Response to Questions by the Washington Sensible Shoreline Alliance Regarding the SMP Update

The following is a response to questions presented by WSSA at the August 28, 2010 Planning Commission Workshop Meeting

1. Administration - How much has it cost to administer permitting processes on lake shores prior to adoption of the Critical Areas regulations in 2006 and how much has it cost since?

Permit process administration costs are not tracked on regulation by regulation basis. Discretionary land use review services include administration of all the regulations contained in the Land Use Code. Critical Areas regulations make up a component of that review, but land use reviewers are also charged with administering regulations of city-wide application (such as dimensional and use requirements) as well as regulations applicable to specific geographic areas of the City (such as Transition Zone, the Downtown Overlay, and the Critical Areas regulations). Costs attributable to a single regulation cannot be calculated.

2. Administration - What have been the nature and number of complaints by those who've been through the City shorelines permitting process since 2006 when the Critical Areas code was passed?

The City has received several verbal complaints, typically through the Land Use and Zoning Information counter, regarding permit costs and timelines. Additional dissatisfaction has been voiced regarding cost, predictability, and unnecessarily strict application of regulations. These comments have been focused on the Critical Areas Report process provided as a means to depart from the prescriptive standards of the City's shoreline rules. Deviations are pursued when an applicant chooses to pursue a design that is not allowed by the required standards, and where there are either degraded conditions or a more environmentally sustainable solution than contemplated by the standards is an option. The cost of obtaining the services of a qualified professional (as required by LUC 20.25H) to prepare a Critical Areas Report and to design and install the required mitigation is the predominate concern.

3. Administration - What legal actions have been taken against Bellevue under the current Critical Areas shoreline regulations? Categorize these showing whether and how the cases were settled, amounts the City paid out, and reasons/rulings associated with each outcome.

One Department decision involving the application of a critical area requirement applicable to the shoreline has been appealed. The case was settled prior to hearing, and the project was permitted consistent with the terms of the Land Use Code.

4. Bulkheads - What analysis of wave, wind, and water conditions on each lake has been carried out to determine the implications and risks which property owners and the City would face under recommended removal of bulkheads?

The City is not recommending removal of legally permitted bulkheads. Moreover, the City, after discussing the matter with the Planning Commission, is not proposing an outright prohibition on new shoreline stabilization.

5. Bulkheads - What design for our lakes' shores does staff recommend for bulkheads? How were these arrived at, and how and where have they been tested? What assurance is there that the test conditions reflect the conditions on our lakes?

For new bulkheads on sites that currently do not have them, staff recommends the following hierarchy: (1) avoidance; (2) soft stabilization measures (soft construction techniques); (3) integrated stabilization measures (soft and hard construction techniques combined); and, (4) hard stabilization measures (hard construction techniques). This hierarchy parallels the range of measures outlined in WAC 173-26-231(3) (a) and is designed to reduce or minimize the negative impacts associated with hardened stabilization on aquatic systems. Additional detail is provided regarding this approach in the Planning Commission packet materials prepared for September 8, 2010.

Soft stabilization has been utilized successfully in several locations within the region including Lakes Sammamish and Washington in Bellevue and elsewhere. Although avoidance or soft stabilization is the preferred option when considering new stabilization measures, the draft proposal favors combining both hardened and soft measures for major repair and replacement of existing legally-permitted stabilization measures. Such an approach is often more suitable when new facilities must be matched with existing hardened stabilization on adjacent properties. New stabilization, when allowed, must follow the hierarchy of preference outlined above. Regardless of the option employed, stabilization measures must be designed by a qualified professional.

6. Docks - Who controls the size of dock surface areas and what are the limits? What do staff recommend and why? What have other jurisdictions enacted?

A variety of federal, state and local agencies have a regulatory interest in dock design and permitting. Under the *no net loss* standard dictated by Ecology's Shoreline Rules, the City's SMP contains regulations governing the design and size of docks. At the July 28, 2010 Planning Commission study session, staff reviewed current dock standards, proposed dock standards, and included a summary of rules from other jurisdictions. Proposed dock rules were also discussed in detail during independent meetings between staff and industry contractors and board members of the Washington Sensible Shorelines Association. Dock design and size are also governed by the US Army Corps of Engineers (USACE) and the Washington State Department of Fish and Wildlife (WDFW) through separate permit processes (Section 10 and Hydraulic Permit Approval) that are independent of the requirements of the SMA and the City's SMP, and intended to address a different set of regulatory objectives.

