# City of Bellevue - Budget One
# 2013-2019 Utility CIP Plan Proposal

## Section 1: Proposal Descriptors

**Proposal Title:** Replacement of Aging Water Infrastructure

**Outcome:** Healthy & Sustainable Environment

**Attachments:** No

**Parent/Dependent Proposals:** No

**Previous Proposal # (s):** 140.02NA

**Proposal Number:** 140.02NA

**Proposal Type:** Existing Service

**Project Status** Funded

**Primary Dept:** Utilities

**Primary Staff Contact:** Pamela Maloney, x4625

## Section 2: Executive Summary

This proposal will fund replacement of the water system components, or rehabilitate facilities to maximize their service life. Bellevue's water system is a complex network of pipes, reservoirs, pump stations, supply inlets and other components that together deliver almost 6 billion gallons of drinking water to our customers annually. System replacement value is estimated at $1.2 Billion, and most of the system is more than halfway through its useful life. Frequent pipe failures provide evidence that many pipes are rapidly approaching the end of their lives and must be replaced. This proposal includes long term renewal and replacement programs, with individual programs for each type of major water system component, each right-sized for sustainable water system management.

## Section 3: Requested Resources $000

CIP #: See Below

| CIP Expenditure | Spending Thru 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|---|
| W-16 | 36,739,552 | 5,359,024 | 6,059,309 | 6,788,816 | 7,547,194 | 8,349,776 | 9,175,831 | 9,423,556 |
| W-67 | 6,499,800 | 458,450 | 471,721 | 484,884 | 497,941 | 511,862 | 525,702 | 539,894 |
| W-69 | 4,238,171 | 232,854 | 239,594 | 246,282 | 252,917 | 259,989 | 267,018 | 274,227 |
| W-91 | 2,960,424 | 933,773 | 1,308,042 | 1,344,545 | 1,380,756 | 1,419,358 | 1,457,736 | 1,497,091 |
| W-98 | 1,900,952 | 359,968 | 370,388 | 380,726 | 390,983 | 401,915 | 412,782 | 423,926 |
| W-99 | 1,295,456 | 179,984 | 231,492 | 237,954 | 244,364 | 251,197 | 257,988 | 264,953 |
| Total Costs/yr | 53,634,355 | 7,524,053 | 8,680,546 | 9,483,207 | 10,314,155 | 11,194,097 | 12,097,057 | 12,423,647 |
| 2013-2019 Total: | | $71,716,762 | | | | | | |
| CIP M&O: | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Supporting Revenue** | | | | | | | | |
| W-16 | | 5,359,024 | 6,059,309 | 6,788,816 | 7,547,194 | 8,349,776 | 9,175,831 | 9,423,556 |
| W-67 | | 458,450 | 471,721 | 484,884 | 497,941 | 511,862 | 525,702 | 539,894 |
| W-69 | | 232,854 | 239,594 | 246,282 | 252,917 | 259,989 | 267,018 | 274,227 |
| W-91 | | 933,773 | 1,308,042 | 1,344,545 | 1,380,756 | 1,419,358 | 1,457,736 | 1,497,091 |
| W-98 | | 359,968 | 370,388 | 380,726 | 390,983 | 401,915 | 412,782 | 423,926 |
| W-99 | | 179,984 | 231,492 | 237,954 | 244,364 | 251,197 | 257,988 | 264,953 |
| Total Revenue / Yr | | 7,524,053 | 8,680,546 | 9,483,207 | 10,314,155 | 11,194,097 | 12,097,057 | 12,423,647 |

## Section 4: Budget Proposal Description

The programs in this proposal are all included in the adopted 2011-2017 CIP; no new projects, deletions, or scope changes are proposed. In 2010, Council approved a ten-year plan to ramp up water main replacement rates to a sustainable level, and subsequently approved corresponding water rate increases for 2009-12. Revenue has been collected since then for accelerated main replacement. W-16

includes continued implementation of that program acceleration, through 2018.
Significant cost savings have been identified, and are reflected in this proposal. Detailed below in "Efficiencies / Innovations," this proposal includes $2.7 million in one-time savings, and $400,000/year in ongoing savings.
This proposal is entirely supported by utility rates. It assumes 2.7-4.0% inflation per year for 2013-19, consistent with City Budget Office recommendations based on a review of relevant cost indices.
This proposal will fund replacement of water system components as they approach the end of their functional life, or rehabilitate facilities to maximize their service life. Bellevue's water system is a complex network of 620 miles of pressurized pipes, 24 storage reservoirs in use (plus four joint-use with other jurisdictions), 22 pump stations, 13 active supply inlet stations, and various other component parts required to deliver almost 6 billion gallons of drinking water every year. System replacement value is estimated at $1.2 Billion, or about $9000 for each of the 135,000+ customers who receive water service. Most of the system is more than halfway through its useful life; many pipes are rapidly approaching the end of their lives and no longer reliably deliver drinking water. These are long term renewal and replacement programs, with individual programs for each major type of water system component (known as an asset class). Each program is right-sized for sustainable water system management, as recommended by Asset Management Program analysis. The Asset Management Program Utilities uses to identify and prioritize wastewater infrastructure rehab and replacement projects based on criticality and business risk is a US EPA best practice. Attachment 140.02NA_Attach1_Project_Breakdown provides a summary of projects funded under this proposal.

Mandates and Contractual Agreements: Utilities Financial Policies (adopted by Council) require Utilities capital investment for implementation of short and long term capital projects, including asset replacement.
Efficiencies/Innovations:
• One time and ongoing savings: This proposal includes $2.7 Million one-time savings and $200,000/year ongoing savings in W-91, Water Pump Station Rehabilitation program. Based on revised engineering estimates, we can achieve a sustainable rate of rehabilitating one station per year with this budget.
• Ongoing savings include $100,000/year budget reduction in W-67, Pressure Reducing Valve (PRV) Rehabilitation. Analysis of existing PRVs revealed that most of the valves are epoxy-coated, and can remain in service longer than the earlier 30-35 year estimate, allowing a sustainable replacement rate of 3+/year.
• Ongoing savings include $100,000/year budget reduction in W-85, Structural/Seismic Reservoir Rehabilitation. This savings is based on revised cost estimates to complete rehab work at the most critical reservoirs by 2018. Further analysis of the next tier of reservoirs will be done toward the end of the CIP window.
• Utilities partners with Transportation to combine asphalt pavement restoration over pipeline replacement into a single large contract for cost savings.
• New repair and replacement technologies and asset management strategies are continuously identified evaluated and (when appropriate,) implemented. For example, Utilities is participating on a national Water Research Foundation study focused on better management of AC water main replacement. We are evaluating each element in consultant's pump station rehabilitation recommendations to determine the least cost approach that will meet our service needs.
Short and Long-term benefits:
In the short term, these programs reduce the likelihood of catastrophic system failures, damage claims to the city, and sharp rate increases to react to system failures rather than proactively managing the system. In the long term, timely replacement or repair of water facility assets keeps customer rates as low as practical by managing the system at the least life-cycle cost, while maintaining target service

levels and meeting regulatory requirements.
Describe why the level of service being proposed is the appropriate level:
The proposed annual investment for each program in this proposal was developed based on Asset Management Program recommendations to minimize the life-cycle cost of ownership/operation of the water utility system, and to assure we don't prematurely replace assets that should be repaired and maintained. An example is the ramping up of W-16 for water main replacement, so that the expected life of a water main is reduced from a non-defensible 400 years, to a more appropriate 100-125 years. Underfunding any of the programs will increase the total cost of system replacement over time.

## Section 5: Responsiveness to Request For Results

**A. Factors/Purchasing strategies addressed by this proposal - for the PRIMARY outcome:**

This proposal addresses Factors 2, 3 and 4: Clean Reliable Water, Clean Green City, and Natural Environment/

• Clean drinking water; Reliable water supply: Replacement of aging water infrastructure ensures a continued supply of clean drinking water, reliably available and in sufficient quantity for homes and businesses.

• Lakes, streams and wetlands; Wildlife habitat: Minimizing water system failures means reduced environmental damage such as flooding and erosion, which damage lakes, streams, and wetlands

• Conservation of resources: Timely replacement of aging water pipes and appurtenances reduces the volume of treated, potable water lost to leakage into the ground or following system breaks.

