

Agenda

ENVIRONMENTAL SERVICES COMMISSION MEETING

450 - 110th Avenue NE (City Hall)
Conference Room 1E-113
Thursday 6:30PM
June 6, 2013
Regular Meeting

	<u>Page No.</u>	<u>Action</u>
1. Call to Order – Brad Helland, Chair		
2. Oral Communications Note: Three-minute limit per person, maximum of three persons for each side of topic. Additional presentation may be heard at Agenda Item 8.		
3. Elect Chair & Vice Chair		X
4. Approval of Agenda *	1	X
5. Approval of Minutes * • May 2, 2013	2-11	X
6. Reports & Summaries		
Information		
• Conservation & Outreach Events & Volunteer Opportunity *	12	
• Council Calendar *	13-14	
• ESC Calendar *	15-16	
Presentations		
• Wastewater System Plan – Findings & Recommendations *	17-27	
• City Comprehensive Plan Update *	28-33	
7. New Business		
8. Director's Office Report		
9. Continued Oral Communications		
10. 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
May 2, 2013
6:30 p.m.

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

COMMISSIONERS PRESENT: Vice Chair Swenson; Commissioners Cowan, Mach, Wang, and Weller

COMMISSIONERS ABSENT: Chair Helland, Commissioner Morin

OTHERS PRESENT: Bob Mulvey, Bill Heubach, Dave Dickson, Regan Sidie, Paul Bucich

MINUTES TAKER: Laurie Hugdahl

1. CALL TO ORDER:

The meeting was called to order by Vice Chair Swenson at 6:30 p.m.

2. ORAL COMMUNICATIONS

Ellen Curr, 4255 134th Ave NE, Bellevue, WA 98005, Co-Vice President of Bridle Trails Community Club, discussed the water project on the agenda. She stated that the community club had invited Nav Ota and her team to speak to them a couple months ago. There was an incredible turnout of over 80 people at a very passionate meeting. The club members are very concerned about the park as it is a cornerstone of the community. The water tower is old so most folks were in support of the retrofit, but not an expansion as it would remove an inordinate amount of trees and reposition trails. The people in the community appear to be opposed to a project of this scale in their neighborhood. She requested that the group be kept in the loop throughout the process.

3. APPROVAL OF AGENDA

Motion made by Commissioner Cowan, seconded by Commissioner Mach, to approve the agenda. Motion passed unanimously (5-0).

4. APPROVAL OF MINUTES

April 4, 2013 Regular Meeting Minutes

Motion made by Commissioner Mach, seconded by Commissioner Cowan, to approve the minutes as presented. Motion passed unanimously (5-0).

5. REPORTS AND SUMMARIES

Information

- Conservation & Outreach Events & Volunteer Opportunity

Deputy Director Mulvey pointed out that the Waterwise Garden Volunteer Work Parties would be held on May 1 and 15 and on June 15 and 19.

- Council Calendar

Deputy Director Mulvey noted that there are several consent items on the agenda in May. Commissioner Mach referred to the King County Waste Water Capacity Charge Briefing scheduled for May 28 and asked if the ESC would be receiving a briefing on that matter also. Deputy Director Mulvey was not sure, but indicated he would look into it. Commissioner Mach suggested that at least the presentation packet from the Council meeting could be forwarded to the ESC.

- ESC Calendar

Staff will be bringing forward recommendations and a draft of the Wastewater System Plan starting in June and continuing for a few months.

- King County Solid Waste Interlocal Agreement—Information Only

Commissioner Mach said he thought that the deadline to sign the extension was in April. Deputy Director Mulvey agreed, but noted that the City has elected not to move forward with the current agreement. He stated that there will be a lot of decision points in the future.