7. Drainage - In fall 2009 testimony by Utilities staff, it was noted that much of the drainage systems falling into our lakes pass through privately owned systems. What

studies have been done to assess the cost of taking these over? In light of the goals of the SMA and resulting SMP, what should be the priorities for taking these over? Until then, will actions required by shoreline properties result in a detectable change in shoreline functions?

No detailed studies have been done to assess the cost of "taking over" private drainage systems and there are no plans to acquire these systems. This issue is addressed in Polices 4 (Conveyance System Responsibility) and 5 (Detention System Responsibility in Single-Family Residential Plats/Short Plats) of the Utilities' 1994 Drainage Comprehensive Plan. The policies are attached. These and the other drainage policies will be reviewed as part of the Utilities' current update of the Plan. The public will have an opportunity to comment on the updated Plan at future Environmental Services Commission (ESC) meetings. Agendas and minutes for the ESC meetings are available at the following link.
http://www.bellevuewa.gov/environ_serv_comm.htm

8. Drainage - Phantom Lake residents consistently cited concern with water quality and water levels of the lake. Utility staff's presentations have not address the relative amounts of pollutants which are attributable to the Eastgate office drainage versus other sources. What are these amounts/proportions?

Studies show that pollutants in stormwater runoff (other than nutrients) roughly correspond to the total runoff from a given urbanized area. Total stormwater runoff to Phantom Lake is proportioned by urbanized area as follows, indicating the pollutants attributable to the different urbanized areas. The commercial urbanized area is the Eastgate office drainage referred to in the question.

Urbanized Area	Acres Draining to Phantom Lake	Percent of Total Area Draining to Lake	Impervious Acreage
Residential	290 acres	60%	84 acres
Commercial	133 acres	27%	83 acres
Parks	62 acres	13%	6½ acres

The principal water quality problem with Phantom Lake is excessive inputs (loading) of phosphorus to the lake. Phosphorus is a nutrient. Sources and relative amounts of phosphorus loading to Phantom Lake were identified in the Phase I KCM Phantom –Larsen Lakes study as follows:

Internal Phosphorus Sources

- 57% Largest single source of phosphorus to Phantom Lake is internal (from lake bed sediments, aquatic plants, etc.)

External Phosphorus Sources

- 21% Greenbelt (wetland areas adjacent to and extending northwest of lake)
- 11% Lake watershed excluding Greenbelt, Inlet 1, and Station A runoff

External Sources

- 7% Inlet 1 – this is area draining to Phantom Lake inlet near bath and tennis club. The drainage to this inlet is composed of runoff from the 133 acre commercial area (referred to as Eastgate office drainage in question), 100 acres of residential area and 36 acres of park land
- 5% Groundwater, precipitation, and Station A (residential development west of Inlet 1)

9. Drainage - The City's storm water code will require property owners who add 1000 sq ft or more to drain their downspout systems to vegetation management areas. Why are these not sufficient for shoreline property owners?

"Drainage" rules for new development and redevelopment apply City-wide. The first drainage rules in Bellevue were established in the late 1970s when Bellevue's Storm and Surface Water Utility was created in response to citizen concerns that urbanization was destroying streams, lakes and threatening properties. The new development and redevelopment "drainage" rules are part of a broader storm and surface water management program. The "drainage" rules, which include flow control, water quality treatment and construction-related erosion and sediment control, have been revised over time. The current regulations are mandated by the federal Clean Water Act through its National Pollutant Discharge and Elimination System (NPDES) permit program requirements. The Environmental Protection Agency (EPA) delegated NPDES permit authority to state environmental agencies. In Washington State, this is the Department of Ecology. Ecology issued the first NPDES Phase II Municipal Stormwater Permit to over 100 municipalities, including Bellevue, in February 2007. The drainage rules, along with many other stormwater management program requirements, are mandated in the Permit and applied City-wide. This makes all residents and businesses responsible for maintaining and improving lake and stream water quality in our community.

In contrast, the "shoreline" rules originate with the state Shoreline Management Act (SMA), which mandates that jurisdictions implement these rules through locally adopted Shoreline Master Programs (SMP). The SMA was passed by the legislature in 1971 and approved by Washington voters in 1972. The overarching goal of the Act is "to prevent the inherent harm in an uncoordinated and piecemeal development of the state's shorelines." The SMP Update, that is currently before the Planning Commission for review, was required ("mandated") by the State legislature to be completed by all 39 counties and more than 200 towns and cities that have shorelines of the state within their boundaries. The SMP is referred to as a "geographically specific" zoning ordinance because it regulates development and use of land within 200 feet of state shorelines. Drainage rules and shoreline rules have different regulatory origins and different regulatory purposes. They need to be consistent; but, implementation of one rule does not satisfy the regulatory requirements of the other.