Purchasing Strategies in the Healthy and Sustainable Environment outcome: These programs replace aging drinking water infrastructure to ensure the delivery of safe drinking water in an environmentally sensitive and sustainable way by minimizing the cost of service over the life of assets, while maintaining expected service delivery. They are right-sized to assure we don't prematurely replace assets that should be repaired and maintained. It is proactive system management, rather than responding after systems fail. It looks to the future, incorporating a 75-year forecast of resources needed for system replacement, considering inter-generational cost equity, and precluding sharp rate increases. It reduces the chance of failure and minimizes the likelihood of large damage claims. Maximizing asset component life means efficient system replacement, avoiding wasting materials.

**B. Factors/Purchasing strategies addressed by this proposal - for the OTHER outcome(s):**

Quality Neighborhoods and Safe Communities require reliable, safe, and affordable basic support services including drinking water. A high quality infrastructure with reliable service delivery supports Bellevue's Economic Growth and Competitiveness.

Citywide purchasing strategies addressed by this proposal:

• How we deliver best value and consider long- and short-term financial impacts: Life cycle cost analyses that consider economic, environmental and social (triple bottom line) costs and benefits are used to evaluate project alternatives so that the best value, not only in pure economic terms but also in terms of the environment and "quality of life," can be identified. Life cycle cost includes design, construction, operations, maintenance, risk (failure costs), and decommissioning. Other best value activities: We are participating in a Water Research Foundation project to identify optimum strategies for AC pipe replacement. Various saddle materials (e.g., stainless steel, bronze, brass, or epoxy coated) are being evaluated to determine which provides the most value. Utilities is evaluating whether using thicker-walled ductile iron (DI) watermains that could last longer would result in lower life cycle coat that the current DI industry standard.

• Leverage collaboration or partnerships w/ others: See Partnerships and Collaboration Section C.

• Eliminate low value-added activities: Asset replacement practices are continually evaluated and improved. For example, when W-99 was first funded, we "potholed" (dug a pit to observe) water

service saddle condition prior to deciding whether to replace them. Potholing required keeping a maintenance crew on standby at the project in case saddles blew apart once they were unearthed. Experience showed that even saddles that didn't fall apart nearly always required replacement. Potholing saddles provided little value at significant expense so it has been discontinued.

**C. Partnerships and Collaboration proposed:**

We coordinate with Transportation to assure utility work in public rights-of-way is completed prior to planned street resurfacing. In particular, W-16 constructs 3-3.5 miles of water main each year, mostly under streets. Selection of water pipes for replacement and streets for overlay is a collaborative, iterative inter-departmental process to achieve both programs' objectives. Utilities also coordinates work with jurisdictions outside Bellevue where we provide water service (Medina, Hunts Point, Yarrow Point, Clyde Hill, Kirkland, Issaquah, and King Co.)

**D. Activities in this proposal that support the work of other proposals, or save costs that would otherwise have to be expended:**

• Timely replacement of water system infrastructure reduces the potential for catastrophic failure and costly damage claims.
• The proposed annual program budgets are established to minimize the total life-cycle cost of ownership. Underfunding any of the programs will increase the total cost over time.
Consequence of not funding the proposal at all:
• Aging water infrastructure would fail with increasing frequency, often catastrophically, resulting in significant damage claims and lawsuits.
• Customer Impact: See individual program descriptions, in 140.02NA_Attach1_Project_Breakdown
• A summary of significant consequences of deferred water system replacement or repair (of pipes, reservoirs, pump stations, valves, saddles, or other components):
- Increase in sudden failures requiring emergency response and repair at a higher total cost;
- Increased likelihood of drinking water flooding private and public facilities, and damaging streams, lakes, and other sensitive areas;
- Increased risk of claims and associated poor customer service;
- Increased risk of regulatory action; and
- Increased operations and maintenance costs.

Funding this program at a lower rate would have similar consequences, although less severe. Funding less than the cost of system repair and replacement that has been determined to minimize the life-cycle cost of system ownership and operation will cost more over time. It is truly "Pay me now, or pay me more later."

# City of Bellevue - Budget One
# 2013-2019 Utility CIP Plan Proposal

## Section 1: Proposal Descriptors

**Proposal Title:** Replacement of Aging Sewer Infrastructure

**Outcome:** Healthy & Sustainable Environment

**Attachments:** No

**Parent/Dependent Proposals:** No

**Previous Proposal # (s):** 140.03NA

**Proposal Number:** 140.03NA

**Proposal Type:** Enhance Existing Service

**Project Status** Funded

**Primary Dept:** Utilities

**Primary Staff Contact:** Pamela Maloney, x4625

## Section 2: Executive Summary

This proposal funds replacement of sewer system infrastructure, or rehabilitation of facilities to maximize their service life. Bellevue's wastewater system is comprised of pipes and pump stations that reliably remove 11 million gallons of sewage from homes and businesses every day, and convey it safely to King Co. Metro's regional system for treatment and disposal. System replacement value is estimated at $1.3 Billion, and most of the system is more than halfway through its useful life. Ongoing inspection of sewer asset condition and increasing claims experience provide evidence that much of the system requires significant repair, or will soon need to be replaced. These are long term renewal and replacement programs, with individual programs for each major type of sewer system component, each right-sized for sustainable wastewater system management.

## Section 3: Requested Resources $000

CIP #: See Below

| CIP Expenditure | Spending Thru 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|---|
| S-16 | 11,116,923 | 480,332 | 494,236 | 508,031 | 521,718 | 536,305 | 550,806 | 565,676 |
| S-24 | 14,495,072 | 1,175,521 | 1,736,192 | 1,784,652 | 1,832,733 | 1,883,975 | 1,934,915 | 1,987,153 |
| S-30 | 8,605,168 | 399,340 | 410,899 | 422,368 | 433,747 | 445,874 | 457,930 | 470,293 |
| S-66 | 0 | 1,040,000 | 1,070,100 | 1,100,000 | 1,129,700 | 1,161,300 | 1,192,700 | 1,224,900 |
| Total Costs/yr | 34,217,163 | 3,095,193 | 3,711,427 | 3,815,051 | 3,917,898 | 4,027,454 | 4,136,351 | 4,248,022 |
| 2013-2019 Total: | | $26,951,396 | | | | | | |
| CIP M&O: | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Supporting Revenue** | | | | | | | | |
| S-16 | | 480,332 | 494,236 | 508,031 | 521,718 | 536,305 | 550,806 | 565,676 |
| S-24 | | 1,175,521 | 1,736,192 | 1,784,652 | 1,832,733 | 1,883,975 | 1,934,915 | 1,987,153 |
| S-30 | | 399,340 | 410,899 | 422,368 | 433,747 | 445,874 | 457,930 | 470,293 |
| S-66 | | 1,040,000 | 1,070,100 | 1,100,000 | 1,129,700 | 1,161,300 | 1,192,700 | 1,224,900 |
| Total Revenue / Yr | | 3,095,193 | 3,711,427 | 3,815,051 | 3,917,898 | 4,027,454 | 4,136,351 | 4,248,022 |

## Section 4: Budget Proposal Description

All but one of the programs in this proposal is included in the adopted 2011-2017 CIP; no scope or budget changes are proposed to those programs. One new program is proposed: S-66, Sewer System Pipeline Replacement. This program compliments S-24, Sewer Pipeline Rehab, to assure the most cost effective solution is implemented (more details below) as pipe assets age.

