

CHAPTER 5 STORM AND SURFACE WATER MANAGEMENT ROLES, RESPONSIBILITIES, AND COMMUNICATIONS

The regulation and management of storm and surface water is distributed across local (city and county), state, and federal agencies. In the City of Bellevue, regulation and management is distributed City-wide. This chapter clarifies the City's roles and responsibilities, identifies types of information sharing that occurs regarding storm and surface water issues within the Utilities Department, and documents areas needing additional communication or clarification. This chapter provides an overview of these topics and is not intended to be a detailed examination of the actions needed for specific management activities. The local, state, and federal agency roles are documented in Chapter 3 Community Vision and Regulatory Framework.

City of Bellevue Roles and Responsibilities

Storm and surface water management is a shared responsibility among city departments. The Utilities, Planning and Community Development, Development Services, Transportation, Parks and Community Services (Parks) departments, and the City Manager's Office each have roles and responsibilities for managing the stormwater system. The inter-relationships among the roles and responsibilities of different departments are described below.

Regulations and Enforcement

As noted in Chapter 3, federal and state regulations, policies, and permits apply to and set the policies and standards for protecting the City's natural resources including shorelines, open space, wetlands, streams, floodplains, groundwater, and lakes. Many state and federal programs have overlapping requirements, permitting authority, and associated enforcement actions. Within the City, Development Services is the primary department tasked with developing and enforcing land use regulations (commercial, industrial, multi-family and single family residential, parks and roads), shorelines, steep slopes, wetlands, streams, floodplains, groundwater (limited to designating Critical Aquifer Recharge Areas within the Critical Areas Ordinance), and lakes. The Utilities Department is responsible for enforcing stormwater regulations (runoff control and water quality) and coordinating the City-wide implementation and documentation of National Pollutant Discharge Elimination System (NPDES) permit compliance.

Planning

Several departments are tasked with planning roles that affect surface water, groundwater, and associated aquatic habitat. The Planning and Community Development Department plans for city and geographic sub-areas through the City's Comprehensive and Land Use Plans. These plans focus on land use, and integrate stream and wetland planning through critical areas and shoreline regulations. The plans recognize these natural areas are a critical component to the quality of life for residents and visitors. Other departments have plans that support the City Comprehensive Plan, such as this Storm and Surface Water System Plan, Parks and Open Space System Plans, and Transportation Comprehensive Plans.

For site-specific planning, a "layered-uses" strategy requires coordination among city departments to achieve respective departmental objectives. For instance, Utilities, Parks, and Transportation could include the same water body in their individual plans for storm and surface water, parks, or transportation improvements. The Parks Department may plan for trails and other recreational access to the surface water; however, the Utilities Department may plan for flood storage in that same area. While there are methods to allow flooding of recreational areas, the facilities must be specially designed

to accommodate inundation. Without coordination, these two plans could be in conflict. The Utilities Department may develop basin plans or conduct targeted studies to identify holistic methods for addressing flooding/detention, water quality, or stream habitat problems for surface waters that cross parks, other publicly owned land, and private properties.

The Transportation Department and the City Manager's Office do not have direct planning roles for surface water or groundwater. However, City objectives of economic development and mobility may result in policy, capital investments, or operational actions that influence surface water or groundwater.

Operations and Maintenance

Public (Utilities Department) Stormwater System

The term "public stormwater system" as used in this document refers only to stormwater facilities located in public rights-of-way, on Utilities Department-owned land, or in easements dedicated specifically to the City of Bellevue Utilities Department. Stormwater facilities otherwise located are managed as private stormwater systems. The Utilities Department is responsible for the inspection, operation, and maintenance of "public stormwater facilities." The Utilities Department operations and maintenance activities are explained more fully in Chapter 9 Utilities Operations.

Private Stormwater Systems

The operation and maintenance of private stormwater systems is the responsibility of the person or entity that owns the property where the facility is located. This includes, but is not limited to stormwater facilities such as pipes, water quality and flow control facilities, and collection systems (e.g., roof gutters and downspouts). The Utilities Department is authorized to inspect the system's function and enforce maintenance requirements for privately owned stormwater facilities. The private facilities are integral to the storm and surface water system, and must be maintained by the property owner to the levels specified in the stormwater maintenance standards to mitigate off-site flooding and protect water quality. It is the property owner's responsibility to maintain storm conveyance systems, such as culverts, pipelines, and other facilities located on private property.