Presentations

- Asset Management Program & Failure & Claims Analysis

Bill Heubach, Senior Utilities Engineer, explained that he would be presenting the annual update and the presentation regarding failures and claims. He reviewed the purpose and goals of asset management. The EPA's asset management framework has five core objectives: determine the state of the assets; determine what customer service levels are required; determine asset criticality; determine the strategies that provide the required level of service at the lowest life cycle cost; and determine the funding strategy. Mr. Heubach pointed out that the cost to construct all of Bellevue's existing assets would be \$3.5 billion today. This represents a \$100,000 investment per connection. Assuming an average asset life of about 100 years, it would cost \$35 million per year to replace 1% of the assets each year. The current CIP is around \$14-15 million per year; however, there are techniques such as relining pipes that are a lot less expensive than digging out and replacing pipes.

In order to keep track of its assets, the City uses a number of different programs and databases. Maximo is used to store the basic asset information, work order history, and the cost of maintaining those assets. JD Edwards is used to keep track of capital costs such as engineering design and construction costs. GIS programs are used to do geographic analysis and make maps. Auxiliary databases are used for CCTV assessment, sorting videos, and condition assessing reports. The City is currently working on getting this data integrated so it is more useable. One of the processes being worked on right now is updating mapping processes so that data will be GIS-based and go directly into Maximo. Mr. Heubach commented that the ultimate goal is to be able to open a GIS program, click on an asset, and have all the related information about that asset available in one place.

Condition assessment is also part of knowing your assets. On the water side it is fairly difficult and expensive to do a condition assessment of an active, pressurized water main so for those the City relies on reports from field crews whenever they work on the mains. In addition to the water mains, a pump station evaluation report was completed a few years ago which gave the City a better handle on the condition of the pump stations and what types of projects will be needed in the future. Also, each reservoir usually gets taken down for cleaning and inspection every couple of years. For wastewater, approximately 10% of the wastewater pipelines are videoed each year and ranked on criticality of the pipeline. There is a systematic program to make sure all the pipelines are videoed every 20 years. In addition to the CCTV program, there is a lakeline assessment program which is currently underway and will determine an estimate of when the lakelines need to be replaced. In addition to the pipelines and lakelines, a consultant is reviewing the condition of seven wastewater pump stations in order to have a representative sample to better project what the future needs will be.

The wastewater forced mains will be evaluated in the next few years. Some forced mains are asbestos cement pipes which are more prone to failure. On the stormwater side there is a CCTV program for the pipelines. About 2% of the system is done each year so the City doesn't have as good idea of the condition of the stormwater pipelines. At this rate it will take 50 years to complete the assessment. One issue is that the City doesn't know exactly when the pipelines were installed. There is a plan to bring a temporary person on board to help with researching and determining the age of the stormwater pipelines. Right now staff is doing inventory and condition assessment for stream culverts on a basin-by-basin basis. Staff hopes to finish the culvert assessment later this year. The concern is that a lot of the culverts are corrugated metal pipes which have a short lifespan depending on environmental conditions.

Service levels on the water side were reviewed. The target level is three unplanned water incidents per 1000 customers a year. Over the last five years, the actual performance has been below the target level. Asset criticality is based on risk where risk is defined as *the probability of failure times the consequences of failure*. Mr. Heubach showed two color-coded maps as

examples that demonstrated how is used to prioritize wastewater main CCTV inspection and asbestos cement watermain replacement. Once staff knows what the assets are, what the conditions are, and what the required level of service is, they can start developing strategies to maintain and improve the assets. As an example, he reviewed a chart identifying the most cost-effective strategies for the Wilburton area wastewater capacity improvements by looking at a summary of life cycle costs. After the strategies are identified, funding strategies are evaluated. Bellevue's approach has been to establish R&R funds. Charts showing the forecast for water and wastewater projected R&R by asset type were reviewed. Stormwater does not have a chart because more data is needed.

Mr. Heubach summarized that the overall goal is to meet customer service levels at the least possible cost while minimizing risk. There is also a bigger picture that having reliable utilities at somewhat stable rates is part of having a vibrant, attractive community. Replacement needs are increasing as the assets are aging. The City is following the EPA framework for its asset management approach.

Commissioner Wang referred to the Five-Year AC Main Replacement Plan and asked about the timing for the Lake Sammamish line. Mr. Heubach stated that this was planned for 2016. Staff believes the pipes are in good condition, but is concerned about potentially unstable geotechnical conditions. What happened in 2012 with the West Sammamish break, is why replacement of these lines has been given higher priority.