As part of the 2009-10 budget update, Council approved initiation of a program to assess the condition and replace sewer pipes in Lakes Washington and Lake Sammamish. Revenue has been collected since

then for this purpose; S-58 continues implementation of that program.
This proposal is entirely supported by utility rates. It assumes 2.7-4.0% inflation per year for 2013-19, consistent with City Budget Office recommendations based on a review of relevant cost indices.
This proposal will fund replacement of sewer infrastructure as it approaches the end of its functional life, or rehabilitation of facilities to maximize service life. Bellevue's wastewater system is comprised of over 650 miles of pipe and 36 pump stations which reliably remove 11 million gallons of sewage every day (on average) from homes and businesses, and convey it safely to King Co. Metro's regional system for treatment and disposal. System replacement value is estimated at $1.3 Billion, or almost $10,000 for each of 135,000+ customers served. Most of the system is more than halfway through its useful life. Ongoing inspection of pipe condition reveals that many pipes require significant repair, or will soon need to be replaced. Increasing failures and claims experience provides further evidence (see 140.03NA_Attach2). These are long term renewal and replacement programs for major sewer system components. Each is right-sized for sustainable wastewater system management, as recommended by Asset Management Program analysis.
Attachment 140.03NA_Attach1_Project_Breakdown provides a summary of programs funded under this proposal.
Mandates and Contractual Agreements:
• Utilities Financial Policies (adopted by Council) require Utilities capital investment for implementation of short and long term capital projects, including asset replacement.
• WAC 173 240 060: The Washington Depts. of Ecology and Health require sewer system operators to minimize overflows to surface water bodies. Repeated overflows can lead to enforcement action or state-mandated capital projects.
• Bellevue's NPDES Permit (Western Washington Phase II Municipal Stormwater Permit) requires Bellevue to reduce the discharge of pollutants to surface water to the maximum extent practicable.
Efficiencies/Innovations:
• Utilities partners with Transportation to combine asphalt pavement restoration into a single large contract for lower bids.
• Sewer pipe deficiencies are prioritized for repair based on the probability and consequence of failure. Prioritizing repairs enables us to use limited budget resources most cost-effectively.
• New technologies for pipe repair or re-lining are evaluated and incorporated when cost effective.
Cost Avoidance:
• Timely replacement of wastewater infrastructure reduces potential for catastrophic failure, which leads to damage claims.
• The annual program budget proposals are established to minimize the total life-cycle cost of ownership. Underfunding any of the programs will increase the total cost over time.
• S-66, the new ongoing program for sewer replacement, will allow replacement of pipe where that is the more cost effective alternative (rather than continued repair.)
Short and long-term benefits of this proposal:
In the short term, these programs reduce the likelihood of catastrophic system failures, damage claims, and sharp rate increases to react to failures rather than proactively managing the system. In the long term, timely replacement or repair of wastewater facilities keeps customer rates as low as practical by managing the system at the lowest life-cycle cost, while maintaining service levels and meeting regulatory requirements.
Describe why the level of service being proposed is the appropriate level:
The proposed annual investment for each program in this proposal was developed based on Asset Management Program recommendations to minimize the life-cycle cost of ownership/operation of the wastewater utility system, and to assure we don't prematurely replace assets that should be repaired and maintained.
Underfunding any of the programs will increase the total cost of system ownership, over time. Funding

of pipe repair and replacement (on land and in-lake) and pump station rehabilitation programs will likely require increased investment in future budget cycles, based on observed data and analysis.

## Section 5: Responsiveness to Request For Results

**A. Factors/Purchasing strategies addressed by this proposal - for the PRIMARY outcome:**

Factors 2 and 4, Clean Reliable Water and Natural Environment, are addressed by this proposal

• Wastewater Management: A reliable wastewater system efficiently and reliably removes sewage from homes and businesses.

• Lakes, Streams, Wetlands, and Wildlife Habitat: Minimizing wastewater system failures means reduced environmental damage that results from failures, such as sewage backups and pollution to surface waters.

• Lakes; Open space, natural areas, and greenbelts: Sewage overflows present human health and environmental hazards that threaten a community, and result in beach closures. Timely replacement or rehabilitation of aging sewer infrastructure minimizes this hazard.

Purchasing Strategies in support of the Healthy and Sustainable Environment outcome:

• These CIP programs replace aging wastewater infrastructure to ensure the continued removal of wastewater in an environmentally sensitive and sustainable way by minimizing the cost of service over the life of assets, while maintaining expected service delivery.

• They are right-sized to assure we don't prematurely replace assets that should be repaired and maintained.

• They reflect proactive system management, rather than responding after systems fail.

• It reduces the chance of failure and minimizes the likelihood of large damage claims.

• Maximizing asset component life means efficient system replacement, avoiding wasting materials.

**B. Factors/Purchasing strategies addressed by this proposal - for the OTHER outcome(s):**

Quality Neighborhoods and Safe Communities require reliable, safe, and affordable basic support services including wastewater removal. A high quality infrastructure with reliable service delivery supports Bellevue's Economic Growth and Competitiveness.

Citywide purchasing strategies addressed by this proposal:

• Deliver best value and consider long- and short-term financial impacts: Life cycle cost analyses that consider triple bottom line costs and benefits (economic, environmental, and social) are used to evaluate project alternatives. The best value, not only in pure economic terms but also in terms of the environment and 'quality of life," is readily identified. Life cycle cost analyses are used to assess project alternatives. Life cycle includes design, construction, operations and maintenance, risk, and decommissioning costs.

• Provide efficiency gains or cost savings: Less expensive sewer pipeline repair techniques are being evaluated for feasibility. (E.g. root saws that can travel up stubs from the sewer main line and the use of herbicides to retard root growth.)

• Leverage collaboration or partnerships: See Section C, Partnerships and Collaboration.

• Innovative and Creative strategies and methods are evaluated for cost-effective sewer infrastructure replacement. (e.g. non-traditional alternatives such as grinder pumps or vacuum wastewater systems are being considered for lakeline replacement)

• Life cycle cost analyses are used to assess project alternatives, to identify the most cost-effective alternative, and eliminate low value-added project elements.

**C. Partnerships and Collaboration proposed:**

• Sewers under Bellevue streets which are scheduled for resurfacing are video-inspected up to two years ahead of Transportation's planned street work, to assure that repairs or replacement that require street cutting and patching (S-24 and S-66) are completed cost-effectively ahead of resurfacing.

• Utilities also works with jurisdictions outside Bellevue where we provide sewer service (Medina, Clyde Hill, Hunts Pt., Yarrow Pt., Beaux Arts, Issaquah, and King Co.) to coordinate with any planned street work. (S-24 and S-66)
• Utilities is collaborating with Parks to design and construct a new sewer main under Meydenbauer Beach Park. (S-58)

**D. Activities in this proposal that support the work of other proposals, or save costs that would otherwise have to be expended:**

• S-58, to replace a sewer lakeline segment through Meydenbauer Beach Park, is being designed in cooperation with the Parks Department to minimize costs to both projects.
• S-66, to replace sewer pipes when that is a more cost effective solution than continued repair and extraordinary maintenance, compliments S-24 (for sewer pipe repair) to ensure the most cost effective solution is implemented.
Consequence of not funding the proposal at all:
• Aging sewer infrastructure would fail with increasing frequency, potentially catastrophically, resulting in damage to property and the environment, and leading to damage claims and lawsuits. Potential for violation of Bellevue's NPDES municipal stormwater permit.
• Customer Impact: See individual program descriptions, in 140.03NA_Attach1_Project_Breakdown.
• Other: A summary of significant consequences of deferred wastewater system replacement or repair:
• Increased likelihood of sewage overflow into private and public facilities, or polluting streams, lakes, beaches, and other sensitive areas;
• Increase in sudden failures requiring emergency response and repair at a higher total cost;
• Increased risk of regulatory action;
• Increased risk of claims and associated poor perception of customer service; and
• Increased operations and maintenance costs.
Funding this program at a lower rate would have similar consequences, although less severe.
In summary, funding less than the cost of system repair and replacement that has been recommended to minimize the life-cycle cost of system ownership and operation will cost more over time. It is truly "Pay me now, or pay me more, later."

# City of Bellevue - Budget One
# 2013-2019 Utility CIP Plan Proposal

## Section 1: Proposal Descriptors

**Proposal Title:** Replacement of Aging Storm Infrastructure

**Proposal Number:** 140.04NA

**Proposal Type:** Enhance Existing Service

**Project Status** Funded

**Outcome:** Healthy & Sustainable Environment

**Attachments:** No

**Parent/Dependent Proposals:** No

**Previous Proposal # (s):** 140.04NA

**Primary Dept:** Utilities

**Primary Staff Contact:** Pamela Maloney, x4625

## Section 2: Executive Summary

This proposal funds replacement or rehabilitation of aging stormwater system infrastructure. Bellevue's stormwater system is comprised of regional detention facilities, pipes and culverts, as well as open streams that convey stormwater runoff to eventual outfall into Lake Washington or Lake Sammamish. The constructed portions of the system, with estimated replacement value of $1 Billion, must be managed to prevent failures that cause flooding, erosion and traffic disruption, and to protect nature spaces (streams, lakes and wetlands) as much as practicable from high velocity, erosive flows and detrimental pollution. Replacement of infrastructure prior to failure is key to preventing storm property damage and for environmental protection. This proposal implements long term asset management strategy to implement the replacement and rehabilitation of Storm infrastructure at the least life-cycle cost, while maintaining acceptable service levels, for sustainable storm system management.

