

# Agenda

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## ENVIRONMENTAL SERVICES COMMISSION MEETING

450 - 110th Avenue NE (City Hall)

June 18, 2015

Thursday 6:30PM

Regular Meeting

Conference Room 1E-113

	<u>Page No.</u>	<u>Action</u>
1. Call to Order – Keith Swenson, Vice Chair		
2. Oral Communications Note: Three-minute limit per person, maximum of three persons for each side of topic. Additional comments may be heard at Agenda Item 12.		
3. Elect Chair & Vice Chair		
4. Approval of Agenda *	1	X
5. Welcome New Commissioner #		
6. Approval of Minutes * <ul style="list-style-type: none"><li>• April 16, 2015 Regular Meeting Minutes</li><li>• May 21, 2015 Regular Meeting Minutes</li></ul>	2-12 13-19	X
7. Reports & Summaries <ul style="list-style-type: none"><li>• ESC Calendar/Council Calendar *</li></ul>	20-21	
8. New Business <ul style="list-style-type: none"><li>• Storm System Plan <i>Presenter: Kit Paulsen, Watershed Planning Manager and Brian Ward, Sr. Engineer</i></li><li>• Water System Plan <i>Presenters: Pam Maloney, Water Resource Planning Manager and Doug Lane, Sr. Engineer</i></li></ul>	22-45 46-47	
9. New Business		
10. Commission Report		
11. Director's Office Report		
12. Continued Oral Communications		
13. Adjournment		

\* Materials included in packet

# Materials separate from packet

Wheelchair accessible. American Sign Language (ASL) interpretation available upon request by calling (425) 452-6466 (v) at least 48 hours in advance. Assistance for the hearing-impaired: Dial 711.



**CITY OF BELLEVUE  
ENVIRONMENTAL SERVICES COMMISSION  
MEETING MINUTES**

Thursday  
April 16, 2015  
6:30 p.m.

Conference Room 1E-113  
Bellevue City Hall  
Bellevue, Washington

**COMMISSIONERS PRESENT:** Chair Helland, Vice Chair Swenson, Commissioners Howe, Wang, Morin and Mach

**COMMISSIONERS ABSENT:** Commissioner Pauley

**OTHERS PRESENT:** Andrew Lee, Deputy Director; Susan Fife-Ferris, Manager Environmental Communications & Outreach; Stephanie Schwenger, Program Administrator; Pam Maloney, Manager Water Resources Planning; Doug Lane, Senior Engineer; Lucy Liu, Assistant Director – Resource Management & Customer Service, Councilmember Robertson

**MINUTES TAKER:** Laurie Hugdahl

**1. CALL TO ORDER:**

The meeting was called to order by Vice Chair Swenson at 6:30 p.m.<sup>1</sup>

Chair Helland arrived at 6:33

**2. ORAL COMMUNICATIONS**

Carla Johnson, Republic Services, stated she was delighted with the 97% Customer Satisfaction Survey results. She presented the Blue Planet Award to Bellevue for having the highest diversion rates of all the cities Republic serves.

**3. APPROVAL OF AGENDA**

**Motion made by Commissioner Morin, seconded by Commissioner Mach, to approve the agenda as presented. Motion passed unanimously (6-0).**

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<sup>1</sup> Chair Helland arrived at 6:33 p.m.

4. **APPROVAL OF MINUTES**

March 19, 2014 Regular Meeting Minutes

Commissioner Wang referred to the second paragraph from the bottom of page 9 and recommended amending it as follows: “Commissioner Wang commented on photos he had sent regarding concerns about the design of *the railings of the walkway under* the bridge at Coal Creek . . .” There was consensus to approve the amendment.

**Motion made by Vice Chair Swenson, seconded by Commissioner Wang, to approve the minutes as amended. Motion passed unanimously (6-0).**

5. **REPORTS AND SUMMARIES**

- ESC Calendar/Council Calendar  
Deputy Director Lee reviewed the calendar.
- Conservation & Outreach Events & Volunteer Opportunity

6. **NEW BUSINESS**

- Solid Waste Contract Performance Audit & Customer Satisfaction Survey Review  
*Susan Fife-Ferris, Manager Environmental Communications & Outreach*  
*Stephanie Schwenger, Program Administrator*

Ms. Schwenger reviewed the background of the solid waste collection contract annual solid waste performance review as contained in the Memo in the ESC packet on pages 17-20. She reminded the ESC that the City started a new solid waste collection contract with Republic Services at the end of June, 2014. There is a provision in the contract for the City to conduct an annual review consisting of a customer satisfaction survey and an audit of the contract performance. She explained that staff is proposing to conduct two customer satisfaction surveys this year. One would be among the single-family residents, and one would be among multifamily and commercial customers, including property managers of multifamily units. About 400 single-family customers would be surveyed with a margin of error at about 5%.

Commissioner Wang commented that by only surveying 80% of the customers and subtracting the 5% deviation, they are actually only getting results on 75% of the customers. He recommended surveying a larger more than three-quarters of the people in the future.

Commissioner Morin asked how many people are sent surveys to ensure that responses are received from at least 400 people. Ms. Schwenger replied that in the past surveys were conducted exclusively via telephone, and surveyors would keep calling until 400 surveys are conducted.

Ms. Schwenger continued to explain that the sample size for the multifamily and commercial survey would be 200 with an overall margin of error plus or minus 6.9%. The satisfaction questions that staff plans to ask are in line with the ones asked in the past. This is intentional in order to allow comparison of responses over time.

Commissioner Wang referred to the seven areas of the questions. He noted that only the first two are related to the actual collection process; the other five are related to what happens after the collection. He asked how the City can get good information about customer satisfaction from only two questions. Ms. Schwenger pointed out that the first question is overall satisfaction, which would include operations and customer service. The second question relates to satisfaction with the collection crew. She thinks the question regarding response time following a missed collection is an operational question, as is the question regarding the response time following a request for a new or replacement cart. Commissioner Wang disagreed, noting that those questions refer to the office and not the actual collection process.

Chair Helland asked about the contract language with regard to the structure of the performance value. Ms. Schwenger said that the contract requires 80% plus or minus the margin of error. Chair Helland asked why the margin of error is subtracted. Deputy Director Lee explained that there are potential penalties associated with the survey results. Including the statistical margin of error in the survey percentage results makes any necessary action legally defensible. Chair Helland asked why the multifamily/commercial survey has a different margin of error. Ms. Schwenger replied that because the sample size is smaller, the margin of error is larger. Chair Helland asked why there wouldn't be a larger sample size so there can be a similar margin of error for the multifamily/commercial survey. Ms. Schwenger explained that the number of commercial and multifamily managers is a much smaller pool than the single-family pool. It is also much more difficult to reach that population. Ms. Fife-Ferris commented it is very difficult to get a sample size of 400 in the commercial and multifamily property manager arena. Chair Helland asked if the seven questions are equally weighted. Ms. Schwenger affirmed they are.

Commissioner Wang recommended expanding the first two questions into more detailed questions to get more specific information such as how the cans are replaced to the sidewalk after being emptied. A more detailed survey may help to identify actual problems.

Commissioner Morin asked Chair Helland how suggestions or recommendations for the survey should be made by the ESC. Chair Helland asked staff about their schedule for seeking feedback. Ms. Schwenger stated that staff would like the feedback within the next month or so. Chair Helland asked if it will still be a third-party vendor doing the survey. Ms. Schwenger replied it will be. Commissioner Wang commented that the type of questioning on the survey is a carryover from the prior contract. He suggested there is value in retaining the current seven-question survey in order to compare to previous surveys, but he recommended expanding it in the future. Commissioner Morin disagreed and thought now would be a good time to change the survey in order to make sure the citizens of Bellevue are receiving adequate service. Chair Helland recommended bringing this item back for more discussion at the May meeting.

Vice Chair Swenson commented on the skill and the care that is given by the drivers manipulating the machinery around his cul-de-sac. He thinks that overall the contractor does a very good job. He would not like to see more public time or money spent making the garbage cans neater. He also expressed concerns about subtracting the margin of error because this can go both ways and represents a significant number of responses.

Ms. Schwenger then reviewed staff's intention in conducting the performance audit as contained on page 19 and 20 in the packet. These items relate to how well the vendor implemented the 2014 contract requirements.

Commissioner Wang asked how many years it has been since Republic took over for Allied. Carla Johnson of Republic Services thought it was 2008. Commissioner Wang referred to number 1 and noted that there are still Allied Trucks and Rabanco driving around. This indicates to him that the trucks are too old. Ms. Fife-Ferris noted that there are trucks running through Bellevue that aren't necessarily serving Bellevue. She noted that there is also a provision for Republic to substitute a truck for a short time if there is a problem. She added that there is a transfer station at Factoria that is used by trucks from all over.

Chair Helland asked if there is a schedule for the contractor providing the monthly metrics scorecard. Ms. Schwenger explained that the requirement is currently in place and Republic has provided a monthly metrics scorecard to the City every month since the beginning of the 2014 Contract. The extensive report covers individual customer listings for multifamily and commercial, container counts, misses, customer contacts, performance fees incurred, accidents, setup and service errors, and other items as prescribed in the contract. Chair Helland requested a copy of that report be sent to the ESC prior to the next meeting. He then asked if there are incentives as well as

penalties associated with this. Ms. Schwenger stated there are. For example, if Republic is able to achieve a certain diversion rate in certain sectors they will receive a certain monetary incentive.

Commissioner Morin referred to the statement that the City is doing an internal audit of the contractor's performance meeting implementation requirements in lieu of a third-party audit. He asked if those requirements are the same as performance fee associated requirements. Ms. Schwenger replied that not all of the implementation activities have performance fees associated with them, but some of them do. She added that the City could hire a third-party auditor, but the auditor would have to get all of the information from the City anyway. Commissioner Morin then referred to Attachment A and noted that some of the questions appear to be ones that the customer should answer as opposed to the contractor. For example, he asked if the City would be surveying the residents of the multifamily units to see if they received information that the contractor was supposed to provide. Ms. Schwenger replied that the City would not be surveying the residents because the contractor has provided proof that the information was printed and mailed. Commissioner Morin suggested that the recipients of the service should be the ones answering the questions as opposed to asking the provider of the services. He commented that this is somewhat like the fox watching the henhouse. Ms. Schwenger acknowledged the concern. Chair Helland suggested that staff provide more information about how this works.

Commissioner Mach asked about the schedule for recycle pickup. Ms. Fife-Ferris stated that it is every week. Commissioner Mach wondered why he received a calendar of pickup dates. Ms. Fife-Ferris asked him to bring it in because he should not have received a calendar. She suggested it might have been sent to him by mistake by another service provider.

Deputy Director Lee noted that this item would be placed on the agenda next month. He requested that any other suggestions be sent to him for discussion at the next meeting.

- Water System Plan – Policies Introduced  
*Pam Maloney, Manager Water Resources Planning*  
*Doug Lane, Senior Engineer*

Ms. Maloney stated she and Doug Lane were seeking input regarding Bellevue's Water System Plan Policies. Mr. Lane reviewed the 2006 Water System Plan Policy, the reason for the proposed changes, and the proposed policy language and discussion for each of the policies.

### Service Ownership/Responsibility

- Chair Helland asked what is meant by unmetered connections. Mr. Lane replied that connections for fire suppression systems typically are not metered, because no water usage is anticipated so the cost of a meter isn't justified. A "tattletale" device is often installed on the double check valve assembly to indicate if any usage does occur.
- Commissioner Morin asked if emergency use of water gets recorded somewhere. Mr. Lane replied that it gets estimated, and is categorized as non-revenue water. This is an estimation of how much water used for flushing mains, disinfection, firefighting, etc. Ms. Maloney added that this is a very small volume, proportionately.
- Commissioner Mach suggested adding the fire sprinkler language back in to the new language for clarity.

