



MEMORANDUM

Action
 Discussion
 Information

DATE: April 28, 2011
TO: Environmental Services Commission
FROM: Brian Ward, Watershed Planning Team *BW*
SUBJECT: *Storm and Surface Water Comprehensive Plan Policies and Evaluation Criteria*

Action Required at this Time

No Commission action is required at this time. Staff will request the Environmental Services Commission (ESC) recommend Council adoption of the updated Plan in late 2011.

For the May ESC meeting, staff will respond to comments and questions received from the Commissioners and members of the public on policies that were presented at the April 7th ESC meeting. Additionally, staff will present criteria that will be used to evaluate the storm and surface water system.

Policy Review:

Staff will respond to comments and questions received at the April meeting on policies related to "Surface Water Quality", "Lake Management" and "Encouraging the Use of Low Impact Development Techniques." The revised policies illustrate staff responses to the issues and/or questions raised during the April meeting. All other proposed edits were incorporated into the draft document.

As mentioned at the April meeting, all policies have now been presented to the Commission. Staff recognizes that upcoming presentations to the City Council and the ESC may result in further comments regarding Storm and Surface Water policies. To that end, we continue to welcome your discussions and comments on any of the stormwater policies that were presented over the past several months.

Storm and Surface Water Evaluation Criteria

Staff will present criteria that will be used to evaluate the storm and surface water system for the comprehensive plan. These criteria, are meant as an objective set of measurements that identify how well the storm and surface water system is performing. These evaluation criteria will be used in an analysis of the storm and surface water system that will guide us toward Comprehensive Plan findings and recommendations, which will be presented to the ESC in the fall. The evaluation criteria are linked to the core elements of the Storm and Surface Water Utility.

Looking Ahead

After the May ESC meeting, staff will continue on the analysis of the stormwater system. Staff will return to the ESC in September with the findings of the analysis and recommendations for future capital, operations, maintenance, programmatic, and outreach resource investments. As

mentioned previously, staff will respond to questions or comments on all aspects of the Storm and Surface Water Comprehensive Plan update throughout the process.

2011 Storm and Surface Water Comprehensive Plan Environmental Services Commission Review Schedule

October 2010

- State of the System Power Point presentation

December 2010—Policy Review

- Emergency Response policy (1st review)
- Delta policy (1st review)
- CIP Prioritization policy (1st review)
- Neighborhood Enhancement policy (1st and final review)
- Residential Drainage Assistance policy (1st and final review)

February 2011—Policy review (cont'd)

- Emergency Response policy (2nd review)
- Delta policy (2nd review)
- CIP Prioritization policy (2nd review)
- Regional, State, and Federal Policy Involvement (1st review)
- Stormwater System Responsibility policy (1st review)
- Detention System Responsibility policy (1st review)
- Stormwater Runoff Control Requirements policy (1st review)

April 2011—Policy review (cont'd)

- Regional, State, and Federal Policy Involvement (2nd review)
- Surface Water Quality (1st review)
- Lake Management (1st review)
- Property Restoration (1st review)
- Encourage the Use of Low Impact Development Techniques

2011 Storm and Surface Water Comprehensive Plan Environmental Services Commission Review Schedule

May 2011

- Surface Water Quality (2nd review)
- Lake Management (2nd review)
- Encourage the Use of Low Impact Development Techniques (2nd review)
- Storm System Evaluation Criteria

September 2011

- Plan Findings and Recommendations

October 2011

- Draft Plan Presentation
- Open House

November 2011

- Commission Action recommending Council adoption of Storm and Surface Water Comprehensive Plan

Surface Water Quality Policy
(see Notebook, Existing Storm Policies tab, pp.12-18)

1 Policy:
2

3 The City shall develop and update surface water quality protection programs as needed and
4 shall carry out those programs and best management practices (BMPs) in order to make
5 progress toward meeting state and federal requirements¹ and the City Comprehensive Plan
6 water quality and related resource goals. City surface water quality programs may include
7 (but not necessarily be limited to):
8

- 9 • Water quality studies and investigations;
10 • A water quality response program, including enforcement.
11 • Education programs (including promoting source controls);
12 • Preservation of lakes, wetlands and streams;

Public comment: Staff received a comment suggesting that the preservation of wetlands and streams should also include “shorelines.” Since shorelines are the terrestrial lands along lakes, staff recommend adding “lakes” rather than “shorelines” to line 12.

