

EXECUTIVE SUMMARY

Introduction

This Storm and Surface Water System Plan (Plan) is a guidance document that establishes storm and surface water policy, is in support of the City's Comprehensive Plan, evaluates the operational management of the Storm and Surface Water Utility, provides a "roadmap" for future planning, and is a tool to help the City meet federal, state, and regional regulations. It is intended for Bellevue residents, business owners, City staff, developers, and other interested parties. The plan does not include a comprehensive list of potential capital projects, although it does identify recommended capital investments. Capital projects are prioritized and funded separately in the City's seven-year capital investment plan, which is updated every two years as part of the City's budget process.

This Plan is an update of (and supersedes) the adopted 1994 Comprehensive Drainage Plan. It is being updated now due to major changes that have occurred since 1994, including:

- Issuance of the Phase II municipal stormwater discharge permit (National Pollutant Discharge Elimination System) to the City of Bellevue (City) in 2007;
- City participation in regional efforts for salmon recovery, due to Chinook salmon being listed under the Endangered Species Act in 1999;
- Changing climate conditions;
- Emerging technology and practices;
- Adoption of Critical Area ordinances; and
- New City initiatives such as the Environmental Stewardship Initiative and updates to the City's Comprehensive Plan.

The specific Plan objectives include:

- Reviewing and updating operating system policies to ensure consistency and cohesiveness with
 - Other utility operations and management;
 - City Comprehensive Plan policies;
 - Relevant City regulations; and
 - Regulatory requirements.
- Refining the Mission Statement for Storm and Surface Water Management.
- Identifying water flow, water quality, and habitat management data gaps and developing tactics to address them.
- Developing Plan recommendations that will guide operations, system, and outreach/education improvements.

The City Council directed that the Environmental Services Commission (ESC) be the review body for this Plan. Opportunities for public review and input on the Plan components were provided at several ESC meetings in 2010 and 2011, and at a public open house on March 1, 2012. Further opportunities for public review and comment were provided through the State Environmental Protection Act (SEPA) process and during Council review and adoption of the Plan.

Policies

Policies that govern the operation of the Storm and Surface Water Utility include policies that address Customer Service, Water Quality, Regional Issues, and Utilities Department Finance. Policies were updated by a Utilities Department team composed of technical and policy staff, and reviewed by the ESC and the public. The policies were reviewed for consistency with the City's Comprehensive Plan which contains elements (i.e. Utilities, Environmental and Capital Facilities) that are directly relevant to storm and surface water management.

This Plan includes the addition of one new policy and the deletion of four others. The remaining policies were not substantially modified, but rather revised for clarity or consistency with other City policies or regulatory requirements.

Four policies were deleted because they are either included in other programs or are now required by the City's Storm and Surface Water Code or Engineering Standards and are therefore no longer needed as a policy statement. Deletion of these policies does not functionally change the services provided by the Storm and Surface Water Utility. The deleted policies are:

- Residential Drainage Assistance Policy;
- Neighborhood Enhancement Projects Policy;
- Stormwater Runoff Control Requirements Policy; and
- Property Restoration Policy.

Planning Considerations

Bellevue's specific mission for stormwater management is

A surface water system that controls damage from storms, protects surface water quality, supports fish & wildlife habitat, and protects the environment.

Stormwater management supports many elements of a highly desirable and productive community. Economic development and a stable economy depend on good infrastructure, including stormwater infrastructure that keep businesses and homes from flooding. Maintaining high quality streams and lakes supports safe human recreation opportunities, allowing swimming and fishing without health concerns. Given these economic, transportation, human health, and recreational benefits, everyone benefits from a strong stormwater management program whether they live near a stream or in an upland area.

Regulatory drivers, including local, state and federal regulations, and regional plans are some of the mechanisms used to promote stormwater management that results in high quality communities for the benefit of all. This Plan considered all of these factors in the development of system evaluation criteria and analysis, and resulting recommendations.

System Analysis

Bellevue's current storm and surface water system was evaluated with respect to how well it achieves the stated mission for stormwater management, including flood protection, water quality and habitat. The system goals, planning criteria and evaluation metrics are shown in Table ES-1.

Table ES- 1. Storm system planning criteria and evaluation metrics.

Goals	Planning Criteria	Evaluation Metrics
Control Damage from Storms	Minimize damage from the 100-year, 24-hour storm event	<ol style="list-style-type: none"> 1) Flooded structures during large storms 2) Number of flood damage claims 3) Number of street closures
Protect Surface Water Quality	Identify pollution “hot-spots”	<ol style="list-style-type: none"> 1) Percent compliance with NPDES Permit 2) Number of Clean Water Act Violations 3) Number of Illicit Discharge Corrections 4) Number of basins classified as Impaired under Clean Water Act Section 303(d) 5) Number of basins classified as a high risk for water quality problems
Support Fish and Wildlife Habitat	Improve stream habitat conditions and biotic integrity (B-IBI) scores	<ol style="list-style-type: none"> 1) Large woody debris frequency per channel width 2) Pool frequency per channel width 3) B-IBI score 4) Number of stream reaches with hardened banks
Protect the Environment	Incorporated above	Combination of all categories

Plan Findings

Analysis confirmed that Bellevue does not have widespread flooding problems. However, there are certain areas within the City that have been subject to street closures, flood damage claims or flooded structures during large storm events.

The City is in 100 percent compliance with its Phase II NPDES Municipal Permit, and has had no fines for Clean Water Act violations during the permit period. One-hundred eighty-two illicit discharges were corrected in 2010-2011, the first year of the City’s Illicit Discharge and Detection Elimination (IDDE) Program, and ten sub-basins were rated as high risk for potential illicit discharges based on land use, outfalls to streams, and fish usage. Seven different stream segments in five Bellevue drainage basins were rated as “impaired” in 2008 based on state criteria for water quality support of beneficial uses under the Clean Water Act. Streams were rated as impaired due to high fecal coliform bacteria counts, high water temperatures, and/or low dissolved oxygen; these affect their acceptability for human recreation (primary physical contact) and aquatic life support. These ratings are fairly typical for urban streams.