10. **Ecological Function – WSSA representatives have pointed out that the definitions associated with measuring shoreline ecological function measure the same factors several times. When, how, and by whom were these factors measured for Bellevue?**

How accurate and reliable are those results? What is the response to WSSA's concerns?

City Response: Shoreline ecological function was analyzed as part of the City of Bellevue Shoreline Inventory and Characterization on a reach-by-reach basis. This study, completed by the City's consultant, was executed at a coarse scale and the findings are not directly transferable to parcel scale interpretation. Shoreline functions are typically measured through a qualitative analysis that evaluates the presence or absence of a specific function due to the physical condition of the shoreline resource.

Consultant Response: The WAC Guidelines help outline the various processes and functions to be analyzed on a reach by reach scale. The four main groups of functions (i.e. hydrologic, hyporheic, vegetative, and habitat) include various subsets of more descriptive and detailed functions to be analyzed. Given the nature of these functions and the various environmental factors or processes which may affect them, there are instances where some factors contribute to more than one function or ecosystem service. For example, very good high quality GIS data on vegetative cover was newly available in 2008 and this data helped to assess several different functions (e.g. Temperature Regulation or Physical Habitat Space).

In determining ecological functions, each reach was individually evaluated for each of the listed WAC functions based on the environmental variables that play a role in those functions. The available GIS data was utilized for this purpose to help score each reach. For instance, with the hydrologic function – Removing excess nutrients and toxic compounds, GIS data for percent impervious surface, housing density, vegetative cover type, and soil infiltration potential were assessed.

These methods for analyzing shoreline ecological functions have been thoroughly reviewed throughout the Department of Ecology. The high quality GIS data available in the City of Bellevue allowed for a more rigorous evaluation of shoreline ecological functions than other jurisdictions which may be absent such resources. This, in fact, lends more support to the study's results.

11. Ecological Function - Staff have cited shoreline restoration is necessary based on the needs of fish as well as shoreline animals. What studies have been carried out as to the types of animals that might be attracted to the shorelines and are they appropriate to encourage in an urban setting?

In answering this question one must distinguish between mitigation and restoration. Mitigation is required to offset impacts to shoreline ecological functions and to ensure no net loss. Restoration is a voluntary action on the part of a property owner or the City. Ecology's Shoreline Rules require that local SMPs include a restoration plan in an effort to offset long-term cumulative impacts from development. The City of Bellevue Land Use Code identifies a list of species of local importance and provides rules related to management of sites where these species may be located. In addition to this list of species, the City, as part of developing tools to assist in managing critical areas, has completed an extensive literature review (see Bellevue Urban Wildlife Habitat Literature Review, 2009)related to the identification and

management of resources required to provide necessary habitat for species survival. Of the wildlife species on the list, tall conifers present on shoreline properties provide important habitat for cavity nesting birds like Pileated Woodpecker and nesting and roosting trees for Bald Eagles. Ospreys and other raptors also use this type of habitat.

12. Ecological Function - WAC 173-26-186 (8) (d) states "...master programs shall contain policies, programs, and regulations that address adverse cumulative impacts and **fairly allocate the burden of addressing cumulative impacts among development opportunities..." What are staff's recommendations to achieve this?**

WAC 173-26-186(8)(d) requires jurisdictions to consider cumulative impacts related to reasonably foreseeable shoreline development and use:

> Local Master Programs shall evaluate and consider cumulative impacts related to reasonably foreseeable future development on shoreline ecological functions and other shoreline functions fostered by the policy goals of this act. To ensure no net loss of ecological functions and protection of other shoreline functions and uses, master programs shall contain policies, programs, and regulations that address adverse cumulative impacts and fairly allocate the burden of addressing cumulative impacts among development opportunities. Evaluation of such cumulative impacts should consider:
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> (i) current circumstances affecting the shorelines and relevant natural processes;
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> (ii) reasonably foreseeable future development and use of the shoreline; and
>
> (iii) beneficial effects of any established regulatory program under other local, state, and federal laws.

The provision concludes with recognition by Ecology that "methods of determining reasonably foreseeable future development may vary according to local circumstances, including demographic and economic characteristics and the nature and extent of local shorelines."