- 13
14 • Stormwater quality controls on new development, redevelopment(including, but not
15 limited to, temporary erosion and sedimentation controls during construction as well
16 as permanent on-site storm water management, flow control and runoff treatment best
17 management practices);
18 • An operation and maintenance program, including an inspection program to ensure
19 private maintenance of private drainage systems.
20 • Capital projects to address identified water quality problems; and
21 • Participation in regional studies and in the development of regional, state, and federal
22 surface water quality policy. See Storm and Surface Water Comprehensive Plan
23 policy Regional, State and Federal Policy Involvement.
24
25
26

27
Regarding the footnote below: Chair Helland asked for examples of requirements that are not achievable, as mentioned in the footnote. Staff will respond to this request as part of the Stormwater 101 presentation later this year.

¹ The City seeks to meet the state and federal surface water quality requirements. However, the Federal Clean Water Act currently includes **some requirements that are not achievable**, and Bellevue and other jurisdictions are seeking amendments so that compliance will be possible. The Standards were initially set to control point sources of pollution, such as discharges from wastewater treatment plants, and for base flows. The Clean Water Act – as interpreted by regulatory agencies – requires that storm water discharges meet these water quality standards for wet weather flows. The State of Washington currently designates all Bellevue streams as **class AA (extraordinary)** the **highest aquatic life and recreational use-category classification** with the strictest standards, which are not always achievable in urban areas (and are often exceeded even in some pristine settings).

Surface Water Quality Policy

(see Notebook, Existing Storm Policies tab, pp.12-18)

28 Discussion:

29

30 **Background**

31

32 Surface water quality protection is required by federal, state, and local regulations and policies.
33 The City of Bellevue Comprehensive Plan includes a policy to "maintain surface water quality
34 defined by federal and state standards and restore surface water that has become degraded to the
35 maximum extent practicable." Related City Comprehensive Plan policies call for protection of
36 natural surface water systems, biological health and diversity, wetlands, aquatic and riparian
37 habitats, and groundwater resources.

38

39 To a large extent, surface water quality protection in the City depends on managing stormwater
40 runoff. Stormwater runoff collects pollutants such as oil, grease, and sediment as it travels along
41 the ground surface, and can therefore become a significant transporter of pollutants. These "non-
42 point source pollutants," unlike pollution from industrial and sewage treatment plants, come
43 from many diffuse and hard-to-trace sources. As the runoff moves, it picks up and carries away
44 natural and human-made pollutants, finally depositing them into wetlands, streams and lakes.
45 Many of these non-point source pollutants are beyond the control of the City, such as those from
46 fuel additives, brake pads, and pesticide applications. Successful management of these
47 pollutants requires implementation of effective practices from private interests as well as other
48 government entities in addition to management practices of the City.

49

50 Stormwater management and surface water quality protection is required by state and federal
51 mandates, most notably:

52

53 1. The Federal Clean Water Act (through rules promulgated by the U.S. Environmental
54 Protection Agency (EPA)) requires municipalities to obtain a National Pollutant
55 Discharge Elimination System (NPDES) permit for their stormwater systems. EPA has
56 delegated permit authority for administering the permit to the state environmental agency,
57 the Washington State Department of Ecology. Ecology issued municipalities in Western
58 Washington, including Bellevue, the National Pollutant Discharge Elimination System
59 and State Waste Discharge General Permit for Discharges from Small Municipal
60 Separate Storm Sewers in Western Washington in January 2007, effective February 16,
61 2007 (referred to as the Western Washington Phase II Municipal Stormwater Permit).
62 The Permit is also intended to assure compliance with provisions of the State of
63 Washington Water Pollution Control Law Chapter 90.48 Revised Code of Washington.
64 A municipal NPDES permit involves meeting the stormwater management program
65 requirements prescribed in the permit plus meeting additional requirements such as
66 monitoring. City implementation of the Permit includes adopting the 2005 Ecology
67 Stormwater Management Manual for Western Washington (or as revised by the state of
68 Washington or as modified through adoption by the City of Bellevue).