### Emergency Preparedness

- Chair Helland asked if private systems are required to have an emergency plan as well. Mr. Lane replied that a large commercial property might have an emergency plan, but it is not required in the same way that it is for a water distributor.
- Commissioner Morin asked how "emergency" is defined. Ms. Maloney explained it is described in the discussion section.

### Service Pressure and Flow

- Commissioner Howe asked if "applicable regulations" refers to the WAC. Mr. Lane thought it was intentionally somewhat broad because there are other regulations which could apply. Chair Helland suggested adding the list of possible regulations. Ms. Maloney explained it is referred to in the discussion text.
- Commissioner Morin asked if 30 psi water pressure is the minimum. Mr. Lane replied it is the minimum under normal operations. Chair Helland suggested that it isn't really a goal; it's a requirement. Commissioner Morin asked if the City would address a situation where someone had a water pressure of less than 30 psi. Ms. Maloney explained that the City would look into it. Commissioner Morin asked if there is any timeframe tied to the city making modifications. Ms. Maloney noted that the City would address it if pressure is in fact what it causing the problem. Deputy Director Lee stated that the current wording is actually correct because it is more specific to new development. 30 psi is a requirement for new construction, but not for existing development. It is a goal for older development, but not required. Chair Helland suggested tightening up the language to explain the difference between new and existing construction.



### Service Reliability

- Commissioner Morin commented that it feels like the intent is to have operational redundancy as long as it is feasible, but he wondered if the language was clear enough for decision-making in the future. Ms. Maloney stated that the policy is to have operational redundancy. Engineering standards put into rules what this policy intends. Chair Helland recommended referencing the engineering standards in the discussion text. Commissioner Morin suggested that the word *practical* might be more appropriate than *practicable*. Director Lee discussed the definition and commented that *practicable* actually works the best in this situation.

### Drinking Water Storage for Emergency Supply Outages

- Councilmember Robertson said she would appreciate if the ESC would have a policy discussion at some point regarding one-day versus two-day storage in terms of the costs and the risks. This would be valuable and informative for the Council. Ms. Maloney offered to bring that topic back next month.
- Commissioner Helland asked how much standby storage the City currently has. Mr. Lane said that he did not have the information on hand in the meeting, but would provide it.
- Commissioner Howe asked if the City looked at how standby storage requirements and capacity vary in different parts of the service area. Mr. Lane replied that the analysis looked at each zone individually.

### Green Buildings

- Chair Helland asked if water connection is required for development. Ms. Maloney noted that there are properties in Bellevue that have private wells as water sources, but they still often have fire protection and if so, receive a bill for that service.
- Commissioner Robertson expressed support for this policy.

### Facility Abandonment

- No changes proposed to the policy. There was some discussion text added.
- Commissioner Howe asked if there is a similar policy for abandonment of sewer pipes. Ms. Maloney thought so, but offered to verify that. Commissioner Howe noted that a sewer policy would be nice to refer back to when the City chooses to do something with its lake lines and Ecology wants the City to take them out.

#### Facility Repurposing

- This is a new policy.
- Commissioner Wang asked if the City would still own the facility and just rent it out, and how potential liability would be managed. Ms. Maloney said the policy as written allows the City to consider different options.

#### Fire System Responsibility

- Commissioner Morin asked about modifying the language in the Water Storage policy to say, “The Utility is responsible to provide and maintain . . .” to leave options open for the City.

#### Fire Flow Requirements for New Construction

- No ESC comments or questions

#### Fire Flow Requirements for Existing Construction

- No ESC comments or questions

#### Fire Flow Improvement Program

- No ESC comments or questions

#### Waterworks Utility Financial Policies

- No ESC comments or questions

#### Satellite/Remote Systems

- Chair Helland noted that this is not merely a semantic change. Ms. Maloney explained that as proposed it better reflects what the intention and practice has been all along.

#### Service Extension

- No ESC comments or questions

#### Requests for Assumption by Water Districts or Private Water Systems

- Commissioner Robertson noted that Hilltop is not interested in assumption, but suggested having a future discussion about how to handle charges when another utility requests assumption into the system. Ms. Maloney commented the existing emergency connection for Hilltop required an agreement about how residents would pay should they exercise that option.

#### Bellevue Initiated Assumption of Water District

- Commissioner Helland asked if there is a policy for de-annexation, for such instances as Issaquah taking over operation of the South Cove area, or other areas where we provide direct water sales outside of the City of Bellevue.

#### Water Sales Outside Bellevue's Service Area

- There are no substantive changes proposed.

#### Water Quality Responsibility

- Mr. Lane distributed a handout regarding requirements related to maximum contaminant levels (MCLs) of tap water.
- Commissioner Helland asked where the water quality samples are taken. Mr. Lane replied that it depends on the parameter being tested; some samples are taken from customer taps, but most are taken from representative locations within the public distribution system.

#### Cross Connection Control

- There are no substantive changes proposed.
- Commissioner Wang thought that the wording was redundant and that "users of the public water supply" was not necessary. Ms. Maloney explained that protecting the water supply, and protecting the users of the supply were both important reasons for the cross connection program.

#### Water Supply Source

- Commissioner Howe suggested naming Cascade Water Alliance instead of saying *regional providers*. Deputy Director Lee explained that the City partners with other regional providers, for such things as seismic resiliency and redundancy.
- Chair Helland asked why the City hasn't used the groundwater supply historically. Mr. Lane explained there were a variety of technical reasons including water quality and insufficient yield, as well as financial considerations.
- Commissioner Howe suggested clarifying that Cascade is the primary provider, but that there is a need to partner with other regional providers in order to provide security in the event of emergency circumstances.

#### Conservation

- No ESC comments or questions

#### Reclaimed Water Use

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- Commissioner Helland asked what the results were from the King County study. Commissioner Howe asked how many potential

reclaimed water customers were identified. Ms. Maloney indicated staff would send out that information.

#### Water Shortage Response

- Commissioner Howe asked if the City’s Emergency Management Plan addresses droughts. Mr. Lane explained there is a document that is an appendix to the plan called the “Water Shortage Contingency Plan”. Staff is updating it now to be more consistent with Cascade’s document.

#### Water Rights for Supply Redundancy

- This is a new policy.

Mr. Helland asked why the City stopped using the wells, and what the water quality issues were. Mr. Lane replied that the wells could not produce all of the water required by growth, and that it made sense financially to purchase water from Seattle once it was available. Water quality issues were those common to groundwater such as iron, manganese and possibly sulfur; removal of these require treatment

#### Requests for Assumption by Water Districts or Private Water Systems

- Commissioner Robertson noted that Hilltop is not interested in assumption, but suggested having a future discussion about how to handle charges when another utility requests assumption into the system. Ms. Maloney commented the connection to Hilltop required an agreement about how residents would pay should they exercise that option.
- There was discussion about crafting a de-annexation policy

#### Bellevue Initiated Assumption of Water District

- Commissioner Helland asked if there is a policy for de-annexation.

#### Water Sales Outside Bellevue’s Service Area

- There are no substantive changes proposed.

#### Water Quality Responsibility

- Mr. Lane distributed a handout regarding requirements related to maximum contaminant levels (MCLs) of tap water.
- Commissioner Helland asked where the water quality samples are taken. Mr. Lane replied that it depends on the parameter being tested; some samples are taken from customer taps, but most are taken from representative locations within the public distribution system.

7. **COMMISSIONS REPORT**

Chair Helland stated that the boards and commissions went before the City Council to talk about the Comprehensive Plan and said essentially the same things that were said at the joint meeting. Councilmember Robertson stated that the Council is working through the Comprehensive Plan now and expects to have it adopted by the end of June. Chair Helland commented on the value of the joint boards and commissions meeting. Councilmember Robertson agreed and recommended that these joint meetings occur at least once a year.

8. **DIRECTOR'S OFFICE REPORT**

Deputy Director Lee had the following items:

- He reviewed handouts including a diagram of how Pond A works and an analysis of sediment removed from Pond A.
- He also reviewed a notice from David Plummer regarding a symposium honoring Mark Plummer.
- Chair Helland's last meeting will be next month. There will be an opening for a new commissioner.

9. **CONTINUED ORAL COMMUNICATIONS**

None

10. **ADJOURNMENT**

**Motion made by Commissioner Wang, seconded by Commissioner Morin, to adjourn the meeting at 9:03 p.m. Motion passed unanimously (6-0).**

The meeting was adjourned 9:03 p.m.

**CITY OF BELLEVUE  
ENVIRONMENTAL SERVICES COMMISSION  
MEETING MINUTES**

Thursday  
May 21, 2015  
6:30 p.m.

Conference Room 1E-112  
Bellevue City Hall  
Bellevue, Washington

**COMMISSIONERS PRESENT:** Chair Helland<sup>1</sup>, Vice Chair Swenson, Commissioners Howe, Wang, Morin, and Mach

**COMMISSIONERS ABSENT:** Commissioner Pauley

**OTHERS PRESENT:** Andrew Lee, Deputy Director; Susan Fife-Ferris, Manager Environmental Communications & Outreach; Councilmember Roberts; Paul Bucich, Engineering Manager; Brian Ward, Senior Engineer; Doug Lane, Senior Engineer

**MINUTES TAKER:** Laurie Hugdahl

**1. CALL TO ORDER:**

The meeting was called to order by Vice Chair Swenson at 6:33 p.m.

**2. ORAL COMMUNICATIONS**

None

**3. APPROVAL OF AGENDA**

**Motion made by Commissioner Howe, seconded by Commissioner Morin, to approve the agenda as presented. Motion passed unanimously (5-0).**

**4. APPROVAL OF MINUTES**

April 16, 2014 Regular Meeting Minutes

Commissioner Wang noted that from *Service Ownership* on page 7 continuing on through page 15 the text is duplicated.

**Motion made by Commissioner Wang, seconded by Commissioner Morin, to postpone the approval of the minutes until these can be reviewed. Motion passed unanimously (5-0).**

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<sup>1</sup> Chair Helland arrived at 7:01 p.m.

## 5. REPORTS AND SUMMARIES

- ESC Calendar/Council Calendar

Deputy Director Lee stated that staff hopes to appoint a new commissioner in the beginning half of June so that person can start coming to the June meeting.

- Conservation & Outreach Events & Volunteer Opportunity

## 6. NEW BUSINESS

- Solid Waste Contract Performance Audit & Customer Satisfaction Surveys Review – Continued from April 16<sup>th</sup> ESC Meeting  
*Susan Fife-Ferris, Manager Environmental Communications & Outreach*

Ms. Fife-Ferris thanked the ESC for their feedback on the survey at the last meeting. Based on that input staff made some changes to the process for the survey that will run this fall. The survey will limit the scope of the questions to the past year; ask for more specifics regarding customer dissatisfaction; ask respondents to share specific compliments or complaints; and consider other options to conduct the survey other than by telephone and cell phone to reach a wider cross-section of customers and more customers in general.

There were no comments or questions from the ESC.

- Storm System Plan  
*Paul Bucich, Assistant Director, Engineering*  
*Brian Ward, Senior Engineer*

Paul Bucich reviewed background on the Storm System Plan. He explained that starting tonight staff would start discussing five Strategic Stormwater Initiatives. The mission of the Storm and Surface Water Mission is to be a surface water system that controls damage from storms, protects surface water quality, supports fish and wildlife habitat, and protects the environment. The final Storm System Plan with the strategic initiatives will be taken to Council this fall for adoption.