Commissioner Mach asked if system information is kept pretty up-to-date when facilities are modified or replaced. Mr. Heubach noted that the lag time between construction and when the asset data is updated is about a year with the current process which can be a challenge.

Failures and Claims

Mr. Heubach explained that the purpose of the presentation was to show trends of where the failures are occurring so the information can be used to best allocate resources. Watermain failures have been fairly constant over time. On one hand the AC pipes are aging, but the City has also started a ramp-up of the amount of AC pipe replacement. The national average is 20-30 failures per 100 miles of pipe per year. A breakdown of watermain failure rates shows that the AC 4-inch pipes are the biggest problem. Usually AC pipe problems result in catastrophic failures; however the number of 4" AC main AC failures has been going down for the last few years. Unfortunately, the number of 6-inch AC failures has been going up. Mr. Heubach pointed out that water utility claims have been up and down. In 2012 there was a large spike upward because of West Lake Sammamish. In 2010, the spike was due to a couple 6-inch AC main failures.

Wastewater overflows have decreased since 2007. This is primarily due to some improved maintenance practices. Staff is hoping that this trend will be

maintained. Although the number of overflows on mains stubs and lakeline, is similar, there are few miles of lakeline, and stubs so the lakeline and stub failure rate are significantly higher than the main failure rate. Mr. Heubach noted that the pump station overflows are more capacity issues than actual failures with the pump stations. Wastewater utility claims and the amount of claims have both gone down.

On stormwater, the number of failures is highly correlated with rainfall events. Most of the stormwater failures are blockage issues from leaves and other debris although there are also a few structural failures each year. Stormwater utility claims are up and down corresponding to heavy rain events. Mr. Heubach displayed a claims map showing where claims for all three utility are occurring throughout the City.

Vice Chair Swenson asked if there are geographic concentrations of claims that are traceable to relating to certain developers, expansion, activity in the area, or regulations in effect at the time. Mr. Heubach noted the City hasn't noticed a pattern with regard to regulations, but there are certain developments that have more problems. Somerset is one such area.

- **Wastewater Condition Assessment Program**

Dave Dickson, Wastewater Superintendent, read the memo in the ESC packet on page 136 regarding the Wastewater Condition Assessment Program. He then explained that the wastewater service area is 37 square miles, 680 miles of pipe, 135,000 customers, 37,000 residential connections, and 56 drainage basins. He showed samples of defects and maintenance problems that staff has found such as a collapsed service stub, grease build-up, a damaged pipe, an aging pipe, a deflected pipe joint, severe swale, a natural gas pipe bored into the main, roots, pilling into a pipe, severe exposed aggregate, and multiple fractures. The condition assessment information is used by engineering for asset management and capital improvements. It is also used for risk management and transportation. All data and videos are available to engineering and O&M staff at their desktops allowing for sound judgments of resource allocations.

Superintendent Dickson then reviewed photos of a sewer main replacement, spot repair, pipe line cycle review, transportation street overlay, and examples of claims and investigations. He explained that the condition assessment information is used by the wastewater crews for corrective maintenance, preventative maintenance, blockages, locates, inspections, and quality controls. Photos showing examples of each were reviewed.

Superintendent Dickson compared old equipment with the new equipment. The utility started videotaping its sewer infrastructure back in the 1970's. The cameras used to be on skids and were pulled from manhole to manhole using ropes and cables. It was very labor and time intensive and caused many traffic problems. There was also no way to view up the service stub. Videos were

stored on beta and then later VHS tapes. Paper files were difficult to access. The current equipment is self-propelled. The cameras have full pan, tilt, and zoom capabilities and are locatable. It is now possible to view service stubs. The images are stored digitally with mobile access in the video trucks. There is unlimited access to the database by engineering and O&M staff via a GPX interface.