69

70 2. The federal Clean Water Act includes additional requirements that affect surface water
71 management. Most notably, State surface water quality standards are promulgated by

Surface Water Quality Policy

(see Notebook, Existing Storm Policies tab, pp.12-18)

72 Ecology, and are revised every three years. Different water quality standards may apply
73 to a particular water body depending on which beneficial uses the water body is classified
74 as providing. Relative to these standards, every two years, Ecology must submit to the
75 U.S. Environmental Protection Agency (EPA) a "water quality limited list," a list of
76 water bodies that don't meet current standards and that are not subject to documented
77 water quality protection programs likely to result in compliance with the standards. Once
78 the list is approved by EPA, Ecology must prioritize the listed water bodies and conduct
79 studies to determine Total Maximum Daily Loads (TMDLs) of the violating pollutant for
80 the affected water bodies. The local jurisdictions (along with other dischargers to the
81 affected water bodies) must then meet the TMDLs through implementation of water
82 quality clean-up plans. Compliance with all current regulatory standards is not always
83 possible; nonetheless, Bellevue continues to proactively work to ensure all achievable
84 state and federal requirements are met.
85

86 Both federal and state regulations focus on mitigating surface water quality impacts through
87 source controls and head-of-the-pipe treatment. Source controls include any measures that keep
88 pollutants out of the stormwater runoff (for example, erosion control and spill containment are
89 source controls). Head-of-the pipe treatment includes facilities such as oil/water separators and
90 sedimentation ponds that remove pollutants from runoff before they enter the main stormwater
91 conveyance system. Source controls can be seen as contrasted to prevention, which avoids water
92 quality problems. Examples of prevention measures are limitations on land development and
93 reduction in or prohibition of use of polluting materials, such as lead in gasoline and copper in
94 brake pads. In general source controls are specific to a given site while prevention measures are
95 applied across the landscape.
96

97 The emphasis on source controls and head-of-the pipe treatment is intended to ensure a supply of
98 clean water throughout the surface water system, to avoid irreversible resource damage, and to
99 reduce the possible need for costly future treatment. Additional treatment of urban runoff could
100 be required in the future if the current approach proves inadequate.
101

102 To meet federal and state requirements, source controls and head-of-the pipe treatment are
103 needed both during and after construction. Other on-going pollution prevention strategies may,
104 as well, be needed. Different aspects of water quality protection are discussed further below.
105

106 **Controlling pollutants from construction**

107
108 Construction activities can be a significant source of sediment. As stated by the EPA in 40 CFR
109 (Code of Federal Regulations), Part 122, "Over a short period of time, construction sites can
110 contribute more sediment to streams than was previously deposited over several decades."
111 Construction activities also can contribute other pollutants such as lubricants, oils or greases, and
112 construction wastes.
113

114 Through the Clearing and Grading Permit process, the City requires erosion and sedimentation
115 control best management practices (BMPs) to mitigate construction-related impacts to streams,

Surface Water Quality Policy

(see Notebook, Existing Storm Policies tab, pp.12-18)

116 lakes and wetlands, and the constructed drainage system.

117

118 The City's clearing and grading development regulations and standards, together with the State
119 Stormwater Manual and the NPDES Municipal Stormwater Permit, provide guidance on erosion
120 and sedimentation control BMPs. Such BMPs include, but are not limited to: marking clearing
121 limits, restricting construction in some drainage basins to the dry weather season, temporary
122 sedimentation ponds, and runoff filtering devices. City approval of Stormwater Pollution
123 Prevention Plans for construction sites is also required.

124

125 Staff strives to ensure that BMPs to control erosion, sedimentation, and other construction-
126 related pollutants are adequate considering site conditions, the proposed development, expected
127 weather conditions, and inspections made during the actual construction. However, erosion and
128 sedimentation can occur regardless of the BMPs employed. Some degree of adverse impacts to
129 the natural and designed drainage systems is inevitable. Costs associated with mitigating these
130 impacts should be borne by the responsible parties.