The Stormwater System is a combination of private and public ownership which grows organically as development occurs. This System currently consists of 32 square miles with 79 miles of streams within the City. There are 26 basins, 3 small lakes, and a significant amount of lake shoreline.

### Strategic Initiatives:

1. Utilities Department Property Management Plans
2. Primary Stormwater Infrastructure

3. Improving Water Quality
4. Open Streams Assessment
5. Watershed Planning

#### Property Management Initiative

The utility owns 430 acres on 23 parcels. There are 136 acres on 60 parcels which are in or near sensitive areas. There are great opportunities to leverage these to achieve the Mission Statement goals outside of just stormwater detention. The Property Management Initiative would compile a list of all the properties, a site assessment of the properties, and an estimation of what could be done with those properties. This would provide the City with a long-term vision for the properties and assist with achieving the Mission Statement goals. The outcome will be a set of discreet long-range management plans.

#### Primary Stormwater Infrastructure Initiative

Brian Ward explained that the stormwater conveyance system is a mixture of privately-owned and publicly-owned infrastructure. There are nearly 400 miles of publicly owned storm pipes. He pointed out that the water conveyed from the top of the watershed down to lower areas flows through pieces of infrastructure which are not in public ownership. This leaves the City potentially vulnerable to a system problem if it is not known where the primary parts are and how they will be maintained. He reviewed some of the stakeholders in stormwater management including the City, the general public, developers, King County and adjacent cities, the State, and federal government. This initiative is about identifying the components of the primary conveyance system and coming up with a long-range management plan to make sure it's viable.

Commissioner Morin asked if the City has an easement to access private systems. Mr. Ward replied that sometimes there are easements, but not always even though easements are an important component of maintenance. If there are not easements, the City has to identify the property owner to discuss the situation.

Vice Chair Swenson asked if the City had accepted the lines in the street, but not the connectors on private property between the streets. Mr. Bucich replied that it had happened. However, if the City can show that the intent of the pipes going through private property was to convey public drainage then the interpretation from the City Attorney is that there can be a prescriptive easement for that pipe. The difficulty is in the situation where it is not clear at all.

Chair Helland arrived at 7:01 p.m.



Commissioner Wang referred to the map and asked if the City is considering converting certain sections of private pipes into public system. Mr. Bucich replied right now staff are just interested in defining management alternatives. Commissioner Wang commented that the planning for subdivisions should extend all the way to the planned use point when subdivisions are reviewed. Mr. Bucich replied that water law in the State of Washington says that as a property owner you are allowed to drain your water across your neighbor's property if that's the natural historic way it flows, and your neighbors have to accept that water and can then pass it on to the next property owner. From a developer perspective, the developer has no control over the system downstream.

Mr. Ward summarized that sometimes there were easements put in place, but not always. The City's goal is to identify where those situations are.

#### Improving Water Quality Initiative

Bellevue was 38% developed when stormwater regulations were implemented. Water quality treatment is primarily accomplished through development or redevelopment. About 21% of the city area is in the right of way and most runoff is untreated. The NPDES permit will help, but it alone will not achieve the desired outcome. The objectives of this initiative are to improve surface water quality, assess system opportunities to implement BMPs independent of redevelopment actions, and prioritize locations and BMP techniques. He discussed the results of the 2014 salmon release into Kelsey Creek and Coal Creek to illustrate water quality issues. In Coal Creek there were many spots where salmon had their "nests" but not a single one in Kelsey Creek; all the salmon were dead in Kelsey Creek within a week. The water quality initiative will help to assess this situation.

Mr. Ward summarized that staff had discussed three initiatives tonight. Next month staff will discuss the remaining two. There will be a public meeting in July and the goal is to have Council adoption in the fall.

#### Farewell to Commission Chair Brad Helland

Director Nav Ota and Councilmember Robertson presented Chair Helland with a plaque and a gift for his ten years of service and expressed appreciation for his work. Cake was served to celebrate.

- Water System Plan  
*Paul Bucich, Assistant Director, Engineering*  
*Doug Lane, Senior Engineer*

Deputy Director Lee commented that staff would be focusing on the storage policy.

Senior Engineer Doug Lane reviewed the policy for Drinking Water Storage for Emergency Supply Outages. He reviewed the background of Department of Health (DOH) requirements for water storage for operational, equalizing, fire, and standby purposes. DOH generally recommends standby storage based on two days of average water usage minus a volume credit where there are multiple water sources, but allows for a minimum of one day. Bellevue's longstanding practice has been to provide at least the one-day storage minimum as recommended by DOH plus also provide separate fire storage. Mr. Lane discussed how Seattle Public Utilities has handled the situation, and that their analysis shows all indoor water usage could be met for at least 5-days based on modeling of three hypothetical water supply emergencies. He also discussed the chart showing the impacts vs. benefits for increasing to two-day standby storage. Benefits would be an additional 24 hours of water in the event of a complete supply outage. Impacts would include the cost of reservoir construction (engineering, permits, etc.); land acquisition; water quality degradation and increased water age; additional cost for pumping and transmission capacity; community impacts; increased O&M; and potential property condemnation costs.

Commissioner Morin asked how the cost of construction was calculated. Mr. Lane replied it is a rough estimate of present day worth with the approximate cost per gallon to construct reservoirs in the past. This number would inflate over time. Commissioner Morin asked about the frequency of these types of events. Mr. Lane replied there have been three times when one of Seattle's two supply sources was shut off from a couple hours to a couple days, but there were no service interruptions from any of these events, due to the redundant supply and operational efforts. Commissioner Morin asked about the cost per capita. Mr. Bucich was not sure. He noted that the underlying issue is about the risk. He commented that the entire time that Bellevue Utilities has been in place there has never been a complete shutoff of water. He stated Bellevue theoretically has six days of water, based on SPU's assessment of their ability to provide five days alone. Additionally the City has existing groundwater rights and is interested in exploring and developing those. Mr. Lane said that the City has broached the subject of using the wells as emergency supplies to Cascade Water Alliance, who thinks it's a great idea to add resiliency.

Commissioner Morin asked if volcanic activity was one of the scenarios considered. Mr. Lane replied that increased turbidity is one of the potential situations that could cause a Cedar River Watershed outage, but it wasn't looked at specifically. This could be ash from volcanic activity or from a forest fire. Particulates in the water could apply to any open reservoir.

Mr. Bucich was asked if Bellevue has had a situation where they have had to get into the one-day storage. Mr. Bucich said he has not heard of any.

Bellevue would likely only encounter that situation when the water feeds are shut off. Staff is not recommending a two-day storage situation, but wanted to discuss it since it is the DOH default recommendation, and DOH recommends that community expectations be considered first before adopting the one day minimum storage standard. Mr. Bucich discussed staff's recommendation to look into groundwater rights and development in lieu of an additional day of water storage.

Commissioner Wang noted that AWWA had a meeting in town a couple weeks ago. He commended Doug Lane for making several presentations at that meeting and doing a great job. Commissioner Wang encouraged other staff members to participate and make good use of opportunities. Mr. Bucich concurred and noted that other utilities staff members also made presentations.

Deputy Director Lee commented that Councilmember Robertson had requested a recommendation from the ESC about the water storage issue. Mr. Lane and Mr. Bucich added that staff would be asking the ESC for a recommendation after the policies have all been completed and the final document is presented in the fall.

**7. NEW BUSINESS**

None

**8. COMMISSION REPORT**

Commissioner Wang noted that August is still listed as a recess. Deputy Director Lee said he would like to solicit dates for a retreat to find out the Commission's availability. He will be discussing this more at the June meeting.

**9. DIRECTOR'S OFFICE REPORT**

Deputy Director Lee had the following items:

- Based on the Governor's declaration of a state of emergency of drought, staff is trying to get the word out to Bellevue residents that there is actually enough water because the Seattle Public Utilities water system relies not only on snow melt, but also on rainfall. Seattle Public Utilities' water outlook for the summer is actually very positive. The City wants water users to practice wise conservation measures, but there is not a water supply issue at the current time. Commissioner Wang discussed the dire water situation in California.
- Commissioner Mach asked about the demand side of water. Deputy Director Lee explained that the demand has been 5-10% higher in the last few billing cycles. He attributed this to the excellent weather. Commissioner Mach noted that there has been extra water the last few years, and wondered about providing some of the extra water to areas that might need it. Deputy Director Lee replied that Cascade Water Alliance has been partnering together with

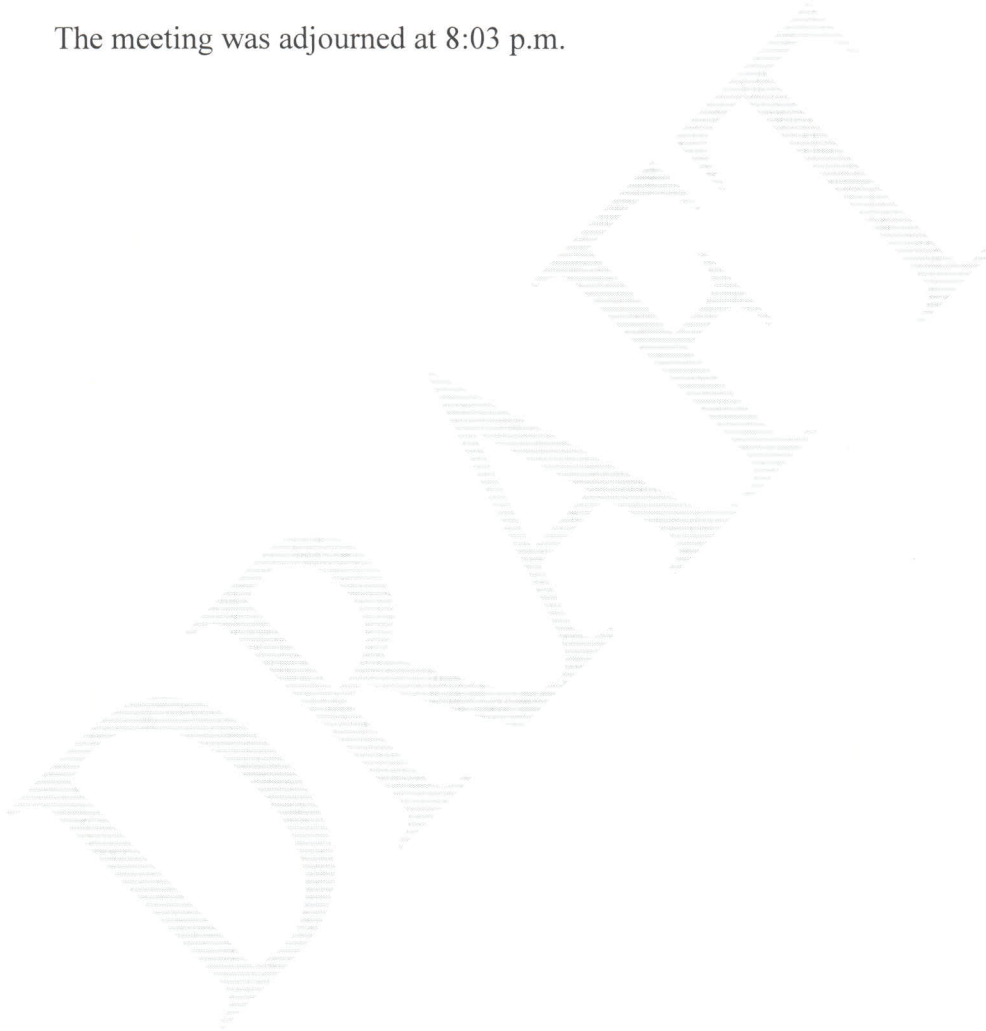
Seattle Public Utilities, Tacoma Water, and Everett Water on the Puget Sound Regional Water Supply Forum to look at ways to increase the resiliency of the region's water supply.