Superintendent Dickson summarized that the result of the condition assessment is that there is a more complete knowledge of the system, resources are properly selected and applied, and there is a reliable sewage conveyance system to dispose of the wastewater ultimately resulting in a sustainable environment, neighborhoods, and businesses. As a public agency, it is staff's responsibility to make sure that the City of Bellevue is an attractive area to live, play, work, and conduct business. A reliable sewage conveyance system is paramount to the health of any area. By placing condition assessment as the hub for information, the City of Bellevue staff has real-time and historical data to apply towards managing a complex sewage conveyance system. Working closely with engineering and asset management, capital improvement projects are developed to improve the sewer system. The information that is available now is used for comprehensive planning, rehabilitation, development, and growth for our area to attract and keep people interested in our city. The wastewater section applies the information gained by condition assessment for the day-to-day allocation of resources. Long-range planning for maintenance and repairs to the conveyances can be applied in a logical manner ensuring staff time, equipment, and materials are properly allotted.

Commissioner Wang asked if the video data is accessible by the public. Superintendent Dickson stated that it is for staff only. Any member of the public would have to submit a public records request. Commissioner Wang asked how someone could find out the condition of a particular line. Superintendent Dickson stated that anyone could call utilities to inquire about any history of an area.

Commissioner Mach asked if in-house crews are generally used for repairs. Superintendent Dickson said the City uses both in-house crews and contractors. For the most part, any new installation will be contracted out. Vice Chair Swenson asked if information about discrepancies from as-builts to what is actually there is relayed. Superintendent Dickson explained that staff does track those. When the conversion to GIS is done, it will be done a lot easier.

- West Side Storage Project

Paul Bucich, Storm Water Policy & Technical Advisor, and Regan Sidie, Design Services Manager, reviewed the west side storage project. Mr. Bucich explained that Bellevue's designs and requirements for storage are based on national and state standards. In 2006, Bellevue's Water Comprehensive Plan identified a need in the West Operating Area for additional water storage. At that time it was around 2.3 million gallons in anticipated need by 2040. In 2010, an additional evaluation was done to confirm what was needed, and it was determined that looking out even further a total of 6.5 million gallons of additional storage would be needed. This was based on new growth projections including the Bel-Red Corridor and the Central Business District. At that time it was decided to get enough storage to reach out to 2030. Recently an internal evaluation was done to confirm that the water targets are still valid. This evaluation changed the anticipated need from 4 million gallons in 2030 down to 3-3.5 million gallons. The growth and the need indicate that there is not a need for all the water right away, but there is a continuous growth need starting by 2014 and really starting by 2016.

Mr. Bucich clarified that Bellevue is part of the Cascade Water Alliance made up of about 8 cities and water and sewer districts. The main source is coming from the Seattle system. There are also emergency interties and some joint facilities with Kirkland and Redmond. In addition to Bellevue residents, Bellevue Utilities provides water and wastewater services to other communities.

In 2010 a study was completed to identify potential sites for constructing reservoirs in the short-term (3-3.5 million gallons) and the long-term (6.5 million gallons). From that study there were four primary sites that were identified. One of those sites is the Pikes Peak Reservoir which is 40-50 years old and is already in need of structural and seismic upgrades within 2-3 years at a cost of \$850,000-1,000,000.

The 2010 evaluation started off with the assumption that the City would want to build a facility on undeveloped land and, where possible, public property. A GIS exercise resulted in 435 potential parcels. This was winnowed down to 76 sites based on a preliminary table top exercise. This was further reduced down to 10 sites based on desirable characteristics such as elevation, hydraulics, existing reservoir, etc. The final four sites were: the Pikes Peak Reservoir (existing site), Woodridge Reservoir (existing site), Meydenbauer Reservoir (existing site), and the Watershed Park (new site).