131

132 **Permanent stormwater controls on new development**

133

134 Once construction is complete, potential for pollution still may exist. Therefore, to mitigate the
135 potential impacts, new development and redevelopment over a certain threshold are required to
136 install permanent stormwater quality controls. These include, but are not limited to, source
137 controls and runoff treatment BMPs (such as wet ponds, oil-water separators, sand filters,
138 biofiltration swales and low impact development techniques where feasible). Because water
139 quality control knowledge is advancing over time, the state requirements may be revised from
140 time to time and may necessitate additional controls. The City desires to modify local codes and
141 the standards as necessary to address amendments to state or federal standards.

142

143 When a site is developed or redeveloped, staff strive to ensure that wetlands, lakes, and streams,
144 are protected, and that disturbance of steep slopes and landslide hazard areas are avoided or
145 minimized consistent with the Critical Area and Shoreline Overlay District requirements in the
146 City's Land Use Code. These regulations are intended to prevent direct destruction of streams,
147 lakes and wetlands and prevent major erosion and other problems otherwise caused from
148 inappropriate development practices on geologically hazardous areas.

149

150 **On-going pollution prevention**

151

152 In addition to the runoff controls discussed above with respect to new development and
153 redevelopment, the City has other water quality protection programs that are consistent with
154 federal and state requirements:

155

156 Public education and outreach: The City manages education programs intended to make sure
157 residents, businesses, and students understand their on-going role in pollution prevention.
158 Education is important, since many source controls require on-going actions such as properly
159 disposing of wastes and minimizing the use of pesticides and other pollution-causing products.

Surface Water Quality Policy

(see Notebook, Existing Storm Policies tab, pp.12-18)

160

161 Public involvement and participation: In addition to making staff readily available to its citizens,
162 the City provides opportunities for the public to be involved in water quality management
163 decisions by accepting public comment at Environmental Services Commission and City Council
164 water quality policy discussions. The City also posts education and relevant documents on the
165 City website to inform customers and to provide another avenue for public input.

166

167 Spill control and water quality response (also known as illicit discharge detection and
168 elimination, or IDDE, in the Permit): The City manages a program to detect and eliminate illicit
169 connections and discharges to the municipal stormwater system and receiving waters, including a
170 water quality response program. Pollutants are sometimes spilled or dumped into the storm
171 drainage system (in violation of federal, state and local law). The City's water quality response
172 program responds to water quality complaints, spills, etc. and can initiate enforcement actions, if
173 warranted. The escalating enforcement process emphasizes education first; and then proceeds, if
174 necessary, to correction notices, stop work orders, notices of violation, and fines. The IDDE
175 program provides training for staff who may observe illicit discharges in the field. Responding
176 to pollutant spills and eventually eliminating improper disposal of pollutant materials to surface
177 waters are program goals.

178

179 Pollution prevention and operations and maintenance requirements: The City's Operations and
180 Maintenance (O&M) programs includes staff training on pollutant reduction from municipal
181 operations, pollutant reducing drainage system maintenance standards, drainage system
182 inspections and spot checks of drainage facilities for proper system function and maintenance of
183 the public storm drainage system. The program also includes policies and procedures to reduce
184 discharge from city-owned lands and facilities including development of Stormwater Pollution
185 Prevention Plans for equipment maintenance yards and storage facilities.

186

187 Stormwater controls should be properly operated and maintained in order to function as intended
188 in protecting water quality. Therefore, in addition to the operation and maintenance program to
189 maintain its own facilities, the City has an inspection program to ensure private maintenance of
190 private stormwater flow control and treatment facilities pursuant to federal and state
191 requirements. Ineffective operation of private drainage systems could result in increase need for
192 public system maintenance or construction of new public capital facilities.

193

194 Monitoring and other investigations: In addition to performing water quality monitoring required
195 by the Permit, the City investigates water quality in order to evaluate problems and assess how
196 best to protect water quality. For example, the City has conducted monitoring and has also
197 monitored individual watersheds and water bodies (such as Phantom and Larsen lakes). When
198 appropriate, the City coordinates with other jurisdictions when conducting studies and
199 developing action plans.

