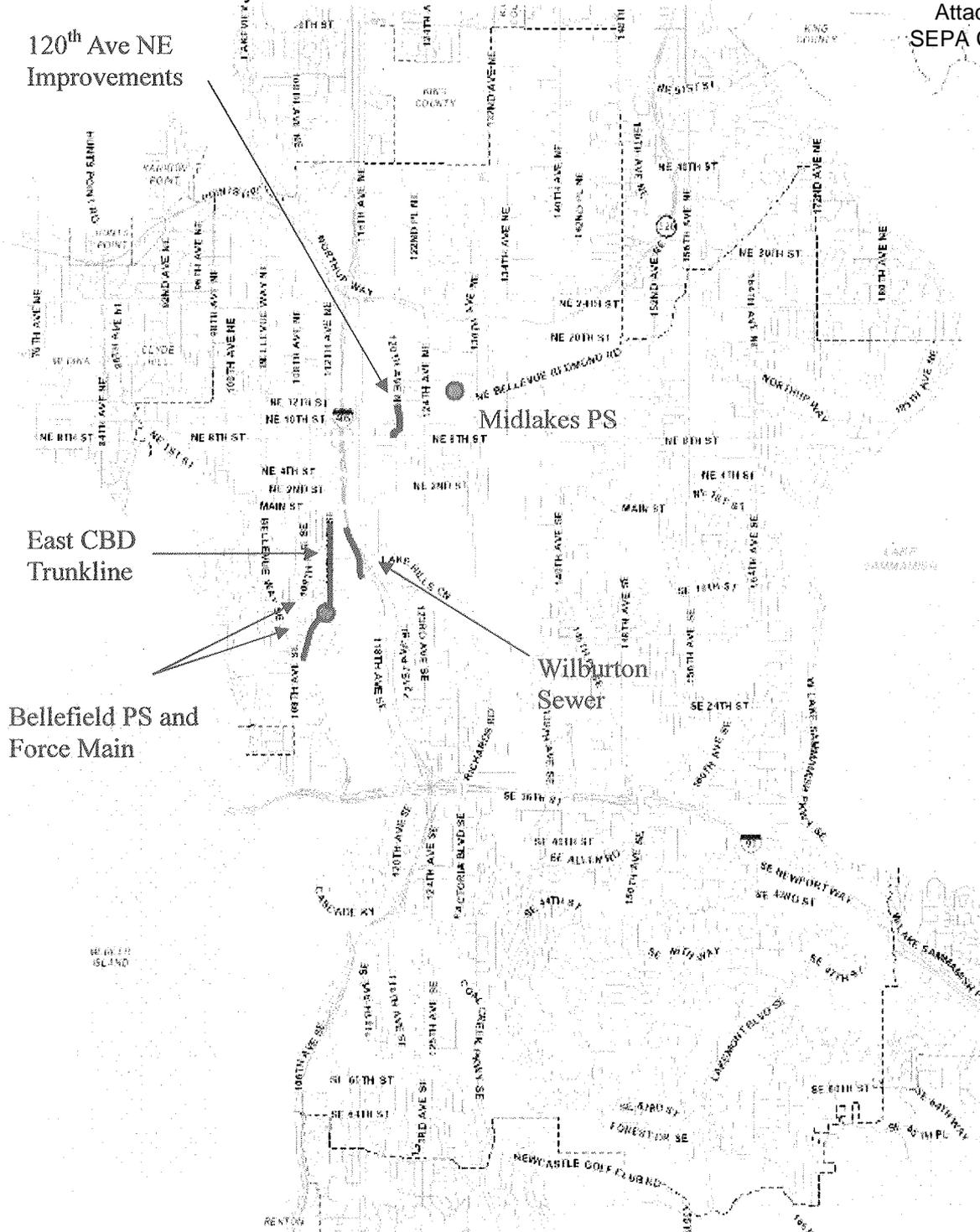


Figure 2: Recommended Capacity Improvements

2. Acreage of site: *Varies. Where applicable, acreage would be provided for each project-specific SEPA.*
3. Number of dwelling units/buildings to be demolished: *0 dwelling units would be anticipated to be demolished. A small number (0-3) of City-owned pump station buildings may be replaced.*
4. Number of dwelling units/buildings to be constructed: *3 small buildings may be constructed for on-site power generation equipment at pump station sites. 2-3 new vaults or buildings may be constructed to replace existing pump stations.*
5. Square footage of buildings to be demolished: *Unknown (would be provided in project-specific SEPA)*
6. Square footage of buildings to be constructed: *Unknown (would be provided in project-specific SEPA)*

7. Quantity of earth movement (in cubic yards): *Unknown (would be provided in project-specific SEPA)*
8. Proposed land use: *The Plan is based on existing zoning and comprehensive land use.*
9. Design features, including building height, number of stories and proposed exterior materials: *Most wastewater conveyance facilities are and would be below grade. Some pump stations and/or on-site generator buildings would be partially or fully above grade due to access or code requirements. Where applicable, design features would be provided in the project-specific SEPA for each project.*
10. Other:

Estimated date of completion of the proposal or timing of phasing:

Timing for the various recommended projects varies, but would be consistent with the City's existing and future CIPs.

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

Yes. Future recommended activity is described in Chapter 9 of the Plan and in the City's sewer CIP. Although other specific areas of expansion or timing cannot be precisely identified, in general the system would expand (1) for additional sewer capacity to accommodate future growth as required by the City's Comprehensive Plan policies, and (2) as requested to extend service to non-sewered parcels (existing septic or vacant lots).

List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

Geotechnical reports, wetlands evaluations, and other environmental information will be prepared soon for Bellefield Pump Station, Meydenbauer Bay Lake Lines, Midlakes Pump Station, and other current CIP projects, but are not yet available. These will be available as part of the project-specific SEPA process for all projects.

Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain. List dates applied for and file numbers, if known.

Permit applications are not yet available, but will be available as part of the project-specific SEPA process for all projects.

List any government approvals or permits that will be needed for your proposal, if known. If permits have been applied for, list application date and file numbers, if known.

Future government approvals will be required for the following projects. The type of approvals will generally be permits related to construction work such as right-of-way use and clearing and grading permits. Some projects in environmentally sensitive areas will require additional permits such as critical areas, shoreline substantial development, hydraulic permit approvals, etc.).

- Sewer Service Extensions Program (CIP Plan No. S-30)
- East CBD Trunk Capacity Improvements (CIP Plan No. S-52)
- Bellefield Pump Station Capacity Improvements, Phase II (CIP Plan No. S-53)
- Wilburton Sewer Capacity Upgrade (CIP Plan No. S-60)
- Midlakes Pump Station Capacity Improvement (CIP Plan No. S-61)
- Utility Facilities for 120th Ave NE Segment 2 (CIP Plan No. S-63)
- Downtown Park Sewer Replacement (Proposed as part of CIP S-66)
- Asbestos Cement Force Main Replacement Program (Proposed New CIP)
- Sewage Pump Station Improvements (CIP Plan No. S-16)
- Sewer System Trunk Rehabilitation Program (CIP Plan No. S-24)
- Minor Capital Improvement Projects (CIP Plan No. S-32)
- Sewer Lake Line Replacement Program (CIP Plan No. S-58)
- Sewer System Pipeline Replacement (CIP Plan No. S-66)

Please provide one or more of the following exhibits, if applicable to your proposal. (Please check appropriate box(es) for exhibits submitted with your proposal):

- Land Use Reclassification (rezone) Map of existing and proposed zoning

N/A. Projects would support current zoning per the City of Bellevue Comprehensive Plan.

- Preliminary Plat or Planned Unit Development
Preliminary plat map

N/A. No plats or planned unit developments are proposed as part of the Plan.

- Clearing & Grading Permit
Plan of existing and proposed grading
Development plans

Clearing & grading permits are not yet available and would be completed for each applicable project. Project-specific SEPA documents with this information will be prepared when appropriate.

- Building Permit (or Design Review)
Site plan
Clearing & grading plan.

Building permits are not yet available and would be completed for each applicable project. Project-specific SEPA documents with this information will be prepared when appropriate.

- Shoreline Management Permit
Site plan

Shoreline management permits are not yet available and would be completed for each applicable project. Project-specific SEPA documents with this information will be prepared when appropriate.

A. ENVIRONMENTAL ELEMENTS

1. Earth

- a. General description of the site: Flat Rolling Hilly Steep slopes Mountains Other

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

Unknown (would be provided in project-specific SEPA)

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

A variety of soils are found throughout Bellevue's wastewater service area. Information on specific sites would be gathered as part of early project planning, and would be provided in project-specific SEPA documentation.

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

Unknown (would be provided in project-specific SEPA)

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

Unknown (would be provided in project-specific SEPA)

- f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe. Attachment 4
SEPA Checklist

Yes. Erosion potential would generally be minimal for maintenance activities. For sewer pipeline construction in road rights-of-way, ground disturbance is typically in paved areas with established stormwater controls, where erosion potential would be limited. Specific projects may have erosion potential, however (project-specific SEPA would provide additional detail not known at this time).

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

N/A. The Plan applies to the entire sewer service area. Where applicable, information would be provided in project-specific SEPA documentation for specific project sites.

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

In general, each project would (1) implement stormwater and erosion control best management practices (BMPs), (2) restrict wet-season excavation work, (3) include spill response plans in case of accidental discharge, and (4) follow all applicable regulations and permit conditions.

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.

Permanent Impacts: *Some increased diesel emissions (to air) would be likely as a result of on-site power at sewage pump stations. These emissions would only occur during periodic maintenance and testing, and continuously during electrical power outages.*

Temporary Impacts: *Some temporary increases in air pollution could occur during construction projects. Air pollution could result from diesel emissions from construction equipment. Also, if smoke testing is used for I&I investigations, smoke will be emitted as part of testing (brief and local).*

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

No

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

None. Impacts to air are generally minimal or temporary, and would only be created with the goal of reducing pollution overall (reducing water pollution in particular).

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.

Yes. The City's sewer service area borders Lake Washington and Lake Sammamish. The service area also includes Mercer Slough, approximately 82 miles of streams within the Bellevue city limits alone (not including neighboring cities in Bellevue's sewer service area), and 3 small lakes (Larsen Lake, Lake Bellevue, and Phantom Lake).

- (2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If Yes, please describe and attach available plans. Attachments # 4
SEPA Checklist

Yes. Most work proposed in the Plan would not be within 200-feet of water bodies, however some significant projects would be. The Bellefield Pump Station Replacement would be within 200-feet of Mercer Slough. The Meydenbauer Lake Lines replacement project would be on the bank of Lake Washington. The lake line evaluations would be along the shorelines of both Lake Washington and Lake Sammamish.

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

Unknown (would be provided in project-specific SEPA)

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

Most sewage facilities do not require surface water withdrawals, as the primary source of sewage flows is domestic water use. Sewer facilities are typically located in public right-of-way or on City-owned property or easements, and are designed not to interact with surface water.

However, the 10 flush stations located on the shores of Lake Washington and Lake Sammamish do withdrawal lake water on a daily basis to flush the downstream lake lines, as part of normal operations. Flush stations each operate for approximately one hour each night. Total daily withdrawal is estimated to be 115,000 gallons from Lake Washington (Flush Stations #1 – #8) and 41,000 gallons from Lake Sammamish (Flush Stations #9, #10). Additional information is provided in Table 5-3.

The only proposed capital improvement project with a foreseeable need for surface water withdrawals or diversions may be the replacement of lake lines. Depending on which alternative is selected, removal and/or replacement of the lake lines could involve the use of cofferdams, dewatering pumps, and or other temporary measures to facilitate pipeline inspection, removal and/or installation.

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

No.

The vast majority of sewer infrastructure is not close to the 100-year floodplain, however, two recommended projects (Bellefield Pump Station Capacity Improvements, Phase II and Kelsey Creek/Glendale Golf Course Flow Monitoring) are in close proximity to the floodplain. Project specific SEPA documents for Bellefield Pump Station will detail how the flood plain proximity is addressed for the replacement facility. For sewer mains in Kelsey Creek and Glendale Golf Course, only flow monitoring (installing meters inside existing manholes) is proposed at this time, so no construction in the flood plain is anticipated there.

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

The overall, cumulative impact of the Plan would be decreased pollutant discharges to water (by reducing the frequency and severity of sewer overflows). Some temporary discharges to water could result from stormwater runoff or inadvertent spills at construction sites (would be mitigated by BMPs and discussed in project-specific SEPA).

b. Ground

- (1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description.

No groundwater will be withdrawn. Only groundwater at very shallow depths enters the wastewater system, and only inadvertently through infiltration.

Wastewater will be discharged to ground water primarily through septic tanks, as dictated by the King County Department of Public Health. The potential for wastewater to be discharged to groundwater from the sewer system is very low, since this would only occur inadvertently through leakage, particularly from pressurized piping. The system is not pressurized, except for very short force mains (shown in Figure 5-2).

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

The City of Bellevue's sewer service area includes approximately x,xxx existing homes that are currently served by septic systems (shown on Figure 3-1). The type of waste is domestic sewage. The number of homes served by septic systems is expected to decline over time, as older septic systems fail and the sewer system is extended.

c. Water Runoff (Including storm water)

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

Most sewer infrastructure is buried, and does not increase runoff. The plan proposes minimal above-grade infrastructure (generally buildings to house pumps or generator equipment, and association driveways and parking). Further detail is not known at this time. Any proposed projects would be constructed in conformance with current stormwater code requirements, and would undergo a project-specific SEPA review.

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

Yes. Stormwater from any developed site could carry some pollutants. Sewers and wet wells are covered, and no chemical or other pollutants would be exposed to the weather, so site runoff would be consistent with other non-pollution generating impervious surfaces such as residential or commercial properties.

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

Each construction project would undergo its own separate project-specific SEPA process. During that process, more detailed and specific information would be provided. In general, each project would (1) implement stormwater and erosion control best management practices (BMPs), (2) restrict wet-season excavation work, (3) limit construction working times to within restricted hours and days to limit noise impacts, (4) include spill response plans in case of accidental discharge, and (5) follow all applicable regulations and permit conditions.

4. Plants

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

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

A wide range of plants are found in the city.

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

The extent to which vegetation could potentially be removed or altered is not known at this time. In general, most existing and potential sewer utility sites are already developed, and would require minimal vegetation removal.

Each construction project would undergo its own separate project-specific SEPA process. During that process, more detailed and specific information would be provided.

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

No endangered plants are known to be found in the city.

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

Proposed vegetative restoration would be commensurate with vegetation removal, which is not known at this time. In general, vegetation removal would be minimized wherever feasible, and restoration would include similar plants where possible and appropriate.

Each construction project would undergo its own separate project-specific SEPA process. During that process, more detailed and specific information would be provided.

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 or all of the species listed are found in the City, except bear which only occasionally enter the City from wildlands outside of the City.

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

Chinook Salmon and cutthroat trout are found in the City.

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

Migration routes of anadromous fish and wildfowl are within the City.

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

Enhanced wildlife habitat is one of the primary reasons for the Plan. The overall, cumulative impact of the Plan would be to reduce pollutant discharges to water or land (by reducing the frequency and severity of sewer overflows) and improved habitat overall.

6. Energy and Natural Resources

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

After completion of all recommended projects, the Plan would require energy and natural resources primarily to meet operations and maintenance needs. Ongoing operations & maintenance activities use fossil fuels in vehicles to transport maintenance crews and equipment to system infrastructure. Spare parts and/or replacement piping are used when needed for maintenance. Pump stations use electricity.

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

No

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

Permanent Impacts (Ongoing Maintenance): *Operations & maintenance vehicles are well-maintained at Bellevue's Service Center to avoid leaks and optimize fuel economy. Maintenance crews only drive where needed to perform maintenance activities. Pumps are appropriately sized to provide reasonable efficiency in the pertinent operating conditions. The recommended pump station rehabilitations would improve efficiency to conserve energy.*

Temporary Impacts (Construction Projects): *Bellevue's economic incentive is to obtain the required construction quality for the minimum price. The market response to this economic incentive is to minimize the resources used to build and maintain wastewater facilities. During design, engineers would optimize pump curves, earthwork quantities, concrete volumes and pipe sizes/lengths to meet the reliability and performance criteria with reasonable cost. During construction, the public bidding procedure requires the low-bid contractor to conserve resources as much as reasonable in order to earn a profit on the project(s).*

7. Environmental Health

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

Permanent Impacts: *The overall, cumulative effects of the Plan would likely be decreased environmental hazards, due to reduced frequency and severity of sewer overflows and pollutant discharges. Sewage is the primary hazardous material associated with Bellevue's wastewater system. In general, no hazardous chemicals are kept at Bellevue's sewer facilities, except for diesel fuel for pump station on-site generators, and potassium permanganate and/or activated carbon for odor control systems at 2-3 lift station facilities. The Plan would add 3 diesel generators and may add new or upgraded odor control facilities (at replaced pump stations).*

Temporary Impacts (Construction Projects): *Some temporary environmental health hazards and risks could occur during specific projects, commensurate with typical construction-related hazards. These would include exposure to construction chemicals (epoxies, paints, concrete admixtures, curing compounds, diesel fuel and fumes, etc.) and common risks associated with construction.*

- (1) Describe special emergency services that might be required.

There are no known emergency services that would be required by the Plan.

- (2) Proposed measures to reduce or control environmental health hazards, if any.

Permanent Impacts: *For ongoing (permanent) maintenance activities, chemicals would be stored with double-containment where required. OSHA rules would be followed, and MSDS sheets and other pertinent information would be provided.*

Temporary Impacts (Construction Projects): *Each construction project would undergo its own separate project-specific SEPA process. During that process, more detailed and specific information would be provided. In general, the contractor for each project would be required to implement appropriate safety measures, develop and execute spill response plans in case of accidental discharge, and follow all applicable regulations and permit conditions.*

b. Noise

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

There are no known noises that would affect the wastewater utility.

- (2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example, traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Permanent Impacts: *Some increased noise would be likely as a result of on-site power at sewage pump stations. These emissions would only occur during periodic maintenance and testing, and continuously during electrical power outages.*

Temporary Impacts: *Some temporary increases in noise would be likely to occur during construction projects, primarily from construction equipment.*

- (3) Proposed measure to reduce or control noise impacts, if any:

Reasonable noise mitigation measures would be incorporated into on-site power generating equipment installations

Each construction project would undergo its own separate project-specific SEPA process. During that process, more detailed and specific information would be provided. In general, each project would limit construction working times to within restricted hours and days to limit noise impacts.

8. Land and Shoreline Use

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

There is a variety of land uses throughout Bellevue's wastewater service area, including multiple densities of residential, commercial and industrial use, as well public spaces such as parks and schools.

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

Bellevue's wastewater service area no longer includes significant agriculture, except for the the Mercer Slough and Larsen Lake Blueberry Farms, which are not sewered areas.

- c. Describe any structures on the site.

Generally the only structures pertinent to Bellevue's existing and proposed wastewater facilities are pump stations and on-site generator enclosures.

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

0 dwelling units would be anticipated to be demolished. A small number (0-3) of City-owned pump station buildings may be replaced.

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

There is a variety of zoning classifications throughout Bellevue's wastewater service area.

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

There is a variety of comprehensive plan designations throughout Bellevue's wastewater service area.

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

There is a variety of shoreline designations throughout Bellevue's wastewater service area.

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

A variety of areas in Bellevue are classified as environmentally sensitive, particularly critical areas.

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

The Plan would not affect housing or employment. A typical pump station site may be visited by 2-3 utility staff on a periodic basis for routine maintenance, and as needed for repair or in response to alarms.

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

None

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

Not applicable

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

The City of Bellevue's policies require the Utilities Department to support proposed land use and the City's Comprehensive Plan. The Plan is compatible with the City's Comprehensive Plan, as required by the City Council. See Comprehensive Plan policies UT-4 and ED-21.

9. Housing

- a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

Zero units would be provided. However, system expansion would occur to support development by others, in accordance with City Comprehensive Plan policies.

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

Zero.

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

One explicit goal of the Plan would be to facilitate housing development through system expansion, in accordance with City Comprehensive Plan policies.

10. Aesthetics

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

No buildings or structures taller than about one story would be anticipated at this time. Project-specific SEPA documentation would provide additional details and notification if any taller structures are proposed.

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

No known views would be anticipated to be altered or obstructed.

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

Most sewer infrastructure is buried, so that aesthetic impacts are typically minimal. The City makes each project known to the surrounding neighborhood, and considers community input for design of above-grade structures.

11. Light and Glare

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

Most sewer infrastructure is buried, so that light or glare is not produced. Some perimeter lighting would be proposed at future facility sites (pump stations and lift station) to enhance safety and security. Lighting would operate during the night.

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

No. Security lighting would enhance safety by illuminating pathways.

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

No

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

The City makes each project known to the surrounding neighborhood, and considers community input for design of all facilities. If any impacts are identified, they would be addresses appropriately.

12. Recreation

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

There is a variety of recreational opportunities throughout Bellevue's wastewater service area.

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

In general, the Plan would not typically affect recreation. However, some proposed projects would impact recreational activities in public waterways and/or parks:

- The replacement of lake line piping could affect recreation at various sites along the Lake Washington shore, and Meydenbauer Bay in particular. Activities and construction related to lake line inspection, removal and installation could entail parking, excavation, noise, impeded views and recreation, and other impacts along the shoreline, depending on which alternatives are selected at each site*
- The Downtown Park sewer replacement would impact use of the Downtown Park during construction. It passes beneath a public fountain, multiple other water features, the middle of the park lawn, and the park's southern parking lot. Due to the sensitive site location, it is anticipated that significant public involvement may be necessary.*

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

Most aspects of the Plan would not affect recreation, and so would not require measures to control impacts on recreation.

For specific projects that may affect recreation (lake line replacement in particular), proposed measures to reduce or control impacts on recreation are not yet known. Project-specific SEPA documentation will detail this information as appropriate.

Replacement of the lake lines is expected to be technically challenging, politically sensitive, and generate significant community feedback, including input regarding impacts on recreation. It is anticipated that no one solution will work at all locations, such that a variety of options may be needed based on site-specific factors. Stakeholder input will be critical to making final decisions, including the measures chosen to reduce or control impacts to recreation. Any option selected will impact entire neighborhoods and require consensus among diverse interest groups.

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.

There is a variety of historic resources throughout Bellevue's wastewater service area.

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

No known significant landmarks would be impacted by the Plan, based on current known information. Each construction project would undergo its own separate project-specific SEPA process, during which more detailed and specific information will be provided.

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

Not applicable at this time (no currently known impacts). Each construction project would undergo its own separate project-specific SEPA process, during which more detailed and specific information will be provided.

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.

There is a variety of streets throughout Bellevue's wastewater service area. Most sewer infrastructure is actually buried piping inside roadway right-of-way. For existing sewer facilities such as pump stations and lift stations, it is not anticipated that access to these sites would be changed by the Plan.

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

There is a variety public transit routes throughout Bellevue's wastewater service area.

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

Sewer pipeline projects would not include parking. Sewer facility rehabilitation projects at pump station and lift station sites would typically include one or two parking spaces, consistent with the existing parking at those locations. It is not anticipated that the Plan would eliminate or create parking spaces, although this may occur if O&M staff indicate a need for more parking. Each project would undergo its own separate project-specific SEPA process, during which more detailed and specific information will be provided.

- 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 road or street improvements would likely be required as part of the Plan. Road and street restoration would typically be required following pipeline repair or replacement projects, however.

- e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe. Attachment 4
SEPA Checklist

Given the wide variety of transportation facilities in the City, it is likely that some facility improvements proposed in the Plan would be located in the general vicinity of transportation facilities.

The Plan would not typically use water, rail or air transportation. However, some construction projects may use various modes of transportation to transport construction materials, and this would generally be outside the City's control. For the lake line replacement project(s), some water transportation would be required to facilitate lake line inspection, removal and/or installation in Lake Washington, depending on which replacement alternatives are selected.

Each project would undergo its own separate project-specific SEPA process, during which more detailed and specific information will be provided.

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

After construction (completed projects), most sewer infrastructure is buried piping that does not require any vehicle trips, except for inspection approximately once every ten years. Most pump station and lift station facilities require two to three vehicle trips per month for routine maintenance.

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

No permanent measures to control transportation are proposed (there is no apparent need).

Temporary measures to reduce or control transportation impacts during Construction would be implemented, however. Depending on site location, construction traffic (concrete trucks, dump trucks, etc) may be required to follow specific haul routes to minimize neighborhood disruption. Construction parking would be restricted to minimize community impacts.

15. Public Services

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

No

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

Not applicable

16. Utilities

- a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

A variety of utility facilities are available throughout Bellevue's sewer service area.

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

Sewer services would be provided by the Plan to everyone in Bellevue's wastewater service area.

Electricity would be required for pump station and lift station projects, provided by Puget Sound Energy.

Signature

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

Signature.....  DOUGLAS LANE.....

Date Submitted..... 10/17/2013.....

SUPPLEMENTAL SHEET FOR NONPROJECT ACTION

Continuation of the Environmental Checklist

4/18/02

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment (see Environmental Checklist, B. Environmental Elements). When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms. If you have any questions, please visit or call Development Services (425-452-6800) 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).

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

Permanent Impacts: *The overall, cumulative impact of the Plan would be decreased pollutant discharges to water or land (by reducing the frequency and severity of sewer overflows). Some increased noise and diesel emissions (to air) would be likely as a result of on-site power at sewage pump stations. These emissions would only occur during periodic maintenance and testing, and continuously during electrical power outages.*

Temporary Impacts: *Some temporary increases in air or water pollution could occur during construction projects, while a temporary increase in noise would be likely. Air pollution could result from diesel emissions from construction equipment. Water pollution could result from stormwater runoff or inadvertent spills at construction sites. Noise would be generated primarily by construction equipment. If smoke testing is used for I&I investigations, smoke will be emitted as part of testing (brief and local).*

Proposed measures to avoid or reduce such increases are:

Each construction project would undergo its own separate project-specific SEPA process. During that process, more detailed and specific information would be provided. In general, each project would (1) implement stormwater and erosion control best management practices (BMPs), (2) restrict wet-season excavation work, (3) limit construction working times to within restricted hours and days to limit noise impacts, (4) include spill response plans in case of accidental discharge, and (5) follow all applicable regulations and permit conditions.

Reasonable noise mitigation measures would be incorporated into on-site power generating equipment installations.

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

Permanent Impacts: The overall, cumulative effects of the Plan would likely be beneficial for plants, animals, fish, or marine life, due to reduced frequency and severity of sewer overflows and pollutant discharges. Most sewer infrastructure is buried (pipes, manholes, etc), so the system components typically have negligible effect on plants, animals, fish and marine life unless there is an overflow.

Temporary Impacts: Some temporary impacts to plants, animals, fish and marine life could potentially occur during construction projects. Most sewer projects occur in public rights-of-way, which are already impacted by streets and roads and do not support plant or animal habitat. Other projects are located on City-owned property that is already developed. The proposed Bellefield Pump Station replacement project would replace an existing pump station located adjacent to wetlands and Mercer Slough, and could therefore result in habitat impacts to these areas. The proposed lake line replacement program would be located along the shorelines of both Lake Washington and Lake Sammamish, and could therefore result in impacts to shoreline plant and animal habitat.

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

Each construction project would undergo its own separate project-specific SEPA process. During that process, more detailed and specific information will be provided.

In general, each project would (1) implement stormwater and erosion control best management practices (BMPs), (2) limit clearing and grading as much as reasonable, (3) avoid wetlands unless absolutely necessary to protect human health and the environment, (4) include spill response plans in case of accidental discharge, and (5) follow all applicable regulations and permit conditions.

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

Permanent Impacts: Ongoing operations & maintenance activities use fossil fuels in vehicles to transport maintenance crews and equipment to system infrastructure. Spare parts and/or replacement piping are used when needed for maintenance. Pump stations use electricity.

Temporary Impacts: Construction projects would require fossil fuels to operate construction vehicles, as well as for the manufacture and delivery of construction materials. Construction materials themselves would require natural resources such as minerals (concrete additives, etc), rubber (pipe gaskets, tires, etc) metals (ductile iron pipe), petroleum products for plastics (PVC pipe, paints, epoxies, etc), graded aggregate (sand, gravel, etc), and others.

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

Permanent Impacts (Ongoing Maintenance): Operations & maintenance vehicles are well-maintained at Bellevue's Service Center to avoid leaks and optimize fuel economy. Maintenance crews only drive where needed to perform maintenance activities. Pumps are appropriately sized to provide reasonable efficiency in the pertinent operating conditions. The recommended pump station rehabilitations would improve efficiency to conserve energy.

Temporary Impacts (Construction Projects): Bellevue's economic incentive is to obtain the required construction quality for the minimum price. The market response to this economic incentive is to minimize the resources used to build and maintain wastewater facilities. During design, engineers would optimize pump curves, earthwork quantities, concrete volumes and pipe sizes/lengths to meet the reliability and performance criteria with reasonable cost. During construction, the public bidding procedure requires the low-bid contractor to conserve resources as much as reasonable in order to earn a profit on the project(s).

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

The majority of the plan would have no effect on environmentally sensitive areas or areas designated for governmental protection.

The proposed Bellefield Pump Station replacement project would replace an existing pump station located adjacent to wetlands and Mercer Slough, and could therefore affect these areas.

The proposed lake line replacement program would be located along the shorelines of both Lake Washington and Lake Sammamish, and could therefore affect both lakes, as well as some adjacent parks. Affects could include inspection work, excavation, pipe removal, pipe installation, and other types of activity in the lakes.

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

Each construction project would undergo its own separate project-specific SEPA process. During that process, more detailed and specific information will be provided.

In general, each project would (1) implement stormwater and erosion control best management practices (BMPs), (2) limit clearing and grading as much as reasonable, (3) avoid wetlands unless absolutely necessary to protect human health and the environment, (4) include spill response plans in case of accidental discharge, (5) involve local stakeholders in decision-making, and (6) follow all applicable regulations and permit conditions (including federal permits and NEPA for in-water work).

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

The majority of the plan would have no effect on environmentally sensitive areas or areas designated for governmental protection. The proposed Bellefield Pump Station replacement project would replace an existing pump station located adjacent to wetlands and Mercer Slough, and could therefore affect these areas. The proposed lake line replacement program would be located along the shorelines of both Lake Washington and Lake Sammamish, and could entail extensive construction activity along the shorelines, affecting views and shoreline use.

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

Each construction project would undergo its own separate project-specific SEPA process. During that process, more detailed and specific information will be provided.

In general, each project would (1) implement stormwater and erosion control best management practices (BMPs), (2) limit clearing and grading as much as reasonable, (3) avoid wetlands unless absolutely necessary to protect human health and the environment, (4) include spill response plans in case of accidental discharge, (5) involve local stakeholders in decision-making, and (6) follow all applicable regulations and permit conditions (including federal permits and NEPA for in-water work).

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

Permanent Impacts: *The Plan would not increase demands on water utilities, wastewater utilities, or on Public Services (Police, Fire, etc). In general the Plan is intended to alleviate increased demands on wastewater utilities. The Plan would increase demands on electrical utilities where existing pump stations are replaced with larger pumps. Most of the Plan would have no effect on transportation, although on-site power at pump stations would reduce demands on roads in a power outage, because maintenance crews would have less urgency to visit those pump stations.*

Temporary Impacts: *Construction projects would increase demands on the regional transportation network, to allow for commuting of construction workers and delivery of construction materials. These impacts would only occur during construction.*

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

Permanent Impacts: *Pumps would be appropriately sized to provide reasonable efficiency in the pertinent operating conditions, and where appropriate would be equipped with variable frequency drives (VFDs).*

Temporary Impacts: *Construction impacts to transportation networks would be temporary. Depending on site location, construction traffic (concrete trucks, dump trucks, etc) may be required to follow specific haul routes to minimize neighborhood disruption. Construction parking would be restricted to minimize community impacts.*

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

The Plan complies with applicable laws. Construction contracts for specific projects would require compliance with local, state, or federal laws or requirements for the protection of the environment.

Appendix B

Adjacent Purveyor Agreements

AGREEMENT FOR SEWAGE DISPOSAL

THIS AGREEMENT made as of this 21ST day of JULY,
1966, between the CITY OF BELLEVUE, a municipal corporation of the
State of Washington, hereinafter referred to as the "City", and the
MUNICIPALITY OF METROPOLITAN SEATTLE, a municipal corporation of the
State of Washington, hereinafter referred to as "Metro",

W I T N E S S E T H:

WHEREAS, the public health, welfare and safety of the
residents of the City and the residents of Metro require the
development of adequate systems of sewage collection and disposal,
the elimination of water pollution and the preservation of the
fresh and salt water resources of the area; and

WHEREAS, Metro is engaged in developing and operating a
Metropolitan Sewage Disposal System and the City is engaged in
developing a sewage collection system for the City; and

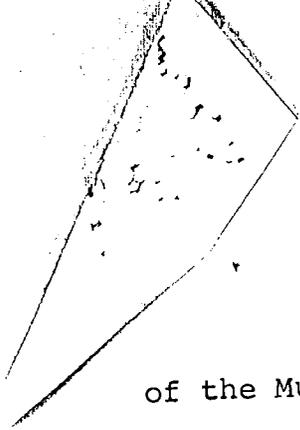
WHEREAS, the City desires to deliver sewage collected by
the City to Metro for disposal; and

WHEREAS, to provide for the disposal by Metro of sewage
collected by the City it is necessary that a contract be now
entered into establishing certain rights and duties of the parties
incident thereto;

NOW, THEREFORE, in consideration of the mutual covenants
contained herein, it is hereby agreed as follows:

Section 1. Definition of Terms. The following words
and phrases used in this contract shall have the meanings herein-
after set forth in this section:

a) The words "Comprehensive Plan" shall mean the
Comprehensive Sewage Disposal Plan adopted in Resolution No. 23



of the Municipality of Metropolitan Seattle and all amendments thereof heretofore or hereafter adopted.

b) The words "Metropolitan Sewerage System" shall mean all of the facilities to be constructed, acquired or used by Metro as a part of the Comprehensive Plan. The Metropolitan Sewerage System shall generally include sewage disposal facilities with capacity to receive sewage from natural drainage areas of approximately one thousand acres or more. The Metropolitan Sewerage System shall thus include trunk or interceptor sewer facilities extending to a point within each tributary and natural drainage area, where not more than one thousand acres remain to be served beyond the upper terminus of such trunk or interceptor sewer.

c) The word "Participant" shall mean each city, town, county, sewer district, municipal corporation, person, firm or private corporation which shall dispose of any portion of its sanitary sewage into the Metropolitan Sewerage System and shall have entered into a contract with Metro providing for such disposal.

d) The words "Local Sewerage Facilities" shall mean all facilities owned or operated by a Participant for the local collection of sewage to be delivered to the Metropolitan Sewerage System.

e) The words "Metropolitan Area" shall mean the area contained within the boundaries of the Municipality of Metropolitan Seattle as now or hereafter constituted.

f) The words "Residential Customer" shall mean a single family residence billed by a Participant for sewerage charges.

Section 2. Delivery and Acceptance of Sewage. The City shall deliver to Metro all of the sewage and industrial waste

collected from that portion of the City located within the boundaries of LID #65-S-87, together with such other areas as may be the subject of future agreements between Metro and the City, and Metro shall accept the sewage and waste delivered for treatment and disposal as hereinafter provided subject to such reasonable rules and regulations as may be adopted from time to time by the Metropolitan Council.

Section 3. Construction of Metro Facilities. Metro shall construct, acquire or otherwise secure the right to use all facilities required for the disposal of sewage delivered to Metro pursuant to this Agreement and shall perform all services required for the maintenance, operation, repair, replacement or improvement of the Metropolitan Sewerage System, including any additions and betterments thereto. Metro shall in its sole discretion determine the nature, location and time of construction of facilities of the Metropolitan Sewerage System.

Section 4. Connection of Local Sewerage Facilities to the Metropolitan Sewerage System. Local Sewerage Facilities of the City shall be connected to the Metropolitan Sewerage System at such time as any of the permanent facilities of such Metropolitan Sewerage System shall be available to receive sewage collected by such local facilities. Such connection shall be accomplished at the expense of the City and in accordance with the rules and regulations of Metro at such point or points of connection as shall be determined by Metro. The City shall secure and pay for the

right to use all Local Sewerage Facilities of another Participant which may be required to deliver the City's sewage to the Metropolitan Sewerage System.

Section 5. Payment for Sewage Disposal. For the disposal of sewage hereafter collected by the City and delivered to Metro the City shall pay to Metro on or before the last day of each month during the term of this agreement, a sewage disposal charge determined as provided in this Section 5.

1. For the quarterly periods ending March 31, June 30, September 30 and December 31 of each year every Participant shall submit a written report to Metro setting forth (a) the number of Residential Customers billed by such Participant for local sewerage charges as of the last day of the quarter, (b) the total number of all customers billed by such Participant as of such day and (c) the total water consumption during such quarter for all customers billed by such Participant other than Residential Customers. The quarterly water consumption report shall be taken from water meter records and may be adjusted to exclude water which does not enter the sanitary facilities of a customer. Where actual sewage flow from an individual customer is metered, the metered sewage flows shall be reported in lieu of adjusted water consumption. The total quarterly water consumption report in cubic feet shall be divided by 2,700 to determine the number of Residential Customer equivalents represented by each Participant's customers other than single family residences. Metro shall maintain a permanent record of the quarterly customer reports from each Participant.

The City's first quarterly report shall cover the first quarterly period following the date when sewage is first delivered to Metro and shall be submitted within thirty days following the end

of the quarter. Succeeding reports shall be made for each quarterly period thereafter and shall be submitted within thirty (30) days following the end of the quarter.

2. a) To form a basis for determining the monthly sewage disposal charge to be paid by each Participant during any particular quarterly period, Metro shall ascertain the number of Residential Customers and Residential Customer equivalents of each Participant. This determination shall be made by taking the sum of the actual number of Residential Customers reported as of the last day of the next to the last preceding quarter and the average number of Residential Customer equivalents per quarter reported for the four quarters ending with said next to the last preceding quarter, adjusted for each participant to eliminate any Residential Customers or Residential Customer equivalents whose sewage is delivered to a governmental agency other than Metro or other than a Participant for disposal outside of the Metropolitan Area.

b) For the initial period until the City shall have submitted six consecutive quarterly reports, the reported number of Residential Customers and Residential Customer equivalents of the City shall be determined as provided in this subparagraph (b). On or before the tenth day of each month beginning with the month prior to the month in which sewage from the City is first delivered to Metro, the City shall submit a written statement of the number of Residential Customers and Residential Customer equivalents estimated to be billed by the City during the next succeeding month. For the purpose of determining the basic reported number of Residential Customers or Residential Customer equivalents of the City for such next succeeding month, Metro may at its discretion adopt either such estimate or the

actual number of Residential Customers and Residential Customer equivalents reported by the City as of the last day of the next to the last preceding reported quarter. After the City shall have furnished six consecutive quarterly reports the reported number of Residential Customers and Residential Customer equivalents of the City shall be determined as provided in the immediately preceding subparagraph (a).

c) If the City shall fail to submit the required monthly and/or quarterly reports when due, Metro may make its own estimate of the number of Residential Customers and Residential Customer equivalents of the City and such estimate shall constitute the reported number for the purpose of determining sewage disposal charges.

3. The monthly sewage disposal charge payable to Metro shall be determined as follows:

a) Prior to July 1st of each year Metro shall determine its total monetary requirements for the disposal of sewage during the next succeeding calendar year. Such requirements shall include the cost of administration, operation, maintenance, repair and replacement of the Metropolitan Sewerage System, establishment and maintenance of necessary working capital and reserves, the requirements of any resolution providing for the issuance of revenue bonds of Metro to finance the acquisition, construction or use of sewerage facilities, plus not to exceed 1% of the foregoing requirements for general administrative overhead costs.

b) To determine the monthly rate per Residential Customer or Residential Customer equivalent to be used during said next succeeding calendar year, the total monetary requirements for disposal of sewage as determined in subparagraph 3(a) of this

section shall be divided by twelve and the resulting quotient shall be divided by the total number of Residential Customers and Residential Customer equivalents of all Participants for the October-December quarter preceding said July 1st; provided, however, that the monthly rate shall not be less than Two Dollars (\$2.00) per month per Residential Customer or Residential Customer equivalent at any time during the period ending July 31, 1972.

c) The monthly sewage disposal charge paid by each Participant to Metro shall be obtained by multiplying the monthly rate by the number of Residential Customers and Residential Customer equivalents of the Participant. An additional charge may be made for sewage or wastes of unusual quality or composition requiring special treatment, or Metro may require pretreatment of such sewage or wastes. An additional charge may be made for quantities of storm or ground waters entering those Local Sewerage Facilities which are constructed after January 1, 1961, in excess of the minimum standard established by the general rules and regulations of Metro.

4. A statement of the amount of the monthly sewage disposal charge shall be submitted by Metro to each Participant on or before the first day of each month and payment of such charge shall be due on the last day of such month. If any charge or portion thereof due to Metro shall remain unpaid for fifteen days following its due date, the Participant shall be charged with and pay to Metro interest on the amount unpaid from its due date until paid at the rate of 6% per annum, and Metro may, upon failure to pay such amount, enforce payment by any remedy available at law or equity.

5. The City irrevocably obligates and binds itself to pay its sewage disposal charge out of the gross revenues of the sewer

system of the City. The City further binds itself to establish, maintain and collect charges for sewer service which will at all times be sufficient to pay all costs of maintenance and operation of the sewer system of the City, including the sewage disposal charge payable to Metro hereunder and sufficient to pay the principal of and interest on any revenue bonds of the City which shall constitute a charge upon such gross revenues. It is recognized by Metro and the City that the sewage disposal charge paid by the City to Metro shall constitute an expense of maintenance and operation of the sewer system of the City. The City shall provide in the issuance of future sewer revenue bonds of the City that expenses of maintenance and operation of the sewer system of the City shall be paid before payment of principal and interest of such bonds. The City shall have the right to fix its own schedule of rates and charges for sewer service provided that same shall produce revenue sufficient to meet the covenants contained in this Agreement.

Section 6. Responsibility of City. The City shall be responsible for the delivery to the Metropolitan Sewerage System of sewage collected by the City, for the construction, maintenance and operation of Local Sewerage Facilities, and for the payment of all costs incident to the collection of such sewage and its delivery to the Metropolitan Sewerage System.

Section 7. Records. Permanent books and records shall be kept by Metro and the City of the respective rates established, the volumes of sewage delivered and discharged into the Metropolitan Sewerage System wherever such volumes are measured and the number of Residential Customers and Residential Customer equivalents reported. In addition Metro shall keep complete books of account showing

all costs incurred in connection with the Metropolitan Sewerage System and the City shall keep complete records showing the amount billed to each of its customers for sewer service and the basis used for such billing including sewage flow and water consumption for each customer where applicable. The records required by this paragraph shall be available for examination by either party at any reasonable time.

Section 8. Development of Metropolitan Sewerage System. It is contemplated that the Metropolitan Sewerage System will be developed in stages and the nature of facilities to be constructed, acquired or used and the time of such construction, acquisition or use shall be determined by Metro, it being contemplated that Metro shall ultimately provide sewage disposal service for the entire Metropolitan Area and such adjacent areas as may feasibly be served into the Metropolitan Sewerage System.

Section 9. Insurance and Liability for Damages. The City shall secure and maintain with responsible insurers all such insurance as is customarily maintained with respect to sewage systems of like character against loss of or damage to the sewerage facilities of the City and against public and other liability to the extent that such insurance can be secured and maintained at reasonable cost. Any liability incurred by Metro as a result of the operation of the Metropolitan Sewerage System shall be the sole liability of Metro and any liability incurred by the City as a result of the operation of the Local Sewerage Facilities of the City shall be the sole liability of the City.

Section 10. Assignment. The City shall not have the right to assign this Agreement or any of its rights and obligations hereunder

either by operation of law or by voluntary agreement without the written consent of Metro and neither party may terminate its obligations hereunder by dissolution or otherwise without first securing the written consent of the other party and this Agreement shall be binding upon and inure to the benefit of the respective successors and assigns of the parties hereto. In the event that the City should be dissolved or should no longer be authorized to operate sewer facilities, the local sewer facilities owned and operated by the City within the Metropolitan Area shall be assigned and transferred to Metro subject to any outstanding debts of the City which had been incurred for the specific purpose of constructing or acquiring such facilities and subject to the acceptance by Metro of the obligation to continue to provide sewer service to the residents served by such local facilities upon payment by such residents of sewage disposal charges determined as herein provided and the reasonable costs of local sewer service.

Section 11. Effective Date and Term of Contract. This Agreement shall be in full force and effect and binding upon the parties hereto upon the execution of the Agreement and shall continue in full force and effect for a period of fifty years.

Section 12. Notice. Whenever in this Agreement notice is required to be given, the same shall be given by Registered Mail addressed to the respective parties at the following addresses:

Municipality of Metropolitan Seattle
410 West Harrison Street
Seattle, Washington 98119

The City of Bellevue
Bellevue, Washington

unless a different address shall be hereafter designated in writing by either of the parties.

The date of giving such notice shall be deemed to be the date of mailing thereof. Billings for and payments of sewage disposal costs may be made by regular mail.

Section 13. Execution of Documents. This Agreement shall be executed in six counterparts, any of which shall be regarded for all purposes as one original. Each party agrees that it will execute any and all deeds, leases, instruments, documents and resolutions or ordinances necessary to give effect to the terms of this Agreement.

Section 14. Waiver. No waiver by either party of any term or condition of this Agreement shall be deemed or construed as a waiver of any other term or condition, nor shall a waiver of any breach be deemed to constitute a waiver of any subsequent breach whether of the same or a different provision of this Agreement.

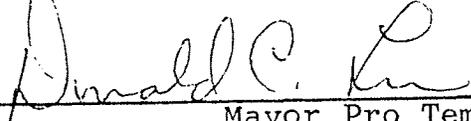
Section 15. Remedies. In addition to the remedies provided by law, this Agreement shall be specifically enforceable by either party.

Section 16. Entirety. This Agreement merges and supersedes all prior negotiations, representations and agreements between the parties hereto relating to the subject matter hereof and constitutes the entire contract between the parties.

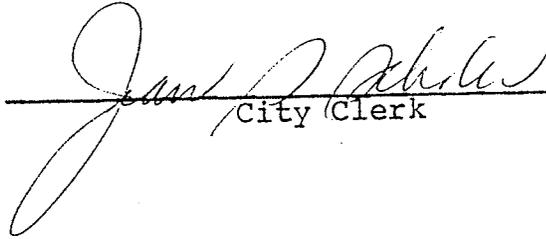
IN WITNESS WHEREOF, the parties hereto have executed this

Agreement as of the day and year first above written.

CITY OF BELLEVUE

By 
Mayor Pro Tem

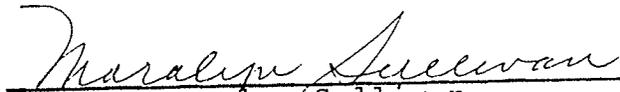
ATTEST:


City Clerk

MUNICIPALITY OF METROPOLITAN SEATTLE

By 
C. Carey Donworth
Chairman of the Council

ATTEST:


Marilyn Sullivan
Clerk of the Council

STATE OF WASHINGTON)
)
COUNTY OF KING) ss.

On this 19th day of July, 1966, before me personally appeared DONALD C. LEE and JEAN S. SCHOLER, to me known to be the Mayor Pro Tem and City Clerk respectively, of the City of Bellevue, Washington, a municipal corporation, and acknowledged the within and foregoing instrument to be the free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that they were authorized to execute said instrument and that the seal affixed is the corporate seal of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year first above written.

Stanley Bausher
Notary Public in and for the State
of Washington, residing at Bellevue

STATE OF WASHINGTON)
)
COUNTY OF KING) ss.

On this 21st day of July, 1966, before me personally appeared C. CAREY DONWORTH AND MARALYN SULLIVAN, to me known to be the Chairman of the Council and Clerk of the Council, respectively, of the Municipality of Metropolitan Seattle, a municipal corporation, and acknowledged the within and foregoing instrument to be the free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that they were authorized to execute said instrument and that the seal affixed is the corporate seal of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year first above written.

Jack A. Hakala
Notary Public in and for the State
of Washington, residing at Seattle

CITY OF BELLEVUE - METRO
FIRST AMENDMENT TO AGREEMENT FOR
SEWAGE DISPOSAL

As of this 2nd day of March, 1967, the
CITY OF BELLEVUE, a municipal corporation of the State of
Washington, hereinafter referred to as the "City" and the
MUNICIPALITY OF METROPOLITAN SEATTLE, a municipal corporation
of the State of Washington, hereinafter referred to as "Metro"
do hereby agree:

1. That Section 2 of the Agreement for Sewage Disposal
between the City and Metro dated as of July 21, 1966, hereinafter
called the "Agreement", be amended to read as follows:

"Section 2. Delivery and Acceptance of Sewage.

The City shall deliver to Metro all of the sewage and
industrial waste collected from those portions of the
City located within the areas described on Exhibit A
attached hereto and by this reference made a part hereof,
together with such other areas as may be the subject of
future agreements between Metro and the City, and Metro
shall accept the sewage and waste delivered for treatment
and disposal as hereinafter provided subject to such
reasonable rules and regulations as may be adopted from
time to time by the Metropolitan Council."

2. That Section 11 of the Agreement be amended to read as
follows:

"Section 11. Effective Date and Term of Contract.

This Agreement shall be in full force and effect and binding
upon the parties hereto upon the execution of the Agreement
and shall continue in full force and effect until
July 1, 2016.

3. That the Agreement as amended by Paragraphs 1 and 2 of this First Amendment shall constitute the entire contract for sewage disposal between the City and Metro.

IN WITNESS WHEREOF, the parties hereto have executed this First Amendment as of the day and year first above written.

CITY OF BELLEVUE

By *Clarence F. Will*
Mayor

ATTEST:

Patricia A. Fisher Deputy
City Clerk

MUNICIPALITY OF METROPOLITAN SEATTLE

By *C. Carey Donworth*
C. Carey Donworth
Chairman of the Council

ATTEST:

Maralyn Sullivan
Maralyn Sullivan
Clerk of the Council

EXHIBIT A

AREA 1. All property located within the boundaries of L.I.D. No. 65-S-87 of the City.

AREA 2. A portion of the City located within Sections 9 and 10, Township 24 North, Range 5 East, W.M., described as follows:

Beginning at the intersection of the centerline of S.E. 26th Street and a line 180 feet easterly of and parallel with the centerline of Henry Richards Road;

Thence southerly along said parallel line to the east west centerline of Tract 27, Mercer Slough Garden Tracts;

Thence easterly along said east west centerline and along the east west centerline of Tracts 28 to 32, inclusive, to the east line of said Plat of Mercer Slough Garden Tracts;

Thence northerly along said east line and its northerly extension to the centerline of S.E. 26th Street;

Thence westerly along said centerline to the point of beginning.

AREA 3. A portion of the City located within Sections 21, 27, and 28, Township 25 North, Range 5 East, W.M., described as follows:

Beginning at the intersection of the centerline of the Bellevue-Redmond Road and the east Section line of Section 27;

Thence north along said east section line to the north line of said Section 27;

Thence westerly along said north line to the east line of Section 21;

Thence northerly along said east line to the north line of Section 21;

Thence westerly along said north line to the west line of the East 1/2 of the Northwest 1/4 of Section 21;

Thence southerly along said west line to the north line of the Plat of Engle's Acres;

Thence westerly, southerly and easterly along the north, west and south lines respectively of said Plat to the west line of the East 1/2 of the Southwest 1/4 of Section 21;

Thence southerly along said west line to the north line of the Plat of Burke & Farrar's Kirkland Addition to Seattle Division 23;

Thence easterly along said north line to the northerly extension of the centerline of 120th Avenue N.E. (Platted as Wilbur Street);

Thence southerly along said centerline to the centerline of Northrup Way;

Thence westerly along the centerline of Northrup Way to the East margin of the Northern Pacific Railway right-of-way;

Thence southerly along said east margin to the north line of the South 2/3 of the Northwest 1/4 of Section 28;

Thence easterly along said north line to a line 1,274.13 feet east of the west line of Section 28;

Thence southerly along said line 1,274.13 feet east of the west line of Section 28 to a point that bears North $83^{\circ} 20' 55''$ west from another point on the east line of the Northwest 1/4 of said Section which is 761.50 feet northerly of the Southeast corner of said Northwest 1/4;

Thence easterly to said point 761.50 feet northerly of said SE corner;

Thence southerly to said SE corner;

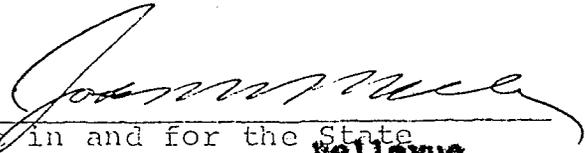
Thence continuing southerly along the centerline of 124th Avenue NE to the centerline of the Bellevue-Redmond Road;

Thence northeasterly to the point of beginning.

STATE OF WASHINGTON)
) ss.
COUNTY OF KING)

On this 17th day of February 1967, before me personally appeared CLARENCE E. WILDE and JENNIFER SCHUBERT, ~~DEPUTY~~ PATRICIA K. WEBER, to me known to be the Mayor and ~~City~~ Deputy Clerk respectively, of the City of Bellevue, Washington, a municipal corporation, and acknowledged the within and foregoing instrument to be the free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that they were authorized to execute said instrument and that the seal affixed is the corporate seal of said corporation.

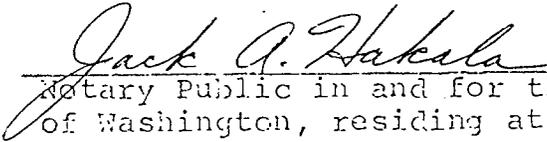
IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year first above written.


Notary Public in and for the State of Washington, residing at Bellevue

STATE OF WASHINGTON)
) ss.
COUNTY OF KING)

On this 2nd day of MARCH, 1967, before me personally appeared C. CAREY DONWORTH and MARALYN SULLIVAN, to me known to be the Chairman of the Council and Clerk of the Council, respectively, of the Municipality of Metropolitan Seattle, a municipal corporation, and acknowledged the within and foregoing instrument to be the free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that they were authorized to execute said instrument and that the seal affixed is the corporate seal of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year first above written.


Notary Public in and for the State of Washington, residing at Seattle

FILED NO. 2625
CITY OF BELLEVUE
DATE 1-7-74
CITY CLERK P. Widen

Executed in 4 counterparts of
which this is counterpart No. 1

C-74-5

MUNICIPALITY OF METROPOLITAN SEATTLE - CITY OF BELLEVUE

SECOND AMENDMENT TO AGREEMENT FOR SEWAGE DISPOSAL

JAN. 10, 1974

This agreement, made and executed this 21st day of ~~December~~ ^{February} 197~~3~~⁴, between the City of Bellevue, a municipal corporation of the State of Washington, hereinafter called the "City" on behalf of itself and as successor in interest to the Bellevue Sewer District, hereinafter called the "District"; the Lake Hills Sewer District, hereinafter called "Lake Hills"; and the Municipality of Metropolitan Seattle, a municipal corporation of the State of Washington, hereinafter called "Metro":

W I T N E S S E T H:

WHEREAS, the City is engaged in providing local sanitary sewer service to areas proximately located within and adjacent to City, including those areas formerly served by Lake Hills and the District, and Metro is engaged in the development and operation of a system of interceptor sewers and treatment facilities for the metropolitan area including areas served by City; and

WHEREAS, the City, Lake Hills and the District have previously entered into long-term agreements with Metro for the disposal of sewage collected by the City, Lake Hills and the District, which agreements bind successors and assigns thereof; and

WHEREAS, the City has entered into agreements with both the District and Lake Hills by which the assets of and operating control over the same have been transferred to the City, and whereby the City has assumed all obligations of Lake Hills and the District; and

WHEREAS, it is necessary to amend section 2 of the agreement for sewage disposal between the City and Metro dated July 21, 1966, as amended March 2, 1967, hereinafter referred to as the "basic agreement", to remove a service area limitation and to provide for the delivery to Metro for disposal all sewage collected by the City;

NOW, THEREFORE, in consideration of the mutual covenants contained herein, it is hereby agreed as follows:

1. Section 2 of the basic agreement is hereby amended to read as follows:

"Section 2. Delivery and acceptance of sewage. The City shall deliver to Metro all of the sewage and industrial waste collected by the City within areas where the City has authority to provide local sewage service, whether or not such areas are within the municipal boundaries of the City, and Metro shall accept sewage and waste delivered for treatment and disposal as hereinafter provided **subject to such reasonable rules and regulations as may be adopted from time to time by the Metropolitan Council.**

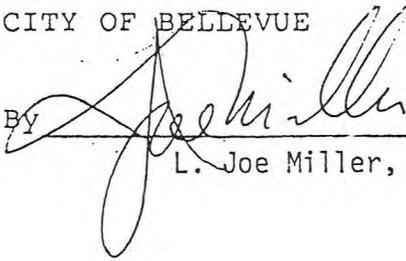
2. The City hereby assumes, adopts and agrees to perform all obligations and responsibilities of the District under its sewage disposal agreement with Metro dated July 26, 1960, as amended, and of Lake Hills under its sewage disposal agreement with Metro dated September 14, 1961, as amended, including the obligations to deliver all sewage collected within the prior boundaries of the District and Lake Hills for disposal and to pay Metro for such disposal services as provided in the above-referenced agreements.

3. Except as otherwise provided in this agreement, all provisions of the basic agreement shall remain in full force and effect as written therein.

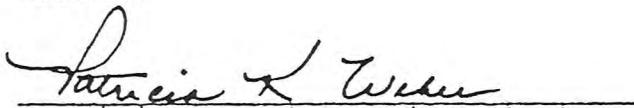
IN WITNESS WHEREOF, the parties have executed this agreement as of the day and year first above written.

CITY OF BELLEVUE

BY


L. Joe Miller, City Manager

ATTEST:


Patricia K. Weber, City Clerk

MUNICIPALITY OF METROPOLITAN SEATTLE

By C. Carey Donworth
C. Carey Donworth
Chairman of the Council

ATTEST:

B. J. Carol
B. J. Carol
Clerk of the Council

STATE OF WASHINGTON)

SS

COUNTY OF KING)

On this 5th day of February, 1974, before me personally appeared L. Joe Miller and PATRICIA K. WEBER, to me known to be the City Manager, City Clerk, respectively, of the City of Bellevue, a municipal corporation, and acknowledged the within and foregoing instrument to be the free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that they were authorized to execute said instrument and that the seal affixed is the corporate seal of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year first above written.

Susan S. Lewis
Notary Public in and for the State
of Washington, residing at Bellevue

STATE OF WASHINGTON)

SS

COUNTY OF KING)

On this 11th day of February, 1974, before me personally appeared C. CAREY DONWORTH and B. J. CAROL, to me known to be the Chairman of the Council and Clerk of the Council, respectively, of the Municipality of Metropolitan Seattle, a municipal corporation, and acknowledged the within and foregoing instrument to be the free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that they were authorized to execute said instrument and that the seal affixed is the corporate seal of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year first above written.

C. W. Winston Chick
Notary Public in and for the State
of Washington, residing at Seattle

4

CITY OF BELLEVUE
MUNICIPALITY OF METROPOLITAN SEATTLE
EXTENSION OF AGREEMENT FOR SEWAGE DISPOSAL

FILED NO. 10884
CITY OF BELLEVUE
DATE 1/04/86
CITY CLERK Jessie
O. Connell
Res. 4675

WHEREAS, the City of Bellevue (the "City") and the Municipality of Metropolitan Seattle (the "Municipality") are parties to a certain Agreement for Sewage Disposal (the "Agreement") dated July 21, 1966, as amended, pursuant to which the City delivers to the Municipality for treatment and disposal all the sewage and industrial wastes it collects from its service area; and

WHEREAS, the Agreement expires by its terms on July 1, 2016; and

WHEREAS, it is in the best interests of the City and the Municipality that the expiration date of the Agreement be extended in order to allow the Municipality to sell and issue its sewer revenue bonds with maturities extending beyond 2016;

NOW, THEREFORE, in consideration of the mutual covenants contained herein and in the Agreement, it is hereby agreed as follows:

The Agreement for Sewage Disposal between the City of Bellevue and the Municipality of Metropolitan Seattle dated July 21, 1966, as amended, is hereby extended for a period of twenty years and shall continue in full force and effect until July 1, 2036.

It is further agreed that all other provisions of said Agreement shall remain unchanged, and the Agreement dated July 21, 1966, as

Extension of Agreement for Sewage Disposal
Page two.

amended, as extended herein shall constitute the entire Agreement for
Sewage Disposal between the parties.

DATED: This 28th day of June, 1987.

CITY OF BELLEVUE

By Phil Kushlan
Phil Kushlan
City Manager

ATTEST:

Marie H. O'Connell
Marie H. O'Connell
City Clerk

MUNICIPALITY OF METROPOLITAN
SEATTLE

By Gary Zimmerman
Gary Zimmerman
Chairman of the Council

ATTEST:

Bonnie Mattson
Bonnie Mattson
Clerk of the Council

EXHIBIT B

FILED NO. 14991
CITY OF BELLEVUE
DATE 12/1/89
CITY CLERK *maie*
O. Connell
Rec. 5206

ORIGINAL

CITY OF BELLEVUE
MUNICIPALITY OF METROPOLITAN SEATTLE
AMENDMENT TO AGREEMENT
FOR SEWAGE DISPOSAL

THIS AMENDMENT made as of the 2nd day
of October, 1992 between the City of
Bellevue, a municipal corporation of the State of Washington
(hereinafter referred to as the "City") and the Municipality
of Metropolitan Seattle, a metropolitan municipal
corporation of the State of Washington (hereinafter referred
to as "Metro");

WITNESSETH:

WHEREAS, the parties have entered into a long term
Agreement for Sewage Disposal dated July 21, 1966, as
amended (hereinafter referred to as the "Basic Agreement");
and

WHEREAS, an advisory committee composed of elected
and appointed officials in the metropolitan area was
appointed by the Metropolitan Council to examine the
structure of Metro's charges to its participants; and

WHEREAS, said advisory committee, following
extensive research, study and deliberations, has recommended
certain changes in the structure of Metro's charges to its
participants and implementation of said changes requires
amendment of the Basic Agreement; and

WHEREAS, the parties have determined that the
recommendations are in the best public interest and
therefore desire to amend said Basic Agreement to implement
said recommendations;

NOW, THEREFORE, it is hereby agreed as follows:

Section 1. Amendment of Section 5 of the Basic Agreement. Section 5 of the Basic Agreement is hereby amended to read as follows:

"Section 5. Payment for Sewage Disposal. For the disposal of sewage hereafter collected by the City and delivered to Metro the City shall pay to Metro on or before the last day of each month during the term of this Agreement, a sewage disposal charge determined as provided in this Section 5.

1. For the quarterly periods ending March 31, June 30, September 30 and December 31 of each year every Participant shall submit a written report to Metro setting forth:

(a) the number of Residential Customers billed by such Participant for local sewerage charges as of the last day of the quarter,

(b) the total number of all customers billed for local sewerage charges by such Participant as of such day, and

(c) the total water consumption during such quarter for all customers billed for local sewerage charges by such Participant other than Residential Customers.

The quarterly water consumption report shall be taken from water meter records and may be adjusted to exclude water which does not enter the sanitary facilities of the customer. Where actual sewage flow from an individual customer is metered, the metered sewage flows shall be reported in lieu of adjusted water consumption. The total quarterly water consumption report in cubic feet shall be divided by 2,250 to determine the number of Residential Customer equivalents represented by each Participant's customers other than single family residences.

Metro shall maintain a permanent record of the quarterly customer reports from each Participant.

The City's first quarterly report shall cover the first quarterly period following the date when sewage is first delivered to Metro and shall be submitted within thirty days following the end of the quarter. Succeeding reports shall be made for each quarterly period thereafter and shall be submitted within thirty (30) days following the end of the quarter.

2. (a) To form a basis for determining the monthly sewage disposal charge to be paid by each Participant during any particular quarterly period, Metro shall ascertain the number of Residential Customers and Residential Customer equivalents of each Participant. This determination shall be made by taking the sum of the actual number of Residential customers reported as of the last day of the next to the last preceding quarter and the average number of Residential Customer Equivalents per quarter reported for the four quarters ending with said next to the last preceding quarter, adjusted for each Participant to eliminate any Residential Customers or Residential Customer equivalents whose sewage is delivered to a governmental agency other than Metro or other than a Participant for disposal outside of the Metropolitan Area.

(b) For the initial period until the City shall have submitted six consecutive quarterly reports, the reported number of Residential Customers and Residential Customer equivalents of the City shall be determined as provided in this subparagraph (b). On or before the tenth day of each month beginning with the month prior to the month in which sewage from the City is first delivered to Metro, the City shall submit a written statement of the number of Residential Customers and Residential Customer equivalents estimated to be billed by the City during the

next succeeding month. For the purpose of determining the basic reported number of Residential Customers and Residential Customer equivalents of the City for such next succeeding month, Metro may at its discretion adopt either such estimate or the actual number of Residential Customers and Residential Customer equivalents reported by the City as of the last day of the next to the last preceding reported quarter. After the City shall have furnished six consecutive quarterly reports the reported number of Residential Customers and Residential Customer equivalents of the City shall be determined as provided in the immediately preceding subparagraph (a).

(c) If the City shall fail to submit the required monthly and/or quarterly reports when due, Metro may make its own estimate of the number of Residential Customers and Residential Customer equivalents of the City and such estimate shall constitute the reported number for the purpose of determining sewage disposal charges.

3. The monthly sewage disposal charge payable to Metro shall be determined as follows:

(a) Prior to July 1st of each year Metro shall determine its total monetary requirements for the disposal of sewage during the next succeeding calendar year. Such requirements shall include the cost of administration, operation, maintenance, repair and replacement of the Metropolitan Sewerage System, establishment and maintenance of necessary working capital and reserves, the requirements of any resolution providing for the issuance of revenue bonds of Metro to finance the acquisition, construction or use of sewerage facilities, plus not to exceed 1% of the foregoing requirements for general administrative overhead costs.

(b) To determine the monthly rate per Residential Customer or Residential Customer equivalent to be used

during said next succeeding calendar year, the total monetary requirements for disposal of sewage as determined in subparagraph 3(a) of this section shall be divided by twelve and the resulting quotient shall be divided by the total number of Residential Customers and Residential Customer equivalents of all Participants for the October-December quarter preceding said July 1st; provided, however, that the monthly rate shall not be less than Two Dollars (\$2.00) per month per Residential Customer or Residential Customer equivalent at any time during the period ending July 31, 1972.

(c) The monthly sewage disposal charge paid by each Participant to Metro shall be obtained by multiplying the monthly rate by the number of Residential Customers and Residential Customer equivalents of the Participant. An additional charge may be made for sewage or wastes of unusual quality or composition requiring special treatment, or Metro may require pretreatment of such sewage or wastes.

4. The parties acknowledge that, by resolution of the Metropolitan Council, Metro may impose a charge or charges directly on the future customers of a Participant for purposes of paying for capacity in Metropolitan Sewage Facilities and that such charges shall not constitute a breach of this agreement or any part thereof. The proceeds of said charge or charges, if imposed, shall be used only for capital expenditures or defeasance of outstanding revenue bonds prior to maturity.

In the event such a charge or charges are imposed, the City shall, at Metro's request, provide such information regarding new residential customers and residential customer equivalents as may be reasonable and appropriate for purposes of implementing such a charge or charges.

5. A statement of the amount of the monthly sewage disposal charge shall be submitted by Metro to each

Participant on or before the first day of each month and payment of such charge shall be due on the last day of such month. If any charge or portion thereof due to Metro shall remain unpaid for fifteen days following its due date, the Participant shall be charged with and pay to Metro interest on the amount unpaid from its due date until paid at the rate of 6% per annum, and Metro may, upon failure to pay such amount, enforce payment by any remedy available at law or equity.

6. The City irrevocably obligates and binds itself to pay its sewage disposal charge out of the gross revenues of the sewer system of the City. The City further binds itself to establish, maintain and collect charges for sewer service which will at all times be sufficient to pay all costs of maintenance and operation of the sewer system of the City, including the sewage disposal charge payable to Metro hereunder and sufficient to pay the principal of and interest on any revenue bonds of the City which shall constitute a charge upon such gross revenues. It is recognized by Metro and the City that the sewage disposal charge paid by the City to Metro shall constitute an expense of the maintenance and operation of the sewer system of the City. The City shall provide in the issuance of future sewer revenue bonds of the City that expenses of maintenance and operations of the sewer system of the City shall be paid before payment of principal and interest of such bonds. The City shall have the right to fix its own schedule of rates and charges for sewer service provided that same shall produce revenue sufficient to meet the covenants contained in this Agreement.

Section 2. Amendment of Section 6 of the Basic Agreement. Section 6 of the Basic Agreement is hereby amended to read as follows:

"Section 6. Responsibility of the City. The City shall be responsible for the delivery to the Metropolitan Sewerage System of sewage collected by the City, for construction, maintenance and operation of Local Sewerage Facilities, and for the payment of all costs incident to the collection of such sewage and its delivery to the Metropolitan Sewerage System.

In addition, the City will undertake continual rehabilitation and replacement of its local sewage facilities for purposes of preventing, reducing and eliminating the entry of extraneous water into such facilities and will expend annually, averaged over five (5) years, an amount equal to two (2) cents per inch of diameter per foot of its local sewage facilities, excluding combined sewers and force mains, for said rehabilitation and replacement. The amount of this expenditure requirement may be increased from time to time by the Metropolitan Council to reflect general inflation. Rehabilitation and replacement projects undertaken pursuant to this section shall be constructed in accordance with criteria adopted by the Metropolitan Council and included in Metro's Rules and Regulations. In the event the City fails to comply with the rehabilitation and replacement expenditure requirements described in this section, the City shall pay such charge as may be determined by Metro for quantities of storm or ground water entering its Local Sewerage Facilities in excess of the minimum standard established by the general Rules and Regulations of Metro.

Section 3. Amendment of Basic Agreement to Add a New Section. A new Section 17 shall be added to the Basic Agreement to read as follows:

" Section 17. Future Amendments. The City agrees to amend and hereby concurs in any amendment to this agreement which incorporates any changes in the terms for

sewage disposal and/or payment therefore as may be proposed by Metro and agreed to by those Participants that shall represent, in total, not less than 90% of the Residential Customers and Residential Customer Equivalents then served by the Metropolitan Sewerage System."

Section 4. Effective Date of Amendment. This amendment shall take effect at the beginning of the first quarter following the date first written above with quarters beginning January 1, April 1, July 1, and October 1.

Section 5. Basic Agreement Unchanged. Except as otherwise provided in this amendment, all provisions of the basic agreement shall remain in full force and effect as written therein.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the day and year first written above.

CITY OF BELLEVUE

Pam Bissinette

ATTEST:

Shawn Martin, Deputy City Clerk

Approved as to form

[Signature]
Assistant City Att.

MUNICIPALITY OF
METROPOLITAN SEATTLE

[Signature]

Gary Zimmerman
Chair of the Council

ATTEST:

MAY 22 1992

Bonnie Mattson

**INTERLOCAL AGREEMENT IMPLEMENTING
THE CITY OF BELLEVUE'S
PARTIAL ASSUMPTION OF THE COAL CREEK
UTILITY DISTRICT**

RECEIVED
CITY OF BELLEVUE
LEGAL DEPT

JUN 10 2002

between the City of Bellevue

AM
7 8 9 10 11 12 1 2 3 4 5 6 PM
A

and the Coal Creek Utility District

TABLE OF CONTENTS

I.	PURPOSE.....	5
II.	DEFINITIONS.....	6
III.	ASSUMPTION.....	7
IV.	DISTRICT AND BELLEVUE RESPONSIBILITIES DURING THE INTERIM PERIOD.....	7
V.	BOUNDARY AND SERVICE AREAS.....	8
VI.	ALLOCATION OF ASSETS.....	8
	A. Physical Assets.....	8
	B. Service Lateral Ownership and Responsibility	9
	C. Other Assets.....	10
	D. Assessments.....	10
	E. Contracts and Agreements.....	10
	F. Developer Project Disposition within the Assumption Area	10
	G. Adjacent Water and Sewer Facilities	11
VII.	ALLOCATION OF LIABILITIES.....	11
	A. 1994, 1998 (ULID 7-S), and 1999 Revenue Bond Issues.....	11
	B. ULID 7-S.....	12
	C. District Loan to ULID 7-S	12
	D. Special Connection Charge.....	12
	E. Unsewered Area Lying Within the Assumption Area	12
	F. Public Works Trust Fund Loans.....	12
	G. Accounts Payable	12
	H. Accrued Employee Benefits.....	13
VIII.	CAPITAL IMPROVEMENT PROJECTS	13
	A. CIP Projects Initiated after January 1, 2003.....	13
	B. CIP Projects in Design on the Assumption Date.....	13
	C. CIP Projects under Construction on the Assumption Date.....	13
IX.	GENERAL WATER SYSTEM OPERATION DESCRIPTION	13
X.	WATER JOINT SERVING FACILITIES	14
XI.	PAYMENT OF WHEELING CHARGE	16
	A. Methodology for computation	16
	B. Special Assessments for Emergency Items	17
	C. Special Assessments for Major Maintenance	17
	D. Exemptions from the Water Joint Serving Facility O&M Cost Pool and Capital Cost Utility Plant Rate Base.....	18
	E. Addition of State excise or other taxes to Bellevue payments to the District.....	18
XII.	CAPITAL COST REIMBURSEMENT FOR THE REPLACEMENT OF EXISTING WATER JOINT SERVING FACILITIES.....	18
XIII.	WATER MASTER AND DIRECT READ METERS.....	20
	A. Master Meter Service Area	20
	B. Master Meter Installation.....	20
	C. Master Meter Ownership, Operation and Maintenance.....	21
	D. Payment for Master Meters.....	21
	E. Master Meter Dispute Resolution.....	21

XIV.	WATER SUPPLY RESPONSIBILITY AND REPORTING.....	21
A.	Water Supply	21
B.	Regional Water Delivery.....	21
C.	Master Meter Reading.....	22
D.	Direct Read Meter Areas.....	22
E.	Total Water Use.....	23
XV.	“OLD WATER” ALLOWANCE IN 1982 SEATTLE WATER PURVEYOR CONTRACT	23
XVI.	SEWER SERVICE AREAS.....	24
XVII.	TELEMETRY.....	25
XVIII.	EMPLOYEES.....	25
XIX.	COSTS TO IMPLEMENT ASSUMPTION	26
XX.	CUSTOMER BILLING.....	26
XXI.	RECORDS.....	26
XXII.	INDEMNITY AND INSURANCE.....	26
A.	Additional Insured	26
B.	Third Party Insurance.....	27
C.	Non-Waiver of Other Rights or Remedies.....	27
XXIII.	DISPUTE RESOLUTION	27
XXIV.	NOTICE AND COMMUNICATIONS.....	27
XXV.	REVIEW BY OTHER AGENCIES.....	27
XXVI.	EXECUTION OF DOCUMENTS	28

TP

LIST OF EXHIBITS

- Exhibit A Service Area Boundaries After Assumption
- Exhibit B City of Bellevue—Coal Creek Utility District Common Service Boundary Line
- Exhibit C Water Joint Serving Facilities
- Exhibit D Physical Assets Located in Bellevue
- Exhibit E Water Master Meter Description (Map and Schedule)
- Exhibit F Direct Read Meter Areas
- Exhibit G Sewer Service Areas
- Exhibit H Methodology to Determine the Operation and Maintenance (O&M) Component of the Wheeling Charge for Joint Serving Facilities
- Exhibit I Agreed Upon Capital Cost Reimbursement Methodology—Water Joint Serving Facilities
- Exhibit J Designation of Sewer Ownership

LIST OF TABLES

- Table 1 Water Joint Serving Facilities
- Table 2 "Old Water" Allocation

TD

INTERLOCAL AGREEMENT IMPLEMENTING THE CITY OF BELLEVUE'S
PARTIAL ASSUMPTION OF THE COAL CREEK UTILITY DISTRICT

THIS INTERLOCAL AGREEMENT is made between the City of Bellevue, a municipal corporation in King County, Washington ("Bellevue") and Coal Creek Utility District, a municipal corporation in King County, Washington ("District"), hereinafter referred to as the "Parties", implementing Bellevue's partial assumption of the District's service area and facilities lying within Bellevue's corporate limits.

WHEREAS the District provides water and sewer utility service within the corporate limits of the cities of Bellevue, Newcastle, Renton, and unincorporated King County; and

WHEREAS Chapter 35.13A RCW provides the authority for a city to assume all or a portion of the service area of a water-sewer district lying within and outside its corporate limits; and

WHEREAS on August 18, 2000, the Washington State Boundary Review Board for King County adopted its Resolution and Hearing Decision approving the proposed partial assumption of that portion of the District lying within the corporate limits of Bellevue and the area of unincorporated King County surrounded by Bellevue which has been subsequently annexed; and

WHEREAS on August 1, 2001, Bellevue and the District approved a settlement agreement ("Settlement Agreement") establishing that effective December 31, 2003, Bellevue shall assume that portion of the District lying within Bellevue's corporate limits (which includes the former unincorporated area of King County surrounded by Bellevue which was annexed to Bellevue pursuant to Ordinance No. 5270 passed February 5, 2001); and

WHEREAS the Settlement Agreement and Exhibit A to the Settlement Agreement set forth the terms and conditions under which Bellevue's partial assumption shall take place including each Party's responsibility to draft an interlocal agreement to effect the Parties' settlement and the assumption;

NOW THEREFORE, in consideration of the terms and conditions contained in the Settlement Agreement, which is incorporated herein as though fully set forth at this point, the Parties, further agree as follows:

I. PURPOSE

The purpose of this Interlocal Agreement is to provide further direction and/or details to the Parties to implement the Settlement Agreement and the assumption.

II. DEFINITIONS

For purposes of this Agreement, and unless otherwise provided in this Agreement, the following terms mean:

- A. "Assumption Date" – December 31, 2003 at 2:30 p.m.
- B. "Assumption Area" – that portion of the District lying within Bellevue's corporate boundaries to be assumed by Bellevue on the Assumption Date. The Assumption Area is shown on attached Exhibit A and the legal description of the common service area boundary is described in attached Exhibit B.
- C. "CIP Projects" – Capital Improvement Projects initiated by the District located, in whole or in part, within the Assumption Area.
- D. "Coal Creek Parkway Facilities" – the sewer interceptor, water main, and water main appurtenances located along Coal Creek Parkway within Bellevue as of the date of this Agreement, excluding those sewer mains within Bellevue tributary or parallel to the sewer interceptor.
- E. "Developer Projects" – extension projects initiated and constructed by owners/developers pursuant to Chapter 57.22 RCW.
- F. "Direct Read Meters" – individual customer water meters that are used to measure water use within the Direct Read Meter Areas.
- G. "Direct Read Meter Areas" – areas in Bellevue and the District where water use is read on Direct Read Meters. The Direct Read Meter Areas are shown on Exhibit F.
- H. "Inlet Meters" – water meters that are used to measure the volume of water delivered by regional water providers to Bellevue and the District from a regional water supply transmission system.
- I. "Interim Period" – the period between August 1, 2001 (the effective date of the Settlement Agreement) and the Assumption Date.
- J. "Master Meters" – water meters, excluding Direct Read Meters, that are used to measure the volume of water moving between the District and Bellevue service areas.
- K. "Old Water Allowance" – the historical average volume of water per month purchased by the District from the City of Seattle between January 1, 1979 through December 31, 1981 which was used for determining the cost for water supplied by Seattle to the District under the District's 1982 wholesale water supply contract as shown on Table 2.

- L. "Parties" – City of Bellevue and Coal Creek Utility District are the two Parties to this Agreement.
- M. "Physical Assets" – all District-owned real property, easements, personal property, and other property rights together with all water and sewer facilities.
- N. "Reporting Period" – the time interval between readings for the same Inlet Meter or Master Meter from which the total water volume delivered through the meter can be calculated.
- O. "Water Joint Serving Facilities" – water system facilities lying within the District that are used to deliver water to both Bellevue and District customers after the Assumption Date. Water Joint Serving Facilities are listed in Table 1 and are shown on Exhibit C.

III. ASSUMPTION

On the Assumption Date, Bellevue shall assume the Assumption Area, which consists of that portion of the District lying within Bellevue's corporate limits (which includes the former unincorporated area of King County surrounded by Bellevue which was annexed into Bellevue pursuant to Bellevue Ordinance No. 5270 passed February 5, 2001), subject to the terms and conditions of this Agreement and that certain Settlement Agreement entered into between the Parties dated 8/1/01. After the Assumption Date, the District shall revise its official boundaries to exclude the Assumption Area. Bellevue shall cooperate with the District in implementing the revision of the District's boundaries and shall not oppose this revision.

IV. DISTRICT AND BELLEVUE RESPONSIBILITIES DURING THE INTERIM PERIOD

- A. During the Interim Period, the District shall incur no new debt for which Bellevue would be responsible without Bellevue's written consent. During the Interim Period, Bellevue shall be responsible for relocation costs of District Facilities in the Assumption Area caused by Bellevue initiated projects other than the following:

PW-R-129 124TH Ave. SE Improvements
 PW-R-116 Factoria Blvd. Improvements

The maximum amount the District shall be responsible for relocation costs for these two projects shall be \$120,000.

- B. During the Interim Period, the District shall, at its own expense, continue to own, maintain, improve and operate the water and sewer infrastructure within the District, including the Assumption Area, in accordance with industry standards. During the Interim Period, the

District shall provide comparable levels of service throughout the entire District service area, including the Assumption Area.

- C. Recognizing the value of formalized ongoing communication between the Parties during the Interim Period, the Parties shall schedule quarterly or more frequent, if needed, meetings to discuss ongoing and new transition issues. All such issues shall be resolved no later than the Assumption Date.

V. BOUNDARY AND SERVICE AREAS

- A. On the Assumption Date, Bellevue shall become the water and sewer service provider for all customers and areas lying within the Assumption Area. After the Assumption Date, irrespective of the source of water provided to Bellevue customers, Bellevue shall bill Bellevue customers for the water and/or sewer service and shall be the point of contact for Bellevue customers with respect to said service.
- B. After the Assumption Date, the District shall remain the water and sewer service provider for all of its customers and areas outside of the Assumption Area. After the Assumption Date, irrespective of the source of water provided to District customers, the District shall bill District customers for the water and/or sewer service and shall be the point of contact for District customers with respect to said service.
- C. Exhibit A shows the boundaries and service areas for the District and Bellevue after the Assumption Date. Exhibit B provides the legal description of the common service area boundary between the District and Bellevue after the Assumption Date.

VI. ALLOCATION OF ASSETS

A. Physical Assets

On the Assumption Date, the Physical Assets of the District, with those exceptions identified in this Agreement, shall be allocated (split) along the boundary between Bellevue and the District, with Bellevue assuming ownership of the Physical Assets located within the Assumption Area and the District continuing to own its Physical Assets outside the Assumption Area; provided, however, that the District shall continue to own, operate, and maintain the Coal Creek Parkway Facilities, and any Master Meters to be installed as part of this Agreement within the Assumption Area.

If the District engages in any construction, maintenance, or other activities in Bellevue affecting the Coal Creek Parkway Facilities or Master Meters after the Assumption Date and while it still owns these facilities, the District shall obtain all necessary permits from Bellevue and pay those fees to Bellevue that any other public utility would be required to pay in

connection with such construction, maintenance, or other activities; provided, however, that the District shall not be required to obtain a franchise from Bellevue for the Coal Creek Parkway Facilities or Master Meters. In addition, the District shall pay for relocation expenses for the Coal Creek Parkway Facilities in accordance with Bellevue City Code Section 14.30.185; with the exception that for the period from the date of the Assumption through December 31, 2009 should the City require the District to relocate these facilities pursuant to BCC 14.30.185, the City shall reimburse the District for all reasonable costs it incurred to relocate the facilities including but not limited to costs of design, engineering, installation, construction management and restoration. Bellevue shall make payment to the District of these costs within ninety (90) days of receipt of the District's invoice. If at any time the District is required to relocate the Coal Creek Parkway Facilities, it shall do so within 365 days of City's written notice to the District to do so. Should the City's project requiring the relocation of CCUD facilities be delayed due to the failure to relocate during the 365 day window, CCUD will be responsible for any costs, penalties or damages resulting from said project delay. Provided further, however, that Bellevue Code Section 14.30.185C or its successor shall not apply until after such time as the District has paid relocation expenses as required under BCC 14.30.185.

The District shall indemnify, defend, and hold harmless Bellevue and its officials, officers, employees, agents, and representatives, when acting within such designated capacity, from all claims, losses, suits, actions, legal or administrative proceedings, costs, attorneys' fees, litigation costs, expenses, damages, penalties, fines, judgments, or decrees by reason of any death, injury, or disability to or of any person or party, including employees, and/or damage to any property or business, including loss of use caused by any negligent act, error, or omission of the District or its officials, officers, employees, agents, representatives, contractors, or subcontractors, when acting within such designated capacity, arising out of any construction, maintenance, or other activities undertaken by the District or its agents on the Coal Creek Parkway Facilities or Master Meters located in the Assumption Area. This indemnification provision applies only to the Coal Creek Parkway Facilities and/or any Master Meters and only to the extent that the claim or cause of action giving rise to the indemnification obligation occurs or arose while the District owned these facilities.

B. Service Lateral Ownership and Responsibility

In the Direct Read Meter Areas certain customers in one Party's service area will receive water service from water mains owned by the other Party. In these situations the Party whose customer is receiving water service shall own, operate, and maintain the customer meter, setter, meter box, and service line up to and including the saddle or tap on the water main. The side sewers of certain customers in one Party's service area will connect directly to a sewer main owned by the other Party. In these

situations the Party who serves these customers shall be responsible for the operation, ownership, and maintenance of the side sewer (or service lateral) within a right-of-way or easement up to and including the tee or saddle at the sewer main.

If emergency conditions arise in locations where one Party owns the water or sewer main and the other Party owns the appurtenant service lines, side sewers or laterals, the Party that owns the water or sewer mains shall have the responsibility for responding to and alleviating the emergency condition. If the responding Party finds there is reason to believe that the emergency condition may have been caused by the service lines, side sewers, or laterals the other Party shall be notified as soon as practicable.

C. Other Assets

The District shall continue to own its equipment, tools, materials, cash, investments, receivables and reserves, except as otherwise provided in this Agreement.

D. Assessments

Unpaid ULID 7-S assessments after the Assumption Date shall continue to be collected by King County. After the Assumption Date, the District shall annually pay Bellevue one-half of the ULID 7-S assessment revenue collected.

E. Contracts and Agreements

Any maintenance bonds, latecomers agreements, or CIP consultant design agreements for properties or facilities within the Assumption Area shall be assigned to Bellevue on the Assumption Date.

F. Developer Project Disposition within the Assumption Area

1. The District shall complete all review, inspection and administration of any Developer Project initiated within the Assumption Area prior to the Assumption Date. Prior to acceptance of these projects by the District, bills of sale, easements, maintenance bonds, and final engineering estimates of construction costs shall be obtained by the District naming Bellevue as owner/grantee and/or beneficiary.
2. The following documents shall be delivered to Bellevue as soon as possible after Developer Project acceptance by the District.
 - Copy of District Board Minutes accepting the developer extension
 - Bills of Sale

- Maintenance Bonds
- As-builts
- Final Engineering estimate of Construction Cost
- Developer Extension Agreement
- Recorded Easements
- Applicable Latecomer Agreements

3. Any accounts receivable due the District from the owner/developer of any Developer Project initiated by the District shall remain the receivable of the District.

G. Adjacent Water and Sewer Facilities

Both the District and Bellevue shall have the right to access manholes owned by the other Party for the purpose of inspecting and evaluating facilities that it owns. Similarly, adjacent water valves may be accessed. Each Party shall provide the other upon request copies of its adjacent as-built system and other maps. The Parties shall notify each other prior to accessing these manholes or water valves except in emergency situations.

VII. ALLOCATION OF LIABILITIES

A. 1994, 1998 (ULID 7-S), and 1999 Revenue Bond Issues

The District's total outstanding revenue bond principal and interest obligations for the 1994, 1998 (ULID 7-S), and 1999 Revenue Bond Issues shall be divided between the Parties on the Assumption Date. On or before the Assumption Date, Bellevue shall pay the District an estimated amount sufficient to retire Bellevue's share of the District's then outstanding revenue bonds. This estimated amount shall be equal to the percentage of District annual gross revenue on December 31, 2002 that is represented by District customers within the Assumption Area. The amount paid by Bellevue shall later be revised upward or downward no later than December 31, 2004, based upon a reconciliation using the District's 2003 audited financial statements. In calculating Bellevue's share, Bellevue shall receive credit for the concurrent reduction in the District's revenue bond reserve requirements as a reduction of the net amount to be paid by Bellevue to the District to retire its calculated share of the outstanding District bonds as of the Assumption Date. The District's revenue bond reserves, unspent bond proceeds, and unspent assessments collected as of the Assumption Date shall together be taken into account when calculating the final amount or percentage of the District's bonded indebtedness to be paid by Bellevue so that Bellevue does not, in effect, pay a share of the bonded indebtedness twice. Any allocation of the District's bonded indebtedness shall be subject to bond counsel and underwriter approval.

B. ULID 7-S

King County shall continue to be the collection agency for the ULID 7-S payments and shall be the responsible agency for any required ULID foreclosure proceedings.

C. District Loan to ULID 7-S

On the Assumption Date, Bellevue shall pay one-half of that portion of the District's loan of \$125,873 to ULID 7-S that is still outstanding on the Assumption Date. Bellevue may recover any such payments from future charges to properties in Bellevue that develop to higher densities than anticipated in ULID assessment rolls.

D. Special Connection Charge

After the Assumption Date, Bellevue shall collect from property owners within the Assumption Area subject to District Resolution No. 1193 at the time of the property owner's sewer connection any unpaid special connection charges for the Lake Washington Boulevard Sewer Extension as of the Assumption Date. Bellevue shall pay over these special connection charges to the District within forty-five (45) days of receipt.