The Pikes Peak Reservoir rose to the top based on the fact that it already needs about \$1 million in improvements. There has been a lot of concern expressed about this site in that the evaluation did not look at sites that encompassed condemnation or acquisition. There was also concern about some of the assumptions that went into the original evaluation. Mr. Bucich stated that the Meydenbauer site would be twice as expensive over the life

cycle as two of the other sites because the water would have to be pumped and moved more. After listening to the community members, staff has re-evaluated the process and stated an intention to confirm and validate the process. Staff also plans to open this up and do a second phase to make sure they haven't missed any potential sites, including private parcels that would have been excluded in the 2010 study. Sites that were in the 2010 study that met the engineering criteria will be put back in the fold along with the top four. This has been communicated with the community at Bridle Trails. The sites will be looked at from an engineering perspective, and then the community will be engaged in the process to develop criteria that they feel was missed in the last evaluation. That community involvement process hasn't been finalized yet. At the end of the process, no more than five sites will be selected, and Utilities will make the final selection of what makes the most sense based on all the criteria.

Mr. Bucich reviewed the proposed process which will include a couple of open houses preceded by neighborhood outreach. Staff is considering a 12-person community participation committee (CPC) which will assist the City with the development of community criteria. Once that criteria is determined, the City will go out to more focused neighborhoods to present the condensed site list based on engineering and utility criteria. Site specific neighborhood meetings would then be planned based on the list of the final four to five sites. Mr. Bucich reviewed the role of the ESC in this process including the initial briefing (tonight), engagement with the engineering evaluation criteria, engagement with community evaluation criteria, and final recommendations to the City Council. The City wants to have a reservoir completed by 2016. Staff is currently working with an independent engineering firm to develop a scope and a cost estimate to do the assessment of the top ten sites and the top five after that.

Commissioner Wang asked when staff intends to come back to the ESC. Mr. Bucich thought it would be in August or September. Commissioner Wang asked about the other six sites that were not selected in the final four. Mr. Bucich said those would go back in the mix for re-evaluation. Commissioner Wang indicated he wanted to know what those sites were anyway and would like to see them on a map with some type of topographic contour. He then asked where the most need for the water is. Mr. Sidie explained that the areas needing the increased storage are the Central Business District (2.4 million gallons) and Bel-Red and Wilburton rezone area (4.1 million). However, areas where reservoirs might be sited don't necessarily fit in those exact locations. There are issues for engineering to consider for the locations such as elevation, pumping, and conveyance.

Vice Chair Swenson asked about looking at sites outside of Bellevue. Mr. Bucich noted that the City is looking at and has looked at several sites outside of Bellevue. Elevation and proximity are key factors.

Commissioner Mach acknowledged that residents in some areas are more vocal than others, but he hopes all areas will have an equal voice going

through the public process. He also hopes that the fact that the City might have a higher concern of appeals with some areas doesn't overly impact the City's decision. Mr. Bucich concurred and noted that this is very important to staff, which is why the City has developed this process. In fairness to the entire community, the City cannot allow one particular voice to drive the process. Staff intends to do outreach to get representation from all areas as much as possible.

Vice Chair Swenson raised concerns about water need projections in relation to conservation efforts. Mr. Sidie stated that a lot of the conservation savings have been realized to date. Cascade Water Alliance's projections may be different because theirs are regional projections while the City's projections are solely based on the development potential in the downtown area and in the newly rezoned Bel-Red areas. Mr. Bucich pointed out that the new reservoir doesn't have to be filled up all the way immediately. As the need increases it could be filled up more. The construction of a second new facility could also be delayed if necessary based on future demand.

There was some discussion regarding the buying capacity issue with Cascade Water Alliance where the City has been paying for water that is not theoretically being used. Mr. Bucich commented that what is being discussed here is actual utilization on the ground. Commissioner Cowen commented that the amount of water purchased from Cascade was based on projections of growth. Mr. Bucich pointed out that if the City doesn't have a storage facility to put the water in to use it, it is definitely a problem.

Commissioner Wang asked for more information about the consultants being used. Mr. Bucich stated that there are three consultants being used, each with different areas of focus. These include RH2, MSA, and Cascadia Consulting.

Commissioner Mach said he was very interested in the public outreach portion of this process. He asked to be kept informed as the process goes along. Mr. Bucich said that staff is trying to design the website so that all the information for the project will be kept current on there. In order to be streamlined and efficient staff is trying to keep the CPC to 15 to 20 active participants.