200

201 The state and federal stormwater monitoring requirements are likely to increase over time.

202

203 Capital projects: Capital projects may be necessary to solve or provide mitigation for an

Surface Water Quality Policy

(see Notebook, Existing Storm Policies tab, pp.12-18)

204 identified water quality problem. Capital projects are identified and prioritized as discussed in
205 the Storm and Surface Water Comprehensive Plan Capital Investment policy.

206

207 Regional cooperation and input on state and federal policy: Bellevue and other jurisdictions are
208 working to ensure that state and federal requirements are practicable and achievable. See Storm
209 and Surface Water Comprehensive Plan Regional, State and Federal Policy Involvement policy
210 for further discussion of the City's role.

211

212 **Summary**

213

214 It is clear that no single action can guarantee surface water quality protection. Protecting surface
215 water quality requires a societal and cultural shift in citizen behavior combined with local, state
216 and federal actions. The City desires to meet federal and state requirements for the protection of
217 surface water quality where practical and achievable. Therefore, consistent with state and federal
218 mandates, the City has and continues to do its part in protecting surface water quality through a
219 number of programs.

220

221 Although the City currently manages and operates water quality programs, new state and federal
222 requirements may result in regulatory changes that will increase costs to property owners and the
223 City's required level of service. The expected changes may include additional operation and
224 maintenance of targeted facilities; increased emphasis on basin studies; additional monitoring;
225 increased emphasis on low impact development requirements where feasible for new
226 development and redevelopment; and requirements or an emphasis on retrofitting stormwater
227 systems to improve water quality and flow control. As these potential changes occur, the City
228 intends to modify applicable policies, codes, standards and procedures to address such changes.

Staff response to public comments received about this policy:

Staff response to Ms. Elfi Rahr’s comments made specifically about the Surface Water Quality policy:

1. Ms. Rahr asked, “If existing rules, guidelines, ordinances are not enforced, what options are available?” Ms. Rahr cites Pond A as an example, stating that there has been no removal of sediment or maintenance of over-grown vegetation for 25-years. This lack of maintenance contributes runoff to Phantom Lake.

Response: Detention pond maintenance standards are not addressed in the Surface Water Quality policy. The concerns expressed about Pond A or other such concerns are welcomed and should be reported to Utilities Department Operations and Maintenance Division. A 24-hour phone line is available to report Utility issues or critical area violations. The City condition was forwarded to the line for citizens to report maintenance needs.

2. Comment: “Eutrophic lakes in Europe are not planted with deciduous trees along the shorelines. Falling leaves become a nutrient source to a lake system. Instead meadows that provide insect for food source to fish.”

Response: This information is an idea for Best Management Practices and is not suited for a policy document.

3. Ms. Rahr request that the City, “address misguided and failed restoration efforts for retrofitting watersheds for the benefit and health of a lake.”

Response: The Water Quality policy does not preclude the preparation of a study to measure effectiveness of past restoration efforts.

4. Ms. Rahr stated, “monitoring of Phyto and Zoo-plankton is essential to understand the food web and without this knowledge no successful action plan is achievable.”

Response: Staff propose this comment is best suited to a specific lake study or monitoring plan rather than the Water Quality policy.

Lake Management Policy

(see Notebook, Existing Storm Policies tab pp.19-21)

Policy:

The Utilities Department should take a lead role in lake management for flood control and water quality purposes only. Maximum use should be made of grants or other outside funding sources and financial cooperation of benefited lake property owners. The Utilities Department should not take a role in lake management issues for recreational or aesthetics purposes.

For Lakes that are sensitive to nutrient loadings and require special controls (see [City of Bellevue Storm and Surface Water Engineering Standards](#)) throughout their watershed the Utilities Department should:

The Commission requested a reference for the “required special controls” referenced in the above statement. The Engineering Standards currently require phosphorus treatment for nutrient sensitive lakes. Staff recommend adding the above language to the policy for clarity.

- Ensure that nutrient controls (and other mitigating measures related to flood control or water quality that are identified in a pertinent lake management plan adopted by City Council) are required of new development and re-development throughout the lakes' watersheds. These controls are in addition to standard City requirements for controlling water quantity and quality.
- Continue to educate and involve businesses and residents in lake protection through on-going Utilities Department education programs and other management mechanisms.