**10. CONTINUED ORAL COMMUNICATIONS**

None

**11. ADJOURNMENT**

The meeting was adjourned at 8:03 p.m.



# 2015 Environmental Services Commission

June 15

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## June

- 18** Storm System Plan - Aspirational Initiatives: Request ESC endorsement (Kit Paulsen/Brian Ward)  
Water System Plan - System Analysis Approach & Results (Pam Maloney/Doug Lane)  
Welcome New Commissioner

## July

- 16** CIP Tour - Scott Taylor  
Low Impact Development-LID Principles Project (Phyllis Varner/Catherine Drews)  
Storm System Plan - Open House Debrief Review  
Storm Plan Content to ESC Mtg (Paul/Brian)  
Water System Plan - Plan Findings & Recommendations (Pam Maloney/Doug Lane)

## August

Retreat Date TBD

## September

- 17** 2015 Mid-Bi Budget (Lucy Liu)  
Asset Management Annual Report (Andrew Lee)  
Storm System Plan - Request ESC Endorsement of Council Adoption (Kit/Brian)  
Utilities Rate & Tax Relief Programs (Susan Fife-Ferris/Patricia Burgess)  
Water System Plan - Review Draft Plan (Pam Maloney/Doug Lane)

## October

- 15** Solid Waste Contract Performance Audit & Customer Satisfaction Survey Results (Susan Fife-Ferris/Stephanie Schwenger)  
Water System Plan - Request ESC Endorsement of Council Adoption (Pam Maloney/Doug Lane)

December 15

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## June

**22** Willowmore Project (Paul/KC)

## July

**6** Issaquah Assumption (Andrew Lee)

Motion to award Construction of Kelsey Creek Sewer Stabilization (Paul Bucich/Regan)

Motion to award Construction of Wilburton Sewer Capacity Improvement (Paul Bucich/Regan)

Motion to award Overlay & Pave Rest Constr (Paul/Regan)

Resolution auth & direct execution of agrmt with KC Flood Control Dist for Lower Coal Crk Haz Reduct Proj (Paul/Regan)

Resolution authorizing execution of Prof Svcs w/MWH amend #2 to Midlakes P.S. Capacity Improvement (Paul/Regan)

**20** Issaquah Assumption (Andrew Lee)

Resolution authorizing Execution of PSA with Tetra Tech for Sewer Lake Line Condition Assessment - Phase 2 (Paul/Regan)

Resolution authorizing execution of Professional Services Agreement for the Kelsey Creek Culvert Project (Paul/Regan)

**27** Solid Waste Transfer & Disposal (Nav/Andrew)

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	<b>Action</b>
<b>X</b>	<b>Discussion</b>
	<b>Information</b>

**DATE:** June 18, 2015  
**To:** Environmental Services Commission  
**From:** Brian Ward, P.E. Storm Water Systems Senior Engineer  
**Subject:** Storm and Surface Water System Plan Update—Strategic Initiatives

Action Required at this Time

No action is required at this time.

Staff will present to the Environmental Services Commission (ESC) the second of two sets of strategic initiatives proposed for the Storm and Surface Water System Plan. Staff invite the Commissioner’s feedback and comments on any of the strategic initiatives included in this packet.

Background

In April 2012, the Environmental Services Commission recommended staff take the 2012 Storm and Surface Water System Plan (Storm System Plan), which is an update to the city’s 1994 Drainage Comprehensive Plan, to City Council for adoption. In coordination with the City Manager’s Office, staff were asked to delay taking the updated Storm System Plan to Council until Council had completed its deliberations on the Shoreline Master Plan. During the delay period, staff took the opportunity to expand the Storm System Plan with a set of five strategic initiatives identified by staff for guiding future stormwater management actions (attachment 1). Since these initiatives were not included in the original updated document Commission approved in 2012, staff are bringing them forward seeking the Commission’s input.

Discussion

The June ESC meeting is the next opportunity for the Commission to review storm water strategic initiatives proposed for inclusion in the Storm and Surface Water System Plan. Staff will present the final set of strategic initiatives and be ready to receive any comments the Commission may have.

In this context, a strategic initiative is defined as a means through which a vision is translated into practice. They are collections of projects and programs, outside of the organization’s day-to-day operational activities that are designed to help the department and city with long range stormwater management issues. The initiatives staff are bringing to your attention are a blend of aspirational goals and clarification of existing business practices. Staff will highlight these initiatives to Council as the Storm System Plan moves forward through the approval process to





establish the basis of possible future requests needed for stormwater management in the 10-year planning horizon of the system plan.

### **Next Steps**

Staff will consider and incorporate your comments and questions into the proposed strategic initiatives.

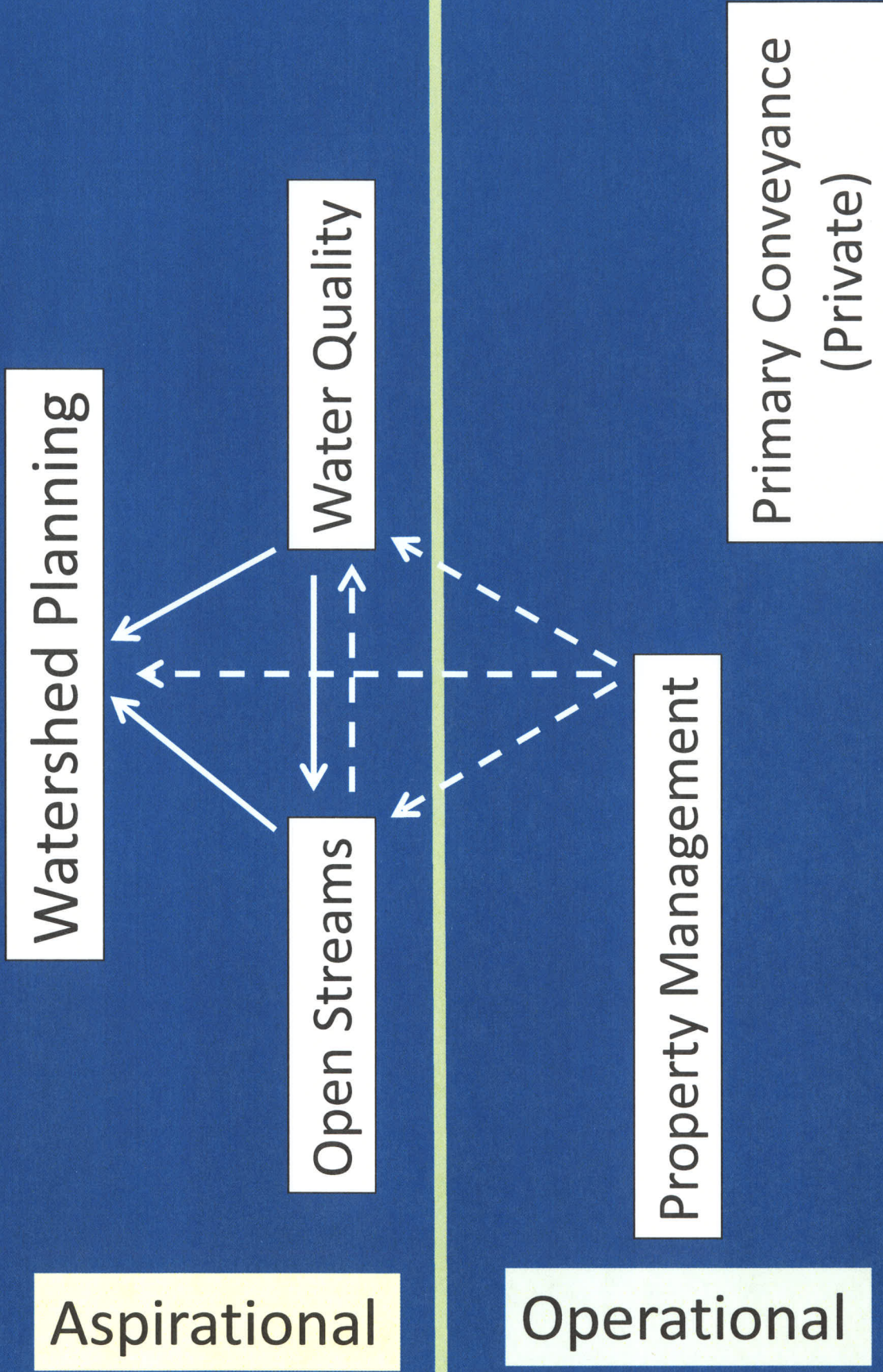
- June 2015 ESC meeting: Staff response to any questions or comments about the first set of strategic initiatives presented at the May ESC meeting and presentation of the second set of strategic initiatives.
- July 16, 2015: staffing brief about the outcome of the Storm System Plan public meeting and recap of Storm System Plan content. Opportunity for staff response(s) to questions or comments by Commission.
- September 17, 2015. ESC recommendation for Council adoption of the Storm Plan.

**City Council adoption:** 2015 (October or November depending on Council's calendar).

*Attachments:* Attachment 1—Storm System Plan Strategic Initiatives



# Storm and Surface Water Strategic Initiatives





# Strategic Initiative—Open Streams Assessment

## 1 Open Streams Condition Assessment

### 2 Taglines (check all that apply; add as needed)

Mission Statement	<input checked="" type="checkbox"/> Control Damage From Storms	<input checked="" type="checkbox"/> Protects Water Quality	<input checked="" type="checkbox"/> Protects Fish & Wildlife Habitat	<input checked="" type="checkbox"/> Protects the Environment	
Policy Issue	<input checked="" type="checkbox"/> Aquatic Habitat	<input checked="" type="checkbox"/> Public/Private	<input checked="" type="checkbox"/> Easements		
Related Strategic Initiatives	<input checked="" type="checkbox"/> Open Streams	<input checked="" type="checkbox"/> Water Quality	<input checked="" type="checkbox"/> Property Management	<input type="checkbox"/> Primary Infrastructure	<input checked="" type="checkbox"/> Watershed Planning

3

### 4 Problem Statement:

5 There is no strategic pathway to achieve the city’s vision for healthy streams<sup>1</sup>. Like most urban  
 6 municipalities, maintaining healthy streams is a challenging goal to achieve. Urban streams experience  
 7 increased flow rates and volumes that degrade aquatic habitat, impact water quality, cause erosion of  
 8 stream beds and banks.

### 9 Objective:

10 The outcome of this initiative will be a stream protection and restoration plan for improving stream  
 11 health. The plan will identify information gaps, identify objectives for streams (including measureable  
 12 restoration outcomes and barriers to achieving these outcomes), and develop criteria for prioritizing  
 13 streams and objectives.

### 14 Background

15 Bellevue’s Comprehensive Plan expresses the community’s vision for the future. This vision states that  
 16 in 2025:

17 Bellevue takes the lead in promoting a quality, sustainable urban environment. Growth is  
 18 occurring without harm to environmentally sensitive land and water resources. Many wetlands,  
 19 riparian corridors and shorelines are protected in their natural state; others are being restored  
 20 so they provide higher quality fish and wildlife habitat. As a result, more salmon are found in  
 21 local creeks and streams, fish are spawning in several locations. The urban forest is recovering,  
 22 and in many parts of Bellevue the tree canopy is increasing. These gains have been achieved  
 23 through a combination of city programs, incentives, education, and regulations.

24 The Utilities Mission statement states that the city’s storm and surface water system “...protects water  
 25 quality, supports fish & wildlife habitat, and protects the environment.”

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<sup>1</sup> City of Bellevue Comprehensive Planning. Bellevue 2025 Vision Details.