The cumulative impacts related to reasonably foreseeable development is addressed in the SMP through the policies and regulations that apply to all allowable shorelines uses and activities. Also, the unique characteristics of the shoreline are protected through the development and administration of an SMP designed to ensure the unique recreational, commercial and ecological benefits of the shoreline are not lost. As identified in the Shoreline Rules, shoreline ecological functions such as habitat function, hyphoreic function, hydrologic function, and heightened sensitivity related to endangered species with statewide interest are reason for rules specific to the shoreline. Similarly, special attention is given to the recreational benefit that Bellevue's freshwater lakes represent. To achieve the level of protection anticipated by the SMA and WAC guidelines, staff recommends development of an SMP that protects existing single family development and fairly requires improvements for new development, redevelopment, and expansion of existing development for all shoreline developments and uses.

In addition to the SMP, there are multiple layers of regulations designed to address impacts from development on natural resources that apply city-wide. Examples of these regulations include the clearing and grading code and critical areas ordinances. These regulations apply equally throughout the city.

13. Incentives - The City's shoreline management consultants prepared a list of incentives from other jurisdictions in June of 2009[1]. Can the Commission be provided copies and what did it report?

Developed by one of the City's consultants, this document is a preliminary summary of incentive programs used by other jurisdictions that could potentially be incorporated into the City's SMP. Staff has retained this list as a resource for drafting the SMP and incorporation of different incentive systems related to regulations. Staff will provide this document to the Commission and will place an electronic copy on the project website. http://www.bellevuewa.gov/shoreline-master-plan.htm

14. Incentives - The Governor's Office for Regulator Assistance sponsored the Green Shorelines workshops last summer. Many forms of incentive were discussed and prioritized by attendees. What were the results?

"The Green Shorelines Workshop Steering Committee was formed in 2008 as a collaborative effort between local, regional, state, and federal agency staff. The Workshops were designed to build on previous shoreline protection and restoration work in the Lake Washington/Cedar/Sammamish watershed (WRIA 8), including the recent City of Seattle document Green Shorelines: Bulkhead Alternatives for a Healthier Lake Washington (also referred to as the Green Shorelines Guidebook).

Four Workshops were held between March and June 2009. The first three Workshops focused on better defining green shorelines, examining the permit process, and discussing existing and potential incentives. The fourth Workshop provided participants with information on green shoreline design, permitting, and incentives and allowed property owners to contribute their ideas regarding potential and existing incentives.

Workshop participants identified several opportunities to encourage green shorelines approaches, including:

• Financial and permitting incentives (e.g., tax breaks, grants, streamlined permitting).
• Technical assistance with the design, installation, and permitting of green shoreline projects.
• Lakeshore demonstration projects.

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1 "Incentives to Encourage Best Practices in Shoreline Management and Ecological Restoration"

• Further definition of where and what type of green shoreline techniques are appropriate for site specific conditions.
• More outreach information on lake health, habitat and fish.

The Workshops provided an outlet for communication, coordination, and understanding among the many individuals and agencies involved in permitting, designing, and implementing green shoreline approaches. Presentations and discussions improved the understanding of green shorelines and how this concept could be applied to the shorelines of Lake Washington and Lake Sammamish. Although these Workshops were targeted directly to the shorelines of Lakes Washington and Sammamish, the process and outcomes provide a useful model for other communities with lake or marine shorelines."

The report was provided to WSSA in August of 2010 during a meeting related to Shoreline Stabilization. The document is also available at http://www.ecy.wa.gov/pubs/1006008.pdf .

15. Monitoring - What monitoring of drainage (flow amounts) and water quality testing is carried out by the City? For comparison, what is carried out by other jurisdictions? It has been noted by King County that Bellevue took over this function for Bellevue shorelines several years ago. What has the City instituted?

Stormwater quality and quantity monitoring carried out by local governments change over time according to study needs, project requirements and regulatory requirements. Some of the City's most comprehensive monitoring has included:

- Bellevue Urban Runoff Program – series of studies to investigate Bellevue's urban runoff sources, effects and potential controls.
- Characterization and Source Control of Urban Stormwater Quality – assessment of Bellevue's stormwater and receiving water quality.
- KCM Phantom – Larsen Lake Restoration Study – scientific study of Phantom and Larsen Lakes to define the lakes' physical, geological, biological and water quality conditions.

The City has monitored Phantom Lake (and Larsen Lake) water quality monthly since early 1990s.