Capital Projects

Construction of stormwater detention, conveyance, and water quality facilities is the responsibility of various City departments, as well as private property owners. As manager of the public storm and surface water system (which includes open streams), the Utilities Department invests in capital projects for stormwater management (conveyance and water quality), riparian habitat improvements on City-owned reaches of streams, and flood control. The City's Transportation Department and the Washington State Department of Transportation (WSDOT) are responsible for capital road projects in Bellevue; such projects often require upgrades or modifications to the storm and surface water system. The Parks Department develops and constructs capital projects in City parks, including stormwater facilities, stream and wetland restoration, as well as recreational and upland projects.

Capital projects often require inter-department coordination and planning to ensure multiple City objectives are met and to avoid conflicts. The Utilities Department's Capital Investment Program is explained in more detail in Chapter 9 Utilities Operations. Private property owners plan and implement capital projects on shorelines, wetlands, streams, and floodplains. All capital projects, whether public or private, are required to meet environmental permit criteria, codes, and engineering standards.

Education

The Utilities and Parks Departments share responsibility for providing educational information and volunteer opportunities to the public to advance environmental stewardship of Bellevue's surface water

resources. The Utilities Department conducts programs related to pollution prevention and stewardship of aquatic resources for the general community, commercial property owners and managers, residential property owners, and schools. Since 2007, many of these educational programs have become mandatory for compliance with Bellevue's NPDES Municipal Stormwater Permit. The Utilities Department also manages volunteer programs that provide opportunities for the public to engage in aquatic restoration and monitoring activities. Many of these volunteer and outreach activities occur on Parks properties. These programs are more fully described in Chapter 10 Public Education and Outreach. The Parks Department provides educational activities within city parks and open spaces that are focused on terrestrial and wetland ecology and other naturalist programs in which the parks are often used as outdoor classrooms. Particular highlights are the Mercer Slough Environmental Education Center, where the City partners with the Pacific Science Center to offer programs on nature and sustainable building to children and adults; and Lewis Creek Park and Visitor Center, which showcases LID practices and ranger-led programs on a variety of nature-related topics.

Emergency Response

The Utilities Department has primary responsibility for responding to emergencies related to surface water within Bellevue. This responsibility includes providing a 24-hour emergency hotline to report flooding of streets or structures, pollutant spills, and illegal discharge of pollutants to the storm and surface water system. Staff is on call 24 hours, 7 days a week, to respond to reported surface water emergencies.

The Utilities Department has prepared an Emergency Management Plan that is consistent with and supports the City of Bellevue Emergency Operations Plan and emergency response plans at the regional, state, and federal levels. The Utilities Department Emergency Management Plan is also consistent with the federal government's National Incident Management System requirements and guidelines and has adopted the Incident Command System model for coordinating its emergency and disaster response efforts. In case of a large event, the Utilities Department may be called to participate in the Emergency Operations Center to coordinate City efforts across multiple departments and effectively respond to priority needs.

Water Quality/NPDES Municipal Stormwater Permit

The Utilities Department is the City's lead for coordinating documentation of City-wide compliance with the NPDES Permit. Most City departments have some responsibility under this permit; for example, the Civic Services and Parks Departments develop and implement pollution prevention plans for their facilities. The Fire Department implements best management practices (BMPs) during fire training and system testing to avoid surface water contamination. Information Services tracks implementation of permit-required activities. The Utilities Department provides numerous permit compliance activities, ranging from illicit discharge detection and elimination to conducting stormwater facilities inspection and cleaning at specified intervals. These activities are further described in Chapter 9 Utilities Operations and the City of Bellevue's 2011 Stormwater Management Program (City of Bellevue 2011).