26 There is an estimated 80 miles<sup>2</sup> of open stream channel in Bellevue of which 23 miles (or 38%) are in  
27 public ownership either through title, easement or other property obligation. The City of Bellevue’s  
28 constructed drainage system connects directly to the open streams and lakes throughout the city.  
29 Stormwater runoff is conveyed to streams, lakes and wetlands by the stormwater drainage system or by  
30 overland sheet flow. As an alternative to piping and burying streams, Bellevue chose to preserve the  
31 network of open streams and lakes from the impacts of stormwater runoff by implementing detention  
32 and water quality treatment (primarily sediment controls) regulations, constructing in-stream storage  
33 facilities (regional stormwater facilities) and implementing stormwater management programs such as  
34 operation and maintenance, public education and outreach.<sup>3</sup> As explained in Chapter 6, Current  
35 Conditions, maintaining healthy streams in an urbanizing area is a challenging goal to achieve because  
36 they experience increased flow rates and volumes that degrade aquatic habitat, impact water quality  
37 and erode stream beds and banks.

38 Some of the storm and surface water system problems that must be addressed to achieve the vision for  
39 healthy streams include:

- 40 • Mitigate stream flow changes. Urban stream flow characteristics are distinctly different than  
41 the flow characteristics of a forested pre-developed period. Urban streams have significantly  
42 higher annual peak flow rates, a higher degree of “flashiness” between storms, meaning they  
43 rise and fall at a faster rate than they once did causing more erosion, and there has been a shift  
44 in seasonal peak flows. What were once considered peak winter flows are now routinely  
45 matched during the dry summer season. This is reflective of trends across the region.
- 46 • Address stream temperature and water quality issues. Urban streams routinely have  
47 temperatures above thresholds that block migration and are sometimes even lethal for salmon.  
48 Some reaches of Mercer Slough, Coal Creek, Ardmore (Idylwood) Creek, Lewis Creek and Kelsey  
49 Creek, are among urban streams listed as “water quality impaired” for certain pollutants by  
50 Ecology.
- 51 • Improve stream biota habitat. Aquatic life in urban streams reflects the changes in stream flow  
52 and water quality. Pre-spawn mortality in coho has been linked to highway and ultra-urban  
53 street runoff and environmental indicator scores for aquatic life are typically rated as “poor” to  
54 “very poor” in urban streams.

55 Current Utilities Department practices focus the department’s efforts for stream and aquatic habitat  
56 restoration on public lands or publically owned infrastructure. This policy has resulted in stream  
57 restoration efforts at sites other than where the greatest “ecological lift” will occur. The policy, coupled  
58 with the relatively small amount of land in public ownership minimizes the ability of most public efforts  
59 at stream restoration to effectively change the environmental response to urbanization. Moreover,  
60 expectations that private property owners on their own will improve stream conditions are unrealistic  
61 and will not address a wide-spread systemic problem. Few, if any private property owners have the

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<sup>2</sup> City of Bellevue Utilities Department. Storm and Surface Water Utility Statistical Report. 2013.

<sup>3</sup> KCM-WRE/YTO. City of Bellevue. 1976. Drainage Master Plan. Bellevue, WA

62 necessary technical skills, financial resources, or understanding of the full system which are needed to  
63 restore a stream or stream segment. This piecemeal approach will take decades to achieve restoration  
64 goals, even if there was full property owner participation. This plan will identify options to remedy  
65 these barriers to stream rehabilitation.

66 Recognizing a need to incentivize public/private partnerships to hasten urban stream restoration, the  
67 Department of Ecology is supporting regional efforts to focus stormwater management at a basin or  
68 watershed scale, rather than strictly focusing efforts on individual site development. Focusing  
69 stormwater management at a basin or watershed scale recognizes that dense urban growth will  
70 continue and that options for focusing urban stream improvements to see restoration results more  
71 quickly exist through such approaches. Some strategies, such as the Redmond citywide management  
72 plan, include a fee-in-lieu program that maintains existing stream conditions in some basins while  
73 moving the stormwater mitigation improvements from all development to specific high priority basins.  
74 This concentrated approach is designed to restore high priority habitat faster, provide streamlined  
75 development, and reduce costs. All basins within the city must have baseline information, restoration  
76 objectives, and prioritized actions before the watershed management plan can be developed. This  
77 stream protection and restoration plan will develop the foundational support for a comprehensive,  
78 holistic watershed management plan to be explored under a separate strategic initiative paper.

### 79 **Big Vision Outcome:**

80 Utilities Department will work with other city departments to develop a comprehensive stream  
81 protection and restoration plan for each basin to achieve the city's vision for healthy streams. This will  
82 include identifying opportunities to reduce flow rates and volumes that degrade aquatic habitat, impact  
83 water quality, cause erosion of stream beds and banks, as well as other urban stresses to streams. The  
84 plan will:

- 85 • Identify existing conditions, data gaps and performance measures needed to evaluate  
86 progress towards the city vision for healthy streams.
- 87 • Develop vision, objectives, and prioritized actions based on basin characteristics, water  
88 quality, current and future land use, historical or anticipated fish use, and other criteria  
89 appropriate for each basin.
- 90 • Identify options for working with private property owners to improve stream habitat in the  
91 most effective locations, in accordance with the city's vision and objectives.
- 92 • Provide required information to develop a comprehensive, holistic watershed management  
93 plan for the City.

94 And, as a result of having the plan:

- 95 • Utilities staff will have a clear understanding of the department's role for streams and  
96 aquatic habitat restoration in the context of the city's vision and goals for stream health.
- 97 • All city staff will understand their role for implementing the city's integrated approach for  
98 stream stewardship and restoration.

- 99 **Known/Existing Actions:**
- 100 **Bellevue’s NPDES Municipal Permit.**
- 101 The Utilities Department meets NPDES requirements, but those requirements are primarily focused on  
102 new development and not on pre-existing development and its impacts. The NPDES permit currently  
103 does not require jurisdictions to develop a plan/strategy for returning impacted streams to a healthy  
104 aquatic state.
- 105 **Community Surveys.**
- 106 Bellevue surveys consistently rate environmental stewardship and healthy open spaces as high  
107 community priorities and an important element of quality of life in Bellevue. In a 2009 representative  
108 sample survey for Bellevue Parks and Community Services, three out of four respondents agreed (with  
109 half expressing strong agreement) with the statement:
- 110 “...the city should place a priority on improving health and ecological function of forest, wetlands,  
111 lakes and streams.”
- 112 This is supported by Bellevue residents’ extensive use of the city’s open space system. The survey found  
113 that 97% of respondents had used park facilities at least twice in the last year, with 74% identifying  
114 natural areas as the facilities used.
- 115 **Environmental Stewardship Initiative.**
- 116 The Environmental Stewardship Initiative vision is:
- 117 “To integrate the natural and developed environments to create a sustainable urban habitat  
118 with clean air and water, habitat for fish and wildlife, and comfortable and secure places for  
119 people to live and work.”
- 120 **Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan**
- 121 Bellevue City Council adopted the 2005 Lake Washington/Cedar/Sammamish Watershed (WRIA 8)  
122 Chinook Salmon Conservation Plan, supporting Chinook salmon recovery efforts with the objective of  
123 maintaining the region’s quality of life including preserving and protecting a healthy environment and  
124 economy.



Open Streams Assessment Initiative

Bellevue has a vision for healthy, functioning streams. Stream health is based on the continuum of the whole stream from headwaters to mouth. Only 38% of the streams are publicly owned (shown in green below) where the Utilities Department can influence habitat. This initiative will analyze various options for developing a systematic approach to improving stream health, including private areas (shown in white).





# Strategic Initiative—Citywide Watershed Management Plan Assessment

## 1 Citywide Watershed Management Plan Assessment

### 2 Taglines (check all that apply; add as needed)

Mission Statement	<input checked="" type="checkbox"/> Control Damage From Storms	<input checked="" type="checkbox"/> Protects Water Quality	<input checked="" type="checkbox"/> Protects Fish & Wildlife Habitat	<input checked="" type="checkbox"/> Protects the Environment	
Policy Issue	<input checked="" type="checkbox"/> Aquatic Habitat	<input checked="" type="checkbox"/> Public/Private	<input checked="" type="checkbox"/> Easements	<input checked="" type="checkbox"/> Water Quality	
Related Strategic Initiatives	<input checked="" type="checkbox"/> Open Streams Assessment	<input checked="" type="checkbox"/> Improving Water Quality	<input checked="" type="checkbox"/> Property Management	<input checked="" type="checkbox"/> Primary Infrastructure	<input checked="" type="checkbox"/> Watershed Planning

### 3 Problem Statement:

4 Current approaches to stormwater management result in continued degradation of urban waterbodies  
 5 and waterways. Increased pollution, flow rates and volumes impact water quality, degrade aquatic  
 6 habitat, flood property and cause erosion of stream beds and banks despite significant public/private  
 7 stormwater investments and increasing regulatory controls. For many cities, including Bellevue, a  
 8 significant source of these impacts is from development that occurred prior to storm and surface water  
 9 regulations, which continue to evolve and become more stringent.

10 The Washington State Department of Ecology recently recognized the fiscal challenges and regulatory  
 11 limitations of addressing the continuing degradation of the Puget Sound under the parcel by parcel  
 12 retrofit/development approach currently mandated by the permit regulatory approach. It approved a  
 13 Citywide Watershed Management Plan for Redmond which allows for actions that are a departure from  
 14 previous Ecology stormwater management directives and which may help local jurisdictions balance  
 15 multiple and sometimes conflicting regulatory requirements for population growth and stormwater  
 16 management. Redmond’s Watershed Plan includes actions to:

- 17 • strategically plan and prioritize private and public stormwater investments to watersheds,
- 18 • where they will deliver the greatest environmental benefit; and
- 19 • address multiple regulatory requirements using a holistic watershed approach.

20 Redmond’s watershed approach is intended to produce focused high quality habitat sooner, albeit in  
 21 limited areas, as opposed to implementing incremental improvements in all streams and lakes that would  
 22 not provide significant overall habitat benefits for decades. Bellevue might benefit from a similar more  
 23 strategic, holistic approach to stormwater management and investment.

### 24 Objective:

25 Invest resources strategically to achieve flow and water quality conditions supportive of aquatic  
 26 beneficial uses in focused areas, meet multiple regulatory drivers and support beneficial economic  
 27 development and redevelopment by assessing the benefits and challenges of a comprehensive, holistic  
 28 Citywide Watershed Management Plan approach to storm and surface water management.

### 29 **Background**

#### 30 Stormwater Management

31 Management of stormwater is a relatively recent discipline. The City of Bellevue incorporated in 1953  
32 (population 6,000). By the time the Storm and Surface Water Utility (SSWU) was formed in 1974, the  
33 city's population was 63,940. At that point, a significant portion of the area within the present city  
34 boundaries had already been developed without stormwater controls (Figure 1).

35 The focus of the newly formed SSWU was to implement stormwater controls and programs to reduce  
36 flooding, erosion and property damage and prevent the deterioration of water quality, and to construct  
37 regional detention ponds and other stormwater capital improvements to mitigate previous development  
38 impacts. An open stream policy was adopted which preferred streams remain open to support fish and  
39 quality of life (rather than piped and buried under fill to support development).

40 It is now 40 years since the SSWU was formed and:

- 41 • Eleven regional detention ponds and other stormwater capital improvements have been  
42 constructed;
- 43 • Stormwater management programs have been implemented to
  - 44 ➤ inspect, operate and maintain the storm and surface water system,
  - 45 ➤ Minimize flooding and water quality impacts, and
  - 46 ➤ Improve aquatic habitat conditions;
- 47 • Stormwater flow control and water quality treatment controls have been applied to new  
48 development and redevelopment projects, evolving over time to require flow control mitigation  
49 back to forested predevelopment conditions and low impact development techniques where  
50 feasible such as rain gardens; and
- 51 • Federal and state regulatory controls to protect water quality and fisheries, address stormwater  
52 and land use impacts, and meet growth management needs continue to multiply and increase.