## Section 3: Requested Resources $000

CIP #: See Below

| CIP Expenditure | Spending Thru 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|---|
| D-103 | 1,226,000 | 2,334,250 | 2,400,000 | 8,250 | 8,473 | 8,710 | 8,945 | 9,187 |
| Total Costs/yr | 1,226,000 | 2,334,250 | 2,400,000 | 8,250 | 8,473 | 8,710 | 8,945 | 9,187 |
| 2013-2019 Total: | | $4,777,815 | | | | | | |
| CIP M&O: | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Supporting Revenue** | | | | | | | | |
| D-103 | | 2,334,250 | 2,400,000 | 8,250 | 8,473 | 8,710 | 8,945 | 9,187 |
| Total Revenue / Yr | | 2,334,250 | 2,400,000 | 8,250 | 8,473 | 8,710 | 8,945 | 9,187 |

## Section 4: Budget Proposal Description

All but one of the programs in this proposal is included in the adopted 2011-2017 CIP. One new project is included in this proposal: D-105 is proposed to replace a major culvert under NE 8th Street at Kelsey Creek.

This proposal does not include two programs that were completed in 2012: D-64 (Neighborhood Enhancement Program-Storm) and D-92 (Regional Detention Facilities Retrofits).

As part of the 2009-10 budget update, Council approved D-103 to replace a major culvert on Coal Creek. Revenue has been collected since then for this purpose; D-103 reflects continued implementation of that project.

This program is entirely supported by utility rates. It assumes 2.7-4.0% inflation per year for 2013-19, consistent with City Budget Office recommendations based on a review of relevant cost indices.

This proposal funds replacement or rehabilitation of the constructed portions (pipes, ponds, vaults, etc) of Bellevue's aging stormwater system. The constructed portions of the system must be managed to prevent failures that cause flooding, erosion and traffic disruption, and to protect nature spaces (streams, lakes and wetlands) as much as practicable from high velocity, erosive stormwater runoff, and detrimental water quality pollutants. Replacement of infrastructure prior to failure is integral to preventing storm water damage to public facilities and private properties and for environmental protection. This proposal implements long term asset management strategy to implement the replacement and rehabilitation of storm infrastructure at the least life-cycle cost, while maintaining acceptable service levels, for sustainable storm system management.
See attachment 140.04NA_Attach1_Proposal_Breakdown for a summary of projects funded in this proposal.
Mandates and Contractual Agreements
• Utilities Financial Policies (adopted by Council) require Utilities capital investment for implementation of short and long term capital projects, including asset replacement.
• Bellevue's NPDES Permit (Western Washington Phase II Municipal Stormwater Permit) requires Bellevue to reduce the discharge of pollutants to surface water to the maximum extent practicable.
Efficiencies/Innovations:
• Internal: Utilities partners with Transportation to combine asphalt pavement restoration into a single large contract for lower bids. Utilities works with Parks to find opportunities for joint use facilities. For example, Coal Creek Parkway Culvert Replacement (D-103) will incorporate a trail extension in the underpass, allowing pedestrians to cross Coal Creek Parkway safely, avoiding the four-lane roadway.
• External: Utilities is coordinating utility relocations with PSE and Olympic Pipe Line at the D-103 Coal Creek Culvert replacement including an agreement to share traffic control to save costs make projects more seamless to the public.
Short and long-term benefits of this proposal: In the short term, these programs and projects reduce the likelihood of catastrophic system failures; traffic disruption due to failed culverts under streets; damage claims to the city; and sharp utility rate spikes to respond to system failures rather than proactively managing the system. In the long term, timely replacement or repair of stormwater facilities keeps customer rates as low as practical by managing the system at the lowest life-cycle cost, while maintaining service levels and meeting regulatory requirements.
Describe why the level of service being proposed is the appropriate level:
The proposed annual investment for each ongoing CIP program in this proposal was developed based on Asset Management Program recommendations, to minimize the life-cycle cost of ownership/operation of the stormwater utility system. Timely replacement of stormwater utility infrastructure reduces the potential for catastrophic failure, which can lead to property and environmental damage, street damage, and claims. Ongoing program annual budgets could be reduced, but that would require maintenance beyond the point where it is cost effective, and would increase the life-cycle cost of system ownership. See other consequences of reduced funding (below). One-time projects to replace major culverts (D-103 and D-105) are not scalable.

## Section 5: Responsiveness to Request For Results

**A. Factors/Purchasing strategies addressed by this proposal - for the PRIMARY outcome:**

A. Factors/Purchasing strategies addressed by this proposal - for the PRIMARY outcome
Factors 2 and 4, Clean Reliable Water and Natural Environment, are addressed by this proposal:
• Storm and Surface Water Management: A reliable stormwater system controls stormwater runoff from rain and storm events to minimize flood and erosion damage to public and private property and the environment. Minimizing stormwater system failures reduces environmental damage that results from failures, such as high flow volumes that erode streams and wash out riparian habitat. Flooding presents safety and environmental hazards that threaten a community. Timely

replacement or rehabilitation of aging stormwater infrastructure minimizes this hazard.
• Lakes, Streams and Wetlands; Wildlife Habitat: Lakes, streams and wetlands are protected by minimizing storm system failures that cause damage.
Purchasing Strategies for the Healthy and Sustainable Environment outcome:
• These programs replace aging stormwater infrastructure to ensure the controlled removal of storm runoff in an environmentally sensitive and sustainable way by minimizing the cost of service over the life of assets, while maintaining expected service delivery.
• They are right-sized to assure we don't prematurely replace assets that would be more cost-effectively repaired and maintained.
• The strategy for proactive system management, rather than responding after systems fail, reduces the chance of failure (which would cause erosion and flooding) and minimizes the likelihood of large damage claims. This also protects natural surface water environments and the habitats they provide.
• Maximizing asset component life means efficient system replacement, avoiding wasting materials.

**B. Factors/Purchasing strategies addressed by this proposal - for the OTHER outcome(s):**

Quality Neighborhoods and Safe Communities require reliable, safe, and affordable basic support services including control of stormwater runoff resulting in protection from flooding. A high quality infrastructure with reliable service delivery supports Bellevue's Economic Growth and Competitiveness.
Citywide purchasing strategies addressed by this proposal:
• Provide best value, and consider long- and short-term financial impacts. Life cycle cost analyses that consider triple bottom line costs and benefits (economic, environmental and social) are used to evaluate project alternatives. The best value, not only in pure economic terms but also in terms of the environment and 'quality of life," is readily identified. Total life cycle costs are used to assess project alternatives. Life cycle includes design, construction, operations and maintenance, risk, and decommissioning costs.
• Provide efficiency gains or cost savings; use innovation and creative strategies. Less expensive storm pipe repair techniques and new technologies are continually evaluated for feasibility.
• Leverage collaboration or partnerships. See Section C, Partnerships and Collaboration.
• Life cycle cost analyses are used to assess project alternatives, to identify the most cost-effective alternative, and eliminate low value-added project elements.

**C. Partnerships and Collaboration proposed:**

• D-64 involves coordination with Transportation to assure any storm pipe defects which require street cuts are completed prior to any planned street resurfacing.
• D-103 and D-105 also involve collaboration with Transportation; the new bridges that replace existing culverts will become a part of the City's arterial system.
• D-103 includes collaboration with Parks to construct a walking trail adjacent to the new culvert.

**D. Activities in this proposal that support the work of other proposals, or save costs that would otherwise have to be expended:**

• Timely replacement of storm system infrastructure reduces the potential for catastrophic failure and costly damage claims
• The proposed annual program budgets are established to minimize the total life-cycle cost of ownership. Underfunding any of the programs or projects will increase the total cost over time.
• D-103 walkway funding (Parks) will save approximately $60,000, the amount it would have cost to build a trail extension for pedestrians to cross Coal Creek Parkway at an existing crosswalk.
Consequence of not funding the proposal at all
1. Legal: Aging storm infrastructure would fail with increasing frequency, potentially

catastrophically, resulting in damage to property and the environment, traffic disruption, and leading to damage suits and claims. Potential for violation of Bellevue's NPDES municipal stormwater permit.

2. Customer Impact: See individual program/project descriptions in 140.04NA_Attach1_Proposal_Breakdown

3. Investment/Costs already incurred: N/A (ongoing programs). For D-103, predesign work and consultations with resource agencies have begun. For D-105, interim repairs were made to extend the culvert life until replacement funding can be secured.