E. Unsewered Area Lying Within the Assumption Area

After the Assumption Date, the District shall allow any unsewered properties within the Assumption Area to connect to District-owned facilities, provided that the owners of the connecting properties shall pay the District's then current General Facilities Charge and any special connection charges owed under applicable District resolutions. Bellevue shall collect such charges and pay them over to the District within forty-five (45) days of receipt.

F. Public Works Trust Fund Loans

On the Assumption Date, Bellevue shall pay the District twenty-eight point three percent (28.3%) of the District Public Works Trust Fund principal and interest loan balances outstanding on August 1, 2001. The loan balances shall only reflect loan proceeds that were received by the District as of August 1, 2001.

G. Accounts Payable

Except as otherwise provided in this Agreement, all accounts payable on the Assumption Date shall remain the full responsibility of the District.

H. Accrued Employee Benefits

Except as otherwise provided in this Agreement, the District shall be responsible for all liabilities for accrued employee benefits for former and current District employees as of the Assumption Date.

VIII. CAPITAL IMPROVEMENT PROJECTS

A. CIP Projects Initiated after January 1, 2003

The District shall provide Bellevue an opportunity to review and comment on all CIP projects in the Assumption Area initiated after January 1, 2003 that are not yet under construction.

B. CIP Projects in Design on the Assumption Date

All CIP projects in the Assumption Area where the design has not been completed on the Assumption Date shall be transferred to Bellevue for completion within a time frame as determined by the process identified in section IV C. The District shall provide copies of all contracts, plans and other related documents to Bellevue pursuant to Section XXI of this Agreement.

C. CIP Projects under Construction on the Assumption Date

CIP projects in the Assumption Area under construction on the Assumption Date shall be completed by the District. Bellevue shall be provided with an opportunity to attend inspections where punch list work items and final acceptance are developed. The District shall provide copies of all contracts, plans and other related documents to Bellevue pursuant to Section XXI of this Agreement.

IX. GENERAL WATER SYSTEM OPERATION DESCRIPTION

The Parties agree to coordinate water quality testing, monitoring, and compliance programs as necessary to meet state and federal water quality requirements. Bellevue and District shall give each other reasonable notice and coordinate operations of their respective facilities when the operations of one Party may impact operations of the other Party's facilities. The operation of the Assumption Area water system after the Assumption Date shall be divided into the following three areas:

- A. Factoria Service Area – The Factoria Area is essentially a stand-alone system. After the Assumption Date, Bellevue shall operate this portion of the water system without District input.

- B. 170 Zone Service Area – The area between I-405 and Lake Washington is generally known as the District’s 170 service area. After the Assumption Date, water will continue to be provided to this area by both the District and Bellevue. Accordingly, pressure reducing station settings shall be adjusted from time to time as necessary to maintain water quality throughout the system. The District and Bellevue agree to coordinate with each other with regard to any such changes in the system operation that may be required.
- C. Newport Hills Service Area – Except as provided in this Agreement, after the Assumption Date the District shall continue to supply water to the Assumption Area of Newport Hills through the Water Joint Serving Facilities and shall operate the Water Joint Serving Facilities without Bellevue’s input.

X. WATER JOINT SERVING FACILITIES

- A. Water Joint Serving Facilities are listed in Table 1 and shown on Exhibit C. Before and after the Assumption date, the District shall own and be responsible for the maintenance and operation of the following Water Joint Serving Facilities.

**TABLE 1
WATER JOINT SERVING FACILITIES**

Serving Facilities Listed by Item	District’s Proportionate Share of Capacity	Bellevue’s Proportionate Share of Capacity
No. 1: 6” Asbestos Cement	60.00%	40.00%
No. 2: 8” Asbestos Cement	60.00%	40.00%
No. 3: 8” Cast Iron	60.00%	40.00%
No. 4: 8” Ductile Iron	60.00%	40.00%
No. 5: 12” Asbestos Cement	50.00%	50.00%
No. 6: 12” Cast Iron	50.00%	50.00%
No. 7: 12” Ductile Iron	60.00%	40.00%
No. 8: 16” Asbestos Cement	50.00%	50.00%
No. 9: 16” Ductile Iron	50.00%	50.00%

TP

No. 10: 18" Ductile Iron	67.00%	33.00%
No. 11: 440 Reservoir (5.0 MG)	67.00%	33.00%
No. 12: 580 Reservoir (1.0 MG)	60.00%	40.00%
No. 13: 580 Reservoir (2.5 MG)	60.00%	40.00%
No. 14: 440/580 Booster Station	67.00%	33.00%
No. 15: Metering Point 5 Booster Station	67.00%	33.00%
No. 16: Hazelwood Pump Station (1)	100.00%	0.00%
No. 17: Master Meters	0.00%	100%

Note (1): The Hazelwood Pump Station is currently used as a backup facility. It is assumed that after the Assumption Date this facility shall continue to be used as a backup facility for the remaining portion of the District not assumed by Bellevue.

- B. The District agrees to provide use and capacity of the Water Joint Serving Facilities shown in Table 1 to Bellevue until December 31, 2028. The Parties may agree to extend the use of some or all of Water Joint Serving Facilities by mutual agreement in writing. If Bellevue and the District do not mutually agree to continue joint use of all or part of the Water Joint Serving Facilities beyond that date, Bellevue shall have up to December 31, 2033 to terminate its use of such Water Joint Serving Facilities. If Bellevue elects to continue use of the Water Joint Serving Facilities beyond December 31, 2028, Bellevue shall continue to pay for its fair share of wheeling charges required by this Agreement so long as it continues such use. Bellevue shall give the District at least six (6) months notice of its intent to terminate such use if such use continues beyond December 31, 2028.
- C. The District shall wheel water delivered from a regional water provider to Bellevue through the Water Joint Serving Facilities in an amount up to and including the proportionate share of capacity assigned to Bellevue for Water Joint Serving Facilities identified in Table 1.
- D. There are additional minor water joint serving facilities not listed in Table 1. On the Assumption Date, Bellevue and the District shall separately own and thereafter be responsible for maintaining these minor water joint serving facilities located within their respective boundaries. Bellevue and the District shall give each other reasonable notice and coordinate operations of their respective facilities when the operations of one Party may impact operations of the other Party's facilities.

TOP

- E. As of the date of this Agreement, the number of water joint serving facilities in Bellevue, except for Master Meters and Coal Creek Parkway Facilities, shown on attached Exhibit D are minimal and the cost for their operation, maintenance, replacement, and repair are considered incidental. So long as the number of such facilities remain minimal and the costs nominal, Bellevue shall not charge the District a wheeling charge. If in the future a wheeling charge is applied it shall be based upon the same methodology as provided for in Section XI. The cost for water supplies delivered to District customers through Bellevue facilities shall be accounted for as provided in Section XIV.
- F. For those areas that utilize the Water Joint Serving Facilities, Bellevue shall not change the operation of its water system within the Assumption Area without approval by the District. Such approval shall not be unreasonably withheld. Bellevue shall have the option to terminate its use of Water Joint Serving Facilities at any time after the Assumption date subject to its obligations to pay as set forth in Sections XI and XII of this Agreement, after which time Bellevue shall have no obligations to inform or receive approvals from the District for operating Bellevue's water system. If Bellevue's operation of Seattle Inlet Metering Facility Number 6, located at SE 56th and 128th Avenue, results in the District incurring a demand metering charge, Bellevue shall be responsible for this charge.

XI. PAYMENT OF WHEELING CHARGE

A. Methodology for computation

Bellevue shall compensate the District for a proportionate share of costs incurred by the District for the operation and maintenance of Water Joint Serving Facilities through the payment of a wheeling charge determined using the methodology set forth in this Section. The wheeling charge shall commence on the Assumption Date and end on December 31, 2028, unless Bellevue continues to use the Water Joint Serving Facilities after that date in accordance with this Agreement, or the Agreement is terminated by operation of law or by mutual agreement of the parties prior to December 31, 2028. The annual wheeling charge shall be paid by Bellevue to the District in equal monthly installments. The wheeling charge shall be calculated for the year 2004 based upon 2002 District fiscal year-end financial statements. The wheeling charge will be reevaluated in 2005 for the 2006 wheeling charge and every five years thereafter based upon the then most current District fiscal year-end financial statement. In intervening years the wheeling charge shall be annually adjusted for inflation by taking the difference between the latest June Seattle-Tacoma-Bremerton Area Index measurement CPI-U and the immediately preceding June Seattle-Tacoma-Bremerton Area Index measurement CPI-U. Bellevue shall be responsible for costs associated with retaining financial consultants mutually acceptable to both Parties who will conduct

the financial analysis necessary to determine the wheeling charge for the year. The wheeling charge shall be based upon Bellevue's proportionate share of direct and customer related general and administrative costs incurred by the District for operating and maintaining Water Joint Serving Facilities using the methodology shown in Exhibit H. Bellevue's proportionate share of direct costs shall be determined by using Bellevue's share of capacity as shown in Table 1 whether or not Bellevue's full capacity in the Water Joint Serving Facilities is utilized. Direct costs for the maintenance and operations of Water Joint Serving Facilities shall be based upon a prorated share of District cost pools for all like facilities located within the District. In determining wheeling charges direct costs shall be increased by a factor to reflect District general and administrative (G&A) overhead expenses. The G&A factor will be calculated as of the Assumption Date and again when determining the 2006 wheeling charge. The G&A factor determined in 2005 for 2006 shall be used in all subsequent years. However, in subsequent five-year reevaluations either Party may elect to have the G&A factor recalculated. The Party electing to reevaluate the G&A factor shall be responsible for the additional costs to conduct the evaluation. Exhibit H provides additional background and information for ascertaining costs attributable to Water Joint Serving Facilities to be used in determining wheeling charges.

B. Special Assessments for Emergency Items

Special assessments may be made for emergency maintenance and emergency repair activities of the Water Joint Serving Facilities. For purposes of this section "emergency" means unforeseen circumstances beyond the control of the District that either: (a) present a real, immediate threat to the proper performance of essential functions; or (b) will likely result in material loss or damage to property, bodily injury, or loss of life if immediate action is not taken. Each Party shall be assessed and pay such special assessment based on its respective allocation of capacity set forth in Table 1 in the Water Joint Serving Facility.

C. Special Assessments for Major Maintenance

The following activities performed on Water Joint Serving Facilities shall be considered major maintenance activities: tank painting, pump and motor replacement, electrical equipment upgrades/replacement, telemetry upgrades, and altitude valve upgrades/replacement. Bellevue shall reimburse the District for the reasonable cost of such major maintenance items based on its respective allocation of capacity set forth in Table 1 in the Water Joint Serving Facility. This compensation shall be paid by Bellevue during the time period beginning on August 1, 2001 and ending on December 31, 2028, unless Bellevue continues to use the Water Joint Serving Facilities after that date in accordance with this Agreement. The District shall plan and schedule major maintenance items so as to give Bellevue one year's notice prior to commencement of work; provided, however, the District shall give two year's notice to Bellevue for any

TP

projected project cost of \$50,000 or more. Once completed the District shall invoice Bellevue for the Bellevue's share of costs for major maintenance activities and Bellevue shall make payment to the District within forty-five (45) days of receipt of the District's invoice.

D. Exemptions from the Water Joint Serving Facility O&M Cost Pool and Capital Cost Utility Plant Rate Base

When calculating wheeling or capital charges for Water Joint Serving Facilities, the District shall exclude all costs for performing major maintenance, emergency maintenance, emergency repair, and all other costs of activities for which Bellevue directly reimburses the District Bellevue's share. The District shall maintain records that separately account for all such costs identified in this Section.

E. Addition of State excise or other taxes to Bellevue payments to the District

Should the District be responsible for paying State excise taxes or future utility taxes on revenues received from Bellevue, payments for Water Joint Serving Facility wheeling charges, or capital cost reimbursements, Bellevue's payments to the District shall be increased to include the taxes payable by the District. Such tax payments shall be deducted from any cost pools used to calculate Bellevue's share of wheeling charges.

XII. CAPITAL COST REIMBURSEMENT FOR THE REPLACEMENT OF EXISTING WATER JOINT SERVING FACILITIES

A. After the Assumption Date Bellevue shall annually compensate the District for a share of the costs for replacing Water Joint Serving Facilities in accordance with the provisions of this Section. This compensation shall be paid by Bellevue during the time period beginning on the Assumption Date and ending on December 31, 2028, unless Bellevue continues to use the Water Joint Serving Facilities after that date in accordance with this Agreement. Cost recovery shall include two elements: 1) an annual depreciation expense, and 2) an annual rate of return on the Utility Plant Rate Base.

B. As of the Assumption Date Bellevue shall be considered to have fully compensated the District for its share of all Water Joint Serving Facilities constructed prior to the date of this Agreement. As such no capital cost recovery for use of these facilities shall be paid by Bellevue to the District.

C. After the date of this Agreement costs for projects to replace any Water Joint Serving Facility shall be determined by the District. Such costs shall include all expenses for designing, bidding, constructing, and inspecting the project. Bellevue shall have the opportunity to review and comment on any proposed project to replace any Water Joint Serving Facility. Bellevue shall be given the opportunity to review and comment on the

project scope and design. When each project is completed the cost for the project facility multiplied by Bellevue's proportionate share of capacity for the facility as delineated in Table 1 shall be added to a Utility Plant Rate Base. Costs for projects for which Bellevue pays a fair share of a special assessment for emergency maintenance, emergency repairs, or for major maintenance in accordance with this Agreement shall not be added to the Utility Plant Rate Base.

- D. A weighted average cost of capital will be computed for each project based upon the return on investment from District cash contributions, and the cost of each form of debt used to finance the project. Costs for any contributions made by developers, grants, or other contributions-in-aid-of construction (CIAC) shall be considered to have a 0% cost of capital. As additional projects are completed the applied rate of return shall be revised to reflect the weighted average cost of capital for the project combined with the existing costs of capital for all projects previously added to the Utility Plant Rate Base. The return on investment for District cash contributions shall be based upon the most current fiscal year-end State Investment Pool performance. A risk premium of 75 basis points (0.75%) will be added to the most current calculation of the weighted average cost of capital for all projects to establish the allowed rate of return (ROR) on Utility Plant Rate Base.
- E. An annual depreciation expense shall be calculated using a straight-line method for the assigned useful life of the facility with no salvage value for each project in the Utility Plant Rate Base. The cost basis for the depreciation expense shall be based upon the original cost for each project less any project costs attributable to any CIAC sources all multiplied by Bellevue's proportionate share of capacity for each facility as delineated in Table 1.
- F. For the purposes of this Agreement the assigned useful lives of new Water Joint Serving Facilities shall be:

Water Mains	75 years
Reservoirs	100 years
Boosters and Pump Stations	35 years
Master Meters	35 years
- G. Bellevue's total annual depreciation expense shall be the total of the annual depreciation expense for all projects in the Utility Plant Rate Base.
- H. The total Water Joint Serving Facilities Utility Plant Rate Base at any given time shall be the original costs for all projects added to the Utility Plant Rate Base less the accumulated depreciation for all projects in the Utility Plant Rate Base and less any portion of such rate base classified as CIAC.

- I. The total annual rate of return on the Utility Plant Rate Base shall be determined by multiplying the year-end total Utility Plant Rate Base times the allowed ROR.
- J. Bellevue's total annual compensation to the District for capital cost reimbursements shall be determined by adding the total annual depreciation expense to the annual ROR on the Utility Plant Rate Base. This annual compensation shall be paid by Bellevue to the District in twelve equal monthly installments.
- K. Prior to the Assumption Date Bellevue shall not be responsible for any compensation to the District for capital cost reimbursement, except as provided for in Section XI (B) and (C) and Section XIII (D).
- L. The District will have no restrictions on how it uses Bellevue capital cost reimbursements.
- M. All updates of the Utility Plant Rate Base and weighted average cost of capital shall be based on fiscal year ending financial subsidiary ledgers that record the capital costs, depreciation accounts, source of financing and amount of debt, and cost of capital for Water Joint Serving Facilities. These costs shall be reconcilable to District fiscal year-end financial statements.
- N. A theoretical example of how the capital cost reimbursement methodology would apply in this Agreement is described in Exhibit I.

XIII. WATER MASTER AND DIRECT READ METERS

A. Master Meter Service Area

Water flowing through the Water Joint Serving Facilities to Bellevue shall be measured by strategically placed Master Meters. These Master Meters shall be capable of measuring water flowing in both directions. The location and general description of each Master Meter site is shown on Exhibit E and the attached Water Master Meter Areas Schedule. Also shown on Exhibit E and its attachment are descriptions of other system improvements that are required as part of this Agreement. Master Meters are Water Joint Serving Facilities.

B. Master Meter Installation

The District shall engineer, specify, design, bid, construct, and install the Master Meters at Bellevue expense, subject to review and approval by Bellevue, which approval shall not be unreasonably withheld. Master Meters shall be designed, constructed, and operated in accordance with best industry practices and only to the extent and cost necessary to serve the purposes set forth in this Agreement. Construction of the Master Meters shall be completed no later than September 30, 2003.

C. Master Meter Ownership, Operation and Maintenance

Master Meters shall be owned, operated, and maintained by the District.

D. Payment for Master Meters

Bellevue shall pay costs for specifications, bidding, engineering, designing, constructing, and inspecting the Master Meters. The District shall invoice Bellevue for such costs on a regular basis, but no more frequently than monthly. Bellevue shall make full payment within 45 days of receipt of the District's actual invoice.

E. Master Meter Dispute Resolution

In the event a Master Meter fails to register any water service or does not register water service within the manufacturer's normal tolerances, the parties shall agree upon the length of meter malfunction. An appropriate adjustment shall then be made on the next monthly invoice based upon the estimated quantity of service delivered during such period of meter malfunction using the historical consumption for the malfunctioning meter during the preceding twelve (12) month period as the basis for estimating the quantity of service delivered.

XIV. WATER SUPPLY RESPONSIBILITY AND REPORTING

A. Water Supply

Each Party is responsible for acquiring and paying for the cost of water supplies to meet the needs of their own customers. At the time of the execution of this agreement both Parties purchase water supplies from the City of Seattle under separate contracts. Each Party reserves the right to change such wholesale water purchase arrangements.

B. Regional Water Delivery

1. Regional water providers will deliver water supplies to the District and Bellevue from a regional transmission system at points regulated by Inlet Meters.
2. The volume of water delivered through Inlet Meters shall be measured by the City of Seattle or its assignee.
3. The District and Bellevue shall be individually responsible for the purchase of all water delivered through an Inlet Meter used exclusively to serve the customers of only the District or Bellevue.

TOP

4. The responsibility for the purchase of water jointly delivered to both the District and Bellevue through an Inlet Meter shall be determined by the methodology provided for in Section XIV E.

C. Master Meter Reading

1. The District shall be responsible for reading the Master Meters on the same frequency and as close as possible to the time that the City of Seattle reads Inlet Meters.
2. For the Reporting Period, Bellevue shall be assigned the volume of water delivered by Master Meters through the following procedure: The District shall record the differences in the meter readings for each Master Meter during the Reporting Period, adding the volume from those Master Meters where there is a net flow from the District to Bellevue, and subtracting the volume from those Master Meters where there is a net flow from Bellevue to the District. This sum shall then be multiplied by 1.024 to account for supply-side losses.

D. Direct Read Meter Areas

1. The District and Bellevue shall be responsible for reading Direct Read Meters within their own service areas.
2. Each calendar year the water use from all Direct Read Meters within the District and Bellevue shall be totaled for the previous year. The net volume of water to be assigned to Bellevue from the Direct Read Meter Areas shall be the difference between the total water volume from the Direct Read Meters within Bellevue and the total water volume from the Direct Read Meters within the District the result of which shall be multiplied by 1.024 to account for supply-side losses. An additional 480 hundred cubic feet (ccf) yearly allowance shall be added to this net volume to reflect the net yearly unaccounted-for-water use by Bellevue. Through a procedure agreed to by both Parties, this total shall be adjusted by estimated volumes resulting from line failures or fire fighting.
3. The total water volume from the Direct Read Meter Area serving Bellevue shall be used in the following year for calculating water purchases from regional water providers. The total water volume for the calendar year calculated in the previous section will be prorated for each Reporting Period based upon historical yearly use patterns agreed to by the District and Bellevue.
4. Bellevue shall not allow any hydrant meter sales from hydrants located within the Direct Read Meter Areas.

TJP

E. Total Water Use

1. The total water volume assigned to Bellevue from Inlet Meters jointly serving the District and Bellevue shall be determined for each Reporting Period by adding the total net volume assigned to Bellevue from the Master Meters and the prorated volume assigned to Bellevue from the Direct Read Meter Area.
2. The total water volume to be assigned to the District from Inlet Meters jointly serving the District and Bellevue shall be the difference between the total amount of volume from Inlet Meters for the Reporting Period minus that water volume assigned to Bellevue for the same Reporting Period.
3. The District shall be responsible for reporting the water volumes assigned to Bellevue and to the District for the Reporting Period to regional water providers in a timely manner. At the same time the District will provide this information to Bellevue. Each Party is responsible for its own payment to its regional water provider for its assigned water volume.
4. In the future should an adjustment to volumes from Inlet Meters jointly serving the District and Bellevue be made by Seattle or the responsible regional water provider, the adjusted volume and responsibility for any payments or credits shall be assigned to the District.

XV. "OLD WATER" ALLOWANCE IN 1982 SEATTLE WATER PURVEYOR CONTRACT

The rights of both Parties under the 1982 Seattle Water Purveyor Contract include provisions for an "Old Water Allowance" that is used in determining the charges for purchased water. To the extent that there is any current or future benefit from "old water", one half (50.0%) of the District's "Old Water Allowance" shall be allocated to Bellevue as delineated in Table 2.

TABLE 2
"OLD WATER" ALLOCATION

Month	District Old Water Allowance (ccf)	Amount to be Allocated To Bellevue (ccf)
January	42,155	21,078
February	44,162	22,088
March	51,429	25,714
April	40,248	20,124
May	42,054	21,027

June	64,898	32,449
July	72,616	36,308
August	110,805	55,403
September	36,589	18,294
October	39,198	19,599
November	42,783	21,392
December	48,877	24,438
Total	635,814	317,907

Note: ccf – hundreds of cubic feet

XVI. SEWER SERVICE AREAS

- A. Exhibit No. G identifies a number of areas within Bellevue and the District where sewer flows from one Party's service area to the other's service area. Each Party agrees to continue to accept current and future sewer flows from the other Party for each of the identified areas at no cost to the other Party based on sewage flows generated under existing land use zoning. If future land use zoning changes are proposed within Areas I, II, and III on Exhibit G, and such zoning changes would result in increased sewage flows, then the Party in whose service area the land use change is being proposed must obtain written verification from the other Party that either 1) there is enough sewerage capacity to handle the increased sewer flow resulting from the proposed changed land use zoning, or 2) there will be improvements constructed as necessary to handle the increased flows. The Party where the increased sewer flows are generated shall be responsible for all reasonable costs associated with any improvements within the other Party's service area needed to accommodate the higher flows.
- B. The Parties agree that upon the Assumption Date, the District shall continue to have sole ownership and all operation and maintenance responsibilities, including all associated costs, for the Coal Creek Parkway Interceptor within Bellevue's limits as shown on Exhibit B. The District shall accept sewer flows from Bellevue to this line at no charge.
- C. Each Party shall be fully responsible for all operation, maintenance, repair, and replacement of their own sewer facilities. The actual ownership of sewer facilities is shown on attached Exhibit J.
- D. Each Party is responsible for its own contract with King County Metro for sewage transmission, treatment and disposal, including reporting and payments for their customers.

TD

XVII. TELEMETRY

Bellevue shall provide its own telemetry at its own cost for the water and sewer facilities within the Assumption Area. After January 1, 2003 the District shall allow Bellevue reasonable access to the District's sewer and water facilities in order to permit Bellevue to design and construct new Bellevue telemetry facilities. After Bellevue's new telemetry is in operation, which shall occur before the Assumption Date, the District may remove, at its own cost, its old telemetry currently located within the Assumption Area. The District shall notify Bellevue no later than June 1, 2004, as to which telemetry components it intends to remove and which will remain. The District shall remove those telemetry components it elects to retain no later than August 1, 2004. Bellevue shall thereafter own all other remaining telemetry components.

XVIII. EMPLOYEES

- A. Before the Assumption Date, the District shall not exceed its current number of employees (as measured by their full time equivalents) or, if additional hires are required, Bellevue shall have no obligation to offer to employ such new employees as of the Assumption Date. The District may refill vacant positions to maintain its August 1, 2001 level of employment.
- B. By June 30, 2003, the District shall determine what positions, if any, it shall no longer need as of the Assumption Date and shall provide Bellevue with a list of those positions, associated job duties, and incumbent names. Bellevue shall offer to employ the incumbent(s) if any. Employees hired by Bellevue shall have the option of retaining or cashing in all or part of their accrued sick leave in accordance with the District's policies. Any sick leave so cashed in shall be deducted from the employee's accrued sick leave at the time that employee is hired by Bellevue. After this deduction, the employee shall otherwise retain all sick leave standing to the employee's credit in the District's plan. Employees hired by Bellevue shall be entitled to vacation as provided in RCW 35.13A.090. Employees hired by Bellevue shall otherwise receive credit for their years of service with the District in determining vacation accrual, sick leave benefits, service awards and layoffs, provided that such benefits for those employees who shall be subject to contracts with Bellevue's labor unions shall be contingent upon union approval. Such employees hired by Bellevue shall also retain their retirement benefits as provided under the statewide Public Employees Retirement System (PERS). To the extent permitted by law and applicable Bellevue employee plan provisions, employees hired by Bellevue may transfer personal retirement accounts to Bellevue retirement plans. Bellevue shall incur no costs associated with the transfer of personal retirement accounts. Except as provided in this Agreement, any employees hired by Bellevue shall be treated as new employees under applicable Bellevue policies and procedures and/or union contracts.

XIX. COSTS TO IMPLEMENT ASSUMPTION

Except as otherwise provided in this Agreement, each Party agrees to bear solely its respective costs of consultant, legal, and staff services incurred in connection with this Agreement.

XX. CUSTOMER BILLING

The District shall read all meters in the Assumption Area and prepare a final billing before the Assumption Date. The District shall be solely responsible for the collection of these receivables.

After the Assumption Date, Bellevue shall be responsible for billing customers located within the Assumption Area and the District shall be responsible for billing customers within the District's modified boundaries.

The District shall provide copies of customer records for customers in the Assumption Area, including water meter readings for 2001, 2002 and through September 1, 2003, to Bellevue by September 30, 2003. The balance of the billing records for the time period September 2, 2003, through the Assumption Date shall be provided to Bellevue not later than February 1, 2004. Bellevue shall promptly pay all reasonable costs for copying such customer records.

XXI. RECORDS

The District shall retain the original records for all business matters relating to the Assumption Area but shall make those records available to Bellevue for review and copying, as needed. Bellevue shall promptly pay all reasonable costs for copying any records it requests.

XXII. INDEMNITY AND INSURANCE

A. Additional Insured

If permitted by the terms of its insurance policies, the District agrees to name Bellevue as an additional insured during the Interim Period for all matters relating to the Assumption Area. If there are any additional premiums payable as a result of naming Bellevue as an additional insured, Bellevue shall pay any such additional premiums to the District within 45 days of the receipt of an invoice for such premiums.

B. Third Party Insurance

The District shall require any contractors or subcontractors performing work in the Assumption Area during the Interim Period to name Bellevue as an additional insured for all matters relating to the Assumption Area.

C. Non-Waiver of Other Rights or Remedies

Except as expressly provided by any indemnity provision in this Agreement, nothing in this Agreement is intended to release, waive, or otherwise modify or limit any party's right to assert any claim in law or equity against the other party arising from any act, error, or omission of that party or its officials, officers, employees, agents, representatives, contractors, or subcontractors, when acting within such designated capacity.

XXIII. DISPUTE RESOLUTION

Disputes between the Parties arising out of this Agreement or its on-going implementation shall be identified in writing and submitted to the District Manager and Bellevue's Director of Utilities who shall undertake a joint resolution process. Authorized, written agreement between the District Manager and Bellevue's Director of Utilities may be submitted to the District's Board of Commissioners and Bellevue Council for consideration. Matters that are not resolved by the Manager and Director may be submitted to mediation with the agreement of both Parties.

XXIV. NOTICE AND COMMUNICATIONS

Notice to the Parties shall be submitted to the following:

Director of Utilities
City of Bellevue
311 - 116th Avenue SE
P.O. Box 90012
Bellevue, WA 98009-9012

District Manager
Coal Creek Utility District
6801 - 132nd Place SE
Newcastle, WA 98059

XXV. REVIEW BY OTHER AGENCIES

This Agreement shall not be effective until reviewed and approved by the City of Seattle, King County (Metro), and the Washington State Department of Health. Once approved by these agencies the effective date of this Agreement shall be considered the date of execution by the last Party to sign. Should any agency decline to approve the Agreement because it does not have the authority or responsibility to approve such agreements (as opposed to declining to approve this Agreement because it is deficient or unacceptable), such agency's action in declining to review or approve the Agreement shall be considered approval for the purposes of this paragraph. The failure of any

agency to comment on this Agreement within 90 days of its submittal to that agency shall constitute approval under this paragraph. If the Parties later receive adverse comments from an agency, the parties shall work cooperatively to try to address and meet the concerns of that agency.

XXVI. EXECUTION OF DOCUMENTS

The Parties agree to execute promptly all documents necessary to implement the terms of this Agreement or to effect its purposes.

CITY OF BELLEVUE

By  _____
City Manager

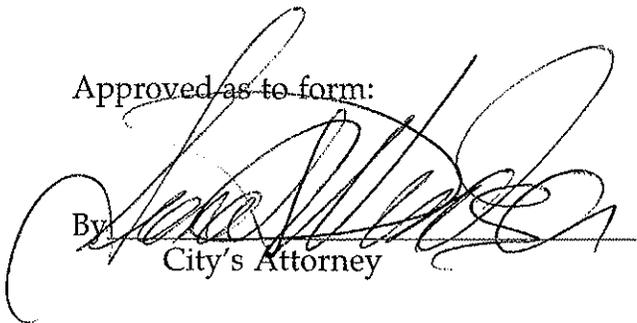
Date signed: May 23, 2002.

COAL CREEK UTILITY DISTRICT

By  _____
District Manager

Date signed: ~~June~~ 3
~~May~~ _____, 2002.

Approved as to form:

 _____
City's Attorney

Approved as to form:

 _____
District's Attorney

TP



Service Area Boundaries after Assumption

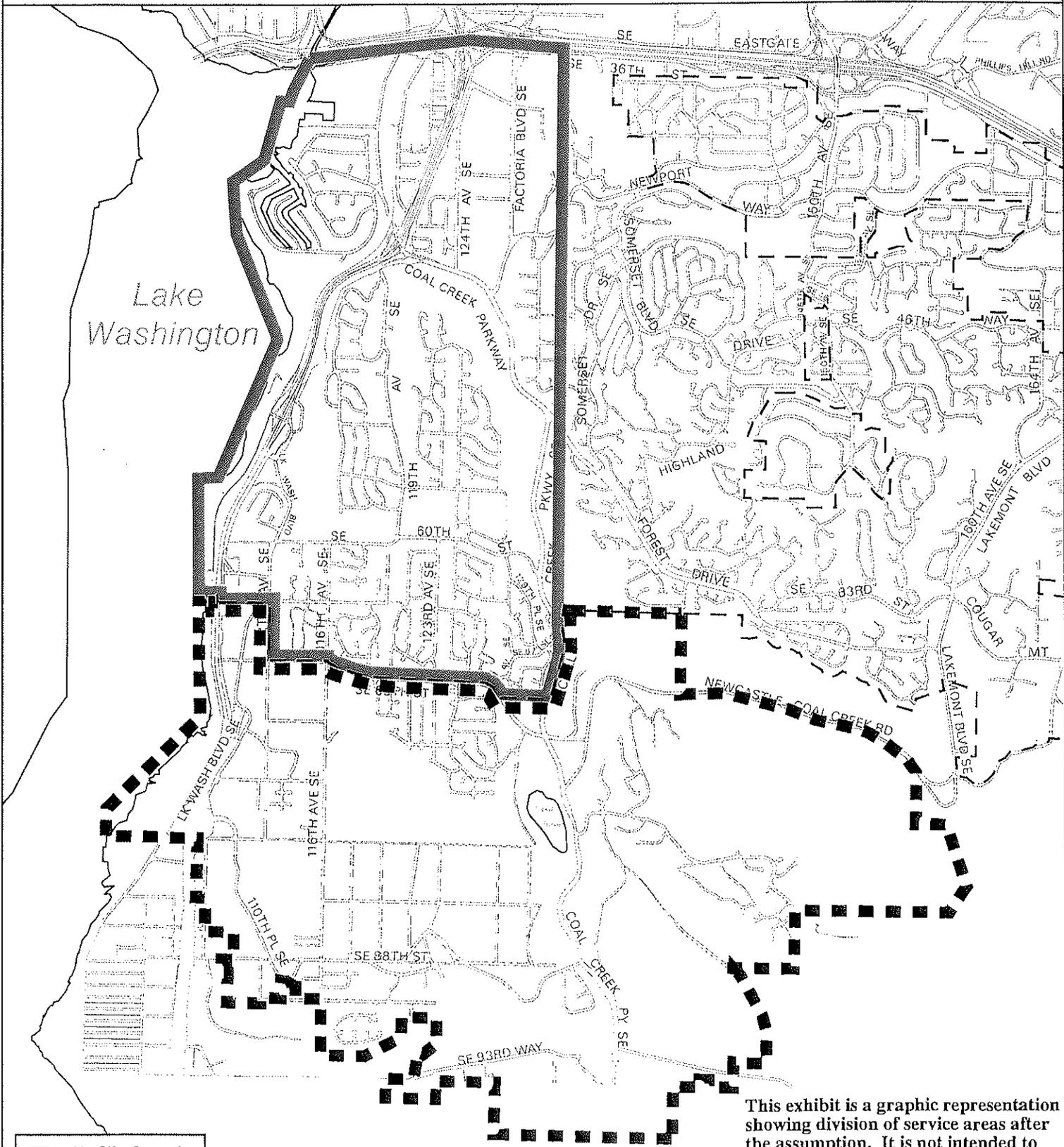


Exhibit A

This exhibit is a graphic representation showing division of service areas after the assumption. It is not intended to represent the legal service areas of Bellevue or CCUD.

Scale: 1 inch = 3000 feet
 Utilities Department
 Engineering Division
 Systems Planning and Mapping
 May 01, 2002
 v:\tup\ta\ccud_a.xml

Legend

-  Coal Creek Utility District Service Areas
-  Bellevue Service Areas
-  Bellevue City Limit

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 data 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

City of Bellevue-Coal Creek Utility District Common Service Boundary Line **Boundary Line Description**

A line lying within Sections 20, 27, 28 and 29, Township 24 North, Range 5 East, W.M., in King County, Washington, described as follows:

Beginning at the Northeast corner of the Northwest quarter of said Section 27; thence Westerly along the North line thereof to the Northwest corner of said Northwest quarter; thence Southerly along the West line thereof to the Easterly margin of Coal Creek Parkway S.E.; thence Southerly along said Easterly margin to the South line of the North half of the Southeast quarter of the Northeast quarter of said Section 28; thence Westerly along said South line to the Northerly margin of S.E. 69th Street; thence Northwesterly and Westerly along said Northerly margin to the South line of the Northwest quarter of the Northwest quarter of said Section 28; thence Westerly along said South line to the East margin of 116th Avenue S.E.; thence Northerly along said East margin to the Easterly extension of the North margin of S.E. 68th Street; thence Westerly along said Easterly extension and North margin to the East margin of 112th Avenue S.E.; thence Northerly along said East margin to the South line of the North 30.00 feet of the Northeast quarter of said Section 29; thence Westerly along said South line to the Centerline of Right of Way, as shown on the S.R. 405(Primary State Highway No. 1), Kennydale North, sheet 3A of 4, dated July 17, 1951; thence Northerly along said centerline to the Easterly extension of the North line of Lot 35, Block A, C.D. Hillman's Lake Washington Garden of Eden Addition to Seattle Division No. 3, as recorded in Volume 11 of Plats, Page 81; thence Westerly along said Easterly extension to the Northeast corner of said Lot 35; thence continuing Westerly along the North line thereof and the Westerly extension of said North line to the Inner Harbor Line of the East shoreline of Lake Washington, as shown on sheet 30 of the State of Washington Commissioner of Public Lands, Maps of Lake Washington Shore Lands, filed in the office of the Commissioner of Public Lands, September 19, 1921 and the **Terminus of said Line.**

01182.DOC
MN/11-28-2001

TP



SCALE=1"=1200'

LEGEND

1

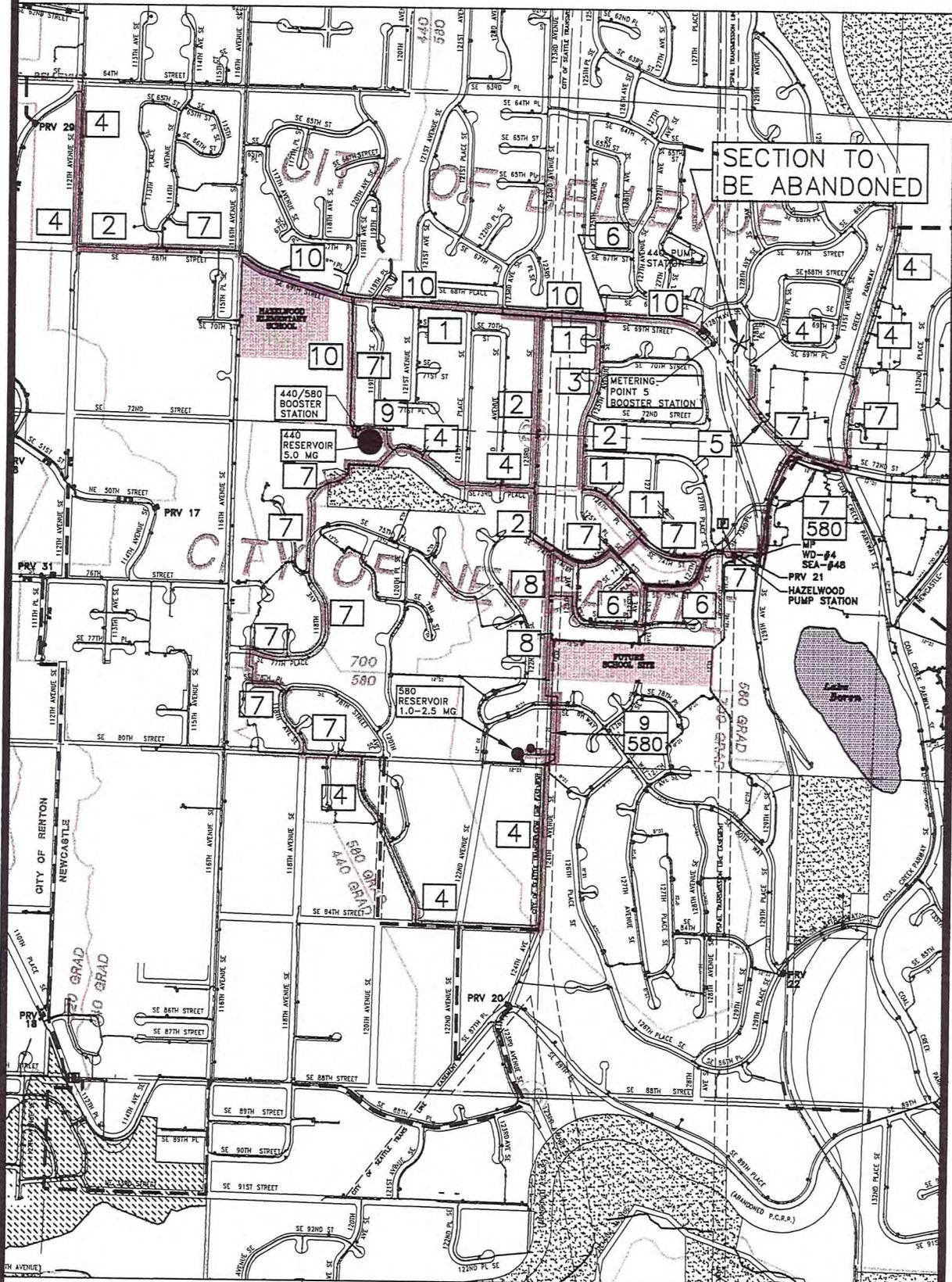
PIPELINE W/ REFERENCE NO. REQUIRED TO BE 'JOINT SERVING' FACILITIES

440 RESERVOIR 5.0 MG

FACILITIES REQUIRED TO BE 'JOINT SERVING' FACILITIES

7
580

REFERENCE NO. W/ ZONE



Penhallegon Associates Consulting Engineers, Inc.

COAL CREEK UTILITY DISTRICT & CITY OF BELLEVUE WATER JOINT SERVING FACILITIES

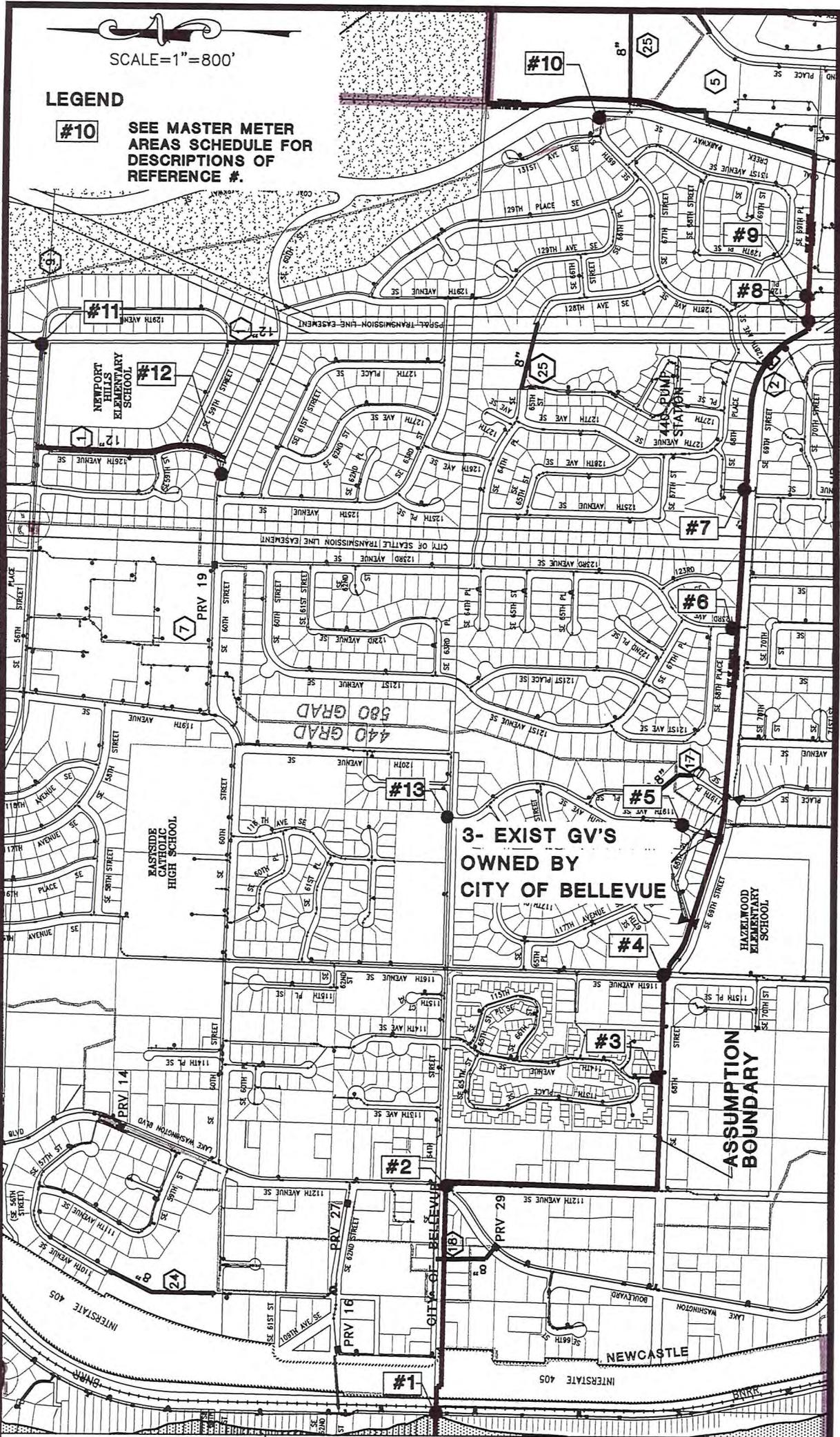
EXHIBIT C

TOP

SCALE=1"=800'

LEGEND

#10 SEE MASTER METER AREAS SCHEDULE FOR DESCRIPTIONS OF REFERENCE #.



3- EXIST GV'S OWNED BY CITY OF BELLEVUE

ASSUMPTION BOUNDARY



Fenhalog Associates Consulting Engineers, Inc.

COAL CREEK UTILITY DISTRICT & CITY OF BELLEVUE WATER MASTER METER DESCRIPTION

EXHIBIT E

Handwritten initials 'TP' in the bottom right corner.

WATER MASTER METER AREAS
SCHEDULE

The following provides an itemized description of the reference numbers shown on Exhibit E - Master Meter Areas

Reference #	Description of Item
#1	A two-directional Master Meter 6± inch in size located at or near the City of Bellevue Corporate limits on Hazelwood Lane within the District's 170 Zone water system.
#2	A two-directional meter or a one (Bellevue-to-District) directional emergency flow connect near the intersection of 112 th Ave SE and SE 64 th St.
#3	A two-directional meter approximately 8-inch in size located on 114 th Avenue SE near SE 68 th St.
#4	A closed valve to be owned and maintained by Bellevue and only opened under emergency situations. An existing valve on 116 th Ave SE near SE 68th/69th intersection shall be used for this purpose.
#5	A two-directional meter approximately 8 inch in size on 119 th Ave SE just north of SE 68 th Place.
#6	A two-directional meter approximately 8 inch in size on 123 rd Ave SE just north of SE 69 th Street.
#7	A two-directional meter approximately 8 inch in size to be located on SE 72 nd St at 125 th Ave SE.
#8	Close and abandon a 10-inch cast iron/12-inch A.C. main on SE 69 th St. and extending north to 128 th Pl. SE. Relocate existing services and fire hydrant as required.
#9	A two-directional meter approximately 8 inch in size at the Bellevue/Newcastle Corporate limits and the extension of 128 th Pl SE.
#10	Two 1-inch, one-directional service meters (one recording flow in each direction). This two-way connection is for the purpose of eliminating a dead end main. A main line 8-inch valve will be cut in at this location to isolate the Bellevue/District system. At such time as the District's main on Coal Creek Parkway is extended and looped to other District facilities, this meter cluster may be abandoned.

70

#11	<p>An emergency Inlet Meter located at approximately SE 56th St and the East Side Supply Line (ESSL approximately 128th Ave SE). This connection will be designed as a pressure sustaining valve and will only open or pass water from the ESSL under emergency or fire flow conditions. This Inlet Meter shall be telemetered and the following shall be provided to the District so the District can monitor the use of this Inlet:</p> <ul style="list-style-type: none"> • Notice/alarm any time the inlet is used • Pressure/head at this location • Flow monitoring of the meter at this location
#12	<p>Upsize an existing 6-inch main to 12-inch main approximately 200± feet in length on SE 60th St between 125th Ave SE and 126th Ave SE. Note this replacement to be accomplished by Bellevue and Bellevue agrees to have the improvement completed by 7/01/2004.</p>
#13	<p>Three (3) valves on SE 69th St to be left normally open, shall be owned and maintained by Bellevue. The water main extending north of these valves is also owned and maintained by Bellevue.</p>

TP

Direct Read Meter Areas



Exhibit F

-  Bellevue Water Customers
-  Coal Creek Utility District Water Customers
-  Bellevue City Limits

Utilities Department
Engineering Division
Systems Planning and Mapping
May 1, 2002



Scale: 1 inch = 800 feet

Sewer Service Areas

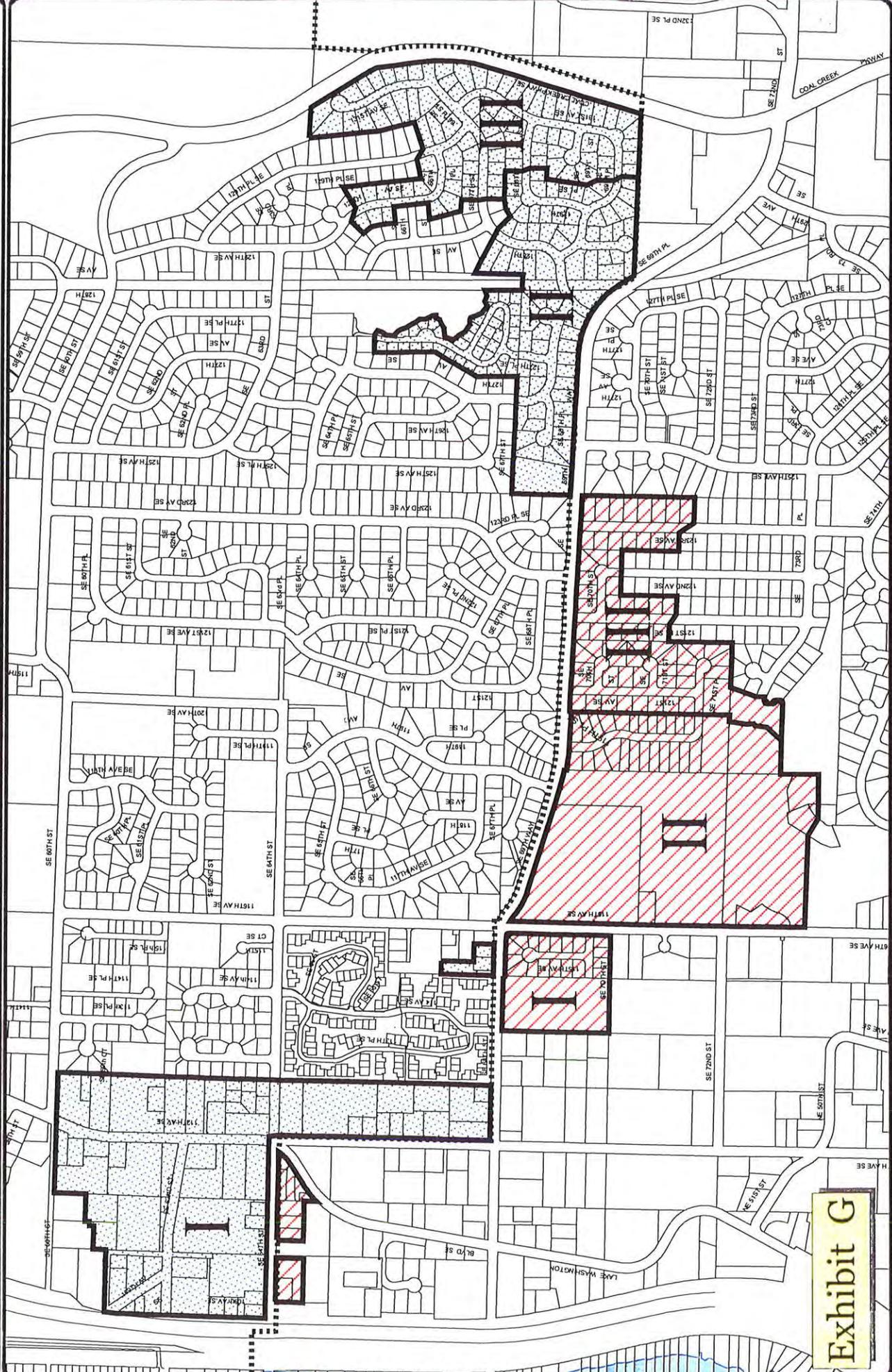


Exhibit G



-  Bellevue Sewer Service Areas Served by Coal Creek Utility District (CCUD) Facilities
-  CCUD Sewer Service Areas Served by Bellevue Facilities
-  Bellevue City Limits

Utilities Department
 Engineering Division
 Systems Planning and Mapping
 May 1, 2002

EXHIBIT H

H.1. Methodology to Determine the Operation and Maintenance (O&M) Component of the Wheeling Charge for Joint Serving Facilities

Information Required:

1. Financial Statement Worksheet
2. Facilities Inventory
3. Appendix B of the Water and Sewer Rate Study dated 6 June 2001

Assumptions:

1. Until the Financial Statement Worksheet for 2004 is available (approximately May 2004), the O&M component will be determined by using the financial and facilities data for the District prior to assumption by Bellevue. After the Financial Statement Worksheet for 2004 is available, the O&M component will be determined by using the financial and facilities data for the District after the assumption. The example provided in Exhibit D.2 is based on financial and facilities data for 2000 (i.e., prior to assumption by Bellevue).
2. Number and size of master meters.
3. The quantity of water pumped by the District for use by Bellevue is 42 percent of the total water pumped by the District

Step 1. Allocate O&M Costs to Utility Activities

Prior to the availability of the Financial Statement Worksheet for 2004, the allocation of O&M costs shown in the general ledger accounts (Financial Statement Worksheet) to the water and sewer utilities is based on Appendix B of the Water and Sewer Rate Study dated 6 June 2001. After the availability of the Financial Statement Worksheet for 2004, the allocation factors must be adjusted to reflect the assumption by Bellevue. O&M costs for the stormwater utility are entirely included in general ledger accounts 510-000 and 515-000.

Step 2. Allocate Water Utility O&M and Customer-Related G&A Costs into Functional Categories

The functional categories and the general ledger accounts applicable to each category are shown in Table H.1-1. The O&M cost of telemetry is allocated based on a 50 percent allocation each to the water and sewer utility and the number of telemetered points in each functional category of the water utility. Please note that the functional category for hydrants and the general ledger account for water purchases will not be applicable for allocation to Bellevue after the assumption and the other functional categories must be adjusted to reflect the facilities assumed by Bellevue.

Step 3. Allocate the O&M and Customer-Related G&A Costs of the Functional Categories of the Water Utility to Bellevue

Based on the allocation criteria shown in Table H.1-2, the O&M and customer-related G&A costs of each functional category will be allocated to Bellevue. Please note that the allocation methodology differs prior to and after the Financial Statement Worksheet for 2004.

Step 4. Review and Compute G&A Multiplier

The G&A accounts, excluding customer-related G&A expenses will be reviewed for applicability and total G&A expenses adjusted. Inapplicable expenses include excise taxes, which will be discussed in Step 6, and surface water taxes. It should be noted that the Financial Statement Worksheets prior to fiscal year 2001 included both capital and O&M related expenses.

Beginning in 2001 these costs will be separated and only O&M costs will be used for allocation purposes. In addition, if legal or engineering expenses are anomalous, they will be normalized. The customer-related G&A expenses are included as a functional category in Step 3. The G&A multiplier is based on the ratio of the total adjusted G&A expenses (excluding customer-related G&A expenses) to the total O&M expenses (plus customer-related G&A expenses), including the water, sewer, and stormwater utilities. Prior to the Financial Statement Worksheet for 2004, the G&A and O&M expenses will include the costs of the District's service area and the service area to be assumed by Bellevue. After the Financial Statement Worksheet for 2004, the G&A and O&M expenses will include only the costs of the District's service area. The District's current general ledger accounts for G&A expenses are shown in Table H.1-3.

Step 5. Determine Bellevue's Monthly Installment Payment

The sum of the O&M and customer-related G&A costs computed in Step 3 is Bellevue's allocated direct costs (i.e., excluding G&A multiplier and excise taxes) of the wheeling charges for the joint serving facilities. Bellevue's monthly installment payment for allocated direct costs is determined by dividing the total annual charge by twelve (12).

Step 6. Apply the G&A Multiplier and Excise Tax and Determine the Total Monthly Installment Payment

Based on the result of Step 5, the total allocated costs will be multiplied by one (1) plus the G&A multiplier determined in Step 4. There appears to be a deduction in computing excise taxes available to the District under RCW 82.16.050. If excise taxes were required, the applicable rate would be applied to the total. This total and any applicable excise tax will constitute the monthly Installment Payment by Bellevue to the District.

TO

H.2. Example of Calculation for the Operation and Maintenance (O&M) Component of the Wheeling Charge for Joint Serving Facilities

Basis of Information:

1. 2000 Financial Statement Worksheet
2. 2000 Facilities Inventory
3. Appendix B of the Water and Sewer Rate Study dated 6 June 2001
4. District report titled "Service Type and Meter Size Totals for Active Customers as of 2 Jan 2001"
5. 2000 metered water consumption data by route for Newcastle and Bellevue

Key Assumptions:

1. Financial and facilities information for 2000 was used to complete the example calculation.
2. It is assumed that there will be 7 master meters (6 – 8 inch meters and 1 – 6 inch meter).
3. The quantity of water pumped by the District for use by Bellevue is 42 percent of the total water pumped by the District.
4. It is assumed that Seattle Public Utilities (SPU) will bill the District directly for meter charges associated with metering point 5.

Step 1. Allocate O&M Costs to Utility Activities

See Table H.2-1.

Step 2. Allocate Water Utility O&M and Customer-Related G&A Costs into Functional Categories

See Table H.2-2, Columns B and C.

Step 3. Allocate the O&M and Customer-Related G&A Costs of the Functional Categories of the Water Utility to Bellevue

As shown in Table H.2-2, the O&M and customer-related G&A costs of each functional category are allocated to Bellevue based on the "Prior to 2004 FSW" allocation criteria shown in Table H.1-2. Additional information (not included in Table H.1-2) pertaining to the allocation of costs is summarized below.

Water Charges

Seattle Meter Charges: Expenses include meter charges paid to SPU for each meter to the District. The District currently has 10 meters of which meters 6, 7, 8, 9, 10 and 11 will be assumed by Bellevue. Metering point 1 will remain with the District. Metering point 5 will be shared by the District and Bellevue. Metering point 2 has been disconnected and metering point 4 is an emergency connection.

Only Bellevue's proportionate share of metering point 5 expenses were allocated to Bellevue. The allocation is based on Bellevue's proportionate share, 40 percent, of the total water pumped by the District from metering point 5. The quantity of water pumped to Bellevue was determined by a review of metered consumption data by route for Newcastle and Bellevue for 2000. The annual meter charge for 2000 was provided by District staff. The cost allocation calculation is shown below.

$$\$5,280 \text{ (annual meter charge)} \times 0.40 = \$2,112.00$$

TP

Reservoirs

Water - Maintenance of Distribution Reservoirs: Allocation of expenses to Bellevue is based on Bellevue's proportion of reservoir capacity of joint serving facilities and reservoir capacity assumed by Bellevue to total reservoir capacity, including reservoir capacity assumed by Bellevue. Reservoir capacities were obtained from Table 1-8 of the Engineering Evaluation of the City of Bellevue's Proposed Partial Assumption of Coal Creek Utility District. Bellevue's proportionate share of serving facilities (440 and 580 reservoirs) were taken from Table 1 of the Draft Interlocal Agreement for a Partial Assumption dated 3 December 2001. The calculation of the cost allocation is shown below.

Total reservoir capacity = 16 million gallons (MG)

Reservoir and Capacity	City's Proportionate Share of Capacity	City's Share of Capacity in MG
Factoria Reservoir – 3.0 MG	100%	3.0 MG
440 Reservoir – 5.0 MG	33.06%	1.653 MG
580 Reservoir – 1.0 MG	39.93%	0.3993 MG
580 Reservoir – 2.5 MG	39.93%	<u>0.99825</u>
Total City Capacity		6.05055 MG

$$6.05055 + 16 \text{ MG} = 0.37816$$

$$\$40,380.44 \times 0.37816 = \$ 15,270.27$$

Pumping

Allocation of costs to Bellevue is based on Bellevue's proportionate share, 42 percent, of the total water pumped by the District. The quantity of water pumped to Bellevue was determined by a review of metered consumption data by route for Newcastle and Bellevue for 2000. The cost allocation calculation is shown below.

$$\$69,249.03 \text{ (Total Water Pumping Costs, excluding Telemetry)} \times 0.42 = \$29,084.59$$

Transmission and Distribution

Allocation of expenses to Bellevue is based on Bellevue's proportion of capacity allocation of joint serving facilities applied to diameter inch – linear feet of joint serving facilities to total diameter inch – linear feet of pipelines including District pipelines and pipelines to be assumed by Bellevue. The total linear feet of pipe-by-pipe size was provided by PACE. It should be noted that 2,838 linear feet of miscellaneous pipe was assumed to be 6 inch in diameter. The linear feet of pipe was then converted to diameter inch – linear feet. Bellevue's proportionate share of pipeline serving facilities was obtained from Table 1 of the Draft Interlocal Agreement for a Partial Assumption, dated 3 December 2001. Again the linear feet of pipe was converted to diameter inch – linear feet. The cost allocation calculation is shown below.

$$\text{Total diameter inch – linear feet of pipelines} = 4,813,770$$

TP

City's proportion of capacity allocation of joint serving facilities to diameter inch – linear feet of pipelines = 159,369

$$159,369 \div 4,813,770 = 0.03311$$

$$\$111,620.55 \text{ (Total Transmission and Distribution Costs)} \times 0.03311 = \$3,695.76$$

Meters and Service Lines

Allocation of expenses to Bellevue is based on diameter inch – meters of master meters to total diameter inch – meters, including District meters and meters to be assumed by Bellevue. The total number of meters by size for 2000 was obtained from Table 2-4 of the Water and Sewer Rate Study, dated 6 June 2001. The total number of meters was then converted to diameter inch - meters. It is assumed that there will be 7 master meters (6 – 8 inch meters and 1 – 6 inch meter). The master meters were then converted to diameter inch –meter. The cost allocation calculation is shown below.

$$\text{Total meters in diameter inch –meters} = 5,401$$

$$\text{Total master meters in diameter inch – meters} = 54$$

$$54 \div 5,401 = 0.01$$

$$\$124,138.31 \text{ (Total Meters and Service Line Costs)} \times 0.01 = \$1,241.38$$

General O&M

Allocation of expenses to Bellevue is based on Bellevue's proportion of direct O&M costs to total O&M costs for the District and Bellevue service areas. The calculation of the cost allocation is shown below.

(Total General O&M ÷ (Total Water Charges + Total Reservoirs + Total Pumping + Total Trans. & Dist. + Total Meters and Service Lines + Total Hydrants)) x (Total Water Charges + Total Reservoirs + Total Pumping + Total Trans. & Dist. + Total Meters and Service Lines + Total Hydrants) = City Allocation of Total General O&M

$$(\$182,660.39 \div \$1,638,104.15) \times \$54,415.06 = \$6,067.67$$

Customer-Related G&A

For General Ledger (GL) accounts 660-000 Operation Supervision and 903-000 Payroll-Office Salaries, customer-related G&A expenses were calculated based on an analysis of activities performed by the District's customer support people on a person-by-person basis. Customer –related expenses for GL accounts 408-200 Payroll Taxes, 926-000 Employee Pension & Insurance and 926-100 Employee Benefits-Vacation, Sick and Holiday is proportional to GL accounts 660-000 and 903-000. Customer-related expenses for GL account 921-000 Office Supplies and Other Expenses is based are review of annual expenditures and considers the number of customers to be assumed by Bellevue. Total customer-related costs of \$171,472.57 were then adjusted from the District's Administrative and General Expenses (which originally totaled \$1,633,642.49) included in Table H.2-3.

Allocation of customer-related G&A expenses to Bellevue is based on the number of master meter accounts to the total number of water and sewer accounts, including District accounts and accounts to be assumed by Bellevue. The total number of accounts for 2000 was obtained from

TO

District report titled "Service Type and Meter Size Totals for Active Customers as of 2 Jan 2001". It is assumed that there will be 7 master meter accounts. The cost allocation calculation is shown below.

Total number of water accounts = 6,450

Total number of sewer accounts = 4,474

Total number of master meter accounts = 7

$7 \div 10,931 = 0.00064$

$\$171,472.56$ (Total Customer Related G&A Costs) $\times 0.00064 = \$109.74$

Telemetry

The allocation of telemetry O&M costs to each functional category was described in Step 2. Allocation of expenses to Bellevue is based on Bellevue's proportionate share of telemetered facilities to be shared and assumed. Bellevue's proportionate share of joint serving facilities was obtained from Table 1 of the Draft Interlocal Agreement for a Partial Assumption, dated 3 December 2001. It is assumed that Bellevue will assume 100 percent of the Factoria reservoir and pump station. Bellevue's proportionate share of metering station 5 is based on Bellevue's share of the total water pumped by the District from metering station 5. The following summarizes Bellevue's proportionate share of the telemetered points in each functional category and calculates the cost allocation.

Reservoirs	Fraction of Telemetered Facilities	City's Proportionate Share of Capacity	City's Share
Factoria	—	100%	0.5
440 Reservoir	1/3	33.06%	0.1102
580 Reservoirs	1	39.93%	0.3993
700 Reservoir	—	0%	<u>0.0</u>
Total			1.0095

$1.0095 \div 8$ (total number of water telemetry points) = 0.12619

$\$4,897.50$ (Total Reservoir Telemetry Costs) $\times 0.12619 = \$618.02$

TP

Pump Stations	Fraction of Telemetered Facilities	City's Proportionate Share of Capacity	City's Share
Factoria	—	100%	0.5
440 BS	1/3	33.06%	0.1102
440/580 BS	1/3	33.06%	0.1102
Hazelwood	1	0%	0.0
Rainier Crest	—	0%	<u>0.0</u>
Total			0.7204

$0.7204 \div 8$ (total number of water telemetry points) = 0.09005

$\$5,597.14$ (Total Pumping Telemetry Costs) \times 0.09005 = $\$504.02$

Metering Stations	Fraction of Telemetered Facilities	City's Proportionate Share of Capacity	City's Share
5	1	40%	0.4
8	1	100%	1.0
11	1	100%	<u>1.0</u>
Total			2.4

$2.4 \div 8$ (total number of water telemetry points) = 0.3

$\$6,296.78$ (Total Metering Station Telemetry Costs) \times 0.3 = $\$1,889.03$

Step 4. Review and Compute G&A Multiplier

The G&A multiplier is based on the ratio of the total adjusted G&A expenses, excluding customer-related G&A expenses (see Table H.2-3) to the total O&M expenses, plus customer-related G&A expenses (See Tables H.2-1 column G and Table H.2-2 column C) including water, sewer and stormwater utilities. The calculation for the G&A multiplier is shown below.

$\$1,462,169.93 \div (\$3,398,503.55 + \$171,472.56) = 0.40957$

Step 5. Determine Bellevue's Monthly Installment Payment

The sum of the O&M and customer-related G&A costs computed in Step 3 is Bellevue's allocated direct costs (i.e., excluding G&A multiplier and excise taxes) of the wheeling charges for the joint serving facilities. Bellevue's monthly installment payment for allocated direct costs is determined by dividing the total annual charge by twelve (12). Bellevue's monthly installment payment is calculated below.

$\$60,592.49 \div 12 = \$5,049.37$

TOP

Step 6. Apply the G&A Multiplier and Excise Tax and Determine the Total Monthly Installment Payment

Based on the result of Step 5, the allocated direct costs are multiplied by one (1) plus the G&A multiplier determined in Step 4.

$$\$5,049.37 \times 1.40957 = \$7,117.44$$

There appears to be a deduction in computing excise taxes available to the District under RCW 82.16.050. If excise taxes were required, the applicable rate would be applied to the total. The current water excise tax rate is 0.05020. The total and applicable excise tax will constitute the monthly Installment Payment by Bellevue to the District.

Summary of Example Results

Based on the example presented in Exhibit H.2., the G&A multiplier is 40.957 percent of Bellevue's allocation of the District's operating expenses (column D of Table H.2-2). The sum of G&A costs and Bellevue's allocation of the District's operating expenses would be divided into twelve equal monthly payments.

10



Technical Memorandum

City of Bellevue – Matter 229.4

February 5, 2002

Page - 1

To: Lloyd Warren, Brad Miyake, and Siona Windsor - City of Bellevue
Tom Peadon - CCUD
Blair Burroughs, Attorney at Law
Marty Penhallegon - PACE Engineers
Lynn M. Takaichi, P.E. - Kennedy/Jenks Consultants

From: David W. Findlay, Principal - Financial Consulting Solutions Group, Inc.

Subject: Agreed Upon Capital Cost Reimbursement Methodology - Water Joint Serving Facilities

Purpose:

This memorandum describes and illustrates the final agreed upon method of calculating the Water Joint Serving Facilities Capital Cost Reimbursement as defined under Section XI of the Interlocal Agreement. This methodology was presented in draft to the negotiating committee members as Technical Memorandum(s) dated November 19th. and 26th., and discussed during several negotiating sessions. Here-in-after, we refer to the final method as the "Capital Cost Reimbursement" method.

Discussion:

The Coal Creek Utility District (District) will use the Capital Cost Reimbursement (CCR) method described in this memorandum to charge the City of Bellevue (COB) for use of District owned Water Joint Serving Facilities (WJSF) to obtain water supply that the COB purchases from a regional water supplier such as the Cascade Water Alliance or the Seattle Public Utilities. The CCR will consist of two capital elements:

- Return "Of" Element – the annual return of investment in Rate Base, defined here-in-after as "depreciation expense" only for the City of Bellevue's capacity share of the WJSF replaced, upgraded or otherwise improved by the District after the assumption; and
- Return "On" Element – the annual return on investment in Utility Plant Rate Base, defined here-in-after as the rate of return (ROR).

The CCR as provided for in the IA will be an entirely separate cost reimbursement mechanism from the WJSF wheeling charge (the charge to recover District O&M and G&A costs). Therefore the annual depreciation expense included the CCR is not a cost to be included in the agreed upon method of calculating the wheeling charge.

The term WJSF Utility Plant Rate Base is defined in the IA as the original cost or fully capitalized costs of the replacement or improvement for a WJSF less accumulated depreciation less total contributions-in-aid of construction (CIAC). There is agreement in the IA that the District will be fully compensated for all existing WJSF at the time of the assumption (12-31-03). This will be accomplished by COB payment of its prorata share of all outstanding revenue bonds, and 28.3% of Public Works Trust Fund loans as of the date



Technical Memorandum

City of Bellevue – Matter 229.4

February 5, 2002

Page - 2

of the assumption Settlement Agreement (SA). The remainder of the City's interest in the District's existing book value in the joint serving facilities will have been or be recovered by the District from all ratepayers, GFC's, LFC's and perhaps donated facilities. Thus this option assumes that both parties agree that the beginning Utility Plant Rate Base value is zero. In other words, the COB share in the initial and current value of the WJSF as of the execution date of the Interlocal Agreement is considered as totally contributed to the District and therefore will be classified as CIAC. If the District finances the replacement, improvement or upgrade of any of the WJSF between the date of the Interlocal Agreement and December 31, 2003, then the full capital costs of the project(s) will be added to the WJSF Utility Plant Rate Base.

Therefore, the value of the WJSF Utility Plant Rate Base used to calculate the CCR will be dependent on the District fully financing, constructing, and owning the replacement, improvement or upgrades to the facilities listed in Table 1.

To illustrate, assume that the District invests a total of \$1,300,000 in the replacement of WJSF 6-inch and 8-inch AC mains. Then the additions to the WJSF Utility Plant Rate Base for calculating the annual CCR would begin at \$1,300,000. For this illustration, assume that for the two new projects, the City of Bellevue's share would be 39.93%, or \$519,090. The actual COB share of each project shall be determined from Table 1, and will differ. For example, there is a 12" Asbestos Cement pipe joint serving facility with the Bellevue share set at 50%. The WJSF Utility Plant Rate Base starting at \$1,300,000 would then be reduced each year thereafter by the accumulated increments of annual depreciation expense applied to COB's cumulative share of WJSF that make up the total Utility Plant Rate Base.

The CCR method does not contemplate the COB paying up front a share of any capital expenditure for joint serving facilities during the 25 to 30 year timeframe of the agreement. However there is the mutually agreed upon exception as provided for in the Interlocal Agreement that the City will pay its cost share up front for major maintenance, emergency maintenance and emergency repair activities. Since COB has agreed to pay such costs, then those costs will not be added into the WJSF Utility Plant Rate Base. If the costs are for any reason (such as accounting procedure) added to the original Utility Plant cost, they will also be treated as CIAC and deducted to arrive at the WJSF Utility Plant Rate Base.

The CCR contemplates that the District will recover the annual depreciation expense calculated for the total COB share of assets recorded in the WJSF Utility Plant Rate Base. The District will also charge a Rate of Return on the COB share of the WJSF Utility Plant Rate Base (total COB cost share less accumulated depreciation and if applicable any money paid up front by COB toward replacement).

The annual depreciation expense will be based on the agreed upon useful life for each class of newly replace or improved WJSF as defined in the Interlocal Agreement. The total WJSF accumulated depreciation will be an aggregation that reflects the current and historical depreciation expense for each facility that the District makes a capital investment after the assumption. For example, if the useful life of the new mains example is 75 years



Technical Memorandum

City of Bellevue – Matter 229.4

February 5, 2002

Page - 3

per Table 1, then the total annual depreciation expense for those two projects would equal 1.333% of \$1,300,000, or about \$17,333. The COB payment of its pro rata 39.93% share would be 1.333% times \$519,090, or \$6,919. COB will have no reversionary rights to any such payments to the District. The District will have no restrictions as to use of the income earned from the CCR.

The "Return Of Element", when combined with a "Risk Premium" (and hereinafter referred to as the rate of return (ROR) on the WJSF Utility Plant Rate Base), will reflect the weighted average cost of capital of the District. The weighted average cost of capital method shall reflect the District's actual practice of funding WJSF projects with cash reserves, revenue bonds, PWTF loans, and/or CIAC sources. In this illustration the CIAC source of funding is not included (CIAC has an explicit zero cost of capital to the District) because it will likely never apply to the WJSF projects. In addition, a "Risk Premium" will be added to the weighted average cost of capital as a hedge for the District. The resultant ROR will only change when a new WJSF project is constructed with a funding source or set of funding sources that cause a change in the weighted average cost of capital.

The following is an illustration of the calculation of the ROR after 12/31/03 which is presumed to be zero at that time (assuming COB pays its share of any applicable WJSF cost incurred during the interim period). The illustrated calculation will be updated each time an additional replacement or investment in WJSF projects is made. *Note: There are two main replacement projects assumed to be constructed for this illustration and that each project assumes the same COB capacity interest. However, a different combination of projects could have different COB capacity interests that would need to be calculated before proceeding with the update.*

Illustration:

- Assume WJSF Project 1 is \$500,000, with 50% funded with a combined 1% PWTF loan and 10% cash match, and the remainder 50% funded with a Parity Revenue bond at 5% interest.
- Assume WJSF Project 2 is \$800,000, with 80% funded with a combined 1% PWTF loan and 10% cash, and the remainder funded with a Parity Revenue bond at 5.5% interest.
- Assume that the fund earnings rate for District invested cash and cash equivalents at the time of the WJSF projects is 4% based on the most recent fiscal year-end King County Investment Pool earnings performance.

Then the District's weighted average cost of capital for these WJSF capital projects would be calculated as shown on the following page.



Exhibit I

Technical Memorandum

City of Bellevue – Matter 229.4

February 5, 2002

Page - 4

WJSF Capital Elements	Amount Invested	Average Interest % (A)	Times % Weight (B)	Weighted Ave. Cost of Capital	Notes and Comments
Cash/Equivalents	\$ 89,000	4.00%	6.85%	.274%	Investment Earnings Average
Revenue Bonds	\$410,000	5.20%	31.54%	1.640%	\$250K @5% and \$160K at 5.5% assumed for illustration
PWTF	\$801,000	1.00%	61.61%	.616%	Two loans; same interest rates
CIAC	\$0	0.00%	0.00%	0.000%	
Total	\$1,300,000		100.00%	2.530%	

Therefore, with this scenario, the weighted average cost of capital would be 2.53% for the capitalization of the two WJSF projects. Add the agreed upon Risk Premium of 75 basis points, or 0.75% and the ROR for this illustration is 3.28%. This ROR reflects the District's average cost of financing the facilities including the opportunity cost of using invested cash reserves as a match for the two PWTF loans, plus the Risk Premium.

Taking this illustration if the two WJSF projects were financed with just revenue bond financing, then the weighted average cost of capital would shift to the higher cost of capital that normally goes with such bonds. However, if some of the replacement cost were to be funded by a developer due to an oversizing requirement, then a portion of the cost might go into the CIAC category at zero interest, thus reducing the overall ROR. Given the ROR of 3.28%, plus COB's share of the annual depreciation expense (assume 39.93% per Table 1) payable to the District for say five years following the investment, the CCR would calculate as follows:

CCR Calculation Example	Year 1	Year 2	Year 3	Year 4	Year 5
Investment	\$1,300,000	\$1,300,000	\$1,300,000	\$1,300,000	\$1,300,000
COB's Share of WJSF Capital Projects at 39.93%	\$519,090	\$519,090	\$519,090	\$519,090	\$519,090
Accumulated Depreciation	\$6,919	\$13,838	\$20,757	\$27,676	\$34,595
Est. Utility Plant Rate Base	\$512,171	\$505,252	\$498,333	\$491,414	\$484,495
ROR Payable @ 3.28%	\$16,799	\$16,572	\$16,345	\$16,118	\$15,891
Depreciation Payable (75 year life, or 1.333%)	\$6,919	\$6,919	\$6,919	\$6,919	\$6,919
Total Cost of Capital - COB	\$23,718	\$23,491	\$23,264	\$23,037	\$22,810

Summary:

The District's WJSF Capital Cost Reimbursement will include the two main cost recovery elements, depreciation expense and ROR on WJSF Utility Plant Rate Base. The actual numbers for each cost component can only be determined once the District makes a new investment in joint serving facilities after the effective date of the Interlocal Agreement for



Exhibit I
Technical Memorandum

City of Bellevue – Matter 229.4

February 5, 2002

Page - 5

the December 31, 2003 assumption. Key elements of this option are summarized as follows:

- Unless otherwise mutually agreed or provided for below, all joint serving assets existing at 12-31-03 will be classified as CIAC (donated or COB as fully paid for its share), thus reducing the net book value to zero as a starting point.
- If there is a WJSF capital replacement project or two constructed between the date of the Interlocal Agreement and prior to 12-31-03 (the Interim period), the project costs will be an allowed addition to the beginning WJSF Utility Plant Rate Base. Such capital project cost additions will only be approved if the COB share of that construction cost is not included in the COB payments for retirement or defeasance of debt at the time of the assumption.
- The COB will begin paying its CCR as of the end of the first month after the assumption date, December 31, 2003.
- If the District does not replace any WJSF during the Interim period or after the date of the Assumption, then there will be no CCR for Bellevue to pay to the District.
- The District must fully finance each WJSF capital replacement, improvement or upgrade project before the City of Bellevue's cost share can be added to be WJSF Utility Plant Rate Base. Any payments made by developers, grants received or upfront payments made by Bellevue will be recorded as CIAC – Water Joint Serving Facilities, and the City of Bellevue's share of such CIAC sources of funding will be deducted from the WJSF Utility Plant Rate Base recorded value.
- All engineering design, planning and administration related costs of WJSF capital projects shall be capitalized and included in the total cost of the projects. Then the City of Bellevue's share would be included in WJSF Utility Plant Rate Base.
- The annual depreciation expense will be calculated for each project based on the full cost and the assigned useful life per the Interlocal Agreement; no salvage value need be calculated. The annual depreciation percentage accrual rate will be multiplied times the COB share of each project included in the schedule of WJSF Utility Plant Rate Base projects. For example, a 75-year life is a 1.333% depreciation rate (1/75); a 50-year life is a 2.000% depreciation rate.
- The ROR will be updated each time a WJSF is replaced or upgraded, thus requiring a capital expense. No update will occur if the capital project is a Major Maintenance, Emergency Maintenance or Emergency Repair. If and when an ROR is recalculated, the update shall reflect the cumulative affect of actual financing for each project. The average cost of capital components, e.g., cash reserves, varied forms of debt and CIAC, will be combined with the existing line item capital sources of capital for WJSF to calculate a revised weighted average cost of capital for the entire WJSF Utility Plant Rate Base. A Risk Premium of 75 basis points, or



Technical Memorandum

City of Bellevue – Matter 229.4

February 5, 2002

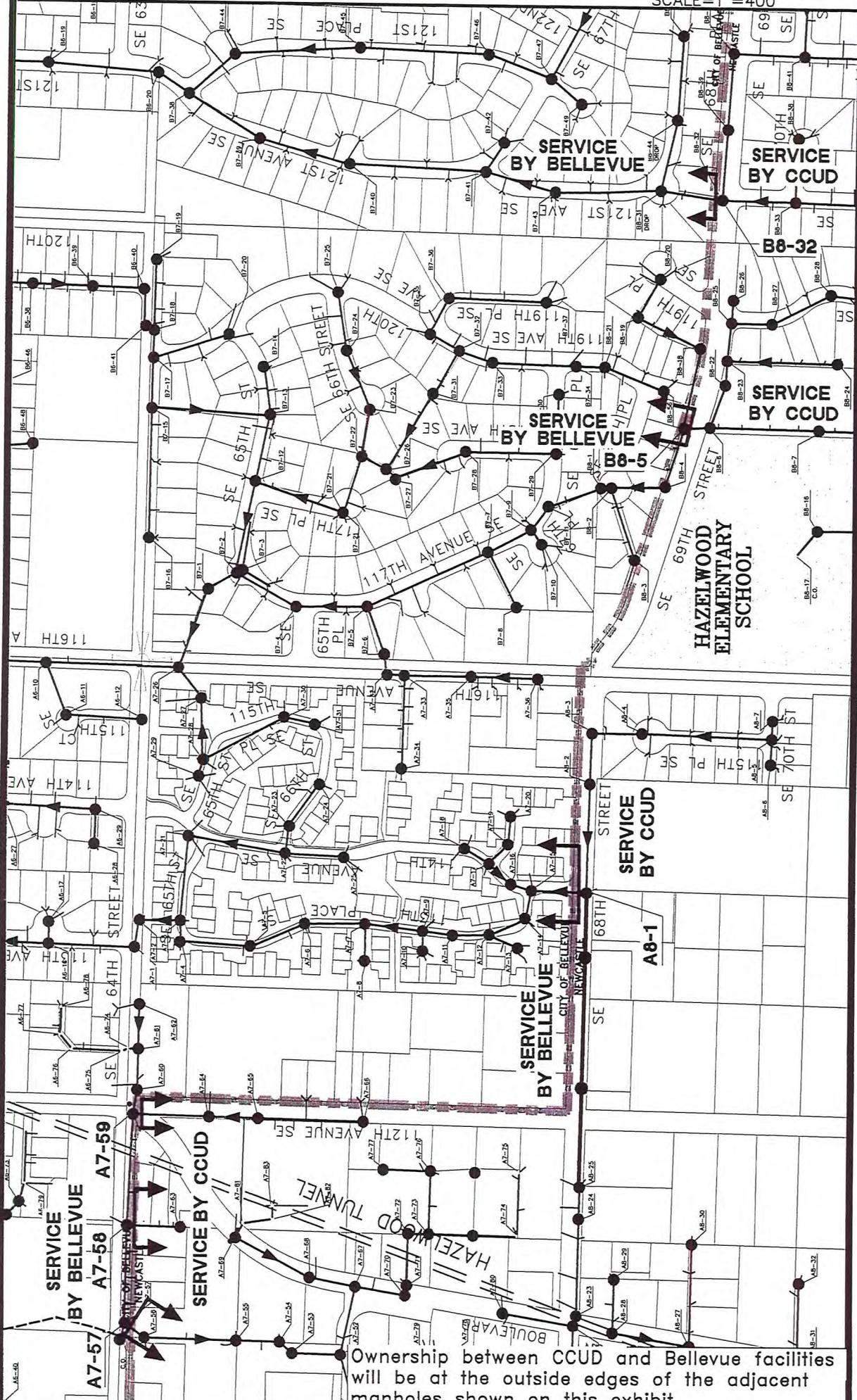
Page - 6

0.75% will be added to the weighted average cost of capital to establish the applicable ROR for the City's share of the WJSF Utility Plant Rate Base.

- The Risk Premium to be included in the total ROR on WJSF Utility Plant Rate Base shall be fixed at 0.75% for the duration of the IA.
- The District will have no restrictions on how it uses CCR revenues paid by the COB in addition to the separate annual wheeling charge.
- The COB will have no right to a refund of any unused CCR payments, or interest thereon over the 25 to 30 years Bellevue is expected to remain dependent on the District's WJSF.

MATCH LINE SEE SHT 2 OF 2

SCALE = 1" = 400'



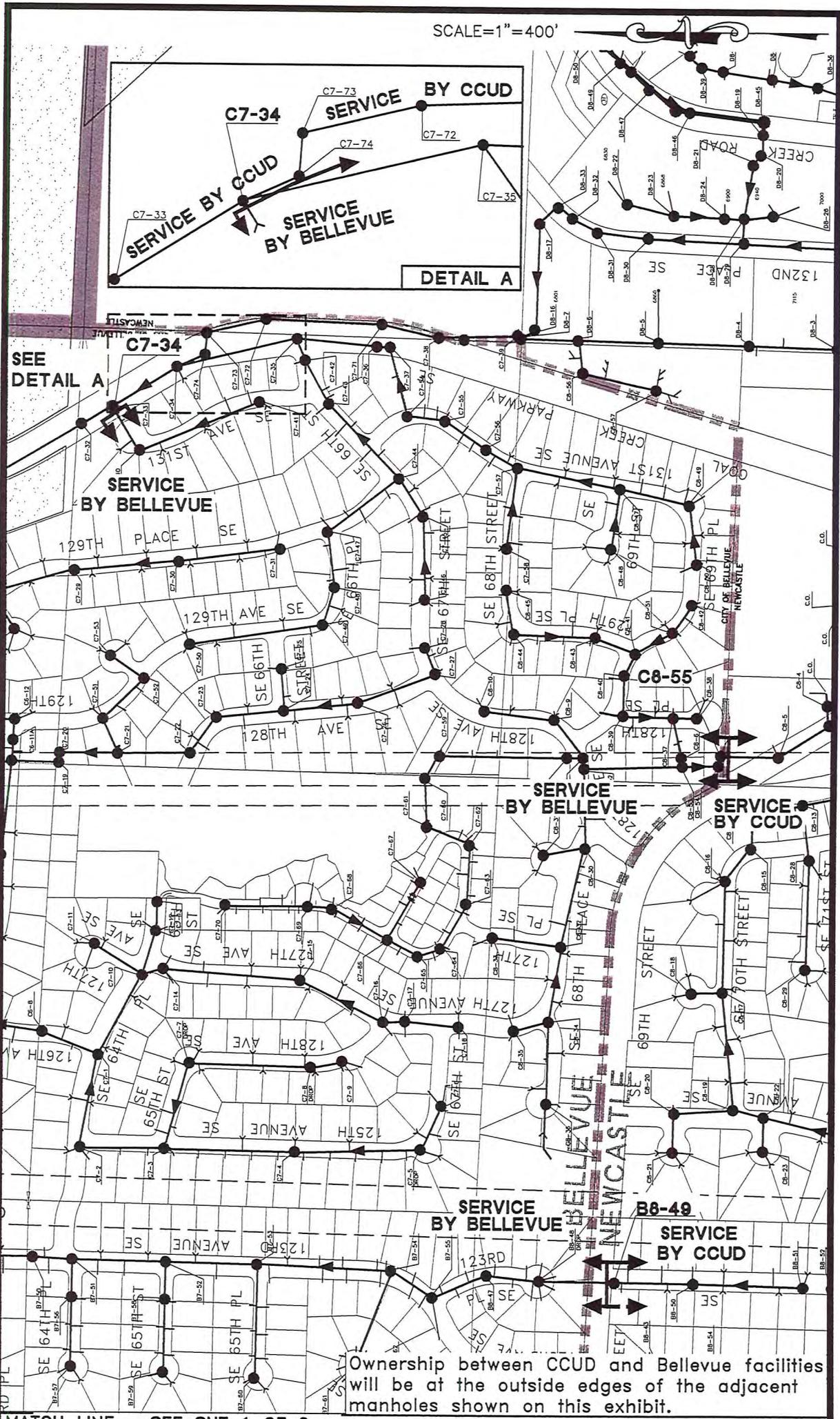
Ownership between CCUD and Bellevue facilities will be at the outside edges of the adjacent manholes shown on this exhibit.



COAL CREEK UTILITY DISTRICT
 & CITY OF BELLEVUE
 DESIGNATION OF
 SEWER OWNERSHIP
 EXHIBIT J

TD

SCALE=1"=400'



Ownership between CCUD and Bellevue facilities will be at the outside edges of the adjacent manholes shown on this exhibit.

MATCH LINE SEE SHT 1 OF 2



COAL CREEK UTILITY DISTRICT
 & CITY OF BELLEVUE
**DESIGNATION OF
 SEWER OWNERSHIP**
EXHIBIT J

REC NO. 34065
CITY OF BELLEVUE
DATE 6/3/03
M. J. O'Malley
CITY CLERK'S OFFICE
CCO FILE# 03-418

**FIRST AMENDMENT TO THE INTERLOCAL AGREEMENT
IMPLEMENTING THE CITY OF BELLEVUE'S PARTIAL
ASSUMPTION
OF THE COAL CREEK UTILITY DISTRICT**

This First Amendment to the Interlocal Agreement Implementing the City of Bellevue's Partial Assumption of the Coal Creek Utility District ("First Amendment") is made and entered into by and between the Coal Creek Utility District (the "District") and the City of Bellevue ("Bellevue") (collectively referred to herein as the "Parties") this 2 day of June, 2003, as follows:

Whereas, the District and Bellevue entered into a certain Interlocal Agreement Implementing The City of Bellevue's Partial Assumption of the Coal Creek Utility District (the "Agreement"), which Agreement was fully executed on June 3, 2002; and

Whereas, certain asbestos cement watermains located within the area to be assumed by Bellevue have experienced failures and are in need of replacement; and

Whereas, the District is willing to replace the asbestos cement watermains as further described herein prior to the Assumption Date set forth in the Agreement on the condition that Bellevue reimburse the District for Bellevue's agreed share of the cost of such replacement project; and

Whereas, the parties desire to amend the Agreement to clarify their respective rights and responsibilities with respect to the replacement of certain asbestos cement watermains within the area to be assumed by Bellevue, as more fully set forth below;

NOW THEREFORE, the parties agree as follows:

- 1. Agreement to Replace Watermains.** The District and Bellevue agree that certain asbestos cement watermains (the "Project") located within the area of the District to be assumed by Bellevue pursuant to the Agreement will be replaced prior to the Assumption Date.