Commissioner Swenson commented on the importance of having members of the ESC engaged in this process. Mr. Bucich concurred. He commented that having an ESC member sitting as an official member on the CPC had been discussed, but the general sense was that it might not be a good idea. Staff will be bringing information to the ESC to evaluate and to vote on moving forward to the Council. To some extent there is a sense that the members of the ESC need to remain impartial even while being engaged.

6. NEW BUSINESS

Vice Chair Swenson brought up the issue of changing the day of meetings for the benefit of Chair Helland. Deputy Director Mulvey offered to get in touch with Chair Helland to find out more about his situation.

7. DIRECTOR'S OFFICE REPORT

Mr. Mulvey thanked the commissioners who attended the Brightwater tour. He offered to make arrangements for a tour for anyone who was unable to attend.

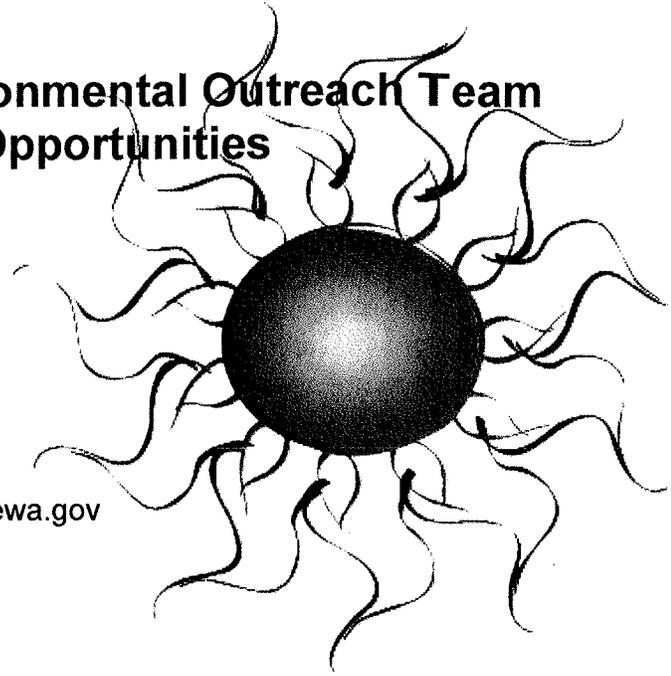
8. CONTINUED ORAL COMMUNICATIONS

Pamela Johnson, 3741 - 122nd Avenue, pointed out that the Kirkland watershed is in Kirkland, so that site would require significant cooperation with the City of Kirkland to use that property. Also, the Bridle Trails Park is actually a state park, so it would require a lot of work with the state. She expressed concern that she didn't hear any talk about grey water or solar power for pumping stations. She encouraged the City to think broadly about some of these things. She also stated she didn't understand the term CPC as opposed to CAC.

9. ADJOURNMENT

The meeting was adjourned at 8:54 p.m.

Utilities' Communications & Environmental Outreach Team Events and Volunteer Opportunities



June

Waterwise Garden Volunteer Work Party

Location: Bellevue Botanical Garden

Date: June 5th & 19th, 1 pm to 3 pm

Staff: Patricia Burgess, x4127, pburgess@bellevuewa.gov
Karren Gratt, x6166, kgratt@bellevuewa.gov