4. Other: A summary of significant consequences of deferred stormwater system (pipes, culverts, ditches, detention ponds, or other components) replacement or repair:

• increased potential for flooding of private and public facilities, traffic disruption, and downstream damage to streams, lakes, and other sensitive areas;
• increase in sudden failures requiring emergency response and repair at a higher total cost
• increased risk of claims and associated poor perception of customer service
• increased risk of regulatory action ; and
• increased O&M resource to maintain facilities that have exceeded their service lives.

Reduced funding would have proportionately less severe consequences for the ongoing programs. One-time projects (D-103 and D-105) are not scalable.

In summary, funding less than the full cost of system repair and replacement as recommended means the life-cycle cost of system ownership and operation will cost more over time. It is truly a case of "Pay me now or pay me more, later."

# City of Bellevue - Budget One
# 2013-2019 Utility CIP Plan Proposal

## Section 1: Proposal Descriptors

**Proposal Title:** Utility Capacity for Growth

**Proposal Number:** 140.05NA

**Proposal Type:** Existing Service

**Project Status** Funded

**Outcome:** Healthy & Sustainable Environment

**Primary Dept:** Utilities

**Attachments:** No

**Primary Staff Contact:** Pamela Maloney, x4625

**Parent/Dependent Proposals:** No

**Previous Proposal # (s):** 140.05NN

## Section 2: Executive Summary

This proposal will fund construction of additional utility system capacity so that development and re-development projects are not delayed. Planned population growth of residents and workers in downtown, the Bel-Red Corridor, and the Wilburton area will require more drinking water storage and water supply facilities, sewer pump station capacity, and added water and sewer pipe capacity to meet state minimum requirements. Existing facilities are at or near capacity to serve the current population. The cost of growth-driven projects will be recovered through connection charges to benefited properties.

## Section 3: Requested Resources $000

CIP #: See Below

| CIP Expenditure | Spending Thru 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|---|
| S-32 | 2,229,051 | 148,487 | 152,785 | 157,049 | 161,280 | 165,790 | 170,272 | 174,869 |
| S-52 | 532,243 | 1,096,742 | 1,265,060 | 0 | 0 | 0 | 0 | 0 |
| S-53 | 0 | 0 | 4,629,681 | 5,354,091 | 0 | 0 | 0 | 0 |
| S-58 | 924,000 | 1,194,090 | 651,310 | 118,977 | 122,182 | 125,598 | 128,994 | 132,477 |
| S-60 | 0 | 1,743,540 | 1,794,057 | 1,784,703 | 0 | 0 | 0 | 0 |
| S-61 | 104,000 | 0 | 1,041,715 | 2,855,443 | 0 | 0 | 0 | 0 |
| W-103 | 270,400 | 281,225 | 2,314,922 | 2,379,536 | 610,911 | 0 | 0 | 0 |
| W-104 | 0 | 0 | 0 | 0 | 610,911 | 2,197,970 | 2,257,401 | 0 |
| Total Costs/yr | 4,059,694 | 4,464,084 | 11,849,530 | 12,649,799 | 1,505,284 | 2,489,358 | 2,556,667 | 307,346 |
| 2013-2019 Total: | | $35,822,068 | | | | | | |
| CIP M&O: | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Supporting Revenue** | | | | | | | | |
| S-32 | | 148,487 | 152,785 | 157,049 | 161,280 | 165,790 | 170,272 | 174,869 |
| S-52 | | 1,096,742 | 1,265,060 | 0 | 0 | 0 | 0 | 0 |
| S-53 | | 0 | 4,629,681 | 5,354,091 | 0 | 0 | 0 | 0 |
| S-58 | | 1,194,090 | 651,310 | 118,977 | 122,182 | 125,598 | 128,994 | 132,477 |
| S-60 | | 1,743,540 | 1,794,057 | 1,784,703 | 0 | 0 | 0 | 0 |
| S-61 | | 0 | 1,041,715 | 2,855,443 | 0 | 0 | 0 | 0 |
| W-103 | | 281,225 | 2,314,922 | 2,379,536 | 610,911 | 0 | 0 | 0 |
| W-104 | | 0 | 0 | 0 | 610,911 | 2,197,970 | 2,257,401 | 0 |
| Total Revenue / Yr | | 4,464,084 | 11,849,530 | 12,649,799 | 1,505,284 | 2,489,358 | 2,556,667 | 307,346 |

## Section 4: Budget Proposal Description

- All projects in this program are included in the adopted 2011-2017 CIP. Council approved water and

sewer rate increases to pay for W-103, W-104, S-52, S-53, S-54, and S-60 when they approved the 2009-10 budget. Revenue has been collected since then toward construction of those projects.

• Savings: A project to add sewer pipe capacity for the west part of downtown (S-54) was completed in 2012, $750,000 under budget. A program to extend water to unserved areas (W-68) has been deleted for a projected savings of $2 Million over the 7-year CIP window. The budget for S-30 reflects a one-time, $300,000 savings. Taken together, these savings total over $3.0 through 2019.

• 2.7-4.0% inflation per year is assumed for 2013-19, consistent with City Budget Office recommendations based on a review of relevant cost indices.

Utility capacity improvement projects are initially constructed from utility rate revenue. Costs associated with growth are subsequently recovered through connection charges proportional to the benefit received, which are collected when properties develop or redevelop. Portions of projects associated with improving system reliability or replacing aging facilities are not recovered through connection charges.

Planned growth in (primarily) downtown, the Bel-Red Corridor, and Wilburton will need additional water facilities to assure a reliable, safe supply of drinking water for daily use and to meet emergencies, and sufficient sewer capacity to safely convey sewage from homes and businesses. Since insufficient water and sewer system capacity (storage, supply, and conveyance) can result in development moratoriums imposed by the Washington State Departments of Health or Ecology, they must be built before development occurs. Although the City fronts the cost for construction of new facilities, CIP costs associated with growth are allocated to benefitted properties in proportion to the benefit received, and must be paid at the time of development or redevelopment. Revenue collected from these connection charges pays for future utility system replacement, helping to keep utility rates lower in the future.

See attachment 140.05NA_Attach1_Project_Breakdown for a summary of projects funded under this proposal.

Mandates and Contractual Agreements:

• Insufficient water and sewer system capacity (storage, supply, and conveyance) can result in development moratoriums imposed by the Washington State Department of Health or Ecology.

• Minimum water storage volume and supply availability are established by state law: WAC 246-290-222(6) and 246-290-235

• Sewer system management to preclude overflows is regulated by state law: WAC 173-221-010, WAC 173-240-060, and WAC 246-271-020

Efficiencies/Innovations:

Significant cost savings of over $3Million have been identified:

• Project S-54, constructed in cooperation with King County, was completed in 2012 on schedule and under budget by $750,000.

• This proposal previously included an ongoing program (W-68) to extend water service to un-served areas. It was intended to facilitate orderly extension of the water system, and provided an affordable option for customers who might otherwise not be able to develop their property. Requests for this service have been infrequent in the past few years because most property within the Bellevue's water service area already have access to the water system. The program will be discontinued; infrequent requests for system extension will be funded by other mechanisms (low cost loans, etc.) Savings include $446,000 unspent from 2011-12, and $227,000/year ongoing (in 2012 constant dollars).

• The budget for S-30, a program to extend sewer pipe to un-served areas, reflects $300,000 one time savings due to reduced demand for the program. (Unlike W-68, demand for this program is expected to continue.)

Other efficiencies/innovations:

• During a reservoir siting study for W-103, city-owned sites were evaluated to see if mutually beneficial sites could be identified (such as at a Park). Ideally, this would reduce acquisition costs and

could provide opportunities for shared facilities. In this case, a suitable city-owned site was not identified.

• Utilities partners with Transportation to combine similar types of asphalt pavement restoration into a single contract, typically resulting in lower bids.

Short- and long-term benefits of this proposal:

In the short term, utility capacity will be available without delaying development and redevelopment projects.

In the long term, recovering the cost of projects from benefited properties will reduce future rate increases to pay for utility system replacement.