53 Despite these significant public/private stormwater investments and increasing regulatory controls,  
54 Bellevue's waterbodies and waterways, like most urbanized areas, continue to experience increased  
55 pollution, flow rates and volumes that impact water quality, degrade aquatic habitat, flood property and  
56 cause erosion of stream beds.

#### 57 Today

58 Bellevue is now the fifth largest city in Washington, with a population of more than 130,000. It is the  
59 high-tech and retail center of the Eastside, with more than 130,000 jobs and a skyline of gleaming high-  
60 rises. While business booms downtown and 84% of the City has been developed, much of Bellevue  
61 retains a small-town feel because of thriving, woodsy neighborhoods and undeveloped areas consisting  
62 of parks and open spaces that are not anticipated to be developed and which together keep people  
63 calling Bellevue "a city in a park." Only 6 percent of the remaining vacant land is likely to be developed.  
64 Therefore, today's stormwater regulations will mostly be applied to redevelopment of existing  
65 development.

## Strategic Initiative—Citywide Watershed Management Plan Assessment

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66 A recent local study estimated a cost of \$1.4 billion (or \$200 million per square mile) in 2011 dollars to  
67 achieve flow control and water quality conditions supportive of aquatic life in a single watershed<sup>1</sup>. In  
68 2013, Ecology approved a citywide watershed management plan for the City of Redmond which allowed  
69 for departure from previous Ecology stormwater management directives. These two recent events  
70 motivate Bellevue to explore whether a watershed-based approach could be a significant improvement  
71 over the parcel-by-parcel retrofit/development approach currently mandated by the permit regulatory  
72 approach.

73 Focusing stormwater management at a basin or watershed scale recognizes that dense urban growth will  
74 continue and that targeting stream improvements for more rapid restoration results may make sense.  
75 One strategy is to include a fee-in-lieu program that maintains existing stream conditions in some basins  
76 while moving the stormwater mitigation improvements from all development to specific high priority  
77 basins. This concentrated approach is designed to restore high priority habitat faster, provide  
78 streamlined development, and reduce costs. All basins within the watershed plan must have baseline  
79 information, restoration objectives, and prioritized actions in order to develop a comprehensive  
80 watershed management approach.

### 81 **Big Vision Outcome:**

82 The big vision outcome is to have healthier waterways, supportive of fish and other aquatic life sooner.  
83 This initiative will assess whether employing a watershed-based approach (relative to the current  
84 approach) allows Bellevue to be more strategic with resources, projects and programs, to meet  
85 conflicting regulatory drivers while supporting future development and redevelopment and to more likely  
86 achieve more immediate and measurable improvements to flow, water quality and aquatic habitat of our  
87 streams and lakes.

88 To implement this initiative, staff expects to:

- 89 1. Assess the benefits and challenges of a comprehensive, holistic Citywide Watershed  
90 Management Plan approach to storm and surface water management and present the results to  
91 City Council for discussion and consideration.

92 Some of the criteria Redmond and the state Department of Ecology considered in arriving at a  
93 viable watershed plan and which Bellevue will include in assessing a watershed-based approach  
94 are:

- 95 • Directs stormwater management improvements to those watersheds within the City where  
96 they will provide the most immediate environmental benefit and where the City has control  
97 and an ability to affect overall water quality; Provides greatest return (environmental  
98 benefit) on investment;

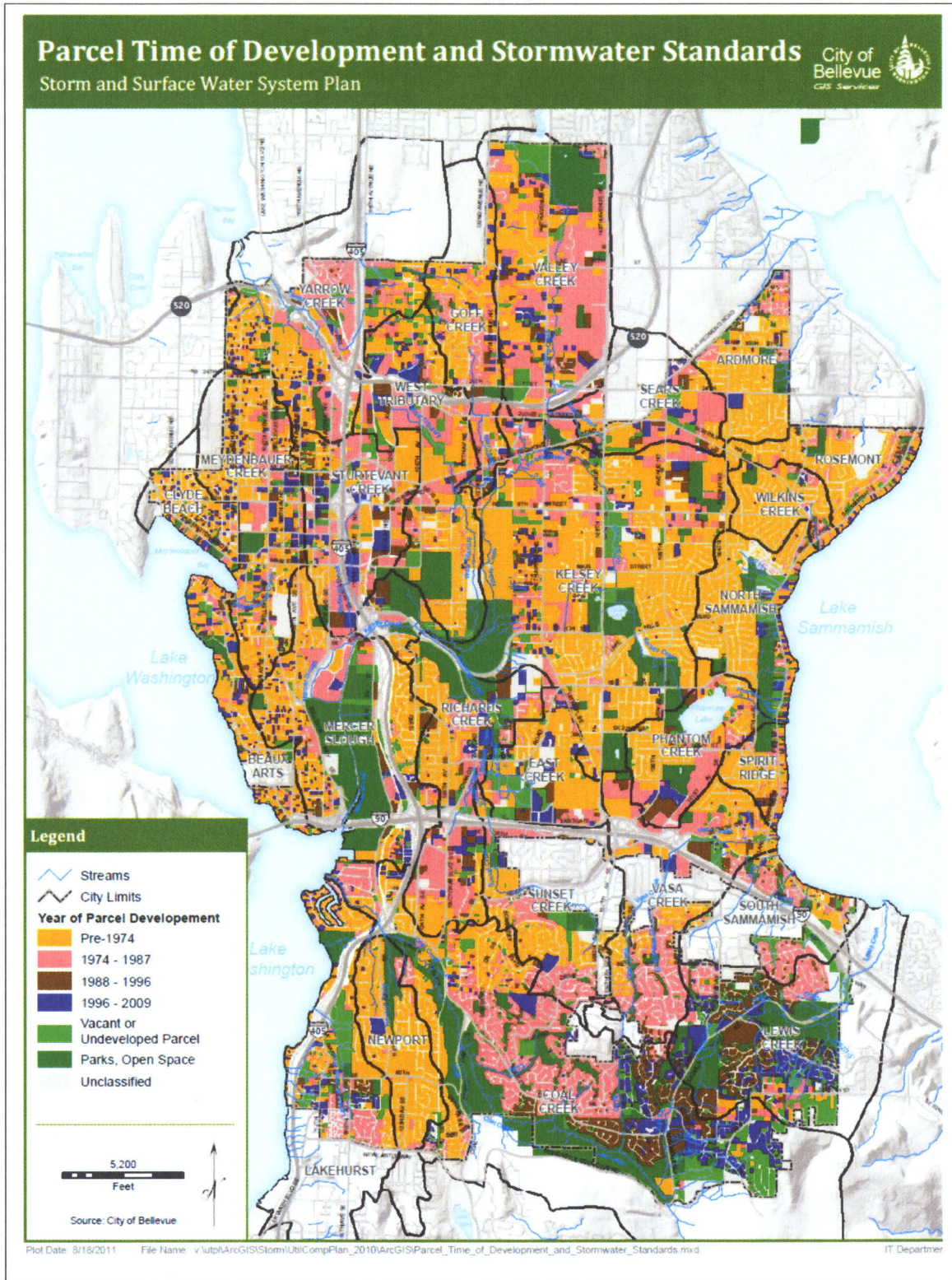
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<sup>1</sup> Stormwater Retrofit Analysis and Recommendations for Juanita Creek Basin in the Lake Washington Watershed; August 2012; work completed by King County, City of Kirkland and the Washington State Department of Transportation and funded by state Department of Ecology stormwater grant.

## Strategic Initiative—Citywide Watershed Management Plan Assessment

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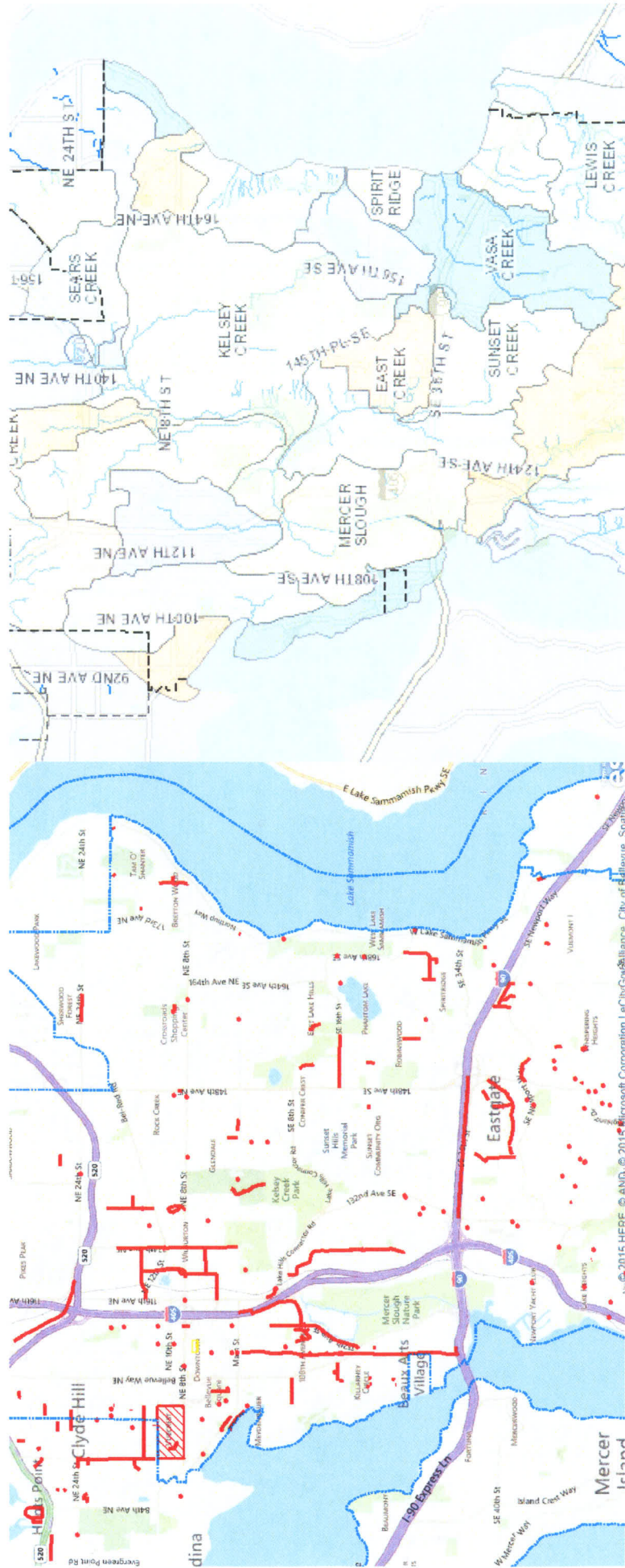
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- Addresses surface water pollution and ecosystem degradation using a holistic watershed approach that locally tailors and provides a coordinated framework for addressing multiple regulatory drivers;
  - Supports future development and redevelopment;
  - Delivers the greatest environmental improvement while not allowing stormwater runoff from any development to further degrade conditions in any receiving water or new or increased impacts due to flows or pollutants in any receiving water;
  - Produces more immediate and measurable positive results relative to the current approach;
  - Provides guidance to stormwater programs and operations to more efficiently benefit surface waters.
2. The steps to assess a watershed management approach include:
- Implementing the Open Streams Assessment Initiative first to characterize and prioritize Bellevue’s watersheds and associated waterbodies and waterways where the greatest return (environmental benefit) on investment can be achieved and to identify opportunities to reduce stormwater flow rates and volumes as well as other urban stressors.
  - Identifying the watershed planning policies, management techniques and tools to consider in the watershed-based management approach including the results of the Improving Water Quality initiative. This process would start with considering those strategies which Ecology approved for the Redmond Plan (such as fee-in-lieu programs, transferring water quality or flow improvements to priority watershed sites and tailoring stormwater regulations based on a prioritized watershed approach). It would also include consideration of other policies, management techniques and tools such as public-private partnerships, property acquisition, tree retention or replacement, aquatic habitat restoration, source control, retrofit improvements, etc.
  - Developing a citywide watershed management plan, based on the results of the open stream assessment initiative, which identifies how and where to apply different policies, management techniques and tools to achieve the big vision outcome.