Discussion:

Bellevue is bounded on the west and east by Lake Washington and Lake Sammamish. Bellevue also includes three small lakes--Larsen Lake which is City owned, Phantom Lake which includes private and public land, and Lake Bellevue which is privately owned. Larsen Lake is managed as a regional detention (flood control) facility.

Lakes tend to become repositories for natural and man-made pollutants (such as nutrients, oil, and pesticides) that enter them with urban runoff, groundwater, air deposition, or to a lesser extent rain. In addition, once nutrients enter a lake and settle to the bottom, they can cycle from the bottom sediments back to the water, where they are available for algae growth. High nutrient levels can fuel nuisance amounts of algae; decaying algae in turn can deplete dissolved oxygen levels, needed by fish and other aquatic animals.

The 1988 and 1994 Comprehensive Drainage Plans concluded that the Utilities Department should have a role in lake management for water quality and flood control only and that maximum use should be made of outside funding sources such as grants and financial cooperation of benefitted lake property owners.

Consistent with that policy, the Utilities Department obtained state grants to pursue several water quality projects related to lake protection. Specifically, the Utilities Department:

- Completed the \$2 million Phantom/Larsen lakes restoration project (1985-1993) aimed at

Lake Management Policy

(see Notebook, Existing Storm Policies tab pp.19-21)

44 breaking the lakes' cycle of nutrient-enrichment; about 70% of that cost was paid from
45 state grants.

46

47 • Participated in a grant-funded water quality study of Lake Sammamish (1985-1993)
48 involving multiple jurisdictions.

49

50 • Formed a public/private partnership (1990-1994) to construct a combined nutrient-
51 control/detention facility at a development in the Lake Sammamish watershed (the
52 Lakemont dry pond filtration facility).

53

54 • Obtained grants to monitor the effectiveness of three nutrient-control techniques
55 recommended in the Lake Sammamish study (1993-1995).

56

57 More recent examples of actions taken consistent with this policy include:

58

59 • The City Council created a Phantom Lake Watershed Committee and authorized
60 expenditure of funds in support of the Committee to develop a plan for the creation of a
61 Lake Management District (LMD) in a 1995 resolution (Resolution No. 5968). The
62 resolution states that “Future City funding of additional Phantom Lake watershed studies
63 and projects will be contingent on implementation of a Lake Management District, in
64 which the City will participate as a partner along with other stakeholders in the
65 watershed.”

66 ▪ The Committee defined lake water quality goals, reviewed and developed an LMD
67 plan for \$1.4 million in water quality and quantity improvements over a 7-year
68 period. The Committee subsequently decided to not pursue formation of the LMD.

69

70 • The City performs on-going lake water quality monitoring and operates and/or maintains
71 Phantom Lake water quality capital investments made as part of the 1985-1993
72 Phantom/Larsen Lakes Restoration Project at an annual cost of \$40-\$65,000.

Ms. Elfi Rahr has requested numerous details be added to the discussion section of the Lake Management policy, lines 58-71 where a brief description of the Phantom Lake Watershed Committee is included.

Response: Staff contend that the details provided by Ms. Rahr are best suited in a report describing the findings of a lake study rather than a policy document. Policy documents are intentionally brief and are meant to provide guidance for the City when acting on lake management issues. The Phantom Lake and Lake Bellevue examples were included in the discussion section of the policy to provide more recent examples of how the policy has been consistently applied over time. The example quotes the City Council’s resolution and does not include language that is related to study results or recommendations. Therefore staff propose no policy change in response to these comments.