Describe why the level of service being proposed is the appropriate level:

The proposed service level will build facilities that meet state minimum requirements for water and wastewater systems, constructed in time to prevent costly delays of development or redevelopment projects. The one-time capacity projects (S-53, W-103, S-60, W-104, S-61, and S-52) are not scalable. S-30, the ongoing program to extend sewers to facilitate development, could be scaled back. Proportionately less sewer could be constructed. Experience has shown that 2+ years of budget is required to construct extensions; so a smaller annual budget would not meet anticipated community needs.

## Section 5: Responsiveness to Request For Results

**A. Factors/Purchasing strategies addressed by this proposal - for the PRIMARY outcome:**

This proposal responds to Factors 1, 2 and 4, Clean Air, Clean Reliable Water and Natural Environment.

•Projects for growth are all future-focused, necessary to meet the water and wastewater needs of planned population and employment growth without detrimental impact to the environment. The need for each was identified during comprehensive planning efforts and targeted studies for proposed changes in land use.

• This proposal ensures a safe, reliable supply of drinking water to and removal of wastewater from homes and businesses as Bellevue grows.

• Lakes, streams, and wetlands will be protected from sewage overflows, failing wells and failing septic systems, avoiding pollution and protecting the environment for plans and wildlife.

• New reservoirs and pump stations are energy efficient, reducing greenhouse gas emissions.

• Building utility capacity in time for planned growth is proactive, allowing time for alternatives analyses that consider life-cycle costs and consider costs and benefits using triple bottom line principles (environmental, fiscal, and social).

**B. Factors/Purchasing strategies addressed by this proposal - for the OTHER outcome(s):**

Reliable drinking water service and wastewater removal are necessary for public health, integral to Quality Neighborhoods and Safe Communities. The water system capacity provided by these projects will ensure our continued ability to respond to fire and water supply emergencies, for Safe Communities. Economic growth and thriving business districts rely on robust utility systems, and cannot tolerate state-imposed development moratoriums. City Policy UT-4 states “Base the extension and sizing of system components on the land use plan of the areas. System capacity will not determine land use.” Bellevue’s continued Economic Growth and Competitiveness is assured by constructing these facilities in time to avoid delaying proposed development activity.

Citywide purchasing strategies:

• Proactive planning and pre-design assure the added capacity is right-sized.

• Building capacity ‘just in time’ is cost effective, minimizing financial impacts in the short term; recovery of the investment from benefited properties keeps utility rates lower in the long term, providing best value.

• Collaboration with Cascade, King Co. Metro, Transportation, and Parks results in lower construction and ownership costs, and may provide opportunities for multi-purpose uses of public property.
• Life-cycle cost analysis of alternatives that incorporates triple bottom line principles for each project is a best practice that assures sound management of utility fiscal resources.

**C. Partnerships and Collaboration proposed:**

• W-104 will involve collaboration with Cascade Water Alliance, regarding regional water supply lines to Bellevue.
• S-52 and S-53 will involve collaboration with Sound Transit to avoid constructing facilities at locations which would conflict with planned light rail alignment.
• All projects that affect streets will involve collaboration with Transportation Dept. to coordinate any planned street work, assuring utility work is completed prior to surface road improvements.

**D. Activities in this proposal that support the work of other proposals, or save costs that would otherwise have to be expended:**

Cost Avoidance:
• Constructing capacity projects as proposed avoids delaying development proposals that must have sufficient water and sewer availability to build. Delayed development would be detrimental to Bellevue's economy.
• Projects S-53 and S-52 involve adding sewage pipe and pump station capacity for downtown. Because the new facilities will be located near future Sound Transit Light Rail facilities, the projects have been delayed to ensure the design avoids conflicts that might require relocation once Sound Transit alignment is finalized.
Consequence of not funding the proposal at all
1. Legal: Insufficient water and sewer system capacity (storage, supply, and conveyance) can result in development moratoriums imposed by the Washington State Department of Health or Ecology. There would be cost consequences to Bellevue (lost revenue) if development was halted awaiting utility capacity projects.
2. Customer Impact:
• Development projects would be denied until water and sewer system capacity meeting state law was available.
• S-30: Failing septic systems can lead to polluted surface waters and public health hazards, which can prevent citizens from using/occupying their property. If sewer system availability is not affordable, redevelopment (such as subdividing or home additions) might not occur.
• Insufficient sewer system capacity results in overflows that pollute surface waters and result in restricted access to streams or beaches.
• Insufficient water system capacity results in insufficient water for daily and seasonal peak demands while providing sufficient water for emergencies such as fires or supply outages, meaning mandatory water use restrictions.
3. Investment/Costs already incurred: A siting study was completed in 2011 for W-103, at a cost of $75,000. Projects S-52, S-53, and S-60 have incurred pre-design costs of $185,000, $6,500, and $87,000, respectively.
Consequence of funding at a lower level: The one-time projects in this proposal are not scalable. They are based on engineering estimates of the cost to provide water and sewer system capacity that meets state law. Deferring project construction would risk development moratoriums if state minimum requirements (e.g. for storage, or to preclude overflows) were not met.
S-30 is the only ongoing program in this proposal. The proposed level of funding allows for a minimal level of City support for wastewater extensions, often just one project every several years.

# City of Bellevue - Budget One
# 2013-2019 Utility CIP Plan Proposal

## Section 1: Proposal Descriptors

**Proposal Title:** WSDOT-Required Utility Relocations

**Proposal Number:** 140.07NA

**Proposal Type:** Existing Service

**Project Status** Funded

**Outcome:** Healthy & Sustainable Environment

**Attachments:** No

**Parent/Dependent Proposals:** No

**Previous Proposal # (s):** 140.07NN

**Primary Dept:** Utilities

**Primary Staff Contact:** Pamela Maloney, x4625

## Section 2: Executive Summary

This proposal provides for relocation of water and sewer pipes as required to accommodate SR520 and I-405 state highway work. The water and wastewater pipes that are buried under or hung on overpasses over I-405 and SR-520 are critical links that provide water and sewer services to Bellevue's utility customers. Bellevue is legally obligated to relocate or modify our utility facilities within highway rights-of-way to accommodate the WSDOT I-405/SR520 Braids and WSDOT 520 Bridge Expansion projects. Utility relocation work is underway; most construction is expected to be completed in 2013.

## Section 3: Requested Resources $000

CIP #: See Below

| CIP Expenditure | Spending Thru 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|---|
| S-55 | 286,000 | 5,000 | 0 | 0 | 0 | 0 | 0 | 0 |
| S-56 | 0 | 1,040,000 | 535,050 | 0 | 0 | 0 | 0 | 0 |
| W-101 | 292,000 | 40,000 | 0 | 0 | 0 | 0 | 0 | 0 |
| W-102 | 0 | 703,034 | 434,007 | 0 | 0 | 0 | 0 | 0 |
| Total Costs/yr | 578,000 | 1,788,034 | 969,057 | 0 | 0 | 0 | 0 | 0 |
| 2013-2019 Total: | | $2,757,091 | | | | | | |
| CIP M&O: | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Supporting Revenue** | | | | | | | | |
| S-55 | | 5,000 | 0 | 0 | 0 | 0 | 0 | 0 |
| S-56 | | 1,040,000 | 535,050 | 0 | 0 | 0 | 0 | 0 |
| W-101 | | 40,000 | 0 | 0 | 0 | 0 | 0 | 0 |
| W-102 | | 703,034 | 434,007 | 0 | 0 | 0 | 0 | 0 |
| Total Revenue / Yr | | 1,788,034 | 969,057 | 0 | 0 | 0 | 0 | 0 |

## Section 4: Budget Proposal Description

All projects in this proposal are included in the adopted 2011 2017 CIP. Because these costs are negotiated, an inflationary adjustment is not included.

This proposal is entirely supported by utility rates. The Council approved rate increases to pay for all of the projects in this proposal as part of the 2009-10 budget. Revenue has been collected for these projects since then. Costs shown reflect a $600,000 savings in S-56 (explanation below.)

This proposal is for funding to relocate water and sewer facilities within WSDOT right-of-way to accommodate two state highway projects: the WSDOT I-405/SR520 Braids, and the WSDOT 520 Bridge Expansion. Bellevue is paying WSDOT to complete the work, per negotiated cost agreements.

Specifically, the proposal includes:
CIP # S-56, WSDOT 520 Bridge Expansion, relocating up to 9 wastewater pipes for total cost of $1,575,050.
CIP # W-102, WSDOT 520 Bridge Expansion, relocating up to 5 water pipes for a total cost of $1,137,041.
CIP # W-101 WSDOT I-405.SR520 Braids, Relocate up to 4 water pipes, for a total cost of $332,000.
CIP # S-55 WSDOT I-405/RS520 Braids, Relocate up to 4 wastewater pipes for a total cost of $291,000.
Total proposal costs of $3,335,091.