Chinook Salmon Recovery (ESA) Regional and City-wide Coordination

In 1999, the Bellevue City Manager directed the Utilities Department to lead City efforts for Endangered Species Act (ESA) response and planning. The Utilities Department has primary responsibility for supporting Bellevue-elected officials at the Lake Washington/Cedar/Sammamish Salmon Recovery Council, participating in regional planning efforts, and coordinating local implementation of recovery plans.

The primary role of local government in the conservation of listed salmon is the protection and restoration of aquatic habitat. Appendix A provides examples of the types of activities the Utilities

Department conducts for aquatic habitat and stormwater, such as spill response and capital projects to improve fish passage through culverts, as well as invasive plant management.

Monitoring and Modeling

Many federal and state regulations that guide the City's environmental actions require monitoring and reporting of environmental conditions and compliance. Within the City, the Utilities Department monitors surface water flow in streams and at regional stormwater detention facilities for operational purposes, and supports operation of U.S. Geological Survey flow gauges at lower Kelsey Creek and Lake Sammamish. The Utilities Department also operates temporary gauges for special projects, basin plans, or other planning or operational purposes. Water quality monitoring is conducted in Phantom and Larsen Lakes to assess whether water quality objectives defined as part of a lakes restoration project continue to be met. As priorities and funding allow, the Utilities Department also conducts limited trend monitoring of aquatic life in streams throughout Bellevue because they serve as environmental indicators of water quality and stream health (Appendix A). King County monitors the water quality of streams and rivers that are crossed by their major wastewater conveyance pipes or facilities, as well as Lake Washington and Lake Sammamish. The numbers of locations for monthly monitoring have evolved over the last couple of decades; currently, three stream sites are being monitored within Bellevue. The Utilities Department manages the hydrologic and hydraulic computer modeling of floodplains and individual drainage basins. The Parks Department monitors water quality at public swimming beaches, in conjunction with King County, and also monitors upland conditions, such as tree canopy, to evaluate potential parks operational impacts to streams. Water level elevation is monitored at Phantom Lake, Lake Sammamish, and Lake Bellevue. No monitoring roles or responsibilities are currently identified for City departments for shorelines, wetlands, groundwater, or Lake Washington.

Communication and Coordination

Stormwater issues are raised in many different City efforts; interdepartmental coordination and ongoing communication are key to successful outcomes.

The Bellevue Comprehensive Plan and its Subarea Plans include policy discussion about aquatic resources. These issues affect multiple departments, including the Utilities Department. All affected departments are provided opportunities for input and discussion during those updates.

Transportation planning and projects usually involve stormwater issues including detention, water quality and stream crossing regulatory requirements, which are similar to any other development. In addition, the Transportation Department often leads coordination efforts for WSDOT and Sound Transit projects requiring substantial intergovernmental efforts for mitigation and project planning. For such projects, the Transportation Department convenes the Utilities, Development Services, Planning and Community Development, and Parks Departments to identify stream and wetland mitigation options, prioritize locations, and review proposals for large regional projects.

Bellevue Parks & Community Services acquires and preserves open space and develops trails and public access points within open space areas. Communication between departments is necessary to assure that multiple department objectives, such as regional trail linkages, flood storage, or salmon recovery are acknowledged and addressed.

The Civic Services Department is responsible for maintaining stormwater facilities on City properties not owned or operated by the Parks or Utilities Departments. The Utilities Department provides technical assistance for stormwater management questions, on request.

Even within the Utilities Department, cross-divisional communication is critical. For instance, the Engineering Division within the Utilities Department is responsible for planning, designing, and

constructing Storm and Surface Water Utility capital improvements. Once projects are constructed, they are maintained and operated by the Operations and Maintenance Division. Upfront communication between the Engineering and Operations and Maintenance Divisions ensures that capital projects are designed for ease of operation and maintenance, as well as initial construction design. Another example is the outreach and education programs within the Resource Management and Customer Service Division. These programs are designed based on coordination with other divisions to optimize meeting multiple objectives such as fulfilling NPDES municipal stormwater education requirements, coordinating with the Stream Team Program, and meeting the Utilities Department outreach priorities. Coordination and communication have improved with implementation of standardized format and repository of standard operating procedures. Ongoing improvements are realized through regular, topical meetings between division managers and technical staff.