73

74

75

• Utilities managed a City-funded study of Lake Bellevue (2006). The study is the City’s contribution towards a resident-proposed public/private partnership to obtain grant

Lake Management Policy

(see Notebook, Existing Storm Policies tab pp.19-21)

76 funding for lake quality improvements. The study determined that managing in-lake
77 phosphorus cycling (76% of phosphorus loading to the lake) would be more effective at
78 improving lake quality than targeting phosphorus entering the lake from urban runoff
79 (24% of phosphorus loading to the lake).
80

81 The work related to Phantom/Larsen lakes and Lake Sammamish emphasized the need for on-
82 going lake and watershed management to limit phosphorus loading. On-going management
83 involves maintaining any capital facilities and working to minimize the entry of phosphorus and
84 other pollutants into the lakes.
85

86 Reducing pollution can be accomplished by:
87

- 88 1. Ensuring best management practices (BMPs) are required of new development and
89 redevelopment, including BMPs for nutrient control.
90
- 91 2. Continuing to educate businesses and residents on their role in lake protection.
92

93 The City routinely requires BMPs to control runoff from new development and redevelopment
94 (except for very minor projects). Consistent with requirements in the state 2005 Ecology
95 *Stormwater Management Manual for Western Washington*, the City requires BMPs for water
96 quality control, not just quantity control (see the Storm and Surface Water Comprehensive Plan
97 surface water quality policy).
98

99 In addition to requirements that apply City-wide, nutrient controls are warranted on new
100 development and redevelopment in the watersheds of Lake Sammamish and Phantom and Larsen
101 Lakes. This is consistent with minimum requirement #6 in the state 2005 *Stormwater*
102 *Management Manual for Western Washington*, which requires jurisdictions to impose more
103 stringent water quality controls where needed to protect water quality sensitive areas. In
104 particular, the State *Stormwater Manual* requires nutrient controls (such as constructed wetlands
105 and specially designed wet ponds) for new development and redevelopment in watersheds
106 draining to receiving waters where nutrients are a concern.
107

108 The National Pollutant Discharge Elimination System (NPDES) municipal stormwater permit
109 also requires local jurisdictions to have educational programs. In Bellevue, education programs
110 are already in place.
111

112 Because a lake is affected by residents and businesses throughout its watershed, and because
113 lakes are highly valued by many residents, the Utilities Department should involve public
114 outreach when undertaking its lake management activities. For example, the Utilities
115 Department could create a watershed management group to involve watershed businesses and
116 residents in setting lake management priorities related to flood control and water quality.

Encourage Use of Low Impact Development Techniques
Proposed New Policy

1 **Proposed New for Storm and Surface Policy—Encourage Use of Low Impact Development**
2 **Techniques Where Feasible**

3 The Commission suggestion to not use the LID acronym has been incorporated.

4 **Policy:**

5 The Utilities Department encourages and promotes the appropriate use of low impact
6 development (~~LID~~) techniques where feasible, and may participate in research and/or use
7 incentives to foster implementation and increased awareness of low impact development ~~LID~~
8 benefits toward achieving a sustainable urban environment.

9 **Discussion:**

10 Several existing policies in the City Comprehensive Plan, Environmental Element and the Bel-
11 Red Subarea Plan support the implementation of low impact development ~~LID~~. Low impact
12 development ~~LID~~ is generally defined as a stormwater management strategy that emphasizes
13 conservation and use of existing natural site features integrated with distributed, small-scale
14 stormwater controls to more closely mimic natural hydrologic patterns in residential, commercial
15 and industrial settings. Promoting and implementing low impact development ~~LID~~ practices are
16 important to achieving the goals of the City and the Utilities Department. The Utilities
17 Department has an opportunity to play a pivotal role in low impact development ~~LID~~ promotion
18 and implementation because of its responsibility for stormwater management. As such, the
19 Utilities Department may consider:

- 20 1. Promoting and encouraging the use of low impact development ~~LID~~ and/or voluntary
21 upgrades to flow control standards, and developing incentives as needed to target specific
22 surface water problems or basins ;
- 23 2. Providing technical support to customers to identify and encourage opportunities for
24 incorporating low impact development ~~LID~~;
- 25 3. Creating educational and/or promotional materials that describe the benefits of low
26 impact development ~~LID~~ and seek low impact development ~~LID~~ grant or partnership
27 opportunities;
- 28 4. Advocating for public education on low impact development ~~LID~~ topics; and
- 29 5. Collaborating with other City departments to facilitate the community's use of low
30 impact development ~~LID~~ by updating codes, standards, regulations and procedures to
31 remove barriers to and encourage the use of low impact development ~~LID~~ techniques.