There are only a very few locations where Bellevue's utility systems can cross the highways that separate major portions of the utility service areas, as shown on attachment 140.07NA_Attach1_WSDOT_Utility_Relocations. The water pipes to be relocated include major water transmission mains up to 16" inches in diameter, which bring water from Cascade's regional supply lines to the areas of Bellevue west of I-405, and 8-inch to 12-inch pipes which are the sole sources of water supply to Hunts Point, Yarrow Point, and Medina, north of SR 520. Wastewater pipes to be relocated include gravity and pressurized mains up to 12-inches in diameter, each critical to the collection of sewage from homes for conveyance to King Co. Metro's regional sewer collection and treatment system.
Mandates and Contractual Agreements
Bellevue is obligated by state permits and agreements to relocate or modify our utility facilities within highway rights-of-way, to accommodate state highway projects.
Efficiencies/Innovations: WSDOT is using a design/build contracting strategy to save time and cost. Bellevue worked with WSDOT to negotiate agreements that would ensure that Bellevue pays a fair cost for construction of these utility relocations, which are being built by WSDOT contractors.
I-405 Braids Project: Bellevue's utility relocation work is nearly complete. The work should be finished in 2013, on schedule and within budget.
WSDOT 520 Project: Utility relocations associated with SR520 are expected to be complete by 2013, well ahead of the 2020 schedule originally envisioned. The compressed schedule is a result of the design/build contractor's approach, which included completing utility work early in the project. The final design and negotiated cost resulted in $600,000 savings from the adopted budget for S-56.
Short- and long-term benefits of this proposal:
In the short term, this project is necessary to continue to provide a reliable, safe supply of clean drinking water to Bellevue's citizens and the customers we serve in Hunts Point, Yarrow Point, and Medina (the Points Communities), and to continue removing sewage from their homes and businesses. Longer term benefits: This project will replace critical older water and wastewater pipes with new pipes, which will ensure we can continue to provide reliable utility service decades into the future.
Describe why the level of service being proposed is the appropriate level:
The funding levels proposed for each project are consistent with negotiated agreements between Bellevue and WSDOT, which were developed based on engineering estimates of the cost to relocate Bellevue Utility facilities that interfere with the highway projects.

## Section 5: Responsiveness to Request For Results

**A. Factors/Purchasing strategies addressed by this proposal - for the PRIMARY outcome:**

This proposal addresses Factors 1, 2 and 4: Clean Air, Clean Reliable Water, and Natural Environment. Relocating utilities facilitates completion of state highway improvements that provide more energy-efficient transportation options through Bellevue. Perhaps more relevant, relocation of the utility pipes supports continued reliable supply and delivery of clean drinking water, and wastewater removal, for Bellevue's utility customers. This proposal ensures a continued

supply of clean drinking water, reliably available and in sufficient quantity for homes and businesses in Bellevue west of I-405, and for the Points Communities. It also ensures continued safe and reliable safe wastewater removal for the same customers. Lakes, streams, and wetlands will be protected from sewer overflows by continuing to provide wastewater service to our customers.
Purchasing strategies addressed by this proposal that are specific to the HSE outcome:
• Partnering with WSDOT to accomplish the product at minimal cost and disruption to citizens, using the WSDOT Design/Build project approach
• Proactive planning to ensure continued delivery of utility services during highway project construction
• Directly supports a Healthy and Sustainable Environment by constructing new pipes that will assure a reliable supply of clean drinking water, and ongoing wastewater management for decades into the future.

**B. Factors/Purchasing strategies addressed by this proposal - for the OTHER outcome(s):**

Reliable water and wastewater systems are necessary for public health, which is integral to Quality Neighborhoods and Safe Communities. Water conveyed by these pipes will ensure our continued ability to respond to fire emergencies, helping to ensure Safe Communities. Economic growth and thriving business districts critical to Economic Growth and Competitiveness rely on robust utility systems. The WSDOT projects that make these utility relocations necessary will Improve Mobility by improving the transportation systems that bring people to and from Bellevue.
Citywide purchasing strategies addressed by this proposal:
This proposal provides best value in meeting community needs, provides for cost savings, and leverages collaboration with external organizations. By working cooperatively with WSDOT during their pre-design and design/build phases, Bellevue will complete these required projects at the lowest possible cost.

**C. Partnerships and Collaboration proposed:**

The projects identified in this proposal required collaboration with the Washington State Department of Transportation (WSDOT). By working cooperatively with WSDOT during their pre-design and design/build phases, Bellevue was able to negotiate agreements to accomplish the required work at the lowest possible cost to utility ratepayers.

**D. Activities in this proposal that support the work of other proposals, or save costs that would otherwise have to be expended:**

Cost Savings: WSDOT's design / build contractor proposed a design and construction strategy that requires significantly less relocation of Bellevue utilities than might otherwise have been required. Consequently, the proposed budget for S-56 reflects significant cost savings of $600,000 from the previously approved budget.
Consequence of not funding the proposal at all
1. Legal: Bellevue would be out of compliance with the WSDOT agreements that allow Bellevue's water and wastewater facilities to cross over or under the freeways.
2. Customer Impact: If this proposal is not funded, WSDOT would remove but not replace Bellevue utility facilities within highway rights-of-way, to construct the highway improvements. The critical water and sewer pipes connecting utility systems east and west of I-405, and north and south of SR520 would be severed. Utility customers in the Points Communities would no longer have drinking water service; some would not have sewer service. We could not supply sufficient water to areas west of I-405 to fill drinking water reservoirs or to fight fires.
3. Investment/Costs already incurred: Projects S-55 and W-101 (associated with the I-405/SR-520 Braids project) are approaching completion. SR 520 utility relocation work will begin in 2013.
Consequence of funding at a lower level: This proposal is for one-time projects. It is not scalable.

# City of Bellevue - Budget One
# 2013-2019 Utility CIP Plan Proposal

## Section 1: Proposal Descriptors

**Proposal Title:** Environmental Preservation

**Proposal Number:** 140.08NA

**Proposal Type:** Enhance Existing Service

**Project Status** Funded

**Outcome:** Healthy & Sustainable Environment

**Attachments:** No

**Parent/Dependent Proposals:** No

**Previous Proposal # (s):** 140.08NA

**Primary Dept:** Utilities

**Primary Staff Contact:** Pamela Maloney, x4625

## Section 2: Executive Summary

This proposal funds Utility CIP projects focused on environmental preservation or restoration. It includes on-going programs and one-time projects intended to restore stream health and environmental habitat, or to prevent pollution of stream and habitat resources. These projects guard against harmful environmental impacts from City operations or repair environmental damage on public lands or lands with public responsibilities.

## Section 3: Requested Resources $000

CIP #: See Below

| CIP Expenditure | Spending Thru 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|---|
| D-104 | 2,224,940 | 1,139,075 | 1,362,368 | 1,601,103 | 1,853,702 | 2,230,300 | 2,633,167 | 0 |
| D-106 | 0 | 199,999 | 736,890 | 3,138,414 | 4,491,272 | 0 | 0 | 0 |
| D-94 | 5,244,814 | 905,961 | 922,198 | 938,309 | 954,295 | 971,331 | 988,266 | 1,005,632 |
| S-59 | 0 | 0 | 190,981 | 196,312 | 201,601 | 207,237 | 212,841 | 218,587 |
| Total Costs/yr | 7,469,754 | 2,245,035 | 3,212,437 | 5,874,138 | 7,500,870 | 3,408,868 | 3,834,274 | 1,224,219 |
| 2013-2019 Total: | | $27,299,841 | | | | | | |
| CIP M&O: | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Supporting Revenue** | | | | | | | | |
| D-104 | | 1,139,075 | 1,362,368 | 1,601,103 | 1,853,702 | 2,230,300 | 2,633,167 | 0 |
| D-106 | | 199,999 | 736,890 | 3,138,414 | 4,491,272 | 0 | 0 | 0 |
| D-94 | | 905,961 | 922,198 | 938,309 | 954,295 | 971,331 | 988,266 | 1,005,632 |
| S-59 | | 0 | 190,981 | 196,312 | 201,601 | 207,237 | 212,841 | 218,587 |
| Total Revenue / Yr | | 2,245,035 | 3,212,437 | 5,874,138 | 7,500,870 | 3,408,868 | 3,834,274 | 1,224,219 |

## Section 4: Budget Proposal Description

Most of the programs in this proposal are included in the adopted 2011-2017 CIP; no scope changes to those programs are proposed. Council approved rate increases to pay for D-104 and S-59 as part of the 2009-10 budget; revenues have been collected for that purpose since that time. Projects D-95, D-100, and D-101 are one-time projects for improvements in Coal Creek, and are substantially complete. Project D-74, also part of the Coal Creek Improvements, was completed in 2011.