Interaction with Non-stormwater Programs

Managing City storm and surface water involves coordinating with other municipal utilities and city activities where those programs affect stormwater. These non-stormwater programs may affect the volumes and flow rates of stormwater and the levels of pollutants in stormwater discharged to Bellevue streams, lakes, and city infrastructure.

Water

Delivering drinking water to City customers requires the regular maintenance of City water mains—the pipelines used to deliver water to consumers. City water mains are regularly flushed to maintain the highest level of drinking water quality. Almost 100 miles of water main are flushed each year, which pushes about 10 million gallons of chlorinated and pH-buffered water from the drinking water system. To prevent stream erosion and harmful changes to surface water quality, the preferred method of flushing is to divert the discharged water into the sanitary sewer system. Unfortunately, in many areas this option is not viable due to sewer pipe capacity. In this case the water is treated, according to NPDES Municipal Stormwater Permit guidelines, to remove chlorine and return the water to a neutral pH before it is discharged to the stormwater system.

Water main breaks can lead to large unanticipated releases of drinking water to the storm drainage network, including local streams, lakes, and wetlands. These emergencies require communication among drinking water, water quality, and surface water staff, as well as immediate notification to the Washington State Department of Ecology (Ecology).

Wastewater

Wastewater pipes typically rely on gravity to convey sewage, so they are usually located in low areas. They often follow drainage routes for a portion of their length. Sometimes the sewer pipe trenches intercept shallow groundwater flowing along its natural pathway to a stream. Stormwater that enters the City's wastewater system (termed inflow and infiltration, or I&I) reduces wastewater pipe capacity, adds to wastewater treatment costs, and can lead to wastewater overflows, affecting local streams, lakes, and wetlands. This infiltration can also reduce stream baseflows. Infiltration quantity is strongly influenced by local soils and topography, as well as sewer pipe condition. The growing interest and use of low impact development (LID) techniques in Bellevue could further accelerate infiltration and therefore affect wastewater capacity. Infiltrating stormwater in some areas could raise shallow groundwater tables and increase the amount of stormwater entering the buried wastewater pipes.

Wastewater pipes that are connected to stormwater systems are illegal and pose serious risks to human health and the environment. The Utilities Department has a program to investigate suspected

accidental or illicit connections and requires the responsible party to remedy any such cross-connections.

Street Maintenance

The National Marine Fisheries Service (NOAA Fisheries) has approved a Regional Road Maintenance Program under the ESA (Regional Road Maintenance Technical Working Group 2001). Bellevue participates in this program, following those guidelines for physical, structural, and managerial BMPs, designed to reduce the impact of road maintenance activities on surface water and aquatic habitat. The Regional Road Maintenance ESA Program provides guidelines regarding staff training about storm and surface water issues; describes management tools that are appropriate for different surface water situations; addresses emergency response issues; and provides guidance for agency research and adaptive management practices. Participation in this program provides critical information for the Bellevue street maintenance staff about surface water issues and management techniques.

Street maintenance is fundamental to the protection of the life and safety of Bellevue residents. This is particularly true in winter when applying salt or sand to icy roads can reduce sliding and prevent accidents. However, after application, the applied sand and salts can move from roads to streams, wetlands, and lakes through the drainage network. To reduce these impacts, the City has established priority road sand and salt removal route maps, so the sand or salt is removed first from streets that drain to salmon streams or other sensitive aquatic habitat.

Opportunities for Additional Coordination

Groundwater

Groundwater protection is the purview of the state through Ecology. While not a groundwater regulator, the Utilities Department's activities often benefit groundwater quality. The Utilities Department regulations to protect surface water quality and encourage natural runoff also help to protect groundwater quality and quantity. For example, natural drainage practices that use infiltration provide water quality treatment before it is infiltrated into the ground. These natural drainage practices are intended to reduce surface water runoff and increase the amount of groundwater without detrimental impacts to groundwater. Pollution prevention efforts, such as private drainage inspections, system repairs, elimination of illicit discharges, and facilities pollution plans help protect groundwater quality. Operational techniques and capital projects, such as building and operating bioswales and detention ponds, also provide treatment and indirectly protect groundwater. Education and outreach efforts that change people's behaviors contribute to groundwater protection, as well as the protection of surface water quality.