- 2. Project Description.** The Project shall consist of replacing the existing asbestos cement watermains and appurtenances located in the SE 65th Place cul-de-sac east of 123rd Avenue SE; in the SE 65th Street cul-de-sac east of 123rd Avenue SE; in the SE 64th Place cul-de-sac just east of 123rd Avenue; and in 123rd Avenue from approximately 140 feet south of the SE 65th Place cul-de-sac to approximately 62 feet north of SE 64th Place. The scope and limits of the Project are also shown on Attachment A hereto.

- 3. Design and Construction Responsibilities.** The District shall be the lead agency responsible for designing, obtaining permits, bidding and constructing the Project. The District shall be responsible for providing appropriate complete submittals and complying with permit conditions. Bellevue shall be given an opportunity to review, comment on and approve the design of the Project at the 75% and 100% completion

stage. Both Bellevue and the District shall approve the design prior to the advertisement for bids. Neither the District nor Bellevue shall unreasonably withhold its approval of the design.

4. Inspection. The District shall be responsible for inspection of the construction phase of the Project. Bellevue shall designate a Bellevue inspector to assist the District's inspector and to coordinate and/or resolve issues as they may arise during construction, provided Bellevue's inspector shall not instruct the Project contractor directly on any matters regarding Project contract performance. Bellevue shall work with the District in the development of the construction punch list and shall participate in the final inspection to assure that all contract requirements have been satisfied. Both Bellevue and the District shall provide final review and approval of the work performed under the contract. Neither agency shall unreasonably withhold their final approval of the Project.

5. Payments and Project Costs. The District shall be responsible for the payment of all costs and expenses for engineering, bidding, inspection, permitting and construction of the Project. All such expenses shall be considered part of the Project costs which costs shall also include the District's administrative and legal costs directly attributable to the Project (collectively referred to in this First Amendment as the "Project Costs"). The District shall not be responsible for costs incurred by Bellevue staff in the management of the project. Total Project Costs shall not exceed 110% of the actual contract bid award amount plus \$75,000 for engineering, permitting, administrative and legal services, and all other contingencies without prior written approval by both the District and Bellevue. Project costs shall not include costs for legal services incurred by either party arising from a dispute between the parties as to the interpretation or implementation of the First Amendment.

6. Warranties and Guarantees. The District shall cause any Project contractor(s) warranties and guarantees to the District to be fully assignable to Bellevue. The District shall assign all such warranties and guarantees to Bellevue upon the District's transfer of assets pursuant to the Agreement to Bellevue.

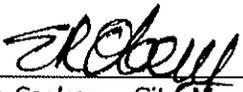
7. Payment of Project Costs by Bellevue. Bellevue shall reimburse the District fifty percent (50%) of the Project Costs within forty-five (45) days of Bellevue's receipt of an invoice from the District itemizing incurred Project Costs and Bellevue's portion of the Project Costs. Bellevue's payment(s) to the District shall accrue simple interest at the rate of one percent (1%) per month after forty-five (45) days until paid.

8. Indemnities. Each Party shall indemnify and hold harmless the other Party, its elected officials, employees and agents from any and all claims, damages, judgments, liabilities, settlements and costs (including attorney's fees) of whatever form or nature arising from or related to the negligent acts or omissions of the other Party, its elected officials, employees and/or agents in the performance and/or non-performance of its obligations under this First Amendment. For this purpose, the District, by mutual negotiation, hereby waives, as respects the City only, any immunity that would otherwise be available against such claims under the Industrial Insurance provisions of Title 51 RCW. For this purpose, Bellevue, by mutual negotiation, hereby waives, as

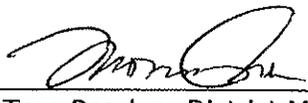
respects the District only, any immunity that would otherwise be available against such claims under the Industrial Insurance provisions of Title 51 RCW. The District shall require all contractors and subcontractors retained for purposes of designing, constructing and/or otherwise providing services on the Project to name the City as an additional insured on the contractors and/or subcontractor's insurance policy(ies).

9. Rights and Obligations. Nothing contained in this First Amendment shall be construed as waiving, modifying or otherwise altering the rights and/or obligations of either or both parties contained in the Agreement except as specifically provided in this First Amendment.

CITY OF BELLEVUE

By 
COC Steve Sarkozy, City Manager
Date Signed: 6/11/03

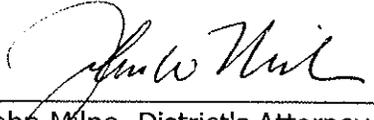
COAL CREEK UTILITY DISTRICT

By 
Tom Peardon, District Manager
Date Signed: 5/14/2003

Approved as to form:

By 
Siona D. Windsor
Assistant City Attorney

Approved as to form:

By 
John Milne, District's Attorney

SE

64TH PL

123RD AVENUE SE

SE 64TH PL

SE 65TH ST

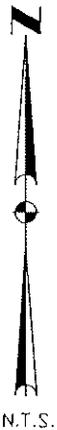
SE 65TH PL

123RD AVE SE

121ST PLACE SE

122ND PL SE

SE 67TH PLACE



N.T.S.

NEWPORT HILLS MO.17
NEWPORT HILLS MO.12

VALLEY PARK
607265

NEWPORT HILLS MO.16
607265

p:\02\2024\exhibit 11/6/02 nmi

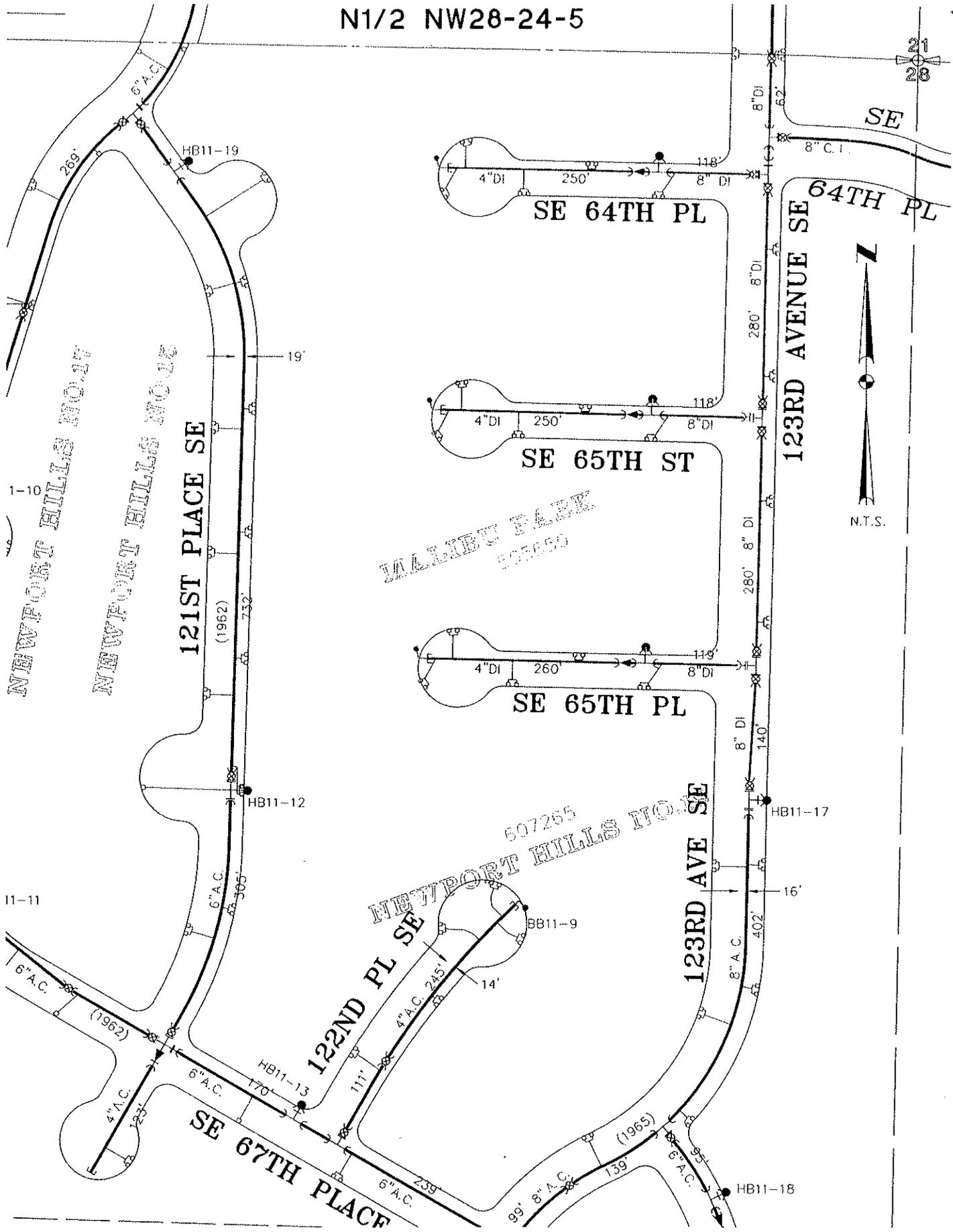


Engineering
Planning
Consulting
Penhallegon Associates Consulting Engineers, Inc.
700 NORTH STREET SOUTH
(426) 627-2014

KIRKLAND, WA 98033
FAX: (426) 627-0643

Attachment A

NEWPORT HILLS
AC MAIN REPLACEMENT



ORIGINAL

CITY OF BELLEVUE, WASHINGTON

ORDINANCE NO. 5445

AN ORDINANCE authorizing the City Manager or his designee to execute an amendment to the Interlocal Agreement Implementing the City of Bellevue's Partial Assumption of the Coal Creek Utility District to share in costs with the District to replace an AC water main.

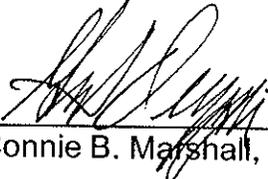
THE CITY COUNCIL OF THE CITY OF BELLEVUE, WASHINGTON, DOES ORDAIN AS FOLLOWS:

Section 1. The City Manager or his designee is hereby authorized to execute an amendment to the Interlocal Agreement Implementing the City of Bellevue's Partial Assumption of the Coal Creek Utility District to share in costs with the District to replace an AC water main, a copy of which Amendment has been given Clerk's Receiving No. 34065.

Section 2. This ordinance shall take effect and be in force five (5) days after passage and legal publication.

Passed by the City Council this 2nd day of June, 2003, and signed in authentication of its passage this 2nd day of June, 2003.

(SEAL)



Connie B. Marshall, Mayor

Approved as to form:

Richard L. Andrews, City Attorney



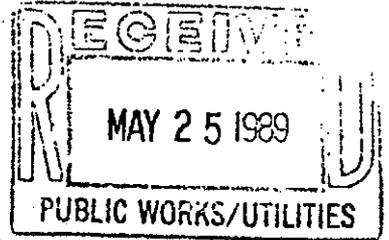
Patrice C. Cole, Assistant City Attorney

Attest:



Myrna L. Basich, City Clerk

Published June 2 2003



CITY OF KIRKLAND

123 FIFTH AVENUE KIRKLAND, WASHINGTON 98033-6189 (206) 828-1243

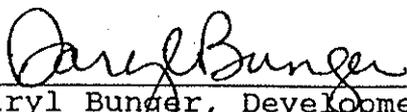
DEPARTMENT OF PUBLIC WORKS
MEMORANDUM OF UNDERSTANDING

To: Daryl Bunger, City of Bellevue
From: Fred French, City of Kirkland
Date: May 24, 1989
Subject: SANITARY SEWER MAIN IN POINTS DRIVE

It will be the understanding between the cities of Kirkland and Bellevue that the City of Kirkland will own, operate, and maintain the sanitary sewer main within the Points Drive right-of-way from the first manhole north of SR 520 and to the north. The City of Bellevue will continue to own, operate, and maintain the lines under and south of SR 520 to the first manhole on the north side. The cities will consider the lines to be within respective jurisdictions for the purposes of issuing permission to access and connect, including street cuts.

This understanding will not extend to any other land use issues and is only intended to simplify the operation of each utility by using the SR 520 right-of-way as an effective utility district boundary.


Fred French, Principal Engineer, Kirkland

 6-8-89
Daryl Bunger, Development Operations Manager, Bellevue

BUNGER.MAY/FF:cw

FILED NO. 9747
CITY OF BELLEVUE

DATE 10-2-84

CITY CLERK *(Signature)*

O. Connell

Res. 4438

AGREEMENT

This agreement made and entered into this day by and between the City of Kirkland, an optional code city, hereinafter referred to as "Kirkland" and the City of Bellevue, an optional code city, hereinafter referred to as "Bellevue",

WITNESSETH:

WHEREAS, both Kirkland and Bellevue are authorized by State law to enter into cooperative agreements; and

WHEREAS, the area described and designated on Exhibit "A" (attached hereto and by this reference incorporated herein) as subject are of the City of Kirkland sanitary sewer system; and

WHEREAS, said area is not presently connected to the Kirkland sanitary sewer system, and because of the topography of the area, may not readily be so connected; and

WHEREAS, the service area and corporate boundaries of the City of Bellevue and its sanitary sewer system lie adjacent to the subject area and the subject area can conveniently be connected into a Bellevue sewer system facility existing or under construction; and

WHEREAS, both parties are desirous where possible and convenient to mutually assist one another.

NOW, THEREFORE, in consideration of the agreements herein contained, it is agreed as follows:

Section 1. All sanitary sewer facilities to be constructed within the subject area described and designated on Exhibit "A", as attached hereto and by this reference incorporated herein, shall upon

construction and acceptance, become for all purposes, including customer service charges and maintenance, part of the Kirkland sanitary sewer system, but may, nevertheless, be connected into the Bellevue sewer system sanitary facility line lying within twenty feet and at the point so designated as "connection point" on Exhibit "A".

Section 2. Bellevue agrees to accept all sewage entering into its system through said connection point and to convey same through its system to its connection with the Municipality of Metropolitan Seattle System.

Section 3. No part of the cost of construction of the sanitary sewer facilities to be constructed within subject area, nor any of its future maintenance or repair, shall be borne by the City of Bellevue.

Section 4. City of Kirkland agrees to pay over to City of Bellevue as to each property within subject area, as it makes sewer connection, an amount equal to \$0.02 per square foot of area of each property. In addition thereto, Kirkland will pay to Bellevue a monthly service trunkage charge in an amount equal to 12¢ per month per residential customer or residential equivalent, actually connected and served by the facilities of the Kirkland sewer system within the subject area.

Section 5. Neither party shall by virtue of this agreement acquire any proprietary or governmental interest in the sewer system or sewer line of the other party. Each party shall be solely responsible for the operation and maintenance of its own system of sewage collection and shall save the other party harmless from any claim for damage, real or imaginary, made by a third party, and alleging negligence or misfeasance in the operation or maintenance of the other party's system, or in the acts or omissions of its own officers or employees.

Section 6. This writing embodies the entire agreement of the parties. There are no promises, terms, conditions, or obligations other than those contained herein. This agreement may be amended only by written instrument signed by both parties.

Section 7. No waiver by either party of any term or condition of this agreement shall be deemed or construed as a waiver of any other term or condition, nor shall a waiver of any subsequent breach, whether of the same or of a different provision of this agreement.

Section 8. This agreement shall terminate upon six (6) months written notice given by either party to the other party. In the event of termination under this paragraph, all costs of disconnection shall be borne by the party requesting the termination.

THIS AGREEMENT SIGNED this 19th day of September, 1984.

CITY OF KIRKLAND

By Tom J. Anderson
Tom J. Anderson, Acting City Manager

THIS AGREEMENT SIGNED this 1st day of October, 1984.

CITY OF BELLEVUE

By [Signature]

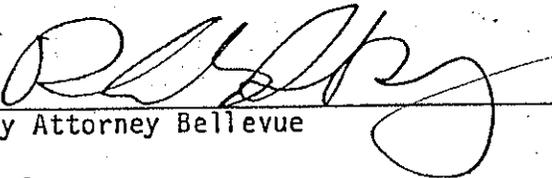
Execution of this agreement approved and authorized on behalf of:
the City of Bellevue by Resolution No. 4428, adopted this 1st
day of October, 1984; and

the City of Kirkland by Resolution No. R3118, of the Kirkland City
Council, adopted this 17th day of Sept., 1984.

Approved as to form:



City Attorney Kirkland



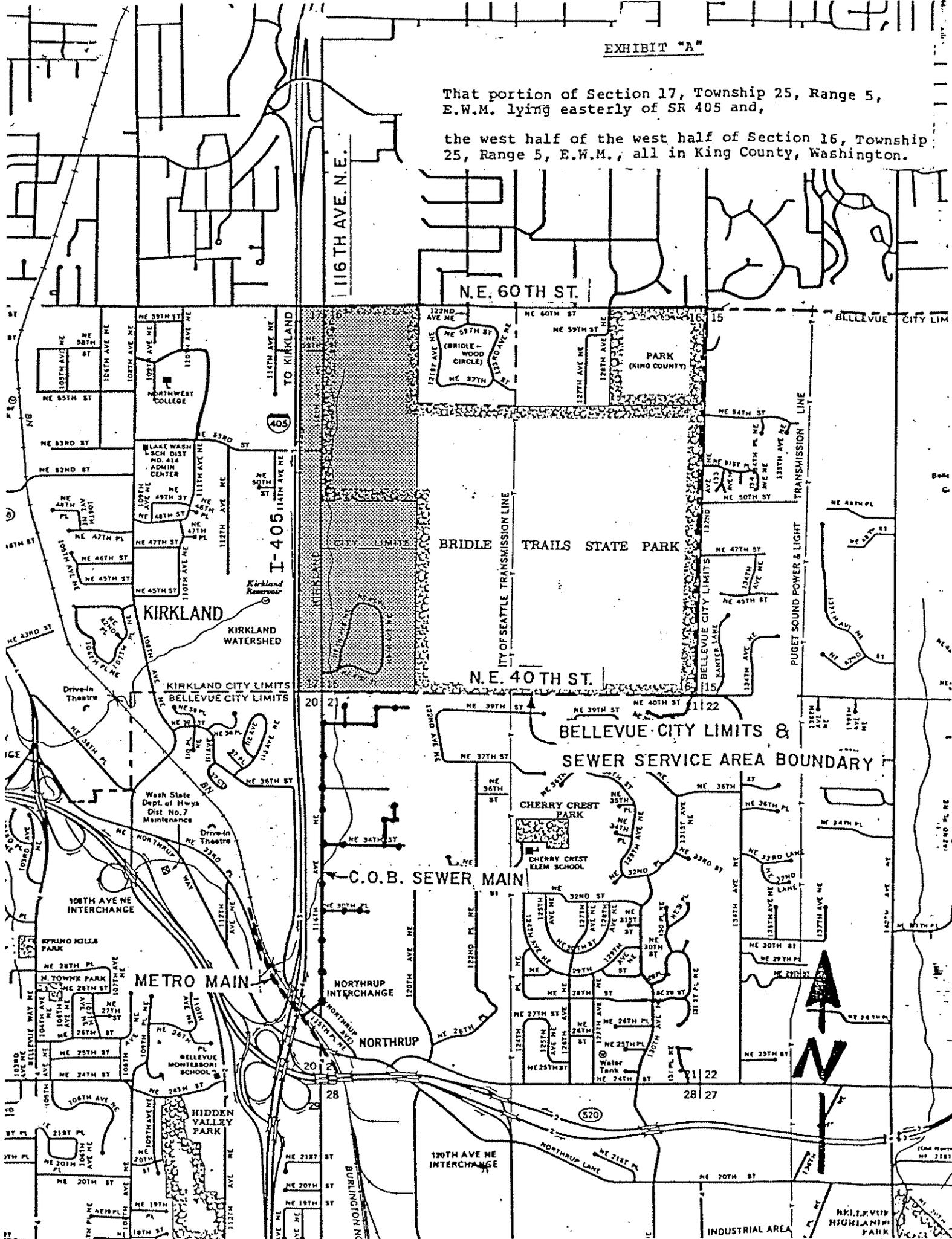
City Attorney Bellevue

4894J

EXHIBIT "A"

That portion of Section 17, Township 25, Range 5, E.W.M. lying easterly of SR 405 and,

the west half of the west half of Section 16, Township 25, Range 5, E.W.M., all in King County, Washington.



RESOLUTION R 3118

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF KIRKLAND AUTHORIZING AND DIRECTING THE CITY MANAGER TO SIGN ON BEHALF OF THE CITY OF KIRKLAND, THAT CERTAIN INTERLOCAL GOVERNMENTAL AGREEMENT WITH THE CITY OF BELLEVUE, FOR THE PROVISION OF SANITARY SEWER SERVICE WITHIN THAT AREA OF KIRKLAND LYING WEST OF AND ADJACENT TO BRIDLE TRAILS STATE PARK.

Whereas, both Kirkland and Bellevue are authorized by state law to enter into cooperative agreements; and

Whereas, that area of the City of Kirkland within its sanitary sewer system service area, adjacent to Bridle Trails State Park as more specifically described in Exhibit A hereto, and by this reference incorporated herein, is not presently connected to the Kirkland sanitary sewer system, and because of the topography of the area may not readily be so connected; and

Whereas, the service area and corporate boundaries of the City of Bellevue and its sanitary sewer system lie adjacent to the subject area, and the subject area can conveniently be connected into a Bellevue sewer system facility existing or under construction; and

Whereas, both parties are desirous where possible and convenient to mutually assist one another, now, therefore,

Be it resolved by the City Council of the City of Kirkland as follows:

Section 1. The proposed interlocal governmental cooperative agreement between the City of Kirkland and the City of Bellevue, for the provision of sanitary sewer service to that area of Kirkland lying west of and adjacent to Bridle Trails State Park, as set forth in Exhibit A, attached to the original of this resolution and by this reference incorporated herein, is approved by the City Council. The City Manager for the City of Kirkland is authorized to sign said agreement on behalf of the City of Kirkland.

Passed by majority vote of the Kirkland City Council in regular, open meeting this 17th day of September, 1984.

AGREEMENT BETWEEN
THE CITY OF KIRKLAND, THE CITY OF BELLEVUE AND BELLEVUE INN, INC.

FILED NO. 6329
CITY OF BELLEVUE
DATE 7-28-80
CITY CLERK *Plush*
L 113610

THIS AGREEMENT entered into this 28 day of July,
1980, is by and between THE CITY OF KIRKLAND, THE CITY OF BELLEVUE AND BELLEVUE
INN, INC.

WHEREAS BELLEVUE INN, INC., the owner of the hereinafter described
real property situated within the City of Kirkland, has requested sewer
connection and service for said real property; and

WHEREAS the City of Kirkland sewer system presently does not have
facilities available within the area in which said real property is located,
and to which said real property could connect and be provided with sewer
services; and

WHEREAS the City of Bellevue has a sewer system with existing
facilities within the public rights-of-way adjacent to said real property
and into which temporary connections could be made; and

WHEREAS all parties agreed that said real property may be
temporarily connected to and serviced by the City of Bellevue sewer system
until such time as the Kirkland sewer system has extended their facilities
into the area and can provide sewer service to said real property;

NOW, THEREFORE, in consideration of the terms and agreements hereinafter set forth, the parties agree as follows:

1. The City of Kirkland and the City of Bellevue agree that the owner may connect the real property, hereinafter described, into and be served by the Bellevue sewer system in accordance with the requirements and payment of costs set forth in Exhibit A attached hereto and incorporated herein; and for so long as said real property is so connected to the Bellevue sewer system, the occupants of said property shall be treated as customers of the Bellevue sewer system for all purposes including the billing and collection of service charges. Provided, however, that this arrangement shall continue pursuant to this agreement only until such time as the facilities of the City of Kirkland sewer system may be extended into the general area in which the real property is situate, and at such time as a service connection for said real property shall be disconnected from the Bellevue sewer system.

2. The owner of the hereinafter described real property agrees and covenants with the City of Kirkland that said property shall be disconnected from the Bellevue sewer system facilities and reconnected to the City of Kirkland sewer system facilities at such time, after the Kirkland sewer system facilities have been extended into the area within which said real property is located, as notice to make such connections to the Kirkland sewer system is given by the City of Kirkland.

3. At the time that said real property shall connect into the Kirkland sewer system, there shall be paid to the City of Kirkland by Bellevue Inn, Inc., their successors or assigns, all connection charges, fees and assessments, as

would be required to be paid for connecting said real property at that time to the particular City of Kirkland utility system, notwithstanding the existence of this agreement; provided, however, that the sum of said charges, fees and assessments shall be reduced by the amount, if any, paid by the owner to the City of Bellevue for the privilege of connecting to the said Bellevue sewer system at the time that the temporary connection is made pursuant to this agreement.

4. It is the intention of all of the parties hereto that the obligations imposed upon the hereinafter described real property, and agreed to and assumed by the owners thereof, shall run with the land; and a copy of this agreement shall be recorded as a public record in the office of the King County Department of records and elections.

454-5887

CITY OF KIRKLAND

BY

Allen B. [Signature]

CITY OF BELLEVUE

BY

Andrew N. [Signature]

BELLEVUE INN, INC.

Harold W. [Signature] President

842-106th NE.

Bellevue, Wash.

STATE OF WASHINGTON)
) SS
COUNTY OF KING)

On this 8th day of July, 19 80, before me, the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared Allen B. Locke ~~and~~ _____,

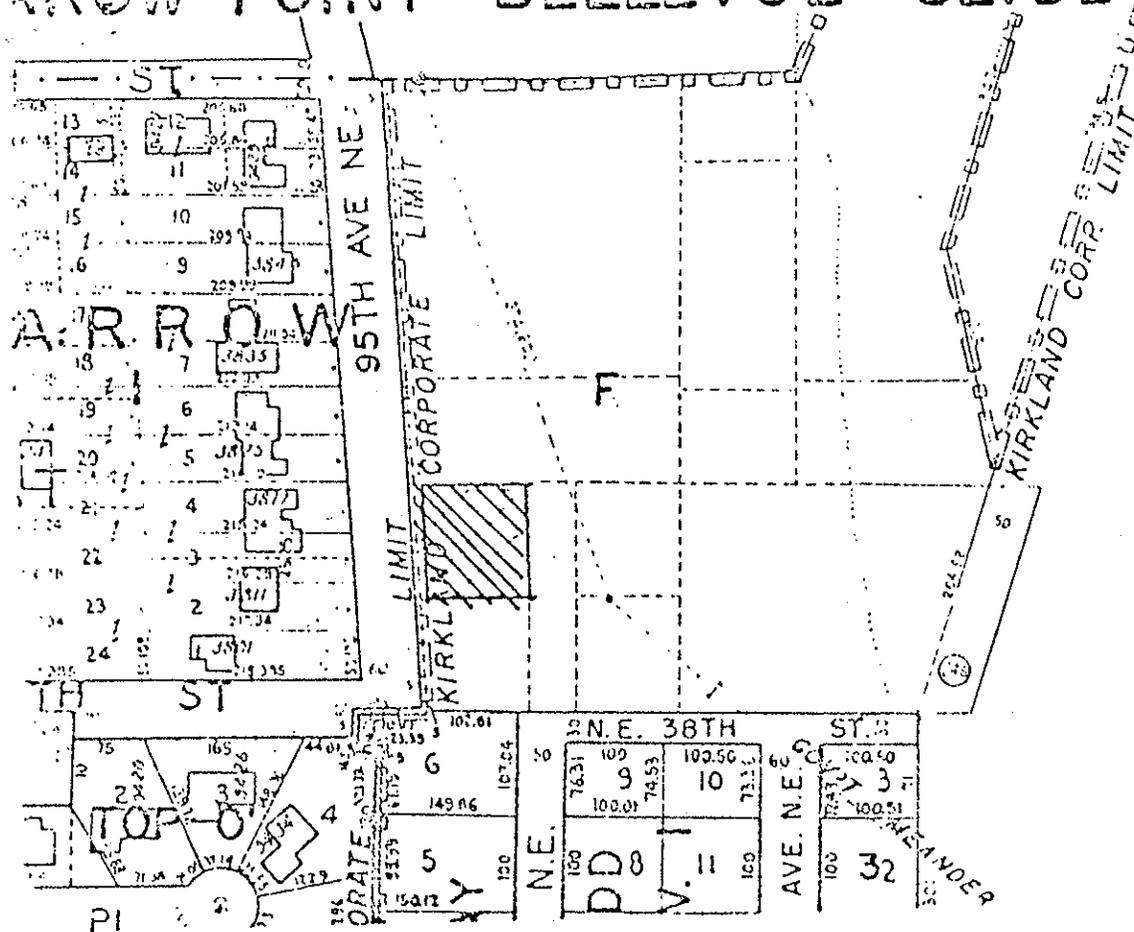
to me known to be the individual described in and who executed the foregoing instrument, and acknowledged to me that he signed and sealed this said instrument as his free and voluntary act and deed for the uses and purposes therein mentioned.

Given under my hand and official seal this 8th day of July, 19 80.

Dally J. Quinn
Notary Public in and for the State
of Washington, residing at Kirkland.

YARROW POINT - BELLEVUE - CLYDE HILL

E 1/2 1



Austin
26.42 1

THAT PORTION OF TRACT "F" OF YARROW, ACCORDING TO THE PLAT RECORDED IN VOLUME 15 OF PLATS, PAGE 92, IN KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID TRACT "F"; THENCE EASTERLY ALONG THE SOUTHERLY LINE THEREOF 107.71 FEET; THENCE NORTH 1°29'18" EAST 130 FEET TO THE TRUE POINT OF BEGINNING OF THIS DESCRIPTION; THENCE CONTINUING NORTH 1°29'18" EAST 100 FEET; THENCE NORTH 88°30'42" WEST TO THE WEST LINE OF SAID TRACT "F"; THENCE SOUTHERLY ALONG SAID WEST LINE TO A POINT WHICH BEARS NORTH 88°30'42" WEST FROM THE TRUE POINT OF BEGINNING; THENCE SOUTH 88°30'42" EAST TO THE TRUE POINT OF BEGINNING; EXCEPT THE WESTERLY 5 FEET THEREOF.

TOGETHER WITH AN EASEMENT FOR DRIVEWAY AND UTILITIES OVER THE WESTERLY 5 FEET OF THE FOLLOWING:

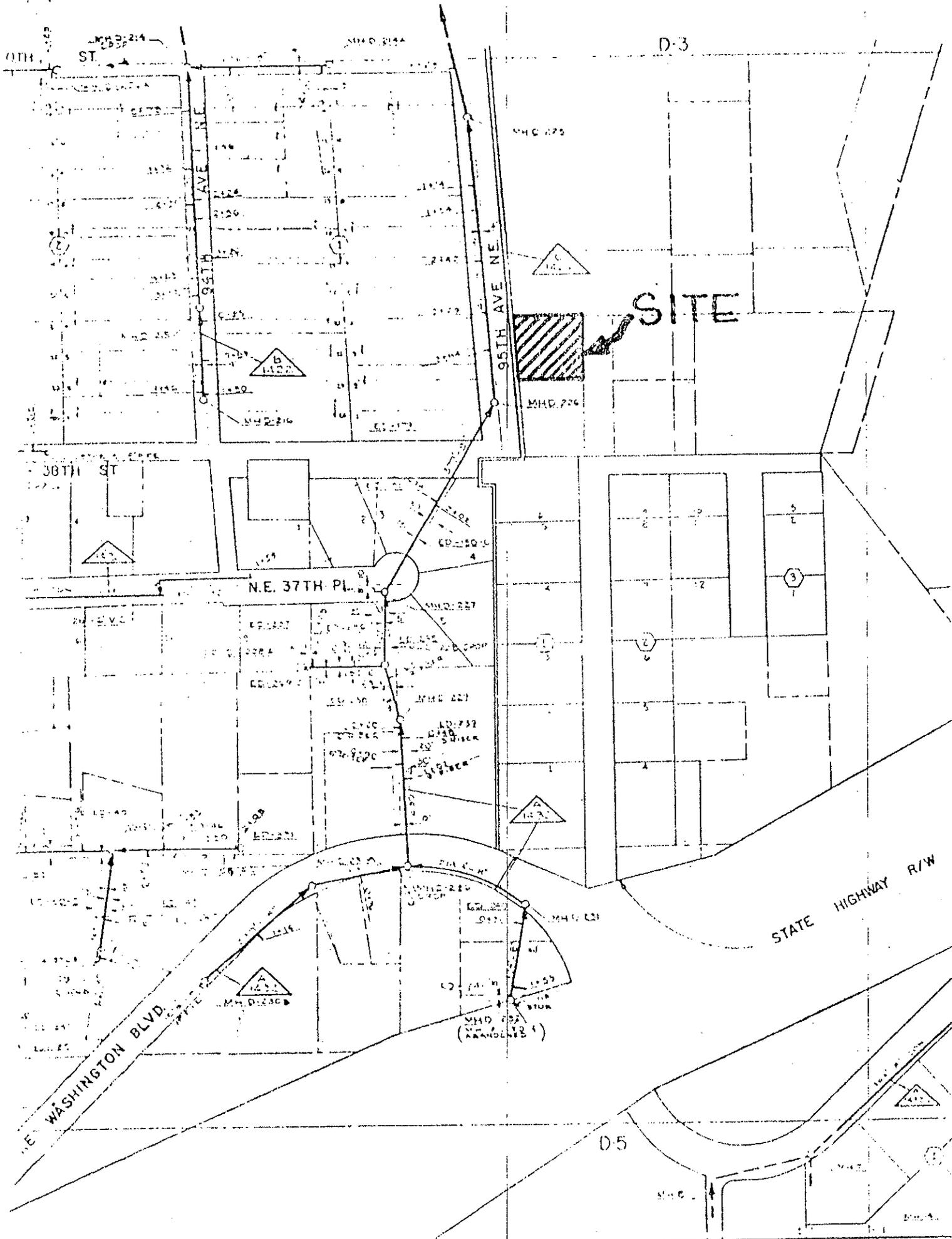
THAT PORTION OF TRACT "F" OF YARROW, ACCORDING TO THE PLAT RECORDED IN VOLUME 15 OF PLATS, PAGE 92, IN KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID TRACT "F"; THENCE EASTERLY ALONG THE SOUTHERLY LINE THEREOF 107.71 FEET; THENCE NORTH 1°29'18" EAST 130 FEET TO THE TRUE POINT OF BEGINNING OF THIS DESCRIPTION; THENCE CONTINUING NORTH 1°29'18" EAST 100 FEET; THENCE NORTH 88°30'42" WEST TO THE WEST LINE OF SAID TRACT "F"; THENCE SOUTHERLY ALONG SAID WEST LINE TO A POINT WHICH BEARS NORTH 88°30'42" WEST FROM THE TRUE POINT OF BEGINNING; THENCE SOUTH 88°30'42" EAST TO THE TRUE POINT OF BEGINNING.

EXHIBIT "A"

Costs

Trunkage	1.6¢ per square foot of area served
Service Charge	12¢ per month per residential customer or residential equivalent



ORIGINAL

CITY OF BELLEVUE, WASHINGTON

RESOLUTION NO. 3610

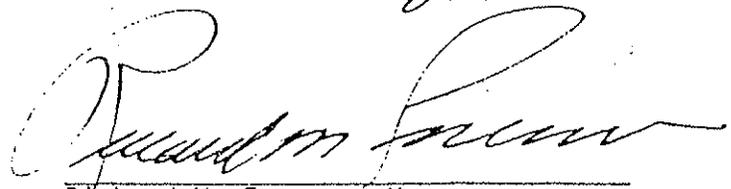
A RESOLUTION authorizing execution of an agreement between the City of Kirkland and the City of Bellevue and Bellevue Inn, Inc. to provide sanitary sewer service to an area within the City of Kirkland.

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

Section 1. The City Manager or her designee is hereby authorized and directed to execute, on behalf of the City, that certain agreement between the City of Kirkland and the City of Bellevue and Bellevue Inn, Inc., to provide sanitary sewer service to an area within the City of Kirkland, which has been given Clerk's Receiving No. 6329.

PASSED by the City Council this 28 day of July, 1980, and signed in authentication of its passage this 28 day of July, 1980.

(SEAL)


Richard M. Foreman, Mayor

Attest:


Patricia K. Weber, City Clerk

AGENDA OF THE CITY COUNCIL
CITY OF BELLEVUE

AGENDA NO: SS 2 (b)

MEETING DATE: 7/21/80

SUBJECT: Agreement with City of Kirkland to Provide Sewer Service

ISSUE: Is providing sewer service to properties within City of Kirkland that cannot at present be served by Kirkland in the public interest?

DEPARTMENT: ~~Public~~ Public Works/Utilities

STAFF CONTACT: Walter E. Davis, Jr. ~~XX~~

TELEPHONE: 6965

OTHER DEPT. COORDINATION: Legal

AGENDA LOCATION:

PUBLIC HEARING _____

LAND USE REPORT _____

BID _____

CONSENT _____

OTHER RESOLUTIONS _____

AND ORDINANCES _____

UNFINISHED BUS. _____

NEW BUSINESS _____

STUDY SESSION X

DISCUSSION _____

INFORMATION X

EXPENDITURE REQUIRED: \$ Semi-annual billing

AMOUNT BUDGETED: \$ -0-

APPROPRIATION REQUESTED: \$ -0-

REVENUE SOURCE: -0-

FINANCIAL DEPARTMENT SIGNATURE: N/A

FISCAL IMPACT: N/A

ENFORCEMENT IMPACT: N/A

CLASS OF SUPPORTING DATA:

ORDINANCE _____

RESOLUTION X

REPORT _____

MINUTE ORDER _____

EXHIBITS:

- A. Site map
- B. Agreement
- C.

HISTORICAL BACKGROUND: None

RECOMMENDATION: Pass resolution authorizing City Manager to execute Agreement with City of Kirkland.

SUMMARY: Sanitary sewer service to the property in this proposed agreement located along 95th Avenue N.E. at approximately N.E. 38th Street will be provided by an existing City of Bellevue line running north into Yarrow Point. We will collect a trunkage charge (one time) from the Developer (Bellevue Inn, Inc.) and monthly will collect from the residents a use fee.

WED/mb

PLEASE RETAIN
THIS MATERIAL FOR REVIEW
AT MEETING OF 7/28/80

5/2/80

FILED NO. 6330
CITY OF BELLEVUE
DATE 7-28-80
CITY CLERK T. Kuhn

ORIGINAL

AGREEMENT BETWEEN
THE CITY OF KIRKLAND, THE CITY OF BELLEVUE AND YARROW POINT PARTNERS

THIS AGREEMENT entered into this 28 day of July,
1980, is by and between THE CITY OF KIRKLAND, THE CITY OF BELLEVUE
and YARROW POINT PARTNERS.

WHEREAS Yarrow Point Partners, the owner of the hereinafter
described real property situated within the City of Kirkland,
has requested sewer connection and service for said real property;
and

WHEREAS the City of Kirkland sewer system presently does
not have facilities available within the area in which said
real property is located, and to which said real property could
connect and be provided with sewer services; and

WHEREAS the City of Bellevue has a sewer system with
existing facilities within the public rights-of-way adjacent
to said real property and into which temporary connections could
be made; and

WHEREAS all parties agreed that said real property may be
temporarily connected to and serviced by the City of Bellevue
sewer system until such time as the Kirkland sewer system has
extended their facilities into the area and can provide sewer
service to said real property;

NOW, THEREFORE, in consideration of the terms and agreements hereinafter set forth, the parties agree as follows:

1. The City of Kirkland and the City of Bellevue agree that the owner may connect the real property, hereinafter described, into and be served by the Bellevue sewer system in accordance with the requirements and payment of costs set forth in Exhibit A attached hereto and incorporated herein; and for so long as said real property is so connected to the Bellevue sewer system, the occupants of said property shall be treated as customers of the Bellevue sewer system for all purposes including the billing and collection of service charges. Provided, however, that this arrangement shall continue pursuant to this agreement only until such time as the facilities of the City of Kirkland sewer system may be extended into the general area in which the real property is situate, and at such time as a service connection for said real property shall be made to the City of Kirkland sewer system and said real property shall be disconnected from the Bellevue sewer system.

2. The owner of the hereinafter described real property agrees and covenants with the City of Kirkland that said property shall be disconnected from the Bellevue sewer system facilities and reconnected to the City of Kirkland sewer system facilities at such time, after the Kirkland sewer system facilities have

been extended into the area within which said real property is located, as notice to make such connections to the Kirkland sewer system is given by the City of Kirkland.

3. At the time that said real property shall connect into the Kirkland sewer system, there shall be paid to the City of Kirkland by Yarrow Point Partners, their successors or assigns, all connection charges, fees and assessments, as would be required to be paid for connecting said real property at that time to the particular City of Kirkland utility system, notwithstanding the existence of this agreement; provided, however, that the sum of said charges, fees and assessments shall be reduced by the amount, if any, paid by the owner to the City of Bellevue for the privilege of connecting to the said Bellevue sewer system at the time that the temporary connection is made pursuant to this agreement.

4. It is the intention of all of the parties hereto that the obligations imposed upon the hereinafter described real property, and agreed to and assumed by the owners thereof, shall run with the land; and a copy of this agreement shall be recorded as a public record in the office of the King County Department of records and elections.

The real property subject to this agreement is described

as:

Beginning at the intersection of the south line of Block F of Yarrow, according to plat recorded in Vol. 15 of Plats, page 92, in King County, Washington and the west line of Govt. Lot 8 in Sect. 19, Township 25 North, Range 5 E. W.M. in King County, Washington; Thence North 88°16'08" West 190.00 feet; Thence North 1°29'18" East 335.00 feet to the true point of beginning; Thence South 88°30'42" East 150.00 feet; Thence North 1°29'18" East to the Northerly line of said Tract F; Thence westerly along said Northerly line to the Northwest corner thereof; Thence Southerly along the Westerly line of said Tract F to a point which bears North 88°30'42" West from the true point of beginning; Thence South 88°30'42" East to the true point of beginning; EXCEPT the Westerly 5 feet & the Northerly 5 feet thereof; TOGETHER WITH an easement for road & utility purposes over a strip of land 50 feet in width, lying South of above described tract & lying North of Northeast 38th Street, the West line of said 50 foot strip bearing South 1°29'18" West from the true point of beginning of above described main tract.

OWNERS, YARROW POINT PARTNERS

CITY OF KIRKLAND

By

CITY OF BELLEVUE

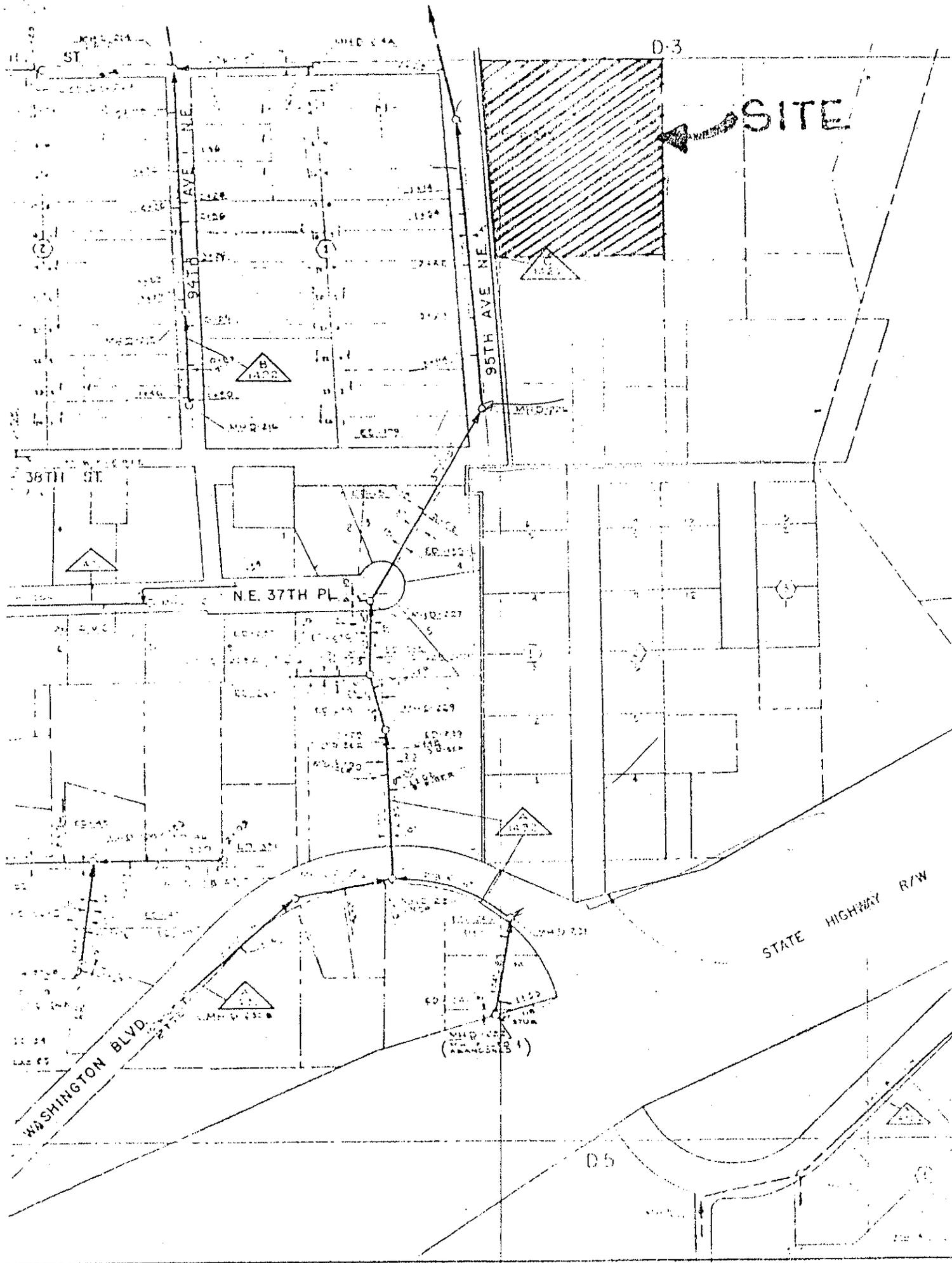
By

Douglas J. Dodds
DOUGLAS J. DODDS
Carolyn J. Dodds
CAROLYN J. DODDS
Bruce J. Dodds
BRUCE J. DODDS
Mary J. Dodds
MARY J. DODDS
Richard U. Chapin
RICHARD U. CHAPIN

EXHIBIT "A"

Costs

Trunkage	1.6¢ per square foot of area served
Service Charge	12¢ per month per residential customer or residential equivalent



CITY OF BELLEVUE, WASHINGTON

RESOLUTION NO. 3609

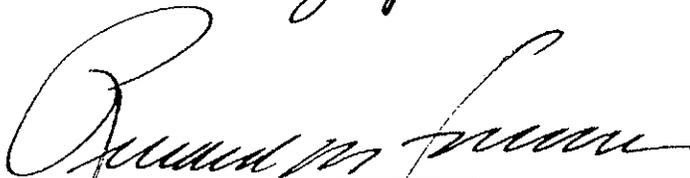
A RESOLUTION authorizing execution of an agreement between the City of Kirkland and the City of Bellevue and Yarrow Point Partners to provide sanitary sewer service to an area within the City of Kirkland.

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

Section 1. The City Manager or her designee is hereby authorized and directed to execute, on behalf of the City, that certain agreement between the City of Kirkland and the City of Bellevue and Yarrow Point Partners to provide sanitary sewer service to an area within the City of Kirkland, which has been given Clerk's Receiving No. 6330.

PASSED by the City Council this 28 day of July, 1980, and signed in authentication of its passage this 29 day of July, 1980.

(SEAL)


Richard M. Foreman, Mayor

Attest:


Patricia K. Weber, City Clerk

FILED NO. 5892
CITY OF BELLEVUE

DATE 1-25-80

CITY CLERK P. Wilson
Re # 3505

AGREEMENT

This agreement made and entered into this day by and between the City of Kirkland, an optional code city, hereinafter referred to as "Kirkland" and the City of Bellevue, an optional code city, hereinafter referred to as "Bellevue",

W I T N E S S E T H :

WHEREAS, both Kirkland and Bellevue are authorized by State law to enter into cooperative agreements; and

WHEREAS, the area described and designated on Exhibit "A" (attached hereto and by this reference incorporated herein) as subject area of the City of Kirkland sanitary sewer system; and

WHEREAS, said area is not presently connected to the Kirkland sanitary sewer system, and because of the topography of the area, may not readily be so connected; and

WHEREAS, the service area and corporate boundaries of the City of Bellevue and its sanitary sewer system lie adjacent to the subject area and the subject area can conveniently be connected into a Bellevue sewer system facility existing or under construction; and

WHEREAS, both parties are desirous where possible and convenient to mutually assist one another.

NOW, THEREFORE, in consideration of the agreements herein contained, it is agreed as follows:

Section 1. All sanitary sewer facilities to be constructed within the subject area described and designated on Exhibit "A", as attached hereto and by this reference incorporated herein, shall upon construction and acceptance, become for all purposes, including customer service charges and maintenance,

part of the Kirkland sanitary sewer system, but may, nevertheless, be connected into the Bellevue sewer system sanitary facility line lying within ten feet (10') and at the point so designated as "connection point" on Exhibit "A".

Section 2. Bellevue agrees to accept all sewage entering into its system through said connection point and to convey same through its system to its connection with the municipality of Metropolitan Seattle System.

Section 3. No part of the cost of construction of the sanitary sewer facilities to be constructed within subject area, nor any of its future maintenance or repair, shall be borne by the City of Bellevue.

Section 4. City of Kirkland agrees to pay over to City of Bellevue as to each property within subject area, as it makes sewer connection, an amount equal to 1.6¢ per square foot of area of each property. In addition thereto, Kirkland will pay to Bellevue a monthly service trunkage charge in an amount equal to 12¢ per month per residential customer or residential equivalent, actually connected and served by the facilities of the Kirkland sewer system within the subject area.

Section 5. Neither party shall by virtue of this agreement acquire any proprietary or governmental interest in the sewage system or sewer line of the other party. Each party shall be solely responsible for the operation and maintenance of its own system of sewage collection and shall save the other party harmless from any claim for damage, real or imaginary, made by a third party, and alleging negligence or misfeasance in the operation or maintenance of the other party's system, or in the acts or omissions of its own officers or employees.

Section 6. This writing embodies the entire agreement of the parties. There are no promises, terms, conditions, or obligations other than those contained herein. This agreement may be amended only by written instrument signed by both parties.

Section 7. No waiver by either party of any term or condition of this agreement shall be deemed or construed as a waiver of any other term or condition, nor shall a waiver of any subsequent breach, whether of the same or of a different provision of this agreement.

Section 8. This agreement shall terminate upon six (6) months written notice given by either party to the other party. In the event of termination under this paragraph, all costs of disconnection shall be borne by the party requesting the termination.

THIS AGREEMENT SIGNED the 28 day of January, 1979.

CITY OF KIRKLAND

By Allen B. [Signature]

CITY OF BELLEVUE

By [Signature]

Execution of this agreement approved on behalf of the City of Bellevue by resolution of its City Council, adopted the 28 day of January, 1979, and authorized by the City of Kirkland by Resolution No. R-2687 of the Kirkland City Council, adopted the 17th day of December, 1979.

Approved as to form:

William C. [Signature]
Assistant City Attorney

1-15-80

ORIGINAL!

CITY OF BELLEVUE, WASHINGTON

RESOLUTION NO. 3505

A RESOLUTION authorizing execution of an agreement between the City of Kirkland and the City of Bellevue to provide sanitary sewer service to an area within the City of Kirkland.

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

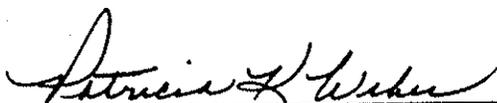
Section 1. The Acting City Manager or his designee is hereby authorized and directed to execute, on behalf of the City, that certain agreement between the City of Kirkland and the City of Bellevue to provide sanitary sewer service to an area within the City of Kirkland, which has been given Clerk's Receiving No. 5892

PASSED by the City Council this 28 day of January, 1980, and signed in authentication of its passage this 28 day of January, 1980.

(SEAL)


Richard M. Foreman, Mayor

Attest:


Patricia K. Weber, City Clerk

**INTERGOVERNMENTAL COOPERATION AGREEMENT BETWEEN THE CITY OF
BELLEVUE AND THE CITY OF KIRKLAND**

FOR

**PROVIDING SANITARY SEWER SERVICE TO SOUTH KIRKLAND PARK AND
RIDE GARAGE**

This Intergovernmental Cooperation Agreement (“Agreement”) effective this 6th day of SEPT., 2012, is entered into between the CITY OF BELLEVUE, a Washington municipal corporation (“Bellevue”) and the CITY OF KIRKLAND, a Washington municipal corporation (“Kirkland”), regarding the provision of sanitary sewer services to the South Kirkland Park and Ride project.

RECITALS

WHEREAS, Bellevue is a non-charter optional municipal code city incorporated under the laws of the State of Washington, with authority to enact laws and enter into agreements to promote the health, safety, and welfare of its citizens and for other lawful purposes; and

WHEREAS, Kirkland is a non-charter optional municipal code city incorporated under the laws of the State of Washington, with authority to enact laws and enter into agreements to promote the health, safety, and welfare of its citizens and for other lawful purposes; and

WHEREAS, King County Metro Transit (“KCMT”) owns a parcel of land measuring approximately 3.8 acres at the NE corner of 108th Avenue and NE 38th Place (the “Property”), which parcel is split by the jurisdictional boundary between Bellevue and Kirkland; and

WHEREAS, KCMT has operated the South Kirkland Park and Ride (“SKPR”) on the Property since 1978; and

WHEREAS, KCMT has applied to construct improvements on the SKPR facility, including construction of multifamily housing, affordable housing, a 3.25 story parking garage and related improvements; and

WHEREAS, the proposed multifamily and affordable housing will be on the west side of the Property on the Kirkland Portion of the Property; and

WHEREAS, the proposed parking garage will be located on the southeast corner of the Property and oriented in an east-west direction along 108th Avenue NE on the Bellevue portion of the Property. The east and south boundaries of the SKPR within Bellevue’s jurisdiction contain ascending steep slopes (over 40 percent slopes), which are deemed critical areas under Bellevue’s Land Use Code, Part 20.25H; and

WHEREAS, Bellevue's Utilities Department provides sanitary sewer services to residents and ratepayers within the City of Bellevue corporate limits and Kirkland's Public Works Department provides sanitary sewer service to residents and ratepayers within the City of Kirkland corporate limits; and

WHEREAS, the nearest sanitary sewer to the SKPR in Bellevue is a Metro trunk line located above the steep slope critical area to the east of the SKPR. Providing sanitary sewer to the proposed parking garage would require constructing a line to connect the proposed parking garage to the Metro trunk line. This construction would require disturbing the steep slope critical area, and the corresponding elevation of the new sanitary sewer line would require installation of pumping facilities to pump effluent uphill to the Metro trunk line; and

WHEREAS, Kirkland provides sanitary sewer to the SKPR and has connections available on **NE 38th Street** that could provide sanitary sewer service to that portion of the proposed parking garage located within Bellevue's jurisdiction; and

WHEREAS, based on the potential construction impacts to the steep slope critical area and the requirement to pump effluent to address grade change challenges, it is economically and technologically inefficient for Bellevue to provide sanitary sewer service to the proposed parking garage; and

WHEREAS, the City of Bellevue and the City of Kirkland both strive to provide the most efficient means of providing sanitary sewer service to their residents and ratepayers; and

WHEREAS, in support of the multi-jurisdictional cooperative efforts for this Essential Public Facility the parties agree that Kirkland would be best able to provide sanitary sewer service for the proposed parking garage to be constructed on the property; and

WHEREAS, the Kirkland and Bellevue are authorized to enter into this Agreement pursuant to and in accordance with the State Interlocal Cooperation Act, Chapter 39.34 RCW.

NOW, THEREFORE, in consideration of mutual promises and covenants contained herein, the parties agree to the terms and conditions as follows:

1.0 Provision of Sanitary Sewer Service

1.1. Bellevue authorizes Kirkland to provide sanitary sewer service for that portion of the SKPR located within Bellevue's jurisdiction. See Attachment A to this Agreement.

1.2. Kirkland agrees to do all things necessary and/or appropriate to provide sanitary sewer services for that portion of the SKPR property that exists within Bellevue's jurisdiction.

1.3. As the designated provider of sanitary sewer services, Kirkland shall process all permits and approvals required for sanitary sewer service connection and/or operation required for redevelopment of the SKPR.

2.0 Indemnification

2.1. Kirkland shall indemnify, defend and hold harmless Bellevue, its employees, servants, and agents from any and all claims, demands, suits, actions, damages, recoveries, judgments, costs, or expenses (including without limitation, attorneys' and expert witness fees) arising or growing out of or in connection with or related to, either directly or indirectly the provision of sanitary sewer service to the SKPR, except to the extent such claims arise from the sole or partial negligence, error or omissions of Bellevue, its employees, servants, and agents. Kirkland agrees that this its obligations under this subparagraph extend to any claim, demand and/or cause of action brought by or, or on behalf of, any of its employees or agents. For this purpose, Kirkland, by mutual negotiation, hereby waives, as respects Bellevue, any immunity that would otherwise be available against such claims under the Industrial Insurance provisions of Title 51 RCW. In the event Bellevue incurs any judgment, award, and/or cost arising therefrom including attorneys' fees to enforce the provisions of this article, all such fees, expenses, and costs shall be recoverable from Kirkland.

2.2. Bellevue shall indemnify, defend and hold harmless Kirkland, its employees, servants, and agents from any and all claims, demands, suits, actions, damages, recoveries, judgments, costs, or expenses (including without limitation, attorneys' and expert witness fees) arising or growing out of or in connection with or related to, either directly or indirectly the provision of sanitary sewer service to the SKPR, except to the extent such claims arise from the sole or partial negligence, error or omissions of Kirkland, its employees, servants, and agents. Bellevue agrees that this its obligations under this subparagraph extend to any claim, demand and/or cause of action brought by or, or on behalf of, any of its employees or agents. For this purpose, Bellevue, by mutual negotiation, hereby waives, as respects Kirkland, any immunity that would otherwise be available against such claims under the Industrial Insurance provisions of Title 51 RCW. In the event Kirkland incurs any judgment, award, and/or cost arising therefrom including attorneys' fees to enforce the provisions of this article, all such fees, expenses, and costs shall be recoverable from Bellevue.

3.0 General Provisions

3.1 This Agreement shall be interpreted, construed, and enforced in accordance with the laws of the State of Washington. Venue for any action under this Agreement shall be King County, Washington.

3.2 This Agreement shall be binding upon and inure to the benefit of the successors and assigns of Bellevue and Kirkland.

3.3 This Agreement is made and entered into for the sole protection and benefit of the parties hereto and their successors and assigns. No other person shall have any right of action based upon any provision of this Agreement.

3.4 This Agreement has been reviewed and revised by legal counsel for all parties and no presumption or rule that ambiguity shall be construed against the party drafting the document shall apply to the interpretation or enforcement of this Agreement. These parties intend this Agreement to be interpreted to the full extent authorized by applicable law.

3.5 This Agreement, including its exhibits, may be amended only by a written instrument executed by each of the parties hereto.

3.6 This Agreement constitutes the entire agreement of the parties with respect to the subject matter of this Agreement, and supersedes any and all prior negotiations (oral and written), understandings and agreements with respect hereto.

3.7 This Agreement may be executed in several counterparts, each of which shall be deemed an original, and all counterparts together shall constitute by tone and the same instrument.

3.8 This Agreement shall take effect upon execution of the Agreement after authorization by Bellevue's City Council and Kirkland's City Council. This Agreement shall remain in effect until terminated by either party by 180 days prior written notice to the other party.

3.9 A copy of this Agreement shall be filed with the Bellevue and Kirkland City Clerks and the County Auditor.

4. Notices. All notices required under this Agreement shall be deemed sufficient if sent in writing by U.S. Mail or by electronic mail. All notices shall be delivered to the following addresses or to any other or additional addresses as may be specified from time to time by notice to either party. Notices shall be deemed received on the day sent electronically or 3 business days after the notice is placed in the U.S. Mail

Bellevue: Utilities Director
City of Bellevue
P.O. Box 90012
Bellevue, WA 98009-9012

With a copy to: City Attorney
City of Bellevue
P.O. Box 90012
Bellevue, WA 98009-9012

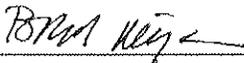
Kirkland: Public Works Director
City of Kirkland
123 5th Avenue
Kirkland, WA 98033

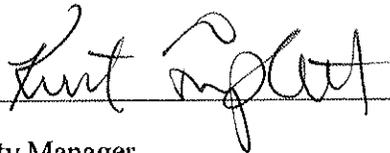
With a copy to: City Attorney
City of Kirkland
123 5th Avenue
Kirkland, WA 98033

IN WITNESS WHEREOF, each of the parties has executed this Agreement by having its authorized representative affix his/her name in the appropriate space below:

CITY OF BELLEVUE

CITY OF KIRKLAND

By: 

By: 

Title: City Manager - Deputy

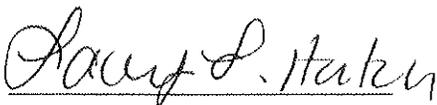
Title: City Manager

Date: 8-9-12

Date: 9/7/12

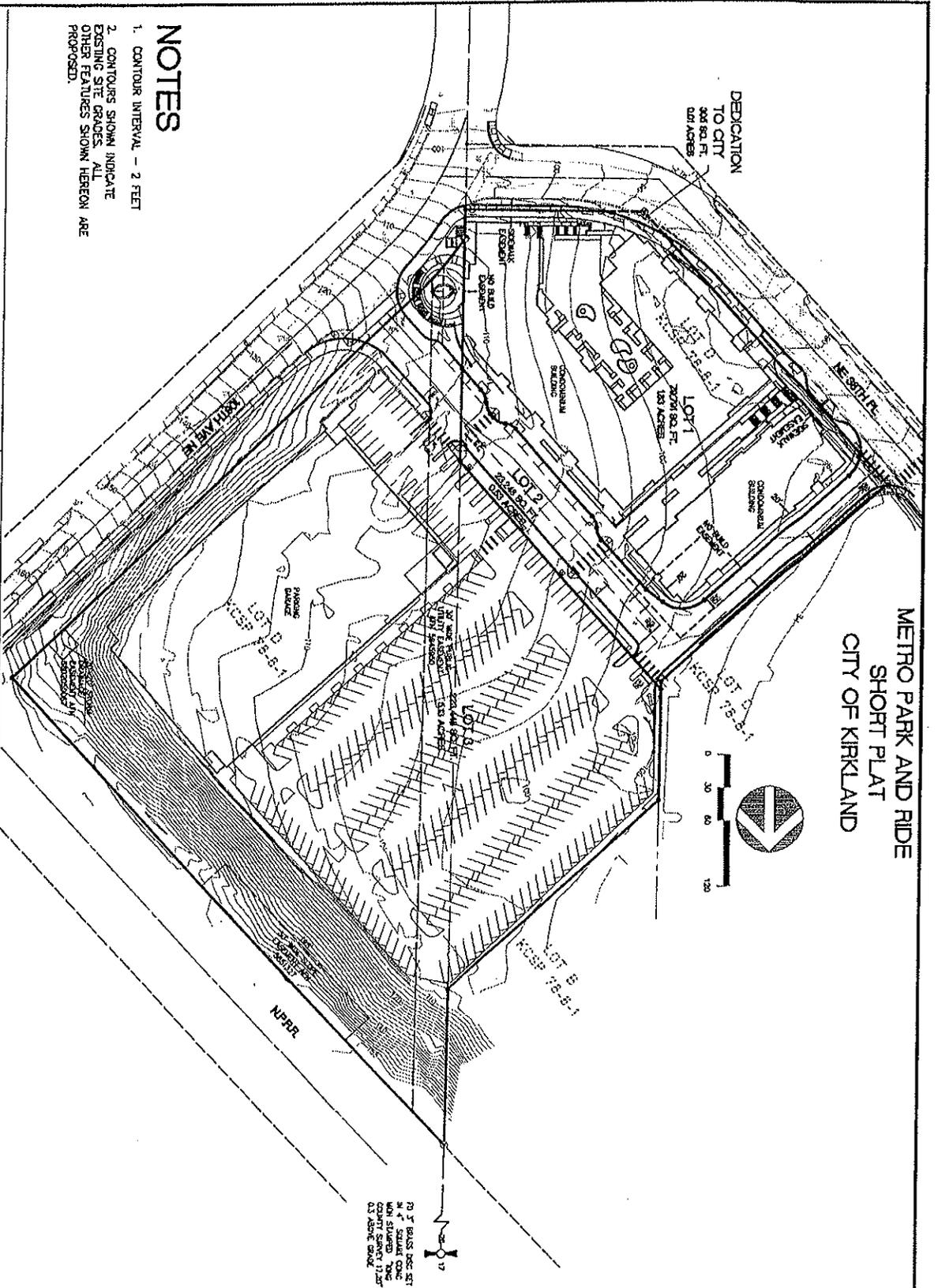
Approved as to form:

Approved as to form:





METRO PARK AND RIDE
SHORT PLAT
CITY OF KIRKLAND



NOTES

1. CONTOUR INTERVAL - 2 FEET
2. CONTOURS SHOWN INDICATE EXISTING SITE GRADES. ALL OTHER FEATURES SHOWN HEREON ARE PROPOSED.

SURVEYOR'S CERTIFICATE

THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECTION, IN CONFORMANCE WITH THE REQUIREMENTS OF THE SURVEY RECORDING ACT AT THE REQUEST OF _____ ON _____ 20__

SURVEYOR _____
CERTIFICATE NO. _____



DAVID EVANS AND ASSOCIATES, INC.
415 - 112th Avenue SE
Bellevue Washington 98005-3518
Phone: 425.519.5500

PORTION OF:
N 1/2 SEC. 20
T. 25 N. R. 5 E. W. 4

DWN. BY A.A.A.	DATE 04-16-12	JOB NO. K2000000
CHD. BY DEV	SCALE 1" = 80'	SHEET 3 OF 3

ATTACHMENT A SITE PLAN
SOUTH KIRKLAND PARK AND RIDE



City of
Bellevue

Public Works/Utilities Department
Post Office Box 90012 • Bellevue, Washington • 98009 9012

June 6, 1990

Bob Bandarra, Utilities Manager
City of Redmond Public Works Department
15670 N.E. 85th Street
Redmond, WA 98052

RE: Proposed Plat - Sanitary Sewer Service
N.E. 20th East of 173rd Ave. N.E.
Developer: Gene Harfst

We have reviewed the request to provide sanitary sewer service to the referenced proposed plat within the City of Redmond and agree after discussions with your department that it is feasible to provide service by connection into the existing Bellevue sanitary sewer located at the southeast corner of the property, being manhole 30-649.

There are several existing interlocal sanitary sewer service agreements between the City of Redmond and the City of Bellevue, which are being reviewed and at this time, we are requesting that this letter serve as an understanding and approval for the City of Redmond to serve the proposed plat under similar conditions of the previous agreements and thus permit time for both agencies to review all agreements and include them into one for final acceptance as agreed to by both cities.

The conditions of approval are as follows:

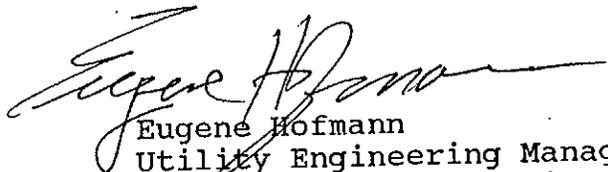
1. Purpose. The purpose of this letter of understanding is to provide sewer service to the proposed referenced Plat in the City of Redmond subject to the conditions stated herein.
2. Connections. All sanitary sewer facilities to be constructed within the referenced area shall, upon construction and acceptance, become for all purposes, including customer service charges and maintenance, part of the Redmond sanitary sewer system facility to that point designated as City of Bellevue sanitary sewer manhole 30-649 located in the existing Plat of Malibu Vista.
3. Acceptance of Sewage. Bellevue agrees to accept all sewage entering into its system through said connection points which meets all applicable METRO, D.O.E. or other regulations, and to convey same through its system to its connection with the City of Bellevue, City of Redmond Joint Use Sanitary Sewer trunkline.

4. Construction Maintenance and Repair Cost. No part of the cost of construction of the sanitary sewer facilities to be constructed within the subject area, nor any of its future maintenance or repair, shall be borne by the City of Bellevue.
5. Customer Billing. It is understood and agreed that all properties within the subject area shall be customers of Redmond and shall be billed by Redmond in accordance with its standard practices and rates.
6. Payment to Bellevue. The City of Redmond agrees to pay to the City of Bellevue a monthly service charge in an amount equal to \$0.12 per month per residential customer or residential equivalent, actually connected and served by facilities of the Bellevue sewer system within the subject area.
7. Assignment and Termination. Each party shall have the right to assign this agreement or its rights or obligations hereunder, in whole or in part, to any entity without the prior written consent of the other party, and neither shall have the right to terminate its obligations hereunder by dissolution or otherwise.
8. Sewer System Property. Neither party shall by virtue of this agreement acquire any proprietary or governmental interest in the sewer system or sewer line of the other party. Each party shall be solely responsible for the operation and maintenance of its own system of sewage collection and shall defend, indemnify and save the other party harmless from any and all claims for injury or death to persons or damage to property, real or imaginary, alleging negligence or misfeasance in the operation or maintenance of the other party's system, or in the acts or omissions of its own officers, employees or agents.
9. Effective Date and Duration. This temporary agreement shall become effective upon authorized signature of both parties and shall remain in effect until terminated by the combined final interlocal agreement to be initiated and accepted by both cities.
10. Entirety. This writing embodies the entire understanding of the parties. There are no promises, terms, conditions, or obligations other than those contained herein. This understanding may be amended only by written agreement signed by both parties.

If this meets with your approval, please sign both and return one copy for our records.

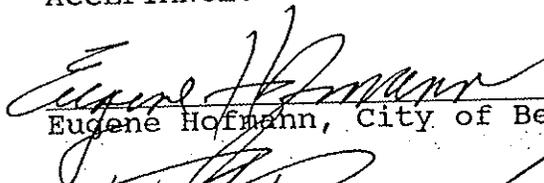
Wes Jorgenson of Bellevue will be working with Scott Thomason of Redmond in the near future to re-write all joint use and interlocal sewer service agreements between the City of Bellevue and the City of Redmond.

Sincerely,

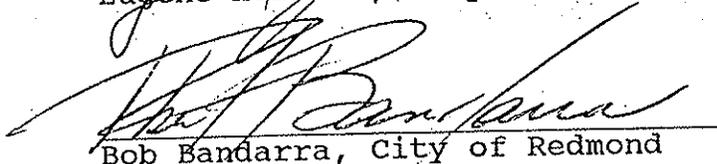


Eugene Hofmann
Utility Engineering Manager
Public Works & Utilities

ACCEPTANCE:



Eugene Hofmann, City of Bellevue



Bob Bandararra, City of Redmond

RECEIVED THIS D...

FILED NO. 11096

86/06/09

#0922 E

CITY OF BELLEVUE

RECD F 11.00
CASHSL

***11.00

DATE 4/8/86

55

CITY CLERK J. J. J.

O. Connell

City of Redmond

JUN 9 2 43 PM '86
BY THE DIVISION OF
RECORDS & COMMUNICATIONS
KING COUNTY

INTERLOCAL SEWER SERVICE AGREEMENT
Plat of Sheffield Greens, Division 3

EXECUTED COPY

8606090922

This agreement made and entered into this day by and between the City of Redmond, a municipal corporation of the State of Washington hereinafter referred to as "Redmond" and the City of Bellevue, a municipal corporation of the State of Washington, hereinafter referred to as "Bellevue",

WITNESSETH:

WHEREAS, Redmond and Bellevue are authorized by Chapter 39.34 RCW, the Interlocal Cooperation Act, to enter into cooperative agreements; and

WHEREAS, the Plat of Sheffield Greens, Division 3, lies within the City limits of the City of Bellevue, and;

WHEREAS, the sanitary sewer system for the Plat of Sheffield Greens, Division 3, is not connected to the Bellevue sanitary sewer system, and because of the topography of the area, may not readily be so connected; and

WHEREAS, corporate boundaries of the City of Redmond and its sanitary sewer service area lie adjacent to the Plat of Sheffield Greens, Division 3; and said plat can conveniently be connected to a Redmond sanitary sewer system facility existing or under construction; and

WHEREAS, both parties desire where possible and convenient to mutually assist one another.

NOW, THEREFORE, in consideration of the agreements

herein contained, it is agreed as follows:

1. Purpose. The purpose of this agreement is to provide sewer service to the Plat of Sheffield Greens, Division 3, in the City of Bellevue subject to the conditions stated herein.

2. Connections. All sanitary sewer facilities to be constructed within the subject area described and designated on Exhibit "A", as attached hereto and by this reference incorporated herein, shall upon construction and acceptance, become for all purposes, including customer service charges and maintenance, part of the Bellevue sanitary sewer system but may, nevertheless, be connected to the Redmond sanitary sewer system facility line lying within twenty feet of said subject area and at those points designated as "connection points" on Exhibit "A".

3. Acceptance of Sewage. Redmond agrees to accept all sewage entering into its system through said connection points which meets all applicable METRO, D.O.E. or other regulations, and to convey same through its system to its connection with the Municipality of Metropolitan Seattle system.

4. Construction Maintenance and Repair Cost. No part of the cost of construction of the sanitary sewer facilities to be constructed within the subject area, nor any of its

8606090922

future maintenance or repair, shall be borne by the City of Redmond.

5. Customer Billing. It is understood and agreed that all properties within the subject area shall be customers of Bellevue and shall be billed by Bellevue in accordance with its standard practices and rates.

6. Payment to Redmond. The City of Bellevue agrees to pay to the City of Redmond a monthly service charge in an amount equal to \$0.12 per month per residential customer or residential equivalent, actually connected and served by facilities of the Bellevue sewer system within the subject area.

7. Assignment and Termination. Each party shall have the right to assign this agreement or its rights or obligations hereunder, in whole or in part, to any entity without the prior written consent of the other party, and neither shall have the right to terminate its obligations hereunder by dissolution or otherwise.

8. Sewer System Property. Neither party shall by virtue of this agreement acquire any proprietary or governmental interest in the sewer system or sewer line of the other party. Each party shall be solely responsible for the operation and maintenance of its own system of sewage collection and shall save the other party harmless from any claim for damage, real or imaginary, made by a third party,

8606090922

8606090922

and alleging negligence or misfeasance in the operation or maintenance of the other party's system, or in the acts or omissions of its own officers or employees.

9. Effective Date and Duration. This interlocal agreement shall become effective upon authorized signature of both parties and shall remain in effect in perpetuity or until terminated or amended pursuant to the terms of this interlocal agreement.

10. Joint Board. Pursuant to RCW 39.34.030 (4) (a), a joint board comprised of the Public Works Director or designee of each respective party shall be responsible for administering this agreement.

11. Filing. A copy of this interlocal agreement shall be filed with the City Clerk of each respective City, the County Auditor, and the Secretary of State.

12. Entirety. This writing embodies the entire agreement of the parties. There are no promises, terms, conditions, or obligations other than those contained herein. This agreement may be amended only by written instrument signed by both parties.

8606090922

IN WITNESS WHEREOF the parties have hereunto set their hands and seals.

By *Mary Lawrence*
CITY OF REDMOND

Date 4-9-86

Approved as to form:

Joy C. Martin
City Attorney for
CITY OF REDMOND

Date _____

By *[Signature]*
CITY OF BELLEVUE

Date 4-28-86

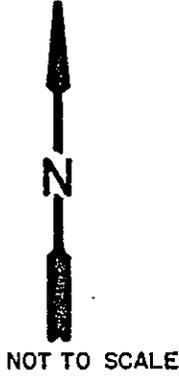
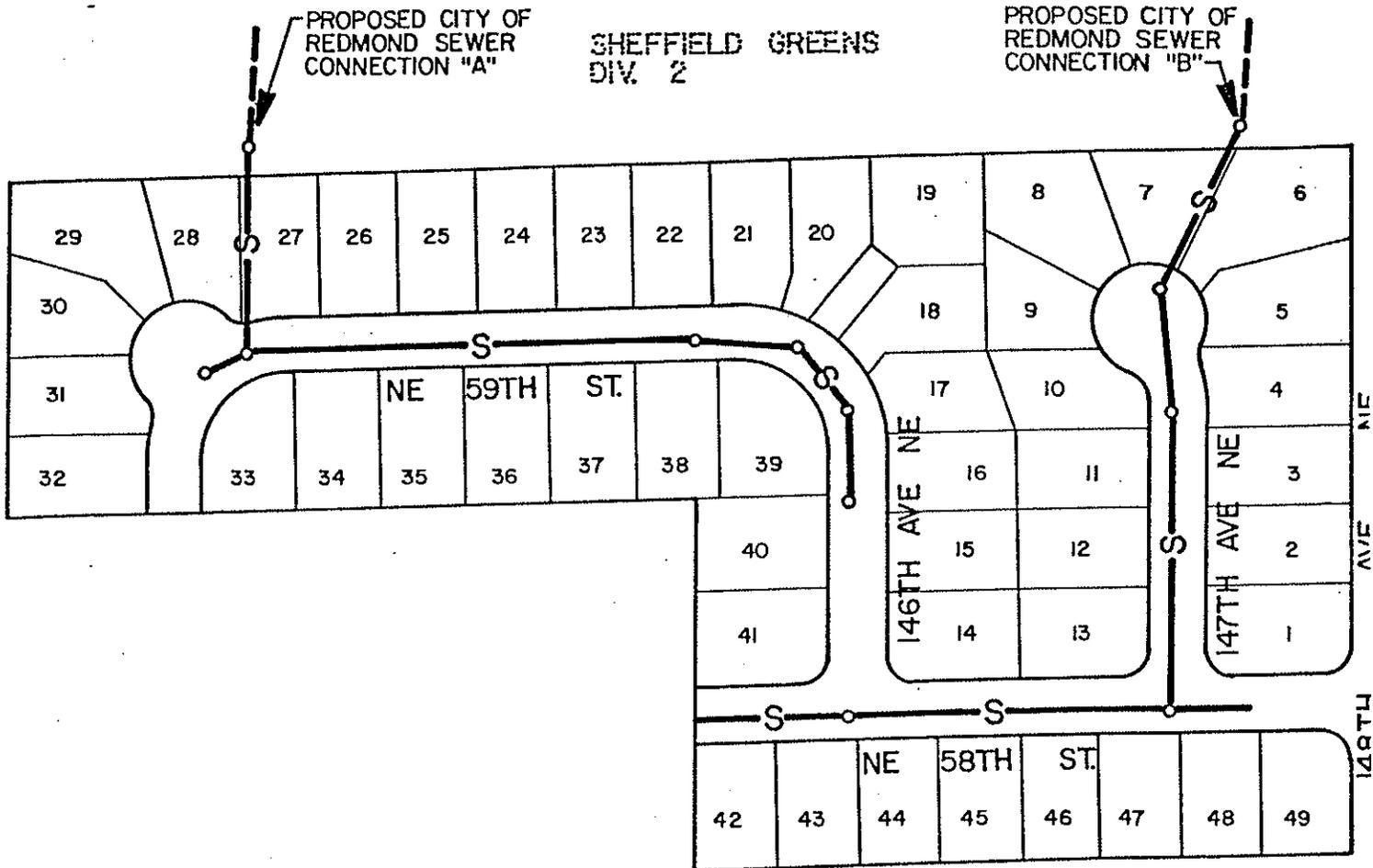
Approved as to form:

[Signature]
City Attorney for
CITY OF BELLEVUE

Date 4-18-86

EXHIBIT "A"
PLAT OF SHEFFIELD GREENS DIV. 3
SEWER SERVICE AREA

8606090922



8606090922

BRIDLE
TRAILS
STATE
PARK

BELLEVUE → REOMOND

140TH AVE NE

NE 61ST CT.

148TH AVE. NE

BELLEVUE
GOLF
COURSE

SITE

SHEFFIELD GREENS
DIVISION 3

SR 520

NE 40TH ST

NORTH

SCALE : 1" = 2560'

VICINITY MAP

SCALE : 1" = 2560'

SANITARY SEWER SERVICE AGREEMENT

PLAT OF WETHERSFIELD SOUTH

This Agreement made and entered into this 15th day of Nov., 1981, by and between the City of Redmond, a municipal corporation of the State of Washington, hereinafter referred to as "Redmond" and the City of Bellevue, a municipal corporation of the State of Washington, hereinafter referred to as "Bellevue",

W I T N E S S E T H :

WHEREAS, both Redmond and Bellevue are authorized by State law to enter into cooperative agreements; and

WHEREAS, the subject area of the Plat of Wetherfield South, described and designated on Exhibit "A" (attached hereto and by this reference incorporated herein) is within Bellevue and is not presently connected to the Bellevue sewer system because of the topography and lack of gravity sanitary sewer service connections in the subject area, and

WHEREAS, the service area and corporate boundaries of Redmond and its sanitary sewer system lie adjacent to the subject area and the sanitary sewer within the subject plat can be conveniently connected into the Redmond sewer system facility at locations as described and designated on Exhibit "A", and

WHEREAS, both parties are desirous wherever possible and convenient to mutually assist one another,

NOW, THEREFORE, in consideration of the mutual covenants contained herein, it is hereby agreed as follows:

1. Connections. Redmond agrees to allow and accept the necessary

EXECUTED COPY

connections as established by developer extension agreements and supply gravity sanitary sewer service to subject plat at connection points A and B as shown on attached Exhibit "A".

2. Conveyance. Redmond agrees to accept all sewage entering into its system through said connection points and to convey same through its system to its connections with the municipality of Metropolitan Seattle System.

3. Construction Maintenance and Repair Cost. No part of the cost of construction of said sanitary sewer facilities within the plat of Wethersfield South subject area, nor any of its future maintenance or repair, shall be borne by Redmond. Bellevue shall bear all costs of said sanitary sewer service connections and bear the risk of loss or destruction of said sanitary sewer service connection as provided by Developer Extension Agreements with customers within subject area.

4. Customer Billing. It is understood and agreed that all properties within subject area shall be customers of Bellevue and shall be billed by Bellevue in accordance with its standard practices and rates. In addition, Bellevue shall collect and remit to Redmond any utility taxes levied by Redmond on the sanitary sewer utility in the city.

5. Payment to Redmond. Bellevue agrees to pay Redmond any charges imposed on Redmond by Metro and a sum of 12¢ per month for each customer or equivalent within subject plat of Wethersfield South served by Redmond's sanitary sewer system each month in which said customers utilize said sanitary sewer system, pursuant to the terms of that certain agreement between the City of Redmond and Lake Hills Sewer District dated February 23, 1968 and any amendments thereto.

6. Sewer Service Changes. It is understood and agreed that Bellevue reserves the right to plan, engineer, construct, maintain, operate, reconstruct, repair and replace the sanitary sewer systems and all appurtenances thereto within subject plat of Wethersfield South; to finance the same upon such terms and conditions as may be reasonable and appropriate; to enter into Developer Extension Agreements or other agreements with respect to the sanitary sewer system within subject area.

7. Assignment and Termination. Either party shall have the right to assign this agreement or its rights or obligations hereunder, in whole or in part, to any entity without the prior written consent of the other party, and neither shall have the right to terminate its obligations hereunder by dissolution or otherwise.

8. Sewage System Property. Neither party shall by virtue of this agreement acquire any proprietary or governmental interest in the sewage system or sewer line of the other part. Each party shall be solely responsible for the operation and maintenance of its own system of sewage collection and shall save the other party harmless from any claim for damage, real or imaginary, made by a third party, and alleging negligence or misfeasance in the operation or maintenance of the other party's system, or in the acts of omissions of its own officers or employees.

9. Entirety. This writing embodies the entire agreement of the parties. There are no promises, terms, conditions, or obligations other than those contained herein. This agreement may be amended only by written instrument signed by both parties.

IN WITNESS WHEREOF the parties have hereunto set their hands and seals and each warrant that they have adopted ordinances and/or resolutions, respectively, authorizing the execution of this agreement and the undersigned parties warrant their authority on behalf of the parties to this agreement to execute the same for and on behalf of the respective parties.

CITY OF REDMOND

Attested:

By: Louis A. Schaefer
Deputy for Paul Kusakabe, City Clerk

By: Christine T. Himes
Christine T. Himes, Mayor



Date 10-29-81

CITY OF BELLEVUE

By: Robert H. Cook

Date 11-15-81

Execution of this Sanitary Sewer Agreement approved on behalf of the City of Redmond by resolution of its City Council, adopted the _____ day of _____, 1981, Resolution No. _____ and approved on behalf of the City of Bellevue by Resolution of its City Council, adopted the 11 day of November, 1981, Resolution No. 3929.

Approved as to form:

William C. Jones
Assistant City Attorney

and concurrently with the use of said line by District in order to transport sanitary sewage to an existing Municipality of Metropolitan Seattle facility (Metro); and

WHEREAS; District is agreeable to amending the prior agreement, above referred to, between the parties, to provide for a portion of the District's system to be used as a joint use general facility, as that term is defined in the prior agreement of the parties and the facility to be used jointly by the parties was not included as a joint use facility in the prior agreement of the parties, but the parties, by addendum to said agreement, desire to include this additional District facility as a joint use general facility, now, therefore,

IN CONSIDERATION of the mutual covenants and agreements herein contained, it is agreed by and between the parties as follows:

1. Description and Identification of Joint Use General Facility: The general joint use facility that will be the subject matter of this addendum and jointly used by District and City, upon the terms and conditions set forth herein, is located within District's boundaries, and is described as follows:

(a) 12-inch trunk sewer line extending from a point 315 feet east of Lake Hills Manhole No. 6 (U.I.I.D. No. 9) to the Metro trunk facility at Northeast 16th Place and the Bellevue-Redmond Road, Bellevue, Washington.

2. Amount and Date of Payment by City to District for Use of Joint Use General Facility: City shall, concurrently with the execution of this agreement, pay to District, in cash, the sum of ELEVEN THOUSAND ONE HUNDRED THIRTY-SEVEN and 27/100ths Dollars (\$11,137.27), as payment by City to District for City's right to jointly use said joint use facility. Said amount to be paid by City to District has been computed by determining the maximum number of potential City

customers and the maximum number of potential District customers who now or hereafter may use or utilize said joint use facility and applying said resulting proportion to the original capital cost of said joint use facility. The aforesaid computation has been heretofore made by engineers for City and District and be and is hereby approved by the parties hereto. District shall deposit the amount received for said joint use facility in the bond redemption fund that was created by District in the resolution adopted by District to fund said improvement.

3. Title to Joint Use General Facility: With respect to the joint use general facility described in this addendum, District shall retain title, ownership, jurisdiction and control over said joint use general facility and shall be deemed the owner thereof for all purposes, the capital contribution made by City to District for joint use of said line being a payment for the right of joint use of said general facility and does not entitle or vest in City any ownership in said joint use facility but only grants to City the right of joint use of capacity in said joint use facility.

4. Repair, Maintenance and Operation of Joint Use General Facility: District shall apply and provide all repairs, maintenance and operation necessary with respect to the operation and maintenance of said joint use facility in accordance with sound maintenance procedures and in accordance with good engineering practice. District agrees to maintain said joint use facility in good working order. City shall contribute a proportionate share of the cost of said repair, maintenance and operation expenses to District on the same terms and conditions as is set forth in paragraph section 2, E, subparagraph (1) and (2) of the agreement between the parties referred to hereinabove and incorporated in full herein as if set forth in full herein, provided that the word "City" shall be substituted for the word

"District" and the "District" shall be substituted for the word "City" where it appears in said quoted and referred to paragraphs. Further, the provisions of Section 2, E, (3), ~~XXX~~ and F, are incorporated from said agreement herein as if set forth in full herein with the word "District" to be substituted for the word "City" and the word "City" to be substituted for the word "District" where said designations appear in said referred to agreement.

5. Replacement of Joint Use Facility if Required Due to Other than Loss or Destruction: It is understood that District has designed said general joint use facility that is the subject matter of this agreement for a potential service located within District and that to the extent that City now desires to utilize said joint use facility, pursuant to this agreement, and if the total or substantial portion of the area within City that may use or utilize said joint use facility is developed that said development would create a surcharge on said joint use facility and as a result the existing joint use facility may not have sufficient capacity to serve both the District area and the City area that potentially will be served by said general joint use facility. It is acknowledged that if the area of District were to be totally developed, that the area within District would not create a surcharge or exceed the capacity of said general joint use facility but that with the addition of the City use of said general joint use facility, said capacity may be reached with all or a portion of said general joint use facility line. Therefore, in the event that capacity of said line is reached and City agrees, upon request by District, to construct a parallel line as may be necessary to serve the City area that uses or utilizes said joint use general facility, all at City's sole cost and expense, provided that District shall design the same to the extent that said parallel line connects to any portion of

the District's system. If, in the determination of District, it is more reasonable, from an engineering standpoint to enlarge the 12-inch joint use general facility, then City agrees to pay all capital cost and construction cost incurred in connection therewith. It is acknowledged that any replacement of said line for said purpose or construction of a parallel line will be solely for the benefit of City.

6. Cost of Connection: City shall bear all cost of connection to the joint use general facility including reasonable inspection charges as may be incurred by District in inspecting said connection and agrees not to make said connection to the District's system until such time as District has been notified of the time and date of said proposed connection, in writing.

7. Risk of Loss: The District shall bear the risk of loss or destruction of the general joint use facility as now constructed. If a parallel line is hereafter constructed by City then City shall bear the risk of loss with respect to the parallel line. If a replacement line is constructed, risk of loss shall be on City for the period of construction and after completion of the replacement line, District shall thereupon assume risk of loss or destruction of said replacement joint use facility line.