Most of Bellevue’s streams have been included in habitat-related surveys for large woody debris, pool frequency and B-IBI scores. Typical of most urban streams in the Puget Sound basin, these habitat evaluation metrics have poor to fair ratings. Several in-stream restoration projects have occurred since some of the data described in this Plan was originally collected, so it is possible, that aquatic habitat conditions in some stream segments have improved.

The functionality of the storm and surface water system and how well it achieves the goals in the Utilities mission statement is dependent on management of the assets, operation and maintenance, financial considerations, and the behavior of the public. The Plan includes specific recommendations for

the asset management program, the Storm and Surface Water Utility's appropriate role in support of other City departments and the region, as well for public education and outreach.

Plan Recommendations

The recommendations in this Plan are grouped into two categories: Capital Investments and Storm and Surface Water Emerging Issues. A brief description of the recommendations is provided here, with more detail provided in the Plan.

Capital Investment Program

The following investments are recommended for continuation or addition to the City's Capital Investment Program. These investments serve to minimize flooding, protect surface water quality and support fish and wildlife habitat while protecting the environment in Bellevue.

- Continue investing in the **Flood Control Capital Program** to reduce or eliminate local flooding caused by insufficient public drainage system capacity.
- Continue to use King County Flood Control Zone District Sub-Regional Opportunity funds to supplement local rates that partially fund projects in the **City's Flood Control Capital Program**.
- Invest in cost-effective water quality projects, where appropriate.
- Consider emerging technologies and techniques that improve water quality for pilot projects.
- Continue to invest in the **Fish Passage Improvement Program** to remove fish passage barriers created by impassable culverts, debris jams, or accumulated sediment, which opens spawning and rearing habitat for salmon populations.
- Continue to invest in the **Stream Channel Modification Program** to construct habitat improvements on stream channels.
- Invest in the **Stream Restoration for Mobility and Infrastructure Initiative** to implement the stormwater improvements associated with this initiative (a city-wide initiative that seeks to address high priority mobility and infrastructure needs in downtown Bellevue and the Bel-Red corridor).
- Continue to invest in the **Stormwater System Conveyance Infrastructure Rehabilitation Program** to rehabilitate or replace defective storm drainage pipelines and ditches identified in the condition assessment program or by other means.
- Continue to invest in **Minor (Small) Storm and Surface Water Capital Improvement Projects**, by making small improvements to Bellevue's surface water system to resolve deficiencies, improve efficiencies, or resolve maintenance problems, often in conjunction with other Bellevue programs such as the transportation overlay program.

Continue to invest in capital programs and projects so that critical facilities (e.g., large diameter pipes and culverts) are repaired or replaced prior to failure.

Storm and Surface Water Emerging Issues

The management of storm and surface water has changed significantly since 1994, when this Plan was last updated. To address these changes and be prepared for anticipated future changes, this Plan includes the following recommendations:

- Continue to encourage use of emerging low impact development (LID) technologies and collect data on their effectiveness.
- Continue to educate the public on how to optimize on-site stormwater runoff management.
- Monitor the effectiveness of structural and outreach programs over time.

- Continue to support regional planning efforts and activities related to water quality, quantity, and habitat consistent with community values and resources.
- Continue to implement the planned NPDES activities described in the City's annual Stormwater Management Program report.
- Verify the state's list of water quality impairments in Bellevue (303(d) listed water bodies) to determine if existing programs will address identified water quality impairments.

Continue to participate in and support the recommendations of the Regional Stormwater Work Group (SWG), which provide more meaningful and useful results, are less expensive to implement than traditional approaches, and meet multiple objectives such as Chinook salmon recovery or Growth Management Act directives.

Strategic Initiatives

Five storm and surface water management strategic initiatives are included in this Storm and Surface Water System Plan:

1. **The Primary Stormwater Infrastructure** strategic initiative will identify and develop strategies for maintaining system functionality of the primary components of the built storm and surface water system (both public and privately owned conveyance systems) with the objective of having management strategies in place that maintain long term system viability.
2. **The Property Management** strategic initiative will support the development of property management plans for Surface Water Utility Enterprise owned properties that have the potential for benefitting the storm and surface water system and natural conveyances.
3. **The Improving Water Quality** strategic initiative will support the development of a plan to address water quality problems that threaten aquatic habitat and Bellevue's surface waters.
4. **The Open Streams Condition Assessment** strategic initiative will support development of a stream protection and restoration plan that has the objective of improving stream health. The plan is intended to identify information gaps, objectives and restoration criteria for each stream within the city.
5. **The Citywide Watershed Management Plan Assessment** strategic initiative will support development of plan that considers how to optimize stormwater mitigation investments that strategically achieve flow and water quality conditions supportive of healthier waterways, fish, and other aquatic life sooner than what might otherwise occur with the existing regulatory approach for improving water quality. The objective is to evaluate opportunities of redistributing stormwater mitigation resources generated by regulatory drivers towards priority stormwater basins where habitat and water quality improvements would have the greatest impacts. The plan is intended to develop a holistic Citywide Watershed management strategy that meets multiple stormwater and economic development needs.

Each of the five strategic initiatives is presented in the form of an "issue paper" that states the problem, provides relevant background information and describes the intended outcome. In some cases a strategic approach to analyzing the problem is suggested. Related policies, other strategic initiatives and specific Mission Statement objectives are indicated in each issue paper.