16. OHWM - The City shoreline staff reports describe the shorelines of Lake Sammamish and Phantom Lake as flood prone. Lake WA is <u>not</u> considered to flood prone because the locks can control water levels. There are flow controls on both Lake Samm. and Phantom Lake. Why can't these or some modification be used to manage water levels on these lakes as well?

The Hiram M. Chittenden Locks are owned and managed by the USACE. Known locally as the Ballard Locks, they serve three specific purposes: (1) to maintain the water level of the fresh water Lake Washington and Lake Union at 20 to 22 feet above sea level; (2) to prevent mixing of sea water from Puget Sound with the fresh water lakes; and, (3) to move boats from the water level of the lakes to the water level of Puget Sound and vice versa. The Ballard Locks are not considered a floodgate and the pool height of the lakes is directly

related to the safe operation of the locks, not management of floodwaters. Because Lake Sammamish and Phantom Lake are not serviced by locks and are not accessible by navigation for the purpose of commerce, it is unlikely that a navigation lock system or dam will be installed. The weir on Lake Sammamish is designed to manage summer surface water elevation at a level suitable for recreation.

The weir on Phantom Lake was installed to address water quality impacts to the lake from the extremely high levels of phosphorus in the adjacent wetland ground and surface waters that were entering the lake. The weir is operated only in the summer months to try and maintain a summer lake level which will prevent wetland ground and surface water from adding additional nutrient (phosphorous) to the lake. A higher summer lake level exerts a positive hydraulic gradient against ground and surface water entering the lake. The wetland ground and surface waters inputs to the lake are the highest external source of phosphorus to the lake. The weir, cutoff channel and berm were constructed to minimize phosphorus impacts such as decreased water clarity, lowered dissolved oxygen levels and more frequent algal blooms resulting from this nutrient source.

17. OHWM - The City had a consultant study done to establish a benchmark OHWM. A value of just over 28 feet was chosen for Lake Sammamish. What was the rationale for this level?

This was the result of a City-sponsored study in an effort to provide property owners a predictable elevation for OHWM with which to establish setback dimensions. It was conducted in response to requests from homeowners on Lake Sammamish for an easier way to establish appropriate building setbacks than using the site specific methods required by Ecology. While the results of the study are very accurate, the elevation contained the report cannot be used to determine OHWM for the purposes of installing shoreline stabilization. The study was also designed to study the hypothesis that there might be significant differences in OHWM based on geographic differences related to prevailing wind direction. Consequently, the Bellevue shoreline was segmented into three segments based on prevailing wind, exposure and fetch. Randomly identified properties in each sector were selected for survey and the OHWM was determined according to specific DOE guidance for each property. It should be noted that the elevation generated as a result of this survey was the product of a peer-reviewed, mathematically valid statistical study with a variance of less than .05 and a confidence interval of +/- .09 from the mean value. The Lake Sammamish OHWM study is available on the project website. Please consult the study for details on how the final elevation was selected and how it is allowed to be used in during the permitting process. The document is available at:
http://www.bellevuewa.gov/pdf/PCD/A_Summary_of_the_Effects_of_Bulkheads_Piers_and_Other_Artificial_Structures_and_Shorezone_Development_on.pdf

18. OHWM - The weir on Phantom Lake controls the elevation of the water level. Residents report that it is not maintained properly. Isn't that the responsibility of the City? What would be the ramifications of more actively managing the water levels on Phantom Lake? (For example, would there be impacts to Lake Sammamish if more water were diverted there?)

See response to question 16 concerning the purpose of the weir. The weir is maintained by the City (see discussion under question # 7 regarding City responsibility for maintenance.) Phantom Lake is a private lake and management of lake elevations would require action by and cooperation among Lake and outlet channel property owners with consideration of potential downstream impacts and would be subject to State and City permitting requirements.

19. Planning Process - (Directed to DOE staff) DOE sits in on an advisory capacity on the local efforts to adopt SMP's. What are the issues which the DOE offers guidance on to staff and what issues are you seeing with respect to Bellevue's process?

DOE response from David Raddabaugh, DOE Regional Shoreline Planner

It is important to remember that Ecology has approval authority for locally adopted SMPs pursuant to RCW 90.58.090.

During the time that Bellevue is developing its SMP update, Ecology staff will support the City's efforts in two general areas. First, as much as resources are available, we will be available to answer questions, comment on areas of concern, and provide other assistance. Ecology may offer guidance on a wide variety of SMP related issues. Second, Ecology will conduct a review of key draft documents during the course of the development of the Bellevue SMP.