Handwritten initials: JJJ, EAT

~~8. Metering Manhole: City agrees to construct and install at its sole cost and expense a metering manhole whereby flows entering the joint use general facility, that is the subject matter of this agreement, can be measured and determined for purposes of reporting to Metro and for other purposes, and as between the parties, City shall be solely responsible for Metro charges due and payable Metro under the terms and conditions of the City's agreement with Metro and District shall be held harmless therefrom by City.~~

9. Compliance with Engineering and Public Agency

Requirements: Each party agrees to abide by the rules and regulations of all governing agencies relating to the operation of sewer systems, particularly with the nature and type of sewage that can be discharged into the system and the City agrees to take such steps as may be reasonably necessary to eliminate storm or ground water being discharged into the joint use general facility in excess of minimum standards as established by general rules and regulations of Metro. Each party agrees to comply with reasonable engineering requests from the other party concerning the use, operation, and maintenance of the joint use general facility that is the subject matter of this agreement.

10. Application of other Terms and Conditions of Joint Use and Transfer of Facilities Agreement of February 23, 1968: It is agreed by and between the parties that the following terms and conditions of that certain Joint Use and Transfer of Facilities Agreement between the parties dated February 23, 1968, reference being made to said agreement as if incorporated in full herein shall apply and become a part of this contract, except where applicable, the terms thereof shall be reciprocally changed to refer to the City or District, and the word "District" shall be substituted for the word "City", and the word "City" shall be substituted for the word "District", where applicable:

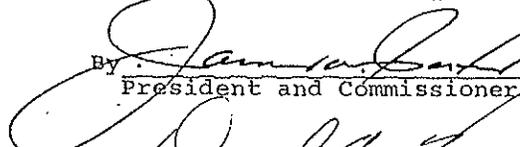
- (a) Section 1, Definitions, and subparagraph (a) City customer, (b) District customer, (c) capital cost or construction costs, (d) Metro or Metro facilities, (e) Use or utilize, and (f) Customer;
- (b) Section 6, Franchises and Easements;
- (c) Section 8, Compliance with Engineering and Public Agency Requirements;
- (d) Section 9, Payments Unconditional;
- (e) Section 10, Books and Accounts;

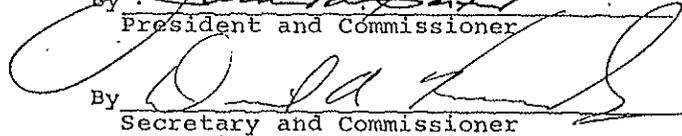
(f) Section 11, Conditions Precedent, excluding "and further subject to the condition precedent of concurrently herewith Lake Hills transfers and assigns all of its right, title and interest in and to the 18-inch trunk line and syphon, located within the City to Metro, upon terms and conditions satisfactory to Metro and the District.";

- (g) Section 12, Waiver;
- (h) Section 13, Remedies;
- (i) Section 14, Assignments;
- (j) Section 15, Entirety;
- (k) Section 16, Duration of This Agreement; and
- (l) Section 17, Fees.

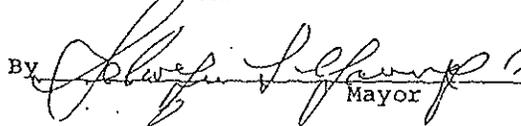
IN WITNESS WHEREOF the parties have hereunto set their hands and seals and each warrant that they adopted ordinances and/or resolutions respectively authorizing execution of this agreement and the undersigned warrant their authority on behalf of the parties of this agreement to execute the same for and on behalf of their respective parties.

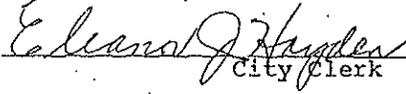
LAKE HILLS SEWER DISTRICT

By 
 President and Commissioner

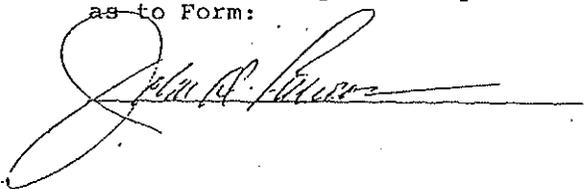
By 
 Secretary and Commissioner

CITY OF REYMOND

By 
 Mayor

Attest: 
 City Clerk

Approved by City Attorney
as to Form:



JOINT USE AND TRANSFER OF FACILITIES
AGREEMENT

THIS AGREEMENT made and entered into this 23RD day of
February, 1968, by and between LAKE HILLS SEWER
DISTRICT of King County, Washington, a municipal corpora-
tion, hereafter referred to as "DISTRICT", and THE CITY OF
REDMOND, a municipal corporation, hereafter referred to
as "CITY",

W I T N E S S E T H:

WHEREAS, the District has heretofore constructed,
operated and maintained a sanitary sewer system, said system
extending outside the territorial boundaries of District
and since 1955 has been providing sewer service to the
public generally; and

WHEREAS, City has heretofore constructed, operated
and maintained a sewer system within the boundaries of
City and has provided sewer service to customers within the
boundaries of City; and

WHEREAS, City has heretofore annexed certain territory
to the City, pursuant to City Ordinance No. 331, adopted
February 27, 1964, thereby extending the boundaries of
City so that the territory of the City overlap portions of
the territory of District, resulting in an overlap of juris-
diction between City and District with respect to the pro-
viding of sewer service to real property within the over-
lap area; and

WHEREAS, at the time of said annexation, District had
theretofore constructed certain sewer facilities located
within the area annexed to the City pursuant to said ordinance,
and, subsequent to said annexation the District continued
to construct sewer facilities within the overlap area,
said sewer facilities being sized to provide sewer service

to the District and to areas not within the boundaries of the District at the time of construction of said facilities, and financing of said sewer facilities was accomplished by the District's sale of sewer revenue bonds; and

WHEREAS, subsequent to said annexation, the District contracted with land developers within the overlap area, whereby developers would construct local sewer facilities or collection systems, at developer's sole cost and expense, and conveyed said facilities to the District, in consideration of District agreeing to provide sewer service to the real property described in the developer extension agreements and with respect to the Braeburn pump and pressure line, the District agreed to reimburse the developer for the cost of said general facility, in that the same served real property other than that owned by the developer, said reimbursement to said developer being in accordance with the comprehensive plan of the District, however, with the exception of the Braeburn pump and pressure line, local facilities were constructed within the overlap area without capital outlay by the District for said construction; and

WHEREAS, both the City and District are legally capable of providing sewer service to the territory within the overlap area and a conflict of jurisdiction between the City and District has heretofore arisen and the parties are desirous of settling said conflict of jurisdiction, upon the terms and conditions as set forth herein, and City is desirous of providing sewer service to the real property within the boundaries of the City, including the real property within the boundaries of the City located within the overlap area and being in control of all incidents of said sewer service, including but not limited to the right

to bill for said sewer service and to maintain, operate and repair all sewer systems located within the City, including within the overlap area to the extent that said facilities are within the boundaries of City, and District is willing to allow City to take over and perform this function for real property located within the city boundaries, upon the terms and conditions set forth herein; and

WHEREAS, both parties desire to jointly use certain existing sewer facilities within the overlap area and sewer facilities hereafter constructed by either of the parties as may be necessary or convenient for the respective parties to provide sewer service to customers of the District and City and the parties are desirous of avoiding the duplication of facilities; and

WHEREAS, City and District will in the future construct additional local and general facilities which may be tributary to the other parties existing or subsequent sewer facilities; and

WHEREAS, the District and City determine that it is not economically desirable for each to construct separate general or local facilities, independently of the other, and agree that it would be to the best interest of the respective parties and the public generally if certain existing general and local facilities heretofore constructed or acquired by the District and future general and local facilities were to be jointly used by the respective parties, now, therefore,

IN CONSIDERATION of the mutual covenants and agreements set forth herein, the parties do hereby agree, pursuant to the authority set forth in R.C.W. 35.13.250 and R.C.W. 56.08 .060 as follows:

Section 1: Definitions. When used in this agreement, the following terms shall have the meaning and interpretation as the following as set forth hereinbelow:

A. City Customer: A customer receiving sanitary sewer service whose real property is located within the boundaries of the City of Redmond. This definition shall include a customer located within the City of Redmond who is likewise located within the existing boundaries of the Lake Hills Sewer District.

B. District Customer: A customer receiving sanitary sewer service, whose real property, receiving sanitary sewer service is located within the boundaries of the Lake Hills Sewer District, however excluding from this definition any and all customers located within the existing boundaries of the City of Redmond.

C. Capital Costs or Construction Costs: Shall mean the contract construction cost, including engineering, overhead, legal, sales tax, easement or franchise cost acquisition, interest cost during period of construction, attributable to the construction of the facility described and shall likewise include total cost of all labor, material and equipment in connection therewith.

D. Developer Extension Agreement: Shall mean those agreements between the District or the City on one hand and the land developer or owner on the other hand, whereby the developer constructs and installs the sewer collection system within a designated area defined in said agreement, at developer's expense, pursuant to plans and specifications prepared or approved by the municipal contracting agency, with the stipulation that the developer will convey the local system to the city or district, who will accept sewage and render maintenance and operation services to such constructed

collector system upon payment of the usual connection and service charges then applicable.

E. Metro or Metro Facilities: Shall refer to the Municipality of Metropolitan Seattle and to facilities constructed or owned by Metro.

F. Use or Utilize: Shall mean a residential or equivalent customer whose sanitary or industrial waste, or any part thereof, flows to or through the facility referred to.

G. Customer: Shall mean a single family residence receiving sewage service and being invoiced by either of the parties for sewer charges, and said term shall likewise include the conversion of non-residential customers i.e., commercial and other users, into residential customers or equivalents, by use of the formula
E equals $\frac{W}{F}$

E - equivalent residential customers

W - all water consumption by non-residential customers of the parties, less water that does not enter the sanitary sewer facilities for the month in question

F - 900 cubic feet

Section 2: Joint Use of Existing General and Local Facilities:

A. Identification of Existing Joint Use General Facilities:

The existing general facilities to be and that will be jointly used by District and City, all of which, as described, are within the boundaries of City, are as follows:

- (1) North area (Ardmore) trunk facility from manhole A-7 to manhole T-16.
- (2) Braeburn general facility consisting of lift station and pressure lines, the pressure line extending from the Braeburn pump located in plat of Braeburn to the 18" trunk line

sold by District to Metro.

- (3) Sherwood Elementary (N. E. 24 Street)
trunk line.
- (4) 172nd Avenue N. E. trunk sewer,
between Metro manhole on Highway 901
and center line of N. E. 40th Street.

B. Identification of Existing Joint Use Local Sewer
Facilities:

Existing joint use local sewer facilities shall include all sewer lines that are tributary to the existing joint use general facilities described in 'A' above or that are tributary to the 18" Metro trunk line, located within the boundaries of City, through which flows sewage, the source of which is from customers of District that are not located within the boundaries of City, a description and list of said joint use local sewer facilities being attached hereto marked Exhibit 1, reference being made thereto as if incorporated in full herein.

C. Amount and Date of Payment by City to District for
Use of Existing Joint Use General Facilities:

City shall, concurrently with the execution of this agreement, pay to the District, in cash, the sum of \$21,425.21, as payment by City to District for City's joint use of said facilities. Said amount is allocated among the said existing joint use general facilities as follows:

- (1) Ardmore trunk \$7,159.40
- (2) Braeburn pump and pressure line \$10,838.31
- (3) Sherwood Elementary (N. E. 24th Street)
trunk \$1,390.32.
- (4) 172nd Avenue N. E. trunk \$2,073.18

Said amount to be paid by City to District has been computed by determining the maximum number of potential City customers and the maximum number of potential District customers who

may use or utilize said facilities and applying said resulting proportion to the capital cost of said facilities. The aforesaid computation has been heretofore made by engineers for the City and District and approved by the respective governing bodies of said parties. District shall deposit the amount received for said respective existing joint use general facilities in the respective bond redemption fund that was created by the District in the resolution adopted by District to fund said improvement. If no fund has been yet established with respect to any of said improvements, then the amount received by District with respect to said improvements shall be deposited in the bond redemption fund as may be hereafter established to fund said improvement.

D. Amount and Date of Payment by City to District For Use of Existing Joint Use Local Facilities:

There shall be no payment by City to District for the joint use of existing joint use local facilities as defined in paragraph B above.

E. Repair, Maintenance and Operation of Joint Use Facilities:

City shall apply and provide all repairs, maintenance and operation reasonably necessary with respect to the existing joint use general and local facilities as described in A and B above, the same to be provided by City in accordance with sound maintenance procedures and in accordance with good engineering practice. City agrees to maintain said joint use facilities in good working order. District shall contribute a proportionate share of the cost of said repair, maintenance and operation expenses to City as follows:

- (1) Routine maintenance and operation: Due to the difficulty of certifying and keeping records as to the exact cost of routine maintenance and operation, the parties agree that District will pay to City the sum of 12¢ per month for each customer or equivalent of District using or utilizing any portion of said joint use facilities for the billing period. Said payment shall be made within fifteen days of receipt of invoice and City will invoice district every two months, subject to adjustment every five years by agreement.
- (2) Power costs, repairs, replacements, materials and supplies: In addition to the routine maintenance and operation charge referred to herein above, District shall pay to City the actual charge incurred by City for power cost, repairs, replacements materials and supplies attributable directly to said original joint use general and local facilities based on the following formula:

C equals E times R

C - charge to District

E - actual cost of power, materials supplies, repairs and replacements during billing period for joint use general and local facilities as described in paragraphs A and B of Section 2

R - ratio of District customers or equivalent actually using or utilizing any portion of said joint use general and/or local facilities during the billing period divided by the total number of District and City customers or equivalents utilizing said joint use general and local facility during said billing period.

Said charge as computed in accordance with this formula shall be paid to City by District within fifteen days of date of receipt of invoice for said charges, the City to invoice District every two months. It is agreed that each party shall supply to the other the total number of customers using or utilizing any portion of said joint use general or local facility for the months involved in said billing. In the event of any single replacement

or repair, for which the total cost of labor, materials and supplies used in connection therewith exceed the sum of \$ 1,000.00 , for said item of replacement or repair, then the same shall be deemed a major repair or replacement, and in computing the proportionate share of said cost to be paid by the District, the foregoing formula as set forth in (2) above shall be amended and in lieu of the term "actually using or utilizing" shall be substituted the term "potentially using or utilizing".

(3) Total Loss or Destruction: In the event of total loss or destruction of said joint use general or joint use local facility, each of the parties shall contribute to the capital cost of replacing the same in accordance with the formula set forth in (2) above, to-wit utilizing the term "potentially using or utilizing" as specified above, within the then existing boundary of the City and District as of the time that said facility is replaced.

(4) Replacement Due to Other Than Loss or Destruction: In the event that replacement of a general or local joint use facility is made by the City for purposes of providing sanitary sewer service to areas that the City may hereafter serve or to provide for connection to another facility hereafter acquired by the City, then in such event, the District shall not contribute in any event to the capital cost or any cost in connection with said replacement, unless the District, prior to replacement thereof agrees, in writing, that said replacement is of benefit to the District, in which event District shall share in the

proportionate cost of said replacement as if the same was due to destruction of said joint use facilities. Provided further that if any joint use general or local joint use facility is replaced by Redmond for said purposes or a substitute service provided, there shall be no additional cost to District and the transfer of service to the substitute or new facility will be without cost to District.

F. Insurance:

With respect to the joint use general or local facilities as hereinabove described, City shall be liable for all damages and claims resulting from the operation or use of said joint use facilities and City agrees to maintain a broad form public liability property and personal injury coverage, on an occurrence basis, in not less than \$100,000 per person and \$300,000 per occurrence liability and \$50,000 property damage.

Section 3. Jurisdiction.

A. Existing boundaries: City shall have the exclusive jurisdiction and control over providing of sanitary sewer service to real property within the City existing boundaries and District shall have exclusive jurisdiction and control over providing of sewer service to real property within District's existing boundaries, except such portion as is within the City existing boundaries. To the extent that both City and District have the legal right to extend their sanitary sewer system outside their respective boundaries, then both City and District shall retain its authority to extend its sewer service beyond its corporate limits, without the consent of the other, however each agrees that it will not extend sewer service into the corporate limits of the other party without the other party's prior written

consent, except as is authorized in paragraph (F) below. Jurisdiction and control shall mean and include, without limitation of said term, the right to establish and collect sewer service charges, connection charges, charges in lieu of assessment, without accounting to the other party for the same in any respect; to plan, engineer, construct, maintain, operate, reconstruct, repair, replace the sanitary sewer systems and all appurtenances thereto; to finance the same upon such terms and conditions as may be reasonable and appropriate; to enter into developer extension agreements or other agreements with respect to the sanitary sewer system.

B. Boundary Facilities: Existing boundary facilities, to-wit facilities installed by the District and located on the boundary line between the City and District existing boundaries, that can readily serve real property located within the District. To the extent that the customer can be readily served by the District, by direct connection to said facility, said real property and customers so connected will continue under the jurisdiction of District to the extent that said real property is located within 150 feet of said boundary facility and the property directly benefited by said facility will be considered within the jurisdiction and control of District, unless the parties otherwise agree in writing. Provided that if City desires to serve the customers located within the City existing limits, City will pay a proportionate charge of the cost of said facility providing sewer service.

C. Future boundaries: As annexations are made by the City of territories formerly within Lake Hills Sewer District, the issue as to whether or not the

jurisdiction and control of sewer facilities, then existing, within said newly annexed territory, shall be resolved by the parties, by mutual agreement, and in the event that the assumption of jurisdiction and control of said new territory, by the City, does not have an adverse economic or operational impact upon the District, then the District agrees to act reasonably in negotiating a joint use agreement, similar to this agreement with respect to said newly annexed area, or to execute an addendum hereto encompassing said newly annexed area.

D. Revenue: All service and connection revenue and all revenue of every type, kind and nature whatsoever, including charges in lieu of assessment, accruing within the jurisdiction of City shall be billed and collected by City after the effective date of this agreement and all sewer and connection revenue and all other revenue of every type, kind and nature whatsoever accruing prior to said effective date of this agreement shall remain the property of and shall be collected by District, and District reserves the right to collect unpaid accrued revenue and to enforce its statutory liens against the real property within City, to the extent necessary, to collect such prior accrued or unpaid charges.

E. Assumption of District Agreements: City does hereby expressly assume and agree to perform all written agreements heretofore entered into by District which are ~~listed on Exhibit 2 attached hereto~~ ^{that effect or} relate to the sewer system of District to the extent that the same is now located within the City, which agreements shall include, but shall not be limited to developer extension agreements, easements and sanitary sewer service agreements.

The City agrees to perform the same upon the same terms and conditions as were required of District and agrees to indemnify and save harmless District from any claim by parties to said agreement that the same have been breached, terminated or otherwise have not been fulfilled by City, as successor to District with respect to said agreements. Provided that nothing herein shall be construed as any limitation on the City's authority to set and collect a uniform rate for monthly sanitary sewer service, which may be a rate different than that set by the District for customers of the District.

F. Connection to Metro Facilities and to Joint Use General Facilities:

District retains the right and authority to make connections to Metro facilities and joint use general facilities as may be reasonably required by District in servicing real property located outside City boundaries. The parties have agreed, as set forth herein below, that future general facilities and local sewer facilities that are constructed by either City or District, which may serve both City and District, shall become joint use facilities, however, if for any reason future joint use facilities or existing joint use facilities are not appropriate for servicing District customers with sanitary sewer service, located outside the City boundaries, then District reserves the right to extend sewer lines within the boundaries of City, said lines to the extent that they are located within City boundaries, to be for the purpose of reaching Metro and existing or future joint use facilities. Provided, however, District shall cooperate with the City in regard to location and design of such connection lines and to submit plans and specifications

to the City for its approval thereof, which approval shall not be withheld unreasonably. Said lines shall be considered connection lines only and District shall not receive any revenue with respect to said lines to the extent that said revenue is from within City boundaries, however, City shall not have the right to utilize said connecting lines unless the parties agree that the same will become joint use facilities. To the extent that said connecting lines do not become joint use facilities, then District shall maintain and operate, repair and replace the same, however, City may at its option, elect to maintain, operate and repair the same at the expense of District, the maintenance and operation both routine and otherwise to be billed to the District and computed in accordance with the formula set forth in Section 2 E above.

Section 4. Transfer of Joint Use and Non-Joint Use Facilities:

This agreement is classified sewer facilities located presently within the boundaries of City, within the territory that is likewise in the boundaries of District, as follows:

- (1) Joint Use General Facilities
- (2) Joint Use Local Facilities
- (3) Local Facilities

District does hereby transfer, assign and set over to City all joint use general facilities, joint use local facilities and local facilities located within the existing boundaries of the City, that are likewise contained within the existing boundaries of District, subject to the District's continuing right of joint use of the joint use general facilities and joint use local facilities on the terms and conditions as set forth

herein, and capacity for the existing and future use of District to said joint use general and local facilities are hereby reserved unto District. Said facilities are transferred and assigned to City as of effective date of this agreement and from said date and thereafter, City shall have the title, custody and control and ownership of said facilities, located within the existing boundaries of City, and City shall be completely responsible for all maintenance, operation and repair of the same and all liability in connection therewith, and shall have the exclusive jurisdiction and control over the same subject to the District's continuing right of joint use and reservation of capacity as outlined hereinabove and in this agreement.

Section 5. Future Joint Use General and Local Facilities:

It is understood that as the City and District expand their respective boundaries and sanitary sewer service is required within said expanded boundaries, that new general and local joint use facilities may be required in order to avoid duplication of facilities. The parties agree that in the event that in development of real property, not presently served with sanitary sewer service, either party foresees that a proposed new facility may benefit customers or potential customers of the other party, then said facilities may become joint use general or joint use local facilities upon the following terms and conditions:

A. Planning. Either party contemplating the development of a sewer facility that could serve customers of the other party, shall in planning said new facility make said plans known and shall provide all preliminary engineering data to the other party as soon as the initiating party determines there is a need for said sewer facility.

Each of said parties then agree to jointly review said data and to cooperate in providing one another with the requirements of the other party with respect to said planned facility. Upon full review, the parties shall then determine, in writing between the parties, whether or not said facility plan can be feasibly utilized, from an engineering and economic standpoint, as a joint use facility, and if the determination is in the affirmative, by both parties, in writing, then all final plans, drawings and specifications, and engineering data, shall be prepared by the initiating party's engineering consultants, and shall be of such size and design as may be necessary, taking into consideration the potential use of said facility by customers of the other party. The initiating party shall be the party who initially determines that said joint use facility is necessary or feasible, and the construction of which would be within the initiating party's then existing boundaries, however, in the event that a joint use facility is required, by either of the parties, and the major portion of the construction of the same would occur within the other party's then existing territory, then the initiating party shall merely refer the request to the other party, and the other party, upon concurring that said joint use facility is necessary or desirable, shall take up and commence the planning, engineering and design of said proposed joint use facility, and shall thereafter be deemed the initiating party. After the parties have agreed in writing that the same shall be a "joint use facility" either local or general, then the parties shall proceed in accordance with the terms and provisions of this section.

B. Construction: The initiating party shall complete the design, plans, drawings and specifications for said new joint use facility which shall be submitted to the other party for approval, and upon approval by the other party of said drawings, plans and specifications, the initiating party and the other party shall, through their respective engineers, compute the estimated costs thereof and the proportionate costs to be borne by each of the parties of said new joint use facility, using the same criteria and methods as was utilized in determining the proportionate costs of the parties for the existing joint use general and local facilities, as referred and identified in Section 2 hereof. The proportionate share of the cost of said new joint use facility, by the other party shall be then arrived at and upon the demand of the initiating party, the other party shall deposit with the initiating party an amount equal to the other party's capital contribution to said new joint use facility, whereupon the initiating party shall submit the same to public bid and contract to construct the same. In the event that the capital costs contribution deposit is not made within thirty days after demand therefor by the initiating party, the initiating party may then declare that said facility will not be a new joint use facility and shall proceed to construct the same as if it were a facility servicing the initiating party only.

After construction of the same has been completed, the capital cost to be contributed by each of the parties towards said joint use facility shall be re-computed, utilizing the actual capital costs, based on said contract and an adjustment in the proportion to be paid by each of the

parties shall be made accordingly. It is understood and agreed that in computing the capital cost of said facilities the City and District will determine the existing and potential customers of the City and District that will use or utilize said new joint use general or local facility and shall apply the resulting proportion to the capital cost of said facility.

C. Connection to New Joint Use Facility: The cost of connecting the sewer system of the non-constructing party to the new joint use facility shall be borne by the party seeking connection thereto.

D. Completion of New Joint Use Facilities: Upon completion of said new joint use general or local facilities, pursuant to this section of this agreement, then the same shall thereafter be treated and deemed as if it were originally described as an existing joint use general or local facility and all the terms and provisions with respect to the existing joint use general and local facilities, as originally described and set forth in Section 2 hereof, shall apply except that the terms thereof shall be reciprocally changed to refer to the City or District, and the word District shall be substituted for the word City, should the joint use facility, as constructed, be located within the boundaries of the District.

Section 6: Franchises and Easements:

Each of the parties hereto agree to cooperate, reciprocally, in the granting and obtaining of easements and franchises as may be necessary for the construction of sewer lines and appurtenances within the boundaries

of the other party, the construction of said sewer lines being subject to the terms and conditions of this agreement.

Section 7: Risk of Loss and Destruction:

The City shall bear the risk of loss or destruction of any local facility or non joint use local or general facility located within the boundaries of the City and the District shall likewise bear the risk of the loss or destruction of all local facilities or non-joint use facilities within the boundaries of District, excluding from the boundaries of District, that portion of the City of Redmond located within the existing boundaries of the District.

The risk of loss or destruction for joint use general or local facilities shall be computed in accordance with the formulas set forth hereinabove.

The party having the responsibility for the operation and maintenance of an existing or future joint use general or local facility will, as between the parties, be liable for all damages and claims resulting from the operation of use of said sewer line as may be asserted against either the City or District by any third party, excluding claims for maintenance and operation, power, replacement or repair expense.

Section 8: Compliance with Engineering and Public Agency Requirements:

City and District agree to abide by the rules and regulations of all other governing agencies regarding the operation of sewer systems by municipalities in districts generally, particularly with respect to

the nature and type of sewage that can be discharged into the other system. Each agrees to take such steps as may be reasonably possible to eliminate storm or ground water being discharged into the joint use facilities in excess of minimum standards as established by general rules and regulations of Metro.

It is further agreed that the District and City will install such metering manholes or other devices as may be necessary, to determine the flow entering the Metro system and/or the joint use facilities, to determine the respective parties debts and obligations to Metro, pursuant to the parties' agreement with Metro and/or to determine whether or not excess storm or ground water is being discharged into the joint use facilities.

Each party agrees to comply with reasonable engineering requests from the other party concerning the use, operation and maintenance of the joint use facilities.

Section 9. Payments Unconditional:

The payments required to be made pursuant to this agreement shall be made regardless of any contingency or happening whatsoever, including the temporary interruption of services by any of the joint use facilities.

Section 10. Books and Account:

Both parties shall keep full and complete books of account, including but not limited to records of the number and nature of sewer customers and the user equivalent, and location of said customers within the District and City, expenses of maintenance and operation of the respective sewer collection systems, and in general,

fully disclose the financial condition and operating results of each district. Such books of account will be open at all times to inspection by either of the parties hereto or the duly authorized agents thereof.

City shall maintain separate and distinct books of account, or in the alternative, designate certain expenses within the books of account maintained by the City in the normal course of business, so as to differentiate those maintenance, operation and other costs and expenses attributable to use of jointly used facilities.

Either agency may request an annual audit by the other agency of the books and records of the other party, in which case such books will be made available to the other, and the cost of such audit shall be borne by the agency requesting the same.

Each party agrees to maintain records of volume of sewage discharged into the parties' respective systems when such volumes are measured, and records of the number of residential customers or equivalent of the respective districts on a monthly basis.

Section 11: Conditions Precedent.

It shall be a condition precedent to the effectiveness of this agreement that approval be obtained from such governmental agencies as may be required, if any, of the terms and conditions of this agreement; and if approval is obtained from said agencies, this agreement shall be binding upon the parties, their heirs, successors and assigns.

This contract is made and executed subject to those certain agreements between the parties, and the Municipality of Metropolitan Seattle, said agreements having been heretofore entered into between said parties and Metro,

reference being made to said contracts as if incorporated in full herein, and further is subject to the condition precedent that concurrently herewith, Lake Hills transfers and assigns all of its right, title and interest in and to the 18 inch trunk line and siphon, located within the City to Metro, upon terms and conditions satisfactory to Metro and the District.

Section 12: Waiver:

No waiver by either party of any term or condition of this agreement shall be deemed or construed as a waiver of any other term or condition, nor shall a waiver of any breach be deemed to constitute a waiver of any subsequent breach, whether the same or different provision of this agreement.

Section 13: Remedies:

In addition to other remedies provided by law, this contract may be specifically enforced by mandatory injunction, injunction or specific performance, by either party.

Section 14: Assignments:

Either party shall have the right to assign this agreement or its rights or obligations hereunder, in whole or in part, to any metropolitan authority, governmental entity or any other entity, without the prior written consent of the other party, and neither shall have the right to terminate its obligations hereunder by dissolution or otherwise, without first securing the written consent of the other party.

Section 15: Entirety:

This agreement merges and supercedes all prior negotiations, representations and agreements between the parties hereto, relating to the subject matter

hereof, and constitutes the entire contract between the parties with respect to the subject matters expressed herein.

Section 16: Duration of This Agreement:

This contract shall be in full force and effect, in perpetuity, or until such time as Metro should construct facilities rendering this joint use facilities unnecessary.

Section 17: Fees:

In the event either of the parties places this agreement in the hands of an attorney for enforcement, or in the event that suit is instituted to enforce this agreement, the defaulting party, agrees to pay all reasonable attorney's fees, engineering fees and costs and expenses related to said action in addition to any other damages or other relief sought, obtained or granted by the court.

IN WITNESS WHEREOF the parties have hereunto set their hands and seals and each warrant that they have adopted ordinances and/or resolutions, respectively, authorizing the execution of this agreement and the undersigned parties warrant their authority on behalf of the parties to this agreement to execute the same for and on behalf of the respective parties.

LAKE HILLS SEWER DISTRICT

BY [Signature]
President

BY [Signature]
Secretary

CITY OF REDMOND

BY [Signature]
Mayor

ATTEST:

Eleanor J. Hayden
City Clerk

Approved by City Attorney as to Form:

John A. [Signature]

LAKE HILLS SEWER DISTRICT - CITY OF BELLEVUE
AGREEMENT

THIS AGREEMENT, dated this 15th day of July,
1970, between the CITY OF BELLEVUE, a municipal corporation,
under authority of Ordinance No. 1511, (hereinafter called the
"CITY"), and LAKE HILLS SEWER DISTRICT OF King County, Washington,
a municipal corporation, under authority of Resolution No. 70-55
(hereinafter called the "DISTRICT")

W I T N E S S E T H :

WHEREAS, the District was heretofore formed for the
special purpose of providing sanitary sewer service for
areas that were then located within King County and outside
of the boundaries of any city or town; and

WHEREAS, the District has now expanded its sanitary
sewer system and has enlarged its boundaries and City has
likewise expanded its boundaries, by annexation, and
as a result, the boundaries of City and District overlap,
and now more than sixty percent (60%) of the territory
of the District now lies within the City; and

WHEREAS, District has financed and constructed the
sewage collection system sufficient to serve substantially
all of the developed portions of the District and have
planned for additional facilities to serve all presently
undeveloped portions of the District, including a substantial
part of the unsewered areas within the City which are
located within and without the present existing boundaries
of the District; and

WHEREAS, it is in the best interest of the residents
of each of the parties to this agreement and in the best
interest of the public generally that municipalities coordinate
and cooperate in their sanitary sewer service planning to

the end that duplication of costs can be avoided and joint use made of existing and future facilities, and that a system serving an area within the District and the City be operated as a common sewer utility.

WHEREAS, R.C.W. 35.13.250 authorizes this agreement between the parties, providing for the maintenance and operation of sewage facilities of the City and District, providing for allocation of costs of maintenance and operation between the City and District, to provide for the financing and construction of new sewage facilities to serve unsewered portions of the district and city, to provide for temporary retention by the district of personal and real property, funds and assets, and providing for the eventual transfer of personal and real property, funds and assets of the District to the City, and reserving unto the District all powers, rights, duties, and privileges, including the right to fix rates and charges for sewer service, to issue bonds, to promulgate rules and regulations for the collection of such charges, and in general the powers of the District to do all things authorized prior to this agreement in the same manner and by the same means as heretofore provided by law, except as is otherwise provided for herein;

NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

Section 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:

1. The term "District" shall mean Lake Hills Sewer District, a municipal corporation, located in King County, Washington, acting by and through its Board of Commissioners, and the term "District Sewer System" shall mean all sewage collection and transmission facilities now or hereafter owned by the Lake Hills Sewer District.

2. The term "City" shall mean the City of Bellevue, a municipal corporation, located in King County, Washington, acting by and through its City Council.

3. The term "Metro" shall mean the Municipality of Metropolitan Seattle, a municipal corporation.

4. The term "Service Charge" or "Sewer Service Charge" shall mean a monthly or other periodic charge for the use of sewer facilities.

5. The term "Side Sewer Permit Fee" shall mean a charge for the inspection of private side sewers to be connected to public sewerage facilities.

6. The term "Connection Charge" shall mean a charge to defray the cost of local and general facilities to real property seeking connection to public sewage facilities that has not been previously assessed for the general and special benefits conferred by such sewer improvements.

7. The term "Assessment" shall mean charges levied in Utility Local Improvement Districts or Local Improvement Districts for special or general benefits conferred by the construction of public sewerage facilities and shall include interest and any penalties thereon.

8. The term "Sewer System" shall mean all sewage collection and transmission facilities heretofore installed, acquired, or managed by the District or by the City, or hereafter installed, acquired, or managed within the District or hereafter installed, acquired, or managed by the District or by the City pursuant to this agreement, including all appurtenances to such facilities and all future additions and extensions thereof and subject to the contractual rights of the Bellevue Sewer System.

9. The term "City Sewer Utility" shall mean all sanitary sewerage facilities hereafter operated by the City.

10. The term "Actual Costs" shall mean those costs of labor, parts, equipment, supplies, maintenance expenses, engineering costs and replacement costs directly attributable to District's

Lu
Am

sewer system and the District's share of the overhead and directly related to the operation of the sewer system only. administrative costs of the City. The overhead and administrative costs of the City shall be apportioned between the City and the District on the following basis: The overhead and administrative costs of the City for operating the sewer system shall be determined and said overhead and administrative costs shall be apportioned between the City and the District in the same ratio as the miles of sewer line of the District's sewer system bears to the entire sewer system.

Section 2. Ownership of Properties. Consistent with the laws of the State of Washington and pursuant to this agreement, all the right, title and interest of the District in and to all real property, franchises, easements, sewers, force mains, pumping stations, lift stations, flushing stations, manholes, valves, fittings, appurtenances, all equipment and vehicles, and all personal property, cash, accounts receivable, investments and choses in action of all kinds which shall be in existence and on hand at the "Title Transfer Date" as hereinafter defined, including all additions thereto and extensions thereof hereafter acquired or constructed by the District shall be conveyed, transferred and quit claimed by the District to the City, effective on such date, subject to all of the provisions of this agreement. The City hereby agrees that until the Title Transfer Date the District shall have the right to use the City sewer utility and sewer system on the terms and conditions as the parties may hereafter agree.

The City shall pay nothing to the District in exchange for the property which the City shall acquire hereunder and the District shall pay nothing to the City for the facilities which the District is permitted to use hereunder and the covenants of this agreement to be performed by the parties shall constitute good and sufficient consideration for the conveyances contemplated by this agreement.

It is mutually agreed and recognized that the properties which the City may acquire pursuant to this agreement shall remain subject to all presently outstanding indebtedness of the District, bonded or otherwise, shall be subject to the

terms of the following resolutions of the District which are incorporated herein by this reference:

Lake Hills Sewer District Resolution Number: 47, 131, 210, 290 (as amended by 323), 332, 362, 509, 546, 627, 812, and shall be subject to all rights of the holders of revenue bonds of the District issued under said resolutions. The District will furnish certified copies of said resolutions to the City.

It is further agreed and recognized that the properties which the City shall acquire pursuant to this agreement shall at all times be operated for the benefit of all persons now or hereafter residing within the District and subject to the rights of all owners of property now or hereafter located within the District, whether such residents or property be inside or outside the City. All use shall be subject to the statutes, regulations, ordinances, and resolutions of the City or District. In particular, but not by way of limitation, trunk or lateral sewer lines and pumping facilities now or hereafter located within the City which are used for the transportation of sewage collected from any property located within the Sewer District shall continue to be made available for such use, provided that the users thereof shall pay reasonable nondiscriminatory fees and charges and comply with reasonable rules and regulations, all as provided in this agreement.

It is further recognized and agreed that this agreement is subject to the provisions of the outstanding agreements for sewage disposal between the District and Metro and between the City and Metro. Disposal of all sewage collected pursuant to this agreement shall continue to be made to Metro in accordance with such agreements or duly adopted amendments thereof. This agreement is further subject to any outstanding agreement of the District.

Section 3. Operation and Maintenance of Sewer Facilities.

From and after July 15, 1970 the City shall and agrees to maintain, operate, repair and replace all of the facilities of the Sewer System, whether located within the City or outside of the City, including all trunks, laterals, lift stations, pumping stations, flushing stations, vehicles, electronic warning system, office equipment, billing equipment and other facilities and equipment now or hereafter constructed, acquired or used as a part of the Sewer System or the business operated in connection therewith and including all sewers constructed or acquired by the City which the District shall use pursuant to this agreement. The City will furnish sewer service to all persons now or hereafter served by the Sewer System for and on behalf of the District.

At all times from and after said date, the City will maintain and keep the Sewer System and all additions and improvements thereto and all equipment used in connection therewith in good repair, working order and condition and will, at all times, operate such system and the business functions connected therewith in an efficient manner and at the lowest reasonable cost.

On the fifteenth (15th) day of each month, beginning Aug. 15, 1970, and continuing monthly thereafter until the Title Transfer Date, the City shall submit to the District an itemized statement of all actual costs incurred by the City in the operation and maintenance of the District Sewer System during the preceding month. Within sixty days from the receipt of such statement, the District shall pay to the City a sum equal to the total amount of said maintenance and operation costs. The District shall advance to the City on or before Aug. 15, 1970, a sum equal to sixty (60) days operating expenditure to be used as a revolving fund to meet costs incurred by the City for operation and maintenance of the District Sewer System during the two months period when District payments will lag

behind actual expenditures by the City. Such moneys shall ultimately²⁷ be applied toward the payment of the operating and maintenance costs incurred by the City during the two months immediately preceding the Title Transfer Date. Said itemized statement of cost shall be identified by code number, or otherwise, so that said cost as itemized can be identified with respect to the heading that said cost appears under in the annual budget hereinafter referred to. Further, said individual cost set forth in said itemized statement shall not discriminate in any respect against the District and said cost as itemized and submitted shall be based upon actual cost to the City and shall not vary from other costs incurred by the City solely due to the fact that said cost or expense is incurred within a geographic area that is located within the district's existing or future boundaries. Further, said costs shall not include any reserves or depreciation as a cost of operation and maintenance. Further, for purposes of this paragraph the term "Sewer System" shall not include any sewage collection or transmission facilities heretofore or hereafter installed, acquired, or managed by the City only and said itemized cost shall only include cost with respect to real and personal property, as defined in Section 2 of this agreement, that will be transferred to City on the "Title Transfer Date" and any cost incurred by City not related to property that will be conveyed to City, as defined in Section 2, will not be submitted to the District. District reserves the right to audit the books of account and records of City and all other data that would explain, verify or support said statement of costs.

An annual budget for each calendar year prior to the Title Transfer Date shall be prepared by the City and submitted

to the district at least thirty (30) days prior to its adoption. Said budget shall set forth the budget for the operation and maintenance of the sewer system, which for purposes of this paragraph shall refer to the District Sewer System which shall relate to the real and personal property that will be conveyed to the City on the Title Transfer Date as defined in Section 2 of this agreement. Said annual budget will be reviewed by the District and suggestions and corrections shall be submitted by the District to the City. However, said recommendations by the District shall be advisory only. No expenditure for operation and maintenance, other than emergency expenditures, shall be made by City unless the same is contained within the budget or is hereafter mutually approved by City and District. City shall maintain a record of all expenditures made in the operation and maintenance of the District Sewer System and shall furnish District not less than quarterly regular financial reports on the operation of said District Sewer System in sufficient detail and with code references, to enable District to relate said expenditures to said budget.

Section 4. Fixing and Collecting Charges: Until the Title Transfer Date, the District shall fix Service Charges, Connection Charges, Side Sewer Permit Fees and sewer extension contract payments for the District Sewer System. The District shall submit any proposed change in rates to the City thirty days before such change shall become effective thereon but determination of district is binding on the parties. Such charges shall be sufficient to pay District's proportion of all costs of maintenance and operation of the Sewer System including costs for the disposal of sewage by Metro, such as *as per* other costs ~~may~~ be incurred by the District in the performance

of its functions and such amounts as may, together with pledged assessments, be required to pay, secure payment of and provide covenanted coverage for, any revenue bonds of the District now or hereafter outstanding. The City shall perform the function of billing and collecting all monthly service charges, side sewer permit fees, connection charges and other amounts due the District, and shall maintain all records for accounting purposes incidental thereto. Such billing and collecting shall be performed for and on behalf of the District until the Title Transfer Date and the costs of such billing and collection shall be deemed to be a part of the cost of operation and maintenance of the District Sewer System. Enforcement of collection shall continue to be the responsibility of the District until the Title Transfer Date, and the City shall keep District fully informed as to all delinquencies.

All funds received by City shall be promptly deposited with the King County Treasurer in the District's maintenance fund, and the District shall make all determinations with respect to transfer of funds from the maintenance fund. ~~Prior to Title Transfer Date City agrees not to adopt any excise tax or other tax ordinance on revenue from the District system directly or indirectly without prior approval of the Board of Commissioners of District.~~

deleted by
Spahr

Section 5. Construction of Sewer Facilities by the District
Prior to the Title Transfer Date. Until the Title Transfer Date, the District shall have the right and power to continue to construct additions to or extensions of the District Sewer System located within the present or future District boundaries. For such purpose, the District shall have the right and power to carry out the provisions of its comprehensive plan, to adopt plans of additions and betterments thereto, subject to approval of agencies required by law to approve such plans, to annex territory, to issue and sell sewer revenue bonds, to apply to the payment thereof Service Charges, Connection Charges, Side Sewer Permit Fees and contract extension payments from persons or property served by the District Sewer System, whether located within or without of the City, or within or without the District, to create utility local improvement districts and to

levy and collect special assessments therein, all in the manner provided by law and this agreement, and to carry out any other activity, right, duty or privilege, not otherwise inconsistent with terms and conditions of this agreement.

If the District shall issue any sewer revenue bonds prior to the Title Transfer Date, such bonds shall be made expressly subject to the terms of this agreement and the City agrees from and after such Title Transfer Date to perform the covenants of said bonds and to assume and pay all of such bonds in accordance with their terms solely out of the revenue of the Sewer System and assessments pledged to the payment of such bonds. Neither such obligation nor any other obligation assumed by the City pursuant to this agreement shall be general obligations of the City.

Except as otherwise specifically provided herein, the District shall, during the period prior to the Title Transfer Date, cause all work to be performed in connection with the construction of additions to or extensions of the Sewer System located within present or future District's boundaries, including, but not by way of limitation, the engineering design of the sewer laterals, trunks, lift stations, pumping stations, flushing stations and appurtenances and the District shall let contracts for the work in the manner provided by law and upon completion of such work prepare as-built drawings therefor in form acceptable to Metro and reasonable engineering standards.

All plans and specifications for sewer improvements to be constructed by the District shall be submitted to and approved by the City prior to construction, however in the event of disagreement, the determination of District with respect to said sewer improvements shall be final and binding on the parties.

The City shall recommend change orders whenever same are deemed to be necessary during the course of construction.

As a part of the cost of construction to be borne by the District the District agrees to restore all streets disturbed by the construction of sewer improvements in accordance with applicable existing franchise requirements, to a condition equal to said streets' condition prior to construction.

The type of road restoration for all streets involved in a proposed improvement shall be determined in advance by a survey of the streets involved conducted jointly by a representative of the particular city or county which shall have jurisdiction over such streets and a representative of the District. The specifications shall state whether the respective city or county or the District or the contractor shall perform such restoration and resurfacing. All work undertaken on any city street shall be subject to the franchise agreement heretofore granted by City to District.

All easements which may be acquired subsequent to July 1, 1970, shall receive the approval of the City before execution and shall run jointly to the District and the City. City shall not make any charge for easements to District over City owned or controlled property.

A performance bond in the amount of not less than 100% of the contract price shall be furnished to the District and to the City jointly by the contractor before any work is commenced. Upon completion of any particular sewer improvements constructed by the District, the District may make final payment therefor in the manner provided by law. The title to all sewer lines, facilities, easements and rights of way hereafter constructed or acquired by the District shall inure to the City on the Title Transfer Date, without cost, subject to the provisions of this agreement,

and from and after the date of such completion, the City shall provide maintenance and operation of such sewer improvements in accordance with this agreement.

Section 6. Construction of Sewer Improvements by the City Prior to the Title Transfer Date. Prior to the Title Transfer Date, it is contemplated that the District will construct all sewer improvements within the District's existing and future boundaries. The City may, however, in the event that the District fails or refuses to proceed with the construction within six months after written request therefor by the City, unless delay is due to matters outside the District's control, create local improvement districts or authorize work by private contract within areas contemplated to be served by the District, provided that such improvements are constructed in conformity with the comprehensive plan of the District or amendments thereto and are approved by the District.

The City shall continue to collect assessments levied in local improvement districts of the City heretofore created for the purpose of constructing sewer improvements and to perform the obligations of outstanding local improvement bonds or warrants of the City. All charges and fees collected by the City from persons and properties connected to the Sewer System within District's boundaries and not for connection to a system constructed or managed by the City shall be deposited in the District Maintenance Fund. All properties heretofore assessed for sewer improvements constructed within the City local improvement districts shall have the right to connect to the improvements constructed therein upon payment of reasonable Side Sewer Permit Fees and Service Charges as provided herein. The District shall permit connection to the District Sewer System of any property which shall request such connection and which shall pay such regular connection charges and Side Sewer Permit Fees and Service Charges as shall be provided by general resolution of the District.

Section 7. Side Sewer Regulations and Permits. Each party to this agreement shall establish effective July 1, 1970, rules and regulations uniform with those of the District governing connections to and discharges into the District Sewer System. The said uniform rules and regulations shall govern the connection of all side sewers to the District Sewer System. The District shall continue to issue Side Sewer Permits and collect Side Sewer Permit Fees until the establishment of the aforesaid rules and regulations. Thereafter and until the Title Transfer Date, the City shall collect such permit fees and issue such permits for and on behalf of the District and deposit said funds to District's maintenance fund. After the Title Transfer Date, the City shall collect such fees as a part of the revenue of the Sewer System and shall issue such permits for and on behalf of the City provided only that such fees be non-discriminatory and limited to an amount equal to the cost of side sewer inspection. Such fees shall be collected from the respective property owners or sewer users applying for side sewer permits. Side Sewer Permit Fees fixed by the City shall be the same for all portions of the Sewer System, whether inside or outside the City. The City shall maintain an as-built drawing of all such side sewer connections.

Section 8. Title Transfer Date. The City may in its sole discretion, upon sixty days written notice to District, fix a date for the transfer of the System and properties of the District to the City (Title Transfer Date), provided either that all of the District's revenue bonds which are outstanding on the date and bonds subject to paragraph 5 of this agreement shall have been paid prior to the date of such notice or that the City shall have 60 days before the Title Transfer Date, assumed the obligation to pay such bonds and perform all covenants relating thereto then outstanding. The provisions of Section 9 to 11, inclusive, hereof shall apply and be effective immediately upon and after the Title Transfer Date.

Section 9. Assumption of District Obligations by the City.

The City shall assume, effective on the Title Transfer Date and pay in accordance with their terms solely out of the earnings and revenue of the Sewer System and assessments pledged thereto all obligations contingent and noncontingent of the District outstanding on the Title Transfer Date or thereafter incurred incident to this contract or in connection with winding up the affairs of the District, including but not limited to paying and securing payment of the principal of and interest on all of the District's then outstanding sewer revenue bonds and performance of all bond covenants in accordance with the terms thereof. Utility local improvement district assessments which have been levied by the District to secure the payment of such bonds shall continue to be collected by the King County Treasurer and applied to the payment of such bonds until all of such bonds shall have been paid or have been fully provided for.

Section 10. Obligation to Continue Service After Title

Transfer Date. From and after the Title Transfer Date, the City shall operate and maintain the Sewer System as a City utility in the manner provided by law, subject to the following requirements of this agreement:

a) The City shall for the useful life of those facilities of the Sewer System which serve persons and properties located within the District but outside of the City make such facilities available to serve such persons and property, upon payment of reasonable Service Charges, Connection Charges and Side Sewer Permit Fees as fixed by the City from time to time consistent with the provisions hereof.

b) The City shall provide sewer service to all portions of the District, whether inside or outside the City, equal in all respects to that provided to residents of the City and the City shall fix Service Charges in all portions of the District, whether located within the City or outside the City, no greater

than the lowest rate for the same class of service levied within any portion of the City. The term "class of service" as used in this paragraph shall refer to classification based on type of sewer use, i.e., single family residence, multiple residence, commercial, etc., City shall not discriminate in rates to customers of the District Sewer System outside the City based on geographical location or on jurisdictional bases.

c) The parties recognize that the District has financed its sewer facilities by assessments sometimes less than 100% of the total cost thereof. The parties also recognize that other sewer districts or private systems which may hereafter be operated by the City may not have fully paid for sewers equivalent to those installed by the District and/or may not have levied assessments upon benefited property in the same proportion of costs as those heretofore levied in the District, or may have constructed facilities of a standard substantially lower than that of the District Sewer System requiring replacement. Whenever such Districts or facilities are incorporated into the City Sewer Utility, the then outstanding revenue bonds of the District shall continue to have a first and prior lien upon the total net revenue of the District Sewer System and, wherever equitable treatment of the District residents shall require, the City shall either establish a differential rate structure for the area served by such other district or system or assess the cost of replacement of substandard sewers against the area served thereby or take such other action as shall avoid, insofar as possible, charging the residents or customers of the District directly or indirectly for costs properly chargeable to such other district or system.

d) The City shall fix rates and charges sufficient to operate and maintain the Sewer System, pay, secure and provide coverage for revenue bonds and repair and replace the facilities of the System as required. However, the revenues of the Sewer System

shall not at any time be applied by the City to the payment of the general expenses of City government not directly applicable to the construction, repair, replacement, administration, operation and maintenance of the Sewer System. City agrees to maintain separate accounting records so that this provision and enforcement thereof can be verified from time to time. The City may, however, subject to the foregoing limitation, combine its sewer and water systems into a single utility if such combination shall be deemed desirable by the City. No rate increase may be made by the City without first securing a complete rate analysis by an independent firm of engineers experienced in the development and operation of municipal public utilities. A copy of such rate analysis shall be furnished to any interested resident within the District's boundaries as of Title Transfer Date.

Section 11. District Funds. From and after the Title Transfer Date, the existing Bond Redemption Fund for the outstanding revenue bonds of the District shall continue to be held by the County Treasurer and invested or applied to the payment of such bonds in accordance with written directions given from time to time by the City, unless all of such bonds shall have been paid. The City shall make required deposits in such fund out of the earnings and revenue of the Sewer System. The City shall pay the County Treasurer the statutory fees provided for his services. Upon payment or provision for payment of all of such bonds, any District utility local improvement assessments thereafter collected by the King County Treasurer, shall be paid to the City quarterly and applied solely to the maintenance, operation, repair, replacement or improvement of the Sewer System and City agrees to maintain appropriate records demonstrating that this provision is being adhered to. Segregations of assessments requested after the Title Transfer Date shall be approved by the City, and the County Treasurer is hereby authorized to honor segregation approvals received from the City.

All cash in the maintenance fund or construction fund of the District, after payment of or provision for payment of all warrants drawn thereon prior to the Title Transfer Date, shall be immediately thereafter paid by the County Treasurer to the City and all money in such funds then on deposit in any bank or savings and loan association shall be withdrawn by the County Treasurer on the earliest practicable date after the Title Transfer Date, and together with all United States bonds held in such funds shall on said date be delivered by him to the City Treasurer upon receipt therefor and all such money and the proceeds of such bonds shall be applied solely to the maintenance, operation, repair, replacement or improvement of the Sewer System and shall not be diverted directly or indirectly to the general fund or operations of the City and City agrees to maintain appropriate records demonstrating that this provision is being adhered to.

Section 12. District Policies and Responsibilities of Commissioners. The parties contemplate that for a reasonable time after the Title Transfer Date and insofar as possible, the City will continue existing District policies for connection to the District Sewer System and for the construction of extensions of the District Sewer System and for the construction of extensions of said System by private developers in order to insure equitable treatment of the District's residents. During the time that present District bonds are outstanding, the District shall continue its corporate existence and the Commissioners of the District shall continue to function, provided that following the Title Transfer Date, the Commissioners only responsibility shall be limited to the enforcement of the provisions of this contract and to serve as an advisory commission to the City in the continuance of the District's policies and City shall assume all duties, obligations

and liabilities of District and its commissioners and shall hold all the commissioners harmless, including all costs of attorney's fees incurred for any claim or liability arising directly or indirectly from District's operation or failure to operate.

Section 13. Term of Agreement. This agreement shall be effective upon its execution by all the parties hereto and shall continue in effect for a term of ninety-nine (99) years from and after the date hereof.

Section 14. District Employees. The City shall offer employment to each person presently employed on a full-time basis by the District in a position of substantially equal or greater responsibility and without any decrease in salary or wages than that now held or paid to such district employee and all vacation and pension rights of such employee shall be preserved and not diminished in any respect. This provision shall apply to all District employees who shall qualify under standards applicable to all City employees and such offer and all terms thereof shall be made before the City shall undertake to perform operation and maintenance of the District Sewer System hereunder and District shall have the right to enforce this paragraph as condition precedent to City undertaking operation and maintenance.

Section 16. Hold Harmless and Payment of Expenses. It is contemplated that the District will continue its corporate existence for some time after the Title Transfer Date to perform such functions as may be required by law and to accomplish the winding up of its affairs. During such period, the City shall pay out of the revenues of the Sewer System all expenses of the District including, but not limited to, auditing costs, clerical, financial and legal services, commissioners' meetings and election costs and costs incident to final dissolution. Counsel for the District shall continue to prosecute and defend any then outstanding claims by or against the District and to recommend settlement thereof to the District. Upon approval by the District Commissioners of the settlement of any such claim or entry of judgment thereon, the City shall pay any District liability thereon out of the revenues of the City Sewer

Utility or shall receive any net proceeds thereof which may be due to the District and deposit same to the account of the City Sewer Utility. Solely out of the revenues of the City Sewer Utility and moneys received pursuant to this agreement, the City further agrees to pay and to save the District and its commissioners, employees, agents and advisors harmless from the payment and defense of any and all legal liability claimed or asserted for which the District is not insured and which is now or hereafter incurred in connection with the performance of the functions of the District and the duties of the commissioners thereof, including any costs, expenses and attorney's fees incurred in the defense of the District or its commissioners, employees, agents or advisors.

Section 17. Records Made Available and Documents Executed.

The District shall make available to the City all records which has pertaining to the construction of the Sewer System, schedules of Sewer Service Charges and Connection Charges and Charges in Lieu of Assessment heretofore made by the District. The District shall furnish to the City records of sewer connections which have been made by the District, sewer customers served by the District, as-built drawings of sewer mains and facilities and such other documents as the City may require to carry out this contract. All parties agree that they shall enter into and execute such instruments deeds or other documents as may be required to give effect to this agreement as may be approved by the parties' attorneys.

Section 18. Liability For Damages, Repair and Replacement.

The District shall be liable for all damages and claims resulting from the operation or use of the District Sewer System prior to the Title Transfer Date unless due to faulty maintenance or breach of this agreement by City and shall be entitled to expend funds for same whether in budget or not. The District shall also be liable for all damages and claims incurred in the construction of additions or extensions to or improvements of the District Sewer System prior to the Title Transfer Date. After the Title Transfer Date, the

City shall be solely liable for all damages or claims in connection with or arising out of the operation, maintenance, construction, repair or replacement of the Sewer System irrespective of date or period giving rise to said claim. The City shall from and after the Title Transfer Date have the duty to make necessary repairs or replacement of the Sewer System sufficient to maintain same in good repair and working order and to provide service to all residents and properties within the District or receiving service outside District as of Title Transfer Date in accordance with the provisions of this agreement.

Section 19. Insurance. Prior to and after the Title Transfer Date the City shall maintain not less than such levels of insurance coverage against casualty or loss to the System and against public liability as shall be required by District operations, assets, and obligations.

IN WITNESS WHEREOF, the parties have executed this agreement as of the day and year first above written.

CITY OF BELLEVUE

By [Signature]
City Manager

ATTEST:
[Signature]
City Clerk

LAKE HILLS SEWER DISTRICT

By [Signature]
Commissioner
By [Signature]
Commissioner
By [Signature]
Commissioner

2511
4/18/75

CITY OF BELLEVUE, WASHINGTON

RESOLUTION NO. 2511

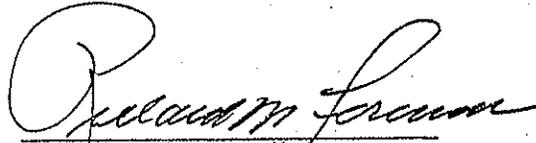
A RESOLUTION authorizing execution of Addendum No. 1 to the Agreement between the City of Bellevue and Lake Hills Sewer District.

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

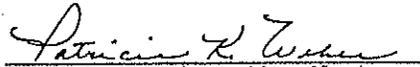
Section 1. The City Manager is hereby authorized and directed to execute, on behalf of the City, that certain Addendum No. 1 to the Agreement between the City of Bellevue and Lake Hills Sewer District, dated July 15, 1970, a copy of which has been given Clerk's Receiving No. 3242

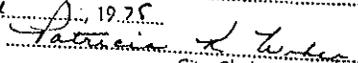
PASSED by the City Council this 21 day of April, 1975, and signed in authentication of its passage this 21 day of April, 1975.

(SEAL)


Richard M. Foreman, Mayor

Attest:


Patricia K. Weber, City Clerk

CERTIFICATE
I, the undersigned, PATRICIA K. WEBER, CLERK of the City of Bellevue, Washington, certify that this is a true and correct copy of Res. No. 2511
Subscribed and sealed this 21 day of April, 1975

City Clerk

INTERLOCAL SEWER SERVICE AGREEMENT
for the plats of
SHEFFIELD PLACE and INTERLAKE COURT

FILED NO. 24188
CITY OF BELLEVUE
DATE 3/8/97
M. Reed
CITY CLERK'S OFFICE

This agreement is made and entered into this day by and between the City of Redmond, a municipal corporation of the State of Washington, hereinafter referred to as "Redmond" and the City of Bellevue, a municipal corporation of the State of Washington, hereinafter referred to as "Bellevue",

WITNESSETH:

WHEREAS, Redmond and Bellevue are authorized by chapter 39.34 RCW, the Interlocal Cooperation Act, to enter into cooperative agreements; and

WHEREAS, the plat of Sheffield Place lies within the city limits of Bellevue and the sanitary sewer service for said plat, because of topography, flows into the Redmond sanitary sewer system; and

WHEREAS, the plat of Interlake Court lies within the city limits of Redmond and the sanitary sewer service for said plat, because of topography, flows into the Bellevue sanitary sewer system; and

WHEREAS, both parties desire, where possible and convenient, to mutually assist one another,
NOW, THEREFORE, the parties agree as follows:

1. Purpose. The purpose of this agreement is to provide sanitary sewer service in a reasonable manner to the plats of Sheffield Place and Interlake Court subject to the conditions stated herein.

2. Connections. All sanitary sewer facilities to be constructed within the service areas described and designated on Exhibits A and B, as attached hereto and by this reference incorporated herein, shall, upon construction and acceptance, become for all purposes, including customer service charges and maintenance, part of the sanitary sewer system of the respective city within which it lies but may, nevertheless, be connected to or flow into the sanitary sewer system of the other party.

Construction plans for actual connections to the other party's system shall be submitted in advance for approval. The owner of the facilities shall be notified prior to construction of any connections to their system and shall have the opportunity to inspect and approve such construction. Such approval of construction plans shall be made in writing and shall not be unreasonably withheld.

3. Acceptance of Sewage. Each city agrees to accept all sewage, which meets all applicable Metro, Department of Ecology or other applicable regulations, from the other party entering into its system through said connection points, provided there is adequate downstream system capacity as determined by the owner of the system, and to convey same through its systems to its connection with the Metro system for disposal. If downstream capacity is insufficient, the additional flow may not be accepted until an agreement is reached by the Joint Board for providing and paying for the additional capacity improvement. Each city shall, however, be responsible for payment to Metro for treatment of said sewage generated within its boundaries.

4. Construction, Maintenance and Repair Costs. No part of the cost of the construction, maintenance or repair of the respective sanitary sewer facilities to be constructed within the subject areas shall be borne by the other party unless agreed upon in writing by the Joint Board.

5. Customer Billing. It is understood and agreed that all properties within the subject areas shall be customers of the city within which the property lies and shall be billed by same city for sewer service in accordance with its own standard practices and rates.

6. Payments. Each city agrees to pay to the other party a monthly service charge in the amount of \$0.12 per month per residential customer or residential customer equivalent within the subject areas which are actually served by the connections.

7. Sewer System Property. Neither party shall, by virtue of this agreement, acquire any proprietary or governmental interest in the sewer systems of the other party.

8. Hold Harmless. Each party shall be solely responsible for the operation and maintenance of its own system of sewage collection and shall indemnify and hold the other party harmless from any claim for damage, real or imaginary, made by a third party, and alleging negligence or misfeasance in the owning party's operation or maintenance of its system, or in the acts or omissions of its officers or employees.

9. Joint Board. Pursuant to RCW 39.34.030 (4)(a), a Joint Board comprised of the Public Works Director of the City of Redmond or his/her designee and the Director of Utilities of the City of

Bellevue or his/her designee, shall be responsible for administering this agreement.

10. Assignment and Termination. Neither party shall have the right to assign this agreement or its rights or obligations hereunder, in whole or in part, to any entity without the prior written consent of the other party, and neither party shall have the right to terminate its obligations hereunder by dissolution or otherwise except for cause.

11. Effective Date and Duration. This interlocal agreement shall become effective upon authorized signature of both parties and shall remain in effect in perpetuity or until terminated or amended by mutual agreement of the parties.

12. Filing. A copy of this interlocal agreement shall be filed with the City Clerk of each respective City and the County Auditor.

13. Entirety. This writing embodies the entire agreement of the parties. There are no other promises, terms, conditions, or obligations other than those contained herein. This agreement may be amended only by written instrument signed by both parties.

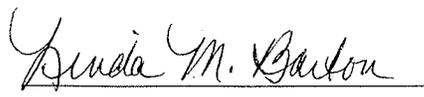
IN WITNESS WHEREOF the parties hereunto set their hands and seals:

By 
CITY OF REDMOND

Date 4-2-97

Approved as to form:


City Attorney for the
City of Redmond

By 
CITY OF BELLEVUE

Date 3/19/97

Approved as to form:

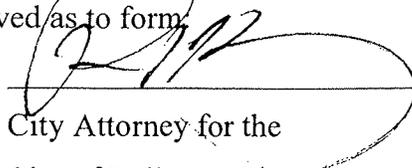
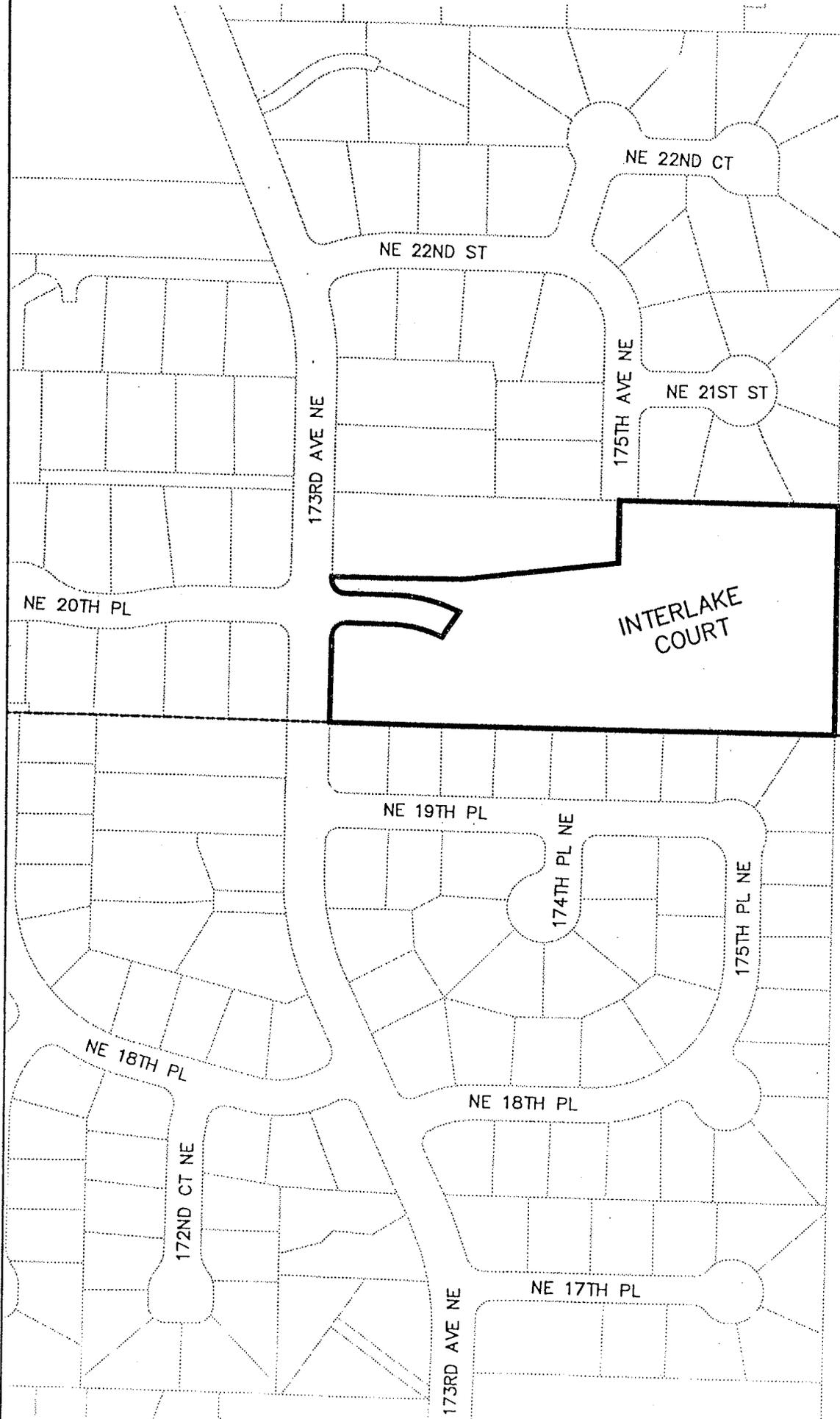

City Attorney for the
City of Bellevue

EXHIBIT - B



CITY OF REDMOND
CITY OF BELLEVUE

INTERLOCAL SEWER SERVICE AGREEMENT

For the
REILLY SHORT PLAT

FILED NO. 29117
CITY OF BELLEVUE
9/27/00
M. Tomrow
CITY CLERK'S OFFICE
656468

This agreement is made and entered into this day by and between the City of Redmond, a municipal corporation of the State of Washington, hereinafter referred to as "Redmond" and the City of Bellevue, a municipal corporation of the State of Washington, hereinafter referred to as "Bellevue",

WITNESSETH:

WHEREAS, Redmond and Bellevue are authorized by chapter 39.34 RCW, the Interlocal Cooperation Act, to enter into cooperative agreements; and

WHEREAS, the Reilly short plat lies within the city limits of Redmond and the sanitary sewer service for said plat, because of topography, flows into the Bellevue sanitary sewer system; and

WHEREAS, both parties desire, where possible and convenient, to mutually assist one another,

NOW, THEREFORE, the parties agree as follows:

1) Purpose

The purpose of this agreement is to provide sanitary sewer service in a reasonable manner to the Reilly short plat subject to the conditions stated herein.

2) Connections

All sanitary sewer facilities to be constructed for the Reilly short plat site, as described and designated on Exhibit A, attached hereto and by this reference incorporated herein, shall, upon construction and acceptance, become for all purposes, including customer service charges and maintenance, part of the sanitary sewer system of Redmond, within which it lies, or privately owned, but will, nevertheless, be connected to and flow into the sanitary system of

Bellevue. Construction plans for actual connections to Bellevue's system shall be submitted to Bellevue in advance for approval. Bellevue shall be notified prior to construction of any connections to their system and shall have the opportunity to inspect and approve such construction. Such approval of construction plans shall be made in writing and shall not be unreasonably withheld.

3) Acceptance of Sewage

Bellevue agrees to accept all sewage from Redmond which meets all applicable Metro, Department of Ecology or other applicable regulations, entering into its system through said connection point, and to convey same through its systems to its connection with the Metro system for disposal. Redmond shall, however, be responsible for payment to Metro for treatment of said sewage generated within its boundaries.

4) Construction Maintenance and Repair Costs

No part of the cost of the construction, maintenance or repair of the sanitary sewer facilities to be constructed within the subject area shall be borne by Bellevue.

5) Customer Billing

It is understood and agreed that all properties within the subject area shall be customers of Redmond and shall be billed by same city for sewer service in accordance with its own standard practices and rates.

6) Payments

Redmond agrees to pay to Bellevue a monthly service charge in accordance with the existing Interlocal Agreement dated February 23, 1968, between Redmond and Bellevue, as successor to Lake Hills Sewer District for each

residential customer or residential customer equivalent within the subject area, which is actually served by the connections.

7) Sewer System Property

Neither party shall, by virtue of this agreement, acquire any proprietary or governmental interest in the sewer systems of the other party.

8) Hold Harmless

Each party shall be solely responsible for the operation and maintenance of its own system of sewage collection and shall indemnify and hold the other party harmless from any claim for damage, real or imaginary, made by a third party, and alleging negligence or misfeasance in the owning party's operation or maintenance of its system, or in the acts or omissions of its officers or employees.

9) Joint Board

Pursuant to RCW 39.34.030 (4)(a), a Joint Board comprised of the Public Works Director of the City of Redmond or his/her designee and the Director of Utilities of the City of Bellevue or his/her designee, shall be responsible for administering this agreement.

10) Assignment and Termination

Neither party shall have the right to assign this agreement or its rights or obligations hereunder, in whole or in part, to any entity without the prior written consent of the other party, and neither party shall have the right to terminate its obligations hereunder by dissolution or otherwise except for cause.

11) Effective Date and Duration

This interlocal agreement shall become effective upon authorized signature of both parties and shall remain in effect in perpetuity or until terminated or amended by mutual agreement of the parties.

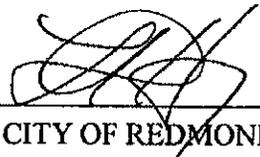
12) Filing

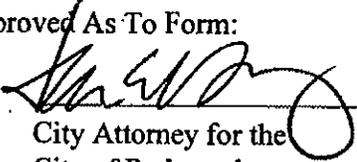
A copy of this interlocal agreement shall be filed with the City Clerk of each respective City and the County Auditor.

13) Entirety

This writing embodies the entire agreement of the parties. There are no other promises, terms, conditions, or obligations other than those contained herein. This agreement may be amended only by written instrument signed by both parties.

IN WITNESS WHEREOF the parties hereunto set their hands and seals:

By  _____ Date 8/16/00
CITY OF REDMOND

Approved As To Form:
 _____ Date 8/15/00
City Attorney for the
City of Redmond

By Linda M. Barton _____ Date _____
CITY OF BELLEVUE

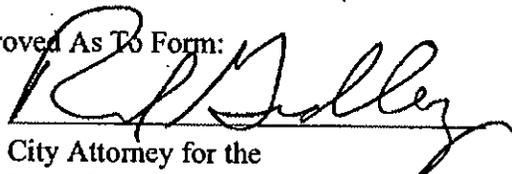
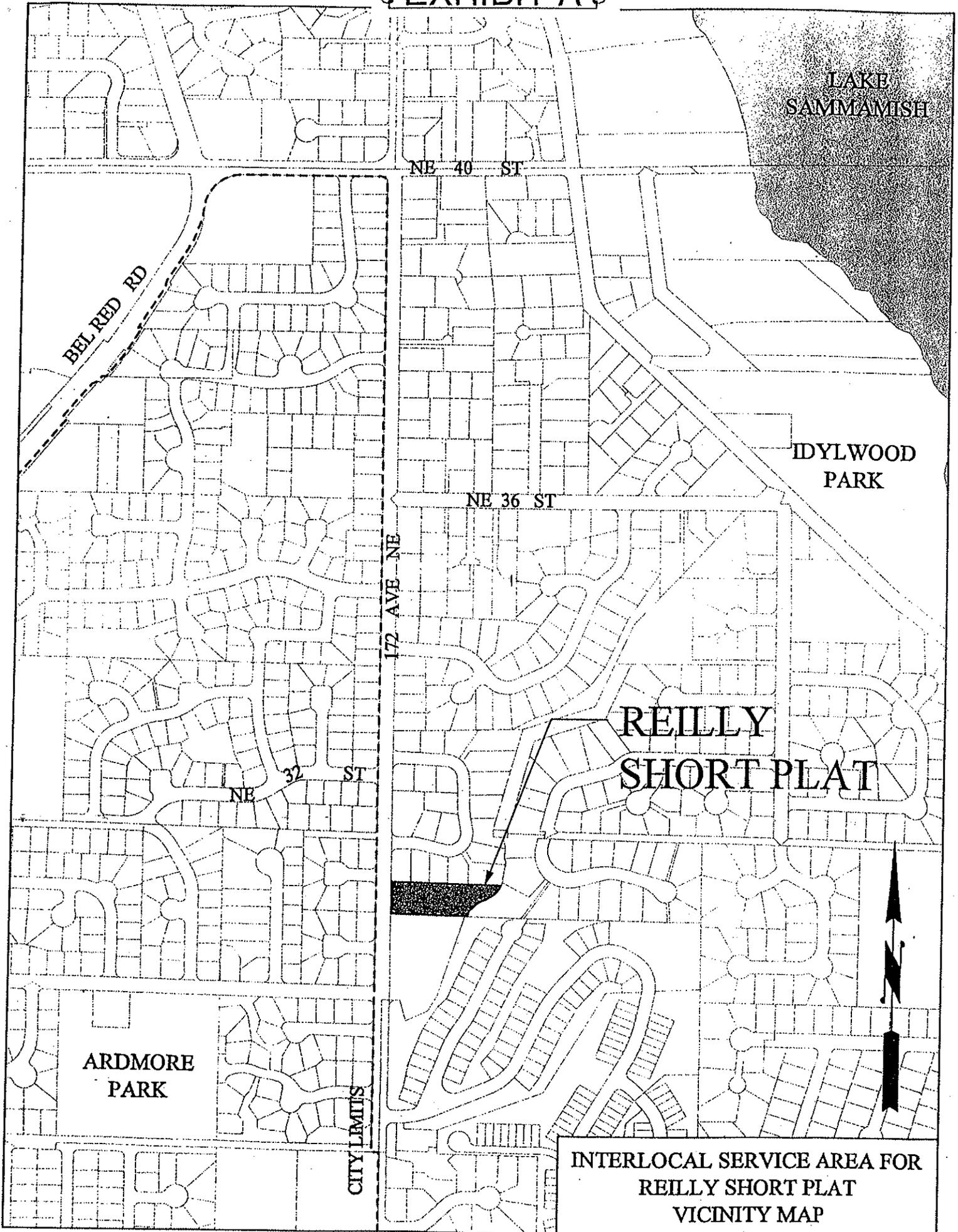
Approved As To Form:
 _____ Date 9-6-00
City Attorney for the
City of Bellevue

EXHIBIT A



INTERLOCAL SERVICE AREA FOR
REILLY SHORT PLAT
VICINITY MAP

0521-RES
8/30/00

ORIGINAL

CITY OF BELLEVUE, WASHINGTON

RESOLUTION NO. 6468

A RESOLUTION authorizing the City Manager or her designee to execute an interlocal agreement with the City of Redmond for the provision of sewer services to certain areas within the vicinity of mutual city limits along 172nd Avenue NE at approximately NE 31st Street.

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

Section 1. The City Manager or her designee is authorized to execute that certain Interlocal Sewer Service Agreement for the Reilly Short Plat in the vicinity of mutual city limits along 172nd Avenue NE at approximately NE 31st Street, a copy of which Agreement has been given Clerk's Receiving No. 29117.

Passed by the City Council this 18th day of September, 2000, and signed in authentication of its passage this 18th day of September, 2000.

(SEAL)

Chuck Mosher
Chuck Mosher, Mayor

Attest:

Myrna L. Basich
Myrna L. Basich, City Clerk

ORIGINAL

FILED NO. 15780
CITY OF BELLEVUE
DATE 2/6/90
CITY CLERK *[Signature]*
O. Council
Res. 5230

AGREEMENT FOR WHOLESALE SANITARY SEWER AND WATER SERVICE

FROM
CITY OF BELLEVUE

TO
CITY OF ISSAQUAH SERVICE AREA

LAKEMONT TRIANGLE

WHEREAS: A sphere of influence agreement has been reached between the City of Bellevue (Bellevue) and the City of Issaquah (Issaquah) that outlines the limits of a future boundary between the Cities, and

WHEREAS: It is desirable that the Cities' future sanitary sewer and water service boundaries correspond with the Cities' future corporate limits, and

WHEREAS: Bellevue sewer and water facilities now exist and may be logically extended to provide adequate service to certain areas within Issaquah's service area (shown on Exhibit C and labeled as Lakemont Triangle), and

WHEREAS: Issaquah sanitary sewer and water facilities are currently a greater distance from the Lakemont Triangle service area, and

WHEREAS: An analysis of sanitary sewer and water service options for Issaquah to serve the Lakemont Triangle service area, concluded that the least cost alternative for sanitary sewer and water service would be through an agreement for joint use of sanitary sewer facilities and a wholesale water service agreement between Bellevue and Issaquah, and

WHEREAS: It is desirable to provide sanitary sewer and water service to the public in the least costly manner, consistent with jurisdictional boundaries, and

WHEREAS: It is recognized that water service to the Lakemont Triangle service area will not solve Issaquah's long term water needs and that other solutions will be needed to serve future growth demands.

AGREEMENT FOR WHOLESALE SANITARY SEWER & WATER SERVICE
FROM CITY OF BELLEVUE TO CITY OF ISSAQUAH - LAKEMONT TRIANGLE

NOW, THEREFORE be it agreed by the Cities of Bellevue and Issaquah that:

1. This Agreement addresses the provision of wholesale sanitary sewer and water service to a limited area of Issaquah's service area. It is not the intent of this Agreement to address facilities that would be capable of serving any additional portion of Issaquah's service area. Such facilities would require a separate agreement.

2. Bellevue agrees to provide wholesale sanitary sewer and water service to Issaquah for the Lakemont Triangle service area only for sanitary sewer conveyance and for retail water distribution and sale in accordance with the terms of this Agreement.

3. The number of Multi-Family Units to be served within the area shall not exceed 600 unless it is mutually agreed that additional units may be served.

4. Bellevue shall supply water from a 12" diameter main on Newport Way at 17300 block. This 12" main will be new construction by the City of Issaquah, and shall be extended from an existing 12" main located at approximately SE 42nd Place and SE Newport Way, west of the Lakemont Triangle. The estimated total length of new main will be 6350 feet. Issaquah shall be responsible for obtaining all necessary permits associated with the new 12" main. By executing this interlocal agreement, Bellevue agrees to endorse Issaquah's efforts to obtain the permits.

Ownership of the new water line from the point of connection to the existing Bellevue 12" main, shall be Issaquah's including that portion of the new main which will be within Bellevue jurisdictional boundaries. Bellevue shall not tap into Issaquah's 12" main without Issaquah's written approval. Such approval shall not be unreasonably withheld.

5. Bellevue shall provide a maximum fire flow of 2000 GPM measured at the intersection of Newport Way and 180th Ave. 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 point and the point of use and Bellevue therefore makes no representation with regard thereto.

6. Bellevue agrees that the wholesale water service it provides to Issaquah will meet the same standards of reliability, rate of flow and quality, that it provides to its retail service customers.

7. The Water Purveyor Contract between the City of Seattle and the City of Bellevue, Section II.B. Resale to Other Parties, requires written consent from Seattle prior to the execution of this Agreement.

AGREEMENT FOR WHOLESALE SANITARY SEWER & WATER SERVICE
FROM CITY OF BELLEVUE TO CITY OF ISSAQUAH - LAKEMONT TRIANGLE

Issaquah agrees, for the Lakemont Triangle service area, to abide by the standard terms and conditions that are imposed by the Seattle Water Department as well as those imposed by Bellevue, including but not limited to cross-connection controls, water quality testing, water conservation and other applicable standards and those terms and conditions are hereby incorporated by reference herein as if set forth in full. This Agreement does not convey purveyor status or water supply rights from the City of Seattle to Issaquah.

8. The basis for determining Issaquah's fair share of the water capital cost of facilities shall be mutually accepted engineering standards and cost estimates related to sizing of storage, pumping, distribution and transmission facilities as listed on Exhibit B.

9. All water supplied to the Lakemont Triangle service area by Bellevue shall be metered by individual service meters to all water users. The metering device(s) shall be owned by Issaquah and be periodically calibrated in accordance with manufacturer's specifications to guarantee accuracy. If, due to water quality, Issaquah needs to periodically flush its main, Issaquah shall install a metered flushing station to record consumptions.

10. Issaquah shall read the individual meters on a bi-monthly schedule. Issaquah shall submit a payment to Bellevue for water consumption. The water shall be charged at Bellevue's standard residential water rate.

11. Bellevue agrees to allow Issaquah to connect the Issaquah sewer main serving the Lakemont Triangle area, into an existing Bellevue sewer facility in the vicinity of SE Newport Way and Lakemont Blvd. (future). (See Exhibit C.)

12. Issaquah agrees to pay Bellevue for their fair share of the sewer facilities on West Lake Sammamish which must be upgraded to serve both the Lakemont Triangle area and proposed Bellevue needs. The basis for determining the fair share computations shall be mutually accepted engineering standards related to sizing of the sewage facilities. (See Exhibit A) Upgrading of existing sewer facilities will include approximately 6000 L.F. of sewer trunk at an estimated cost of \$1,500,000.00 (1989 dollars).

Upgrading by Bellevue of the sewer facilities to meet additional capacity demands resulting from proposed Lakemont Triangle Development, and payment by Issaquah for its associated costs are conditional upon a signed commitment from the Developers to Issaquah. A signed commitment from the Developer will be required by Issaquah prior to building permit approval, which will include the portion for which the Developer must contribute toward the sanitary sewer upgrade. Failure by Developers to provide a signed

AGREEMENT FOR WHOLESALE SANITARY SEWER & WATER SERVICE
FROM CITY OF BELLEVUE TO CITY OF ISSAQUAH - LAKEMONT TRIANGLE

commitment in a timely manner prior to finalization of plans to upgrade the Bellevue sewer, will result in the reduction of the sewer upgrade by Bellevue, shall release Issaquah from all monetary responsibility for that portion of the upgrade costs and Issaquah would not be able to connect to Bellevue's sewer facilities.

13. Bellevue shall construct, own and maintain all sanitary sewer facilities within its service area that are jointly used by Bellevue and Issaquah.

14. Bellevue agrees to bill and Issaquah agrees to pay a monthly user fee of \$.87 per Multi-Family Unit per month for sewage conveyance capacity, after construction. This rate includes charges for maintenance and operation of the jointly used facilities in perpetuity and will not be subject to additional charges for maintenance and operation.

15. Bellevue and Issaquah agree that the sanitary sewer and water system improvements needed to serve the area are to be provided in response to development activity, hence the construction of the facilities is dependent upon Developer contributions and construction. Issaquah's fair share of the capital cost of facilities to serve the area shall be provided from Developer cash contributions and/or Developer facility construction.

16. Issaquah shall construct, own and maintain all sanitary sewer and water facilities that are solely used for service to Issaquah, regardless of the location of the facilities.

17. Issaquah agrees to pay Bellevue's applicable general facilities fees for each Multi-Family Unit that is served. These fees will be collected by Issaquah on a unit by unit basis at the time that service is granted under Building Permit approval. An annual payment will be made to Bellevue representing the connection fees that were collected 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 include an accounting of the connections added during the year.

18. Bellevue agrees to obtain all necessary approvals and permits for serving and constructing the jointly used facilities.

AGREEMENT FOR WHOLESALE SANITARY SEWER & WATER SERVICE
FROM CITY OF BELLEVUE TO CITY OF ISSAQUAH - LAKEMONT TRIANGLE

19. Issaquah agrees to obtain all necessary approvals and permits for construction of the facilities that will solely serve Issaquah.

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 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 issue 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.

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. With respect to 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

AGREEMENT FOR WHOLESALE SANITARY SEWER & WATER SERVICE
FROM CITY OF BELLEVUE TO CITY OF ISSAQUAH - LAKEMONT TRIANGLE

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.

HEREBY AGREED TO AND ACCEPTED BY this the 19th day of
April, 1990.

CITY OF BELLEVUE

Pam Bassinuth

CITY OF ISSAQUAH

Howard C. Hinde

Mayor

Approved as to form:

[Signature]
Assistant City Attorney

Wayne Desala 3/14/90
City Attorney

52:50

EXHIBIT A

COST ALLOCATION FOR
SOUTH VASA PARK SEWER TRUNK

Issaquah will serve 600 Multi-Family Units (360 Equiv. Single Family Units) via a sewer pump station. Normally peak flow from 600 MF Units would be approximately 200 gpm, it is anticipated that the pump station will be sized for around 275 gpm, which is equivalent to 825 MF or 495 SF Units. For flow demand and determining Issaquah's share of the trunk costs, 495 Equiv. SF Units is being used for Issaquah. The total number of projected equivalent single family units in the South Vasa Trunk is 2009, including Issaquah.

1) Cost for constructing new trunk.

The estimated project cost is \$1,567,000. Therefore, the cost per Equiv. SF Unit is $\$1,567,000/2009 = \780 . **

2) Replacement and M&O costs.

Replacement cost = \$1,560,000
Anticipated life of trunk = 75 years
Replacement cost per year = $\$1,560,000/75 = \$20,800$
Assume annual M&O cost = \$1000

Total annual cost = \$21,800

Issaquah's share = $495/2009 = 25\%$

Issaquah's cost per year = $.25(\$21,800) = \$5,450$

Cost per MF unit per month = $\$5,450/600 \text{ SF units}/12 \text{ months}$
= \$0.75 per month

3) Additional cost for admin., insurance, liability, etc.
+15% = \$0.12

TOTAL MONTHLY CHARGE PER MF UNIT PER MONTH = \$0.87

** This is in 1989 dollars, interest will be added to the cost for connection made in future years.

EXHIBIT B

COST OF
SOUTH 520 ZONE REGIONAL FACILITIES

1) Estimated ultimate equivalent single family units

Ultimate Max. day demand (MDD) = 4.9 MGD
(1985 Water Comp. Plan, pg. 3-12)

Avg. Day Demand per capita = 80 gpcd

3.1 persons per SF unit

ADD per equiv. SF unit = 80 gpcd X 3.1 = 248 gpd

MDD = ADD X 2.4

MDD for equiv. SF = 248 gpd X 2.4 = 769 gpd

(All from 1986 Water Comp. Plan Amend., pg. 11 & 12)

Estimated ultimate SF units in South 520 Zone =
4,900,000 MGD / 769 gpd = 6372

2) Estimated replacement cost of existing regional facilities:

2MG Steel Reservoir	= \$ 800,000
3MG Concrete Reservoir	= \$1,300,000
*2 Supply Inlet Stations	= \$1,350,000 (60% = \$810,000)
*8500 lf - 24" Pipe	= \$1,490,000 (60% = \$894,000)
*9400 lf - 16" Pipe	= \$1,175,000 (60% = \$705,000)
*17200 lf - 12" Pipe	= \$1,720,000 (60% = \$1032,000)

TOTAL = \$5,541,000

* These facilities provide service to other areas, therefore, only 60% will be allocated to the South 520 Zone.