# Current Regulations Mitigate Stormwater On-site Not By Basin



Bellevue Streams and Drainage Basins

Construction permits June 4, 2015 (source NW Maps)

Improvements from new development would be difficult to detect in streams because of the distributed nature of development



1 **Primary Stormwater Infrastructure**

2 **Taglines (check all that apply; add as needed)**

Mission Statement	<input checked="" type="checkbox"/> Control Damage From Storms	<input type="checkbox"/> Protects Water Quality	<input type="checkbox"/> Protects Fish & Wildlife Habitat	<input type="checkbox"/> Protects the Environment	
Policy Issue	<input type="checkbox"/> Aquatic Habitat	<input checked="" type="checkbox"/> Public/Private	<input checked="" type="checkbox"/> Easements		
Related Strategic Initiatives	<input type="checkbox"/> Open Streams Assessment	<input type="checkbox"/> Improving Water Quality	<input type="checkbox"/> Property Management	<input checked="" type="checkbox"/> Primary Infrastructure	<input checked="" type="checkbox"/> Watershed Planning

3

4 **Problem Statement:**

5 Bellevue’s ability to effectively operate the publically-owned storm and surface water system is  
 6 contingent upon all of the primary components of the system (both public and private) functioning as  
 7 designed. Primary components are those elements of the drainage system that, if they failed to perform  
 8 as designed, would result in conditions that jeopardize the ability of the surrounding drainage system to  
 9 safely convey storm water and avoid substantial environmental and property damage. When primary  
 10 stormwater components on private property fail to perform as designed, the city’s ability to successfully  
 11 convey runoff to receiving waters is compromised. This can result in:

- 12 • Emergency capital improvement projects;
- 13 • Flooding of major transportation corridors , and property in both public and private  
 14 ownership;
- 15 • Jeopardized public safety; and
- 16 • Environmental damage.

17 The complexities of property rights and the ambiguity of drainage system<sup>1</sup> responsibility in some  
 18 circumstances contribute to an uncertain set of roles and responsibilities for storm system  
 19 management. Timely maintenance and asset renewal of primary drainage components (both publically  
 20 and privately owned) is important to a fully functioning drainage system.

21 Bellevue does not currently have a management strategy to address the long-term viability of private  
 22 conveyance components of the drainage system. Bellevue’s private drainage inspection program is  
 23 currently limited to the inspection of privately-owned detention and water quality facilities. It does not  
 24 extend to inspecting the condition or function of private conveyance facilities that comprise a critical  
 25 part of the primary stormwater conveyance system.

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<sup>1</sup> Drainage system also referred to as the “storm and surface water system,” means the entire system within the city, both public and private, naturally existing and manmade, for the drainage, conveyance, detention, treatment or storage of storm and surface waters.

## Strategic Initiative—Primary Stormwater Infrastructure

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26 In addition, there is not a definitive policy that facilitates a quick and accurate determination of system  
27 ownership. Recent legal opinions have only complicated matters in this regard.

### 28 **Objective:**

29 To identify the primary components of the built storm and surface water system (publically and privately  
30 owned components) and to develop management strategies for addressing long term system viability so  
31 that drainage services continue to be provided in a safe and functional manner as the components age.

### 32 **Background**

33 The built storm and surface water system is comprised of pipes, manhole structures, detention  
34 structures, water quality facilities, catch basins, outfall pipes and many other appurtenances necessary  
35 to provide for drainage of rain water. In addition, the system is designed to alleviate a wide array of  
36 environmental effects that occur as a result of an urbanizing landscape. Examples include impacts to  
37 water quality, aquatic habitat, downstream property owners, and flood frequencies.

38 Bellevue Utilities has not explicitly identified those elements of the built drainage system that are  
39 considered “primary.” Primary components are individual elements that are part of a larger drainage  
40 system network which, if they failed to perform as designed, would result in conditions that jeopardize  
41 the ability of the surrounding drainage system to safely convey storm water and avoid substantial  
42 environmental and property damage. Not knowing which components are “primary” puts Bellevue  
43 Utilities in a vulnerable position for meeting its duty of providing drainage services to the community in  
44 the event those primary components fail or are otherwise rendered incapable of functioning as  
45 designed.

46 Current policy asserts that responsibility for system maintenance, construction of renewal projects, and  
47 replacement of failed system components belongs to the property owner where the drainage asset is  
48 located. Unless otherwise stipulated by an easement or other legal agreement, land ownership implies  
49 management responsibility of the storm water asset whether or not it is a primary system component.  
50 Much of the built stormwater system in Bellevue is located in the public right-of-way, meaning the City  
51 is responsible for that portion of the system’s condition. However, in many locations throughout the  
52 City large conveyance pipes (12” or greater in diameter) are located on single family residential  
53 properties whose owners are unaware that the pipe is their responsibility to maintain, renew and  
54 replace.

55 Current storm system policy limits public responsibility to *“all components of the storm and surface*  
56 *water system in city-owned right-of-way and in easements or tracts dedicated to, and accepted by, the*  
57 *Utilities Department.”*<sup>2</sup> The policy also establishes criteria for when other components of the drainage  
58 system can be incorporated into public ownership. It states “All of the following conditions must be met  
59 before ownership is transferred”:

60 1. There is a public benefit;

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<sup>2</sup> City of Bellevue. 2012 Storm and Surface Water System Plan. Bellevue, WA. Storm and Surface Water System Responsibility policy

## Strategic Initiative—Primary Stormwater Infrastructure

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- 61           2.    Easement or property is offered by the property owner at no cost;
- 62           3.    The system meets current City standards or is brought up to current City standards by the
- 63                 owner;
- 64           4.    There is access for Utilities Department maintenance from public right-of-way;
- 65           5.    The Utilities Department has adequate resources to maintain the system, and for
- 66                 detention systems,
- 67           6.    The system serves a residential plat or short plat (rather than a commercial property).<sup>3</sup>

68   This policy, established in 1995, has all but eliminated transfer of private systems into public ownership,

69   and does not consider the criticality of the role that component may play in providing drainage services

70   to the nearby area.

### 71   **Big Vision Outcome:**

72   The city will identify the “primary” drainage system components that collect and/or convey stormwater

73   runoff. This effort will also identify the associated cost of its continued maintenance and eventual

74   replacement. The “primary” system will be established by using criteria that identify components of the

75   built drainage system that are considered to have a primary function for the operation of the larger

76   drainage system’s performance, regardless of ownership. In circumstances where a “primary

77   component” is in private ownership, the city will development management options or strategies for

78   those primary conveyance systems.

### 79   **Strategies:**

- 80           1.    Develop criteria that identify individual components of the built storm and surface water system
- 81                 that are essential to the function of the larger drainage system network. Quantify how much of
- 82                 the system is considered primary for system operation.
- 83
- 84           2.    Once the City knows which components are primary, focus condition assessment efforts toward
- 85                 those primary system components (regardless of ownership). Use the information as the basis
- 86                 for developing management options for keeping the infrastructure components functioning to
- 87                 defined performance standards.
- 88
- 89           3.    For those primary components not in explicit public ownership identify mechanisms that
- 90                 provide the agency assurance that the components are functioning appropriately and are
- 91                 appropriately maintained.
- 92
- 93           4.    Identify maintenance cost associated with any new or added infrastructure.

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<sup>3</sup> City of Bellevue. 2012 Storm and Surface Water System Plan. Bellevue, WA. Storm and Surface Water System Responsibility policy

94 **Utilities Department Policy**

95 **Stormwater System Responsibility**

96 Policy:

97 The Utilities Department shall own and maintain all components of the storm and surface water system  
98 in city-owned right-of-way and in easements or tracts dedicated to, and accepted by, the Utilities  
99 Department. The Utilities Department should not acquire or accept additional new or existing System  
100 components outside the city-owned right-of-way (through easements, ownership, or other property  
101 rights) except when needed for Utilities Department construction projects identified in the Utilities  
102 Department Capital Investment Program, or when all of the following conditions are met:

- 103 1. There is a public benefit;
- 104 2. Easement or property is offered by the property owner at no cost;
- 105 3. The system meets current City standards or is brought up to current City standards by the  
106 owner;
- 107 4. There is access for Utilities Department maintenance from public right-of-way;
- 108 5. The Utilities Department has adequate resources to maintain the system, and for detention  
109 systems,
- 110 6. The system serves a residential plat or short plat (rather than a commercial property).

111 Discussion:

112 Much of the stormwater system in Bellevue is not owned by the Utilities Department. Private drainage  
113 conveyance and detention systems are those components for which the Utilities Department does not  
114 have a property interest. Detention and conveyance systems located in city-owned right-of-way are  
115 owned and maintained by the Utilities Department. In addition, the Utilities Department has acquired  
116 easements, right-of-way, or fee title (through purchase or dedication) for some additional system  
117 components.

118 All detention systems must be maintained to make sure they function as designed for flood control.  
119 Detention system maintenance also benefits water quality when trapped pollutants are removed from  
120 the system rather than being flushed downstream during a major storm. The Utilities Department  
121 maintains its facilities through ownership and allocation of maintenance resources. System function of  
122 other detention facilities is pursued through the City's private drainage inspection program (PDI).

123 Where practical and when in the public interest, multi-purpose detention facilities should be  
124 encouraged.

125 The City's historical policy has been to acquire control of system components on an as-needed basis  
126 when brought up to current City standards by others or through an approved Utilities Department  
127 project.

128 An aggressive program to acquire additional segments of the stormwater system (conveyance and  
129 detention) is not recommended because:

- 130 • Owning and maintaining the stormwater system would not address the City's water quality and

## Strategic Initiative—Primary Stormwater Infrastructure

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- 131 flood control responsibilities, since pollutants and runoff originate throughout each drainage  
132 basin. Also, most of the primary conveyance systems are streams (riparian corridors), and  
133 streams are regulated through local and state regulations.
- 134 • The cost of acquiring all conveyance systems and bringing them up to standards would be high  
135 and would also result in increased operation and maintenance costs.
  - 136 • Assuming substandard systems could increase City liability.
  - 137 • The Utilities Department’s private maintenance and inspection program will continue to work  
138 with property owners to ensure maintenance of privately owned detention systems.
  - 139 • Assuming ownership of private systems is not necessarily equitable to ratepayers.
- 140





1 **Property Management Plans**

2 **Taglines (check all that apply; add as needed)**

Mission Statement	<input checked="" type="checkbox"/> Control Damage From Storms	<input checked="" type="checkbox"/> Protects Water Quality	<input checked="" type="checkbox"/> Protects Fish & Wildlife Habitat	<input checked="" type="checkbox"/> Protects the Environment	
Policy Issue	<input type="checkbox"/> Aquatic Habitat	<input checked="" type="checkbox"/> Public/Private	<input checked="" type="checkbox"/> Easements		
Related Strategic Initiatives	<input checked="" type="checkbox"/> Open Streams	<input checked="" type="checkbox"/> Water Quality	<input checked="" type="checkbox"/> Property Mgt.	<input type="checkbox"/> Primary Infrastructure	<input checked="" type="checkbox"/> Watershed Planning

3

4 **Problem Statement:**

5 The Utilities Department owns 430 acres of land on 203 parcels within Bellevue’s City Limits, of that  
 6 total 136 acres are located in or near sensitive areas. Many of these properties have been acquired over  
 7 time through development review, donations or acquisition through unique conditions. Much of the  
 8 land is nearby or associated with open streams, wetlands and other sensitive areas that have the  
 9 potential to help the City achieve the SSWU Mission goals. Because no comprehensive long-term  
 10 management plans exist for these properties, their potential benefit may be under-realized. Proper  
 11 long-term management plans would allow Utilities to optimize the potential of these properties to  
 12 improve water quality, control flooding and better protect the environment. There is also potential to  
 13 provide future mitigation areas once an accurate assessment of these properties has occurred.