One new project is included in this proposal: D-106. This project to improve flood protection from Coal Creek in Newport Shores will be funded entirely by revenue from the King Co. Flood Control Zone District (KCFZD) as a regional priority flood control project.

This proposal assumes 2.7-4.0% inflation per year for 2013-19, consistent with City Budget Office recommendations based on a review of relevant cost indices, for projects S-59, D-81, D-86, and D-104

(local- funded portion). Projects that are substantially complete, projects with budgets set by legal mandate or Council directive, and projects funded by KCFZD do not include an inflationary adjustment. (D-94 (partial), D-95, D 100, D-104, and D-106).
Except for D-106, this proposal is supported primarily by utility rates. Projects mandated by the Coal Creek Settlement agreement include King County funding. Project D-94 is funded in part (~$345,000/yr) from the KCFZD sub-regional fund. Grant revenue is pursued as opportunities arise.
This proposal is for Utility CIP projects with environmental preservation or restoration as the primary goal. It includes programs and projects intended to restore stream health and environmental habitat, or prevent pollution of those resources. These projects guard against detrimental impacts from city operations, or they repair environmental damage on public lands or lands with public responsibilities (e.g. easements, and past project sites).
See attachment 140.08NA_Attach1_Project_Breakdown for a summary of projects funded under this proposal.
Mandates and Contractual Agreements
• Council directive for the Mobility and Infrastructure Initiative, December 2008 (D-104)Oct 2004
• Court-ordered Coal Creek Settlement Agreement (D-95, D-100, D-101) August, 2004
• RCW 77.57.030 and WAC 22-110-070 require fish passage for all water crossing structures, including culverts. (D-81). Those statutes give WDWF the authority to resolve problems and bill local governments, if necessary.
• WAC 173-24—060 regarding sewage overflow requirements (S-59)
• Western Washington Phase II Municipal Stormwater Permit (issued Jan 17, 2007; modified June 17, 2009, anticipated re-issue date June 2012) regulating surface water quality. (aka NPDES permit) (S-59)
• Plant replacement and mitigation monitoring is required by Bellevue's Critical Areas Ordinance, as well as project-specific Washington Department of Fish and Wildlife's Hydraulic Project Approvals, and Corps 404 permits. (D-95, D-100, and D-101)
Efficiencies/Innovations: Each ongoing program uses criteria specific to the program objective to prioritize projects within it. Specific project designs are selected after evaluating alternative designs and considering financial, environmental, and social costs and benefits (triple-bottom line), which incorporates life cycle cost analysis of the alternatives.
Cost Avoidance: Steady progress toward stream restoration projects that benefit salmon reduce the likelihood of third-party lawsuits under the Endangered Species Act.
Short- and long-term benefits of this proposal: Each project results in immediate short term benefits: making streams accessible to salmon, reducing and removing habitat-choking and flood-causing sediment, and reducing flooding at homes and businesses, or which blocks roads. Even more important, this proposal will lead to long term, measurable and sustainable improvement of water quality and valuable habitat of Bellevue's surface waters.
Describe why the level of service being proposed is the appropriate level:
See descriptions for D-81, D 86, D 94, and D 104, for the rationale for the proposed annual budget of these ongoing programs. One-time projects are not scalable.

## Section 5: Responsiveness to Request For Results

**A. Factors/Purchasing strategies addressed by this proposal - for the PRIMARY outcome:**

This proposal supports a Healthy and Sustainable Environment with project-specific objectives to restore or preserve Bellevue's surface waters. Ongoing investment and effort is necessary to maintain water quality and habitat for streams in an urban environment. These projects protect water quality by reducing the potential for sewer overflows to sensitive surface waters, reducing sediment that chokes stream habitat, restoring degraded stream reaches, and removing barriers that prevent fish from accessing healthy stream habitat.
Factors in the Healthy and Sustainable Environment outcome:

- Factor 2: Clean, Reliable Water. S-59, D-86, D-94, D-95, D-100, and D-101 will result in reduced pollutants (sewage spills and sediment transport) to Bellevue's water resources.
- Factor 4: Natural Environment. S-59, D-81, D-86, D-95, D-100, D-101, D-104, and D-106 will preserve and restore streams and surface waters that provide critical habitat for salmon, other fish and riparian animals, and plants. D-94 and D-106 provide flood control and D-104 will provide recreational benefits. S-59, D-81, and D-104 in particular will support preservation of lakes, streams, and wetlands for the enjoyment of Bellevue citizens.

Purchasing Strategies in the Healthy and Sustainable Environment outcome:

- S-59 is a proactive measure to protect surface water quality and habitat, and safely remove wastewater from homes and businesses, by preventing sewer overflows during power outages.
- D-94 and D-106 will ensure that storm and surface water runoff is controlled to minimize the impacts of flooding and erosion.
- D-81, D-86, D-95, D-100, D-101, D-104, and D-106 will manage, maintain, and restore Bellevue's streams to ensure their continued viability to support salmon and other species.
- D-104 will create new green spaces for recreation by restoring streams that currently flow through pipes.

**B. Factors/Purchasing strategies addressed by this proposal - for the OTHER outcome(s):**

S-59 results in a Safer Community by reducing the chance of sewage overflow into Bellevue's streams and lakes, which contaminates stream water quality and can result in beach closures to protect public health. D-94 and D 106 will support Safer Community by reducing flooding hazards. D-104 directly supports Improved Mobility in Bellevue by making improvements to streams in the BelRed Corridor in conjunction with planned street improvements of Bellevue's MII, and supports Economic Growth and Competitiveness by funding stream restoration that will enhance and encourage redevelopment of high quality attractive residential and commercial urban areas.

Citywide purchasing strategies: This proposal leverages resources from KCFZD to provide Bellevue citizens reduced flooding and better environmental outcomes for their ratepayer dollars. All Utility CIP designs undergo alternatives analysis using triple bottom line principles (financial, environmental and social costs and benefits) and total life cycle cost considerations (best practices), to assure best value in design and efficient resource investment for the long term. This proposal is focused on protection and stewardship of environmental resources.

**C. Partnerships and Collaboration proposed:**

Internal: Parks Department (D 101 and D 104); External: King County Flood Control Zone District (KCFZD) (D 94; D-106); various granting agencies (esp.D 81 and 86); and King County (D 95, D 100, D 101).

**D. Activities in this proposal that support the work of other proposals, or save costs that would otherwise have to be expended:**

D-94 and D-106 remove flood hazards that might otherwise result in damage claims to the City

Consequence of not funding the proposal at all (See specific programs for specific consequences of each)

1. Legal:

- Increased likelihood of third-party lawsuits for non-compliance with state requirements or court order;
- Potential fines by Washington Department of Fisheries;
- Risk of mandated capital projects by the Washington Departments of Ecology or Health; and
- State resource agencies less likely to issue permits to Bellevue if we don't fulfill permit obligations.

2. Customer Impact:

- Reduced amenities in Bel-Red Corridor to attract redevelopment;
- Salmon would never be able to access almost two miles of restored habitat in Goff Creek or West Tributary;
- Bellevue citizens would have increasingly reduced opportunity to enjoy fish and other riparian species in the 70+ miles of open streams that meander through their neighborhoods;
- Higher utility rates resulting from state agency fines and for mandated corrective actions; and
- Continued flooding and access restrictions at known locations affecting homes and businesses.

3. Investment/Costs already incurred: D-95, D-100, and D-101 are substantially complete. Design work is underway for the next projects in D-81, D-86, and D-94.

Consequence of funding at a lower level: D-81, D-86, D-94 and D-104 are ongoing programs; reducing funding to the proposal would have similar consequences as described above, but proportionately less severe. S-59, D 95, D-100, D-101, and D-106 are one-time projects and are not scalable.