Estimated depreciation of the facilities:

Reservoirs

age 13 years - expected useful life 100yrs

depreciation = 13/100 = 13%

Inlets - new no depreciation

Pipe

avg age 16 years - expected life 75yrs

depreciation = 16/75 = 21%

Depreciation value

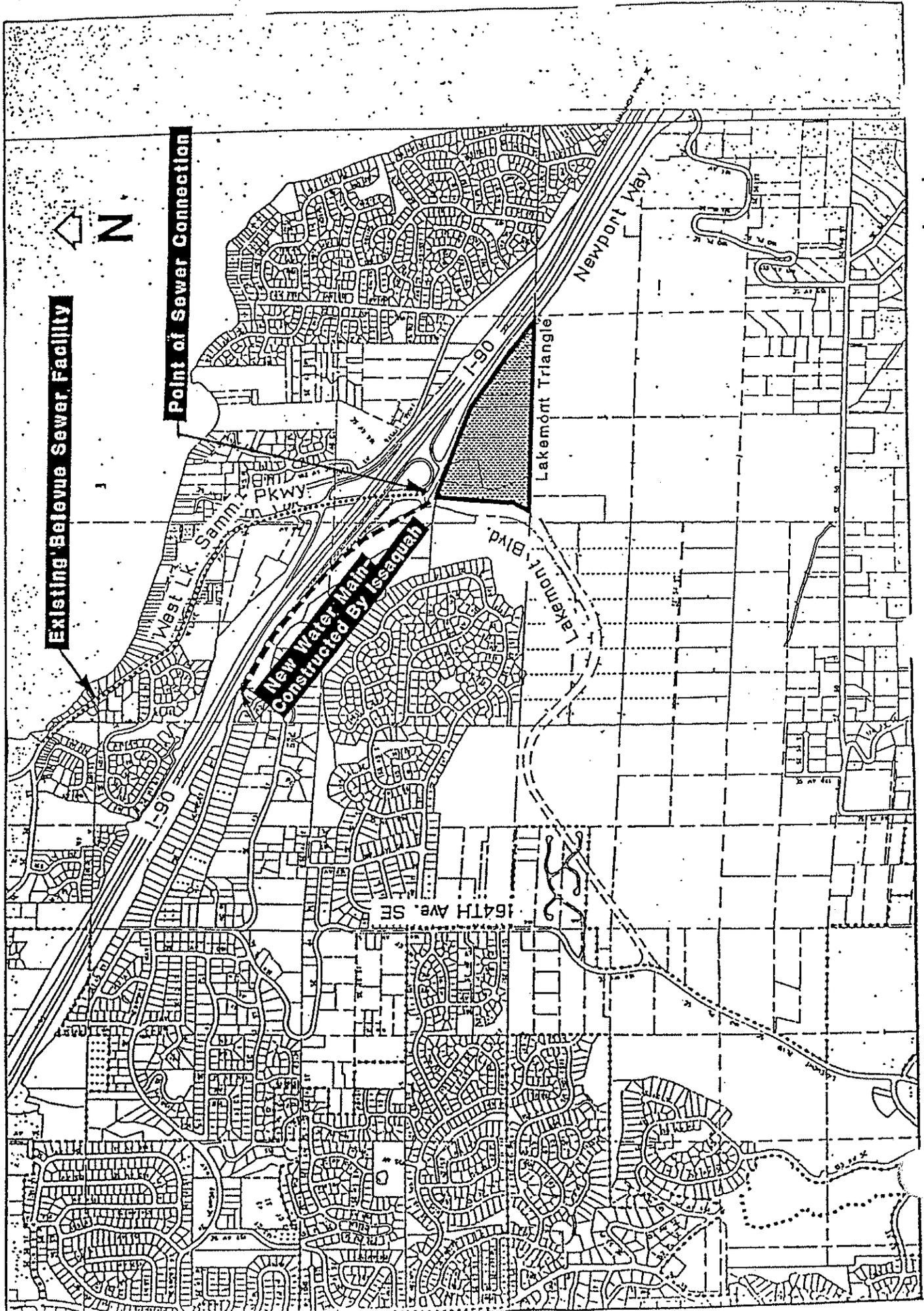
Reservoirs = \$2,100,000 X .13 = \$273,000

Pipes = \$3,441,000 X .21 = \$722,000

TOTAL FACILITIES REPLACEMENT COSTS MINUS DEPRECIATION

\$5,541,000 - \$995,000 = \$4,546,000

ESTIMATED COST PER EQUIVALENT SF UNIT = \$4,546,000 / 6372
= \$715



FILED NO. 14578
CITY OF BELLEVUE
DATE 6/30/89
CITY CLERK Marie O. Connell

^{PN}
ORIGINAL

Res. 51
5149

**AGREEMENT FOR DESIGN AND CONSTRUCTION OF
JOINT-USE SEWER TRUNK ALONG WEST LAKE SAMMAMISH BLVD.
FROM S.E. 12TH PLACE TO APPROXIMATELY S.E. 25TH-STREET**

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 Eastgate Sewer District (hereinafter called "Eastgate").

WHEREAS, Bellevue and Eastgate desire to work cooperatively in the design and construction of a joint-use sewer trunk because of the potential for reduced construction and maintenance costs and reduced adverse environmental impacts as compared to the construction of separate sewer trunks, now, therefore,

In consideration of the mutual covenants contained herein, the parties agree to participate in design and construction of a joint-use sewer trunk along West Lake Sammamish Blvd. pursuant to the following terms and conditions:

1. Purpose.

This Agreement is intended to set forth the terms and conditions upon which Bellevue and Eastgate agree to cooperate for the purpose of designing, constructing and maintaining a joint-use sewer trunk along West Lake Sammamish Blvd. from S.E. 12th Place to an existing sewer manhole located at approximately S.E. 25th Street.

2. Administration of Agreement.

Eastgate shall be the lead agency charged with responsibility for administration of this Agreement. The specific responsibilities of the parties are set forth hereinafter.

3. Design and Construction.

Eastgate shall take all necessary steps to provide for the design and construction, including construction administration and inspection, of the sewer trunk. The estimated cost of the sewer trunk is \$405,200.00.

Eastgate shall furnish Bellevue with 4 copies of the plans and specifications of the sewer trunk for review and approval by Bellevue when the design is at the eighty percent (80%) and one hundred percent (100%) stages.

Eastgate shall be the contracting "owner" with its contractor and shall be responsible for all phases of the construction and completion of the sewer trunk in accordance with the approved plans. Eastgate shall coordinate and keep Bellevue informed of the contractor's progress during construction. Upon completion of the work in accordance with the approved plans, Eastgate shall notify Bellevue of the date and time of final construction inspection. Bellevue personnel may accompany Eastgate's personnel and inspector on final inspection for purposes of creating a final checklist (punchlist). Upon satisfactory completion by the contractor of the final checklist, Bellevue shall furnish its written approval of the construction to Eastgate. Eastgate's acceptance of the work shall be by resolution passed by the Board of Commissioners. A copy of the resolution shall be furnished to Bellevue.

Eastgate shall furnish Bellevue with a copy of the advertisements for bids and shall make available bids received for review by Bellevue. Eastgate shall recommend award of a contract to the bidder regarded by Eastgate as the lowest responsible bidder. Eastgate shall provide Bellevue with a copy of the contract and notice to proceed. Change order additions which constitute extras and increase the contract price by more than five percent (5%) shall be approved or disapproved by Bellevue before the work is performed. Bellevue shall either approve or disapprove such change order in writing within ten working days (10) of receipt of the proposed change order. Failure of Bellevue to respond within ten working days (10) of receipt of same shall be deemed approval of the change order by Bellevue.

4. Sharing of Costs.

Eastgate shall be responsible for paying all costs of design and construction of the sewer trunk for which it shall receive reimbursement from Bellevue in line with Exhibit "A" attached hereto and by this reference incorporated herein. The estimated cost for the trunk line is \$405,200.00, a copy of the current cost estimate dated May 15, 1989 is attached for reference. Costs incurred by Eastgate or Bellevue employees for the design or construction of the trunk will be borne by each respective party and will not be included as project costs eligible for cost sharing.

5. Method of Payment.

Eastgate will prepare and forward a monthly invoice to Bellevue for its share of costs for design and construction of the sewer trunk, together with a copy of the bills/invoices received by Eastgate from its consultants, contractors, and other third parties for cost of design and construction for the project. Bellevue shall pay such costs within thirty (30) days of receipt of the invoice from Eastgate.

6. Ownership, Operation and Maintenance.

Eastgate shall maintain ownership of the sewer trunk upon completion of the project. In consideration of Bellevue's payment of fifty percent (50%) of the cost of the sewer trunk, Bellevue shall have rights to fifty percent (50%) of the trunks flow capacity.

Eastgate shall be responsible for operating and providing routine maintenance of the sewer trunk. Any major repair or replacement which costs more than five hundred (\$500) shall be shared by both parties equally.

7. Indemnity.

Eastgate agrees to defend, save harmless, and indemnify Bellevue from and against any and all claims and demands for injury or death to persons and/or damage to property arising out of the construction, operation and maintenance of the sewer trunk by Eastgate except as may be caused by the acts and negligence of Bellevue, its agents, servants, or employees, or through acts of nature. Bellevue shall in turn agree to defend, save harmless, and indemnify Eastgate from and against any and all claims and demands for injury, death or damage arising out of Bellevue's specific involvement in the construction operation and maintenance of the sewer trunk line in question.

Eastgate's design consultant shall be required to maintain professional liability insurance with limits of not less than \$1,000,000.00.

8. Connection Charges.

Upon completion of the project and prior to allowing any properties to connect to the trunk, Eastgate shall identify the developable areas served directly by the trunk

and shall determine connection charges which allocate the project costs equitably over those properties. The actual allocation method shall be determined by Eastgate, but must be based to recoup all project costs from the developable areas as they connect to the trunk.

As properties connect to the trunk Eastgate shall collect the appropriate connection charge from each property. The connection charges collected by Eastgate shall be divided between Eastgate and Bellevue in line with Exhibit "A" attached hereto and by this reference incorporated herein, so as to reimburse Bellevue for its share of the cost of construction of the sewer trunk. Bellevue's reimbursement shall not include its share of cost of that portion of the line lying south of the existing Eastgate Sewer District boundary (see Exhibit "A").

9. Amendments to Agreement.

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.

10. Disputes-Fees.

This Agreement is binding on the heirs, successors and assigns of both Bellevue and Eastgate and in the event that either Bellevue or Eastgate is required to enforce the terms of the subject Agreement then, in that event, jurisdiction shall lie in King County and the prevailing party in such litigation shall be entitled to its costs and reasonable attorney's fees.

DATED this 1ST day of AUGUST, 1989.

CITY OF BELLEVUE

EASTGATE SEWER DISTRICT

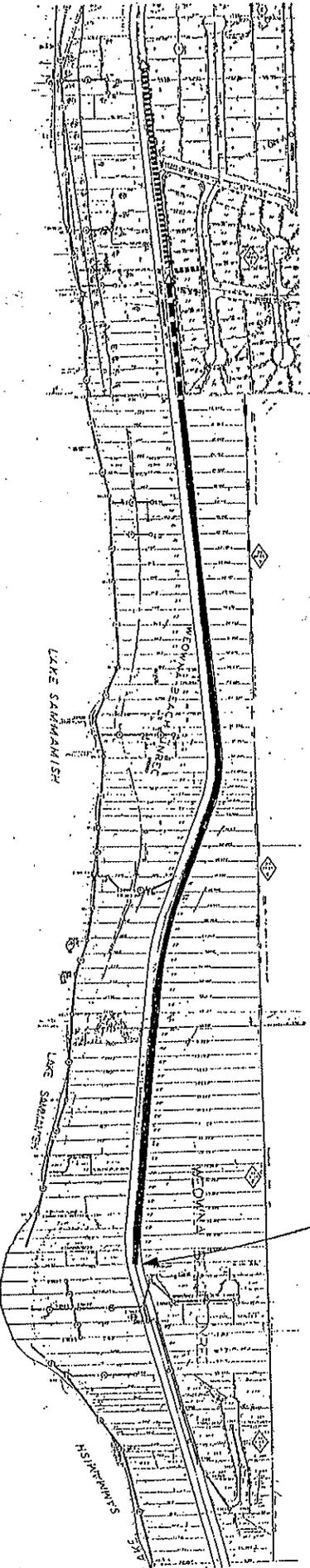
By: *Phillip Kushlan*
Phillip Kushlan,
City Manager

By: *Robert A. Biser*

Mike Barbich
Robert A. Michel

APPROVED AS TO FORM:

By: *Richard Kirkby*
Richard Kirkby,
Assistant City Attorney



- SEWER LINES PAID FOR 50% EASTGATE / 50% BELLEVUE
- - - - - SEWER LINES PAID FOR 50% EASTGATE / 50% BELLEVUE
- EXISTING EASTGATE SEWERS
- ⋯⋯⋯⋯⋯ EXISTING BELLEVUE SEWERS

FUTURE CONNECTION
OF BELLEVUE'S
PUMP STATION NO. 5

SCALE 1" = 400'

(100-17930)

FILED NO. 17930
CITY OF BELLEVUE
DATE 6/23/92
Sham Mad
Res. 5522

CITY OF BELLEVUE
EASTGATE SEWER DISTRICT
INTERLOCAL AGREEMENT
SANITARY SEWER SERVICE
SOUTHEAST SEWER SERVICE AREA

This Agreement made and entered into this day by and between the City of Bellevue, a municipal corporation of the State of Washington, hereinafter referred to as "Bellevue" and the Eastgate Sewer District, a municipal corporation of the State of Washington, hereinafter referred to as "Eastgate",

W I T N E S S E T H:

WHEREAS, Bellevue and Eastgate are authorized by Chapter 39.34 R.C.W. the Interlocal Agreement Act, to enter into cooperative agreements; and

WHEREAS, a portion of the Bellevue southeast sanitary sewer service area described and designated on Exhibit "A" (attached hereto and by this reference incorporated herein) is not presently capable of serving to the Bellevue sanitary sewer system because the Bellevue sanitary sewer system is not directly available for connections in the subject area; and

WHEREAS, the corporate boundaries of Eastgate and it's sanitary sewer system lie adjacent to the subject area of the Bellevue southeast sanitary sewer service area and the Bellevue Southeast sanitary sewer service area can be conveniently connected into the Eastgate sanitary sewer facilities at locations designated on Exhibit "A", and

EXHIBIT A

COPY ORIGINAL

WHEREAS, both parties are desirous whenever possible and convenient to mutually assist one another,

Now, therefore, in consideration of the mutual covenants contained herein, it is hereby agreed as follows:

1. Purpose. The purpose of this Agreement is to provide sanitary sewer service to the properties as described in Exhibit "A" within the Bellevue sewer service area subject to the conditions stated herein. Connection points shall be as shown on Exhibit "A" where Eastgate sanitary sewer facilities are presently available or will be available in the future, which may be added to this Interlocal Agreement by an Amendment upon approval of both entities.

2. Connections. Eastgate agrees to allow the necessary connections as established and administered by Bellevue through Developer Extension Agreements or the Bellevue Capital Improvement Program to supply sewer service. All sanitary sewer facilities to be constructed within the subject area described and designated on Exhibit "A", as attached hereto and by this reference incorporated herein, shall upon construction and acceptance, become for all purposes, including customer service charges and maintenance, part of the Bellevue Sewer Utility, but may, nevertheless, be connected to the Eastgate Sewer Utility. All connections to Eastgate's sanitary sewer facilities shall be made in accordance with Eastgate's standards and specifications with appropriate supervision and inspection by Eastgate personnel or representatives.

3. Acceptance of Sewage. Eastgate agrees to accept all sewage entering into its system through said connection points, as designated on Exhibit "A", which meets all applicable METRO, D.O.E. or other regulations, and to convey same through its system to its connection with the Municipality of Metropolitan Seattle system.

4. Construction, Maintenance and Repair Cost. No part of the cost of construction of the sanitary sewer facilities, nor any part of the future maintenance or repair of the sanitary sewer facilities laying within Bellevue, as designated on Exhibit "A", shall be borne by the Eastgate Sewer Utility.

It is anticipated that should Bellevue connect properties within Exhibit "A" to the Eastgate facilities, that certain oversizing of lines may be required at two separate sites. It is understood and agreed that Bellevue will be responsible for its fair share cost of oversizing said lines, including construction and engineering costs, as shown on the on-from-to exhibits attached hereto and by this reference incorporated herein as Exhibits "B" and "C". Said work shall be in accordance with Eastgate's standards and specifications.

5. Customer Billing. It is understood and agreed that all properties within the subject area which are within the Bellevue Sewer Utility boundaries shall be billed by Bellevue in accordance with its standard practices and rates.

It is further understood and agreed that all properties within the subject area which are within the Eastgate Sewer

District boundaries shall be billed by Eastgate in accordance with its standard practices and rates.

6. Assignment and Termination. Each party shall have the right to assign this agreement and/or its rights and/or obligations hereunder, in whole or part, to any entity without prior written consent of the other party, and neither shall have the right to terminate it's obligations hereunder by dissolution or otherwise. This Agreement is binding upon the heirs, successors and assigns of the parties hereto.

7. Sewer System Property. Neither party shall by virtue of this Agreement, acquire any proprietary or governmental interest in the sewer system or sewer line of the other party. Each party shall be solely responsible for the operations and maintenance of it's own system of sewage collection, as designated by Exhibits "A", and shall save the other party harmless from any claim for damage, real or imaginary, made by a third party, and alleging negligence or misfeasance in the operation or maintenance of the other parties system, or in the acts or omissions of it's own officers or employees.

8. Effective Date and Duration. This interlocal Agreement shall become effective upon authorized signature of both parties and shall remain in effect in perpetuity or until terminated or amended pursuant to the terms of this interlocal Agreement.

9. Joint Board. Pursuant to RCW 39.34.030(4)(a), a joint board comprised of the Eastgate Sewer Utility Manager,

or a designee, and the City of Bellevue Public Works Director, or a designee, shall be responsible for administering this Agreement.

10. Filing. A copy of this interlocal Agreement shall be filed with the Bellevue City Clerk, the Eastgate Sewer District and County Auditor.

11. Entirety. This writing embodies the entire Agreement of the parties. There are no promises, terms, conditions, or obligations other than those contained herein. This Agreement may be amended only by written instrument signed by both parties.

IN WITNESS WHEREOF, the parties have hereunto set their hand and seals.

Date: 6/29/92

CITY OF BELLEVUE

By: Pam Besionne

Approve as to Form:

Scott Conklee, ass't
City Attorney for
CITY OF BELLEVUE

Date: _____

EASTGATE SEWER DISTRICT

By: Robert H. Bond

By: Robert J. Bragerton

By: Robert J. Michel

Approved as to Form:

Joel E. Bradshaw
Joel E. Bradshaw, WSBA #02440
Bradshaw & Richards, P.S.
Attorneys for EASTGATE SEWER
DISTRICT

BELLEVUE-EASTGATE SERVICE DESCRIPTION

That portion of Section 13, Township 24 North, Range 5 East, W. M., in King County, Washington, described as follows:

Commencing at the Northwest corner of the Northwest quarter of said Section 13; thence Southerly along the West line thereof to the Southerly margin of S.R. 90, as per Richards Road to Lake Sammamish Right of Way Plans (June 12, 1969) and the True Point of Beginning; thence continuing Southerly along said West line to the Northwest corner of the Southwest quarter of said Section 13; thence Southerly along the West line thereof to the intersection of the center line of 164th Avenue S.E.; thence Southerly along said center line to the West line of said subdivision; thence Southerly along said West line to the center line of S.E. 45th Way; thence Easterly along said center line to the center line of 165th Avenue S.E.; thence Northerly and Northeasterly along said center line to the center line of S.E. 45th Street; thence Easterly along said center line to the intersection of the Southerly extension of the East line of Block 5, Eastmont Home Tracts, as recorded in Volume 57 of Plats, Pages 91 and 91, in King County, Washington; thence Northerly along said Southerly extension and the East line of said Block 5 to the Northerly line of said Block 5; thence Northwesterly along said Northerly line to the West line of the Northeast quarter of the Southwest quarter of said Section 13; thence Northerly along said West line to the Northwest corner of said subdivision; thence Easterly along the North line thereof to the Southwest corner of the Northeast quarter of said Section 13; thence Easterly along the South line thereof to the East line of King County Short Plat No. 475087, as filed under Recording No. 7507010538, in King County, Washington; thence Northerly along said East line to the Southerly margin of said S.R. 90; thence Westerly and Northerly along said Southerly margin to the prohibited access line and the Southerly margin of said S.R. 90; thence Westerly along said prohibited access line and Southerly margin to the True Point of Beginning.

91170.DES/095
MN/10-7-91

**EASTGATE SEWER DISTRICT
TRAILERS INN OVERSIZING
ON-FROM-TO**

ON

An Easement

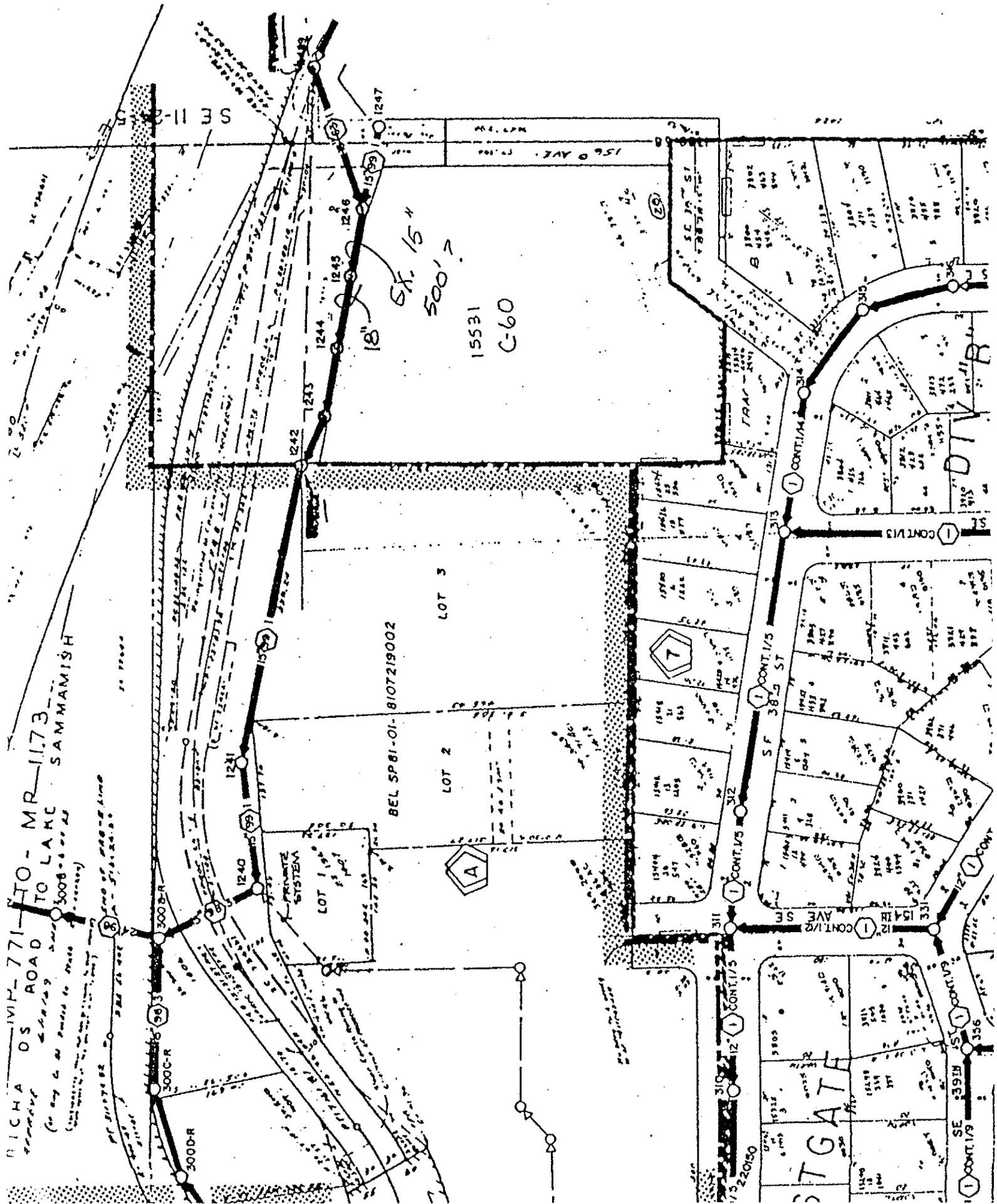
FROM

A point approximately 450 feet North and 95 feet East of the intersection of 156th Ave. S.E. and S.E. 38th Street.

TO

500 feet West to a point approximately 605 feet North and 105 feet East of the intersection of 155th Ave. S.E. and S.E. 38th Street.

EXHIBIT B



**EASTGATE SEWER DISTRICT
S.E. 40TH STREET OVERSIZING
ON-FROM-TO**

ON

S.E. 40th Street

FROM

The interesection of S.E. 40th Street
and 164th Avenue S.E.

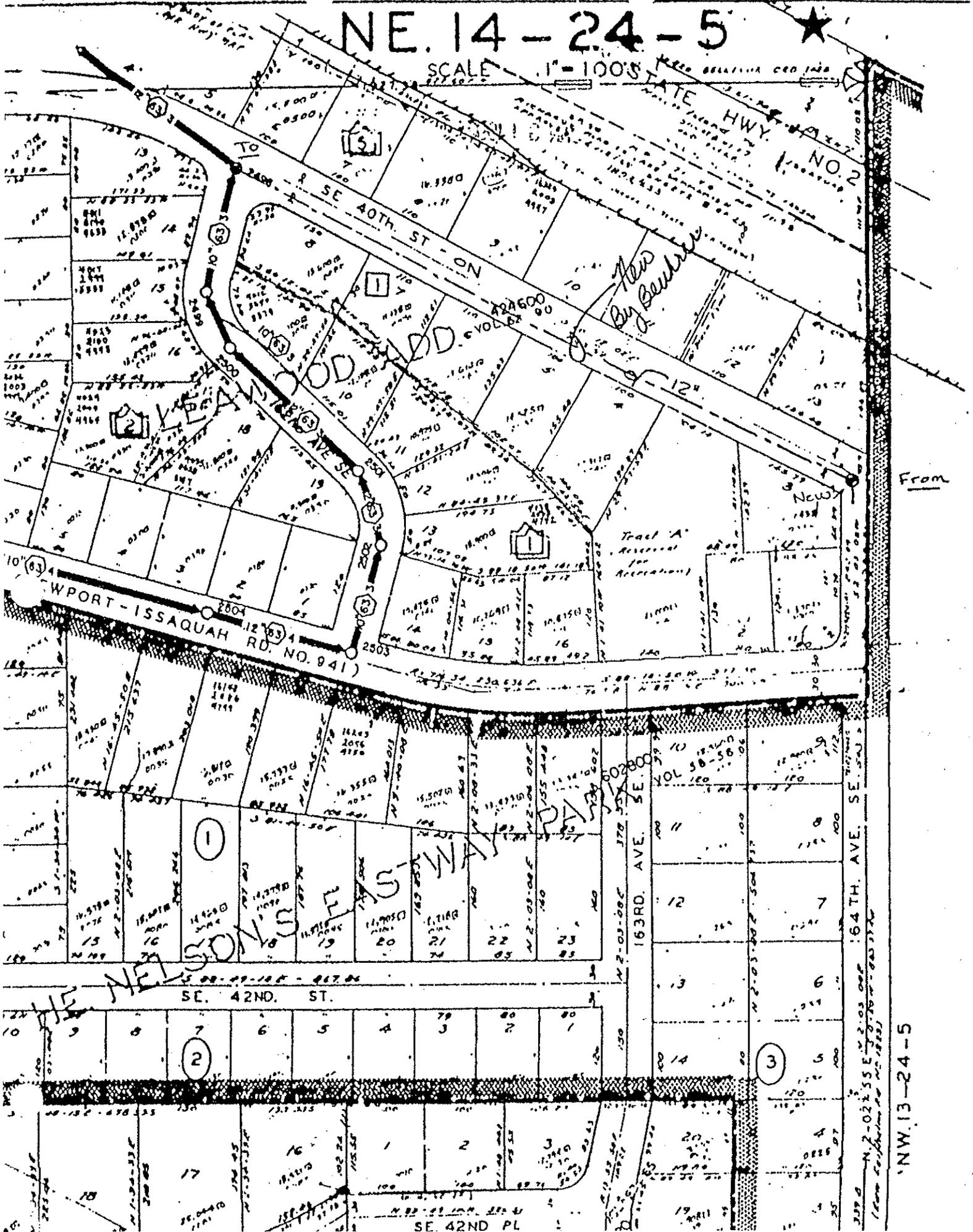
TO

900 feet west to the
intersection S.E. 40th
Street and 162nd Ave. S.E.

NE. 14-24-5



SCALE 1" = 100'



From

NW. 13-24-5

CITY OF BELLEVUE, WASHINGTON

RESOLUTION NO. 7779

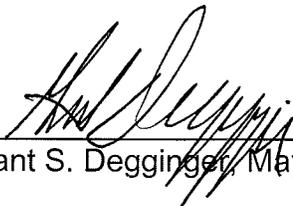
A RESOLUTION authorizing the City Manager or his designee to execute an Interagency Agreement between the City of Bellevue and King County Wastewater Division, in an amount not to exceed \$26,000, for roadway repairs on SE 6th Street.

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 Interagency Agreement between the City of Bellevue and King County Wastewater Division, in an amount not to exceed \$26,000, for roadway repairs on SE 6th Street, a copy of which Interagency Agreement has been given Clerk's Receiving No. 43157.

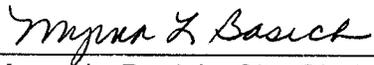
Passed by the City Council this 4th day of August, 2008, and signed in authentication of its passage this 4th day of August, 2008.

(SEAL)



Grant S. Degginger, Mayor

Attest:



Myrna L. Basich, City Clerk

**INTERAGENCY AGREEMENT FOR WORK TO BE PERFORMED BY
KING COUNTY WASTEWATER TREATMENT DIVISION**

THIS AGREEMENT is made and entered into by and between King County ("the County") and the City of Bellevue, ("the City").

RECITALS

- A. The City is desirous of contracting with the County for the performance of certain work.
- B. The County is agreeable to performing the work on the terms and conditions hereinafter set forth and in consideration of the mutual covenants and agreements herein contained.
- C. The parties can achieve cost savings and benefits in the public's interest by having the County perform the work for the City at the City's expense.

AGREEMENT

NOW, THEREFORE, the parties agree as follows:

- 1. Work
 - 1.1 Scope of Work. The County Wastewater Treatment Division or its designee shall perform the work described on the attached Exhibit 1, Scope of Work.
 - 1.2 Modification of Work. If the City desires to modify the work requested, it shall notify the County of that desire. If the County agrees, the parties shall prepare an amended Scope of Work, which will be attached hereto as Exhibit 2. The amended Scope of Work shall bear the signature of the Wastewater Treatment Director for the County and Transportation Deputy Director for the City, authorizing the amended work.

2. County Personnel Standards

The County or its designee is acting hereunder as an independent contractor so that:

- a. County employees or its designees performing work hereunder shall be for all purposes employees of the County;
- b. Control of County personnel standards of performance, discipline, and all other aspects of employment shall be governed entirely by the County.

3. Compensation

- 3.1 Costs. The City shall pay the County for actual costs (direct labor, employee benefits, equipment rental, materials and supplies, utilities, permits, and administrative overhead costs) for the work performed by the County. Administrative overhead costs shall be charged as a percentage of direct labor costs.
- 3.2 Billing. The County will bill the City for the cost of work performed. The bill will reflect actual costs and administrative overhead, as described in Section 3.1 above. Payments are due within 30 days of the City's receipt of said invoice.

4. Permits

The City is responsible for obtaining any permits or other authorizations that may be necessary for the County or its designee to perform the work under this Agreement.

5. County Responsibilities

5.1 County Status. The County or its designee will act as a contractor only and will not purport to represent the City professionally.

5.2 County Performance. The County or its designee shall perform the work requested by the City as described in the Scope of Work. The County or its designee will furnish all necessary labor, supervision, machinery, equipment, materials, and supplies to perform the work requested by the City in the Scope of Work

5.3 Timing of Work. The County or its designee will make every effort to recognize pertinent City deadlines for completion of the requested work, and will notify the City of any hardship or other inability to perform the work requested, including postponement of work due to circumstances requiring the County to prioritize its resources toward emergency-related work.

6. Duration

This Agreement is effective upon signature by both parties, and shall remain in effect until completion of the work and payment of all sums due hereunder, provided that either party may terminate this Agreement by a written notice received by the other party at least five business days before the work commences.

7. Force Majeure

The County's or its designee's performance under this Agreement shall be excused during any period of force majeure. Force majeure is defined as any condition that is beyond the reasonable control of the County or its designee, including but not limited to, natural disaster, severe weather conditions, contract disputes, labor disputes, epidemic, pandemic,

delays in acquiring right-of-way or other necessary property or interests in property, permitting delays, or any other delay resulting from a cause beyond the reasonable control of the County or its designee.

8. Liability

Each party hereto agrees to indemnify and hold harmless the other party, and its officers, agents and employees, for all claims (including demands, suits, penalties, losses, damages, attorneys fees or costs of any kind whatsoever) to the extent such a claim arises or is caused by the indemnifying party's own negligence or that of its officers, agents or employees in performance of this agreement.

The foregoing indemnity is specifically and expressly intended to constitute a waiver of each party's immunity under Washington's Industrial Insurance Act, RCW Title 51, as respects the other party only, and only to the extent necessary to provide the indemnified party with a full and complete indemnity of claims made by the indemnitor's employees. The party's acknowledge that these provisions were specifically negotiated and agreed upon by them.

9. Audits and Inspections

The records and documents pertaining to all matters covered by this Agreement shall be retained and be subject to inspection, review or audit by the County or the City during the term of this Agreement and for three (3) years thereafter.

10. Entire Agreement and Amendments

This Agreement contains the entire agreement of the parties hereto and supersedes any and all prior oral or written representations or understandings. This Agreement may only be amended by mutual, written agreement between the parties, provided that the Scope of Work may be amended as described in Section 1.2 above.

11. No Continuing Services

This Agreement is valid only for an individual work item, as specified in the Scope of Work. Ongoing services require an interlocal agreement pursuant to Chapter 39.34 RCW.

12. No Third Party Rights

Nothing contained herein is intended to, nor shall be construed to, create any rights in any third party, or to form the basis for any liability on the part of the parties to this Agreement, or their officials, officers, employees, agents or representatives, to any third party.

13. Waiver of Breach

Waiver of any breach of any provision of this Agreement shall not be deemed to be a waiver of any prior or subsequent breach and shall not be construed to be a modification of the terms of this Agreement.

14. Headings

The headings in this Agreement are for convenience only and do not in any way limit or amplify the provisions of this Agreement.

15. Invalid Provisions

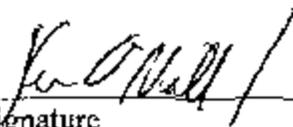
If any provision of this Agreement shall be held invalid, the remainder of the Agreement shall not be affected if such remainder would then continue to serve the purposes and objectives of the parties.

IN WITNESS WHEREOF, the parties have executed this Agreement effective as of the date last written below.

KING COUNTY

CITY OF BELLEVUE

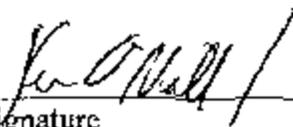
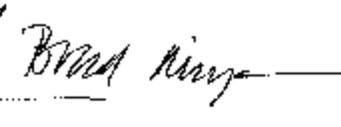

Christie True, Division Director
DNRP - Wastewater Treatment Division


Signature

Date

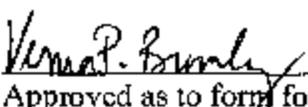
7/31/08

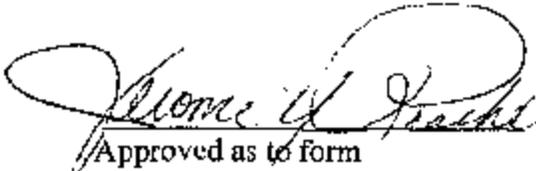
Title

 / 
Acting Transportation Director / Deputy City Manager

Date

8/4/08 / 8/08/08


Approved as to form for use in 2008
Verna Bromley
Prosecuting Attorney


Approved as to form
Jerome Roache
Assistant City Attorney

Attachment: Exhibit 1, Scope of Work

EXHIBIT 1

Scope of Work

Per the request of the City's Transportation Department the County will perform additional restoration to the roadway base and asphalt paving sections on SE 6th Street between 114th Avenue SE. and 113th Avenue SE. This will result with the entire roadway section being rebuilt and restored by King County's contractor during it's sewer force main project. The original area of restoration was documented in a Letter of Understanding between King County Waste Water Treatment Division and City of Bellevue Utilities Engineering Division.

Cost Estimate

The total cost estimate for the additional restoration area is \$25,000. This cost is based on a direct cost for materials per square yard of area restored. See attached sheet for the specific areas and cost breakdown. The total cost of this project is not to exceed \$26,000.

Schedule

The County will perform this work with their existing sewer force main contract at the same time that all other restoration is scheduled. This work occurred in March of 2008.

Quantities calculated for added base and roadway repair by King County Wastewater Division for restoration on SE 6th Street between 114th Ave SE and 116th Ave SE. See map for measurement and calculation areas of repair and division of responsibility. Unit costs are based upon current bids for like quantities on other City of Bellevue projects:

ITEM OF WORK	QUANTITY	UNIT	UNIT COST	TOTAL COST
ASPHALT CONCRETE PAVEMENT REMOVAL	750	SY	4.00	3,000.00
1/2" HMA PG 64-22, ASPHALT	90	TON	70.00	6,300.00
CLASS E ASPHALT BASE	180	TON	70.00	12,500.00
CRUSHED SURFACING BASE COURSE	155	TON	20.00	3,100.00
TOTAL OF ALL ITEMS				\$25,000.00

ORIGINAL

2641-RES
4/12/2012

CITY OF BELLEVUE, WASHINGTON

RESOLUTION NO. 8388

A RESOLUTION authorizing the execution of an amendment to the interagency agreement with King County for the design and construction of a joint sewer trunk project in the SE 3rd Street and 102nd Avenue SE to combine with the County's project to increase the capacity of the West CBD Trunk (CIP Plan No. S-54).

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

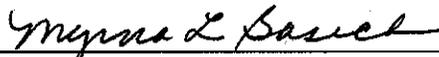
Section 1. The City Manager or his designee is hereby authorized to execute an amendment to the interagency agreement with King County for the design and construction of a joint sewer trunk project in the SE 3rd Street and 102nd Avenue SE to combine with the County's project to increase the capacity of the West CBD Trunk (CIP Plan No. S-54), a copy of which amendment has been given Clerk's Receiving No. 48942.

Passed by the City Council this 16th day of April, 2012, and signed in authentication of its passage this 16th day of April, 2012.

(SEAL)


Conrad Lee, Mayor
Mayor

Attest:


Myrna L. Basich, City Clerk

ORIGINAL

#48942 DATE 7-5-12 LOC INTR LOC-001 GR #1050094-001
As 8388

FIRST AMENDMENT TO INTERAGENCY AGREEMENT BETWEEN KING COUNTY (WASTEWATER TREATMENT DIVISION) AND CITY OF BELLEVUE FOR UTILITY PIPELINE WORK IN CONJUNCTION WITH THE BELLEVUE INFLUENT TRUNK IMPROVEMENTS PROJECT AND THE WEST CENTRAL BUSINESS DISTRICT TRUNK IMPROVEMENT PROJECT

This First Amendment to the Interagency Agreement for Utility Pipeline Work in Conjunction with the Bellevue Influent Trunk Improvements Project and the West Central Business District Trunk Improvement Project is made by and between the City of Bellevue (the "City") and King County, by and through the Department of Natural Resources and Parks, Wastewater Treatment Division (the "County"). The City and the County may also be referred to herein individually as a "Party" and collectively as the "Parties."

RECITALS

- A. On or about March 29, 2010 the City and the County entered into an Interagency Agreement for Utility Pipeline Work in Conjunction with the Bellevue Influent Trunk Improvements Project and the West Central Business District Trunk Improvement Project (the "Agreement"), as more particularly described therein.
- B. In accordance with the terms of the Agreement, the City and the County desire to amend the Agreement upon the terms and conditions set forth herein.

AGREEMENT

Now therefore, in consideration of the Parties' mutual assent, the Parties agree as follows:

1. Amendment

1.1. A new Section 3.13 shall be added to the Agreement, as follows:

"3.13. Inserta-tees. The County shall assume full and complete ownership and responsibility for Inserta-tees installed by the Contractor on the County's Bellevue Influent Trunk as connection tees to the newly installed service laterals. Inserta-tees shall not be installed on the City's West CBD Trunk. The service laterals, up to the point of connection with the Inserta-tees, shall be owned and maintained by the City. The County shall provide the City with a copy of the as-built record drawings of the Bellevue Influent Trunk identifying the location of the new service laterals and any locations of Inserta-tees installed by the Contractor."

1.2. A new Section 4.9 shall be added to the Agreement, as follows:

“4.9. Pavement Overlay. The City shall assume responsibility for the implementation and management of the full width pavement grind and overlay required for the project under Right-of-Way Street Use Permit No. 09 129294 TK during the City’s regular overlay schedule in the spring of 2012. The extent of the pavement overlay areas are the portion of SE 6th Street directly south of the Bellevue Pump Station impacted by construction staging; the intersection of SE 6th Street and 102nd Ave. SE; 102nd Ave. SE between SE 6th Street and SE 3rd Street; and SE 3rd Street between 101st Ave. SE and Bellevue Way; and any overlay work required in Bellevue Way, or as required under the City’s right of way permit. Upon execution of this Amendment, the City shall release the County from responsibility for the pavement grind and overlay as currently required in the permit No. 09 129294 TK listed above, and shall issue a revised permit omitting this requirement. The County shall reimburse the City for its proportionate share of the costs for the overlay per Paragraph 5.4 of this Agreement.”

1.3. A new Section 5.4 shall be added to the Agreement, as follows:

“5.4. Reimbursement for Pavement Overlay and Invoicing. Pursuant to the same cost-share split percentages applied to the rest of the construction activity covered by this Agreement, the County shall reimburse the City for fifty-six (56) percent of the pavement overlay costs related to the Bellevue Influent Trunk construction (SE 6th Street, 102nd Ave. SE between SE 6th St. and SE 3rd St., and the portion of SE 3rd St. between 101st Ave. SE and 102nd Ave SE.). The City shall be responsible for one hundred (100) percent of the pavement overlay costs related to the West CBD Trunk construction (the portion of SE 3rd between Bellevue Way and 102nd Ave. SE, up to the manhole to which the West CBD Trunk will be connected in the intersection of SE 3rd St. and 102nd Ave. SE; and any overlay work required in Bellevue Way.) The City shall provide the County with one invoice for the County’s share of costs, in accordance with this paragraph 5.4, within 30 days of the completion of the pavement overlay work. A properly documented invoice shall be paid by the County to the City within thirty (30) days of receipt.”

2. **No Other Changes.** Except as set forth herein, all other terms, conditions and paragraphs of the Agreement remain unchanged and in full force and effect.
3. **Authority.** Each individual signing this First Amendment to the Agreement warrants that he or she has the legal authority to agree to this First Amendment and to bind the Party for which that individual signs.
4. **Counterparts.** This First Amendment may be executed in counterparts, and each set of duly delivered counterparts that includes all signatories shall be deemed to be one original document. In addition, the Parties may sign this First Amendment by facsimile and the exchange of facsimile signatures on this First Amendment shall be binding on the Parties.

IN WITNESS WHEREOF, the parties hereto have executed this Amendment, effective on the latest date shown below. The signatories below represent and warrant that they possess the authority to execute this Amendment and bind their respective entities.

CITY OF BELLEVUE

KING COUNTY

By: [Signature]
Name Wesley Johnson
Title Assistant Director

By: [Signature]
Name Pam Elardo, PE, Director
Title King County Wastewater Treatment Division

Dated: 4/17/12

Dated: 16 MAY 2012

Approved as to form only:

Approved as to form only:

By: [Signature] 4/11/2012
CITY Attorney Date

By: [Signature] 5/15/12
Sr. Dep. Prosecuting Attorney Date



King County

Department of Natural Resources and Parks
Wastewater Treatment Division

King Street Center, KSC-NR-0501
201 S Jackson Street
Seattle, WA 98104-3855
206-684-1260 Fax 206-684-1959
TTY Relay: 711

GR #1050094-001

RECEIVED

FEB 27 2012

CITY COUNCIL

February 27, 2012

Bellevue Mayor Don Davidson
Bellevue City Councilmembers
P.O. Box 90012
Bellevue, WA 98009-9012

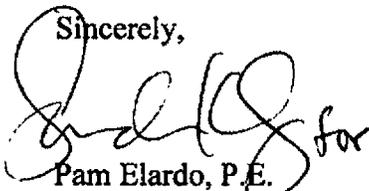
Dear Mayor Davidson and Councilmembers:

The attached First Amendment to the Interagency Agreement between the King County Wastewater Treatment Division and the City of Bellevue sets forth amended responsibilities and obligations of the City and County relating to the County's Bellevue Influent Trunk Project and the City's West Central Business District (West CBD) Trunk Project. This amendment provides for transfer of responsibility for final pavement restoration from King County under its Right of Way Street Use Permit, to the City of Bellevue, to be implemented under the City's annual road overlay contract in 2012. Per terms outlined in this amendment, the County will reimburse the City for its share of the road overlay work. The amendment also stipulates that the use of "Inserta-tee" lateral connections on the County's Bellevue Influent Trunk will be owned and operated by King County, and that these devices shall not be installed on the City's West CBD Trunk sewer as they are not the City's preferred sewer lateral connection device.

This amendment to the original Interagency Agreement has been prepared by city and county staff members, and reviewed by the King County Prosecuting Attorney's Office. I am prepared to sign an identical document following approval by the Bellevue City Council. I am requesting two executed originals for our files. Please send those to the attention of Sharman Herrin, Government Relations Administrator, at 201 South Jackson Street, Mailstop KSC-NR-0501, Seattle, Washington 98104.

Thank you for your consideration of this First Amendment to the Interagency Agreement.

Sincerely,



Pam Elardo, P.E.
Division Director

Enclosure

CITY COUNCIL AGENDA MEMORANDUM

SUBJECT

Resolution No. 8388, authorizing the City Manager to execute the first amendment to the interagency agreement with King County for the design and construction of a joint sewer trunk project in SE 3rd Street and 102nd Avenue SE. This joint project combines the County's project to upsize their Bellevue Influent Trunk with the City's project to increase the capacity of the West CBD Trunk (CIP Plan No. S-54).

FISCAL IMPACT

This amendment does not have a fiscal impact on the City. The purpose of this amendment is to transfer the lead agency role for the SE 3rd Street and 102nd Avenue SE sewer upgrade projects from King County to the City of Bellevue. The original agreement stipulated that King County would be the lead agency for the design and construction phase of the project and the City would take the lead at time of the overlay to incorporate it into existing overlay programs to reduce overall project costs. Executing this first amendment to the interagency agreement with King County does not revise the cost-split obligation of the original agreement, for which the City's portion is 44%.

The City's share of the project cost is funded from the Utilities CIP Plan No. S-54, West CBD Trunk Capacity Improvement Project, as previously approved by the City Council. All of the City's project costs will eventually be recovered via connection charges that are being collected from all properties that will benefit from the increase in available sewer trunk capacity.

Working cooperatively with King County and incorporating the City's existing overlay program will have an estimated cost savings to the City of approximately \$740,000. This work was included in the 2011-2017 Utility CIP with a budget of \$4,093,000 for the City's project.

STAFF CONTACT

Michael Jackman, Interim Deputy Director, 452-6012
Wes Jorgenson, Assistant Director, 452-4887
Utilities Department

POLICY CONSIDERATION

This amendment to the interagency agreement supports regional cooperation, ensuring that construction of the County's project and the City's West CBD Trunk Capacity Improvement Project are completed in the most cost effective and least disruptive manner.

Comprehensive Wastewater Plan policy states that sewer service extensions or capacity upgrades are the responsibility of the benefiting properties. However, the City may construct the infrastructure to

facilitate timely completion of projects as long as the City's costs are reimbursed by benefitting property owners. As noted above, there is a connection charge to benefitting properties that will reimburse the City's costs, including interest.

CIP Plan Project S-54, West CBD Sewer Trunk Capacity Improvement, was created to allow the City to construct this sewer capacity upgrade to accommodate future growth in downtown Bellevue. The project is consistent with City Comprehensive Plan Policy UT-4, which indicates utility system capacity should not determine land use. The current wastewater system's capacity would limit downtown development.

BACKGROUND

The West CBD Sewer Trunk Capacity Improvement Project is identified in Bellevue's Comprehensive Wastewater Plan as necessary to provide sufficient sewer capacity to allow planned development in downtown Bellevue. Based on development projections in the west portion of the CBD, this capacity will be needed by approximately 2014. Sufficient sewer capacity will reduce the likelihood and occurrence of sewer overflows which pollute surface waters and create potential health and safety hazards.

In early 2008, County and City staff initially met to discuss each agency's plans to increase the capacity of their sewer trunks in SE 3rd Street and 102nd Avenue SE, and to discuss how best to coordinate the projects. Both the County and City projects would be constructing new sewer trunks in 102nd Avenue SE between SE 3rd and SE 6th Streets. In addition, the County's project would be constructing a new sewer trunk in SE 3rd Street west of 102nd (to 101st Avenue SE), and the City's project would be constructing a new sewer trunk in SE 3rd Street east of 102nd (to Bellevue Way). Both the County and City projects are needed to provide sufficient sewer capacity to serve anticipated growth in the western portion of downtown Bellevue (a.k.a. Bellevue's Central Business District or the CBD).

In December 2009, the County and the City signed a memorandum of understanding that provided the basis for exploring the possibility of pursuing a joint project. After evaluating project alternatives, the County and the City concluded that a joint project would be mutually beneficial. A joint project would provide for the most efficient use of the limited right-of-way space available in 102nd Avenue SE, would result in project cost savings for both agencies, and would minimize disruption to properties adjacent to the project.

In March 2010, the County and City executed the interagency agreement to design and construct the joint project. As provided in the agreement, the County served as the lead agency responsible for managing the design and construction of the joint pipeline project. **Pipeline construction has been ongoing since spring of 2011 and is scheduled for completion in spring of this year.** This proposed amendment to the interagency agreement will transfer lead agency status to the City for design and construction of the final asphalt pavement restoration for the joint project, and will add clarification to the limits of pipeline ownership and responsibility.

Grinding and overlaying the streets affected by pipeline construction is a requirement of the right-of-way use permit for the joint sewer project. The amendment will transfer lead agency status from the County to the City so that the paving work can be added to the City's 2012 street overlay contract.

Since the City's contract includes a much larger volume of work beyond this project site, the cost to perform the paving work on 102nd Avenue SE and SE 3rd Street will be significantly lower due to economies of scale and greater bidder competition expected for the larger overlay project. Since the City will be the lead agency for final pavement restoration, the County will reimburse the City for costs incurred to perform this work. The same cost-share split percentages applied to the pipeline project will be applied to the paving work. This amendment will not increase project costs to either the County or the City. In fact, total project costs will be reduced by including paving work within the City's overlay contract.

In addition to the provision for paving, the amendment will clarify ownership and maintenance responsibilities for the County and City. After completion of the joint project, the County will be the owner of the new trunk in 102nd Avenue SE and the new trunk in SE 3rd Street west of 102nd. While the County will own and maintain the trunk line, sewer service lateral pipes that connect properties to the trunk line will be owned and maintained by the City. The City typically owns and maintains sewer service laterals from the sewer main lines up to the edge of public right-of-way. The amendment clarifies that the City's ownership and responsibility for maintenance of the sewer laterals will end at the point of connection to the tee-fittings on the County's trunk line. The County will own and maintain the tees as well as the trunk line. As provided in the original interagency agreement, the City will own and maintain the new trunk in SE 3rd Street east of 102nd Avenue SE, including service laterals within the public right of way.

Staff proposes that Bellevue execute this amendment to the interagency agreement with the County to take advantage of this opportunity to complete the County and City projects in the most cost effective and least disruptive manner.

EFFECTIVE DATE

If adopted, this Resolution will become effective immediately.

OPTIONS

1. Adopt Resolution No. 3388 authorizing the City Manager to execute the first amendment to the interagency agreement with King County for the design and construction of a joint sewer trunk project in SE 3rd Street and 102nd Avenue SE. This joint project combines the County's project to upsize their Bellevue Influent Trunk with the City's project to increase the capacity of the West CBD Trunk (CIP Plan No. S-54).
2. Do not adopt the Resolution and provide alternative direction to staff.

RECOMMENDATION

Adopt Resolution No. 3388, authorizing the City Manager to execute the first amendment to the interagency agreement with King County for the design and construction of a joint sewer trunk project in SE 3rd Street and 102nd Avenue SE. This joint project combines the County's project to upsize their Bellevue Influent Trunk with the City's project to increase the capacity of the West CBD Trunk (CIP Plan No. S-54).

MOTION

Move to adopt Resolution No. ~~3388~~, authorizing the City Manager to execute the first amendment to the interagency agreement with King County for the design and construction of a joint sewer trunk project in SE 3rd Street and 102nd Avenue SE. This joint project combines the County's project to upsize their Bellevue Influent Trunk with the City's project to increase the capacity of the West CBD Trunk (CIP Plan No. S-54).

ATTACHMENTS

Project Area Map
CIP Project Description
Proposed Resolution No. ~~3388~~

AVAILABLE IN COUNCIL OFFICE

First Amendment to the Interagency Agreement
Interagency Agreement
Memorandum of Understanding

11/14/67

5065 47

Deeds

6324410

Executed in 2 counterparts of which this is counterpart No. 2

City of Bellevue

AGREEMENT

THIS AGREEMENT, dated as of this 14th day of NOVEMBER, 1967, between the CITY OF BELLEVUE, a Municipal Corporation, under authority of Ordinance No. 1377, (hereinafter called the "City"), the CITY OF MEDINA, a Municipal Corporation, under authority of Ordinance No. 79, (hereinafter called "Medina"), the TOWN OF CLYDE HILL, a Municipal Corporation, under authority of Ordinance No. 10-8-67, (hereinafter called "Clyde Hill"), the TOWN OF HUNTS POINT, a Municipal Corporation, under authority of Ordinance No. 47, (hereinafter called "Hunts Point"), the TOWN OF YARROW POINT, a Municipal Corporation, under authority of Ordinance No. 77, (hereinafter called "Yarrow Point"), the TOWN OF BEAUX ARTS VILLAGE, a Municipal Corporation, under authority of Ordinance No. 9, (hereinafter called "Beaux Arts"), and BELLEVUE SEWER DISTRICT, a Municipal Corporation, under authority of Resolution No. 1207, (hereinafter called the "District");

W I T N E S S E T H:

WHEREAS, the District was formed for the special purpose of providing sanitary sewer service for areas which now cover a major portion of the City of Bellevue and all of the cities of Medina, Clyde Hill, Hunts Point, Yarrow Point and Beaux Arts in King County, Washington, and more than 60% of the territory of the District now lies within the City of Bellevue; and

WHEREAS, the District has financed and constructed a sewage collection system sufficient to serve substantially all of the developed portions of the District and planned for the

Blue print on file in Vault.

eventual addition of sewers to serve all presently undeveloped portions of the District and a substantial part of the unsewered areas within the City which are now outside of the District; and

WHEREAS, it is in the best interests of the residents of each of the municipalities which are parties to this agreement that the sewer system of the District be financed, developed and operated as a single integrated system and that provision be made for the permanent ownership and operation of such integrated system; and

WHEREAS, to accomplish this purpose it is necessary that an agreement be entered into fixing the rights and duties of the parties, protecting the legitimate interests of bondholders and creditors of the District, the users of the sewerage facilities of the District and the City and the residents and property owners of each of the municipalities which are parties to this agreement; and

WHEREAS, it is the desire of all parties hereto to enter into this agreement pursuant to Section 35.13.250 RCW, to provide for the maintenance and operation of the sewerage facilities of the City and the District, to provide for the allocation of costs of maintenance and operation between the City and the District, to provide for the financing and construction of new sewerage facilities to serve certain unsewered portions of the District and the City, to provide for the temporary retention by the District of certain personal and real property, funds and assets, to provide for the eventual transfer of personal and real property, funds and assets of the District to the City, to continue for the interim period the powers of the District to issue bonds, to fix rates and charges for sewer service, and to promulgate rules and

Blue-print
on file in
Vault.

regulations for the collection of such charges and in general to continue the powers of the District to do all things authorized to the District prior to this agreement in the same manner and by the same means as heretofore provided by law, except as otherwise specifically provided herein;

NOW, THEREFORE, THE PARTIES HEREBY AGREE AS FOLLOWS:

Section 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:

1. The term "District" shall mean Bellevue Sewer District, a Municipal Corporation, located in King County, Washington, 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.

2. The term "City" shall mean the City of Bellevue, a Municipal Corporation, located in King County, Washington, 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.

3. The term "Metro" shall mean the Municipality of Metropolitan Seattle, a Municipal Corporation.

4. The term "Service Charge" or "Sewer Service Charge" shall mean a monthly or other periodic charge for the use of sewer facilities.

5. The term "Side Sewer Permit Fee" shall mean a charge for the inspection of private side sewers to be connected to public sewerage facilities.

Blue-print
on file in
Vault.

6. The term "Connection Charge" shall mean an additional charge for the connection to public sewerage facilities of properties not previously fully assessed for special benefits conferred by such public sewers.

7. The term "Assessment" shall mean charges levied in Utility Local Improvement Districts or Local Improvement Districts for special benefits conferred by the construction of public sewerage facilities and shall include interest and any penalties thereon.

8. The term "Sewer System" shall mean all sewage collection and transmission facilities heretofore installed or acquired by the District or by the City, or hereafter installed or acquired within the District or hereafter installed or acquired by the District or by the City pursuant to this agreement within the potential service area colored in red on Exhibit A, or hereafter added to such area by agreement between the District and the City, including all appurtenances to such facilities and all future additions and extensions thereof.

9. The term "City Sewer Utility" shall mean all sanitary sewerage facilities hereafter operated by the City.

Section 2. Ownership of Properties. Consistent with the laws of the State of Washington and pursuant to this agreement, all the right, title and interest of the District in and to all real property, franchises, easements, sewers, force mains, pumping stations, lift stations, flushing stations, manholes, valves, fittings, appurtenances, all equipment and vehicles, and all personal property, cash, accounts receivable, investments and choses in action of all kinds which shall be in existence and on hand at the "Title Transfer Date" as hereinafter defined, including all additions thereto and extensions thereof hereafter acquired or construction by the District shall be conveyed, transferred and

quitclaimed by the District to the City, effective on such date, subject to all of the provisions of this agreement. The City hereby agrees that until the Title Transfer Date the District shall have the right to use the sewerage facilities of the City described on Exhibit A hereof on the terms and conditions hereinafter set forth.

The City shall pay nothing to the District in exchange for the property which the City shall acquire hereunder and the District shall pay nothing to the City for the facilities which the District is permitted to use hereunder and the covenants of this agreement to be performed by the parties shall constitute good and sufficient consideration for the conveyances contemplated by this agreement.

It is mutually agreed and recognized that the properties which the City may acquire pursuant to this agreement shall remain subject to all presently outstanding indebtedness of the District, bonded or otherwise, shall be subject to the terms of the following resolutions of the District which are incorporated herein by this reference:

Resolution No. 474 adopted June 9, 1959 (Series "D" Bonds);

Resolution No. 985 adopted May 11, 1965 (Revenue and Refunding Bonds, 1965)

and shall be subject to all rights of the holders of revenue bonds of the District issued under said resolutions. The District will furnish certified copies of said resolutions to the City.

It is further agreed and recognized that the properties which the City shall acquire pursuant to this agreement shall at all times be subject to the right of the other parties to this agreement, all persons now or hereafter residing within the District and the rights

Blue-print
on file in
Vault.

of all owners of property now or hereafter located within the District, whether such residents or property be inside or outside the City, to use the Sewer System. In particular, but not by way of limitation, trunk or lateral sewer lines and pumping facilities now or hereafter located within the City which are used for the transportation of sewage collected from any property located within the Sewer District shall continue to be made available for such use, provided that the users thereof shall pay reasonable nondiscriminatory fees and charges and comply with reasonable rules and regulations, all as provided in this agreement.

It is further recognized and agreed that this agreement is subject to the provisions of the outstanding agreements for sewage disposal between the District and Metro and between the City and Metro. Disposal of all sewage collected pursuant to this agreement shall continue to be made to Metro in accordance with such agreements or duly adopted amendments thereof. This agreement is further subject to any outstanding agreement between the District and the City of Houghton.

Section 3. Operation and Maintenance of Sewer Facilities.

From and after January 1, 1968, the City shall maintain, operate, repair and replace all of the facilities of the Sewer System, whether located within the City or outside of the City, including all trunks, laterals, lift stations, pumping stations, flushing stations, vehicles, electronic warning system, office equipment, billing equipment, and other facilities and equipment now or hereafter constructed, acquired or used as part of the Sewer System or the business operated in connection therewith, and including all sewers constructed or acquired by the City which the District shall use pursuant to this agreement. The City will furnish sewer service to all persons served by the Sewer System, for and on behalf of the District.

At all times from and after said date, the City will maintain

Blue-print
on file in
Vault

and keep the Sewer System and all additions and improvements thereto and all equipment used in connection therewith in good repair, working order and condition and will, at all times, operate such system and the business functions connected therewith in an efficient manner and at the lowest reasonable cost.

On the tenth day of each month, beginning February 10, 1968, and continuing until the Title Transfer Date, the City shall submit to the District an itemized statement of all costs incurred by the City in the operation and maintenance of the Sewer System during the preceding month. Within sixty days from the receipt of such statement, the District shall pay to the City a sum equal to the total amount of said maintenance and operation costs. The District shall advance to the City on or before said date the sum of \$60,000 to be used as a revolving fund to meet costs incurred by the City for operation and maintenance of the Sewer System during the two months period when District payments will lag behind actual expenditures by the City. Such moneys shall ultimately be applied toward the payment of the operating and maintenance costs incurred by the City during the two months immediately preceding the Title Transfer Date.

An annual budget for each year prior to the Title Transfer Date for the operation and maintenance of the Sewer System shall be prepared by the City and submitted to the District at least thirty days prior to its adoption. No expenditure for operation and maintenance, other than emergency expenditures, shall be made unless same shall be within the budget or shall be approved by the City and the District. The City shall maintain a record of all expenditures made in the operation and maintenance of the Sewer System and shall furnish the District, not less than quarterly, regular financial reports on the operation of the System in

not
file in
Vault

sufficient detail to enable the District to relate expenditures to the budget.

Section 4. Fixing and Collecting Charges. Until the Title Transfer Date, the District shall fix Service Charges, Connection Charges, Side Sewer Permit Fees and sewer extension contract payments for the sewer system. The District shall submit any proposed change in rates to the City thirty days before such change shall become effective and the City may submit any comments or suggestions thereon. Such charges shall be sufficient to pay all costs of maintenance and operation of the Sewer System including costs for the disposal of sewage by Metro, such other costs as may be incurred by the District in the performance of its functions and such amounts as may, together with pledged assessments, be required to pay, secure the payment of, and provide covenanted coverage for, any revenue bonds of the District now or hereafter outstanding. The City shall perform the function of billing and collecting all monthly Service Charges, Side Sewer Permit Fees, Connection Charges and sewer extension contract payments. Such billing and collecting shall be performed for and on behalf of the District until the Title Transfer Date and the costs of such billing and collecting shall be deemed to be part of the cost of operation and maintenance of the Sewer System. Enforcement of collection shall continue to be the responsibility of the District until the Title Transfer Date.

Section 5. Construction of Sewer Facilities by the District Prior to the Title Transfer Date. Until the Title Transfer Date, the District shall have the right and power to continue to construct additions to or extensions of the Sewer System of the District outside the City and within those areas of the City described in

print
file in
vault.

Exhibit A and such additional areas within the City as the City may from time to time hereafter designate. For such purpose, the District shall have the right and power to carry out the provisions of its comprehensive plan, to adopt plans of additions and betterments thereto, subject to the approval of the agencies required by law to approve such plans, to annex territory, to issue and sell sewer revenue bonds, to apply to the payment thereof Service Charges, Connection Charges, Side Sewer Permit Fees and contract extension payments from persons or property served by the Sewer System, whether located within or without the City, or within or without the District, to create utility local improvement districts and to levy and collect special assessments therein, all in the manner provided by law and this agreement.

If the District shall issue any sewer revenue bonds prior to the Title Transfer Date, such bonds shall be made expressly subject to the terms of this agreement and the City agrees from and after such Title Transfer Date to perform the covenants of said bonds and to assume and pay all of such bonds in accordance with their terms solely out of the revenue of the Sewer System and assessments pledged to the payment of such bonds. Neither such obligation nor any other obligation assumed by the City pursuant to this agreement shall be general obligations of the City.

Except as otherwise specifically provided herein, the District shall, during the period prior to the Title Transfer Date, cause all work to be performed in connection with the construction of additions to or extensions of the Sewer System, both within the City and outside the City, including, but not by way of limitation, the engineering design of the sewer laterals, trunks, lift stations, pumping stations, flushing stations and appurtenances and the District shall let contracts for the work in the manner provided by law and upon completion of such work prepare as-built drawings therefor in form acceptable to the City. The City shall provide

Blue-print
on file in
Vault

the following engineering services for and on behalf of the District and the District shall pay to the City the cost of such services, provided that the City may authorize the District to furnish any or all of such services:

a. All plans and specifications for sewer improvements to be constructed by the District shall be submitted to and approved by the City prior to construction.

b. The City shall inspect the work in progress to insure that same shall be accomplished in accordance with the plans and specifications and the construction contract and the City shall decide disputes with contractors involving interpretation of the plans and specifications and such decision shall be final.

c. The City shall prepare monthly and final estimates of work performed and recommend acceptance by the District of work as completed and the District shall make no final payments for work performed until acceptance of such work shall have been recommended by the City.

d. The City shall recommend change orders whenever same are deemed to be necessary during the course of construction.

As a part of the cost of construction to be borne by the District, the District agrees to restore all streets disturbed by the construction of sewer improvements in accordance with applicable existing franchise requirements.

The type of road restoration for all streets involved in a proposed improvement shall be determined in advance by a survey of the streets involved conducted jointly by a representative of the particular city or county which shall have jurisdiction over such streets and a representative of the District. The specifications shall state whether the respective city or county or the District or the contractor shall perform such restoration and resurfacing. No work shall be undertaken on any city street

by the District until a permit therefor has been obtained from the City within which such street shall be located. No such permit shall be unreasonably withheld.

The District shall acquire and pay for such easements and rights of way as may be necessary to construct the Sewer System. All easements which may be acquired subsequent to September 1, 1967, shall receive the approval of the City before execution and shall run jointly to the District and the City. The cities which are parties to this agreement shall provide the District with easements over city property, the extent and location of which are consistent with other reasonable use of such property, when such easements are required for the construction of the District's Sewer System and shall make no charge to the District for such easements.

A performance bond in the amount of not less than 100% of the contract price shall be furnished to the District and to the City by the contractor before any work is commenced. Upon completion of any particular sewer improvements constructed by the District and the approval of such work by the City, the District may make final payment therefor in the manner provided by law. The title to all sewer lines, facilities, easements and rights of way hereafter constructed or acquired by the District shall inure to the City on the Title Transfer Date, without cost, subject to the provisions of this agreement, and from and after the date of such completion, the City shall provide maintenance and operation of such sewer improvements in accordance with this agreement.

Section 6. Construction of Sewer Improvements by the City Prior to the Title Transfer Date. Prior to the Title Transfer Date, it is contemplated that the District will construct all sewer improvements within the District and within the area of the

City described in Exhibit A as now or hereafter amended. The City may, however, in the event that the District fails or refuses to proceed with the construction within six months after written request therefor by the City, create local improvement districts or authorize work by private contract within areas contemplated to be served by the District, provided that such improvements are constructed in conformity with the comprehensive plan of the District or amendments thereto and are approved by the District.

The City shall continue to collect assessments levied in local improvement districts of the City heretofore created for the purpose of constructing sewer improvements and to perform the obligations of outstanding local improvement bonds or warrants of the City. From and after January 1, 1968, and prior to the Title Transfer Date, the City shall continue to establish and collect rates and charges for sewer service from persons and properties within such City local improvement districts as may be located outside the District and within the area of Exhibit A as now or hereafter amended, but such rates and charges shall not be lower than those fixed for the same class of service from time to time thereafter by the District. The City shall also fix a schedule of Side Sewer Permit Fees for the privilege of connecting such property to the Sewer System, equal to those fixed by the District. All charges and fees collected by the City from persons and properties connected to the Sewer System shall be paid to the District. All properties heretofore assessed for sewer improvements constructed within the City local improvement districts shall have the right to connect to the improvements constructed therein upon payment of reasonable Side Sewer Permit Fees and Service Charges as provided herein. Within the area described in Exhibit A, the District shall permit connection to the Sewer System of any property which shall request such connection and which shall pay such regular connection

charges, and Side Sewer Permit Fees and Service Charges as shall be provided by general resolution of the District.

Prior to the Title Transfer Date, the City shall not connect any sewer line located outside of the area described in Exhibit A to the Sewer System without the written consent of the District.

Section 7. Side Sewer Regulations and Permits. Each city which is a party to this agreement shall establish effective January 1, 1968, rules and regulations uniform with those of the District governing connections to and discharges into the Sewer System. The said uniform rules and regulations shall govern the connection of all side sewers to the Sewer System. The District shall continue to issue Side Sewer Permits and collect Side Sewer Permit Fees until the establishment of the aforesaid rules and regulations. Thereafter and until the Title Transfer Date, the City shall collect such permit fees and issue such permits for and on behalf of the District. After the Title Transfer Date, the City shall collect such fees as a part of the revenue of the Sewer System and shall issue such permits for and on behalf of the cities which are parties to this agreement, provided only that such fees be nondiscriminatory and limited to an amount equal to the cost of side sewer inspection. Such fees shall be collected from the respective property owners or sewer users applying for side sewer permits. Side Sewer Permit Fees fixed by the City shall be the same for all portions of the Sewer System, whether inside or outside the City. The City shall maintain an as-built drawing of all such side sewer connections.

Section 8. Title Transfer Date. The City may in its sole discretion, upon thirty days written notice to all parties to

Blue-print
on file in
Vault.

this agreement fix a date for the transfer of the System and ~~properties of the District to the City (Title Transfer Date),~~ provided either that all of the District's revenue bonds which are outstanding on the date of this agreement shall have been paid prior to the date of such notice or that the City shall have assumed the obligation to pay such bonds then outstanding and shall have secured the written consent of the holders thereof as required by law. The provisions of Sections 9 to 11, inclusive, hereof shall apply and be effective immediately upon and after the Title Transfer Date.

Section 9. Assumption of District Obligations By The City. The City shall assume, effective on the Title Transfer Date and pay in accordance with their terms solely out of the earnings and revenue of the Sewer System and assessments pledged thereto all obligations of the District outstanding on the Title Transfer Date or thereafter incurred incident to this contract or in connection with winding up the affairs of the District, including but not limited to paying and securing payment of the principal of and interest on all of the District's then outstanding sewer revenue bonds in accordance with the terms thereof. Utility local improvement district assessments which have been levied by the District to secure the payment of such bonds shall continue to be collected by the King County Treasurer and applied to the payment of such bonds until all of such bonds shall have been paid or have been fully provided for.

Section 10. Obligation to Continue Service After Title Transfer Date. From and after the Title Transfer Date, the City shall operate and maintain the Sewer System as a City utility in the manner provided by law, subject to the following requirements of this agreement:

a) The City shall for the useful life of those facilities of the Sewer System which serve persons and properties located within the District but outside of the City make such facilities available to serve such persons and property, upon payment of reasonable Service Charges, Connection Charges and Side Sewer Permit Fees as fixed by the City from time to time consistent with the provisions hereof.

b) The City shall provide sewer service to all portions of the District, whether inside or outside the City, equal in all respects to that provided to residents of the City and the City shall fix Service Charges in all portions of the District, whether located within the City or outside the City, no greater than the lowest rate for the same class of service levied within any portion of the City. The term "class of service" as used in this paragraph shall refer to classification based on type of sewer use, i.e., single family residence, multiple residence, commercial, etc., but shall not include classification on geographical or jurisdictional bases.

c) The parties recognize that the District has financed its sewer facilities by assessments equal to approximately 97% of the total cost thereof. The parties also recognize that other sewer districts or private systems which may hereafter be operated by the City may not have fully paid for sewers equivalent to those installed by the District and/or may not have levied assessments upon benefited property in the same proportion of costs as those heretofore levied in the District, or may have constructed facilities of a standard substantially lower than that of the Sewer System requiring replacement. Whenever such Districts or facilities are incorporated into the City Sewer Utility, the then outstanding revenue bonds of the District shall continue to have a first and prior lien upon the total net revenue of the Sewer System and, wherever equitable treatment of the District residents shall re-

quire, the City shall either establish a differential rate structure for the area served by such other district or system or assess the cost of replacement of substandard sewers against the area served thereby or take such other action as shall avoid, insofar as possible, charging the residents or customers of the District directly or indirectly for costs properly chargeable to such other district or system.

d) The City shall fix rates and charges sufficient to operate and maintain the Sewer System, pay, secure and provide coverage for revenue bonds and repair and replace the facilities of the System as required. However, the revenues of the Sewer System shall not at any time be applied by the City to the payment of the general expenses of City government not directly applicable to the construction, repair, replacement, administration, operation and maintenance of the Sewer System. The City may, however, subject to the foregoing limitation, combine its sewer and water systems into a single utility if such combination shall be deemed desirable by the City. No rate increase may be made by the City without first securing a complete rate analysis by an independent firm of engineers experienced in the development and operation of municipal public utilities. A copy of such rate analysis shall be furnished to each of the other parties to this agreement. The requirement that a rate analysis be made may be waived in writing by the parties to this agreement at anytime.

Section 11. District Funds. From and after the Title Transfer Date, the existing Bond Redemption Fund for the outstanding revenue bonds of the District shall continue to be held by the Treasurer and invested or applied to the payment of such bonds in accordance with written directions given from time to time by the City, until all of such bonds shall have been paid. The City shall make required deposits in such fund out of the earnings and

Blue-print
on file in
Vault.

revenue of the Sewer System. The City shall pay the County Treasurer the statutory fees provided for his services. Upon payment or provision for payment of all of such bonds, any District utility local improvement assessments thereafter collected by the King County Treasurer, shall be paid to the City quarterly and applied solely to the maintenance, operation, repair, replacement or improvement of the Sewer System. Segregations of assessments requested after the Title Transfer Date shall be approved by the City and the County Treasurer is hereby authorized to honor segregation approvals received from the City.

All cash in the Maintenance Fund or Construction Fund of the District, after payment of or provision for payment of all warrants drawn thereon prior to the Title Transfer Date, shall be immediately thereafter paid by the County Treasurer to the City and all money in such funds then on deposit in any bank or savings and loan association shall be withdrawn by the County Treasurer on the earliest practicable date after the Title Transfer Date, and together with all United States Bonds held in such funds shall on said date be delivered by him to the City Treasurer upon receipt therefor and all such money and the proceeds of such bonds shall be applied solely to the maintenance, operation, repair, replacement or improvement of the Sewer System and shall not be diverted directly or indirectly to the general fund or operations of the City.

Blue-print
on file in
Vault.

Section 12. District Policies and Responsibilities of Commissioners. The parties contemplate that for a reasonable time after the Title Transfer Date and insofar as possible, the City will continue existing District policies for connection to the Sewer System and for the construction of extensions of the Sewer System and for the construction of extensions of the System by private developers in order to insure equitable treatment of the District's residents. During the time that District bonds are

outstanding, the District shall continue its corporate existence and the Commissioners of the District shall continue to function, provided that following the Title Transfer Date, the Commissioners' responsibility shall be limited to the enforcement of the provisions of this contract and to serve as an advisory commission to the City in the continuance of the District's policies.

Section 13. Term of Agreement. This agreement shall be effective upon its execution by all the parties hereto and shall continue in effect for a term of ninety-nine (99) years from and after the date hereof.

Section 14. District Employees. The City shall offer employment to each person presently employed on a full-time basis by the District in a position of substantially equal or greater responsibility and compensation than that now held by such District employee and all vacation and pension rights of such employee shall be preserved. This provision shall apply to all District employees who shall qualify under uniform standards applicable to all city employees and such offer shall be made before the City shall undertake to perform operation and maintenance of the Sewer System hereunder.

Section 15. Franchise Within Other Cities. The cities other than the City of Bellevue, which are parties to this agreement, do hereby consent to the assignment of the respective franchises by which the District has used streets and other public places therein and agree to enact such legislation as is necessary to extend the life of such franchises to coincide with that of this agreement. It is recognized that the respective cities have or may adopt by general ordinance such reasonable requirements for the regulation of street use and occupancy as each deems necessary for the public health, safety and general welfare.

Section 16. Hold Harmless and Payment of Expenses.

It is contemplated that the District will continue its corporate existence for some time after the Title Transfer Date to perform such functions as may be required by law and to accomplish the winding up of its affairs. During such period, the City shall pay out of the revenues of the Sewer System all expenses of the District including, but not limited to, auditing costs, clerical, financial and legal services, commissioners' meetings and election costs and costs incident to final dissolution. Counsel for the District shall continue to press or defend any then outstanding claims by or against the District and to recommend settlement thereof to the District. Upon approval by the District Commissioners of the settlement of any such claim or entry of judgment thereon, the City shall pay any District liability thereon out of the revenues of the City Sewer Utility or shall receive any net proceeds thereof which may be due the District and deposit same to the account of the City Sewer Utility. Solely out of the revenues of the City Sewer Utility and moneys received pursuant to this agreement, the City further agrees to pay and to save the District and its commissioners harmless from the payment of any and all legal liability for which the District is not insured and which is now or hereafter incurred in connection with the performance of the functions of the District and the duties of the commissioners thereof, including any costs, expenses and attorney's fees incurred in the defense of the District or its commissioners.

Section 17. Records Made Available and Documents Executed.

The District shall make available to the City all records which it has pertaining to the construction of the Sewer System, schedules

side-print
on file in
Vault

of Sewer Service Charges and Connection Charges and Charges in Lieu of Assessment heretofore made by the District. The District shall furnish to the City records of sewer connections which have been made by the District, sewer customers served by the District, as-built drawings of sewer mains and facilities and such other documents as the City may require to carry out this contract. All parties agree that they shall enter into and execute such instruments, deeds or other documents as may be required to give effect to this agreement.

Section 18. Liability for Damages, Repair and Replacement. The District shall be liable for all damages and claims resulting from the operation or use of the Sewer System prior to the Title Transfer Date. The District shall also be liable for all damages and claims incurred in the construction of additions or extensions to or improvements of the Sewer System prior to the Title Transfer Date. After the Title Transfer Date, the City shall be solely liable for all damages or claims in connection with or arising out of the operation, maintenance, construction, repair or replacement of the Sewer System. The City shall from and after the Title Transfer Date have the duty to make necessary repairs and replacement of the Sewer System sufficient to maintain same in good repair and working order and to provide service to all residents and properties within the District in accordance with the provisions of this agreement.

Section 19. Insurance. Prior to the Title Transfer Date the District shall maintain such insurance against casualty or loss to the System and against public liability as shall normally be maintained by private utilities under similar circumstances.

or Blue-print
on file in
Vault.

After the Title Transfer Date, such insurance shall be maintained by the City.

IN WITNESS WHEREOF, the parties have executed this agreement as of the day and year first above written.

X CITY OF BELLEVUE

By Clarence Wilde
Mayor



[Signature]

X BELLEVUE SEWER DISTRICT

By [Signature]
Commissioner

Thomas Telfer
Commissioner

[Signature]
Commissioner

ATTEST:

Thomas Telfer
City Clerk Sec.

Blue-print on file in Vault.

X CITY OF MEDINA

By [Signature]
Mayor



[Signature]

X TOWN OF CLYDE HILL

By [Signature]
Mayor

ATTEST:



[Signature]
Town Clerk

Blue-print on file in Vault.



TOWN OF HUNTS POINT

By *P. J. Evans*
Mayor *Pro-Tem*

ATTEST:
James A. Bayard
Town Clerk

X TOWN OF YARROW POINT

By *Howard D. ...*
Mayor *Pro-Tem*



ATTEST:
Francine M. Decker
Town Clerk

X TOWN OF BEAUX ARTS VILLAGE

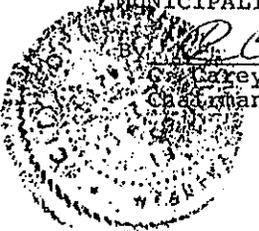
By *James H. Madison*
Mayor



ATTEST:
Patricia B. Hinton
Town Clerk

APPROVED AND ACCEPTED:
M. R. Williams
King County Treasurer

APPROVED AND ACCEPTED:
MUNICIPALITY OF METROPOLITAN SEATTLE
Clare Donworth
Clare Donworth,
Chairman of the Council



Blue-print
on file in
Vault.

Blue-print
on file in
Vault.

R. EIVED MAY 2 1968

BOUNDARY REVIEW BOARD

KING COUNTY, STATE OF WASHINGTON

KING COUNTY COURTHOUSE—SEATTLE, WASHINGTON, 98104—MA 2-5900

May 27, 1968

Bellevue Sewer District
P. O. Box 70
Bellevue, Washington 98004

Attention: Mr. Don Wilson

Re: Bellevue Sewer District Agreement
Boundary Review Board File #F-62

*Interim Operations -
Eventual Ownership
Agreement
between
Bell. Sew.
Dist. &
City of Bell.*

Gentlemen:

You were advised by letter from this office dated April 23, 1968 that the referenced matter was in form acceptable for filing and had been filed effective March 28, 1968.

As the sixty-day period subsequent to filing provided in Section 10, Chapter 189, Laws of 1967, has elapsed, and the Board has received no request for review and has not itself chosen to invoke jurisdiction, the action proposed in this Notice of Intention (Boundary Review Board File #F-62) is therefore deemed approved.

Yours very truly,

KING COUNTY BOUNDARY REVIEW BOARD

Joseph F. Lightfoot
Joseph F. Lightfoot
Chief Clerk

JFL:cms

*Note: Copies mailed to each
concerned city-town Metro
June 26, 1968. D.K.W.*

my official seal the day and year first above written.

Arthur E. Jackson
Notary Public in and for the State
of Washington, residing at *Bellevue*

STATE OF WASHINGTON)
; ss.
COUNTY OF KING)

On this 10th day of August, 1967, before me personally came and appeared *Lloyd Chapman* and *R. S. Aitken*, to me known to be the Mayor and Town Clerk, respectively, of the Town of Clyde Hill, a Municipal Corporation, and acknowledged the within and foregoing instrument to be the free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that they were authorized to execute said instrument and that the seal affixed is the corporate seal of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year first above written.

Arthur E. Jackson
Notary Public in and for the State
of Washington, residing at *Bellevue*

STATE OF WASHINGTON)
; ss.
COUNTY OF KING)

On this 14th day of August, 1967, before me personally came and appeared *B. F. Evans* and *James A. Buzard*, to me known to be the Mayor and Town Clerk, respectively, of the Town of Hunts Point, a Municipal Corporation, and acknowledged the within and foregoing instrument to be the free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that they were authorized to execute said instrument and that the seal affixed is the corporate seal of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year first above written.

Arthur E. Jackson
Notary Public in and for the State
of Washington, residing at *Bellevue*

Blue-print
on file in
Vault

STATE OF WASHINGTON)

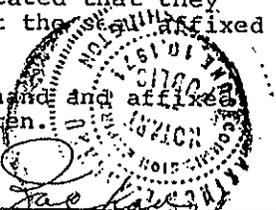
: ss.

COUNTY OF KING)

On this 15th day of August, 1967, before me personally came and appeared Sheldon Dunning and Lorraine Dede, to me known to be the Mayor and Town Clerk, respectively, of the Town of Yarrow Point, a Municipal Corporation, and acknowledged the within and foregoing instrument to be the free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that they were authorized to execute said instrument and that the seal affixed is the corporate seal of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year first above written.

Arthur E. Jackson
Notary Public in and for the State of Washington, residing at Bellevue



STATE OF WASHINGTON)

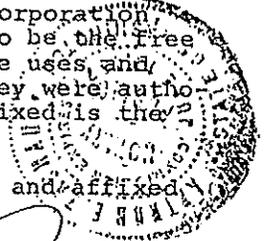
: ss.

COUNTY OF KING)

On this 17th day of September, 1967, before me personally came and appeared James H. Madison and Patricia B. Liston, to me known to be the Mayor and Town Clerk of the Town of Beaux Arts Village, a Municipal Corporation, and acknowledged the within and foregoing instrument to be the free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that they were authorized to execute said instrument and that the seal affixed is the corporate seal of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year first above written.

Arthur E. Jackson
Notary Public in and for the State of Washington, residing at Bellevue



Blueprint on file in Vault.

Appendix C
Sewer Utility Ordinances and
Code

Chapter 24.04 SEWER UTILITY CODE

Sections:

24.04.010	Title.
24.04.020	Purpose.
24.04.030	Applicability and compliance with other laws.
24.04.040	City not liable.
24.04.041	Conflict of provisions.
24.04.042	Severability.
24.04.050	Definitions.
24.04.060	Authority of the utility.
24.04.065	Duty to serve.
24.04.067	Service interruptions.
24.04.070	Sewer system plan.
24.04.080	Reserved.
24.04.100	Connections or modifications to the sewer system.
24.04.115	System ownership.
24.04.120	Permits – Approvals.
24.04.125	Reserved.
24.04.130	Engineering and design requirements.
24.04.140	Installation responsibility.
24.04.150	Latecomer agreements.
24.04.160	Sewer easement requirements.
24.04.170	Construction requirements.
24.04.175	Construction and warranty inspections and tests.
24.04.210	Maintenance of sewer system.
24.04.213	Industrial waste discharge monitoring, abatement and pretreatment.
24.04.215	Unauthorized and prohibited discharges.
24.04.220	Right of entry for inspection.
24.04.240	Regulations of other agencies.
24.04.250	Fees for permits/approvals/specific services.
24.04.260	Connection charges.
24.04.270	Sewer rates.
24.04.275	Capital recovery charges.
24.04.280	Code violations, enforcement, and penalties.

24.04.010 Title.

This chapter shall be known as the sewer utility code and shall be referred to herein as the “code.” (Ord. 5964 § 1, 2010.)

24.04.020 Purpose.

This code is enacted as an exercise of the city of Bellevue’s (“city”) police power as set forth in Section 11 of the Washington Constitution to protect and preserve the public health, safety and welfare. The purpose of this code shall be liberally construed to:

- A. Provide for the planning, security, design, construction, use, maintenance, repair and inspection of public and private sanitary sewer systems;
- B. Establish programs and regulations to provide for the appropriate use of public and private sanitary sewer systems;
- C. Provide for the enforcement of the provisions of this code, the engineering standards and related city manuals and code provisions; and
- D. Provide for and promote the health, safety and welfare of the general public and not to create, establish, or designate any particular class or group of persons who may be especially protected or benefitted. (Ord. 5964 § 1, 2010.)

24.04.030 Applicability and compliance with other laws.

- A. This code supplements and references certain provisions of the Bellevue City Code, including but not limited to Chapter 1.18 BCC, and other city ordinances and regulations regarding protection of the public and private sanitary sewer system.
- B. Approvals, decisions, and permits granted under this code are not waivers of the requirements of any other laws, nor do they indicate compliance with any other laws. Compliance is still required with all applicable federal, state, and local laws and regulations.
- C. Compliance with the provisions of this code, the engineering standards, permits or other approvals, or rules promulgated by the director do not necessarily mitigate all impacts to the environment. The primary obligation for compliance with such regulations and standards is prevention of environmental harm, which ultimately is placed upon property owners and responsible parties as defined in this code and Chapter 1.18 BCC. (Ord. 5964 § 1, 2010.)

24.04.040 City not liable.

- A. Nothing contained in this code is intended to nor shall be construed to create or form the basis for any liability on the part of the city, or its officers, employees or agents, for any injury or damage resulting from the failure of property owners or responsible parties to comply with the provisions of this code, engineering standards, or related manuals, or by reason or in consequence of any inspection, notice, order, certificate, permission or approval authorized or issued in connection with the application or enforcement of this code, engineering standards, or related manuals, or by reason of any action or inaction on the part of the city related in any manner to the application or enforcement of this code, engineering standards, or related manuals by the city, its officers, employees, or agents.
- B. Nothing in this code, engineering standards, or related manuals shall impose any liability on the city or any of its officers, employees, or agents for cleanup or any harm relating to sites containing hazardous materials, wastes or contaminated soil.
- C. Nothing contained in this code, engineering standards, or related manuals shall require city involvement or enforcement of this code for private disputes occurring between property owners. (Ord. 5964 § 1, 2010.)

24.04.041 Conflict of provisions.

Should a conflict occur between the provisions of this code, the engineering standards or manuals adopted by the city in relation to this code, or between this code,

the engineering standards and related manuals with laws, regulations, codes or rules promulgated by other authority having jurisdiction within the city, the most restrictive requirement shall be applied, except when constrained by federal or state law, or where specifically provided otherwise in this code. (Ord. 5964 § 1, 2010.)

24.04.042 Severability.

If any provision of this code, engineering standards, or related manuals, or its application to any person or circumstance, is held invalid by a court of competent jurisdiction, the remainder of the code, engineering standards, or related manuals, or the application of the provision to other persons or circumstances is not affected, and to this end the provisions of this code are declared to be severable. (Ord. 5964 § 1, 2010.)

24.04.050 Definitions.

Except where specifically defined herein, all words used in this code shall carry their customary meanings. Words used in the present tense include the future, and the plural includes the singular; the word “shall” is always mandatory, whereas the word “may” denotes a use of discretion in making a decision. The following words and phrases, when used in this code, shall have the following meanings:

A. A Definitions.

“As-built” means a final drawing of the actual installation of the structures, materials and equipment.

B. B Definitions (Reserved).

C. C Definitions.

“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.

“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 the utility’s share of the cost of any regional sewer collection system and of the costs of facilities that benefit the property. Connection charges include latecomer charges, capital recovery charges and direct facilities charges.

D. D Definitions.

“Director” means the director of the Bellevue utilities department, or his/her designated representative or other person designated by the city manager.

E. E Definitions.

“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.

“Emergency management plan” provides the foundation, framework and guidelines for initiating and maintaining direction and control of the utility’s response efforts during all emergency or disaster scenarios. The emergency management plan is consistent with and supports the city of Bellevue emergency operations plans and emergency response plans maintained at the regional, state and federal levels of government.

“Emergency operation plan” provides guidance for mitigation, preparedness, response and recovery operations including disaster and emergency responsibilities and procedures, training and community education. The plan provides for the coordination of operations throughout the city during emergencies and disasters, and the best utilization of the city’s resources. The plan meets the requirements of a comprehensive emergency management plan as described in Chapter 118-30 WAC.

“Engineering standards” means the city’s utility engineering standards, which include minimum standards for the design and construction of water, storm and surface water drainage and sanitary sewer facilities.

F. F Definitions.

“FOG” means fats, oils and grease.

G. G Definitions (Reserved).

H. H Definitions (Reserved).

I. I Definitions.

“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.