14 **Objective:**

15 Create Management Plans for Utilities properties that are within or near sensitive areas and that have  
 16 the potential for benefitting from a long term plan.

17 The Management Plans will provide individual assessments for achieving long term goals for each  
 18 significant property associated with sensitive areas. These assessments will guide the Utility in  
 19 managing the properties to meet SSWU mission goals, which are aligned with the City’s Comprehensive  
 20 Plan policies. The Plans will be used as management tools and can be submitted to permit agencies in  
 21 support of future maintenance, capital construction and/or CIP project mitigation.

22 Each assessment would evaluate, document, and measure existing conditions for:

- 23 • Aquatic habitat
- 24 • Invasive and native vegetation
- 25 • Forest conditions
- 26 • Channel blockages
- 27 • Wildlife features
- 28 • Encroachments and debris locations
- 29 • Establishing clear property boundaries.

## Strategic Initiative—Property Management Plans

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30 Each assessment will provide future recommendations for the property and will take significant time to  
31 develop. Site inspections will be conducted at the appropriate time to collect desired data (e.g.  
32 identification of some invasive vegetation is best accomplished while the species is flowering in late  
33 summer). Larger, more significant properties will have their own assessment. Smaller, similar use sites  
34 may be combined into a single assessment. Partnerships with other Departments will be pursued for  
35 evaluation of properties with multi-use opportunities.

### 36 **Background**

37 Over time the SSWU has developed a substantial inventory of large tracts of land within and around  
38 sensitive areas. Generally these properties are comprised of wetlands and riparian areas surrounding  
39 stream channel and upland drainages. These properties are significant because of their role in  
40 controlling runoff during storm events, preventing erosion, protecting habitat biodiversity, and their  
41 influence on native vegetation and aquatic ecosystems.

42 Management and maintenance of these properties has been very task- focused, primarily performed  
43 reactively in an effort to mitigate a problem or deficiency. To date there has been no effort to look at  
44 each property to assess potential and identify strategies to optimize their benefit.

45 The a “cause and effect map” for the 2015-16 Healthy and Sustainable Environment budget outcome  
46 supports stormwater management that promotes healthy streams and wetlands and improved wildlife  
47 habitat.

48 Because Bellevue’s citizens continue to assign significant importance to the management and protection  
49 of our open spaces, particularly those that harbor streams, lake and wetlands; the Storm and Surface  
50 Water Utility needs to optimize use of these properties toward that goal. Development of land  
51 management plans for the properties Utilities manages is the first logical step.

### 52 **Big Vision Outcome:**

53 The Utilities Department has a complete inventory of its land holdings and understands how they can be  
54 managed to optimize their contributions towards achieving the goals in the Storm and Surface Water  
55 Mission Statement.

### 56 **Strategies:**

57 Develop land management plans for all the properties owned by the Utilities Department. Developing  
58 land management plans would provide the city and the department critical information about the  
59 properties and about how they can best be used to help achieve goals, and it would provide the city  
60 with a guidance document for implementing future land management actions. The land management  
61 plans would help with future budget requests would work synergistically with other land management  
62 plans (e.g. Parks property management plans) and support other city-wide initiatives.

63 Development of management plans will allow for future maintenance and CIP efforts to be focused  
64 aligned with the goals for each property to support the goals of the SSWU.

## Improving Water Quality

### Taglines (check all that apply; add as needed)

Mission Statement	<input type="checkbox"/> Control Damage From Storms	<input checked="" type="checkbox"/> Protects Water Quality	<input checked="" type="checkbox"/> Protects Fish & Wildlife Habitat	<input checked="" type="checkbox"/> Protects the Environment	
Policy Issue	<input type="checkbox"/> Aquatic Habitat	<input type="checkbox"/> Public/Private	<input type="checkbox"/> Easements		
Related Strategic Initiatives	<input type="checkbox"/> Open Streams	<input checked="" type="checkbox"/> Water Quality	<input type="checkbox"/> Property Mgt.	<input checked="" type="checkbox"/> Primary Infrastructure	<input checked="" type="checkbox"/> Watershed Planning

### Problem Statement:

Throughout Bellevue and the region, lakes, streams, and wetlands are affected by stormwater runoff. Stormwater runoff from developed land—such as roads, parking areas, rooftops and lawns—transports a mixture of pollutants such as petroleum, heavy metals, animal waste, and sediments into nearby streams. Stormwater runoff is the leading contributor to water quality pollution of urban waterways in the state<sup>1</sup>. Fish, wildlife, and habitat are compromised, as well as, the community’s ability to experience a healthy natural environment that supports fishable and swimmable waters.

### Objective:

Improve surface water quality and habitat by removing pollutants that threaten Bellevue’s surface waters where feasible and affordable through application of selective stormwater retrofit Best Management Practices (BMPs) in locations where there is a lack of adequate stormwater water quality treatment.

### Background

Bellevue has a long history of using codes, standards and municipal programs to address ongoing pollutant runoff affecting fish, wildlife, and the environment. Despite these efforts untreated pollutants from areas developed prior to regulations continue to degrade lakes, streams, and wetlands, impacting fish, habitat, and the community’s ability to enjoy the natural environment.

This is a national issue and local governments and regulators are increasingly turning to stormwater “retrofit” in urban areas to augment existing programs as a means of managing stormwater runoff to improve water quality in lakes and streams. Retrofits include installations or upgrades of best management practices (BMP’s) in developed areas where there is a lack of adequate stormwater treatment. For example, rain gardens may be installed on the roadside to collect surface pollutants, trap them in soils, and percolate clean runoff into the ground. In other areas a vault could be installed and maintained to remove sediment instead of allowing it to travel to a stream and impact fish habitat.

<sup>1</sup> Puget Sound Partnership ([www.psp.wa.gov/stormwater.php#2](http://www.psp.wa.gov/stormwater.php#2))

## Strategic Initiative—Improving Water Quality

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While some studies show high costs for reducing urban pollution to levels that support biological function<sup>2</sup>, other studies provide evidence to support that properly applied stormwater retrofits can reduce pollutants in lakes and streams in a cost effective manner.<sup>3</sup> Successful projects have implemented a balance of traditional and low impact BMP's that treat for specific pollutants of concern based on modelling results and water chemistry and biological indicators. This project would evaluate the opportunities and constraints for achieving environmental improvements in water quality through focused use of retrofit technology.

It is anticipated that future Phase II Municipal Stormwater Permit (NPDES), such as Bellevue's, will likely mandate stormwater retrofit in the future. Implementing this initiative would allow the City of Bellevue to provide information to the State about the opportunities and constraints of retrofit in an urban environment, as well as position the city for future grant programs.

The Utilities Department and city's mission statements support investigating and implementing retrofit BMPs where benefit can be demonstrated and is cost effective. This approach is also consistent with adopted policies and the community's values for a healthy and sustainable environment.

### **Big Vision Outcome:**

Utilities will develop a plan that prioritizes Bellevue's drainage system to identify where retrofit makes the most sense to address water quality issues related to runoff. Criteria and processes will be developed to determine the use of appropriate retrofit technologies. A list of priority areas that would benefit most from WQ retrofit will be developed using a variety of factors. A menu of BMP alternatives will be developed that weighs existing options with BMP retrofit using cost/benefit, pollution reduction, and/or habitat enhancement to provide staff with more tools for improving habitat and the uses of Bellevue's streams. This effort will provide guidance for where retrofit may be a reasonable, effective, and appropriate tool to improve water quality through the Capital Investment Program or operational efforts. It will also serve to inform other strategic efforts, such as the Open Streams Assessment and Watershed Planning, by providing important information regarding where the highest risk and highest priority areas for water quality improvement needs are, helping to further those efforts and improve water quality.

### **Strategy:**

Identify priority areas where water quality projects could improve stream and lake conditions. Assess site constraints for those areas. Evaluate existing and new technology to determine whether the retrofit options are appropriate for highly developed areas, will not cause other water quality issues, and are expected to address pollutants of concern. Identify areas where pollutants, such as sediment, pathogens, nutrients, metals, and other organics and inorganics are likely to persist without a focused retrofit water quality plan. Develop a plan for prioritized projects to achieve improved and measurable

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<sup>2</sup> Stormwater Retrofit Analysis and Recommendations for Juanita Creek Basin in the Lake Washington Watershed; August 2012; work completed by King County, City of Kirkland and the Washington State Department of Transportation and funded by state Department of Ecology stormwater grant.

<sup>3</sup> K. Brian Boyer and mark S. Kieser (2012) Urban Stormwater Management – An MS4 Success Story for Western Michigan University. *Journal of Green Building*: Winter 2012, Vol. 7. No. 1 pp. 28-39.

## Strategic Initiative—Improving Water Quality

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water quality results. Identify potential grants and funding sources. Focused water quality monitoring may be employed to determine specific needs or effectiveness of treatments. Other data, such as biological, habitat, and pre-spawn mortality will be incorporated as additional effectiveness indicators of selected installations.





	<b>Action</b>
<b>X</b>	<b>Discussion</b>
	<b>Information</b>

**DATE:** June 18, 2015  
**To:** Environmental Services Commission  
**From:** Doug Lane, P.E. Water & Sewer Systems Senior Engineer  
**Subject:** Water System Plan Update

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Action Required at this Time

Staff will present results of analysis performed for the Water System Plan update. No formal action by the Commission is required at this time, although we do encourage your questions and input for consideration as we develop the draft Water System Plan.

Background

Bellevue's 2006 Comprehensive Water Plan was adopted by Council in 2008, and approved by WA Department of Health (DOH) in 2009. An update to the Plan is underway; it is now known as the 'Water System Plan'. DOH requires that the Plan be updated every six years.

Analysis performed for the Water System Plan update includes:

- System history, and changes to service area and asset inventory;
- Recent trends in annual, seasonal, and hourly water consumption;
- New service area population forecasts;
- Complete re-build and calibration of water system hydraulic model;
- Hydraulic analysis of water distribution system;
- Regulatory evaluation and water quality analysis;
- Storage evaluation, including criteria and zone-by-zone needs assessment;
- Emergency well evaluation;
- Review of asset management program;
- Operational practices; and
- Organizational efficiency and technology needs.

Discussion

Commission input is important to ensure the Water System Plan guides water system operations and investment appropriately over the next planning period. The City Council appreciates a thorough vetting of utilities planning by ESC before the recommendations are brought forward for their approval.

**Next Steps**

Staff will consider and incorporate your comments and questions into the Draft Water System Plan. Findings and recommendations as a result of analysis will be presented to ESC in July. The entire Draft Water System Plan will be provided for ESC review, concurrent with the SEPA comment period and review by DOH and adjacent utilities in fall 2015.