Ecology is looking forward to a chance to review the Draft SMP when it is ready. My immediate concern regarding the Bellevue SMP process is the rate of progress in its development. While I appreciate that the City has had many concerns to address, it will be important to focus the major areas where decisions need to be made such as vegetation conservation, piers and docks, and shoreline stabilization.

20. Planning Process - City staff have cited there is limited funding to extend the SMP process further than year's end. What have been the dollar amounts spent on shoreline planning to date? Categorize these by pre-Critical Areas process and the current effort and show the source of funds.

Pre-Critical Areas process- No specific amount was designated for shoreline planning. The money expended from the Department of Planning and Community Development's operating budget for the Critical areas update project was approximately $242,879.

Post Critical Areas process- As of 6/30/2010, $312,957.41 has been spent on the shoreline update project. The City received a grant from the Department of Ecology in the amount of $175,000 and we have received $160,000 of this amount. The City of Bellevue committed $265,000 in CIP money for the Shoreline Update project. The project costs include the preparation of a shoreline inventory and characterization report, wildlife, and wetland inventory. In addition the city hosted a boat tour of Lake Washington, conducted a public opinion phone survey, conducted focus groups with residential property owners and marina

and construction industry representatives, and held several open houses. To provide the Planning Commission and the public with a better understanding of the science supporting shoreline management, scientists and staff from a variety of private, state, and regional companies, institutions, and agencies, with a role in the management of water resources, volunteered their time at no cost to the City to make presentations to the commission.

21. Planning Process - How does staff see its role in developing the SMP? Should it be - (a) one of unbiased accounting of what the law stipulates and delivering a balance of views on issues and topics, or (b) should staff be free to advocate for a particular outcome including the freedom to inject personal philosophy, opinion, and conjecture?

Staff operates as outlined under Option A.

22. Planning Process - The SMA Guidelines direct that SMP's are to be based on the OBJECTIVE use of relevant scientific information. In their March 24th presentation, WSSA representative Dr. Pauley pointed to a number of deficiencies found in the City's (science) reports. How have these allegations been addressed and how has staff assured an OBJECTIVE use of relevant science?

The City relied on a wider range of studies, reports and papers in drafting the Critical Area policies and codes. At the Planning Commission's specific request, staff arranged unbiased, objective, and relevant presentations summarizing some of the most recent research efforts regarding the impact of shoreline residential development on ecological function and habitat. The individuals that participated are qualified, credentialed research scientists who volunteered their time and who are not directly affected by the regulations under discussion here. All of the research discussed was specific to the Northwest or to Lake Washington and Lake Sammamish in particular. All of the presenters are scientists whose recent research that has been referenced in numerous peer reviewed studies or used by other nearby jurisdictions in buttressing their own science-based conclusions regarding docks, piers, stabilization and setbacks or buffers.

In preparing the proposed regulations, the following key science documents were consulted along with many individual papers.

1) The 2006 GMA Best Available Science document for critical areas (including the Shoreline Area) and the Critical Areas Risk Analysis (which assessed overall risk to ecological functions from two alternatives—and no action).
2) A specific study produced by the City of Bellevue and titled *A Summary of the Effects of Bulkheads, Piers, and Other Artificial Structures* and *Shoreline Development on ESA-listed Salmonids in Lakes* commissioned by the city following the 1999 ESA listing of Puget Sound Chinook.
3) Department of Fish and Wildlife publication titled *Land Use Planning for Salmon, Steelhead and Trout: A Land Use Planner's Guide to Salmonid Habitat Protection and Recovery.*
4) Numerous studies and publications to the project website, including several studies related to the impacts of docks and bulkheads on shoreline ecosystems.

To date staff has organized and delivered presentations to the Commission from:

1) Dan Nickel of the Watershed Company provided a basic conceptual model describing the changes to aquatic habitat and ecosystem functions brought about by urban development.
2) Tessa Francis, PhD. presented a brief overview of her research on the effects of shoreline urbanization and aquatic ecosystems.
3) US Fish and Wildlife researcher Roger Tabor presented results from his 14 years of research in the Lake Washington basin. Recent projects presented included movement patterns of Chinook salmon smolts, smallmouth bass, and northern pike minnow; nearshore habitat use of juvenile Chinook salmon in lakes; predation of juvenile sockeye salmon and Chinook salmon by predatory fishes; and distribution, habitat use, and diet of freshwater sculpin.
4) Jose Carrasquero, a Principal Scientist with Herrera Environmental Consultants, with 21 years of experience in the Puget Sound region and Jeff Parsons, a coastal geomorphologist with more than 15 years of both applied and research experience. Mr. Carrasquero and Dr. Parsons presented information on physical habitat forming and ecological processes as well as the life history and biological requirements of target species.