J. J Definitions (Reserved).

K. K Definitions (Reserved).

L. L Definitions.

“Latecomer agreement” means a contract that provides for the reimbursement of costs to developers who construct facilities that directly benefit other properties.

“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.

M. M Definitions (Reserved).

N. N Definitions.

“Nonpolar fats” means fats, oils or grease of animal or vegetable origin.

O. O Definitions (Reserved).

P. P Definitions.

“Polar fats” means fats, oils or grease of mineral origin.

“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.

“Private sewer system” means any part of the sewer system that is not part of the public sewer system as defined in the code.

“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, engineering standards, related manuals, or other codes, ordinances, or resolutions of the city or other agencies. “Procedure” as defined herein is often referred to as a standard operating procedure or SOP.

“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, including but not limited to an agent, contractor, applicant, or developer.

“Public sewer system” means the sanitary sewer system owned and operated by the utility.

Q. Q Definitions (Reserved).

R. R Definitions.

“Residential structure” means a single-family or duplex structure.

S. S Definitions.

“Sewage” means waste discharged from the sanitary facilities of buildings and includes industrial wastes.

“Sewer facility” means any facility for the conveyance or storage of sewage, whether part of the public sewer system or a private sewer system, which is connected to or intended to be connected to the public sewer system.

“Sewer main” means a pipe designed or used to transport sewage, excluding side sewers.

“Sewer pretreatment” means the treatment of industrial waste before discharge to the public sewer system.

“Sewer service” means providing for the disposal of sewage from a structure into the public sewer system.

“Sewer system plan” means the comprehensive wastewater plan for the utility, as adopted by the city council, as now or hereafter amended.

“Side sewer” means a conduit extending from the public sewer main to the connection with a building’s plumbing system.

“Side sewer stub” means that portion of the side sewer in the right-of-way or easement dedicated to the utility.

Standard Operating Procedure or SOP. Refer to the definition of “procedure.”

“Structure” means a combination of materials constructed and erected permanently on or under the ground or attached to something having permanent location on or under the ground. Not included are residential fences, retaining walls less than 30 inches in height, rockeries less than 30 inches in height and similar improvements of a minor character.

T. T Definitions (Reserved).

U. U Definitions.

“Unsafe condition” means any condition on any premises, or in any private sewer system thereon, that is a hazard to public health, safety, welfare, or environment 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.

“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.

“Utility developer extension agreement” means a contract between the utility and a property owner and/or developer that provides for plan review and inspection of sewer system facilities that satisfy all applicable code requirements.

“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.

- V. V Definitions (Reserved).
- W. W Definitions (Reserved).
- X. X Definitions (Reserved).
- Y. Y Definitions (Reserved).
- Z. Z Definitions (Reserved). (Ord. 5964 § 1, 2010.)

24.04.060 Authority of the utility.

The utility, by and through its director or his designee, including enforcement officers, 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, emergency management and operations plans, procedures pertaining to the billing and collection of sewer 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, adopt, update, administer and enforce, as needed, engineering standards to establish minimum requirements for the design and construction of sewer 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 sewer system, including capital improvements, and relating to the design, construction and inspection of private sewer systems;

D. Enter into contracts pursuant to Chapter 35.91 RCW, the Municipal Water and Sewer Facilities Act, including contracts that provide for the reimbursement of owners constructing facilities (latecomer agreements) and agreements with private property owners for the extension of the sewer system (utility developer extension agreements);

E. Advise the city council, city manager and other city departments and commissions on matters relating to the utility;

F. Prepare and recommend the sewer system plan referenced in BCC 24.04.070 for adoption by the city council and implementation by the utility;

G. 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;

H. Develop and implement programs related to sewer use, including an industrial waste management program for protection of the public sewer system and a septic system management program;

I. Carry out other responsibilities as required by this code or other city codes, ordinances or regulations consistent with the Bellevue comprehensive plan; and

J. Take enforcement action, to the extent allowed by law, pursuant to Chapter 1.18 BCC. (Ord. 5964 § 1, 2010.)

24.04.065 Duty to serve.

The utility is responsible for providing sewer 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 sewer service outside the utility service area. (Ord. 5964 § 1, 2010.)

24.04.067 Service interruptions.

Notwithstanding BCC 24.04.065, the utility does not guarantee that sewer service will be continuously available within the utility service area. Sewer service may be temporarily unavailable due to a system failure, emergency, construction or maintenance or other unforeseen circumstances. The utility is not responsible for costs or damages incurred by property owner, tenant or customer due to an interruption in service, whether planned or unplanned. (Ord. 5964 § 1, 2010.)

24.04.070 Sewer system plan.

A sewer system plan, also referred to as the city's comprehensive wastewater 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. (Ord. 5964 § 1, 2010.)

24.04.080 Reserved.

(Ord. 5964 § 1, 2010.)

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 subsection B of this section. 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);
- b. All applicable requirements of this code and utility procedures have been met;
- c. All applicable engineering standards have been met or alternative standards have been approved by the utility as substantially equal;
- d. The property owner has paid all applicable fees and charges;
- 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;

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;

c. The proposed septic system is in compliance with all applicable federal, state and local health and environmental regulations;

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 200 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. (Ord. 5964 § 1, 2010.)

24.04.115 System ownership.

A. Utility Ownership of Sewer Facilities.

1. The utility owns all sewer facilities in public right-of-way and in easements dedicated to the public and accepted by the utility, except to the extent that private ownership is otherwise indicated as a matter of record. Such facilities typically include mains, pump stations and side sewer stubs (that portion of the side sewer between the public sewer main and the edge of right-of-way or easement line).

2. The utility may acquire existing private sewer facilities, provided:

a. Utility ownership of the facility would provide a public benefit;

b. Necessary and appropriate property rights are offered by the property owner at no cost to the utility;

c. The facility substantially meets current standards, as determined by the utility, or is brought up to current standards by the owner;

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.

B. Private Ownership of Side Sewers. Side sewers located on private property are exclusively owned by the underlying property owner(s), unless otherwise assigned or dedicated by easement to and accepted by the city, except to the extent that public ownership is otherwise indicated as a matter of record. Property owners shall be responsible for the development, maintenance, and repairs of private side sewers and their appurtenances, including but not limited to check valves, cleanouts, and pumps. (Ord. 5964 § 1, 2010.)

24.04.120 Permits – Approvals.

A. General. The utility shall administratively develop submittal requirements for the various utility permits/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. If required, a side sewer permit application shall be made submitted and attested to by the property owner or his or her licensed and bonded contractor.

3. Side sewer permits for commercial projects, including multifamily structures, may be issued as part of the utility developer extension agreement, if one is required, pursuant to subsection (C)(1) of this section. The side sewer can be installed as part of the utility developer 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 shall be issued only after sewer main extensions have been accepted by the city.

5. Side sewer permits expire two years from the date of issuance. The director or his designee may extend the duration of an open side sewer permit for up to one year, provided the utility receives payment for any applicable fees.

6. Open applications for side sewer permits that have not been issued shall be canceled by the utility if not issued within one year from the date of submittal.

C. Utility Developer Extension Agreement.

1. The property owner and the utility shall enter into a utility developer 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 utility developer extension agreement is required to serve a proposed commercial or multifamily building, the utility will not approve the building permit until the system extension agreement has been initiated. When a utility developer extension agreement is required to relocate a sewer main from under a proposed building, the utility will not approve the building permit until the developer 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 director or his designee, based on appropriate standard cost indices. 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; and

4. Be recorded with King County against the real 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. (Ord. 5964 § 1, 2010.)

24.04.125 Reserved.

(Ord. 5964 § 1, 2010.)

24.04.130 Engineering and design requirements.

A. General.

1. The property owner is responsible for sewer system design.

2. The sewer system designer shall 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 shall be required whenever necessary to:

- a. Meet hydraulic capacity requirements. See the engineering standards;
- b. Replace or relocate existing facilities as required or authorized by the utility; 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. (Ord. 5964 § 1, 2010.)

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 utility developer 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 construct a sewer facility beyond the scope of city code and engineering standards requirements, the utility shall compensate the property owner for the difference in cost between the normally sized sewer facility and the additional sewer facility, based on the lowest of three bids from reputable licensed contractors furnished by the property owner. Extending the sewer system to the extreme of the property, per BCC 24.02.130(B)(2), is a development requirement and is specifically not subject to reimbursement by the utility.

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 benefitting properties that connect to the extension during the agreement's duration. See BCC 24.04.150 regarding latecomer agreements.

3. The city may 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. (Ord. 5964 § 1, 2010.)

24.04.150 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 sewer facility that benefits property in addition to the owner's property and it is not feasible for the owner to include such other benefitting property owner in the utility developer extension agreement. The request must be made in writing and unit costs must be provided before the utility accepts the public sewer facility.

C. Zone of Benefit. The utility shall determine which properties benefit from the public sewer facility that shall be subject to the latecomer agreement.

D. Method of Cost Allocation. The utility shall determine the method of cost allocation used.

E. Recording. The utility shall 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 sewer facility, each latecomer shall pay, at the time of connection, his/her pro rata share of the construction costs of the sewer 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 20 years following acceptance of the sewer 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 sewer facility, as specified in the agreement. (Ord. 5964 § 1, 2010.)

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 utility will accept, approve, or execute an easement:

1. Clear title in the grantor shall be demonstrated;

2. The proposed easement shall be compatible with utility clearance standards and setback standards and with other utilities, structures, buildings, or easements. The utility may require the easement to exclude other utilities and uses if necessary to protect the public sewer system;

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;

4. The easement shall prohibit all buildings and structures within the easement area except those which can readily be removed, as determined by the utility, by the property owner at the owner's expense when access to the sewer facility is required by the utility. If such buildings or structures are within the easement area, an agreement with the utility to have the owner remove the structure upon request by the utility, approved by the city, 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. (Ord. 5964 § 1, 2010.)

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 utility developer 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 may perform inspections or hole-cuts 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 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, provided the property owner or contractor 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 subsection (C)(1) of this section shall be calculated pursuant to BCC 24.04.250(B) and charged to the property owner or contractor in charge of such work. The property owner or contractor 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. In

addition, if the city collected an assurance device it collect the debt from the assurance device by use of all means available under the law.

3. If, in the opinion of the director, the work being performed is not in accordance with these codes or engineering standards and the responsible person 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.

E. Utility Relocations – Developer Initiated.

1. Public Sewer System Relocations. To the extent authorized by law, when relocations of the public sewer system are necessary to accommodate any development or redevelopment, the property owner, applicant or project proponent for such development or redevelopment, including any governmental or regional entity, shall relocate at its sole cost and expense the affected facilities in accordance with all city codes, standards, permit conditions, and pursuant to any existing franchise or other agreement.

2. Nonmunicipal Utility Relocations. To the extent authorized by law and except as provided in BCC 14.60.230, when relocations of nonmunicipal utility facilities are necessary to accommodate any public sewer facility associated with development or redevelopment, the property owner, applicant or project proponent for such development or redevelopment, including any governmental or regional entity, shall, at its sole cost and expense, arrange for the relocation of such nonmunicipal utilities in accordance with all city codes, standards, permit conditions and pursuant to any existing franchise or other agreement. (Ord. 5964 § 1, 2010.)

24.04.175 Construction and warranty inspections and tests.

A. Construction/Installation Inspection.

1. All projects permitted or approved by the utility under a utility developer 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 execution of a utility developer extension agreement, the property owner shall consent to inspection and testing.

2. Newly installed sewer facilities shall be inspected, tested, and documentation completed according to the permit requirements or developer extension agreement conditions, the engineering standards, and procedures.

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. (Ord. 5964 § 1, 2010.)

24.04.210 Maintenance of sewer system.

A. Responsibility. The utility has responsibility for maintenance of the public sewer system unless otherwise provided by agreement, local ordinance or state law. Owners of private sewer systems are solely responsible for maintenance and operation of such private systems.

B. Contract Maintenance. The utility may agree to provide maintenance service to maintain private sewage pump stations that serve more than one residence, by contract and at the owner's expense, in order to meet the city's obligation to the Washington State Department of Ecology for maintenance responsibility.

C. Side Sewer Cleaning. All side sewer cleaning contractors and/or plumbers, side sewer contractors and owners, prior to cleaning existing side sewers (as distinguished from plumbing and septic tank facilities), shall notify the utility of such operations and comply with utility requirements. Debris cleaned from a side sewer shall be removed and shall not be caused to enter the sewer main. If debris causes a downstream blockage, the owner or his agent shall be liable for any resulting damages. (Ord. 5964 § 1, 2010.)

24.04.213 Industrial waste discharge monitoring, abatement and pretreatment.

A. General. The industrial waste program is intended to prevent, control and correct the discharge of substances, such as hazardous, dangerous, caustic or explosive materials, polar and nonpolar fats, oils and greases, which could cause hazardous, dangerous or explosive conditions within the public sewer system or could cause blockages, operational failures or premature degradation of the public sewer system.

B. Applicability of Other Regulations. All discharges to the public sewer system shall comply with all applicable rules and regulations of any federal, state or local agency having governmental or contractual jurisdiction within the utility service area.

C. Pretreatment of Discharges. The utility shall require the pretreatment of discharges to the public sewer system, except single-family residences, if necessary to prevent and/or correct hazardous, dangerous, or explosive conditions or blockage, operational failure or premature degradation of the public sewer system.

Notwithstanding the above, all restaurants and food-processing businesses shall install pretreatment methods, such as grease interceptors, oil-water separators, biological or chemical treatment and other best available technology, to reduce or eliminate FOG discharges. All pretreatment systems are subject to review and approval by the utility.

D. Sampling and Inspection Tees and Manholes. Sampling and/or inspection tees or manholes in the side sewer connection(s) to the public sewer system may be required in all connections, except single-family residential connections. Inspection tees and manholes enable the utility to monitor and test the discharge for compliance with utility requirements or to allow monitoring and testing in accordance with the rules and regulations of other federal, state or local agency having governmental or contractual jurisdiction within the utility service area. (Ord. 5964 § 1, 2010.)

24.04.215 Unauthorized and prohibited discharges.

A. Certain Wastes Prohibited. No person shall discharge or cause the discharge of any of the following wastes into the public sewer system, by direct or indirect means:

1. Flammable liquids, solids or gases capable of causing or contributing to an explosion or supporting combustion in any public sewer facility or side sewer connection to the public sewer system, such as, but not limited to, gasoline, kerosene, naphtha, benzene, toluene, xylene, ethers, alcohols, ketones, aldehydes, peroxides, chlorates, perchlorates, bromates, carbides, hydrides and sulfides, or any other substances that the utility, King County department of metropolitan services, a fire department or fire district with jurisdiction, any state agency or the Environmental Protection Agency have identified as a fire hazard or a hazard to the system;

2. Any solid or viscous substance or particles in a quantity, either by itself or in combination with other wastes, that is capable of obstructing flow or interfering with the operation or performance of the public sewer system;

3. Any gas or substance that, either by itself or by interaction with other wastes, is capable of creating a public nuisance or hazard to life or of preventing entry by authorized personnel to pump stations and other sewer facilities;

4. Any gas or substance that, either by itself or by interaction with other wastes, may cause corrosive structural damage to the public sewer system;

5. Heated substances in amounts that prevent entry into public sewer facilities by authorized personnel or that adversely impact facilities;

6. Food waste that cannot pass through a one-fourth-inch sieve;

7. Any radioactive wastes or isotopes that exceed such concentration limitations as established by applicable Washington State Department of Health regulations;

8. Trucked and hauled wastes, except as approved by the utility and discharged at designated locations;

9. Storm water, surface water, ground water, roof runoff, subsurface drainage, cooling water, unpolluted waste water and/or any water or wastes generated during construction activities, unless specifically authorized by the utility;

10. Substances that may cause excessive foaming in the public sewer system;

11. Polar and nonpolar fats, oils and greases in amounts that cause a visible sheen on the discharge or in the public sewer system, build-up of grease in any public sewer facility or which accumulations either alone or in combination with other discharges cause obstruction of the public sewer system; or

12. Any wastes or substances which exceed local discharge limits of, or are prohibited by, any other federal, state or local agency having governmental or contractual jurisdiction within the sewer service area.

B. Discovery of Unauthorized or Prohibited Discharge. Upon discovery of an unauthorized or prohibited discharge, the utility shall notify the property owner and/or responsible party as defined in Chapter 1.18 BCC and the applicable King County department in writing as soon as possible of the nonconforming or prohibited discharge and of all corrective measures necessary.

C. Damage Caused by Unauthorized or Prohibited Discharges. Any person discharging or causing, either directly or indirectly, an unauthorized or prohibited discharge to the public sewer system, that results in damage to, blockage of or premature degradation of any public sewer facility, shall be liable for said damage and

financially responsible for any and all necessary repairs or other corrective actions necessary to restore the public sewer system to full and normal operation.

D. Any violation of this section or any provision of this code shall constitute a civil violation subject to the enforcement procedures set forth in Chapter 1.18 BCC. (Ord. 5964 § 1, 2010.)

24.04.220 Right of entry for inspection.

A. 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 this code, provided the utility shall first notify the proper owner or person responsible for the premises. If entry is refused, the director shall have recourse to every remedy provided by law to secure entry.

B. For inspection programs authorized by the director or his designee, the utility may provide advance mailings of its intent to inspect properties consistent with such inspection programs. (Ord. 5964 § 1, 2010.)

24.04.240 Regulations of other agencies.

A. General. The responsibility for determining the existence and application of local, state and federal laws and regulations pertaining to sewer facilities and sewer 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 sewer facilities unless more stringent requirements of the local jurisdiction in which such customers are located are applicable.

C. King County Department Regulations. Utility customers shall comply with all applicable requirements of applicable King County departments. (Ord. 5964 § 1, 2010.)

24.04.250 Fees for permits/approvals/specific services.

A. General.

1. The applicable city 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. Utility developer extension agreements;
- b. Disconnection charge for unauthorized connections;
- c. Side sewer permits;
- d. Hole-cuts; and
- e. 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 sewer service and connection charges.

B. Fee Amount. The fee amount for each permit, approval or specific service shall cover the actual 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, creating an as-built 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. 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.

3. Overhead, at a rate to be established by the utility pursuant to written procedures.

C. Fee Schedule. The applicable city 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. (Ord. 5964 § 1, 2010.)

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 LUC 20.50.044 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 shall not be reassessed.

4. The utility may enter into contracts with property owners of 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 director or his designee, 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 of this section from time to time to reflect the actual cost of the facilities for which the charges are made. (Ord. 5964 § 1, 2010.)

24.04.270 Sewer rates.

A. General. The city council shall establish rates for sewer use and service; such rates are in addition to connection charges and fees for specific services. The utility may establish classifications of customers or service, using any method or methods authorized by law.

B. Rate Basis. Sewer 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 biennial 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 biennial budget. Rate adjustments shall be recommended as needed to meet revenue requirements. Any recommended rate adjustment shall consider equity, adequacy, cost 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 sewer service charges and fees in accordance with state law.

E. Rate Relief. The city council may establish sewer rate relief measures for specific customer classes as authorized by state law. (Ord. 5964 § 1, 2010.)

24.04.275 Capital recovery charges.

A. The utility shall establish and collect a monthly capital recovery charge so that each new improvement, development, redevelopment or existing structure that places an additional demand on the public sewer system bears its equitable share of the cost of said public utility system.

B. Right-of-way and nonbuilding tracts shall be exempt from the capital recovery charge.

C. The capital recovery charge shall be based on the cost of the sewer utility plant-in-service, less the cost of donated facilities, less the cost of city-built local facilities for which direct facilities charges are imposed, plus recoverable interest divided by the customer base as quantified by single-family equivalent units.

D. The capital recovery charge shall be placed on affected properties as monthly charge for a period of 10 years.

E. The director or his designee is authorized to adjust the capital recovery charge value based upon updated values of the above-described elements. (Ord. 5964 § 1, 2010.)

24.04.280 Code violations, enforcement, and penalties.

The enforcement procedures and penalties associated with violations of this code are set forth in BCC 1.18.075. (Ord. 5964 § 1, 2010.)

CITY OF BELLEVUE, WASHINGTON

ORDINANCE NO. 6086

AN ORDINANCE establishing revised sewerage service charges; repealing Ordinance No. 5974; providing for severability; and establishing an effective date.

WHEREAS, the Environmental Services Commission has reviewed the Sewer 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 establish the following amended schedule of rates and charges for the sewerage service area for the Sewer 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 in the sewerage service area for the Sewer Utility of the City of Bellevue sewerage service charges as hereinafter provided.

Section 2. Single Family Residential Structures.

A. The service charge for single-family residential units shall be \$79.58 per bimonthly billing period in 2013 and \$79.58 per bimonthly billing period in 2014, plus a volume charge based on the bimonthly winter-average water consumption for the structure, as follows:

<u>Winter-Average Cubic Feet Consumed</u>	<u>Charge Per Hundred Cubic Feet of Water</u>	
	<u>2013</u>	<u>2014</u>
0 to 5,000	\$3.03	\$3.37
Over 5,000	\$3.92	\$4.36

B. For purposes of these charges, winter-average consumption is the average bimonthly water volume recorded on three normal meter readings during the period of December 15 through June 15 of the preceding year. Winter-average consumption for each residence will be recomputed before the start of each year and that volume will be used to compute the bimonthly sewer volume charge for the residence for the entire calendar year.

C. For those residences that are not Bellevue water customers, actual meter reading data necessary to compute the residence's winter-average water consumption will be obtained from the customer's water district, whenever possible.

Where that data is unavailable and for new structures where water consumption data necessary to compute actual winter-average consumption has not been recorded, bimonthly sewer volume charges for the residence will be based on Bellevue's system-wide winter-average residential consumption of 1,500 cubic feet for a two-month period.

Section 3. Multifamily Residential Structures or Facilities.

The service charge for each multifamily residential structure or facility shall be \$81.34 for 2013, and \$84.62 for 2014 per bimonthly billing period for each dwelling unit, plus \$6.71 for 2013 and \$6.98 for 2014 per 100 cubic feet of water consumed by such structure or facility in excess of 1,100 cubic feet per dwelling unit during each bimonthly billing period.

For the purposes of this Section 3, "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, but shall not include hotels, motels or trailer parks. Mixed-use structures that include both multi-family dwelling units and commercial non-residential units and that are served by one water meter shall be billed as multi-family.

Section 4. Non-residential Structures or Facilities.

The service charge for non-residential structures or facilities shall be based on water consumption by each structure or facility and shall be computed as follows:

\$8.04 for 2013, and \$8.36 for 2014 per 100 cubic feet of water consumption per bimonthly billing period

provided, there shall be a minimum charge of \$125.04 for 2013 and \$130.08 for 2014 per bimonthly billing period.

For purposes of this Section 4, "non-residential structure or facilities" shall mean any structure or facility not governed by Section 2 or Section 3 of this ordinance and shall include, but not be limited to, any commercial, industrial, business, trade, school or municipal structure or facility.

Section 5. King County/METRO Charges. In addition to these rates and charges for sewerage service established in this ordinance, or otherwise established by the City, the following King County/METRO charges are imposed to ensure compliance with Section 204 of Public Law 92-500 (22 U.S.C. 1251) CFR Part 35, Subpart E:

A. A "surcharge" in an amount to be determined as provided in King County/METRO Resolution Nos. 2315 and 2557 (now incorporated into Title 28 of the King County Code, Chapter 28.84.060), as now constituted or hereafter amended, said charge to be added to the customer's regular bill.

B. An "Industrial Cost Recovery (ICR)" charge in an amount to be determined as provided in King County/METRO Resolution Nos. 2556 and 3374 (now incorporated into Title 28 of the King County Code, Chapter 28.84.060), as now constituted or hereafter amended, said charge to be billed separately to qualifying industrial customers on an annual basis.

C. An administrative charge of \$17.11 shall be added to each customer bill that contains a King County/METRO "surcharge" or "ICR charge."

D. The City of Bellevue, in cooperation with King County/METRO, shall maintain such records as are necessary to document that its sewerage charges comply with the above-cited federal laws and regulations and King County/METRO regulations.

Section 6. User Charges. The charges for each user shall be the sum of any applicable charges under Sections 2, 3, 4 and 5 multiplied by the percentage indicated below for that city or town:

Bellevue	105.4856%
Clyde Hill	110.3273%
Hunts Point	107.2506%
Medina	104.3408%
Yarrow Point	105.4856%
All Other	100.0000%

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. The Utilities Department Director shall have authority under this ordinance to adopt procedures necessary for the efficient and equitable administration of the sewer rate structure.

Section 8. Severability. If any section of this ordinance, or any portion of any section of this ordinance, or its application to any person or circumstance, is held invalid, the remainder of the ordinance or the application of the provision to other persons or circumstances shall not be affected.

Section 9. Repeal. Ordinance No. 5974 is repealed as of January 1, 2013; provided, however, that any charges made for sewerage service under Ordinance No. 5974 are not invalidated by the repeal of that ordinance.

Section 10. Effective Date. Sections 1-9 of this ordinance shall take effect on January 1, 2013, shall apply to service provided on and after that date and shall supersede all existing schedules of charges as of that date. The specific sewerage service charges for 2013, as hereinbefore indicated, shall take effect on January 1, 2013 and shall remain in effect through and including December 31, 2013. The specific sewage service charges for 2014, as hereinbefore indicated, shall take

effect on January 1, 2014, and shall remain in effect until amended by the City Council.

Section 11. This ordinance shall take effect and be in force five (5) days after passage and legal publication.

Passed by the City Council this 3rd day of December, 2012 and signed in authentication of its passage this 3rd day of December, 2012.

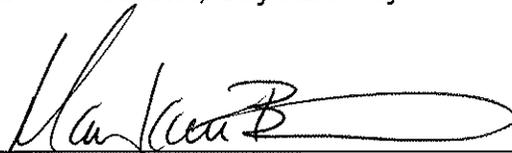
(SEAL)



Conrad Lee, Mayor

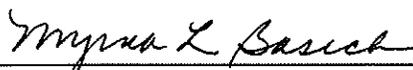
Approved as to form:

Lori M. Riordan, City Attorney



Mary Kate Berens, Deputy City Attorney

Attest:



Myrna L. Basich, City Clerk

Published December 14, 2012

ORIGINAL

CITY OF BELLEVUE, WASHINGTON

ORDINANCE NO. 5787

AN ORDINANCE amending Ordinance No. 5705; clarifying the sewer billing rate for mixed use structures that include both multi-family dwelling units and commercial non-residential units served by one meter.

WHEREAS, Ordinance No. 5705 established sewerage service charges that shall be collected from each user in the sewerage service area for the Sewer Utility of the City of Bellevue as hereinafter provided; and

WHEREAS, clarifying the billing rates of certain mixed use structures is desirable;

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

Section 1. Ordinance No. 5705, Section 3, is amended to read as follows

Multifamily Residential Structures or Facilities.

The service charge for each multifamily residential structure or facility shall be \$55.10 for 2007, and \$56.48 for 2008 per bimonthly billing period for each dwelling unit, plus \$5.00 for 2007 and \$5.13 for 2008 per 100 cubic feet of water consumed by such structure or facility in excess of 1,100 cubic feet per dwelling unit during each bimonthly billing period.

For the purposes of this Section 3, "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, but shall not include hotels, motels or trailer parks. Mixed use structures that include both multi-family dwelling units and commercial non-residential units and that are served by one water meter shall be billed as multi-family.

Section 2. Except as expressly amended herein, all other provisions of Ordinance 5705 shall remain in full force and effect.

Section 3. Severability. If any section of this ordinance, or any portion of any section of this ordinance, or its application to any person or circumstance, is held invalid, the remainder of the ordinance or the application of the provision to other persons or circumstances, shall not be affected.

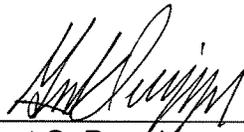
Section 4. Effective Date. Sections 1-3 of this ordinance shall take effect on January 1, 2008, and shall supersede all existing schedules of charges as of that date.

Section 5. This ordinance shall take effect and be in force five (5) days after its passage and legal publication.

Section 6. Attachment A to this Ordinance lists the charges for sewerage incorporating this amendment.

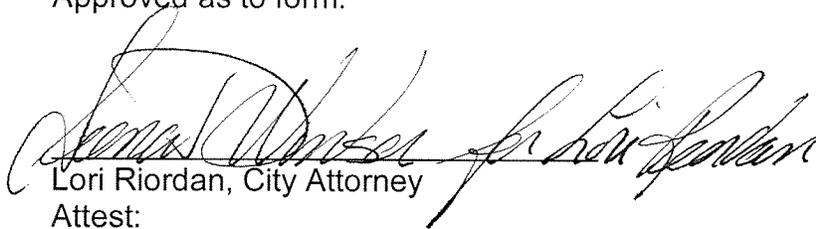
Passed by the City Council this 3rd day of December, 2007, and signed in authentication of its passage this 3rd day of December, 2007.

(SEAL)



Grant S. Degginger, Mayor

Approved as to form:



Lori Riordan, City Attorney
Attest:



Myrna L. Basich, City Clerk

Published December 6, 2007

Attachment A

Section 1. Charges Established. There are hereby established and shall be collected from each user in the sewerage service area for the Sewer Utility of the City of Bellevue sewerage service charges as hereinafter provided.

Section 2. Single Family Residential Structures.

A. The service charge for single-family residential units shall be \$55.90 per bimonthly billing period in 2007 and \$55.90 per bimonthly billing period in 2008, plus a volume charge based on the bimonthly winter-average water consumption for the structure, as follows:

<u>Winter-Average Cubic Feet Consumed</u>	<u>Charge Per Hundred Cubic Feet of Water</u>	
	<u>2007</u>	<u>2008</u>
0 to 5,000	\$2.04	\$2.18
Over 5,000	\$2.87	\$2.94

B. For purposes of these charges, winter-average consumption is the average bimonthly water volume recorded on three normal meter readings during the period of December 15 through June 15 of the preceding year. Winter-average consumption for each residence will be recomputed before the start of each year and that volume will be used to compute the bimonthly sewer volume charge for the residence for the entire calendar year.

C. For those residences that are not Bellevue water customers, actual meter reading data necessary to compute the residence's winter-average water consumption will be obtained from the customer's water district, whenever possible. Where that data is unavailable and for new structures where water consumption data necessary to compute actual winter-average consumption has not been recorded, bimonthly sewer volume charges for the residence will be based on Bellevue's system-wide winter-average residential consumption of 1,500 cubic feet for a two-month period.

D. The Utilities Department Director shall have authority under this ordinance to adopt procedures necessary for the efficient and equitable administration of the residential volume-based sewer rate structure.

Section 3. Multifamily Residential Structures or Facilities.

The service charge for each multifamily residential structure or facility shall be \$55.10 for 2007, and \$56.48 for 2008 per bimonthly billing period for each dwelling unit, plus \$5.00 for 2007 and \$5.13 for 2008 per 100 cubic feet of water consumed

by such structure or facility in excess of 1,100 cubic feet per dwelling unit during each bimonthly billing period.

For the purposes of this Section 3, "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, but shall not include hotels, motels or trailer parks. Mixed use structures that include both multi-family dwelling units and commercial non-residential units and that are served by one water meter shall be billed as multi-family.

Section 4. Non-residential Structures or Facilities.

A. The service charge for non-residential structures or facilities shall be based on water consumption by each structure or facility and shall be computed as follows:

\$5.56 for 2007, and \$5.70 for 2008 per 100 cubic feet of water consumption per bimonthly billing period.

Provided, there shall be a minimum charge of \$86.42 for 2007 and \$88.58 for 2008 per bimonthly billing period.

For purposes of this Section 4, "non-residential structure or facilities" shall mean any structure or facility not governed by Section 2 or Section 3 of this ordinance and shall include, but not be limited to, any commercial, industrial, business, trade, school or municipal structure or facility.

Section 5. King County/METRO Charges. In addition to these rates and charges for sewerage service established in this ordinance, or otherwise established by the City, the following King County/METRO charges are imposed to ensure compliance with Section 204 of Public Law 92-500 (22 U.S.C. 1251) CFR Part 35, Subpart E:

A. A "surcharge" in an amount to be determined as provided in King County/METRO Resolution Nos. 2315 and 2557 (now incorporated into Title 28 of the King County Code, Chapter 28.84.060), as now constituted or hereafter amended, said charge to be added to the customer's regular bill.

B. An "Industrial Cost Recovery (ICR)" charge in an amount to be determined as provided in King County/METRO Resolution Nos. 2556 and 3374 (now incorporated into Title 28 of the King County Code, Chapter 28.84.060), as now constituted or hereafter amended, said charge to be billed separately to qualifying industrial customers on an annual basis.

C. An administrative charge of \$15.50 shall be added to each customer bill that contains a King County/METRO "surcharge" or "ICR charge."

D. The City of Bellevue, in cooperation with King County/METRO, shall maintain such records as are necessary to document that its sewerage charges comply with the above-cited federal laws and regulations and King County/METRO regulations.

Section 6. User Charges - Outside. The charges for each user outside the city or town limits of Bellevue, Clyde Hill, Hunts Point, Medina and Yarrow Point shall be the sum of any applicable charges under Sections 2, 3, 4 and 5 of this ordinance.

Section 7. 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 any applicable charges under Sections 2, 3, 4 and 5 multiplied by the percentage indicated below for that city or town:

Bellevue	105.4856%
Clyde Hill	109.0756%
Hunts Point	107.2506%
Medina	100.0000%
Yarrow Point	105.4856%

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.

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 5th day of December, 2003, and signed in authentication of its passage this 5th 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

CITY OF BELLEVUE, WASHINGTON

ORDINANCE NO. 5668

AN ORDINANCE authorizing the City Manager, or his designee, to amend the 2005-2011 General and Utility Capital Investment Program (CIP) Plans and to increase the project budgets for the Kamber Roadway Improvements (CIP Plan PW-R-102), Fish Passage Improvement Program (D-81), the Stream Channel Modifications (D-86), the Richards Creek/East Creek Flow Management (D-90), the Small Diameter Water Main Replacement (W-16), and the Sewer System Pipeline Rehabilitation (S-24) to reflect \$515,000 in revenue received through disbursement of a Settlement Agreement with Olympic Pipe Line Company; and amending the 2005-2006 Budget for the General CIP Fund by increasing the appropriation by \$34,000; and amending the 2005-2006 Budget for the Utility CIP Fund by increasing the appropriation by \$481,000.

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

Section 1. Section 1. The City's 2005-2011 Capital Investment Program (CIP) Plans adopted by Ordinance No. 5580 on December 6, 2004, as previously amended, are hereby amended by increasing the project budgets for the Kamber Roadway Improvements (CIP Plan PW-R-102), the Fish Passage Improvement Program (D-81), the Stream Channel Modifications (D-86), the Richards Creek/East Creek Flow Management (D-90), the Small Diameter Water Main Replacement (W-16), and the Sewer System Pipeline Rehabilitation (S-24) to reflect \$515,000 in revenue received through disbursement of a Settlement Agreement with Olympic Pipe Line Company.

Section 2. The City's 2005-2006 General CIP Fund appropriation adopted by Ordinance No. 5580 on December 6, 2004, as previously amended, is hereby further amended to increase the appropriation to said CIP Fund by \$34,000.

Provided however, if the actual revenue received from the source specified in said agreement shall be more or less than the anticipated amount set forth herein, the appropriation shall be adjusted to equal the amount actually received.

Section 3. The City's 2005-2006 Utility CIP Fund appropriation adopted by Ordinance No. 5580 on December 6, 2004, as previously amended, is hereby further amended to increase the appropriation to said CIP Fund by \$481,000.

Provided however, if the actual revenue received from the source specified in said agreement shall be more or less than the anticipated amount set forth herein, the appropriation shall be adjusted to equal the amount actually received.

Section 4. The Finance Director or her designee is authorized to make interfund loans from appropriate City fund to the General CIP Fund in whatever amounts, for whatever duration or under whatever terms are appropriate and necessary to cover cash flow shortages in said fund that may be created by this agreement.

Section 5. This ordinance shall take effect and be in force five (5) days after passage and legal publication.

Passed by the City Council this 3rd day of April, 2006 and signed in authentication of its passage this 3rd day of April, 2006.

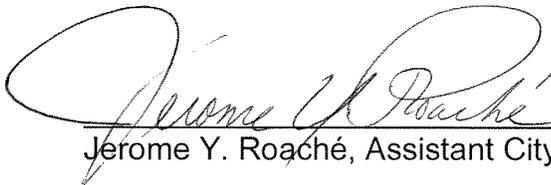
(SEAL)



Grant Degginger, Mayor

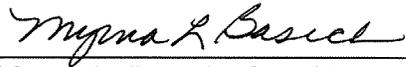
Approved as to form:

Lori M. Riordan, City Attorney



Jerome Y. Roaché, Assistant City Attorney

Attest:



Myrna L. Basich, City Clerk

Published April 7, 2006

CITY OF BELLEVUE, WASHINGTON

ORDINANCE NO. 5856

AN ORDINANCE authorizing and providing for the acquisition of interest in land for the purpose of completing the Meydenbauer Creek Sewer Replacement and Bank Stabilization Project; providing for condemnation, appropriation, taking of land and property rights necessary therefore; providing for the cost thereof and directing the initiation of appropriate proceedings in the manner provided by law for said condemnation.

WHEREAS, on December 1, 2008, the City Council adopted the 2009-2015 CIP, by Ordinance No. 5851, which included CIP Plan No. D-86, Stream Channel Modification Program (otherwise known as the Meydenbauer Creek Sewer Replacement and Bank Stabilization Project ("Project")); and

WHEREAS, the City Council has found that the public health, safety, necessity and convenience demand that said Project be undertaken at this time and that in order to carry out the Project it is necessary at this time for the City to acquire interests and rights to the properties described herein; and

WHEREAS, the City Council finds and declares it necessary and in the best interest of the public that interests in the land and property rights hereinafter described be condemned, appropriated, and taken for public use, subject to the making or paying of just compensation to the owners thereof in the manner provided by law; now, therefore,

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

Section 1. The land and property rights within the City of Bellevue, King County, Washington, described in the attached Exhibits "A" and "B", are necessary for construction of the Project described above, subject to making or paying just compensation to the owners thereof in the manner provided by law.

Section 2. The City of Bellevue specifically finds construction of the Project to be a public use, specifically the construction or repair of public utilities. The City Council specifically finds construction of the Project to be necessary, and in the best interests of the citizens.

Section 3. The cost and expense of acquiring said property rights shall be paid for from the Capital Investment Plan, or from other monies the City may have available or may obtain therefore. The Director of the Utilities Department or his designee is hereby authorized to negotiate with and make offers to the owners of said land or property for the purposes of making or paying just compensation, and to

approve the payment of just compensation as negotiated with said owners or as ordered by the Court.

Section 4. The City Attorney is hereby authorized and directed to undertake proceedings provided by law to condemn, appropriate, and take the property necessary to carry out the provisions of this ordinance. The City Attorney is further authorized to approve and enter into any and all such agreements, stipulations, and orders necessary to carry out the provisions of this ordinance, including for the payment of just compensation as agreed to with the property owners, or as ordered by the Court.

Section 5. This ordinance shall take effect and be in force five (5) days after passage and legal publication.

Passed by the City Council this 9th day of February, 2009 and signed in authentication of its passage this 9th day of February, 2009.

(SEAL)



Grant S. Degginger, Mayor

Approved as to form:

Lori M. Riordan, City Attorney



Lacey L. Madche, Assistant City Attorney

Attest:

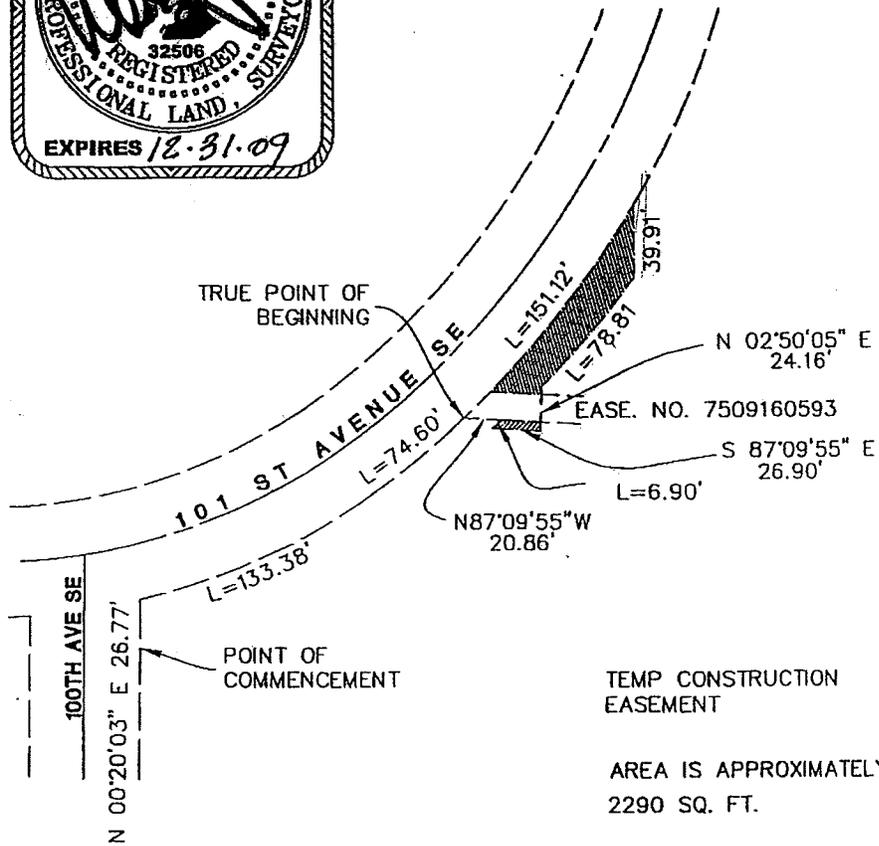
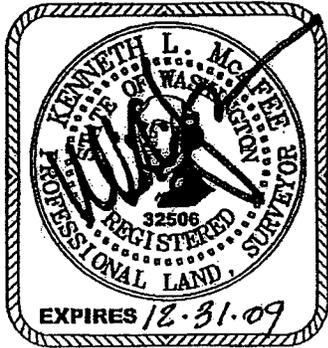


Myrna L. Basich, City Clerk

Published February 12, 2009

EXHIBIT A

SW1/4 OF SECT. 32, T. 25 N., R. 5 E., W.M.



TEMPORARY CONSTRUCTION EASEMENT



Engineers
a Pacific company

PACIFIC PARK
1442 - 112TH AVENUE NE, STE 102
BELLEVUE, WASHINGTON 98004
425.451.7022

CITY OF BELLEVUE

KING COUNTY, WASHINGTON

EASEMENT EXHIBIT

JOB NO.
WA07.002.M0120

DATE
01.15.09

SHEET NO.

1

EXISTING LAND DESCRIPTION:

KING COUNTY PARCEL NUMBER: 0666000475

TRACTS 74 AND 75, BELLEVUE ACRE AND HALF ACRE TRACTS,
ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 11 OF PLATS,
PAGE 35, IN KING COUNTY, WASHINGTON;

TOGETHER WITH THAT PORTION OF LAKE WASHINGTON SHORELANDS IN
GOVERNMENT LOT 2, SECTION 32, TOWNSHIP 25 NORTH, RANGE 5 EAST,
W.M., IN KING COUNTY, WASHINGTON, LYING WEST OF TRACTS 57, 58, AND
59, OF SAID BELLEVUE ACRE AND HALF ACRE TRACTS, LYING NORTHERLY
OF TRACT 75 OF SAID BELLEVUE ACRE AND HALF ACRE TRACTS, LYING
EASTERLY OF 100TH AVE SOUTHEAST (ALSO KNOWN AS WILDWOOD
AVENUE AND ALCAZAR STREET) AS CONVEYED TO KING COUNTY BY
DEED RECORDED UNDER RECORDING NUMBER 3166974, AND LYING
SOUTHERLY OF 101ST AVENUE SOUTHEAST (ALSO KNOWN AS WILDWOOD
PARK ROAD) AS CONVEYED TO KING COUNTY BY DEED RECORDED UNDER
RECORDING NUMBER 3166973.

TEMPORARY CONSTRUCTION EASEMENT:

COMMENCING AT THE NORTHWEST CORNER OF TRACT 75 OF BELLEVUE
ACRE AND HALF ACRE TRACTS, ACCORDING TO THE PLAT THEREOF
RECORDED IN VOLUME 11 OF PLATS, PAGE 35, IN KING COUNTY,
WASHINGTON, ALSO BEING A POINT ON THE EAST MARGIN OF 100TH AVE
SE;

THENCE NORTH 00°20'03" EAST, 26.77 FEET ALONG SAID EAST MARGIN TO
THE SOUTHERLY MARGIN OF 101ST AVE SE;

THENCE NORTHEASTERLY ALONG SAID MARGIN OF 101ST AVE SE, ON A
NON-TANGENT CURVE HAVING A RADIUS OF 364.50 FEET, WHOSE CENTER
BEARS NORTH 12°57'01" WEST THROUGH A CENTRAL ANGLE OF 20°57'59",
AN ARC DISTANCE OF 133.38 FEET TO A POINT OF COMPOUND
CURVATURE;

THENCE CONTINUING ALONG SAID MARGIN ON A CURVE HAVING A RADIUS OF 507.68 FEET WHOSE CENTER BEARS NORTH 33°55'00" WEST AN ARC DISTANCE OF 74.60 FEET TO THE TRUE POINT OF BEGINNING;

THENCE CONTINUING ALONG SAID MARGIN AN ARC DISTANCE OF 151.12 FEET;

THENCE SOUTH 00°00'00" EAST A DISTANCE OF 39.91 FEET TO A POINT ON A NON-TANGENT ARC HAVING A RADIUS OF 507.68 FEET WHOSE CENTER BEARS NORTH 53°56'46" WEST;

THENCE SOUTHWESTERLY ALONG SAID CURVE AN ARC DISTANCE OF 78.81 FEET;

THENCE SOUTH 02°50'05" WEST A DISTANCE OF 24.16 FEET;

THENCE NORTH 87°09'55" WEST A DISTANCE OF 26.90 FEET;

THENCE NORTHEASTERLY ALONG A NON-TANGENT ARC HAVING A RADIUS OF 522.68 FEET WHOSE CENTER BEARS NORTH 43° 11'31" WEST AN ARC DISTANCE OF 6.90 FEET TO THE SOUTH LINE OF EASEMENT NUMBER 7509160593, RECORDED ON OCTOBER 1, 1975, RECORDS OF KING COUNTY, WASHINGTON;

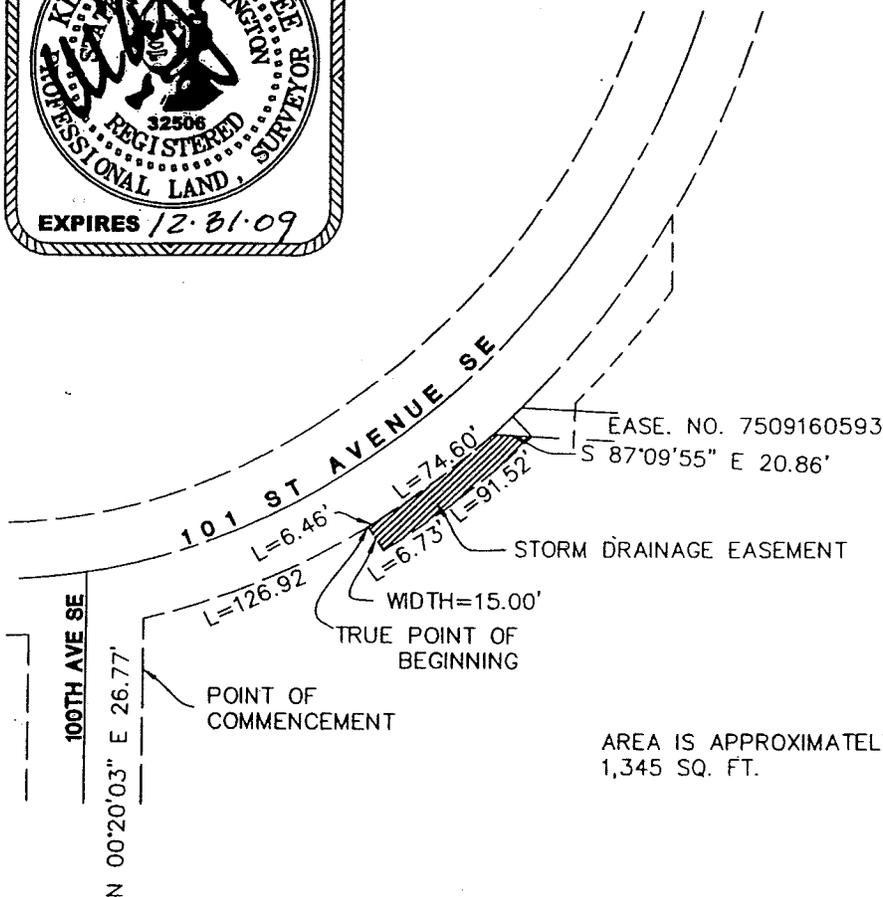
THENCE NORTH 87°09'55" WEST A DISTANCE OF 20.86 FEET TO THE TRUE POINT OF BEGINNING.

EXCEPT THAT PORTION OF THE EASEMENT FILED UNDER KING COUNTY RECORDERS NUMBER 7509160593.

SAID DESCRIPTION CONTAINING APPROXIMATELY 2290 SQ. FT

EXHIBIT B

SW1/4 OF SECT. 32, T. 25 N., R. 5 E., W.M.



AREA IS APPROXIMATELY 1,345 SQ. FT.

SCALE: 1" = 100'



Engineers
 a Pacific company
 PACIFIC PARK
 1412 - 112TH AVENUE NE, STE 102
 BELLEVUE, WASHINGTON 98004
 425.455.7622

CITY OF BELLEVUE

KING COUNTY, WASHINGTON

STORM DRAINAGE EASEMENT EXHIBIT

JOB NO.
 WA07.002.M0120

DATE
 01.14.09

SHEET NO.
 1

EXISTING LAND DESCRIPTION:

KING COUNTY PARCEL NUMBER: 0666000475

TRACTS 74 AND 75, BELLEVUE ACRE AND HALF ACRE TRACTS,
ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 11 OF PLATS,
PAGE 35, IN KING COUNTY, WASHINGTON;

TOGETHER WITH THAT PORTION OF LAKE WASHINGTON SHORELANDS IN
GOVERNMENT LOT 2, SECTION 32, TOWNSHIP 25 NORTH, RANGE 5 EAST,
W.M., IN KING COUNTY, WASHINGTON, LYING WEST OF TRACTS 57, 58, AND
59, OF SAID BELLEVUE ACRE AND HALF ACRE TRACTS, LYING NORTHERLY
OF TRACT 75 OF SAID BELLEVUE ACRE AND HALF ACRE TRACTS, LYING
EASTERLY OF 100TH AVE SOUTHEAST (ALSO KNOWN AS WILDWOOD
AVENUE AND ALCAZAR STREET) AS CONVEYED TO KING COUNTY BY
DEED RECORDED UNDER RECORDING NUMBER 3166974, AND LYING
SOUTHERLY OF 101ST AVENUE SOUTHEAST (ALSO KNOWN AS WILDWOOD
PARK ROAD) AS CONVEYED TO KING COUNTY BY DEED RECORDED UNDER
RECORDING NUMBER 3166973.

STORM DRAINAGE EASEMENT:

COMMENCING AT THE NORTHWEST CORNER OF TRACT 75 OF BELLEVUE
ACRE AND HALF ACRE TRACTS, ACCORDING TO THE PLAT THEREOF
RECORDED IN VOLUME 11 OF PLATS, PAGE 35, IN KING COUNTY,
WASHINGTON, ALSO BEING A POINT ON THE EAST MARGIN OF 100TH AVE
SE;

THENCE NORTH 00°20'03" EAST, 26.77 FEET ALONG SAID EAST MARGIN TO
THE SOUTHERLY MARGIN OF 101ST AVE SE;

THENCE NORTHEASTERLY ALONG SAID MARGIN OF 101ST AVE SE, ON A
NON-TANGENT CURVE HAVING A RADIUS OF 364.50 FEET, WHOSE CENTER
BEARS NORTH 12°57'01" WEST THROUGH A CENTRAL ANGLE OF 19°57'02", A
DISTANCE OF 126.92 FEET TO THE TRUE POINT OF BEGINNING;

THENCE CONTINUING ALONG SAID MARGIN AN ARC DISTANCE OF 6.46 FEET TO A POINT OF COMPOUND CURVATURE HAVING A RADIUS OF 507.68 FEET WHOSE CENTER BEARS NORTH 33°55'00" WEST;

THENCE ALONG SAID MARGIN AN ARC DISTANCE OF 74.60 FEET TO A POINT;

THENCE SOUTH 87°09'55" EAST ALONG THE SOUTH LINE OF EASEMENT NUMBER 7509160593, RECORDED ON OCTOBER 1, 1975, RECORDS OF KING COUNTY, WASHINGTON A DISTANCE OF 20.86 FEET TO A POINT ON AN ARC HAVING A RADIUS OF 522.68 FEET WHOSE CENTER BEARS NORTH 43°56'55" WEST;

THENCE SOUTHWESTERLY ALONG SAID CURVE AN ARC DISTANCE OF 91.52 FEET TO A POINT OF COMPOUND CURVATURE HAVING A RADIUS OF 379.50 FEET WHOSE CENTER BEARS NORTH 33°55'00" WEST;

THENCE CONTINUING ALONG SAID CURVE AN ARC DISTANCE OF 6.73 FEET TO A POINT;

THENCE NORTHWESTERLY ALONG A RADIAL LINE 15.00 FEET TO THE TRUE POINT OF BEGINNING.

SAID DESCRIPTION CONTAINING APPROXIMATELY 1345 SQ. FT

ORIGINAL

CITY OF BELLEVUE, WASHINGTON

ORDINANCE NO. 5959

AN ORDINANCE delegating authority to the City Manager or his designee to sign a mutual aid agreement whereby the City of Bellevue joins the Washington Water/Wastewater Agency Response Network, which allows for voluntary sharing of public utility resources in emergency or disaster situations.

WHEREAS, the City Council desires to participate in the Washington Water/Wastewater Agency Response Network for the sharing of public utility resources in major emergency and/or disaster situations; and

WHEREAS, the mutual aid agreement follows a national model strongly promoted by the Federal Emergency Management Administration and the American Water Works Association; and

WHEREAS, although the City Council desires to enter into the mutual aid agreement as currently written, Council directs staff to continue to work with the members of the network to improve the terms of the mutual aid agreement;

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

Section 1. The City Manager or his designee is authorized to execute the mutual aid agreement whereby the City of Bellevue joins the Washington Water/Wastewater Agency Response Network, a copy of which agreement has been given Clerk's Receiving No. 42933.

Section 2. Within nine months of the effective date of this ordinance, staff shall provide a report to the Council regarding the status of efforts to improve the terms of the mutual aid agreement.

Section 3. This ordinance shall take effect and be in force thirty (30) days after passage and legal publication.

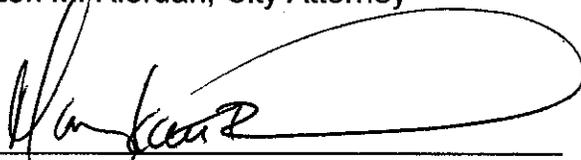
Passed by the City Council this 2nd day of August, 2010
and signed in authentication of its passage this 2nd day of August,
2010.

(SEAL)


Don Davidson, DDS
Mayor

Approved as to form:

Lori M. Riordan, City Attorney


Mary Kate Berens, Deputy City Attorney

Attest:


Myrna L. Basich, City Clerk

Published 8/5/10

CITY OF BELLEVUE, WASHINGTON

ORDINANCE NO. 6086

AN ORDINANCE establishing revised sewerage service charges; repealing Ordinance No. 5974; providing for severability; and establishing an effective date.

WHEREAS, the Environmental Services Commission has reviewed the Sewer 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 establish the following amended schedule of rates and charges for the sewerage service area for the Sewer 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 in the sewerage service area for the Sewer Utility of the City of Bellevue sewerage service charges as hereinafter provided.

Section 2. Single Family Residential Structures.

A. The service charge for single-family residential units shall be \$79.58 per bimonthly billing period in 2013 and \$79.58 per bimonthly billing period in 2014, plus a volume charge based on the bimonthly winter-average water consumption for the structure, as follows:

<u>Winter-Average Cubic Feet Consumed</u>	<u>Charge Per Hundred Cubic Feet of Water</u>	
	<u>2013</u>	<u>2014</u>
0 to 5,000	\$3.03	\$3.37
Over 5,000	\$3.92	\$4.36

B. For purposes of these charges, winter-average consumption is the average bimonthly water volume recorded on three normal meter readings during the period of December 15 through June 15 of the preceding year. Winter-average consumption for each residence will be recomputed before the start of each year and that volume will be used to compute the bimonthly sewer volume charge for the residence for the entire calendar year.

C. For those residences that are not Bellevue water customers, actual meter reading data necessary to compute the residence's winter-average water consumption will be obtained from the customer's water district, whenever possible.

Where that data is unavailable and for new structures where water consumption data necessary to compute actual winter-average consumption has not been recorded, bimonthly sewer volume charges for the residence will be based on Bellevue's system-wide winter-average residential consumption of 1,500 cubic feet for a two-month period.

Section 3. Multifamily Residential Structures or Facilities.

The service charge for each multifamily residential structure or facility shall be \$81.34 for 2013, and \$84.62 for 2014 per bimonthly billing period for each dwelling unit, plus \$6.71 for 2013 and \$6.98 for 2014 per 100 cubic feet of water consumed by such structure or facility in excess of 1,100 cubic feet per dwelling unit during each bimonthly billing period.

For the purposes of this Section 3, "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, but shall not include hotels, motels or trailer parks. Mixed-use structures that include both multi-family dwelling units and commercial non-residential units and that are served by one water meter shall be billed as multi-family.

Section 4. Non-residential Structures or Facilities.

The service charge for non-residential structures or facilities shall be based on water consumption by each structure or facility and shall be computed as follows:

\$8.04 for 2013, and \$8.36 for 2014 per 100 cubic feet of water consumption per bimonthly billing period

provided, there shall be a minimum charge of \$125.04 for 2013 and \$130.08 for 2014 per bimonthly billing period.

For purposes of this Section 4, "non-residential structure or facilities" shall mean any structure or facility not governed by Section 2 or Section 3 of this ordinance and shall include, but not be limited to, any commercial, industrial, business, trade, school or municipal structure or facility.

Section 5. King County/METRO Charges. In addition to these rates and charges for sewerage service established in this ordinance, or otherwise established by the City, the following King County/METRO charges are imposed to ensure compliance with Section 204 of Public Law 92-500 (22 U.S.C. 1251) CFR Part 35, Subpart E:

A. A "surcharge" in an amount to be determined as provided in King County/METRO Resolution Nos. 2315 and 2557 (now incorporated into Title 28 of the King County Code, Chapter 28.84.060), as now constituted or hereafter amended, said charge to be added to the customer's regular bill.

B. An "Industrial Cost Recovery (ICR)" charge in an amount to be determined as provided in King County/METRO Resolution Nos. 2556 and 3374 (now incorporated into Title 28 of the King County Code, Chapter 28.84.060), as now constituted or hereafter amended, said charge to be billed separately to qualifying industrial customers on an annual basis.

C. An administrative charge of \$17.11 shall be added to each customer bill that contains a King County/METRO "surcharge" or "ICR charge."

D. The City of Bellevue, in cooperation with King County/METRO, shall maintain such records as are necessary to document that its sewerage charges comply with the above-cited federal laws and regulations and King County/METRO regulations.

Section 6. User Charges. The charges for each user shall be the sum of any applicable charges under Sections 2, 3, 4 and 5 multiplied by the percentage indicated below for that city or town:

Bellevue	105.4856%
Clyde Hill	110.3273%
Hunts Point	107.2506%
Medina	104.3408%
Yarrow Point	105.4856%
All Other	100.0000%

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. The Utilities Department Director shall have authority under this ordinance to adopt procedures necessary for the efficient and equitable administration of the sewer rate structure.

Section 8. Severability. If any section of this ordinance, or any portion of any section of this ordinance, or its application to any person or circumstance, is held invalid, the remainder of the ordinance or the application of the provision to other persons or circumstances shall not be affected.

Section 9. Repeal. Ordinance No. 5974 is repealed as of January 1, 2013; provided, however, that any charges made for sewerage service under Ordinance No. 5974 are not invalidated by the repeal of that ordinance.

Section 10. Effective Date. Sections 1-9 of this ordinance shall take effect on January 1, 2013, shall apply to service provided on and after that date and shall supersede all existing schedules of charges as of that date. The specific sewerage service charges for 2013, as hereinbefore indicated, shall take effect on January 1, 2013 and shall remain in effect through and including December 31, 2013. The specific sewage service charges for 2014, as hereinbefore indicated, shall take

effect on January 1, 2014, and shall remain in effect until amended by the City Council.

Section 11. This ordinance shall take effect and be in force five (5) days after passage and legal publication.

Passed by the City Council this 3rd day of December, 2012 and signed in authentication of its passage this 3rd day of December, 2012.

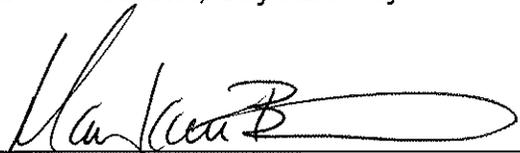
(SEAL)



Conrad Lee, Mayor

Approved as to form:

Lori M. Riordan, City Attorney



Mary Kate Berens, Deputy City Attorney

Attest:



Myrna L. Basich, City Clerk

Published December 14, 2012

Appendix D

Completed CIP

Appendix D

Completed Projects

This Appendix provides additional information on capital projects completed since 2002. These projects are listed in Section 9.4.

D.1 Sewage Pump Station Improvements

This ongoing program was initiated in 1985 to fund rehabilitation/retrofit of the 36 pump and 10 flush stations throughout the wastewater system, most of which are over 30 years old. Stations are prioritized for rehabilitation based on the risk and consequence of failure, maintenance and operations experience, pump station age, and coordination with other projects. Pump Station rehabilitation projects completed from 2002-2012 under CIP Plan No. S-16 are shown in Table D-1.



Emerald Ridge Pump Station Construction

D.2 Bellefield Pump Station Capacity Interim Expansion (Phase I)

Bellefield Pump Station, located on 112th Avenue SE at SE 15th Street near the entrance to the Bellefield Office Park, did not have sufficient capacity to meet the ultimate modeled projected flows or practical build-out projected flows.

The Bellefield Pump Station Expansion Predesign Report, April 2001, recommended an interim expansion of the station's capacity (Phase I) followed by reconstruction of the station and its force main 10 to 20 years later (Phase II). The interim expansion (Phase I) consisted of upsizing the pumps, valve modifications, site access improvements, and other upgrades.

D.3 Upper Vasa Creek Erosion Control and Slope Stabilization

This project was proposed to address an unstable slope that constituted a threat to a nearby sewer line. Subsequent erosion occurred during a 2007 storm event, but did not damage the sewer line. Storm damage repairs commenced in 2010 and were completed in 2011, primarily funded by a FEMA hazard mitigation grant.

D.4 Sunset Creek Channel Improvements

This project was needed to address high stream flow erosion that constituted a threat to a nearby sewer line.

D.5 New Bogline Lift Station

This project was proposed to address long term soil stability problems that caused a pipe serving approximately 60 homes to settle and develop negative slopes (the pipe was constructed in 1965 and was relocated in 1987). The low spots in the pipe require frequent maintenance.

In 2006 this project was deleted in the CIP update because the apparent benefits did not justify the estimated capital costs. Piping will be replaced under CIP Plan No. S-66 instead. The pipeline is currently cleaned quarterly by O&M staff.

D.6 Auxiliary Power Upgrades at Sewage Pump Stations

This project was needed to replace non-standard emergency generator receptacles at 33 existing pump station and on 4 portable generators.

D.7 Sewer System Trunk (Pipeline) Rehabilitation Program

This program, now named the Sewer System Pipeline Rehabilitation Program, funds repair of localized defects and occasional relining or replacement of defective sewer pipes. Most defects are identified from the Utility’s infrastructure condition assessment (video) program. Pipes are selected for replacement based on risk of failure (likelihood and consequence), failure history, and to coordinate with other construction, such as planned street overlays (which reduce restoration costs).



Sewer Repair on 156th Ave SE



Sewer Service Extension on Cougar Mountain

D.8 Sewer Service Extensions Program

This ongoing program provides funds for the design and construction of new sewer pipes for development or redevelopment, or to extend sewer pipes to areas with failing septic systems throughout the service area. These facilities are constructed to serve areas that currently do not have sewer service available.

D.9 Minor Capital Improvement Projects

This ongoing program pays for small improvements to Bellevue’s sewer system to resolve deficiencies, improve efficiencies, or resolve maintenance problems, often in conjunction with other programs such as the Transportation overlay program. Projects are prioritized based on criteria including public safety/property damage, maintenance frequency, operator safety, environmental risk, reliability and efficiency gains, coordination with other city projects or development activity, and level of service impact.

D.10 West CBD Trunk Capacity Improvements

This project was located between the intersection of Bellevue Way SE and SE 3rd Street and King County's Bellevue Pump Station at 102nd Avenue SE and SE 6th Street. The previous trunk alignment ran along a stream through easements on private property. The capacity improvements project, completed in 2011, was managed by King County, but funded by the City of Bellevue.

D.11 East CBD Trunk Capacity Improvements

This project will replace approximately 1,600 feet of sewer pipe with larger diameter pipelines, to convey sewage generated from planned growth in the eastern side of downtown Bellevue, generally east of 110th Ave NE. This project (Bellevue CIP Plan #S-52) was on hold pending a decision on Sound Transit's East Link light rail alignment, which will impact sewer trunk routing.

D.12 Bellefield Pump Station Capacity Improvements (Phase II)

Phase II of the Bellefield Pump Station Expansion (capacity improvements) is currently in design. This project is discussed more in Chapter 9.

D.13 Canyon Creek Interceptor Replacement

This project was recommended in Coal Creek Utility District's Draft 1999 Comprehensive Sewer Plan, to stabilize the Canyon Creek Interceptor in areas where the creek has historically unstable slopes. On two prior occasions, the banks of the creek washed out, exposing the sewer main. The slope was stabilized on both occasions by CCUD using FEMA funding.

This project has not been completed. No capacity problems or deterioration has been observed, and the slope is not known to have washed out since Bellevue assumed ownership of the pipeline in 2003.

D.14 Newport Hills Interceptor Capacity Improvements

This potential project was identified in Coal Creek Utility District's Draft 1999 Comprehensive Sewer Plan due to flat pipeline grades in SE 52nd Street and SE 54th Street. It was anticipated

that surcharging might occur in these areas of low slopes, however no surcharging was observed during flow monitoring by CCUD.

Capacity problems are not known to have occurred in these locations since Bellevue assumed ownership of the pipeline in 2003.

D.15 Abandon Gaupholm Lift Station

Coal Creek Utility District's Draft 1999 Comprehensive Sewer Plan identified abandonment of Gaupholm Lift Station as a future project. The pump station was rebuilt in 1987 and serves a single-family development of approximately 15 residences, but could potentially drain by gravity to the King County Metro connection where Kimberlee Park Pump Station discharges.

Gaupholm Lift Station is still in service, and is not currently scheduled for abandonment. This option will be considered as the station ages, as a potential means to improve reliability.

D.16 WSDOT I-405/S.R. 520 Braids Sewer Relocation

This project includes relocation of up to four wastewater pipes located within the state's right-of-way, to accommodate the I-405/S.R. 520 "Bellevue Braids" highway project. Bellevue is legally obligated by State permits and agreements to relocate or modify its utilities to accommodate the State's project.

This project commenced in 2009, and was completed in 2011. The project was managed by WSDOT, with funding from the City.



I-405 Utility Relocation at NE 12th St Overpass

D.17 WSDOT S.R. 520 Expansion Sewer Relocation

This project includes relocation of up to seven wastewater pipes located within WSDOT's right-of-way, to accommodate the S.R. 520 highway expansion project. Bellevue has four gravity mains, one pressurized force main, one lake line, and one siphon line within the vicinity of the WSDOT project. Bellevue is legally obligated by State permits and agreements to relocate or modify its utilities to accommodate the State's project.

This project commenced in 2010, and was completed in 2013. The project was managed by WSDOT, with funding from the City.

D.18 Upgrade Wastewater Telemetry System

This project replaced Bellevue's analog-tone telemetry system with digital technology, to improve processing speed, allow two-way communication, improve functionality, increase system safety and reliability, and reduce the chance of overflows. The system upgrade also provided redundant emergency response capabilities, by allowing the use of City Hall as a backup control room, in the event of the loss of the use of the Bellevue Service Center. The project was completed in 2011.

D.19 Design of Sewer Facilities for NE 15th Multi Modal Corridor

This project was proposed to design new sewer facilities concurrent with the design of the NE 15th Multi Modal corridor. The corridor will consist of a new street, bikeways, pathways, and the new East Link light rail. The key sewer facility proposed for this project was approximately 1.3 miles of 8 inch and 12 inch sewer pipe.

Sewer pipes were proposed in the new NE 15th Multi Modal Corridor to provide utility services to adjacent redeveloped properties. The utility investment associated with redevelopment of the Bel-Red Corridor would be recouped via connection charges collected from benefited properties when they redevelop.

This project was funded as CIP Plan No. S-62, but has been deleted following further analysis. It has been determined that due to the locations of Metro's interceptors and other existing infrastructure, parallel sewer lines located inside the multi-modal corridor will not be necessary. Service will be provided to re-developed properties through the sewer extension program and extended perpendicular to the multi-modal corridor.

**Table D-1, Sub-Projects Completed Under CIP No. S-16
Sewage Pump Station Improvements**

Sub-Project Description	Year Initiated	Year Completed
Flush Station Rehabilitation Program (Lake Washington)	2001	2005
Lift Station No. 12 Odor Abatement	2001	2005
Bagley Pump Station Odor Abatement	2001	2004
Lift Station No. 12 Pump Replacement	2001	2008
Mercury Manometer Replacement at Sewer Pump Stations	2005	2008
2006 Sewer Pump Station Predesign Report	2005	2007
Flush Station No. 5 Rehabilitation	2005	2012
Southridge Pump Station Rehabilitation	2007	2009
Kimberly Park Pump Station Rehabilitation	2007	2009
Misc Pump Station Improvements	2010	Ongoing
Emerald Ridge Pump Sta Replmnt	2011	Ongoing
Sewer Pump Station Generator Receptacle Additions 2011	2011	Ongoing
Sewer Pump Station Wet Well Condition Assessment	2011	2012
Pump Station No. 12 Investigation	2011	Ongoing
Lake Washington Pump Station Pump Replacement	2011	2011
Wastewater Pump Station Condition Assessment 2013	2012	Ongoing
Sewer Pump Station Wet Well Rehabilitation 2013	2012	Ongoing
Lake Heights Sewer Pump Station Rehabilitation	2012	Ongoing
Wilburton Sewer Pump Staion Rehabilitation	2012	Ongoing

**Table D-2, Sub-Projects CIP No. S-24
Sewer System Pipeline Rehabilitation Program**

Sub-Project Description	Year Initiated	Year Completed
NE 24th St Sewer Replacement (NE 24th @ 140th Ave NE)	2001	2005
3042 169th Place NE Sewer Pipeline Repair	2001	Cancelled
Utilities Infrastructure Rehabilitation (2003) - Sanitary Sewer	2001	2003
Utilities Infrastructure Rehabilitation (2004) - Sanitary Sewer	2001	2004
Utilities Infrastructure Rehabilitation (2005) - Sanitary Sewer	2001	2005
2004 Sewer Internal Point Repair	2001	2004
Factoria Blvd & SE 38th Dig and Repair	2001	2004
Lakeline Cleanouts at Beaux Arts Park	2001	2004
2005 Sewer Internal Point Repair	2001	2005
2006 Sewer Internal Point Repair	2001	2006
5325 145th Place SE	2001	2003
Sewer Manhole at Station 12	2001	2003
Sewer Main Abandonment at 900 111th Pl SE	2001	2003
Miscellaneous Sewer Trunk Rehab Projects	2001	Ongoing
Pancake Corral Side Sewer Repair	2001	2002
NE 28th St Siphon Line Repair	2001	2003
I-405 at NE 8th Street Sewer Pipe Relining	2001	2002
92nd Ave NE Sanitary Sewer Spot Repairs	2002	2003
7620 NE 6th Street Sewer Repair	2002	2003
NE 8th Street and 129th Pl. NE Manhole	2002	2003
147th Ln NE at NE 9th St Sewer Replacement	2002	Ongoing
12920 NE 32nd Pl Manhole	2002	2003
NE 8th St 102nd to 103rd Ave NE Sewer Repair	2002	2003
Fairweather Place Sewer Replacement	2002	2003
4658 - 171st Ave SE Side Sewer Repair	2002	2003
1033 151st Ave SE Intenal Point Repair	2002	2003
13433 NE 20th St Sewer Point Repair	2002	2003
116th Ave NE at Northup Way Manhole Section	2002	2003
140th Ave NE at NE 42nd St Sewer Stub Extension	2002	2003
14008 NE 32nd Pl Cleanout	2002	2003
3099 125th Ave NE Cleanout	2002	2003
12813 NE 32nd Pl Cleanout	2002	2003
129th Ave NE and NE 35th Pl Cleanout Cover Upgrade	2002	2003
NE 55th St Cleanout	2002	2003
14624 SE 15th St Manhole Section	2002	2003
2401 127th Ave NE Manhole Section	2002	2003
130th Ave NE and NE 26th Pl Manhole Section	2002	2003
140th Ave NE at NE 14th St Manhole Section	2002	2003
14444 NE 11th Pl Manhole Section	2002	2003
145th Pl SE and SE 13th Pl Manhole Section	2002	2003
1909 145th Ave SE Mahole Section	2002	2003

Table D-2, Sub-Projects CIP No. S-24 (Continued)
Sewer System Pipeline Rehabilitation Program

Bellevue Way at Main St Manhole Section	2002	2003
114411 SE 14th St Dig and Replace	2002	2003
14427 SE 14th St Dig and Repair	2002	2003
14625 SE 15th St Dig and Repair	2002	2003
3120 92nd Ave NE Dig and Repair	2002	2003
2700 Richards Road Dig and Replace	2002	2003
3200 130th Ave NE Dig and Replace	2002	2003
606 106th Ave NE Internal Point Repair	2002	2003
13831 NE 8th St Internal Point Repair	2002	2003
14635 SE 16th St Dig and Repair	2002	2003
13300 Kamber Rd Dig and Replace	2002	2003
1005 99th Ave NE Dig and Repair	2002	2003
420 84th Ave NE Dig and Replace	2002	2003
1008 NE 16th Pl Dig and Replace	2002	2003
2633 Evergreen Point Road Sewer Pipe Repair	2002	2003
Bellevue Way 8" Pipeline Rehabilitation	2001	2001
4304 SE Newport Way Manhole Improvements	2003	2003
906 Bellfair Lane Sewer Repair (100th Ave NE)	2003	2003
Sanitary Sewer Dig and Repair Sites (2002)	2002	2003
Wastewater R&R Development	2002	Ongoing
Compton Green 130th Ave NE Emergency Sewer Replacement	2002	2003
Bannerwood Park Sanitary Sewer Improvements	2003	2003
Grind and Overlay (2003) Various Sites	2003	2003
3135 Hunts Point Circle Sanitary Sewer Repair	2003	2007
Sanitary Sewer Repairs (2004), Phase 1	2004	2004
Sanitary Sewer Repairs - SE 16th St at 145th Pl SE	2004	2005
Sanitary Sewer Repairs - NE 8th St at 96th Ave NE	2004	2005
Sanitary Sewer Dig and Repair 2005	2004	2005
Sanitary Sewer Manhole Cover Replacement 2005	2004	2005
Mercer Slough - SE 8th St Sewer Stub Repair at 11711	2005	2006
Vasa Park - SE 12th St Sewer Stub Repair at 16737	2005	2007
Bellevue - 903 Belfair Rd Sanitary Sewer Repair	2005	2005
East Creek Culvert Replacement Sewer Repair	2005	2005
Sanitary Sewer Dig and Repair 2006	2005	2007
Newport/119th Ave SE Sewer Repairs	2005	2006
Bellevue Square Sanitary Sewer Repairs	2006	2006
Sanitary Sewer Dig and Repair 2007, Phase 1	2006	2008
Sanitary Sewer Dig and Repair 2007, Phase 2	2006	2008
Meydenbauer/101st Ave SE at SE 5th St Sewer Replacement	2007	2010
Sanitary Sewer Dig and Repair 2008	2007	2009
Sewer Lakeline Condition Assessment	2007	2008
San Sewer Dig and Repair	2009	Cancelled

Table D-2, Sub-Projects CIP No. S-24 (Continued)
Sewer System Pipeline Rehabilitation Program

San Sewer Internal Point Rep	2009	Cancelled
San Sewer Trenchless Rehab	2009	Cancelled
Yarrow Trib/Sewer Protection	2009	2011
Beaux Arts/108th Ave SE Sewer Repair	2011	2011
Sanitary Sewer Repairs 2011, Phase 2	2011	2012
Yarrow/NE 28th Pl Sewer Repair 2011	2011	2011
San Sewer Trenchless Repair 2012	2011	2013
Eastgate/SE 42nd Street I/I Reduction	2011	2011
Sanitary Sewer Repairs 2012, Phase 1	2011	2012
Sanitary Sewer Repairs 2012, Phase 2	2011	2013
Sewer Video Condition Assessment	2012	Ongoing
Sanitary Sewer Repairs 2013, Phase 1	2012	Ongoing
Sanitary Sewer Repairs 2013, Phase 2	2012	Ongoing
Crossroads/Bellevue Youth Theater Sewer Replacement	2012	Ongoing

**Table D-3, Sub-Projects Completed Under CIP No. S-30
Sewer Service Extensions Program**

Sub-Project Description	Year Initiated	Year Completed
Manhole at 140th Avenue and Main Street	2001	2002
Newport Way to SE 42nd Pl Sewer Extension (Easement line)	2001	2005
Leawood/164th Ave SE Sewer Extension	2001	2003
Leawood/161st Ave SE Sewer Extension	2001	2003
Horizon View C Sewer Extension	2001	2002
Meydenbauer 106th Ave SE Side Sewer	2001	2002
184th Ave SE Sewer Extension	2001	2002
Factoria SE 42nd St Sewer Extension	2002	2002
Mockingbird Hill Sewer Extension	2002	2002
Cougar Mtn/SE 43rd St Sewer Extension	2004	2005
Cougar Mtn/SE 45th St at 167th Ave SE Sewer Extension	2004	2010
Miscellaneous Sewer Extension Projects	2004	
Factoria/SE 41st St Sewer Extension	2004	2007
Cougar Mtn/SE 59th St Sewer Extension	2005	2007
Horizon View C Sanitary Swr	2005	2006
Factoria/134th Ave SE Monthaven East Sewer Extension	2007	
Bellevue CBD/Main St 106th-107th Ave NE Sewer Capacity Imp	2008	2012
Bellevue CBD/NE 8th St at 106th Ave NE Sewer Capacity Imp	2008	2012
Bellevue CBD/NE 8th St at Bellevue Way Sewer Capacity Imp	2008	2012
Cougar Mtn/17630 SE Cougar Mtn Dr Sewer Extension	2011	2011
Factoria/134th Ave SE Monthaven East Sewer Ext Monitoring	2011	Ongoing

**Table D-4, Sub-Projects Completed Under CIP No. S-32
Minor Capital Improvement Projects**

Sub-Project Description	Year Initiated	Year Completed
Exposed Lake Line Projects	2001	2012
Miscellaneous	2001	Ongoing
Richards Road Side Sewer Upgrades	2001	2003
Odor Abatement at Cozy Cove Pump Station	2003	2005
Contaminated Soils at 164th Ave SE	2003	2003
Underground Storage Tank Installation/Removal at Bellefield Pump Station	2003	2003
1527 146th Ave SE Side Sewer Replacement	2003	2004
Bellefield Pumping Station Site Access Improvements	2003	2004
Sunset Creek Sewer Pipe Protection	2004	2004
Sanitary Sewer Dig and Repair 2006	2006	2007
Bellefield Dosing Chamber Rehabilitation	2006	2008
Lakeline Access Improvements	2006	On Hold
Vasa/Upper Creek Storm Damage Repairs	2008	2011

Appendix E

Future CIP

S-16 Sewage Pump Station Improvements

Category: **Sewer**
 Department: **Utilities**

Status: **Ongoing**
 Location: **Pump stations throughout the Sewer Utility's service area**

Programmed Funding

Programmed Funding	Appropriated To Date	FY 2013 Budget	FY 2014 Budget	FY 2015 Budget	FY 2016 Budget	FY 2017 Budget	FY 2018 Budget	FY 2019 Budget
14,774,027	11,116,923	480,332	494,236	508,031	521,718	536,305	550,806	565,676

Description and Scope

This ongoing program funds rehabilitation/retrofit of the 36 pump and 10 flush stations throughout the wastewater system, most of which are over 30 years old. Stations are prioritized for rehabilitation based on the risk and consequence of failure, maintenance and operations experience, pump station age, and coordination with other projects. The next retrofit projects include three critical stations: Flush Station #5, Lake Heights, and Wilburton.

PROJECT NEED: System Renewal and Replacement

Rationale

Much of the sewage collected from homes and businesses passes through one or more of 36 pump stations and 10 flush stations (in-lake, low-pressure facilities that periodically 'flush' the nearly-flat sewer lakelines with lake water.) Pump stations include electrical and mechanical equipment with an estimated service life of 25 years; in-lake flush station components last 40 years, on average. Beyond service life, components fail more frequently, technology becomes obsolete, and parts replacement becomes difficult or impossible. The structures that house the pumps and equipment generally have a 100-year service life; components exposed directly to sewage deteriorate faster. State and federal laws require that we minimize pump station overflows; repeated violations can result in sanctions. Station rehabilitation improves reliability and safety, reduces the risk of system overflow and failure, and reduces the liability associated with such failures.

Environmental Impacts

The majority of the improvement work will be within the existing pump stations and no substantial environmental impacts are anticipated. The State Environmental Protection Act (SEPA) determinations (typically Determinations of Non-Significance) and exemptions from Shoreline regulations are obtained as required for each pump station as it is upgraded.

Operating Budget Impacts

This project will have no impact on operating revenues (and/or) expenditures, since it replaces existing facilities.

Project Map



Schedule of Activities

Project Activities	From - To	Amount
Project Costs	1985 - 2019	14,774,027
Total Budgetary Cost Estimate:		14,774,027

Means of Financing

Funding Source	Amount
Miscellaneous Revenue	7,000
Utility Rates/Fees	14,767,027

Total Programmed Funding: 14,774,027
Future Funding Requirements: 0

Comments

S-24 Sewer System Pipeline Rehabilitation

Category: **Sewer**
 Department: **Utilities**

Status: **Ongoing**
 Location: **Various locations throughout Sewer Utility's service area**

Programmed Funding

Programmed Funding	Appropriated To Date	FY 2013 Budget	FY 2014 Budget	FY 2015 Budget	FY 2016 Budget	FY 2017 Budget	FY 2018 Budget	FY 2019 Budget
26,830,213	14,495,072	1,175,521	1,736,192	1,784,652	1,832,733	1,883,975	1,934,915	1,987,153

Description and Scope

This program funds repair of localized defects and occasional relining of defective sewer pipes. Most defects are identified from the Utility's infrastructure condition assessment (video) program. Pipes are selected for repair based on risk of failure (likelihood and consequence), failure history, and to coordinate with other construction, such as planned street overlays (which reduce restoration costs).

PROJECT NEED: System Renewal and Replacement

Rationale

Bellevue's 650+ miles of sewer mains and 'stubs' that carry wastewater from homes and businesses to the mains are rapidly deteriorating. Most are 35-60 years old, and more than halfway through their expected functional life. As pipes age, cracks become wider and joints between pipes loosen, increasing the likelihood of blockages that cause sewer backups. Pipe rehabilitation reduces pipeline failures, reduces the risk of blockages or collapse that could result in property damage, and reduces the amount of ground water entering the sewer system which in turn reduces the risk of exceeding the system capacity.

In many cases, localized 'spot' repairs are the most cost effective choice and assure maximum total pipe life. Video observations and condition data indicates whether full pipe replacement or relining is more cost effective.

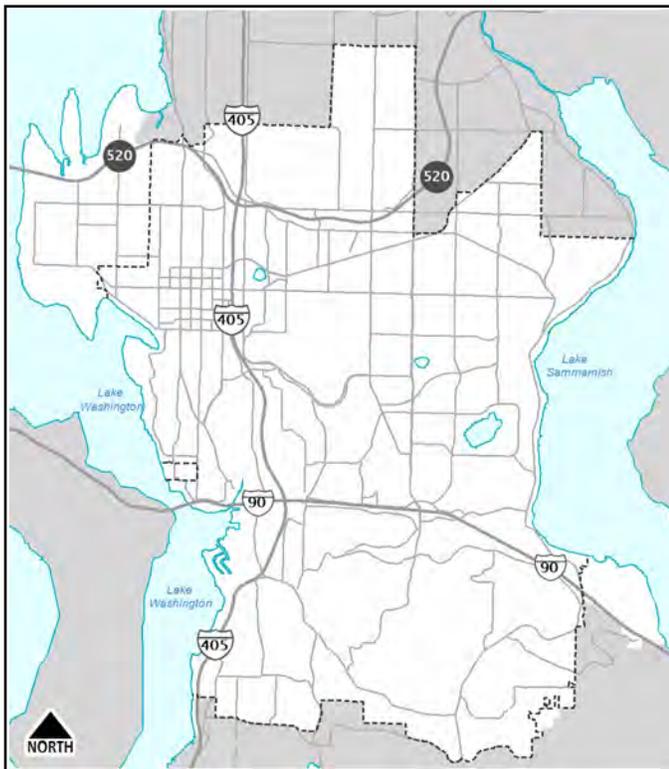
Environmental Impacts

The environmental impacts and the State Environmental Protection Act (SEPA) requirements will be determined for each replacement segment, but they are generally SEPA exempt.

Operating Budget Impacts

This project will have no impact on operating revenues (and/or) expenditures, since it replaces or repairs existing facilities.

Project Map



Schedule of Activities

Project Activities	From - To	Amount
Project Costs	1990 - 2019	26,830,213
Total Budgetary Cost Estimate:		26,830,213

Means of Financing

Funding Source	Amount
Judgements/Settlements	84,000
Miscellaneous Revenue	879,000
Utility Rates/Fees	25,867,213
Total Programmed Funding:	26,830,213
Future Funding Requirements:	0

Comments

This project will be located throughout the service area.

S-30 Sewer Service Extension

Category: **Sewer**
 Department: **Utilities**

Status: **Ongoing**
 Location: **Various locations throughout Sewer Utility's service area**

Programmed Funding

Programmed Funding	Appropriated To Date	FY 2013 Budget	FY 2014 Budget	FY 2015 Budget	FY 2016 Budget	FY 2017 Budget	FY 2018 Budget	FY 2019 Budget
11,645,619	8,605,168	399,340	410,899	422,368	433,747	445,874	457,930	470,293

Description and Scope

This ongoing program provides funds for the design and construction of new sewer pipes for development or redevelopment, or to extend sewer pipes to areas with failing septic systems throughout the service area. These facilities are constructed to serve areas that currently do not have sewer service available.

PROJECT NEED: System Expansion

Rationale

This program facilitates orderly extension of the sewer system, which state and county policies encourage, and provides an affordable option for customers who might otherwise not be able to develop their property. Projects are typically constructed in areas where the City is approached by affected property owners or in conjunction with other Utility or roadway construction. Each project requires majority support of affected property owners, except when health or safety is at risk. The program eliminates dependence on septic systems by providing sewer service. It reduces costs and disruption to communities when constructed in conjunction with other projects.

Property owner interest fluctuates annually, resulting in some years with no construction, and other years with substantial new construction. As the sewer system approaches build-out, fewer requests for sewer system extension are anticipated. Benefited properties pay their share of the project costs through connection charges when they connect.

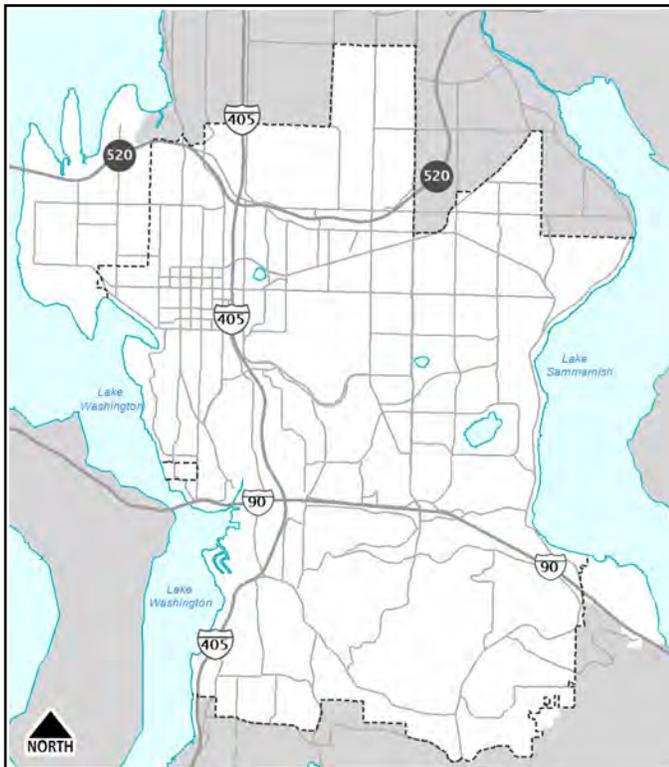
Environmental Impacts

The environmental impacts and the State Environmental Protection Act (SEPA) requirements are determined for each specific project.

Operating Budget Impacts

Operating budget costs will increase due to the addition of new sewer pipe. Additional operating costs will be incremental depending on the length and location of new sewer pipes, and can be approximated at \$0.90/LF. The existing budget allows construction of approximately 1,000 LF of sewer pipe each year, which is only constructed if requests are received.