Stream Planning and Projects

A number of departments have roles in protecting and managing streams and wetlands. Currently, the Utilities Department provides technical and field expertise to the Transportation Department and the Development Services Department to mitigate stream and wetland impacts related to shoreline management and state transportation projects such as Interstate 405, State Route 520, and Link light rail. These mitigation efforts are done on a project basis. Comprehensive city-wide planning among departments is important for optimal results. The Utilities Department also conducts various aquatic habitat protection, restoration, and evaluation activities (Appendix A).

Stormwater and Streams Maintenance

The Utilities Department conducts stream maintenance activities on Utilities-owned properties to operate and maintain stormwater facilities, minimize street flooding, and enhance fish passage to primary spawning habitat for salmon protected under the ESA. Standard operating procedures have

been established for stream maintenance activities such as beaver dam management, removal of invasive weeds, and other similar stream maintenance needs that affect flooding, water quality, and salmon passage. The Utilities Department management responsibilities extends only to stormwater facility assets located in public rights-of-way, on Utilities Department-owned land, or in easements dedicated specifically to the City of Bellevue Utilities Department. Maintenance responsibilities including stream maintenance on property in ownership by other City departments or by private entities is the responsibility of the respective property owners.

Capital Projects in Parks

The Utilities and Parks Departments have occasionally proposed stream and wetland capital projects in areas of contiguous or cooperatively owned Utilities and Parks properties. Projects for stream stability, salmon habitat improvements, wetland trails, and park infrastructure projects have potentially conflicting objectives. Cross-departmental coordination is critical to identifying and avoiding conflicting proposals and balancing multiple needs. Staff-level communications have been employed successfully to resolve such conflicts.

Aquatic Education

The Utilities and Parks Departments share responsibility for environmental education and stewardship activities within park lands. Coordination is critical to ensure key messages are consistent. The Development Services Department provides some outreach for critical areas and shorelines, such as development vegetation templates for native vegetation along shorelines. The Utilities Department conducts similar educational programs about native vegetation along shorelines as well as natural yard care. Coordination ensures that despite this overlap in roles, messages remain consistent, and efficiencies are maintained by keeping programs unique.

Environmental Permitting

Environmental regulations can be complex and confusing to people not regularly involved in aquatic projects. Permit requirements change frequently and there may be conflicting or overlapping requirements among the Development Services Department critical areas or shoreline permits, the Utilities Department permits and agreements with property owners. Environmental permits issued by Washington Department of Fish and Wildlife, the U.S. Army Corps of Engineers, and Ecology each have their own permit conditions. For example, shoreline management requirements may dictate using native vegetation where shorelines are disturbed, but the Utilities Department often works on private utility easements and needs to replace disturbed vegetation with the type of plants that previously existed. Opportunities to streamline the environmental permitting process are continuously examined among the respective stakeholder groups to resolve these types of issues.

Summary of Key Roles and Communication Needs

Similar to the City's transportation network, the storm and surface water system touches every part of the city, and is affected by the actions of almost every City department, as well as other agencies, jurisdictions, and private citizens. Managing such a system requires extensive coordination and communication, both internally within the City government and externally with the public and regulatory agencies. The following roles and responsibility statements are key to understanding how storm and surface water responsibilities are administered:

- The state is responsible for groundwater; City departments share responsibility for coordinating with the state on groundwater issues.
- No single entity can plan and implement stream and wetland projects or mitigation opportunities.

- The Utilities Department manages the Transportation and Utilities Departments' stormwater facilities, but not those of other City departments. (This has created confusion about the maintenance role of the Utilities Department among other departments.)
- Roles for aquatic stewardship outreach and education among the Utilities, Parks, and Development Services Departments could be more clearly defined, including a statement of desired outcome, City-wide.
- There are overlapping and sometimes conflicting permit requirements from local, state, and federal agencies. For those priority issues, sufficient City of Bellevue staff time will need to be allotted to resolve such discrepancies and make any necessary code and regulatory changes.