In addition to staff organized presentations, WSSA provided a presentation to the Commission that included commentary by Dr. Pauley, a retired UW fisheries professor and research scientist, who lives on Lake Sammamish. Dr. Pauley's presentation provided context to the extensive range of habitat utilized by migratory fish populations, reviewed various life cycle requirements for different fish populations, including smallmouth bass, and identified specific habitat requirements and predation issues associated with Bellevue shorelines. Pauley's 1984 paper, prepared with David Pflug, and titled *Biology of Smallmouth Bass in Lake Sammamish, Washington* was consulted as part of staff's review of the science. While Dr. Pauley was critical of some conclusions reached in the City's 2006 BAS study, he concluded the City's *A Summary of the Effects of Bulkheads, Piers, and other Artificial Structures and Shorezone Development on ESA-listed Salmonids in Lakes,* which formed the underpinning for the regulatory steps taken in 2006 and today, was without reproach. Taken together the City's use of science has been current, comprehensive, and objective.

23. Property Rights - Has DoE directed that the City must consider cumulative impacts to full build-out of Bellevue lands? Would that include just shoreline build-out or development of "all lands" in the basin? If "all lands" are the focus, how can regulations then be applied primarily to shoreline properties? What has been the legal advice provided to Planning staff from City or Ecology attorneys on whether this would be a violation of property rights?

See response to question #7

24. Scientific Basis - Dr. Pauley, in his March 2010 presentation, noted several instances where conclusions of technical studies had been misinterpreted and possibly reversed. What has the City done to determine the extent to which this happened and to report

needed changes or to assess where policies have been developed based on faulty information?

The City supplemented previous science reports as outlined in above in question #23, with objective presentations summarizing findings from a range of recent research related to the key elements under review as part of the SMP. The scientists that participated came of their own accord and without compensation or vested interest in the outcome.

There is little doubt that science plays a very important role in preparing an SMP. For example, following RCW 90.58.100 (1), local governments are instructed to "utilize a systematic interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts and consider all plans, studies, inventories and systems of classification made or being made by federal, state, regional or local agencies . . . or by organizations dealing with pertinent shorelines of the state." This legal direction is implemented in the Guidelines in the requirement to incorporate "the most current, accurate, and complete scientific and technical information available that is applicable to the issues of concern."

That said scientists often disagree about causes and so while scientific information can assist in formulating policy options and assessing risk, it cannot be substituted for the judgment of policy makers carefully weighing an issue and taking into account a wide range of information, including homeowner observation. Instead, policy makers need to act under less than scientific certainty and an eye to the precautionary principle, with the full understanding that ecological health may deteriorate if their response is insufficiently protective. In this regard, Planning Commission members must act as risk managers, carefully weighing the potential for further loss of ecological function against the intrusion on private property rights that regulation inevitably entails. Staff believes, as do regional agencies, and our sister cities sharing the waterfront of both lakes, that there is sufficient scientific information, even though that information may be imperfect, to support a modest regulatory program aimed at protecting shoreline resources and existing ecosystem services.

Although a summary of science is essential to understand shoreline ecosystems as they relate to the SMA, the City's primary goal in updating the SMP is to effectively respond to the SMP guidelines included in Title 173-26 WAC.

Policy #4
Conveyance System Responsibility

POLICY:

The Utility shall own and maintain all elements of the storm drainage system in the right-of-way and in easements or tracts dedicated to, and accepted by, the Utility. The Utility should not acquire or accept additional new or existing components of the stormwater conveyance system (through easements, ownership, or other property rights) except when needed for Utility construction projects identified in the Comprehensive Drainage Plan, or when all of the following conditions are met:

1. There's a public benefit;

2. An easement or property is offered by the property owner at no cost;

3. The system meets City standards or is brought up to City standards by the owner;

4. There is access for Utility maintenance from public right-of-way; and

5. The Utility has adequate resources to maintain the system.

DISCUSSION:

Much of Bellevue's stormwater conveyance system is privately owned. Private drainage conveyance systems are those on private property on which the Utility does not have an easement or maintenance responsibility. Conveyance systems in public right-of-way are owned and maintained by the Utility. In addition, the Utility has acquired easements, right-of-way, or fee title (through purchase or dedication) for some additional conveyance system segments.