Project Map



Schedule of Activities

Project Activities	From - To	Amount
Project Costs	1990 - 2019	11,645,619
Total Budgetary Cost Estimate:		11,645,619

Means of Financing

Funding Source	Amount
Miscellaneous Revenue	828,000
Utility Rates/Fees	10,817,619

Total Programmed Funding: 11,645,619
Future Funding Requirements: 0

Comments

This project will be located throughout the service area.

S-32 Minor (Small) Capital Improvement Projects

Category: **Sewer**
 Department: **Utilities**

Status: **Ongoing**
 Location: **Various locations throughout Sewer Utility's service area**

Programmed Funding

Programmed Funding	Appropriated To Date	FY 2013 Budget	FY 2014 Budget	FY 2015 Budget	FY 2016 Budget	FY 2017 Budget	FY 2018 Budget	FY 2019 Budget
3,359,583	2,229,051	148,487	152,785	157,049	161,280	165,790	170,272	174,869

Description and Scope

This ongoing program pays for small improvements to Bellevue's sewer system to resolve deficiencies, improve efficiencies, or resolve maintenance problems, often in conjunction with other programs such as the Transportation overlay program. Projects are prioritized based on criteria including public safety/property damage, maintenance frequency, operator safety, environmental risk, reliability and efficiency gains, coordination with other city projects or development activity, and level of service impact.

PROJECT NEED: System Renewal and Replacement

Rationale

These improvements correct unanticipated minor deficiencies or maintenance problems of the existing system. This program allows the City to efficiently maintain and upgrade its sewer system by coordinating minor improvements with other City projects and maintenance activities. These projects are too small to justify their own CIP projects, don't fit within the scope of other sewer CIP programs, and sometimes cannot be anticipated. The budget is based on average historical need.

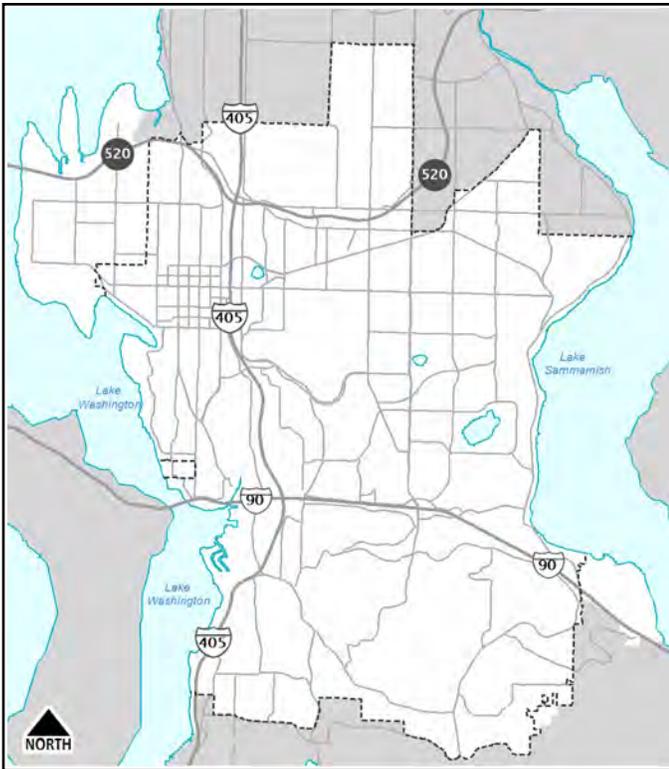
Environmental Impacts

The environmental impacts and the State Environmental Protection Act (SEPA) requirements are determined for each specific project, but are generally exempt.

Operating Budget Impacts

This project will have no impact on operating revenues (and/or) expenditures.

Project Map



Schedule of Activities

Project Activities	From - To	Amount
Project Costs	1990 - 2019	3,359,583
Total Budgetary Cost Estimate:		3,359,583

Means of Financing

Funding Source	Amount	
Utility Rates/Fees	3,359,583	
Total Programmed Funding:		3,359,583
Future Funding Requirements:		0

Comments

This project will be located throughout the service area.

S-52 East CBD Sewer Trunkline Improvements

Category: **Sewer**
 Department: **Utilities**

Status: **Approved and Begun**
 Location: **112th Ave SE: Bellefield P.S. to 500 ft north of SE 8th St.**

Programmed Funding

Programmed Funding	Appropriated To Date	FY 2013 Budget	FY 2014 Budget	FY 2015 Budget	FY 2016 Budget	FY 2017 Budget	FY 2018 Budget	FY 2019 Budget
2,894,045	532,243	1,096,742	1,265,060	-	-	-	-	-

Description and Scope

This project will replace approximately 1,600 feet of sewer pipe with larger diameter pipelines, to convey sewage generated from planned growth in the eastern side of downtown Bellevue, generally east of 110th Ave NE. This project may be adjusted to accommodate the construction alignment and schedule of the Sound Transit EastLink Light Rail.

PROJECT NEED: System Expansion

Rationale

The project is needed to provide sufficient sewer capacity to allow planned development in the eastern part of downtown. Sufficient capacity will reduce the likelihood and occurrence of sewer overflows which pollute surface waters and create potential health and safety hazards. The capacity is required now as every new development that drains to this pipe increases the risk of sewer overflows to Sturtevant Creek and Mercer Slough. To avoid conflicts and accommodate maintenance access, the pipes and associated facilities need to be located outside of the East Link light rail right-of-way. Final design and construction will be closely coordinated with Sound Transit.

The project is consistent with City Comprehensive Plan Policy UT-5, which indicates utility system capacity should not determine land use. The current wastewater system capacity would limit downtown redevelopment.

Environmental Impacts

An environmental determination will be made in conjunction with preliminary design of this project. SEPA review will be required. Construction impacts will be mitigated during construction; the additional capacity will reduce the potential for sewer overflow and consequent negative environmental impacts.

Operating Budget Impacts

This project will have no impact on operating revenues (and/or) expenditures.

Project Map



Schedule of Activities

Project Activities	From - To	Amount
Project Costs	2009 - 2014	2,894,045
Total Budgetary Cost Estimate:		2,894,045

Means of Financing

Funding Source	Amount
Utility Rates/Fees	2,894,045

Total Programmed Funding: 2,894,045
Future Funding Requirements: 0

Comments

S-53 Bellefield Pump Station Capacity Improvement

Category: **Sewer**
 Department: **Utilities**

Status: **Approved and Begun**
 Location: **1300 Blk 112th Ave SE, and 112th south toward BelWay**

Programmed Funding

Programmed Funding	Appropriated To Date	FY 2013 Budget	FY 2014 Budget	FY 2015 Budget	FY 2016 Budget	FY 2017 Budget	FY 2018 Budget	FY 2019 Budget
9,983,772	-	-	4,629,681	5,354,091	-	-	-	-

Description and Scope

This project will replace the existing Bellefield Pump Station and pressurized discharge pipe with larger facilities of sufficient capacity to meet the needs of planned growth in the eastern side of downtown Bellevue, generally east of 110th Ave NE. This project may be adjusted to accommodate the construction schedule of the Sound Transit EastLink Light Rail.

PROJECT NEED: System Renewal & Replacement; System Expansion

Rationale

The project is needed to provide sufficient sewer capacity to allow planned development in the eastern part of downtown. Sufficient capacity will reduce the likelihood and occurrence of sewer overflows which pollute surface waters and create potential health and safety hazards. The eventual need for this project was identified in Comprehensive Wastewater Plans ever since the downtown was re-zoned for high density development in the 1980s. Interim capacity improvements were made in 2002; more capacity is needed by 2015. The current station capacity of 2800 gpm was sufficient for 30 years of early downtown growth. The required ultimate capacity of 6800 gpm is needed to serve approximately 40,000 people who will live and work downtown. Without the project, sewage would overflow from the pump station into Mercer Slough, initially just during peak sewage flows such as major rain events, and eventually because daily flows would exceed the station capacity.

Benefited properties have paid connection charges toward this project since the 1980s, when they redeveloped. The intent is that downtown growth pay for their capacity portion of this project. The capacity required to serve the large tributary basin is paid by the entire rate base.

The project is consistent with City Comprehensive Plan Policy UT-5, which indicates utility system capacity should not determine land use. The current pump station capacity would limit downtown redevelopment.

Environmental Impacts

An environmental determination will be made in conjunction with preliminary design of this project. SEPA review will be required. Construction impacts will be mitigated during construction; the additional capacity will reduce the potential for sewer overflow and consequent negative environmental impacts.

Operating Budget Impacts

This project will have no impact on operating revenues. Operating expenditures may increase marginally for increased power costs due to anticipated increased sewage flows & higher capacity pumping equipment.

Project Map



Schedule of Activities

Project Activities	From - To	Amount
Project Costs	2014 - 2015	9,983,772
Total Budgetary Cost Estimate:		9,983,772

Means of Financing

Funding Source	Amount
Utility Rates/Fees	9,983,772

Total Programmed Funding: 9,983,772
Future Funding Requirements: 0

Comments

S-55 Relocate Sewer WSDOT I-405/SR 520 Braids

Category: **Sewer**
 Department: **Utilities**

Status: **Approved and Begun**
 Location: **Within and adjacent to the I-405 and SR 520 Rights of Way**

Programmed Funding

Programmed Funding	Appropriated To Date	FY 2013 Budget	FY 2014 Budget	FY 2015 Budget	FY 2016 Budget	FY 2017 Budget	FY 2018 Budget	FY 2019 Budget
291,000	286,000	5,000	-	-	-	-	-	-

Description and Scope

Relocate up to three wastewater pipes located within the state's right-of-way, to accommodate the state highway project.

PROJECT NEED: Regulatory Requirements (Mandate)

Rationale

Bellevue is legally obligated by State permits and agreements to relocate or modify its utilities to accommodate the State's project.

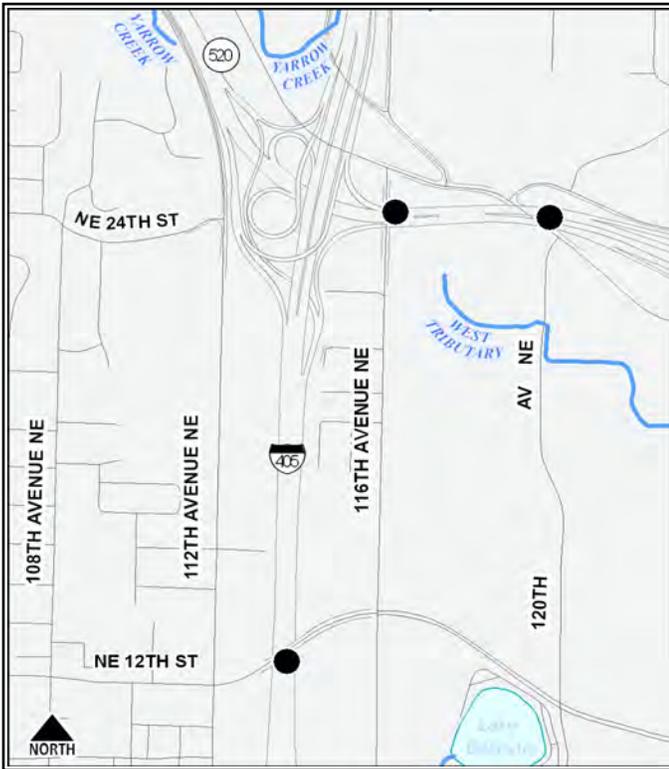
Environmental Impacts

Relocation of utilities is an incidental part of the State's highway project. Any environmental impacts will be identified and mitigation proposed as part of the environmental review for the entire WSDOT project.

Operating Budget Impacts

At this time, this project has no known impact on operating revenues and/or expenditures.

Project Map



Schedule of Activities

Project Activities	From - To	Amount
Project Costs	2009 - 2013	291,000
Total Budgetary Cost Estimate:		291,000

Means of Financing

Funding Source	Amount	
Utility Rates/Fees	291,000	
Total Programmed Funding:		291,000
Future Funding Requirements:		0

Comments

S-56 Relocate Sewer WSDOT 520 Expansion

Category: **Sewer**
 Department: **Utilities**

Status: **Approved and Begun**
 Location: **Within and adjacent to SR 520 Right of Way**

Programmed Funding

Programmed Funding	Appropriated To Date	FY 2013 Budget	FY 2014 Budget	FY 2015 Budget	FY 2016 Budget	FY 2017 Budget	FY 2018 Budget	FY 2019 Budget
1,575,050	-	1,040,000	535,050	-	-	-	-	-

Description and Scope

Relocate up to seven wastewater pipes located within the state's right-of-way, to accommodate the state highway project. Bellevue has four gravity mains, one pressurized force main, one lake line, and one siphon line within the vicinity of the WSDOT project.

PROJECT NEED: Regulatory Requirements (Mandate)

Rationale

Bellevue is legally obligated by State permits and agreements to relocate or modify its utilities to accommodate the State's project.

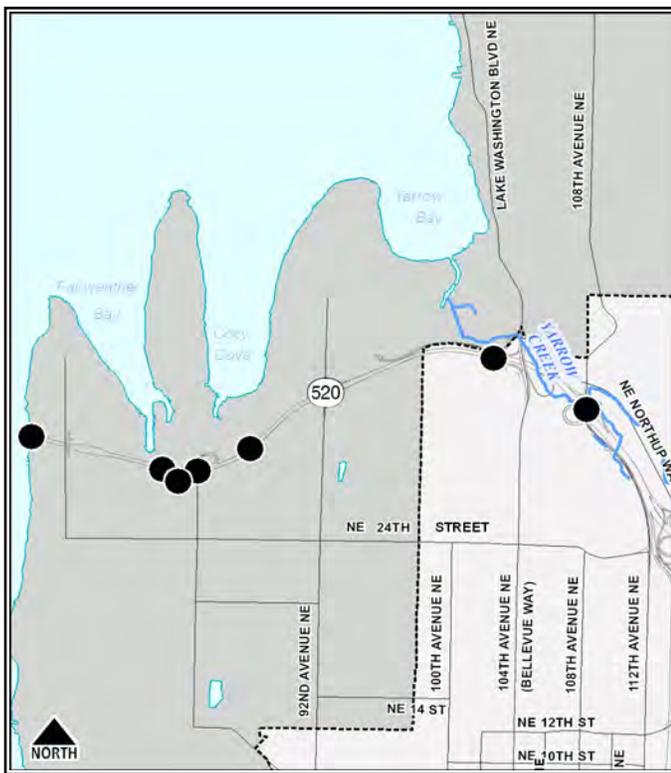
Environmental Impacts

Relocation of utilities is an incidental part of the State's highway project. Any environmental impacts will be identified and mitigation proposed as part of the environmental review for the entire WSDOT project.

Operating Budget Impacts

At this time, this project has no known impact on operating revenues and/or expenditures.

Project Map



Schedule of Activities

Project Activities	From - To	Amount
Project Costs	2013 - 2014	1,575,050

Total Budgetary Cost Estimate: 1,575,050

Means of Financing

Funding Source	Amount
Utility Rates/Fees	1,575,050

Total Programmed Funding: 1,575,050

Future Funding Requirements: 0

Comments

The locations identified are potential relocation sites.

S-58 Sewer Lake Line Replacement Program

Category: **Sewer**
 Department: **Utilities**

Status: **Ongoing**
 Location: **Along shoreline from Meydenbauer Beach Park to Grange I**

Programmed Funding

Programmed Funding	Appropriated To Date	FY 2013 Budget	FY 2014 Budget	FY 2015 Budget	FY 2016 Budget	FY 2017 Budget	FY 2018 Budget	FY 2019 Budget
3,397,628	924,000	1,194,090	651,310	118,977	122,182	125,598	128,994	132,477

Description and Scope

This program has two parts. 1) One-time replacement of approximately 1,150 feet of sewer pipe currently buried under Meydenbauer Bay with an on-shore buried pipe. Pipe replacement is being coordinated with the master plan for Meydenbauer Park development. 2) Ongoing assessment of the remaining 19+ miles of lakelines to determine remaining life expectancies, recommend maintenance practices to maximize the remaining life, and to develop design strategies, priorities, and replacement schedules. Additional replacements will occur in future years based on the outcome of this assessment.

PROJECT NEED: System Renewal and Replacement

Rationale

Bellevue has 19+ miles of sewer pipes buried under water near the shorelines of Lakes Washington and Sammamish, known as "lakelines." The pipes were built in the 1950s and 1960s to convey sewage primarily from lakefront properties. Their underwater location makes them difficult to access and maintain, which is increasingly problematic as they age. Pipe failures or blockages cause sewage releases directly into the lakes, threatening sensitive shoreline habitat, closing beaches and interrupting service to homeowners.

Meydenbauer Bay was chosen for the first construction project due to the high risk of failure based on 2007 condition assessment and pipeline maintenance experience. This is some of our oldest sewer lakeline, and is constructed primarily of Asbestos Cement (AC) pipe, which is known to deteriorate more rapidly than cast iron pipe (which comprises the bulk of in-lake pipe.) Recent video inspection of an on-shore portion near Meydenbauer Bay revealed a large hole in the crown of the pipe, and that cleaning operations have thinned the AC pipe walls and/ or broken off pieces of the pipe. The opportunity to replace the pipe on city-owned land minimizes environmental impacts and simplifies construction. The estimate presumes abandoning the existing pipe in place.

The long term program will include condition assessment to determine remaining life expectancies and maintenance recommendations, and will include preliminary engineering studies to identify and evaluate replacement options.

Environmental Impacts

Specific environmental impacts have not been determined. The project will require SEPA review.

Operating Budget Impacts

At this time, this project has no known impact on operating revenues and/or expenditures, since it is replacing an existing facility.

Project Map



Schedule of Activities

Project Activities	From - To	Amount
Project Costs	2009 - 2019	3,397,628
Total Budgetary Cost Estimate:		3,397,628

Means of Financing

Funding Source	Amount
Utility Rates/Fees	3,397,628

Total Programmed Funding: 3,397,628
Future Funding Requirements: 0

Comments

S-59 Add On-site Power at Sewer Pump Stations

Category: **Sewer**
 Department: **Utilities**

Status: **Approved and Not Begun**
 Location: **Various Wastewater Pumping Stations**

Programmed Funding

Programmed Funding	Appropriated To Date	FY 2013 Budget	FY 2014 Budget	FY 2015 Budget	FY 2016 Budget	FY 2017 Budget	FY 2018 Budget	FY 2019 Budget
1,227,559	-	-	190,981	196,312	201,601	207,237	212,841	218,587

Description and Scope

This project will add on-site power generation capability at three high priority pumping stations which currently rely on portable generators during power outages. Specific locations would be selected based on a study evaluating the likelihood and consequence of sewage overflows, giving consideration to volume of base flow versus wet well capacity; proximity to surface water bodies; geographic distance from portable equipment.

PROJECT NEED: Improved Level of Service

Rationale

Twenty-three of Bellevue's thirty-eight pump and lift stations rely on portable power generation equipment during extended power outages. As a result, staff and equipment are stretched to capacity during large storm events with massive losses of power, such as during and following the December 2006 windstorm.

On-site generation would more easily prevent sewage overflows, comply with DOE and DOH regulations, protect the City from violations of the NPDES Municipal Stormwater Permit, minimize closures of public and private beaches, minimize public health and safety risks, and free up staff for other storm response.

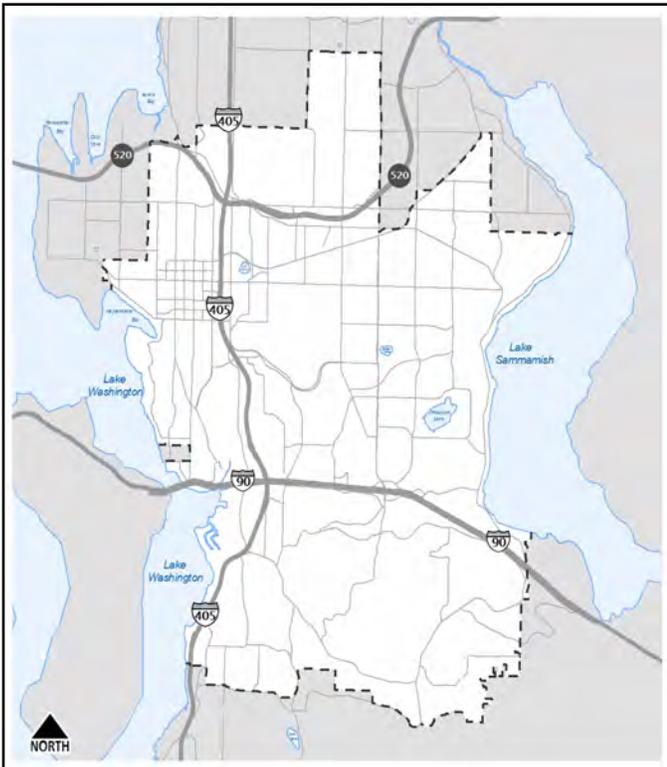
Environmental Impacts

No environmental impacts are anticipated. Equipment would be installed within existing facilities.

Operating Budget Impacts

At this time, this project has no known impact on operating revenues and/or expenditures.

Project Map



Schedule of Activities

Project Activities	From - To	Amount
Project Costs	2014 - 2019	1,227,559
Total Budgetary Cost Estimate:		1,227,559

Means of Financing

Funding Source	Amount	
Utility Rates/Fees	1,227,559	
Total Programmed Funding:		1,227,559
Future Funding Requirements:		0

Comments

S-60 Wilburton Sewer Capacity Upgrade

Category: **Sewer**
 Department: **Utilities**

Status: **Approved and Begun**
 Location: **North & West of the intersection of 114th Ave SE and SE 8th**

Programmed Funding

Programmed Funding	Appropriated To Date	FY 2013 Budget	FY 2014 Budget	FY 2015 Budget	FY 2016 Budget	FY 2017 Budget	FY 2018 Budget	FY 2019 Budget
5,322,300	-	1,743,540	1,794,057	1,784,703	-	-	-	-

Description and Scope

This project will replace approximately 2,000 feet of 12-inch diameter pipe with larger diameter pipe to provide sufficient capacity for anticipated upstream development. Design alternatives which achieve similar objectives will be evaluated during pre-design.

PROJECT NEED: System Expansion

Rationale

This project is needed to provide sufficient sewer capacity to allow planned re-development within the Wilburton area. This redevelopment will occur based on land-use changes from existing uses to office, retail, multi-family residential, and hotels, that will require more sewer capacity. Portions of the existing trunk are currently at capacity. Redevelopment that would increase sewer flows to this trunk line cannot be allowed until the trunk capacity is increased. Project costs will be recovered from benefiting properties as redevelopment occurs.

The project is consistent with City Comprehensive Plan Policy UT-5, which indicates utility system capacity should not determine land use. The current wastewater system capacity would limit Wilburton redevelopment.

Environmental Impacts

Environmental impacts would be evaluated during SEPA review of the project, but are not expected to be significant.

Operating Budget Impacts

At this time, this project has no known impact on operating revenues and/or expenditures.

Project Map



Schedule of Activities

Project Activities	From - To	Amount
Project Costs	2013 - 2015	5,322,300
Total Budgetary Cost Estimate:		5,322,300

Means of Financing

Funding Source	Amount
Utility Rates/Fees	5,322,300

Total Programmed Funding: 5,322,300
Future Funding Requirements: 0

Comments

S-61 Midlakes Pump Station Capacity Improvements

Category: **Sewer**
 Department: **Utilities**

Status: **Approved and Not Begun**
 Location: **Just north of Bel-Red Rd and west of 130th Ave NE**

Programmed Funding

Programmed Funding	Appropriated To Date	FY 2013 Budget	FY 2014 Budget	FY 2015 Budget	FY 2016 Budget	FY 2017 Budget	FY 2018 Budget	FY 2019 Budget
4,001,158	104,000	-	1,041,715	2,855,443	-	-	-	-

Description and Scope

This project will replace the existing Midlakes sewer pump station with a larger one, to provide capacity for planned growth in the Bel-Red Corridor through 2030.

PROJECT NEED: System Expansion

Rationale

The existing station can pump 800 gallons of sewage/minute (gpm), just sufficient for the light industrial zoning in the area it has served since its original construction in 1968. Planned development in the Bel-Red Corridor includes residential housing and retail shops which will generate much more sewage. A very limited amount of redevelopment can occur before the pump station capacity must be increased, to avoid significant risk of sewage overflow to the West Tributary of Kelsey Creek.

This project will increase the station capacity to 1,100 gpm. Construction is proposed for 2014 and 2015, although it may need to be accelerated to accommodate development proposals. Costs for the added capacity would be recovered through connection charges. Costs for replacing the existing capacity would not be collected from connection charges to re-developing properties, since the station would require significant retrofit to replace old facilities and equipment even without expansion.

Environmental Impacts

Operating Budget Impacts

Project Map



Schedule of Activities

Project Activities	From - To	Amount
Project Costs	2011 - 2015	4,001,158
Total Budgetary Cost Estimate:		4,001,158

Means of Financing

Funding Source	Amount
Utility Rates/Fees	4,001,158

Total Programmed Funding: 4,001,158
Future Funding Requirements: 0

Comments

S-63 Utility Facilities for 120th Ave NE Improvements (Segment 2)

Category: **Sewer**
 Department: **Utilities**

Status: **Approved and Begun**
 Location: **120th Ave NE: NE 8th St to NE 12th Street**

Programmed Funding

Programmed Funding	Appropriated To Date	FY 2013 Budget	FY 2014 Budget	FY 2015 Budget	FY 2016 Budget	FY 2017 Budget	FY 2018 Budget	FY 2019 Budget
1,169,914	84,864	-	535,050	550,000	-	-	-	-

Description and Scope

This project will design and construct new sewer pipe in 120th Ave NE in conjunction with street improvements, and where needed to provide sewer service for redevelopment of adjacent properties consistent with the Bel-Red Corridor Final Report. The project is broken down into segments. Segment 2 is from NE 8th St to NE 12th St and will construct approximately 700 feet of 15-inch or 18-inch pipe.

PROJECT NEED: System Expansion

Rationale

Much of 120th Avenue NE is currently without sewer facilities. Commercial and residential development along the street will require sewer facilities be constructed in the street, to obtain sewer service. Collaboration with the Transportation Department will occur to ensure the design is completed in coordination with the street design. This project will ensure sewer facilities are ready for construction when resources to construct this project are secured and approved.

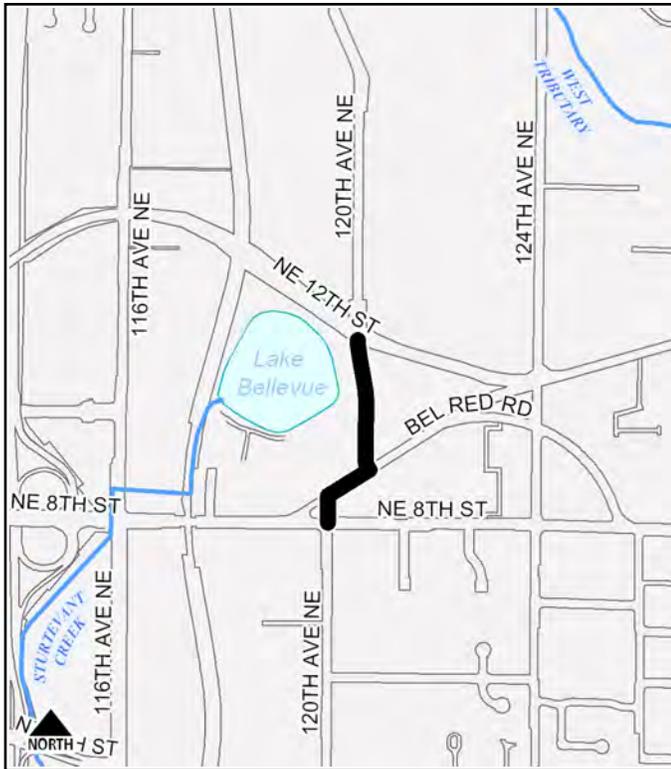
Environmental Impacts

The environmental impacts and State Environmental Protection Act (SEPA) requirements will be determined during the design process with the Transportation Department.

Operating Budget Impacts

Operating budget costs will increase due to the addition of new sewer main. Additional operating costs will be incremental depending on the length and location of new sewer main, and can be approximated at \$0.90/LF.

Project Map



Schedule of Activities

Project Activities	From - To	Amount
Project Costs	2011 - 2015	1,169,914
Total Budgetary Cost Estimate:		1,169,914

Means of Financing

Funding Source	Amount
Utility Rates/Fees	1,169,914

Total Programmed Funding: 1,169,914
Future Funding Requirements: 0

Comments

S-66 Sewer System Pipeline Replacement

Category: **Sewer**
 Department: **Utilities**

Status: **New**
 Location: **Various locations throughout the Sewer Utility's service area**

Programmed Funding

Programmed Funding	Appropriated To Date	FY 2013 Budget	FY 2014 Budget	FY 2015 Budget	FY 2016 Budget	FY 2017 Budget	FY 2018 Budget	FY 2019 Budget
7,918,700	-	1,040,000	1,070,100	1,100,000	1,129,700	1,161,300	1,192,700	1,224,900

Description and Scope

This program will replace sewer pipe throughout the service area. The current budget is estimated to replace sewer pipe at a rate of 0.5 to 0.75 miles per year. The pipes replaced would be those where life cycle cost analyses indicate replacement is a more economical solution than continuing to make point repairs. Replacement methods may include trenchless rehabilitation techniques such as cured-in-place pipe, and pipe bursting, and/or open trench replacement. This program will compliment S-24, Sewer System Pipeline Rehabilitation, which focuses on making point repairs to extend the useful life of sewer pipes. Adding this program is consistent with the Asset Management Program strategy to meet expected and required customer service levels at the lowest life cycle cost.

PROJECT NEED: System Renewal and Replacement

Rationale

Many sewer pipes are over 60 years old, approaching their useful life. Many pipes have required multiple repairs to prevent new and/or respond to reported sewage overflows. The cost to repair and maintain aged, cracked pipes and keep them free of roots and other debris eventually exceeds the cost to replace the pipeline. We have identified several miles of sewer pipe that are candidates for rehabilitation/replacement. As the system ages more will be identified. The budget for S-24 cannot support the cost of pipe replacement and keep up on the needed point repairs. As a result, the backlog of sewer defects has significantly increased.

Although this program's funding levels do not provide the resources for a long term sustainable level of pipeline replacement, it allows Bellevue Utilities to replace some pipelines that have clearly reached the end of their useful economic life. The proposed replacement rate of up to 0.75 miles of pipe per year implies that sewer pipe system-wide would need to last an average of more than 650 years, much longer than the EPA's recommendation of 100 years. While sufficient for now, the annual program budget will eventually need to increase to meet asset management program goals.

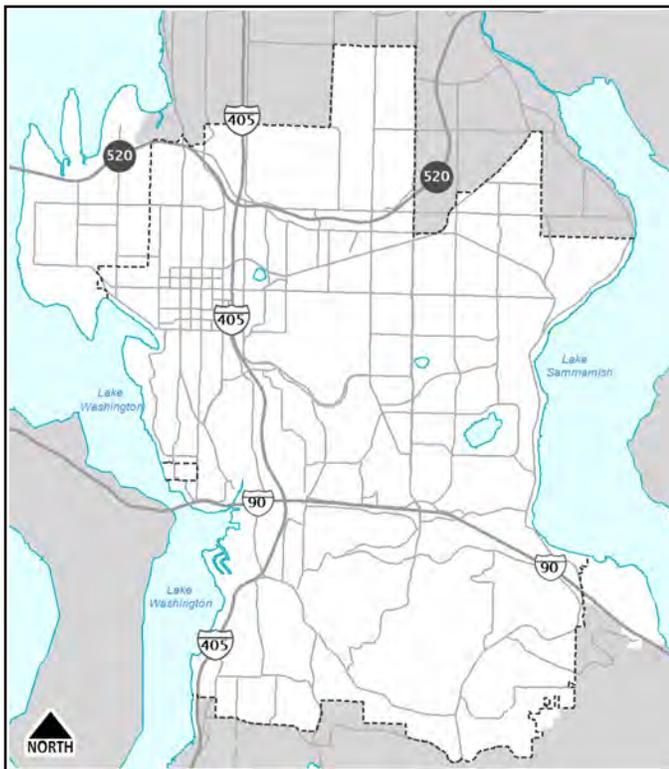
Environmental Impacts

The environmental impacts and the State Environmental Protection Act (SEPA) requirements will be determined for each replacement segment, but they are generally SEPA exempt.

Operating Budget Impacts

This project will have no impact on operating revenues (and/or) expenditures, since it replaces existing facilities.

Project Map



Schedule of Activities

Project Activities	From - To	Amount
Project Costs	2013 - 2019	7,918,700
Total Budgetary Cost Estimate:		7,918,700

Means of Financing

Funding Source	Amount
Utility Rates/Fees	7,918,700
Total Programmed Funding:	7,918,700
Future Funding Requirements:	0

Comments

Appendix F

Model Results

Appendix F

Existing Trunk Sewers

Name	Length (ft)	Basin 1		Capacity ¹ (gpm)
		Diameter (in)	Slope (%)	
1142	488	8	0.3791	334
1153	125	10	0.152	383
1154	150	10	0.1467	376
1155	215	10	0.0558	232
1156	130	8	0.4385	360
1161	27	12	1.0001	1599
1170	330	8	6.6815	1404
1172	198	10	6.9256	2585
1173	281	12	2.6344	2595
1189	338	10	0.5	695
1191	428	10	5.1165	2222
1204	330	10	0.5	695
1218	330	10	0.4788	680
1228	330	10	6.8158	2565
1229	330	10	0.4546	662
1237	413	8	0.9201	521
1238	402	10	0.2811	521
1246	339	10	0.3392	572
1247	412	10	0.3034	541
1251	174	8	0.4598	368
1274	177	8	0.4068	346
1275	26	8	0.4231	353
1305	160	8	0.45	364

Basin 2				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
2177	334	10	0.3743	601
2181	293	12	0.3072	886
2182	306	12	0.2909	862
2184	306	12	0.098	501
2185	436	8	0.5	384
2186	438	8	0.6416	435
2187	122	8	1.3362	628
2189	310	8	1.7745	723
2190	40	12	0.375	979
2307	320	8	1.3407	629

Basin 3*				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)**
199	248.7	6	0.45	169
434928	105	6	0.58	192
179	130.7	6	0.83	230
121	48.6	8	0.31	303
122	291.8	8	0.4	344
247	85.1	8	0.4	344
123	307.4	8	0.4	344
173	204.8	8	0.42	352
164	152.7	8	0.47	373
245	126.6	8	0.48	377
434932	14.7	6	2.4	391
255	187	8	0.55	403
197	199.5	6	2.68	413
306	240.3	8	0.58	414
208	102.7	6	2.77	420
296	95.8	6	2.77	420
176	293.2	6	3.05	441
198	137.8	6	3.38	464
163	100.1	8	0.8	486
253	152.8	8	0.86	504
252	238.8	8	0.89	513
194	100.9	6	4.4	530
195	101.3	6	4.4	530
196	100	6	4.4	530
146	181.7	6	4.5	536
172	244.1	8	1	544
157	202.7	8	1.3	620
158	198.5	8	1.3	620

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 3*			Capacity ¹ (gpm)**
		Diameter (in)	Slope (%)		
160	246.7	8	1.3	620	
192	108.4	6	6.19	628	
193	100.7	6	6.19	628	
237	391.1	8	1.85	740	
148	61.5	8	1.9	750	
205	158.4	6	9.15	764	
171	349.3	8	2.08	784	
233	393	8	2.53	865	
170	426.5	8	2.62	880	
236	280.3	8	2.86	920	
226	410.6	8	3.32	991	
224	405.8	8	3.47	1013	
191	221.7	8	3.56	1026	
174	189.1	8	3.77	1056	
246	358.8	8	3.8	1060	
125	414.1	8	3.8	1060	
124	353	8	3.8	1060	
165	260.2	8	4.23	1118	
225	412.2	8	4.82	1194	
138	332.7	8	5	1216	
238	169.8	8	5.1	1228	
130	383.1	8	5.36	1259	
129	124	8	5.36	1259	
150	315.3	8	5.71	1299	
235	412.3	8	5.74	1303	
161	168.8	8	6.24	1358	
249	210.3	8	6.47	1383	
136	96.5	8	6.65	1402	
200	230.4	8	7	1439	
127	117.2	8	7.01	1440	
159	343.2	8	8.4	1576	
241	172.9	8	8.8	1613	
232	228.8	8	9.57	1682	
128	189.8	8	9.84	1706	
248	312.3	8	9.95	1715	
137	301	8	10.47	1760	
155	175.4	8	10.98	1802	
149	304.7	8	11.26	1825	
168	356.6	8	11.47	1842	
156	220.7	8	13.4	1991	
147	332.6	8	13.51	1999	
120	141.2	8	13.76	2017	

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 3*		Capacity ¹ (gpm)**
		Diameter (in)	Slope (%)	
145	277.5	8	96.4	5339
204	210.5	6	999.99	Unknown
183	408	8	999.99	Unknown
184	84.5	8	0	Unknown
242	451.7	8	999.99	Unknown
240	34.2	8	0	Unknown
234	229.9	8	0	Unknown
78665	177.9	8	999.99	Unknown
254	241	8	999.99	Unknown
258	70.2	6	0	Unknown
243	391.9	8	999.99	Unknown
221	390.8	8	0	Unknown
209	372.8	8	0	Unknown
213	295.6	8	999.99	Unknown
223	361.8	8	0	Unknown
231	30.1	6	999.99	Unknown
227	31	6	999.99	Unknown
228	104.3	6	999.99	Unknown
229	95.4	6	999.99	Unknown
230	115.1	6	999.99	Unknown
219	353.6	8	999.99	Unknown
214	96.8	8	0	Unknown
220	403.7	8	999.99	Unknown
211	138.1	8	0	Unknown
212	155.7	8	0	Unknown
210	203.8	8	0	Unknown
188	99.2	8	0	Unknown
185	248.3	8	0	Unknown
189	290.9	8	0	Unknown
187	192.7	8	0	Unknown
190	153.3	8	999.99	Unknown
201	145	6	999.99	Unknown
186	150.2	8	0	Unknown
275	284.3	8	999.99	Unknown
143	150	6	999.99	Unknown
142	207.2	6	999.99	Unknown
274	126.6	6	999.99	Unknown
141	120.2	8	999.99	Unknown
281	47.4	8	999.99	Unknown
135	149.6	8	999.99	Unknown
177	232.2	8	0	Unknown
180	43.2	6	999.99	Unknown

- Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 3*		
		Diameter (in)	Slope (%)	Capacity ¹ (gpm)**
181	65.4	8	999.99	Unknown
182	311.2	8	999.99	Unknown
169	36.9	8	999.99	Unknown
144	107.6	6	999.99	Unknown
166	86.1	8	0	Unknown
119	62.1	8	999.99	Unknown
108	109	6	999.99	Unknown
107	100.7	6	999.99	Unknown
314	239	8	999.99	Unknown
309	103	6	0	Unknown
310	26	6	0	Unknown
103	205.6	8	0	Unknown
106	302.7	6	0	Unknown
303	69.7	6	0	Unknown
126	187.3	8	0	Unknown
140	112.1	8	0	Unknown
277	89.6	8	0	Unknown
153	126.2	8	0	Unknown
154	149.9	8	0	Unknown
293	45	6	0	Unknown
305	45.8	8	0	Unknown
215	334.8	8	0	Unknown
298	47.9	6	0	Unknown
222	179.3	8	0	Unknown
295	199	6	0	Unknown
178	225.7	8	0	Unknown
257	82.8	6	0	Unknown
78825	23.6	6	0	Unknown
78827	338.8	6	0	Unknown
81401	65	6	0	Unknown
239	108.5	8	0	Unknown
81402	206.9	8	0	Unknown
167	185.9	8	0	Unknown
84615	119.6	8	999.99	Unknown
85252	21.3	8	0	Unknown
430089	105	8	0	Unknown
430298	32	8	0	Unknown
430650	241.2	8	0	Unknown
434086	23.3	0	0	Unknown
455546	86	6	0	Unknown

*: Basin 3 sewers are not modeled. Information shown is the best available from the City’s as-built data.

** : Unknown capacities given for pipes with unknown slopes or diameters

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 4		Capacity ¹ (gpm)
		Diameter (in)	Slope (%)	
4101	203	8	1.074	563
4102	336	8	4.7673	1186
4104	116	8	1.0776	564
4105	301	8	1.03	551
4106	223	8	4.0616	1095
4107	351	8	3.9718	1082
4114	74	12	7.3168	4325
4115	37	21	0.1081	2338
4116	80	21	0.3125	3976
4117	62	10	5.7352	2353
4118	300	10	1.4001	1162
4119	298	10	2.6519	1600
4120	52	10	1.731	1292
4121	209	10	3.7922	1913
4122	236	8	2.7807	906
4123	410	8	6.3493	1368
4124	264	8	2.7814	906
4125	375	8	4.0032	1087
4126	288	8	10.061	1723
4127	94	8	9.7913	1699
4128	380	8	1.7898	727
4129	166	8	0.7832	481
4131	215	8	0.7907	483
4132	315	21	0.0794	2004
4146	250	8	7.5817	1495
4148	436	21	0.1009	2259
4159	436	21	0.1009	2259
4176	438	21	0.1005	2254
4192	503	21	0.1014	2265
4204	481	21	0.0998	2247
4219	169	8	0.4024	345
4220	354	8	3.0806	953
4221	288	8	0.3993	343
4228	322	8	0.4596	368
4230	340	21	0.1	2249
4235	195	8	6.2738	1360
4237	321	8	12.8781	1949
4238	155	8	8.9061	1621
4239	149	8	8.9076	1621
4244	176	21	0.0966	2210
4251	205	8	0.6342	432
4252	265	8	0.9057	517

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 4		Capacity ¹ (gpm)
		Diameter (in)	Slope (%)	
4263	291	21	0.0997	2245
4264	275	8	3.5295	1020
4265	208	21	0.101	2260
4276	502	21	0.0996	2244
4281	275	8	3.5295	1020
4282	476	8	3.1402	962
4290	489	21	0.1022	2274
4306	176	8	3.9178	1075
4316	146	8	4.0444	1092
4317	256	8	4.1403	1105
4320	333	24	0.0811	2891
4326	146	8	3.9208	1075
4333	165	24	0.0788	2850
4334	90	24	0.0556	2393
4335	115	24	0.0957	3140
4336	83	24	0.0964	3152
4337	241	24	0.2448	5024
4338	333	24	0.1381	3774
4339	300	24	0.1233	3566
4341	194	24	0.0825	2916
4345	126	24	1.2064	1153
4346	76	24	0.0263	1647
4347	16	24	1.8753	3905
4355	269	8	3.0721	952
4356	267	10	2.6226	1591
4358	95	10	0.9264	945
4361	155	10	0.9226	944
4363	113	10	1.2921	1117
4364	157	8	2.8674	920
4373	290	10	3.4503	1825
4374	197	10	1.2641	1104
4375	180	10	1.9003	1354
4380	332	10	0.3012	539
4381	32	10	0.6563	796
4387	378	10	0.3122	549
4388	119	8	6.7379	1410
4389	270	8	8.9505	1625
4390	270	8	7.118	1449
4391	190	8	5.5189	1276
4439	190	8	2.4744	854
4474	276	8	12.1022	1889
4499	64	24	0.3906	6346

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 4		Capacity ¹ (gpm)
		Diameter (in)	Slope (%)	
4540	340	8	4.7406	1182
4544	275	8	6.0108	1332
4545	267	8	3.7142	1047
4547	403	8	9.9975	1717
4549	270	8	6.6815	1404
4560	178	8	4.8935	1201
4563	376	8	6.4335	1378
4564	242	8	6.4348	1378
4565	85	8	2.0004	768
4594	99	21	0.0606	1751
4617	27	24	3.4465	8850
4619	172	24	0.1047	3285
4579	400	12	0.775	1408
4578	152	12	1.3817	1880
4577	248	12	2.9852	2763
4576	250	12	4.5246	3401
4575	275	12	1.7821	2135
4574	158	12	2.5325	2545
4573	105	12	2.6676	2612
4572	215	12	2.0935	2314
4571	400	12	0.45	1073
4570	402	12	0.4478	1070
4569	117	12	0.5128	1145
4568	119	12	0.5882	1226
4618	202	12	1.5844	2013
4615	24	12	8.7415	4728
4406	61	8	3.0014	941
4405	67	8	0.8209	492
4404	268	8	0.6008	421
4402	507	8	0.3984	343

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 5				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
5119	241	8	7.1803	1455
5120	179	8	1.218	599
5121	157	8	1.2485	607
5122	430	8	8.8437	1615
5135	120	8	8.7415	1606
5244	378	8	6.4339	1378
5251	130	8	5.3538	1257
5252	206	8	10.0257	1720
5257	17	8	9.4537	1670
5269	291	8	1.3988	642
5581	235	8	6.5288	1388
5580	45	8	1.1112	572

Basin 6				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
6110	400	8	0.585	420.39
6157	410	12	3.3409	922.84
6180	302	15	0.3808	789.16
6181	95	12	0.8	430.3
6182	93	12	0.6774	316.16
6183	264	12	2.1331	335.48
6184	471	12	1.0638	649.28
6185	329	12	0.7082	345.74
6186	79	12	0.9874	588.98
6187	181	10	16.2318	919.82
6192	378	8	0.5688	414.53
6196	411	12	0.691	329.29
6197	514	24	0.4261	627.72
6198	470	24	0.5192	315.94
6201	157	8	16.0764	203.78
6205	158	8	19.1386	404.53
6213	230	10	0.3783	598.38
6226	433	10	0.291	524.84
6231	276	10	1.9098	344.54
6262	51	10	2.1377	422.53
6280	81	10	6.6691	512.56
6281	463	12	0.2203	750.56
6282	350	12	0.2257	759.72
6376	350	8	0.4	347.62
6387	190	10	5.4502	271.37
6389	261	10	3.5808	841.09

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 6				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
6390	169	10	2.1603	430
6391	124	10	1.5002	191.66
6392	110	10	1.5547	213.14
6396	319	10	6.9193	559.26
6462	80	12	0.3375	928.99

Basin 7				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
7169	337	8	3.2599	981
7179	330	8	2.2733	819
7749	157	8	0.6306	431
7191	316	8	3.9176	1075
7199	140	8	0.95	529
7207	150	8	8.814	1612
7208	320	8	0.9125	519
7245	230	8	1.0348	552
7222	248	8	1.4437	653
7244	272	8	1.4193	647
7228	432	8	3.0106	942
7234	473	8	3.9566	1080
7242	472	8	3.914	1074
7251	420	8	0.9691	535
7253	372	8	5.9757	1328
7741	16	8	1.0001	543
7392	168	8	0.6488	437
7659	212	8	0.901	516
7391	282	8	3.1576	965
7402	132	8	6.3766	1371
7648	265	10	0.551	729
7424	390	8	3.5689	1026
7410	109	18	0.2844	2514
7672	196	18	0.0408	953
7431	117	8	3.2496	979
7423	400	8	4.1636	1108
7407	337	18	0.1424	1779
7406	489	18	0.1063	1537
7422	315	18	0.1397	1762
7438	500	18	0.162	1898
7448	307	18	0.1368	1744
7447	336	18	0.1696	1942
7217	500	18	0.164	1909
7223	466	18	0.1567	1866

- Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 7				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
7229	446	12	1.2109	1760
7243	461	12	4.0815	3231
7252	447	12	3.779	3109
7254	312	12	7.6279	4416
7258	308	18	1.091	4924
7809	124	18	1.1372	5028
7541	221	14	3.7674	4685
7754	315	14	3.9141	4776
7770	309	14	4.8211	5300
S-9	307.4	18	1.4933	5761
7789	214	8	0.958	532
7788	36	8	1.2501	607
7471	249	8	1.1165	574
7477	13	8	1.1539	583
7478	92	8	1.9025	749
7479	136	8	0.5441	401
7480	33	8	1.2728	613
7481	58	8	0.7759	478
7483	209	8	0.5742	412
7492	390	8	1.7875	726
7493	221	8	2.0638	780
7494	102	8	1.765	722
7689	256	8	1.1329	578
7690	118	8	1.4408	652
7691	81	8	2.2228	810
7692	123	8	6.7634	1412
7693	25	8	0.4	343
7694	26	8	0.3846	337
7695	49	8	0.2041	245
7696	25	8	3.2016	972
7697	369	8	0.6504	438
7698	282	8	0.993	541
7699	42	8	0.9524	530
7700	62	8	17.1837	2251
7701	186	8	0.4301	356
7702	197	8	0.5076	387
7703	34	8	0.2941	295
7704	63	8	1.0636	560
7496	171	8	1.234	603
7705	300	8	1.1701	587
7495	325	8	3.3835	999
7507	311	8	3.4619	1010

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 7			Capacity ¹ (gpm)
		Diameter (in)	Slope (%)		
7525	311	8	3.5779	1027	
7524	488	8	1.0021	544	
7537	97	12	2.0107	2268	
7829	155	12	6.4391	4058	
7544	200	8	0.4	343	
7828	122	12	2.5418	2549	
7540	300	15	0.4733	1995	
7542	98	15	2.1433	4245	
7769	77	15	1.5586	3620	
7570	242	8	0.3884	338	
7569	245	8	0.5306	396	
7568	212	15	1.1605	3123	
7832	138	15	1.2682	3265	
7581	307	12	5.4707	3740	
7593	7.7	12	1.4287	1911	
7751	307	8	1.176	589	
7433	324	8	2.8036	909	
7451	318	8	2.9636	935	
7458	38	8	0.7632	474	
7750	289	8	1.2181	599	
7782	32	8	1.719	712	
7786	9	8	3.3352	992	
7430	162	8	1.0247	550	
7429	324	8	1.9201	753	
7449	356	8	1.8964	748	
7646	271	8	1.5205	670	
7647	331	8	1.4261	649	
7450	370	8	1.4055	644	
7464	320	8	2.6916	891	
7465	34	15	0.7647	2535	
7826	140	15	3.5666	5476	
7825	98	15	3.032	5049	
781863	259	15	2.8081	4859	
7824	42	15	1.9528	4052	
781861	247	15	2.1665	4268	
7823	424	15	1.7762	3864	
7530	190	8	2.0215	772	
7487	30	8	1.3335	627	
7486	288	8	1.0035	544	
7497	400	8	1.2351	604	
782601	400	8	0.34	317	
7821	165	15	2.8436	4889	

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 7				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
7820	125	15	5.8982	7041
7819	247	15	2.9203	4955
7818	215	15	3.8447	5685
7512	331	8	3.5037	1017
7528	192	10	0.875	919
7527	22	10	21.771	4584
7817	298	18	4.5853	96
7816	215	18	1.5956	5955
7815	164	18	0.9452	4584
7814	32	18	7.4582	2876
7571	198	8	10.1735	1732
7558	300	10	3.1215	1736
7556	400	15	0.205	1313
7585	391	15	0.2455	1437
7599	39	12	8.8031	4745
7505	220	8	0.7909	483
7518	237	8	0.6118	425
7634	255	8	0.4118	349
7846	80	8	1.0626	560
7633	275	8	2.6191	879
7536	300	8	3.9431	1078
7553	253	8	2.6215	879
7635	425	8	1.7791	724
7564	295	8	6.2051	1353
7850	68	8	1.8827	745
7535	127	8	2.5914	874
7720	193	8	2.6071	877
7552	112	8	2.2952	823
7831	153	8	2.5498	867
7204828	67	8	2.1796	802
7426130	11	12	1.3638	1867
7426125	40	18	3.3268	8599
7426134	306	18	1.425	5628
7310	401	12	2.517	2537
7325	30	8	1.0001	543
7326	167	12	1.2696	1802
7327	217	12	1.461	1933
7735	57	12	1.1404	1708
7338	324	12	1.3952	1889
7339	107	12	1.159	1722
7352	188	12	1.1809	1738
7354	244	12	1.3116	1831

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 7				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
7365	295	12	0.2373	779
7375	210	12	1.3287	1843
7382	111	18	0.1171	1613
7801	390	18	0.1231	1654
7395	275	18	0.1782	1990
7412	220	18	0.05	1054
7411	292	18	0.2295	2258
7413	316	18	0.2152	2187
7414	27	18	0.2222	2223
7427	229	8	0.4454	362
7417	48	8	0.3958	342
7418	156	8	10.6627	1773
7415	41	18	2.0248	6709
7774	352	18	0.3466	2776
7425	237	18	1.9244	6540
7434	163	8	5.7642	1304
7435	34	8	0.7647	475
7734	54	8	0.5926	418
7733	43	8	0.7907	483
7732	194	8	0.5412	400
7753	250	8	6.1395	1346
7752	160	8	3.3456	993
7731	152	18	1.7437	6226
7797	179	8	1.1006	570
7842	137	8	0.1022	174
7426	310	8	0.3936	341
7436	141	8	4.7429	1183
7442	23	8	6.1857	1351
7441	257	18	1.2608	5294
7455	265	18	1.7776	6286
7459	218	8	8.4474	1578
7460	272	18	0.6397	3771
7467	407	18	1.8676	6443
7474	315	18	1.7463	6230
7488	299	18	1.6424	6042
7428	293	6	0.669	206
7437	216	8	1.4261	649
7443	65	8	0.4462	363
7444	154	8	0.526	394
7445	224	8	0.6607	441
785161	409	8	0.5819	414
7629	205	8	0.6634	442

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 7				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
7630	31	8	0.8065	488
7628	260	8	0.4808	377
7627	70	8	6.2263	1355
7463	301	8	2.1035	788
7462	351	8	4.0318	1091
7461	268	8	0.6567	440
7468	100	8	0.66	441
7469	320	8	1.5689	680
7475	320	8	2.1505	796
7489	320	8	1.5814	683
7470	350	8	2.2263	810
7476	16	12	2.4382	2497
7719	344	12	0.6715	1310
7490	343	12	1.1079	1683
7504	217	12	4.2388	3292
7503	112	12	10.74	5241
7502	320	12	4.8651	3527
7500	7	12	1.7145	2094
7501	329	18	3.3971	8690
7515	330	18	4.6748	194
7516	262	8	3.1619	966
7520	230	8	2.8359	915
7521	294	8	2.5008	859
7522	142	8	5.8905	1318
7533	29	8	3.9341	1077
7519	160	18	1.9379	6563
7790	300	18	1.8336	6384
7551	165	8	9.1287	1641
7550	12	8	3.5021	1016
7549	218	24	0.2248	4814
7561	305	24	2.9291	7378
7559	61	24	1.1804	1032
7575	223	10	0.3812	606
7562	256	12	0.3984	1009
7827	92	12	0.4783	1106
7560	225	12	6.0645	3938
7532	92	8	2.8163	911
7499	340	8	2.804	909
7513	169	8	9.1385	1642
7514	150	8	1.0001	543
7531	150	8	3.609	1032
7529	181	8	2.0999	787

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 7				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
7539	274	10	0.5365	720
7548	235	10	0.9362	950
7557	40	12	1.2751	1806
7812	12	12	12.0873	5560
7813	308	24	1.4872	2382
7508	138	8	2.537	865
7509	331	8	4.2001	1113
7510	426	8	3.7538	1052
7538	428	8	4.6663	1173
7526	176	8	4.9777	1212
7840	175	8	4.5361	1157
7545	116	8	6.8088	1417
7546	311	8	2.2192	809
7554	10	8	24.9414	2712
7555	375	24	0.2027	4571
7583	123	24	0.561	7605
7584	312	24	0.2019	4563
S-21	104.4	18	4.3047	9782
S-20	388.1	24	0.9534	9914
7594	60	12	5.2238	3655
7596	20	18	1.5002	5775
7595	404	18	1.3764	5531
7608	389	24	0.09	3046
7623	293.4	24	1.9909	4327
S-30	18.6	24	7.6568	8096
S-10	384.6	24	3.3508	8586
S-11	272.9	24	1.9718	4258
S-12	46	42	0.1522	7615
S-13	74.9	42	0.0935	3805
S-14	78.2	42	0.1023	4443
S-15	377.7	42	0.1006	4323
S-15a	10.5	30	2.0004	6038
S-16	12.8	42	0.1563	7850
7621	55	24	2.2187	5124
S-20a	10	8	130.1661	6196
7598	55.4	18	6.4756	1998
S-22	86	18	18.5678	316
7564a	13	12	6.2429	3995
7461a	10	8	4.0032	1087

- Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 8				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
8118	256	8	2.1919	804
8119	109	8	0.1284	195
8120	97	8	3.6106	1032
8143	360	8	9.3349	1659
8153	450	8	12.1827	1843
8177	257	8	0.3385	316
8178	290	8	0.5931	418
8179	10	8	19.7757	2415
8180	81	15	2.3463	4441
8181	45	14	0.6667	1971
8187	231	12	5.976	3909
8188	75	15	1.3335	3348
8195	144	15	1.3473	3365
8196	244	15	1.2255	3210
8197	50	15	1.5402	3598
8210	501	15	1.1877	3160
8272	21	12	3.3352	2920
8273	157	12	3.3713	2936
8777	291	14	0.6495	1945

Basin 9				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
9230	218	8	0.2523	273
9233	247	8	4.4944	1151
9237	58	8	6.8783	1424
9238	288	8	3.5021	1016
9240	355	8	5.0063	1215
9251	176	10	8.3356	2836
9252	35	10	5.4366	2290
9256	300	8	0.7	454
9257	158	8	0.7152	459
9258	266	10	7.8512	2753
9259	158	10	3.0014	1702
9260	25	10	0.004	62
9303	362	10	2.9239	1680
9304	319	10	2.7628	1633
9305	320	10	3.5335	1847

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 10		Capacity ¹ (gpm)
		Diameter (in)	Slope (%)	
10119	152	10	0.1974	436
10122	140	10	0.4429	654
10189	39	10	0.359	589
10190	298	10	0.3893	613
10194	58	8	1.7071	710
10195	324	8	1.7009	708
10197	340	6	2.7628	419
10201	301	8	2.3395	831
10205	243	8	0.4033	345
10206	443	8	0.4402	360
10218	304	10	0.5	695
10222	206	6	1.2282	279
10223	272	6	2.832	424
10224	290	8	2.594	875
10225	100	6	1.0201	254
10226	157	8	4.8912	1201
10228	342	8	2.4949	858
10229	153	10	0.451	660
10230	160	10	0.425	640
10235	264	10	2.5614	1572
10236	290	8	3.858	1067
10238	264	10	2.6752	1607
10241	7	8	0.4	343
10243	353	8	0.4646	370
10244	347	8	2.0062	769
10537	236	10	0.3644	593
10556	20	10	1.1501	1053
10557	25	10	2.0404	1403
10558	13	8	1.5386	674
10561	230	8	1.2349	604
10562	263	15	3.0318	5048
10563	254	15	0.7481	2508
10575	61	8	1.82	733
10576	311	10	1.2831	1113
10577	264	8	1.5191	669
10578	247	8	2.438	848
10579	231	8	2.0177	771
10580	278	15	0.6079	2261
10581	211	15	0.4645	1976
10582	179	10	0.3296	564
10583	133	15	0.7594	2527
10584	265	15	2.8804	4921

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 10			Capacity ¹ (gpm)
		Diameter (in)	Slope (%)		
10591	25	8	1.5202	670	
10611	116	15	1.4484	3489	
10612	33	15	4.8542	6388	
10614	111	10	2.0635	1411	
10615	46	8	2.4573	851	
10616	16	8	2.6259	880	
10617	317	15	1.7069	3788	
10621	259	10	0.112	329	
10628	171	10	2.5681	1574	
10629	14	10	6.1545	2437	
10630	70	10	2.4293	1531	
10636	262	8	1.588	684	
10641	49	8	3.676	1041	
10650	12	12	0.75	1385	
10652	104	6	1.4328	301	
10653	273	8	1.0074	545	
10661	53	8	0.9812	538	
10657	69	8	2.7692	904	
10676	197	8	3.8709	1069	
10637	84	8	0.5	384	
10638	26	8	0.5	384	
10247	149	8	3.6064	1031	
10586	266	8	3.6151	1033	
10249	415	8	3.3561	995	
10240	179	15	5.0623	6523	
10187	108	8	5.0063	1215	
10188	91	8	7.2497	1462	
10552	59	8	0.4915	381	
10672	109	12	0.5046	1136	
10671	306	12	0.6798	1318	
10670	159	12	0.4277	1046	
10669	93	10	0.2151	456	
10539	89	10	2.0004	1389	
1081825	204	10	2.0004	1389	
10212	45	12	2.0004	2262	
108469	194	12	0.3918	1001	
10213	194	8	4.5201	1169	
10215	72	8	2.4174	855	
10216	139	8	3.8446	1078	
10627	225	8	1.8981	757	
10217	78	8	1.8465	747	
10675	151	8	1.8944	757	

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 10			Capacity ¹ (gpm)
		Diameter (in)	Slope (%)		
10245	31	8	3.1629	978	
10246	79	15	3.3817	5332	
10255	260	15	0.7962	2587	
10254	267	18	0.2996	2581	
10253	400	21	0.3	3895	
10252	133	18	0.3008	2586	
10251	216	18	0.2269	2246	
10250	399	18	0.4962	3321	
10574	56	8	1.0715	562	
10573	100	8	2.8712	920	
10572	292	8	6.3311	1367	
10571	192	8	4.6247	1168	
10261	18	8	4.616	1167	
10262	400	18	2.1955	6986	
10274	341	18	2.2733	7109	
10679	84	8	2.2625	817	
10258	248	8	2.5775	872	
10272	231	8	2.0004	768	
10268	266	8	4.2859	1124	
10270	135	8	3.7062	1046	
10271	275	8	7.3287	1470	
10273	14	8	5.0063	1215	
10279	400	6	8.0257	713	
10280	400	8	8.5561	1589	
10281	295	18	1.8206	6362	
10286	100	6	4.4945	534	
10649	216	6	8.6011	739	
10287	40	6	4.9059	558	
10288	304	8	7.9029	1527	
10290	45	8	8.4298	1577	
10289	198	18	1.7225	6188	
1081019	133	18	1.8123	6347	
10293	440	6	6.4909	642	
10294	147	8	0.6803	448	
10295	216	8	7.7033	1507	
10643	39	8	1.0257	550	
10642	133	8	7.2066	1458	
10296	204	18	4.0671	9508	
10302	318	18	1.1951	5154	
10648	120	18	0.7834	4173	
10301	105	8	2.6581	885	
10305	99	6	5.3409	582	

- Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 10			Capacity ¹ (gpm)
		Diameter (in)	Slope (%)		
10306	289	6	7.2578	678	
10307	388	6	7.1782	675	
10308	243	18	0.9795	4666	
10317	166	18	0.9699	4643	
10323	568	24	0.3979	6405	
10341	42	24	0.0476	2216	
10342	315	24	0.3524	6027	
10343	217	24	0.3226	5767	
10365	74	24	0.2297	4867	
10366	406	24	0.298	5543	
10385	85	24	0.3882	6327	
10386	370	24	1.5434	2614	
9	24.6	24	2.9676	7491	
8	271.2	24	3.0033	7596	
7	412.3	24	1.1981	1114	
6	157.5	36	0.2222	4111	
5	339.9	36	0.2177	3968	
4	181.3	36	0.2207	4063	
3	112.5	36	0.2222	4110	
2	96.7	36	0.2172	3951	
1	98.6	36	0.2231	4139	
10513	99.3	6	1.0172	254	
10512	227.3	8	7.9884	1535	
10511	153.2	8	8.1734	1553	
10510	189.4	8	1.7004	708	
10509	149.6	8	0.3342	314	
10347	360.2	8	0.4997	384	
10333	368.6	8	0.4612	369	
10327	388.1	8	3.3515	994	
10312	180.2	8	0.4773	375	
10315	393.3	8	4.6809	1175	
10314	99.2	8	1.0384	553	
10633	93	8	0.6237	429	
10263	64.5	8	1.7212	713	
10264	105.1	8	1.7129	711	
10276	217.3	8	2.3016	824	
10277	96.3	8	12.5589	1925	
10284	300.6	8	1.0613	559	
10565	226.8	8	1.0583	559	
10566	83.1	8	1.0831	565	
10567	63.9	8	1.0955	568	
10568	79.8	8	1.1279	577	

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 10			Capacity ¹ (gpm)
		Diameter (in)	Slope (%)		
10569	129	8	1.0543	558	
10256	107.8	6	6.4326	639	
10265	393.6	8	3.2029	972	
10266	402.3	8	2.9095	926	
10278	397.7	8	2.6411	883	
10285	389.5	8	2.6042	876	
10300	143.7	8	0.4315	357	
10299	251.3	8	0.4377	359	
10297	306.4	8	1.7659	722	
10291	123	8	1.6588	699	
10570	107	8	1.4581	656	
10304	37	8	2.2709	818	
10310	277	8	2.2497	815	
10311	213	8	2.0568	779	
10632	41	8	1.4636	657	
10631	159	8	2.2773	820	
10319	392	8	0.9873	540	
10325	280	8	0.7357	466	
10332	268	10	1.7279	1291	
79661	103.2	8	2.2292	811	
79662	135.4	8	2.2162	809	
79663	339.6	8	3.3588	995	
79664	333.3	8	1.7404	716	
79665	165.1	8	1.9386	756	
79666	76	8	2.6325	881	
79701	73.7	8	2.7147	895	
79702	98.7	8	2.6352	882	
79667	175.1	10	2.7137	1618	
79668	200.6	10	3.4417	1822	
79669	15.9	8	3.3352	992	
10275	406	8	2.2518	815	
10282	217	8	5.4273	1265	
10601	400	8	1.9904	766	
10602	400	8	2.711	894	
10603	252	8	3.4385	1007	
10604	185	8	1.1244	576	
10605	47	8	1.2341	603	
10318	388	8	1.9256	754	
10324	438	8	1.7194	712	
10331	399	10	0.9574	961	
10348	81	10	0.8889	926	
10349	20	10	0.35	581	

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 10				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
10350	296	12	0.2432	789
10351	56	12	0.5536	1190
10352	344	12	0.2413	785
10353	161	12	0.2422	787
10354	95	12	0.4	1011
10435432	240	12	0.2375	779
10435435	41	12	1.2196	1766
10355	275	12	0.1345	587
10395	75	12	1.3134	1833
10394	316	16	0.1487	1327
10422	69	12	1.5509	1991
10418	379	16	0.1346	1262
10417	184	16	0.1576	1366
10417a	110	16	0.0182	464
10417b	36	16	0.1389	1283
10417c	115	16	0.0348	642
10392	421	12	4.6702	3456
10416	35	20	0.1	1976
10415	185	20	0.1243	2203
10430	23	24	0.8261	9229
10431	98	8	0.6123	425
10409	165	8	1.0485	556
10432	367	8	0.4469	363
10433	132	8	0.4015	344
10434	216	8	4.3467	1132
10436	89	8	1.798	728
10438	455	20	0.1253	2211
10439	55	20	0.1273	2229
10440	369	20	0.1355	2300

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 11				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
11126	457	8	0.2998	301
11129	400	10	0.28	515
11130	240	10	0.3625	586
11131	62	10	4.812	2134
11134	172	8	0.4186	356
11178	250	8	4.633	1183
11179	481	10	3.0534	1700
11180	586	10	0.3942	611
11181	412	8	11.0672	1828
11182	307	10	0.5603	728
11184	234	8	0.4957	387

Basin 12				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
12117	147	12	4.085	3232
12118	400	12	2.1255	2331
12119	400	12	4.2538	3298
12120	250	12	0.0004	32
12121	400	12	3.5021	2993
12122	340	12	4.3423	3332
12132	260	12	4.5431	3408
12133	30	15	1.6336	3706
12134	100	12	21.7467	7457
12154	160	15	0.9125	2770
12103	10	12	13.1113	5790

Basin 13				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
13123	274	15	0.3577	1734
13124	117	15	1.5814	3646
13125	243	15	0.3992	1832
13128	62	15	8.1072	8255
13129	210	8	0.7238	462
13130	200	8	0.37	330
13131	156	8	0.4167	351
13132	210	8	0.4	343
13133	187	8	0.3957	342
13136	194	8	0.8351	496
13168	124	8	0.3952	341
13126	210	15	0.4	1834
13107	80	15	0.4	1834

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 13				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
13108	259	15	0.3629	1747
13109	340	15	3.0014	5023
1385520	154	8	5.7041	1297
13110	30	15	3.0014	5023
13112	319	15	1.5801	3645
13115	300	15	0.2667	1497
13116	300	15	0.2167	1350
13104	31	8	3.3567	995
13137	76	8	4.5046	1167
13138	276	8	0.4493	368

Basin 14				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
14101	120	8	2.0421	785
14102	85	8	0.4	348
14103	110	8	0.8	492
14104	229	10	0.2402	477
14105	145	8	25.9415	2799
14106	182	10	0.2802	515
14107	192	10	0.2813	516
14108	296	10	0.2804	515
14109	111	8	7.3713	1492
14110	186	8	8.5635	1608
14113	170	8	7.8476	1540
14117	208	8	8.6232	1614
14118	156	8	16.6157	2240
14119	361	8	5.1203	1244
14120	306	8	1.5034	674
14121	99	8	3.0317	957
14122	158	8	5.3621	1273
14123	332	8	0.4548	371
14173	202	10	0.2822	517
14176	193	10	0.2798	515
14177	157	10	0.2803	515
14178	350	10	0.28	515
14179	399	10	0.2807	515
14180	156	10	0.2821	517
14181	34	10	13.4736	3571
14182	25	10	33.776	5654
14183	99	10	11.1803	3253
14184	116	8	18.4076	2358
14185	113	8	15.2174	2144

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 14				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
14187	152	8	11.5902	1871
14188	179	8	0.5587	411
14191	305	8	0.4918	385
14193	285	8	0.5263	399
14253	43	8	9.8616	1726
14127	276	8	0.4312	361
14131	215	8	0.3116	307
14132	262	8	10.1821	1754
14136	282	8	0.4326	362
14137	259	8	0.332	317
14145	268	8	0.3619	331
14154	302	8	0.4371	363
14155	124	8	0.2339	266
213220	138	8	6.9004	1427

Basin 15				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
15115	89	8	7.8102	1536
15116	310	8	0.6161	431
15117	259	8	1.5484	684
15144	370	8	12.6486	1955
15158	381	8	0.4751	379
15160	309	8	0.3916	344
15162	312	8	0.4006	348
15164	363	8	9.6339	1706
15167	52	8	10.6366	1793
15168	110	8	13.6341	2029
15169	101	8	27.0691	2860
15170	381	8	5.9317	1339
15182	140	8	0.3714	335
15184	117	8	0.4017	348
15185	325	8	3.1431	974
15188	60	8	3.2684	994
15189	272	8	2.9277	940
15192	141	8	6.6887	1421
15193	330	8	4.1794	1124
15196	301	8	0.4618	374
15204	201	8	20.3754	2481
15205	73	8	10.8022	1806
15206	25	8	12.8242	1968

- Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 16				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
16108	195	8	9.7902	1720
16109	100	8	17.7743	2317
16110	252	8	9.9698	1735
16111	35	8	0.3714	335
16112	80	10	5.1694	2212
16113	625	12	9.6445	4966
16122	345	8	7.8502	1540
16123	261	8	7.0558	1460
16124	90	10	0.5	688
16125	10	10	28.828	5224

Basin 17				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
17105	431	8	1.8309	743.72
17107	340	8	3.4108	1015.09
17113	487	10	1.0863	1014.05

Basin 18				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
18160	306	8	0.5	389
18172	100	8	10.5177	1783
18173	129	8	0.814	496
18174	184	8	0.5	389
18175	350	8	0.3771	338
18179	277	8	5.6081	1302
18180	182	8	5.0338	1233
18181	163	8	0.5031	390
18194	306	8	2.1345	803
18195	270	8	0.5	389
18201	19	8	0.5263	399
18202	269	8	0.5093	392
18203	115	8	0.5217	397
18211	98	8	3.6657	1052
18216	163	8	2.0004	777
18217	205	8	1.9516	768
18218	118	8	0.3898	343
18224	340	8	3.237	989
18229	165	8	1.2122	605
18240	165	8	6.0718	1354
18242	343	8	7.7491	1530
18248	197	8	6.8689	1441

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 18				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
18253	40	8	10.5584	1786
18255	300	8	5.6088	1302
18260	210	8	6.6815	1421
18261	340	8	5.3016	1266
18262	169	8	2.9599	946
18267	395	8	5.1206	1244
18268	380	8	2.3164	837
18269	395	8	2.7859	917
18280	395	8	3.0394	958
18281	395	8	2.5325	875
18282	340	8	4.422	1156
18283	25	12	0.32	905
18287	270	8	0.5	389
18288	118	8	0.5	389
18289	25	12	0.24	783
18290	1	12	253.0202	5436

Basin 19				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
19132	121	8	0.3967	346
19135	75	8	0.4933	386
19136	200	8	0.44	365
19167	53	8	0.4528	370
19168	142	8	0.4437	366
19171	56	8	0.5	389
19172	348	8	0.5546	409
19176	373	8	0.3995	347
19207	387	8	0.4005	348
19208	181	8	9.1541	1663
19209	203	8	3.6971	1057
19210	135	8	1.2594	617
19211	150	8	1.0001	550
19214	363	8	1.0193	555
19215	85	8	1.5296	680
19216	334	8	2.6956	902
19217	118	8	0.8475	506
19254	305	10	1.0263	986
19255	157	10	0.2832	518
19256	302	10	0.2219	458
19257	242	10	0.1818	415
19258	116	10	0.0776	271
19259	118	10	0.7458	840

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 19				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
19260	110	8	1.2728	620
19261	177	8	1.13	584
19262	275	8	2.5463	877
19263	170	8	0.5882	422
19265	118	8	5.0913	1240
19266	317	10	0.2776	513
19267	150	8	4.0767	1110
19289	388	10	1.4538	1173
19294	120	10	4.63	2093
19295	388	12	0.3918	1001
19313	93	12	0.3871	995
19314	399	12	0.3885	997
19315	165	12	0.3842	991
19316	240	12	0.375	979
19317	302	12	0.3841	991
19318	403	15	0.1985	1292
19319	340	15	1.6443	3718
19320	210	15	0.4762	2001
19321	399	15	0.2506	1452
19322	404	8	0.5099	392
19352	300	8	4.8356	1209
19353	345	8	1.4291	657
19354	253	8	8.7287	1624
19355	230	8	8.5089	1603
19356	368	8	0.6794	453
19357	310	8	0.6452	441
19358	50	8	5.0063	1230
19359	167	8	12.9823	1980
19364	340	8	6.4842	1400
19166	65	8	2.3699	846
19165	301	8	2.8117	922
19164	342	8	2.7291	908
19163	149	8	0.4161	355
19450	154	8	0.4026	349
19180	200	8	4.5046	1167
19161	250	8	2.5929	885
19162	158	8	2.4184	855

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 20			Capacity ¹ (gpm)
		Diameter (in)	Slope (%)		
20546	360	8	1.3084	629	
20449	232	8	1.1294	584	
20474	87	8	1.1265	583	
20453	400	8	2.6659	897	
20454	375	8	1.6776	712	
20455	25	8	0.48	381	
20173	159	8	2.3277	839	
20175	389	8	3.3206	1002	
20176	400	8	2.7711	915	
20177	120	8	0.525	398	
20494	160	8	0.4	348	
20183	160	8	7.8806	1543	
20178	241	8	0.9088	524	
20179	186	8	0.7097	463	
20180	299	8	0.6154	431	
20181	400	8	0.555	409	
20194	170	8	0.5588	411	
20195	365	8	0.5589	411	
20221	145	8	0.5586	411	
20222	245	10	0.5633	730	
20232	115	10	0.5565	726	
20233	300	10	0.56	728	
20237	52	10	0.2115	447	
20236	197	10	0.2538	490	
20267	282	10	0.4007	616	
20274	121	10	2.902	1657	
20273	403	10	2.3903	1504	
20613	254	10	1.8704	1331	
20278	378	10	2.3207	1482	
20279	222	10	1.9734	1367	
20280	110	10	1.8185	1312	
20281	313	10	1.9493	1358	
20337	332	10	2.0185	1382	
20441	85	10	2.3418	1489	
20470	261	10	2.1844	1438	
20120	180	8	1.5002	673	
20338	172	8	8.0199	1557	
20339	20	8	26.0956	2808	
20340	348	12	1.6353	2045	
20283	330	8	3.7602	1066	
20284	332	8	0.3946	345	
20344	326	8	2.3289	839	

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 20		
		Diameter (in)	Slope (%)	Capacity ¹ (gpm)
20345	299	8	3.9362	1090
20346	278	8	4.5443	1172
20347	262	8	2.1341	803
20341	312	12	1.0193	1614
20342	108	12	1.7595	2121
20343	224	12	1.5538	1993
20384	139	12	0.6763	1315
20388	217	12	1.166	1727
20389	205	12	1.7808	2134
20487	108	12	0.8426	1468
20390	228	12	1.294	1819
20391	227	12	2.2869	2418
20569	27	12	2.4452	2501
20392	320	24	0.475	6998
20396	320	24	0.6156	7967
20357	185	8	1.9355	765
20358	165	8	1.9337	764
20372	393	10	0.3715	593
20370	428	10	0.3318	560
20366	431	8	3.5754	1039
20359	332	10	4.4955	2063
20360	321	10	2.967	1676
20407	201	10	9.46	2992
20408	203	12	1.0592	1646
20409	250	10	4.7453	2119
20464	152	10	5.0327	2183
20410	189	10	4.3374	2026
20411	189	10	4.3003	2018
20412	257	10	13.7908	3613
20404	270	15	5.8061	6986
20403	208	18	0.75	4083
20560	238	18	0.8698	4397
20397	55	24	1.091	605
20418	381	24	0.5066	7227
20130	65	10	14.4723	3701
20138	458	24	0.428	6642
20140	36	24	1.3612	1846
20139	404	24	0.5124	7268
20155	209	24	0.3876	6321
20420	195	24	1.4412	2189
20159	49	24	0.2449	5025
20158	44	21	1.773	9470

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 20				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
20161	406	21	0.3793	4380
20162	410	21	0.3805	4387
20166	377	21	0.3793	4380
20167	39	21	1.7695	9460
20119	273	8	3.2251	987
20118	301	8	1.03	558
20115	288	8	0.4757	379
20107	445	8	1.6092	697
20530	107	8	1.9349	765
20531	400	8	3.427	1017
20595	20	8	5.5586	1296
20596	327	8	3.4271	1018
20597	317	8	2.8087	921

Basin 21				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
21112	44	8	0.8182	497
21113	90	10	0.5667	732
21114	295	10	0.5492	721
21115	305	10	1.7708	1295
21138	200	10	0.355	580
21139	340	10	0.6382	777
21163	306	8	2.262	827
21164	365	8	3.166	978
21165	313	8	1.294	625
21167	354	8	2.0795	793
21168	271	8	1.897	757
21170	92	8	1.0979	576
21201	318	8	2.8786	933

Basin 22				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
22142	324	8	0.4383	364
22143	110	8	0.4909	385
22144	381	8	0.399	347
22153	162	8	0.4012	348
22154	245	8	0.4816	381
22155	387	8	0.4419	365
22156	218	8	0.3991	347
22160	400	8	0.35	325
22162	50	8	1.9003	758

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 22				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
22163	309	8	0.4013	348
22172	402	8	0.3881	342
22174	19	12	0.4474	1070
22176	27	10	10.2384	3113
22177	295	10	0.6204	766
22180	338	8	0.3994	347
22191	86	8	1.0001	550
22192	408	8	0.3995	347
22193	399	8	0.3283	315
22196	180	8	1.0001	550
22200	73	8	0.8	492
22204	224	8	0.4375	364
22210	192	10	0.6823	804
22212	114	8	0.4474	368
22227	183	8	0.3989	347
22242	275	12	0.3455	940
22243	49	10	0.102	311
22211	39	10	0.6923	810
22225	56	8	7.3591	1491
22224	159	8	0.5032	390
22223	144	8	7.0452	1459
22222	99	8	0.495	387
22229	53	8	0.4906	385
22228	214	8	0.7711	483
22226	197	8	1.4621	665
22221	83	8	0.494	386
22159	121	8	7.2171	1477
22158	171	8	0.7135	464
22157	33	8	0.3939	345
22145	242	8	0.4008	348
22141	230	8	2.7793	916
22152	400	8	0.4	348
22149	340	8	0.5882	422
22150	45	8	0.2444	272

Basin 23				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
23111	173	10	0.1965	431
23115	176	10	0.3636	587
23116	202	12	0.2178	746
23117	396	12	0.2727	835

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 23			Capacity ¹ (gpm)
		Diameter (in)	Slope (%)		
23118	273	12	3.8049	3119	
23119	12	18	6.9333	2414	
23120	261	18	0.092	1430	
23149	275	8	2.5026	870	
23150	299	8	0.3345	318	
23151	172	8	2.7045	904	
23154	427	8	0.5878	421	
23156	110	8	0.7728	483	
23161	340	8	0.3059	304	
23163	400	8	0.515	394	
23164	200	8	0.42	356	
23177	282	8	0.4184	356	
23193	276	18	0.0507	1062	
23210	209	8	0.7177	466	
23216	200	8	0.75	476	
23229	300	8	0.7167	465	
23230	250	8	1.9083	759	
23231	266	8	0.3985	347	
23232	38	8	0.3947	345	
23239	342	8	0.4386	364	
23241	160	8	0.3063	304	
23242	120	8	6.7822	1431	
23243	100	8	8.1267	1567	
23250	172	8	0.4012	348	
23294	295	18	0.122	1647	
23295	296	18	0.1791	1995	
23296	148	18	1.0271	4778	
23297	349	18	0.2178	2200	
23303	500	12	1.1641	1725	
23304	16	12	2.751	2652	
23313	209	10	0.3206	551	
23314	109	10	0.4495	652	
23320	418	12	0.2033	721	
23329	310	12	0.2	715	
23331	161	12	0.1988	713	
23333	209	12	0.201	717	
23334	105	12	0.2	715	
23355	217	12	0.2028	720	
23357	231	12	0.1991	714	
23360	345	8	9.4036	1685	
23365	340	8	2.2064	816	
23366	150	8	0.5	389	

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 23				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
23377	270	8	10.0504	1742
23435	110	8	0.6818	454
23438	234	12	1.1539	1718
23448	21	12	1.4287	1911
23455	26	18	0.3077	2615
23439	1	12	4.0032	3199

Basin 24				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
24130	259	8	1.0271	557
24132	182	8	4.5652	1174
24135	341	8	1.1731	595
24136	298	8	6.2808	1377
24137	131	8	18.4834	2363
24138	133	8	7.1536	1470
24140	264	8	8.6304	1615
24141	22	8	29.888	3005
24142	53	8	8.5213	1604
24143	321	8	3.2728	994
24149	124	8	8.5716	1609
2483362	1	12	29.1667	8636
2483361	21	12	0.5714	1209
24152	40	8	3.9781	1096
24153	335	8	5.6808	1310
24154	280	8	8.0293	1557
24176	126	8	5.5881	1299
24177	378	8	4.9664	1225
24178	227	8	17.5367	2302
24209	95	8	9.8367	1724
24272	32	10	8.0257	2756
24273	128	10	2.2349	1455
24283	156	8	18.7777	2382

Basin 25				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
25113	275	12	1.5711	2004
25115	100	12	1.5702	2004
25116	379	12	1.1874	1743
25117	399	12	2.6325	2595
25118	123	12	6.1171	3955
25119	138	12	6.1347	3961

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 25				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
25120	111	12	9.566	4946
25121	20	12	0.6	1239
25122	30	12	14.5173	6093
25129	257	8	0.428	360
25130	183	8	0.4918	385
25131	149	8	0.6712	450
25132	142	8	3.2764	995
25133	120	8	3.235	989
25134	270	8	3.287	996
25136	255	8	1.3727	644
25137	226	8	2.2129	818
25138	190	8	3.6867	1055
25139	201	8	2.2394	823
25140	51	8	0.9804	544
25142	179	8	1.6762	712
25143	294	8	2.3816	848
25144	23	8	8.5968	1612
25146	392	8	1.6584	708
25147	383	8	1.4806	669
25148	316	8	5.8645	1331
25149	126	8	6.0667	1354
25150	274	8	5.0685	1237
25151	345	8	4.2647	1135
25154	401	8	0.4988	388
25169	257	8	6.4335	1394
25235	279	12	6.1189	3956
25246	351	8	2.0802	793
25247	35	8	13.9627	2054

- Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 26				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
26113	155	8	8.9453	1644
26158	256	8	1.3243	633
26164	309	8	3.5265	1032
26165	177	8	1.6839	713
26176	90	8	5.3521	1272
26177	37	8	2.1897	813
26181	32	8	2.5633	880
26182	135	8	3.632	1047

Basin 27				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
27106	330	8	3.4354	1019
27113	380	8	3.5285	1032
27114	30	8	3.6691	1053
27115	302	8	6.9705	1451
27118	227	8	3.9679	1095
27119	285	8	3.5109	1030
27151	239	8	2.9301	941
27152	212	8	2.8313	925
27646	20	8	24.5041	2721

Basin 28				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
28148	282	8	3.559	1037
28150	399	8	3.2523	991
28151	393	8	2.7975	919
28152	248	8	6.4651	1398
28153	120	8	13.462	2017
28154	110	8	13.4472	2016
28155	360	8	16.0327	2201
28165	193	8	8.3188	1585
28177	378	8	1.0053	551
28183	294	8	0.4082	351

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 29				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
29128	170	8	0.7647	481
29129	331	8	0.3928	344
29131	256	8	1.172	595
29132	160	8	1.2501	615
29134	132	8	1.5153	677
29184	331	8	0.3928	344
29185	332	8	2.1993	815
29186	311	8	4.1192	1116
29187	71	8	9.9074	1730
29188	133	8	2.2562	826

Basin 30				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
30126	410	8	0.4878	384
30134	91	8	1.3188	631
30833	269	10	1.2306	1079
30151	224	8	0.4018	348
30827	132	8	0.3939	345
30161	48	8	0.4167	355
30163	90	8	2.0226	782
30164	320	8	0.4	348
30173	200	8	0.4	348
30182	245	8	0.4	348
30139	334	8	0.6587	446
30152	185	8	1.4272	657
30156	248	8	1.5244	679
30155	137	8	0.4964	387
30159	88	8	0.6591	446
30160	309	8	0.4984	388
30174	298	8	0.2215	259
30181	298	8	0.604	427
30180	307	8	2.2807	830
30179	402	8	4.5071	1167
30187	380	10	0.5	688
30186	400	10	0.5	688
30185	240	10	2.5133	1542
30184	233	15	0.2876	1555
30192	275	15	0.2873	1554
30204	50	15	0.86	2689
30206	393	15	0.4046	1844
30209	329	15	2.2376	4337

- Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 30			Capacity ¹ (gpm)
		Diameter (in)	Slope (%)		
30218	308	15	2.4553	4543	
30221	147	15	0.3946	1821	
30222	160	15	0.4063	1848	
30223	318	15	0.3994	1832	
30234	213	15	0.3991	1832	
30247	198	15	0.399	1831	
30248	197	15	0.4162	1871	
30253	283	15	0.3993	1832	
30264	316	15	0.3987	1831	
30280	428	15	0.3902	1811	
30292	368	15	0.4103	1857	
30298	250	15	0.4	1834	
30316	253	15	0.3992	1832	
30324	241	15	0.4025	1839	
30334	192	15	0.401	1836	
30337	306	15	0.3987	1831	
30345	230	15	0.4652	1978	
30353	108	15	5.7595	6958	
30356	160	18	0.3375	2739	
30357	90	18	0.4667	3221	
30358	240	18	0.4042	2997	
30359	165	18	0.4	2982	
30360	310	18	0.4032	2994	
30361	300	18	0.3967	2969	
30362	440	18	0.4023	2990	
30363	325	18	0.4	2982	
30631	264	18	0.4015	2987	
30628	243	18	0.3992	2979	
30623	161	18	0.4969	3323	
30624	488	18	0.4918	3306	
30617	336	18	0.4554	3181	
30611	175	18	0.3771	2895	
30610	75	18	1.1467	5049	
30605	268	18	0.5	3334	
30601	183	18	2.2519	7075	
30594	191	18	1.0786	4896	
30595	72	18	0.6806	3889	
30596	293	18	0.4744	3247	
30597	188	18	0.6383	3767	
30579	225	18	0.4889	3297	
30581	275	18	0.4364	3114	
30582	365	18	0.6028	3660	

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 30			Capacity ¹ (gpm)
		Diameter (in)	Slope (%)		
30568	75	18	0.5333	3443	
30569	140	18	0.5	3334	
30570	213	18	0.4695	3230	
30571	213	18	0.2817	2502	
30572	225	18	0.4889	3297	
30573	205	18	0.4976	3326	
30577	255	18	0.498	3327	
30559	384	8	9.1527	1663	
30574	93	8	7.5483	1510	
30576	220	18	0.5	3334	
30575	91	18	0.5055	3352	
30564	265	18	0.5019	3340	
30563	225	18	0.4978	3326	
30554	500	18	1.2001	5165	
30781	135	18	0.8223	4275	
30780	373	18	1.1341	5021	
30799	225	18	0.5511	3500	
30773	295	18	0.4881	3294	
30762	115	18	0.4348	3109	
30758	175	18	0.4571	3188	
30750	140	18	0.5714	3564	
30751	170	18	0.4706	3234	
30752	270	18	0.4815	3271	
30749	320	18	0.4688	3228	
30753	300	18	0.5333	3443	
30754	450	18	0.5111	3371	
30738	350	18	1.543	5857	
30721	153	8	7.5377	1509	
30722	65	18	3.849	9250	
30723	170	18	5.1244	673	
30724	150	18	3.9163	9330	
30726	235	18	5.0789	625	
30698	100	12	6.212	3986	
30699	150	18	2.6676	7700	
30687	430	18	2.559	7542	
30681	37	18	2.0274	6713	
30680	160	18	1.0313	4788	
30679	200	18	1.1151	4979	
30678	235	18	1.1065	4959	
30668	435	18	1.6324	6024	
30651	175	8	9.7604	1717	
30655	270	18	0.4815	3271	

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 30				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
30654	305	18	0.5246	3415
3059572	380	18	0.5	3334

Basin 31				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
31197	283	8	1.9438	766
31200	183	8	0.8197	498
31203	180	8	1.1112	579
31206	266	8	3.3063	999
31208	425	8	2.5891	884
31213	185	8	1.8922	756
31216	182	8	0.544	405
31218	115	8	0.7044	461
31159	115	8	2.0004	777
31158	235	8	0.3872	342
31157	80	8	0.2375	268
31156	310	10	0.2065	442
31168	171	10	0.2105	446
31170	267	10	0.2172	453
31427	5	10	90.2526	9243
31171	200	8	0.42	356
31229	319	12	3.7644	3103
31231	435	8	5.9646	1342
31233	280	8	1.368	643
31424	800	6	3.824	701
31263	332	8	0.2861	294
31265	320	8	0.375	337
31266	258	8	0.5	389
31279	261	8	0.2797	291
31281	340	8	0.4059	350
31283	62	8	0.7742	484
31284	259	8	0.3745	336
31294	327	8	0.367	333
31317	257	8	0.4008	348
31318	189	8	0.4021	349
31319	285	8	0.7649	481
31320	272	8	2.5965	886
31375	261	8	0.3985	347
31376	260	8	0.4	348
31377	190	8	0.4	348
31228	260	12	0.0538	371
31181	35	12	0.0857	468

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 31				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
31182	292	12	0.2466	794
31267	140	12	0.25	800
31268	324	12	0.2778	843
31286	241	8	0.4025	349
31296	105	8	0.3524	326
31297	242	8	0.3512	326
31301	270	8	0.1	174
31426	34	8	1.0589	566
31306	136	8	0.0956	170
31307	105	8	0.1333	201
31285	448	12	0.2344	774
31189	129	12	0.2558	809
31188	204	12	0.2549	807
31184	163	12	0.2577	812
31183	65	12	0.2615	818
31160	412	12	0.4757	1103
31173	20	12	0.4	1011
31177	126	12	0.254	806
31178	262	12	0.2557	809
31429	20	12	0.4	1011
Metro31431	20	12	4.1536	3259
Metro31432	20	12	0.4	1011

Basin 32				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
32129	28	8	14.3233	2080
32165	400	12	0.2	715
32170	265	12	0.3245	911
32171	135	12	0.8593	1482
32172	226	12	0.4425	1064
32173	225	8	9.9015	1730
32174	212	8	1.1793	597
32177	263	12	0.8251	1453
32198	366	8	13.7989	2042

- Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 33*		Capacity ¹ (gpm)**
		Diameter (in)	Slope (%)	
139	325.6	8	0.5	385
127	63.4	8	0.5	385
126	224.7	8	0.5	385
125	231.1	8	0.5	385
138	394	8	0.8	486
104	236.4	8	1	544
128	207.2	8	1.37	636
140	331.2	8	1.37	636
141	307	8	1.4	643
119	316.8	8	2	769
105	244.8	8	4.1	1101
118	194	8	4.2	1114
117	348.1	8	4.3	1128
124	255.1	8	7.07	1446
137	260.6	8	9.02	1633
103	160.4	8	12.23	1902
102	136.2	8	999.99	Unknown
101	98.6	0	999.99	Unknown

*: Basin 33 sewers are not modeled. Information shown is the best available from the City's as-built data.

** : Unknown capacities given for pipes with unknown slopes or diameters

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 34		Capacity ¹ (gpm)
		Diameter (in)	Slope (%)	
34305	215	8	0.507	391
34304	235	8	0.4043	349
34303	235	8	2.0004	777
34302	400	8	1.5427	683
34301	200	8	0.4	348
34300	170	8	0.4	348
34299	160	8	0.4063	350
34298	398	8	0.402	348
34297	400	8	0.45	369
34227	244	8	0.3771	338
34228	250	8	0.4	348
34229	319	8	0.4483	368
34224	85	8	0.2471	273
34212	282	8	0.4255	359
34213	313	8	0.3962	346
34218	269	8	0.9666	540
34196	129	8	0.4031	349
34197	171	8	1.743	726
34198	101	8	0.5149	394
34202	142	8	0.9296	530
34334	177	8	0.9322	531
34203	119	8	0.9328	531
34335	62	8	0.9355	532
34204	199	8	0.9247	529
34240	257	8	1.1285	584
34241	41	8	0.4146	354
34242	259	8	0.4015	348
34243	46	8	0.413	353
34244	300	8	1.2334	610
34122	173	8	1.1041	578
34129	298	8	1.0437	562
34130	401	8	1.232	610
34131	158	8	2.976	948
34132	169	8	4.4838	1164
34133	181	8	1.5306	680
34134	22	12	0.4091	1023

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 35		Capacity ¹ (gpm)
		Diameter (in)	Slope (%)	
35184	60	8	0.5	389
35186	98	8	24.1437	2701
35187	199	8	1.0051	551
35188	255	8	2.9424	943
35204	304	8	2.4679	863
35205	400	8	4.1285	1117
35206	254	8	8.1728	1571
35207	143	8	0.3986	347
35208	400	8	0.4	348
35209	159	8	1.1196	582
35210	95	8	23.075	2640
35211	190	8	3.1595	977
35212	48	8	2.0838	793
35213	62	8	13.1278	1991
35214	81	8	13.1366	1992
35215	89	8	13.1228	1991
35226	56	8	13.1479	1993
35227	37	8	4.0574	1107
35228	385	8	11.2392	1843
35230	73	8	2.7408	910
35231	120	8	13.4535	2016
35232	279	8	1.4338	658
35233	280	8	15.912	2192
35236	297	8	12.5557	1948
35239	73	8	0.6849	455
35240	151	8	4.4481	1159
35241	283	8	0.3463	323
35243	209	8	0.4258	359
35244	324	8	10.8661	1812
35245	276	8	12.2577	1924
35246	392	8	1.1276	584
35258	149	8	4.9052	1217
35261	281	8	7.8533	1540
35262	339	8	0.9853	546
35263	254	8	1.004	551
35293	65	8	12.402	1936
35294	96	8	21.3007	2537
35295	78	8	15.57	2169
35296	190	8	13.2733	2002
35297	10	8	14.0363	2059
35301	12	12	2.2506	2399

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 35				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
35302	314	8	0.9809	544
35310	121	10	0.2975	531
35311	74	10	1.5813	1223
35312	121	10	0.1901	424
35313	116	10	0.3362	564
35314	165	10	0.2364	473
35315	79	10	0.4684	666
35316	92	10	1.2718	1097
35319	94	10	0.1489	375
35321	47	8	1.2341	611
35322	190	12	2.4534	2505
35323	207	12	1.6379	2047
35324	193	12	1.482	1947
35325	49	12	1.4491	1925
35326	126	12	2.1275	2332
35327	257	15	0.2529	1458
35328	49	15	0.3265	1657
35329	11	15	1.091	3028
35330	196	15	0.2806	1536
35331	20	15	1.1001	3041
35332	83	15	0.494	2038
35333	190	15	0.3105	1616
35334	125	12	1.0881	1668
35335	172	12	1.0698	1654
35418	270	8	0.0259	89
35400	378	8	0.709	463
35401	130	8	0.5231	398
35402	186	8	0.2634	282
35403	402	8	0.0871	162
35404	87	8	0.3678	333
35405	120	8	0.8167	497
35406	395	8	1.157	591
35407	398	8	0.5327	401
35408	301	8	1.0632	567
35409	400	8	0.755	478
35410	400	8	0.8425	505
35411	18	8	4.6718	1188
35412	58	8	0.8276	500
35413	39	8	15.7827	2184

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 36				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
36101	400	0.4	12	1011
36102	400	0.4	12	1011
36103	293	0.3003	12	876
36104	148	0.3987	12	1010
36105	176	0.3636	12	964
36106	50	0.28	12	846
36107	48	0.8125	12	1441
36108	130	0.5692	12	1206
36109	40	1.0501	8	563
36111	45	0.4	8	348
36112	80	0.4	8	348
36114	400	0.4	8	348
36115	300	0.4	8	348
36116	380	0.4	8	348
36119	429	0.4009	8	348
36139	400	0.4	12	1011
36279	342	0.3977	12	1008
36150	309	0.2977	8	300
36152	388	0.0541	8	128
36243	65	1.8311	8	744
36158	379	0.3087	8	305
36207	400	0.4	8	348
3680602	58	0.3966	8	346
36148	30	0.5	8	389
36147	27	2.6305	8	891
36146	65	12.3233	8	1539
36232	103	7.2129	6	1476
36231	300	0.5033	8	390
36237	175	0.2857	8	135
CO	292	0.2089	6	115
3680634	420	0.0002	6	4
3672309	22	1.8185	6	741
OverFlow	400	4.9059	8	4604

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 37		Capacity ¹ (gpm)
		Diameter (in)	Slope (%)	
37116	70	8	40.9013	3515
37117	100	8	39.2668	3444
37118	170	8	8.4417	1597
37119	37	8	1.9463	767
37128	101	8	1.3566	640
37130	100	8	6.9165	1446
37131	125	8	44.5837	3670
37132	72	10	48.1962	6754
37133	100	10	18.1518	4145
37134	70	10	3.5451	1832
37135	63	10	56.1387	7290
37136	101	15	1.4754	3522
37137	168	8	8.5489	1607
37138	171	8	14.4467	2089
37142	252	8	16.1304	2207
37143	135	8	14.827	2116
37146	132	8	8.4313	1596
37147	219	8	6.6448	1417
37148	109	8	12.0405	1907
37149	35	8	6.8733	1441
37150	81	8	40.5683	3501
37151	100	8	8.632	1615
37184	385	8	7.0722	1462
37208	141	15	3.2855	5255
37209	93	10	5.2761	2235
37213	160	10	8.9671	2913
37214	263	10	13.6267	3592
37215	197	10	4.7006	2109
37216	125	10	2.4567	1525
37217	94	10	6.471	2475
37236	199	15	0.4774	2003
37237	233	15	0.3991	1832
37238	183	15	0.3989	1831
37239	270	15	0.4	1834
37240	225	15	0.4089	1854
37241	335	15	0.3612	1743
37242	232	15	0.4741	1996
37243	306	15	0.3595	1738
37244	198	15	0.3232	1648
37245	202	10	4.2811	2013
37359	180	8	6.3573	1386
37360	84	8	18.2989	2351

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 37				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
37361	67	8	13.7398	2037
37362	82	8	13.0612	1986
37363	78	8	10.3108	1765
37364	235	8	5.5703	1297
37369	76	8	15.158	2140
37370	72	15	0.5556	2161
37372	171	15	0.5673	2184
37373	124	15	0.5081	2067
37375	91	10	13.7547	3608
37376	209	15	0.5455	2141
37377	119	10	3.9274	1928
37378	334	15	0.4401	1923
37381	89	10	9.7425	3037
37382	168	10	6.3461	2451
37383	176	8	12.7909	1966
37394	135	8	19.7286	2441
37395	274	8	17.9196	2327
37396	95	8	18.4981	2364
37400	295	8	15.2769	2148
37403	59	8	10.5497	1785
37404	85	8	6.212	1370
37405	283	8	8.0543	1560
37414	83	8	10.8709	1812
37415	146	8	3.7561	1065
37425	255	8	8.4774	1600
37426	217	15	0.6083	2261
37428	199	15	0.5628	2175
37456	188	8	11.4358	1859
37457	93	8	12.4612	1940
37458	98	8	8.6237	1614
37459	125	8	11.0264	1825
37460	214	8	5.8511	1330
37461	307	8	8.862	1636
37468	100	8	13.9333	2052
37469	112	8	14.4706	2091
37470	198	8	10.5122	1782
37471	119	8	9.9651	1735
37475	248	8	3.5304	1033
37476	230	8	8.5353	1606
37515	122	8	2.9685	947
37516	99	8	2.5261	874
37537	145	8	2.6561	896

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 37				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
37538	150	8	0.4933	386
37539	158	8	0.5063	391
37540	83	8	10.7115	1799
37541	221	8	0.4027	349
37542	145	8	7.323	1487
37543	183	8	3.2367	989
37544	111	8	15.0319	2131
37545	263	8	7.3199	1487
37546	97	8	4.0239	1103
37556	167	8	1.8027	738
37582	111	8	3.1547	976
37583	245	8	5.0472	1235
37584	92	8	5.836	1328
37586	331	8	13.3935	2012
37588	173	8	7.3726	1492
37589	202	8	6.6483	1417
37590	210	8	3.0586	961
37591	157	8	9.8371	1724
37592	48	8	2.6259	891
37595	106	8	4.287	1138
37596	95	8	8.4511	1598
37597	66	8	11.1443	1835
37610	40	12	4.2288	3288
37611	129	12	3.11	2820
37612	39	12	0.7436	1379
37625	80	12	0.5125	1145
37626	167	15	0.497	2044
37627	265	15	0.4981	2046
37628	230	15	0.5	2050
37629	88	15	0.5	2050
37630	209	15	4.3198	6026
37631	114	15	0.5	2050
37632	191	15	0.4974	2045
37648	191	15	0.5183	2087
37650	329	15	0.4863	2022
37652	136	15	0.5147	2080
37653	125	15	0.48	2009
37656	144	15	0.9723	2859
37657	181	15	7.1619	7759
37658	186	15	9.6304	8998
37659	339	14	0.5015	1721
37662	18	8	10.0504	1742

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 37		
		Diameter (in)	Slope (%)	Capacity ¹ (gpm)
37663	99	8	10.5532	1786
37666	110	8	4.2493	1133
37667	141	8	3.79	1070
37668	168	8	2.6795	900
37669	125	8	0.808	494
37670	148	8	0.5	389
37671	319	8	3.2117	985
37746	157	8	5.2173	1255
37747	60	8	1.1334	585
37748	148	14	0.5	1719
37749	178	15	0.618	2279
37750	149	14	0.349	1436
37751	69	14	0.7971	2170
37752	162	14	0.4938	1708
37753	111	14	0.5045	1726
37754	150	15	0.5	2050
37755	187	15	0.4973	2045
37763	147	10	4.6513	2098
37764	190	10	5.5982	2302
37765	276	10	1.8119	1310
37766	169	10	4.2642	2009
37767	168	10	4.2897	2015
37769	200	10	14.9545	3762
37770	216	10	8.6619	2863
37774	130	10	9.5822	3012
37775	121	10	4.0529	1959
37776	294	10	5.2453	2228
37777	106	12	0.5377	1173
37779	225	12	0.4933	1123
37780	283	12	0.4594	1084
37784	73	12	4.0993	3238
37785	344	12	5.2164	3652
37799	134	15	2.9117	4947
37866	40	8	15.5082	2164
37867	26	12	2.3468	2450
37875	395	8	18.901	2390
37876	127	8	0.3465	324
37877	138	8	1.0001	550
37878	95	8	3.8766	1082
37879	160	8	13.1113	1990
37880	103	8	17.2511	2283
37881	168	8	13.1113	1990

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 37				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
37882	87	8	9.2345	1670
371074	400	12	4.1711	3266
37883	105	15	1.3716	3396
371073	140	12	4.6909	3463
37129	378	15	2.8239	4872
37115	77	14	1.3768	2832
37925	24	8	26.0956	2774
37926	245	8	0.996	549
37936	160	8	0.8813	516
37937	45	8	19.6581	2437
37938	151	8	2.0998	796
37939	95	8	29.9784	3009
37946	156	8	9.6016	1703
37947	160	8	1.1313	585
37948	97	8	4.3236	1143
37949	180	8	0.7	460
37950	74	8	7.5893	1514
3783829	48	12	3.4395	2966

Basin 38				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
38744	39	12	2.5393	2548
38101	88	12	0.3409	934
38102	45	12	1.4446	1922
38103	75	12	0.0267	261
38104	71	12	0.338	930
38169	253	12	0.3636	964
38171	347	10	0.3141	545
38172	356	10	2.7454	1612
38173	320	8	2.6415	893
38174	55	8	0.5273	399
38175	148	10	8.7974	2886
38184	347	10	3.4718	1813
38185	106	10	3.6061	1848
38186	97	10	3.3317	1776
38187	205	10	5.4667	2275
38188	253	10	6.0108	2385
38189	275	10	2.5572	1556
38190	298	10	2.0441	1391
38745	129	15	1.0001	2899
38746	128	10	1.0001	973
38702	150	16	1.5002	4190

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 38			Capacity ¹ (gpm)
		Diameter (in)	Slope (%)		
38703	44	15	10.9977	9615	
38704	181	15	12.0704	73	
38705	95	15	4.1826	5930	
38706	101	15	3.9734	5779	
38707	211	15	16.0266	1607	
38708	170	15	18.6639	2526	
38709	66	15	1.8336	3926	
38710	250	15	4.1997	5942	
38711	258	15	2.1168	4218	
38283	10	10	2.0004	1376	
38195	390	10	3.2761	1761	
38196	230	8	3.2844	996	
38284	365	10	1.5481	1211	
38285	324	10	0.8889	917	
38286	343	10	0.8892	917	
38287	349	10	0.8912	918	
38288	350	8	3.402	1014	
38289	343	8	7.0025	1454	
38290	236	8	6.7356	1426	
38291	69	8	2.6531	895	
38281	300	8	70.3716	4611	
38280	97	8	15.3637	2154	
38279	228	8	26.8189	2846	
38278	122	8	36.4796	3320	
38277	136	8	45.3015	3699	
38276	49	8	29.8838	3005	
38263	151	8	11.7356	1883	
38275	171	8	9.991	1737	
38274	326	8	1.5278	679	
38231	288	8	0.5139	394	
38226	390	8	0.5	389	
38224	260	8	0.5	389	
38223	170	8	6.7329	1426	
38217	319	8	0.5016	389	
38292	108	8	0.5093	392	
38201	90	8	0.5	389	
38200	160	8	3.258	992	
38199	260	8	0.5	389	
38198	160	8	3.0014	952	
38197	282	8	0.5	389	
38143	313	8	0.5016	389	
38142	144	8	0.5	389	

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 38			Capacity ¹ (gpm)
		Diameter (in)	Slope (%)		
38141	301	8	0.5017	389	
38138	180	8	0.5	389	
38712	66	15	7.4906	7935	
38713	172	18	1.2036	5172	
38714	377	18	0.8541	4357	
38715	228	18	1.1492	5054	
38716	74	18	0.7297	4028	
38717	66	18	1.1819	5126	
38718	129	18	0.7985	4213	
38719	194	18	0.8145	4255	
38720	279	18	0.828	4290	
38721	194	18	5.0632	609	
38722	203	18	7.2207	2669	
38723	46	18	3.6546	9013	
38724	238	15	5.4535	6771	
38725	143	15	2.0914	4193	
38726	120	16	3.6023	6493	
38950	269	15	0.9368	2806	
38949	196	15	5.7236	6936	
38595	415	12	10.1703	5100	
38596	284	12	17.0452	6602	
38597	100	12	3.0014	2770	
38598	545	12	10.4884	5179	
38599	70	12	3.0014	2770	
38600	81	12	16.7357	6542	
38601	99	12	22.8466	7643	
38602	145	12	2.8978	2722	
38604	150	12	3.1215	2825	
38603	290	12	7.556	4396	
38605	350	12	15.9802	6392	
38606	140	16	2.5723	5487	
38607	442	15	23.7662	4135	
38404	203	12	2.661	2609	
38403	34	16	0.5588	2557	
38402	224	16	0.5357	2504	
38401	230	15	0.587	2221	
38386	208	15	1.5002	3551	
38366	415	15	1.5038	3555	
38365	280	15	1.0001	2899	
38364	285	15	1.0001	2899	
381097	143	12	1.4267	1910	
38373	48	15	1.8336	3926	

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 38				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
38363	190	15	0.9264	2791
38362	153	8	3.4596	1022
38727	304	15	2.5963	4672
38728	120	15	5.726	6938
38729	70	15	2.8869	4926
38730	69	15	2.7402	4799
38429	218	12	4.2469	3295
38430	100	12	11.3117	5378
38738	86	12	1.0001	1599
38739	90	12	15.2867	6252
38431	162	12	1.2347	1777
38432	74	12	5.7935	3849
38433	196	12	1.0001	1599
38434	378	12	4.5364	3406
38465	16	8	9.3531	1681
38466	166	8	21.6208	2556
38467	157	8	12.9741	1980
38468	148	8	10.0572	1743
38469	239	8	13.2057	1997
38470	78	8	15.0523	2132
38793	108	8	13.7771	2040
38471	106	8	7.0647	1461
38435	135	12	11.1502	5340
38436	150	12	10.7753	5249
38437	174	12	4.914	3545
38438	350	12	0.6	1239
38731	394	8	6.3886	1389
38733	310	8	4.3137	1142
38734	406	8	6.7964	1433
38735	105	8	8.6898	1620

Basin 39				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
39156	455	24	1.2023	1133
39155	194	24	1.1392	838
39154	116	24	0.888	9568
39153	116	24	0.8793	9521
39152	116	24	0.888	9568
39151	505	24	0.4792	7029
39150	95	24	1.7266	3342
39149	139	24	0.6331	8079
39173	140	24	0.6572	8231

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 39				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
39169	300	24	0.6667	8291
39168	147	24	0.2857	5427
39167	90	24	0.3	5561
39166	178	24	0.3652	6136
39164	255	24	0.2275	4842
39163	201	10	0.4527	655
39249	123	10	0.4309	639
39248	174	10	0.6437	781
39247	405	10	0.3358	564
39225	140	10	0.2786	514
39224	234	10	0.4103	623
39218	396	10	0.3838	603
39214	126	10	0.3095	541
39213	169	10	0.432	639
39195265	89	8	0.5281	399
39195288	153	8	1.2223	608
39195270	77	8	0.5065	391
39195272	145	8	0.9311	530
39208	300	8	4.5146	1168
39207	220	8	2.4098	853
39206	123	8	7.6647	1522
39204	184	8	10.6578	1794
39203	179	8	3.8576	1080
39195	338	8	9.0007	1649
39194	130	8	9.4262	1688
39193	218	8	22.8691	2628
39192	279	8	9.2726	1674
39406	127	8	0.5039	390
39405	278	8	9.4775	1692
39390	150	8	0.7667	481
39356	85	8	0.7647	481
39355	77	8	4.3027	1140
39354	139	8	23.7742	2680
39353	374	8	24.2091	2704
39404	174	8	7.7125	1526
39399	9	8	7.8014	1535
39398	60	8	7.3531	1490
39397	400	8	5.3727	1274
39396	350	8	2.3549	843
39395	265	8	4.1053	1114
39486	275	8	3.9485	1092
39485	47	8	9.6402	1707

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 39		
		Diameter (in)	Slope (%)	Capacity ¹ (gpm)
39172	65	15	4.574	6201
39171	292	10	6.662	2511
39170	246	10	6.477	2476
39259	394	10	6.5879	2497
39258	403	10	5.8412	2351
39257	407	10	4.0081	1948
39256	45	10	3.5133	1824
39255	412	10	5.6693	2317
39254	145	10	5.8028	2344
39253	285	10	3.6164	1850
39252	159	10	4.615	2090
39251	241	10	5.1312	2204
39250	175	10	10.2535	3115
39522	147	10	10.9494	3219
39521	246	10	9.5555	3008
39520	125	10	7.945	2742
39519	329	10	5.968	2377
39518	287	8	15.959	2196
39525	318	8	10.2228	1757
39524	97	12	6.4152	4050
39575	150	12	8.8343	4753
39574	82	12	7.2876	4317
39573	74	8	8.367	1590
39572	169	8	0.4852	383
39571	174	8	9.4907	1693
39570	157	8	5.0382	1234
39568	221	8	3.1237	971
39567	169	8	0.8876	518
39565	158	8	1.8991	757
39564	233	8	8.5287	1605
39563	189	8	4.7142	1193
39562	92	8	5.7268	1315
39561	124	8	5.7676	1320
39798	11	8	26.8251	2847
39797	116	8	0.3966	346
39796	142	8	2.6277	891
39795	279	8	6.1658	1365
39191	168	12	2.8762	2712
39190	220	12	2.2733	2411
39189	391	12	4.5828	3423
39188	205	12	2.8304	2690
39181	267	12	9.0973	4823

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 39				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
39180	212	12	0.4764	1104
39179	175	12	3.2016	2861
39306	400	12	3.9781	3189
39305	400	12	0.725	1362
39304	399	8	0.6592	446
39303	206	10	4.4267	2047
39300	163	8	0.9939	548
39299	214	10	3.769	1889
39333	109	8	0.9909	547
39332	116	10	1.3277	1121
39331	74	8	1.0811	572
39484	69	8	9.6828	1710
39480	207	8	4.5748	1176
39479	371	8	8.4015	1593
39436089a	101	8	1.0001	550
39436089	207	8	1.8796	754

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 40				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
40667	267	6	13.2996	918
40666	97	6	8.5569	737
40666a	2	4	195	1190
40102	164	10	0.6098	767
40103	189	10	4.7779	2147
40104	123	10	0.3089	546
40105	177	10	0.3051	543
40106	394	10	0.2995	538
40107	173	10	0.4277	642
40108	118	8	1.5256	671
40109	241	10	1.3238	1130
40116	180	8	10.5584	1765
40117	337	8	8.6074	1593
40118	215	8	8.8484	1616
40119	168	8	11.5768	1848
40120	237	8	10.2989	1743
40444	217	8	9.6343	1686
40443	250	8	11.9974	1881
40442	317	8	7.2429	1462
40441	294	8	11.667	1855
40440	247	8	15.6119	2146
40439	196	8	13.8031	2018
40438	162	8	14.6613	2080
40437	214	8	13.5431	1999

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 41		Capacity ¹ (gpm)
		Diameter (in)	Slope (%)	
41117	25	18	0.2	2108
41119	276	12	4.0068	3201
41180	283	12	5.5208	3757
41181	400	12	2.5258	2541
41197	200	10	5.207	2220
41198	292	10	6.1038	2404
41199	496	10	3.3507	1781
41200	95	10	4.4465	2052
41201	242	10	4.5916	2085
41202	223	10	2.6422	1581
41203	184	10	6.1201	2407
41204	161	10	5.0063	2177
41205	207	10	4.3519	2030
41206	231	10	5.2018	2219
41207	98	10	9.2226	2955
41208	98	10	5.2111	2221
41209	251	10	7.5513	2674
41210	55	10	70.9306	8194
41458	195	10	1.2565	1091
41459	399	10	0.975	961
41460	228	10	1.6844	1263
41461	267	10	1.4983	1191
41462	111	10	5.3228	2245
41465	197	10	1.848	1323
41466	140	10	2.844	1641
41467	173	10	3.4587	1809
41468	165	10	5.201	2219
41469	385	10	0.5273	706
41470	247	8	2.7946	908
41471	180	8	0.5	384
41472	229	8	0.524	393
41473	51	8	3.7477	1051
41474	68	8	3.3696	997
41479	267	8	1.0862	566
41482	20	8	1.0001	543
41483	185	8	0.5027	385
41568	242	8	0.5	384
41546	50	8	0.5	384
41547	167	8	0.503	385
41548	187	8	0.4973	383
41549	177	8	0.4972	383
41550	200	8	0.5	384

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 41			Capacity ¹ (gpm)
		Diameter (in)	Slope (%)		
41551	206	8	0.5	384	
41552	137	8	0.4964	383	
41555	307	8	0.4853	378	
41556	28	8	3.6095	1032	
41557	90	8	1.1556	584	
41558	148	8	0.7027	455	
41487	42	10	11.8927	3355	
41506	167	8	4.4295	1143	
41507	55	8	5.5357	1278	
41526	199	8	2.9561	934	
41530	200	8	7.254	1463	
41488	219	8	0.8676	512	
41489	359	8	0.8524	501	
41504	171	8	15.2867	2123	
41503	90	8	4.226	1116	
41502	148	8	4.2606	1121	
41501	270	8	4.2446	1119	
41182	400	10	1.3001	1109	
41183	313	10	0.9361	941	
41184	88	10	24.3876	4805	
41185	193	10	3.0844	1709	
41186	310	10	23.1095	4677	
41187	30	10	1.3668	1137	
41188	260	10	0.9577	952	
41189	100	10	33.5763	5638	
41190	230	10	4.1645	1985	
41191	250	10	1.4602	1176	
41192	390	10	4.5303	2071	
41193	195	10	2.0517	1394	
41611	127	10	8.8534	2895	
41116	131	16	0.6718	2804	
41115	372	16	0.6989	2860	
41114	135	16	1.3038	3906	
41113	611	16	0.766	2994	
41112	137	16	0.2555	1729	
41111	327	16	0.2508	1713	
41179	24	16	3.6691	6553	
41110	44	16	0.4773	2363	
41120	230	15	1.4349	3473	
41121	199	15	1.4675	3512	
41122	44	15	1.8185	3910	
41127	90	12	2.0782	2305	

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 41		
		Diameter (in)	Slope (%)	Capacity ¹ (gpm)
41158	190	12	2.3111	2431
41128	14	12	1.0001	1599
41129	320	12	1.3251	1841
4182808	175	12	0.5714	1209
4182806	19	12	1.0527	1641
4182803	291	12	0.4811	1109
4182801	152	12	0.4868	1116
41362	16	12	0.9375	1548
41363	367	12	0.327	914
41366	318	12	0.5252	1159
41367	268	12	0.8881	1507
41368	46	10	0.7826	861
41369	44	10	2.0231	1384
41370	25	10	0.8	870
41371	102	10	0.5098	695
41372	22	10	1.0001	973
41373	23	10	1.8699	1330
41375	147	10	1.0545	999
41376	131	10	2.2219	1450
41377	191	10	2.0266	1385
41378	269	10	1.8591	1327
41379	395	10	1.5192	1199
41380	310	8	7.9932	1554
41381	325	8	9.6477	1707
41382	160	8	17.6695	2310

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 42		Capacity ¹ (gpm)
		Diameter (in)	Slope (%)	
42152	200	8	2.4507	860
42153	207	8	4.7881	1203
42154	200	8	4.7052	1192
42155	198	8	1.7174	720
42156	229	8	2.5336	875
42157	241	8	1.4524	662
42179	189	8	6.7827	1431
42184	55	8	6.212	1370
42185	200	8	2.6009	886
42186	244	8	6.5715	1409
42187	173	8	1.6765	712
42188	87	8	6.913	1445
42190	222	8	6.6589	1418
42191	340	8	9.0218	1651
42193	250	8	1.2001	602
42194	152	8	6.4608	1397
42214	141	8	1.7024	717
42215	131	8	7.2634	1481
42216	212	8	10.242	1759
42231	126	8	12.5663	1948
42232	278	10	0.6943	811
42235	103	8	2.0393	785
42236	280	8	22.0915	2583
42240	280	8	23.1693	2646
42241	150	8	16.0148	2200
42244	33	8	2.3643	845
42269	178	8	9.0822	1656
42293	315	8	5.3218	1268
42294	17	12	0.2353	776
42295	348	12	0.4224	1039
42296	300	12	0.4933	1123
42297	111	12	0.6036	1242
42298	144	12	0.3958	1006
42299	121	12	0.3141	896
42300	125	12	0.304	882
42301	125	10	2.745	1612
42302	129	10	2.6366	1580
42303	125	10	6.6547	2510
42306	216	12	0.338	930
42308	392	12	4.1797	3269
42309	192	12	0.3438	938

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 42		
		Diameter (in)	Slope (%)	Capacity ¹ (gpm)
42310	138	10	6.7837	2534
42311	107	12	8.9137	4774
42312	237	12	1.2659	1799
42313	68	12	4.1949	3275
42314	176	12	6.2337	3993
42318	188	8	9.3653	1682
42319	214	8	9.013	1650
42320	81	8	6.1846	1367
42351	188	8	7.5641	1512
42397	277	12	0.2527	804
42356	116	12	0.2414	786
42355	399	12	0.2682	828
42325	108	12	0.287	857
42326	212	12	1.0378	1629
42327	126	12	0.9524	1561
42328	84	12	0.6548	1294
42329	457	12	1.5319	1979
42330	267	15	0.2921	1567
42331	357	15	0.2717	1511
42332	79	15	0.2405	1422
42333	379	15	0.2797	1533
42334	293	15	0.2833	1543
42335	192	15	0.401	1836
42337	84	15	0.2738	1517
42338	90	15	0.2667	1497
42339	90	15	0.2556	1466
42340	67	15	0.4627	1972
42341	378	15	0.2778	1528
42342	160	15	0.2813	1538
42343	142	15	1.0564	2980

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 43				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
242	250	12	0.76	1394
243	18	12	0.3889	997
244	315	12	3.3956	2947
245	50	12	3.1616	2843
246	216	12	2.1162	2326
249	248	12	4.4641	3379
321	301	14	0.299	1319
322	180	14	0.3	1321
323	48	14	0.0208	348
1	400	12	5.551	3768

Basin 44*				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
209	146.7	8	0.57	411
210	82.1	8	0.59	418
212	394.9	8	0.5	385
213	94.4	8	0.5	385
214	65.2	8	0.5	385
215	81.9	8	0.5	385
205	74.2	8	0.5	385
204	263.5	8	0.5	385
203	107.4	8	0.5	385
80528	129.1	8	0.4	344
207	135.7	8	0.5	385
206	278.8	8	0.5	385
219	305.8	8	0.9	516
218	104.6	8	0.67	445
217	120.7	8	1.03	552
211	111	8	0.45	365
202	132.1	8	0.24	266

*: Basin 44 sewers are not modeled. Information shown is the best available from the City's as-built data.

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 45		Capacity ¹ (gpm)
		Diameter (in)	Slope (%)	
45101	17	10	30.4365	5419
45102	82	10	0.061	243
45103	150	10	3.3352	1794
45104	48	10	5.925	2391
45105	69	10	23.2701	4739
45106	110	10	11.9299	3393
45107	381	10	13.3509	3589
45108	361	10	7.4194	2676
45144	314	10	5.7155	2349
45145	396	10	4.6033	2108
45146	285	10	4.5288	2091
45147	166	10	7.1686	2630
45263	390	10	3.5935	1862
45267	415	10	5.7748	2361
45268	413	10	3.8475	1927
45269	431	10	1.8688	1343
45123	8	12	48.9938	1193
45124	73	12	1.7903	2140
45125	123	12	0.9805	1583
45126	98	12	1.4644	1935
45127	190	10	3.2933	1783
45128	65	10	39.7192	6191
45129	259	10	24.3112	4844
45130	147	10	4.4276	2067
45154	143	10	8.9406	2937
45155	40	10	6.846	2570
45156	400	10	10.4873	3181
45157	384	10	4.3887	2058
45158	180	10	2.2093	1460
45159	200	10	4.5207	2089
45274	216	10	5.6214	2329
45277	121	10	2.6354	1595
45278	344	10	3.4733	1831
45279	159	10	2.086	1419
45280	74	10	1.5858	1237
45283	97	10	2.3993	1522
45284	286	10	2.6233	1591
45285	110	10	1.2989	1120
45318	392	10	2.6256	1592
45319	210	10	0.8683	915
45320	340	10	0.8495	905
45321	272	10	1.9078	1357

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 45				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
45322	225	10	0.3748	601
45323	168	10	1.1957	1074
45324	264	10	1.2142	1082
45350	181	10	2.0669	1412
45217	391	10	4.3441	2047
4582439	48	10	11.7804	3372
45418	364	10	0.5524	730
45419	342	10	0.2628	504
45420	361	10	0.3281	563
45362	356	10	0.2967	535
45000	50	60	0.002	5228

DRAFT

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 46				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)
46257	75.6	10	0.6821	811
46180	250	10	0.8024	880
46154	193	10	0.6199	773
46151	402.5	10	1.6899	1277
46149	233.9	10	1.1538	1055
46222	290.1	10	10.1575	3131
46223	185.2	10	2.779	1638
46267	298	8	0.4996	384
46256	241	10	0.8888	926
46207	335	10	0.901	932
46153	136.8	10	5.257	2252
46165	23	8	11.0053	1802
46150	50	10	2.2189	1463
46140	101	12	18.4133	6862
46145	81	12	4.1169	3245
46146	326.2	8	0.668	444
46152	156.2	10	0.6362	784
46181	40.9	12	1.0123	1609
46158	360	8	0.5	384
46133	43	16	1.6979	4485
46134	34.9	16	4.2053	7058
46135	49.6	16	0.9743	3397
46136	399.6	12	2.5908	2574
46137	264	12	5.1688	3636
46138	303	12	3.9727	3187
4684414	50	10	0.9855	975
46139	190	12	7.3488	4335
46148	243	12	7.6567	4425
46157	17	8	0.5882	417

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 47*		Capacity ¹ (gpm)**
		Diameter (in)	Slope (%)	
116	231.1	8	0.44	361
111	122.2	8	0.49	381
110	172.2	8	0.5	385
109	61	8	0.5	385
108	98	8	0.5	385
104	133	8	0.5	385
103	245.7	8	0.5	385
102	69.5	8	0.5	385
101	105.1	8	0.5	385
138	323	8	0.5	385
123	40.3	8	0.5	385
107	150	8	0.63	432
134	219.4	8	0.93	524
144	149	8	1	544
120	72	8	1.01	547
121	147.1	8	1.06	560
78959	51.5	8	1.3	620
106	224.1	8	1.65	699
157	312.2	8	1.7	709
155	249	8	1.7	709
115	39	8	1.71	711
146	30.3	8	1.93	755
156	145.7	8	3	942
154	159.1	8	4.5	1154
118	167	8	4.7	1179
142	82	8	4.76	1186
105	93.3	8	5	1216
148	72.6	8	5.2	1240
150	323.2	8	5.71	1299
143	55	8	6.02	1334
152	121.2	8	6.48	1384
141	163	8	6.8	1418
153	132.4	8	6.92	1431
124	114	8	7.1	1449
145	20	8	7.5	1489
430999	186	8	8.66	1600
128	87	8	8.9	1622
149	286.3	8	9.29	1657
114	175.4	8	9.9	1711
151	84.7	8	11.22	1822
430986	103.6	8	11.55	1848

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 47*				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)**
85500	35	8	11.86	1873
126	164.8	8	14.9	2099
125	161.3	8	15	2106
140	152	8	16.6	2216
127	136.2	8	17.18	2254
430978	26	8	17.27	2260
430982	76	8	19.5	2401
117	60.2	8	20.6	2468
119	60.6	8	23.3	2625
130	184.1	8	24.2	2675
135	104.8	8	25.71	2757
112	49.1	8	35	3217
129	50	8	39.6	3422
137	40.9	8	999.99	Unknown
133	40.2	8	999.99	Unknown
136	38.3	8	0	Unknown
139	241.9	8	0	Unknown
113	94	8	999.99	Unknown
122	73	8	999.99	Unknown
78964	48.3	8	0	Unknown
81841	35	8	0	Unknown
82407	36	6	0	Unknown
82406	49	8	0	Unknown
82405	73	8	0	Unknown
82404	127	8	0	Unknown
82403	106	8	0	Unknown

*: Basin 47 sewers are not modeled. Information shown is the best available from the City's as-built data.

** : Unknown capacities given for pipes with unknown slopes or diameters

Basin 48*				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)**
118	239.1	12	0.65	2825
117	377	12	0.65	2825
182	30.9	10	0.28	3639
181	121.3	10	0.28	3639
132	399.3	8	0.4	5943
183	174.2	8	0.4	5943
180	295.4	8	0.4	5943
167	26.4	8	0.4	5943
163	73.2	8	0.4	5943
144	70.4	8	0.5	6179
145	107.4	8	0.5	6179

- Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 48*			Capacity ¹ (gpm)**
		Diameter (in)	Slope (%)		
148	71.2	8	0.5	6179	
149	251.5	8	0.5	6179	
131	125.7	8	0.54	6263	
157	313.2	8	0.61	6397	
176	207.8	8	0.63	6433	
119	40.1	8	0.65	6469	
173	251.2	8	0.68	6520	
139	78.8	8	0.7	6553	
136	110.2	8	0.78	6678	
147	191.1	8	0.8	6707	
124	72.9	8	0.8	6707	
143	150.2	8	0.9	6847	
146	202.1	8	0.9	6847	
162	121	8	0.93	6886	
138	379.3	8	0.95	6912	
140	152.8	8	0.96	6924	
172	38.5	8	0.96	6924	
141	142.5	8	1	6974	
142	188.8	8	1	6974	
123	385.4	8	1	6974	
168	83.3	8	1	6974	
179	245.6	8	1.1	7091	
134	115.6	8	1.5	7485	
154	177.2	8	1.93	7822	
161	104.7	8	2	7870	
155	218.5	8	2.1	7938	
165	144.2	8	2.13	7957	
169	203.5	8	2.29	8059	
175	229.2	8	2.52	8194	
166	122.9	8	2.8	8347	
159	234.8	8	2.94	8418	
177	310.3	8	3.08	8487	
170	138.1	8	3.97	8871	
174	109.6	8	4.4	9032	
178	130.5	8	4.43	9042	
130	168.6	8	4.58	9095	
160	141.7	8	6.12	9567	
133	216	8	6.3	9616	
128	251.8	8	6.54	9678	
158	136.3	8	6.71	9722	
137	246.3	8	7.7	9958	
125	146.5	8	8.22	10073	

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 48*				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)**
156	180.6	8	8.7	10173
129	270.1	8	8.73	10179
122	156.6	8	9.1	10253
164	125.3	8	10.55	10521
127	135.4	8	12.61	10854
126	311.2	8	14.02	11056
135	151.9	8	18.2	11571
171	47.5	8	999.99	Unknown
20312	92.3	0	999.99	Unknown
20311	65	0	999.99	Unknown
20310	184.7	0	999.99	Unknown
20309	351.2	0	999.99	Unknown
20308	177	0	999.99	Unknown
20307	239.2	0	999.99	Unknown
20304	114.6	0	999.99	Unknown
20303	224.7	0	999.99	Unknown
20053	288.8	0	999.99	Unknown
20052	313.8	0	999.99	Unknown
20051	194.4	0	999.99	Unknown
20050	347.1	0	999.99	Unknown
20049	301	0	999.99	Unknown
19839	316.3	0	999.99	Unknown
19838	309.3	0	999.99	Unknown
19837	247	0	999.99	Unknown
19836	388.9	0	999.99	Unknown
19384	30.7	0	999.99	Unknown
19383	19.6	0	999.99	Unknown
19382	23.1	0	999.99	Unknown
19381	45.4	0	999.99	Unknown
19380	374	0	999.99	Unknown

*: Basin 48 sewers are not modeled. Information shown is the best available from the City's as-built data.

** : Unknown capacities given for pipes with unknown slopes or diameters

Basin 50*				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)**
102	277.1	8	0.5	385
104	132.3	8	0.5	385
145	139.2	8	0.5	385
674	219.4	8	0.5	385
105	212.6	8	0.5	385
148	148.5	8	0.5	385
699	91.1	8	0.5	385

- Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 50*		Capacity ¹ (gpm)**
		Diameter (in)	Slope (%)	
697	206.6	8	0.5	385
154	108.5	8	0.5	385
152	120.1	8	0.5	385
153	58	8	0.5	385
155	145.9	8	0.5	385
698	284	8	0.5	385
665	158.6	8	0.52	392
666	123.3	8	0.55	403
673	403.4	8	0.58	414
151	170.7	8	0.71	458
552	102.8	6	3.45	469
135	377.3	8	1	544
147	388.3	8	1	544
110	154.3	8	1.16	586
115	97	8	1.29	618
678	135.7	8	1.62	692
675	120.1	8	1.73	715
108	53.1	8	2.04	777
124	205.8	8	2.2	807
150	241.7	8	2.5	860
131	174.5	8	2.51	862
127	298	8	3.2	973
845	20	8	3.38	1000
113	179.8	8	3.81	1061
101	160.3	8	4.4	1141
670	360	8	5.64	1291
157	223.4	8	6.1	1343
156	198.8	8	6.2	1354
117	342.1	8	6.41	1377
116	142.2	8	6.48	1384
149	233.2	8	7.24	1463
130	122.7	8	7.48	1487
136	133.1	8	7.7	1509
132	224	8	8.29	1566
109	131.4	8	8.33	1569
123	149.3	8	8.5	1585
694	47	8	8.5	1585
118	124.8	8	9.3	1658
120	236	8	10.9	1795
111	172.2	8	11	1804
122	161.6	8	12.3	1907
671	150.3	8	12.87	1951

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 50 [*]				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm) ^{**}
677	52.7	8	13.58	2004
125	138.7	8	14	2035
696	153.5	8	14.6	2078
134	106.1	8	14.84	2095
126	195.9	8	15	2106
139	132	8	15.61	2149
133	93.9	8	16.77	2227
146	196.2	8	17.12	2250
142	269	8	17.4	2268
672	88.3	8	18	2307
137	134.2	8	18.21	2321
143	41.6	8	18.4	2333
144	105.8	8	19	2370
121	96	8	19.9	2426
129	79.8	8	21.08	2497
128	150.9	8	21.52	2523
119	143.1	8	22.6	2585
695	301.9	8	27.2	2836
114	80.9	8	42.4	3541
669	114.8	8	45.43	3665
112	105.5	8	46	3688
667	92.7	0	0	Unknown
107	15.7	8	0	Unknown
81481	76.4	8	0	Unknown
668	101	8	0	Unknown
846	15.6	8	999.99	Unknown
106	36.8	8	999.99	Unknown
141	19.2	10	999.99	Unknown
138	40	8	999.99	Unknown
140	72.8	10	999.99	Unknown
676	196.4	8	999.99	Unknown
709	63.8	8	999.99	Unknown

*: Basin 50 sewers are not modeled. Information shown is the best available from the City's as-built data.

** : Unknown capacities given for pipes with unknown slopes or diameters

Basin 51 [*]				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm) ^{**}
715	129.9	8	0.02	77
843	335	6	0.5	179
173	149.9	6	0.7	211
292	23.8	8	0.4	344

- Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 51*			Capacity ¹ (gpm)**
		Diameter (in)	Slope (%)		
293	177.3	8	0.4	344	
176	208.9	8	0.4	344	
858	292.6	8	0.46	369	
291	218	8	0.49	381	
302	142.5	8	0.5	385	
278	307.9	8	0.5	385	
652	207.5	8	0.5	385	
726	198.1	8	0.5	385	
722	132	8	0.5	385	
869	81	8	0.51	388	
159	246.2	8	0.54	400	
352	238.5	8	0.58	414	
870	116	8	0.65	438	
282	144	8	0.69	452	
863	55	8	0.87	507	
859	51	8	0.94	527	
727	128.1	8	0.98	538	
294	129.3	8	1.04	555	
361	96.8	8	1.04	555	
283	386.9	10	0.32	558	
866	99	8	1.15	583	
454327	122	6	6.49	643	
281	316.7	8	1.89	748	
716	30	8	2	769	
862	124.2	8	2	769	
868	31	8	2.1	788	
298	126	8	2.34	832	
865	25	8	2.38	839	
413042	231	12	0.3	878	
288	144.4	8	2.8	910	
723	210.8	8	2.83	915	
833	144.5	10	0.98	976	
172	335.9	8	3.4	1003	
784	95	8	3.52	1020	
79248	243.4	8	3.7	1046	
171	128.9	8	3.7	1046	
413053	106.1	12	0.43	1051	
861	79.5	8	3.87	1070	
167	444	8	3.9	1074	
287	139.8	8	3.9	1074	
284	253.3	10	1.22	1089	
289	343.6	8	4.2	1114	

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 51*		Capacity ¹ (gpm)**
		Diameter (in)	Slope (%)	
164	59	8	4.3	1128
160	215	8	4.3	1128
163	181.2	8	4.34	1133
864	216	8	4.82	1194
720	131.6	8	5.43	1267
871	179.4	8	5.59	1286
867	98	8	5.83	1313
719	339	8	6.09	1342
166	383.8	8	6.2	1354
275	99	8	6.43	1379
413046	84.8	12	0.8	1434
162	134.6	8	7.07	1446
161	108.8	8	7.07	1446
413039	22.7	12	0.82	1452
651	30.1	8	7.5	1489
351	362.9	8	7.56	1495
728	233.8	8	7.62	1501
277	267.9	8	8.02	1540
413057	242.9	12	0.95	1563
785	133	8	9.29	1657
718	262	8	11.14	1815
844	217.5	10	5.58	2329
721	96.2	8	19.23	2385
413061	35.5	12	2.37	2468
276	75.3	8	26.25	2786
435840	28.3	8	67.67	4473
362	19	8	0	Unknown
79247	199.4	6	0	Unknown
177	392.9	8	0	Unknown
853	446	8	0	Unknown
175	248.4	8	0	Unknown
174	252.7	8	0	Unknown
829	162.9	8	0	Unknown
851	34	8	0	Unknown
850	265.3	8	0	Unknown
849	33.7	6	0	Unknown
832	328.2	8	0	Unknown
875	90	8	0	Unknown
725	185.7	8	0	Unknown
724	62.6	8	0	Unknown
158	139	8	0	Unknown
860	73.8	8	0	Unknown

- Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 51*				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)**
295	31	8	0	Unknown
710	55.2	8	0	Unknown
711	23.4	8	0	Unknown
297	83.8	8	999.99	Unknown
299	202.9	8	999.99	Unknown
357	321.3	8	999.99	Unknown
355	426.3	8	999.99	Unknown
356	229.8	8	999.99	Unknown
353	23.8	8	999.99	Unknown
296	141.1	8	999.99	Unknown
280	25.8	8	999.99	Unknown
876	36	6	999.99	Unknown
165	289	8	999.99	Unknown
824	15	8	999.99	Unknown

*: Basin 51 sewers are not modeled. Information shown is the best available from the City's as-built data.

** : Unknown capacities given for pipes with unknown slopes or diameters

Basin 52*				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)**
83974	27.8	6	0.14	94
551	41.2	6	0.4	160
548	111.1	6	1	253
549	77.1	6	1	253
560	16.2	8	0.28	288
530	90	8	0.4	344
559	371.2	8	0.4	344
554	100.1	8	0.4	344
639	102.1	8	0.4	344
567	235.6	8	0.4	344
486	44.5	8	0.4	344
491	98.4	8	0.4	344
492	389.5	8	0.41	348
565	282.1	8	0.42	352
431	345	8	0.44	361
536	115.3	8	0.5	385
532	43.4	8	0.5	385
534	242	8	0.5	385
537	279.3	8	0.5	385
496	260.3	8	0.5	385
495	160.3	8	0.5	385
475	247.4	8	0.5	385

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 52 [*]		Capacity ¹ (gpm) ^{**}
		Diameter (in)	Slope (%)	
501	103.4	8	0.51	388
436	388.9	8	0.51	388
703	103.8	8	0.53	396
494	209.9	8	0.53	396
438	146	8	0.53	396
439	379.8	8	0.54	400
591	277.5	8	0.55	403
540	87.4	8	0.57	411
493	242.9	8	0.58	414
440	254.2	8	0.58	414
566	103.7	8	0.6	421
505	150	8	0.61	425
553	49.1	6	2.95	434
503	38.3	8	0.64	435
583	15	8	0.67	445
509	47.7	8	0.71	458
488	343.1	8	0.73	465
516	413.3	8	0.74	468
860	219.4	6	3.8	492
482	387.2	8	0.82	492
436567	63	8	0.84	498
539	53	8	0.96	533
987	207.6	8	1	544
502	115	8	1	544
857	172	8	1	544
856	126.1	8	1.05	557
855	112.9	8	1.05	557
544	144.1	8	1.09	568
984	91.9	8	1.13	578
590	351.9	8	1.15	583
545	40.6	8	1.17	588
854	85.9	8	1.27	613
588	255.4	8	1.28	615
513	135.3	8	1.32	625
504	187.1	8	1.58	684
85421	96.4	8	1.75	719
481	207.2	8	1.91	752
572	144.1	8	2	769
584	377.1	8	2	769
638	272	8	2.01	771
562	263.5	8	2.04	777
499	218.8	8	2.14	796

- Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 52*			Capacity ¹ (gpm)**
		Diameter (in)	Slope (%)		
484	176.3	8	2.2	807	
483	208.2	8	2.2	807	
569	146.9	8	2.24	814	
476	181.2	8	2.24	814	
585	62.1	8	2.29	823	
594	225	8	2.3	825	
542	175.8	8	2.3	825	
533	63	6	10.7	826	
515	25	8	2.6	877	
587	166.9	8	2.63	882	
581	206.9	8	2.63	882	
582	175.9	8	2.67	889	
506	99.5	8	2.69	892	
473	260.2	8	2.71	895	
595	17.8	8	2.78	907	
988	140.9	8	2.82	913	
592	270.1	8	3.27	983	
571	258.4	8	3.49	1016	
586	79.1	8	3.51	1019	
558	242.3	8	3.54	1023	
523	18.3	8	3.57	1027	
527	254.1	8	3.62	1035	
577	262.9	8	3.63	1036	
433	320.6	8	3.73	1050	
561	107.5	8	3.87	1070	
823	179	8	3.96	1082	
528	45.6	8	3.96	1082	
437	272	8	4.07	1097	
489	159.8	8	4.08	1098	
550	36.1	8	4.1	1101	
574	258.7	8	4.15	1108	
985	110	8	4.15	1108	
490	262.3	8	4.2	1114	
436581	62	8	4.24	1120	
575	159.7	8	4.28	1125	
991	102.4	8	4.28	1125	
986	84.7	8	4.5	1154	
434	142.1	8	4.5	1154	
435	278.4	8	4.5	1154	
990	82.6	8	4.58	1164	
568	194.9	8	4.67	1175	
547	50.2	8	4.67	1175	

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 52 [*]		Capacity ¹ (gpm)**
		Diameter (in)	Slope (%)	
640	379.1	8	4.75	1185
432	399.2	8	4.81	1193
555	51.7	8	4.85	1198
593	276.2	8	5.87	1318
563	335	8	5.97	1329
859	222.7	8	6.03	1335
858	249.8	8	6.32	1367
436585	75	8	6.36	1371
579	165.4	8	6.59	1396
589	127.8	8	6.64	1401
479	237.8	8	6.69	1407
500	130	8	6.91	1429
989	102.4	8	7.19	1458
498	275.3	8	7.2	1459
546	196.7	8	7.25	1464
541	122.1	8	7.32	1471
570	158.2	8	7.34	1473
578	357.6	8	7.7	1509
576	82	8	7.86	1525
529	175	8	8	1538
436556	99	8	8.28	1565
511	81.4	8	8.3	1567
436577	138	8	8.32	1569
995	111.5	8	8.55	1590
827	72.2	8	8.87	1620
564	329.1	8	8.88	1620
512	209.8	8	8.97	1629
83977	58	8	9.36	1664
573	112.1	8	9.57	1682
531	104.2	8	10	1720
84535	50	8	10.69	1778
477	264.1	8	12.14	1895
543	173.7	8	12.72	1939
436563	90	8	13.5	1998
704	102.2	8	13.68	2011
485	95	8	18.91	2365
980	92	8	22.47	2578
508	172	8	-0.24	Unknown
538	47.3	8	0	Unknown
78173	299	0	0	Unknown
359	374.6	8	0	Unknown
360	375.3	8	0	Unknown

- Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 52*				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)**
361	225.2	8	0	Unknown
745	44.3	8	0	Unknown
744	126.1	8	0	Unknown
556	130.6	8	0	Unknown
557	46.7	0	0	Unknown
996	108.1	8	0	Unknown
83128	22.5	8	0	Unknown
472	40.3	8	0	Unknown
478	155.1	8	0	Unknown
507	213.3	8	999.99	Unknown
522	266.6	8	999.99	Unknown
983	271	8	999.99	Unknown
850	30	6	999.99	Unknown
514	45.5	8	999.99	Unknown
524	15.9	8	999.99	Unknown
992	152.3	6	999.99	Unknown
521	257.5	8	999.99	Unknown
519	290.1	8	999.99	Unknown
517	232.1	8	999.99	Unknown
518	238.4	8	999.99	Unknown
831	316.3	8	999.99	Unknown
520	248.2	8	999.99	Unknown
497	140.5	8	999.99	Unknown
487	22	8	999.99	Unknown
474	102	8	999.99	Unknown
362	391.8	8	999.99	Unknown
365	248.6	8	999.99	Unknown
363	199.4	8	999.99	Unknown
441	90.1	8	999.99	Unknown
358	384.4	8	999.99	Unknown

*: Basin 52 sewers are not modeled. Information shown is the best available from the City’s as-built data.

** : Unknown capacities given for pipes with unknown slopes or diameters

Basin 53*				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)**
788	212.9	8	0.05	122
644	33.8	8	0.1	172
787	70	8	0.2	243
315	150	8	0.4	344
840	132	8	0.45	365
314	191	8	0.5	385

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 53 [*]			Capacity ¹ (gpm) ^{**}
		Diameter (in)	Slope (%)		
310	241.1	8	0.5	385	
857	280.8	8	0.54	400	
858	62	8	0.74	468	
842	265	8	0.82	492	
838	227.5	8	0.83	495	
839	385	8	0.98	538	
813	128	8	1	544	
812	51	8	1	544	
811	58	8	1	544	
819	94.7	8	1	544	
734	95	8	1	544	
650	170	8	1	544	
841	65.3	8	1	544	
814	173.9	8	1.01	547	
828	190.3	8	1.14	581	
859	39.4	8	1.19	593	
797	274.8	8	1.24	606	
308	68.3	10	0.39	616	
304	26.4	10	0.5	697	
827	173.4	8	1.76	721	
829	101.9	8	1.91	752	
837	31	8	1.94	757	
305	224.9	12	0.23	769	
679	264.9	8	2.09	786	
818	179	8	2.11	790	
832	65.8	8	2.19	805	
810	107	8	2.22	810	
825	123.4	8	2.56	870	
824	116.1	8	2.56	870	
817	255	8	2.83	915	
808	18.4	8	2.86	920	
800	143.4	8	2.91	928	
313	88.1	8	3.1	957	
834	225.3	8	3.13	962	
805	22.2	8	3.39	1001	
809	196	8	3.52	1020	
855	96.3	6	17.25	1049	
845	197.4	8	3.82	1063	
636	46.1	8	4	1088	
735	169.7	8	4.07	1097	
848	103.6	8	4.3	1128	
807	152	8	4.84	1196	

- Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 53*				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)**
851	91.3	8	4.86	1199
850	171.5	8	4.94	1209
849	151.4	8	5.15	1234
826	78.6	8	5.58	1285
798	45.2	8	6	1332
736	19.5	8	6.43	1379
815	357	8	6.59	1396
853	91.6	8	7.1	1449
799	163.6	8	7.16	1455
312	110.9	8	7.4	1479
833	66.5	8	8.78	1611
830	183.7	8	8.93	1625
846	49.3	8	9.25	1654
843	91.1	8	10.12	1730
835	144	8	10.24	1740
844	159.5	8	10.77	1785
311	98.6	8	11	1804
742	157.1	8	11.35	1832
831	160.7	8	12.31	1908
680	60.7	8	16.59	2215
852	88.2	8	17.1	2249
741	23	8	43.26	3577
648	171.5	8	0	Unknown
806	99	8	0	Unknown
856	38.2	8	0	Unknown
860	26	8	0	Unknown
740	21.8	8	0	Unknown
816	38.6	8	999.99	Unknown
737	105.5	8	999.99	Unknown
303	73.3	10	999.99	Unknown

*: Basin 53 sewers are not modeled. Information shown is the best available from the City's as-built data.

** : Unknown capacities given for pipes with unknown slopes or diameters

Basin 54*				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)**
720	42	8	0.1	172
724	64.3	8	0.11	180
718	191.9	8	0.22	255
184	132.9	6	1.8	339
658	235.4	8	0.4	344
656	217.8	8	0.4	344
721	41	8	0.4	344

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 54*			Capacity ¹ (gpm)**
		Diameter (in)	Slope (%)		
727	157	8	0.4	344	
653	299.4	8	0.4	344	
250	260.7	8	0.4	344	
654	215	8	0.4	344	
655	361.1	8	0.4	344	
659	401.4	8	0.4	344	
729	168.4	8	0.42	352	
657	402.7	8	0.49	381	
244	145.1	6	2.28	381	
318	288	8	0.5	385	
319	145.1	8	0.5	385	
237	122	8	0.5	385	
262	333.8	6	3.14	447	
260	274.4	6	3.34	461	
440229	53.6	8	0.73	465	
274	222.7	6	3.45	469	
731	62	8	0.81	489	
218	134	8	0.81	489	
325	210.5	8	1.16	586	
334	163	8	1.2	596	
320	133.5	8	1.4	643	
241	279	6	7.14	675	
329	256.7	8	1.55	677	
256	210.2	6	7.78	704	
83522	37.1	6	7.97	713	
246	65	6	8.16	721	
247	189.6	6	8.16	721	
660	29.5	8	1.79	728	
240	302.4	6	8.37	731	
830	111	8	1.92	754	
265	206.8	10	0.6	764	
83521	97.8	8	2.06	780	
253	266.7	8	2.38	839	
242	239.1	8	2.46	853	
238	390	8	2.5	860	
662	116.5	8	2.6	877	
243	263.2	8	2.77	905	
263	190.4	8	2.9	926	
254	267.7	8	2.91	928	
215	147.8	6	13.8	938	
216	154.5	8	3.02	945	
261	327	8	3.1	957	

- Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 54*			Capacity ¹ (gpm)**
		Diameter (in)	Slope (%)		
255	186	8	3.15	965	
330	400.9	8	3.31	989	
259	266.1	8	3.34	994	
245	188.7	6	16.8	1035	
733	80	8	3.98	1085	
236	398.8	8	4.01	1089	
339	151.4	8	4.08	1098	
730	71.6	8	4.09	1100	
739	100.6	8	4.11	1102	
267	299.4	8	4.2	1114	
333	287.6	8	4.2	1114	
269	250.4	8	4.3	1128	
231	206.9	8	4.3	1128	
273	243.5	8	4.52	1156	
182	98.6	8	4.6	1166	
266	90.6	8	4.76	1186	
183	323.8	8	4.99	1215	
271	318.4	8	5.16	1235	
332	138.3	8	5.2	1240	
223	200.1	8	5.54	1280	
328	230.7	8	5.64	1291	
217	170	6	28.18	1340	
272	326	8	6.19	1353	
249	283.5	8	6.27	1362	
224	97	8	7	1439	
186	317.1	8	7	1439	
326	169.4	8	7.11	1450	
232	204	8	7.99	1537	
663	279.1	8	8.03	1541	
226	111.6	8	8.3	1567	
213	265.9	8	8.6	1595	
221	271.2	8	9	1631	
239	407	8	9.5	1676	
185	370.1	8	11.32	1830	
728	185.6	8	11.42	1838	
220	212.4	8	11.6	1852	
327	211.9	8	12.71	1939	
251	184.3	8	13	1961	
340	195.7	8	13.78	2019	
723	90.9	8	15	2106	
248	45.1	8	17.78	2293	
189	257.4	8	19.88	2425	

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 54*		Capacity ¹ (gpm)**
		Diameter (in)	Slope (%)	
726	59.5	8	20.78	2479
719	90	8	27	2826
732	40	8	36	3263
725	41.1	8	37.5	3330
722	57.5	8	42.4	3541
664	50.1	8	0	Unknown
10396	20.3	0	0	Unknown
234	45	8	0	Unknown
179	182.5	6	0	Unknown
829	200.6	8	0	Unknown
229	252	8	0	Unknown
181	42	6	0	Unknown
180	15.9	8	0	Unknown
206	169.8	8	0	Unknown
207	99.9	8	0	Unknown
828	56.6	8	0	Unknown
336	141.8	8	0	Unknown
637	156.5	8	0	Unknown
331	215.6	8	0	Unknown
317	320	8	0	Unknown
214	183.6	8	0	Unknown
701	103.9	6	0	Unknown
85610	14	8	0	Unknown
827	25.8	8	999.99	Unknown
743	274.4	8	999.99	Unknown
323	108.1	8	999.99	Unknown
335	91.8	8	999.99	Unknown
338	105.1	6	999.99	Unknown
337	90	0	999.99	Unknown
322	64.9	8	999.99	Unknown
321	182.8	8	999.99	Unknown
316	55	8	999.99	Unknown
324	185.7	8	999.99	Unknown
211	162.4	6	999.99	Unknown
212	177	8	999.99	Unknown
209	104	8	999.99	Unknown
208	161.2	6	999.99	Unknown
225	188.9	8	999.99	Unknown
78080	191	8	999.99	Unknown
210	64.2	8	999.99	Unknown
200	175.4	8	999.99	Unknown
199	118.3	6	999.99	Unknown

- Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 54*				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)**
203	31.4	8	999.99	Unknown
204	89.2	6	999.99	Unknown
201	109.8	8	999.99	Unknown
202	79.4	6	999.99	Unknown
205	21.6	8	999.99	Unknown
190	95.9	8	999.99	Unknown
191	76.6	8	999.99	Unknown
194	87.3	8	999.99	Unknown
192	106.7	8	999.99	Unknown
195	144.9	8	999.99	Unknown
196	172.1	8	999.99	Unknown
197	123.4	8	999.99	Unknown
198	45.6	8	999.99	Unknown
193	30.4	8	999.99	Unknown
826	99.3	6	999.99	Unknown
842	359.6	6	999.99	Unknown
257	248.2	6	999.99	Unknown
270	258.2	6	999.99	Unknown
252	184.2	8	999.99	Unknown
258	253.3	6	999.99	Unknown

*: Basin 54 sewers are not modeled. Information shown is the best available from the City's as-built data.

** : Unknown capacities given for pipes with unknown slopes or diameters

Basin 55*				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)**
471	284.5	8	0.02	77
786	229.6	8	0.02	77
370	100	6	0.5	179
789	33.1	8	0.17	224
758	74	8	0.2	243
417	209.3	8	0.24	266
350	309.1	8	0.24	266
349	219.8	8	0.29	293
346	104.6	8	0.3	298
385	20.5	8	0.38	335
470	170.4	8	0.4	344
469	416	8	0.4	344
368	218.8	8	0.4	344
374	269.2	8	0.41	348
425	52.7	8	0.41	348
375	337.7	8	0.44	361
432446	21	6	2.1	366

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 55*		Capacity ¹ (gpm)**
		Diameter (in)	Slope (%)	
753	292.9	8	0.49	381
834	126.2	8	0.5	385
347	250.1	8	0.5	385
785	79.8	8	0.5	385
428	245	8	0.51	388
849	81.8	8	0.51	388
860	286	8	0.55	403
463	120.6	8	0.57	411
429	306.4	8	0.61	425
345	293.7	8	0.75	471
457	396.9	8	0.8	486
344	38.9	8	0.8	486
447	35	8	0.81	489
373	143.6	8	0.86	504
754	202.5	8	0.87	507
432410	373.2	8	0.95	530
430	249.7	8	0.96	533
348	188.5	8	0.97	536
859	163	8	0.97	536
452	178.6	6	4.56	539
837	110	8	0.99	541
473	100	8	1	544
367	221.6	8	1	544
765	51.6	8	1	544
838	87.9	8	1	544
839	152.5	8	1	544
773	84	8	1	544
772	83	8	1	544
771	165	8	1	544
460	80.2	8	1.03	552
459	78.6	8	1.16	586
432414	30.2	8	1.2	596
841	186.1	8	1.21	598
416	269.1	8	1.33	627
432443	58.4	8	1.39	641
759	397.5	8	1.49	664
870	63	8	1.54	675
432406	29.1	8	1.69	707
464	182.1	8	1.94	757
342	176	8	1.96	761
382	105.4	8	2.21	808
467	382.1	8	2.28	821

- Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 55*			Capacity ¹ (gpm)**
		Diameter (in)	Slope (%)		
770	110.8	8	2.41	844	
376	204.4	8	2.54	867	
449	136.7	8	2.72	897	
411	272.7	8	3.04	948	
389	99.8	8	3.13	962	
862	178.9	8	3.19	971	
793	331.7	8	3.3	988	
413	270.6	8	3.33	992	
412	331.3	8	3.37	998	
390	193.1	8	3.55	1025	
444	39.6	8	3.69	1045	
762	82.9	8	4	1088	
853	101.2	8	4.22	1117	
866	78.9	8	4.28	1125	
383	252.5	8	4.39	1139	
446	319.4	8	4.52	1156	
875	52.9	8	4.53	1157	
472	153	8	4.56	1161	
366	169.1	8	4.85	1198	
752	48.3	8	5.04	1221	
851	110	8	5.06	1223	
856	77	8	5.06	1223	
850	107.2	8	5.08	1226	
855	75	8	5.2	1240	
871	114	8	5.45	1270	
848	78	8	5.53	1279	
380	81.5	8	5.63	1290	
443	120.7	8	5.73	1302	
840	106.2	8	6.02	1334	
873	209	8	6.12	1345	
379	63.3	8	6.15	1349	
369	296	8	6.4	1376	
419	127.1	8	6.45	1381	
867	224.2	8	6.99	1438	
864	74.4	8	7.1	1449	
466	76.3	10	2.16	1449	
863	99.2	8	7.33	1472	
378	306.6	8	7.4	1479	
454	96.6	8	7.42	1481	
423	266.3	8	7.88	1527	
445	253	8	7.88	1527	
764	113.5	8	8	1538	

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 55*			Capacity ¹ (gpm)**
		Diameter (in)	Slope (%)		
801	71.9	8	8	1538	
761	180.2	8	8	1538	
865	230.3	8	8	1538	
755	141.2	8	8.07	1545	
763	139.8	8	8.23	1560	
432382	163.5	8	8.87	1620	
377	270.9	8	9.27	1656	
424	317.8	8	9.4	1667	
858	70	8	9.6	1685	
766	76.9	8	10	1720	
757	174.1	8	10.05	1724	
458	232	8	10.13	1731	
857	152	8	10.46	1759	
835	162.4	8	10.5	1762	
427	97.8	8	10.9	1795	
450	133.9	8	11.36	1833	
405	117.2	8	11.36	1833	
869	70	8	11.51	1845	
420	133	8	11.78	1866	
432440	84.7	8	12.05	1888	
760	41	8	12.68	1936	
381	251.6	8	12.68	1936	
854	77.1	8	12.96	1958	
410	168.2	8	13.35	1987	
461	87.6	8	13.96	2032	
432398	293	8	14.49	2070	
422	120.7	8	16.17	2187	
421	55.3	8	16.22	2190	
462	259.3	8	18.3	2326	
451	186.5	8	22.03	2552	
432402	169.3	8	24.2	2675	
453	128.2	8	27.51	2852	
384	26.7	8	32.14	3083	
872	20	8	67.6	4471	
404	237	8	-33.68	Unknown	
876	138	8	0	Unknown	
836	214.9	8	0	Unknown	
388	40.1	8	0	Unknown	
455	146.5	8	0	Unknown	
396	257.5	6	999.99	Unknown	
402	323.4	8	999.99	Unknown	
392	87.5	8	999.99	Unknown	

- Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 55*				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)**
406	194.5	6	999.99	Unknown
465	15.7	10	999.99	Unknown
847	62.1	8	999.99	Unknown
780	138.7	8	999.99	Unknown
468	417.7	8	999.99	Unknown
456	112.8	6	999.99	Unknown
474	63	8	999.99	Unknown
756	70	8	999.99	Unknown
448	22.4	8	999.99	Unknown
371	144.9	8	999.99	Unknown
372	107.8	8	999.99	Unknown
391	188.8	8	999.99	Unknown
399	57.1	8	999.99	Unknown
393	91.5	8	999.99	Unknown
386	84	8	999.99	Unknown
415	271.8	8	999.99	Unknown
414	96.3	8	999.99	Unknown
403	153	8	999.99	Unknown
401	162.2	8	999.99	Unknown
407	332.4	8	999.99	Unknown
408	345.6	8	999.99	Unknown
409	151.5	8	999.99	Unknown
400	354.1	8	999.99	Unknown
398	209.9	8	999.99	Unknown
395	146.9	8	999.99	Unknown
397	112.8	6	999.99	Unknown
394	195.4	6	999.99	Unknown
877	60	6	999.99	Unknown
341	168.7	8	999.99	Unknown
442	186.9	8	999.99	Unknown
82507	186.9	8	999.99	Unknown

*: Basin 55 sewers are not modeled. Information shown is the best available from the City's as-built data.

** : Unknown capacities given for pipes with unknown slopes or diameters

Basin 56*				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)**
161	53.1	8	0.1	172
148	198.9	8	0.3	298
149	204.6	8	0.3	298
155	259.5	8	0.4	344
154	398.9	8	0.4	344
153	119.9	8	0.4	344

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 56*		Capacity ¹ (gpm)**
		Diameter (in)	Slope (%)	
156	253	8	0.4	344
157	135	8	0.4	344
127	20	8	0.4	344
126	194.8	8	0.4	344
125	286.7	8	0.4	344
160	196.9	8	0.5	385
140	108.4	8	0.5	385
128	186.4	8	0.5	385
104	52.8	8	0.5	385
103	34	8	0.5	385
110	102.9	8	0.5	385
118	34.5	6	2.65	411
147	200.9	8	0.6	421
146	198.6	8	0.6	421
150	68.9	8	0.7	455
152	259.4	8	0.8	486
151	186.5	8	0.8	486
145	419.8	8	0.89	513
133	74.7	8	0.98	538
135	316.2	8	0.98	538
144	69.8	8	1	544
143	37.7	8	1	544
85353	61.3	8	1.02	549
112	248.2	8	1.24	606
102	160.6	8	1.24	606
116	239.3	8	1.33	627
139	294.9	8	1.39	641
124	194.8	8	1.53	673
85351	160.8	8	1.54	675
163	182.6	8	1.7	709
129	123.6	8	1.72	713
132	378.8	8	1.79	728
106	114.5	8	1.92	754
105	220.2	8	2.21	808
108	161	8	2.62	880
111	53.4	8	2.79	908
120	134.1	8	3.28	985
136	270.1	8	3.28	985
109	51	8	3.97	1084
115	77.1	8	4	1088
137	39.1	8	4	1088
121	131.2	8	4.17	1110

- Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 56*				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)**
159	320	8	4.25	1121
123	371.9	8	4.5	1154
122	184.6	8	4.71	1180
113	153.1	8	6.7	1408
107	118.1	8	6.7	1408
114	177.2	8	9.8	1702
134	283.1	8	0	Unknown
117	36.9	0	0	Unknown
130	305	8	0	Unknown
131	27.5	8	0	Unknown
138	125.4	8	0	Unknown
158	35	8	999.99	Unknown
101	43	6	999.99	Unknown
119	36.9	8	999.99	Unknown
78252	62	8	999.99	Unknown

*: Basin 56 sewers are not modeled. Information shown is the best available from the City's as-built data.

** : Unknown capacities given for pipes with unknown slopes or diameters

Basin 57*				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)**
380	169.2	8	0.1	172
385	104.8	8	0.15	211
503	243	8	0.19	237
466	127.2	8	0.21	249
663	126.8	8	0.22	255
502	174.8	8	0.24	266
581	110.4	6	1.74	333
364	201	8	0.4	344
512	145.2	8	0.4	344
519	396.2	8	0.4	344
518	163.4	8	0.4	344
517	190.3	8	0.4	344
513	271	8	0.4	344
515	123.2	8	0.4	344
516	84.1	8	0.4	344
397	328	8	0.41	348
565	161.8	8	0.41	348
567	263.8	8	0.43	357
577	82.6	6	2	357
476	243.5	8	0.44	361
568	98.1	8	0.45	365
543	398.4	8	0.46	369

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 57*			Capacity ¹ (gpm)**
		Diameter (in)	Slope (%)		
582	69.6	8	0.46	369	
657	156.6	8	0.48	377	
677	93.4	8	0.48	377	
666	110.6	8	0.48	377	
475	119.1	8	0.48	377	
656	110.1	8	0.49	381	
665	386.5	8	0.5	385	
671	63.7	8	0.5	385	
421	225.8	8	0.5	385	
366	186	8	0.5	385	
479	100.8	8	0.5	385	
392	52.4	8	0.5	385	
393	159.3	8	0.5	385	
532	70	8	0.5	385	
525	73.7	8	0.5	385	
523	241.9	8	0.5	385	
531	315	8	0.5	385	
536	166.4	8	0.5	385	
540	197.9	8	0.5	385	
533	185.4	8	0.5	385	
597	276.7	8	0.5	385	
634	130.3	8	0.5	385	
586	143.4	8	0.5	385	
549	65.9	8	0.5	385	
548	79.9	8	0.5	385	
595	130.6	8	0.5	385	
596	122.4	8	0.5	385	
594	77.1	8	0.5	385	
591	365.5	8	0.5	385	
589	228.8	8	0.5	385	
310	157.5	8	0.5	385	
314	86.4	8	0.5	385	
313	125	8	0.5	385	
312	74.2	8	0.5	385	
309	254.8	8	0.5	385	
662	146.8	8	0.52	392	
490	41.3	8	0.53	396	
632	332.5	8	0.53	396	
576	90.8	6	2.5	399	
399	164.2	8	0.56	407	
398	108.2	8	0.57	411	
588	342.2	8	0.58	414	

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 57*			Capacity ¹ (gpm)**
		Diameter (in)	Slope (%)		
306	195.5	8	0.6	421	
415	234.4	8	0.61	425	
331	335.7	8	0.63	432	
413	228.4	8	0.64	435	
463	88.1	8	0.65	438	
699	166.8	8	0.65	438	
409	239.6	8	0.66	442	
454	230.9	8	0.67	445	
464	98.4	8	0.67	445	
414	136.9	8	0.68	448	
365	129.2	8	0.7	455	
416	103.4	8	0.7	455	
453	80.6	8	0.7	455	
474	264.9	8	0.7	455	
308	197.3	8	0.7	455	
429	103.8	8	0.72	461	
419	68.8	8	0.73	465	
578	306.8	8	0.73	465	
418	116.8	8	0.75	471	
442	95.3	8	0.76	474	
441	111	8	0.76	474	
430	160.6	8	0.76	474	
410	141.8	8	0.77	477	
477	163.2	8	0.78	480	
412	104.1	8	0.79	483	
566	273.3	8	0.8	486	
584	68.5	8	0.81	489	
402	226.1	8	0.83	495	
417	128.4	8	0.84	498	
701	241.8	8	0.86	504	
538	49.8	8	0.87	507	
456	146.1	8	0.9	516	
537	151.8	8	0.9	516	
559	244.6	8	0.9	516	
404	335.1	8	0.92	522	
522	60.9	8	0.92	522	
424	111.9	8	0.93	524	
367	175.1	8	0.94	527	
85238	87.7	8	0.97	536	
322	315.7	8	0.98	538	
500	227.6	8	1	544	
689	290.1	8	1.05	557	

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 57*		Capacity ¹ (gpm)**
		Diameter (in)	Slope (%)	
378	394.4	8	1.06	560
379	358.3	8	1.06	560
553	312	8	1.08	565
407	204.9	8	1.11	573
560	88.2	8	1.13	578
510	237.7	8	1.14	581
600	137.2	8	1.14	581
447	96	8	1.15	583
609	320.9	8	1.16	586
448	115.1	8	1.17	588
389	198.5	8	1.18	591
401	223.4	8	1.18	591
403	230.9	8	1.2	596
704	176.2	8	1.2	596
334	208.2	8	1.22	601
541	171.1	8	1.22	601
547	195.1	8	1.26	610
564	202.6	8	1.29	618
497	99	8	1.3	620
370	404.3	8	1.3	620
423	80.6	8	1.3	620
686	102.2	8	1.3	620
633	344	8	1.3	620
444	311	8	1.43	650
439	208.4	8	1.44	653
556	67.4	8	1.44	653
460	170.9	8	1.45	655
384	103.3	8	1.5	666
408	83.6	8	1.5	666
491	225.5	8	1.53	673
84866	51.5	8	1.54	675
336	182.5	8	1.57	681
462	144.6	8	1.58	684
333	309.3	8	1.65	699
580	64.2	6	7.7	701
678	372.7	8	1.7	709
682	191.9	8	1.7	709
684	322.8	8	1.7	709
318	294	8	1.7	709
508	236.2	8	1.72	713
506	233.4	8	1.76	721
427	73.9	8	1.77	723

- Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 57*			Capacity ¹ (gpm)**
		Diameter (in)	Slope (%)		
394	94.8	8	1.8	730	
320	340	8	1.8	730	
317	236	8	1.8	730	
471	302.8	8	1.83	736	
507	355.7	8	1.86	742	
544	154.6	8	1.9	750	
509	285.6	8	1.92	754	
330	120.1	8	1.96	761	
685	346.4	8	2	769	
501	278.6	8	2	769	
84858	194.2	8	2	769	
451	117.1	8	2.05	779	
432	214.6	8	2.05	779	
450	132.7	8	2.05	779	
449	99.4	8	2.05	779	
326	83.5	8	2.06	780	
608	99	8	2.09	786	
376	316.7	8	2.12	792	
406	89.7	8	2.21	808	
458	275.3	8	2.26	818	
459	93.5	8	2.3	825	
587	154.5	8	2.3	825	
590	322.2	8	2.3	825	
371	292.5	8	2.34	832	
604	40.4	8	2.34	832	
84862	111.3	8	2.34	832	
605	67.9	8	2.37	837	
443	394.7	8	2.39	841	
433	196.1	8	2.4	842	
472	282.9	8	2.41	844	
469	121.5	8	2.45	851	
498	267.4	8	2.46	853	
438	295	8	2.46	853	
422	110.3	8	2.47	855	
534	97.6	8	2.47	855	
554	129.8	8	2.48	856	
683	325.6	8	2.5	860	
496	274.4	8	2.5	860	
79283	99	8	2.53	865	
520	171.7	8	2.54	867	
602	56	8	2.55	868	
79282	210	8	2.56	870	

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 57*		Capacity ¹ (gpm)**
		Diameter (in)	Slope (%)	
431	126.3	8	2.58	873
305	128.3	8	2.58	873
505	154.9	8	2.59	875
425	187.6	8	2.6	877
426	183.1	8	2.61	879
705	196.4	8	2.62	880
304	265.2	8	2.63	882
84876	49	8	2.65	885
391	101.5	8	2.67	889
84870	69.1	8	2.68	890
405	140.2	8	2.7	894
550	142.1	8	2.71	895
84872	54.3	8	2.73	898
551	161	8	2.76	903
504	186.7	8	2.79	908
601	49.1	8	2.81	912
84868	46.1	8	2.83	915
511	212.4	8	2.84	916
428	122.5	8	2.87	921
437	251.4	8	2.88	923
457	277.9	8	2.89	924
436	101.4	8	2.9	926
434	206	8	2.9	926
396	257.8	8	2.9	926
493	212.1	8	2.9	926
492	242.8	8	2.9	926
315	116.9	8	2.9	926
363	100.4	8	3.03	947
495	282.3	8	3.03	947
452	141.6	8	3.13	962
381	45.2	10	0.97	971
455	22.5	8	3.19	971
382	263.3	8	3.2	973
668	61.5	8	3.25	980
563	137.5	8	3.29	986
574	197	8	3.31	989
494	264.2	8	3.35	995
79286	108	8	3.36	997
521	99.4	8	3.39	1001
420	158.6	8	3.4	1003
369	192.7	8	3.42	1006
514	191.1	8	3.47	1013

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 57*			Capacity ¹ (gpm)**
		Diameter (in)	Slope (%)		
400	257.9	8	3.54	1023	
629	81	8	3.66	1040	
478	135.9	8	3.68	1043	
84875	68.3	8	3.68	1043	
468	163.3	8	3.71	1047	
681	152.7	8	3.79	1059	
700	200.6	8	3.81	1061	
79281	222	8	3.82	1063	
368	279	8	3.88	1071	
374	230	8	3.91	1075	
84856	135.9	8	3.93	1078	
446	283.4	8	4	1088	
558	176.6	8	4.04	1093	
557	163.7	8	4.09	1100	
484	300	8	4.2	1114	
524	68.5	8	4.21	1116	
84860	73.5	8	4.25	1121	
655	227.8	8	4.44	1146	
84864	42.3	8	4.57	1163	
79284	313	8	4.61	1168	
84877	53	8	4.62	1169	
485	94.4	8	4.65	1173	
675	150	8	4.7	1179	
461	75.8	8	4.78	1189	
679	154.4	8	4.8	1191	
470	31.7	8	4.8	1191	
487	253.6	8	4.8	1191	
583	80.8	8	5	1216	
706	34.6	8	5	1216	
575	116.4	8	5	1216	
707	143.8	8	5	1216	
395	127.9	8	5.02	1218	
467	170.8	8	5.03	1220	
535	191.3	8	5.1	1228	
631	228.9	8	5.1	1228	
387	189.3	8	5.19	1239	
489	177.9	8	5.2	1240	
411	141.2	8	5.22	1242	
79285	290	8	5.37	1260	
390	308	8	5.38	1261	
488	229.1	8	5.4	1264	
599	93.9	8	5.47	1272	

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 57*		Capacity ¹ (gpm)**
		Diameter (in)	Slope (%)	
388	126.5	8	5.67	1295
445	148.8	8	6.16	1350
653	152.6	8	6.24	1358
486	81.4	8	6.3	1365
703	155	8	6.36	1371
569	158.4	8	6.5	1386
661	176.6	8	6.63	1400
660	329.8	8	6.63	1400
465	125.4	8	6.63	1400
654	53	8	6.74	1412
483	81.6	8	6.9	1428
482	95.9	8	6.9	1428
687	129.9	8	7	1439
688	206.6	8	7	1439
672	83.6	8	7.3	1469
690	246.9	8	7.4	1479
555	192.5	8	7.42	1481
435	59	8	7.43	1482
552	388.5	8	7.51	1490
708	101.1	8	7.59	1498
579	69.3	8	7.59	1498
673	262.1	8	7.8	1519
676	239	8	8.2	1557
674	121	8	8.3	1567
377	265.1	8	8.3	1567
527	114.7	8	8.54	1589
383	76.7	8	8.67	1601
372	232.1	8	8.9	1622
373	236.9	8	9.4	1667
570	52.7	8	9.62	1687
325	58.8	8	9.64	1688
598	197.3	8	9.7	1694
440	112.1	8	9.74	1697
667	230.3	8	9.77	1700
561	95.5	12	1.13	1704
319	214.9	8	10.8	1787
375	286.2	8	10.9	1795
323	166.3	8	11.23	1822
528	71.9	8	11.67	1858
327	33.2	8	11.92	1877
628	37.8	8	12.55	1926
329	76.1	8	13.07	1966

- Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Basin 57*				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)**
328	174.9	8	13.5	1998
529	191.5	10	4.21	2023
316	134.2	8	14.5	2071
321	265.6	8	14.65	2081
593	144.3	8	15.7	2155
606	68.5	8	18.76	2355
607	211.4	8	18.83	2360
585	57.7	8	21.37	2514
562	31.1	8	21.53	2523
702	112	8	21.59	2527
603	51.7	8	23.75	2650
473	182.3	8	24	2664
324	181.3	8	24.4	2686
630	60	8	27.14	2833
530	64	10	12.31	3459
592	189.4	8	54.13	4001
635	80.4	8	0	Unknown
79287	99	6	0	Unknown
335	115.3	8	0	Unknown
307	152.3	8	0	Unknown
332	180.6	8	0	Unknown
84897	61.9	6	0	Unknown
670	118.8	8	999.99	Unknown
480	60.7	8	999.99	Unknown
545	58.6	8	999.99	Unknown
571	89.2	8	999.99	Unknown

*: Basin 57 sewers are not modeled. Information shown is the best available from the City's as-built data.

** : Unknown capacities given for pipes with unknown slopes or diameters

Basin 58*				
Name	Length (ft)	Diameter (in)	Slope (%)	Capacity ¹ (gpm)**
354	174	8	0.12	188
364	142.2	8	0.4	344
370	190.4	8	0.41	348
374	152.8	8	0.43	357
330	172.6	8	0.43	357
367	221.2	8	0.47	373
369	96.4	8	0.6	421
387	50.3	8	1	544
353	137.4	8	1.08	565
331	106.3	8	1.17	588
378	98.5	8	1.3	620

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 58*			Capacity ¹ (gpm)**
		Diameter (in)	Slope (%)		
350	55.2	8	1.72	713	
385	212.5	8	2.13	794	
358	213.6	8	2.3	825	
348	292.8	8	3	942	
344	72.2	8	3.1	957	
334	178.3	8	3.13	962	
375	97	8	3.26	982	
340	302.8	8	3.4	1003	
383	106	8	3.69	1045	
366	119.2	8	3.8	1060	
349	154	8	4	1088	
379	188.6	8	4.25	1121	
352	80	8	4.9	1204	
384	311.4	8	5.5	1275	
85645	14.4	8	5.64	1291	
345	109.4	8	5.78	1307	
335	282.4	8	5.97	1329	
389	27.3	8	6.17	1351	
329	152.4	8	6.47	1383	
78250	141.9	8	7.06	1445	
341	180.8	8	7.14	1453	
339	247	8	7.52	1491	
332	159.5	8	7.71	1510	
342	131.4	8	8.65	1599	
333	331.8	8	9.7	1694	
337	115.6	8	9.82	1704	
328	317.6	8	9.97	1717	
357	61.5	8	10.3	1745	
351	77.4	8	11.2	1820	
368	125.1	8	11.57	1850	
371	204.3	8	11.79	1867	
377	127.4	8	12.1	1892	
336	91.4	8	12.93	1955	
380	154.3	8	13.34	1986	
376	86.5	8	13.74	2016	
365	209.1	8	14	2035	
381	54.1	8	16.44	2205	
355	51.2	8	22	2551	
356	133.9	8	31	3028	
386	118.4	8	31.13	3034	
343	167.9	8	33.33	3139	
388	78.8	8	44.79	3639	

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

Name	Length (ft)	Basin 58*		
		Diameter (in)	Slope (%)	Capacity ¹ (gpm)**
346	61.2	8	46.59	3712
382	73.4	8	51.1	3887
338	54.1	8	63.88	4346
347	122	8	0	Unknown
372	163.6	8	999.99	Unknown
390	28.9	8	999.99	Unknown
363	26.8	8	999.99	Unknown

*: Basin 58 sewers are not modeled. Information shown is the best available from the City’s as-built data.

** : Unknown capacities given for pipes with unknown slopes or diameters

DRAFT

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.

This Page is Intentionally Blank

1. Capacities shown are estimated based on a gross approximation of pipe roughness for each segment indicated, and do not take into account any downstream backwater effects.