Some system components were installed by developers and then dedicated to the City, but most of the significant acquisitions were for City drainage projects. In particular, several stream reaches were obtained in order to build in-stream flood control facilities, and a supplemental trunk pipeline was built in City right-of-way in the Meydenbauer basin.

The City's historical policy has been to acquire control of conveyance system components on an as-needed basis when brought up to City standards by others or through an approved Utility project. The 1988 Comprehensive Drainage Plan generally reflects the historical policy.

The current policy is similar to that in the 1988 CDP. However:

* It combines two prior policies--one dealing with the primary conveyance system (the large, regional systems) and one dealing with the smaller conveyance system elements.

* This policy clarifies that the City will sponsor a project to bring a system up to standards only if the project is identified in the Comprehensive Drainage Plan (CDP). (If there's sufficient public benefit to upgrade a substandard private conveyance system, the project eventually will become part of the CDP.)

* Unlike the 1988 policy, this policy requires that there be access from public right-of-way and resources for Utility maintenance before the Utility will accept responsibility for a system.

An aggressive program to acquire additional segments of the conveyance system is not recommended because:

* Owning and maintaining the conveyance systems would not address the City's water quality and flood control responsibilities, since pollutants and runoff originate throughout each drainage basin. Also, most of the primary conveyance systems are streams (riparian corridors), and streams are adequately protected through local and state regulations.

* If substandard systems are accepted, the City could assume liability for damage to adjacent private structures to the extent they are damaged by flow from the conveyance system.

* The cost of acquiring all conveyance systems and bringing them up to standards would be high and would also result in increased operation and maintenance costs.

Policy #5
Detention System Responsibility in Single-Family Residential Plats/Short Plats

POLICY:

The Utility shall own and maintain all detention systems in the public right-of-way and in easements of tracts dedicated to, and accepted by, the Utility. The Utility should not accept ownership and responsibility for new detention systems or for existing private detention systems (through easements or other property rights) unless all of the following conditions are met:

1. There's a public benefit;
2. An easement or property is offered by the property owner at no cost;
3. The system meets City standards or is brought up to City standards by the owner;
4. There is access for Utility maintenance from public right-of-way;
5. The Utility has adequate resources to maintain the system; and
6. The system serves a residential plat or short plat (rather than a commercial property).

Where practical and in the public interest, multi-purpose detention facilities with shared maintenance responsibilities, should be enocuraged.

DISCUSSION:

Detention systems need to be maintained to make sure they function as designed for flood control. Detention system maintenance also benefits water quality; trapped pollutants are removed from the system rather than flushed downstream in a major storm. The City can ensure that maintenance occurs either by:

* Owning the facilities (and allocating maintenance resources); or
* Requiring maintenance through its private maintenance and inspection program (PMI).

The 1988 Comprehensive Drainage Plan policy called for the Utility to seek ownership of private detention systems in single-family plats, regardless of whether those systems met standards. The policy called for the Utility to prioritize system improvements with other Utility needs. That policy was adopted for three reasons:

1. City ownership clarifies maintenance responsibility (and therefore can improve reliability); maintenance responsibility among property owners in a single-family plat may be poorly defined or assigned to a homeowners' association that is not well organized.

2. It was consistent with City acceptance of substandard drainage systems in annexed areas.

3. It was perceived as more equitable to single family ratepayers.

However, since that policy was adopted only two of the 21 private detention systems in single-family plats were assumed by the City due to budget constraints. The current policy does not seek to acquire all private single-family plat (or short plat) detention systems (but instead would have the City accept them under more limited circumstances) for the following reasons:

1. Assuming substandard systems could increase City liability.

2. If all the single-family private detention systems were assumed by the City and upgraded to current standards, the City would incur over one million dollars in capital costs

3. Annual maintenance cost would be significant. There are currently 19 private single-family plat detention systems and 45 private short-plat systems, and the cost of City maintenance would be about $2,200 per plat and $250 per short plat. This cost would be partially off-set by reduced staff time needed to inspect the systems.

4. It is not necessarily more equitable to ratepayers for the City to assume ownership of private systems. Private systems cost less to install, and the original economic benefit should have been passed down to the property owners. Also, the 1988 policy pertained to plats, not short plats, so not all detention systems serving single-family homes would become public under that policy. Finally, the question of ratepayer equity can be looked at in rate studies.

The current policy allows City ownership of detention systems under circumstances that minimize City costs and liability. The Utility's private maintenance and inspection program will continue to work with property owners to ensure maintenance of privately owned detention systems.