Natural Resources Week

Location: Lewis Creek Park

Date: June 4th, 6th, and 7th, 10 am - 1:30 pm

Staff: Laurie Devereaux, x5200, ldevereaux@bellevuewa.gov

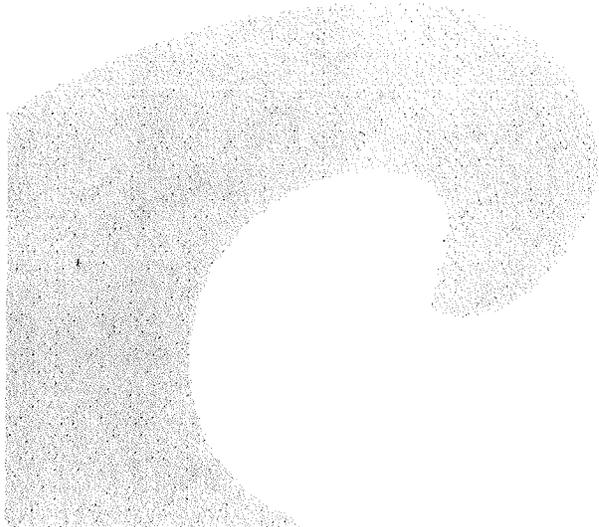
July

Waterwise Garden Volunteer Work Party

Location: Bellevue Botanical Garden

Date: July 3rd & 17th, 1 pm to 3 pm

Staff: Patricia Burgess, x4127, pburgess@bellevuewa.gov
Karren Gratt, x6166, kgratt@bellevuewa.gov



2013 Tentative Council Calendar

May 13						
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June

- 17** Consent: Resolution authorizing general services contract for bill print & mail services (Virginia)
 Consent: Resolution to Award Prelim Eval of Potential Sites for the WOA Storage to MSA Engr (Regan)
 Consent: Resolution to Award Prelim Final Design Svcs for B'field PS to RH2 Engr (Regan)
 Public Hearing - To declare Utility Owned Property Surplus (Lucy/Bob)

- 24** KCD Task Force Briefing (Alison)

July

- 8** SS: Storm & Surface Water System Plan Presentation (Paul/Kit)
15 Consent: Resolution to Adopt Storm & Surface Water Comp Plan (Paul/Kit)

August

- 5** 2014 Solid Waste Collection Contract (Lucy/Susan F2)

November 13						
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Key:

Agenda item description – **Consent:** Waste Reduction & Recycling Grant

Assistant Director's Name or designated staff that will

be available to attend Mayor's meeting

Staff Name – material content expert

2013 Pending Council

Bellevue/Redmond Consolidation of Sewer Agreements – Wes

Briefing – New NPDES Municipal Stormwater Permit (2013-2018) – Phyllis & Paul (Tentative June)

Katie/2013Calendars/Pending Council Calendar

Updated 5/20/13

2013 Tentative Environmental Services Calendar

May 13						
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July

11 CIP Tour

August

1 Commission Recess

September

5 City Comprehensive Plan Update (Pam)
Sewer Lakeline Report (Regan/Jay)
Tentative Water System Plan Update - Introduce Policies (Pam/Doug)
Wastewater System Plan - Provide Draft Plan (Pam/Doug)
Water Cost of Service Study (Lucy/Bob B)
West Side Storage Project (Regan/Paul)

June 13						
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July 13						
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October

3 Tentative - Phantom/Larsen Lakes Drainage Investigation (Paul)
Tentative - Water System Plan Update - Present Planning Criteria (Pam/Doug)
Tentative Water System Plan Update Complete Policy Review (Pam/Doug)
Update on 2014 Solid Waste Contract Vendor Selection (Susan/Elaine)
Wastewater System Plan - Open House 1 hour before regular meeting (Pam/Doug)
Wastewater System Plan Discuss/Respond to questions about draft plan (Pam)

August 13						
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September 13						
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November

7 2013 Solid Waste Contract Performance Review (Lucy/Elaine)
City Comp Plan Update (Pam)
Waste Water System Plan - ESC Recommendation to Council for Adoption of Draft Plan (Pam/Doug)
Water Rate Design (Bob B)

October 13						
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December

5 Draft NPDES 2014 Stormwater Mgmt. Program (Paul)

December

5 Phyllis)
Tentative - City Comp Plan (Pam)
West Side Storage Project (Regan/Paul)

November 13						
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January 14						
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April 14						
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Pending – ESC:

Status Reports on the following issue will be made when there are significant development:

Nothing pending at this time.

Katie/2013 Calendars/Pending ESC Calendar

Updated 1/4/2013



City of
Bellevue

Post Office Box 90012 • Bellevue, Washington • 98009 9012

Action
 Discussion
 Information

May 28, 2013

To: Environmental Services Commission
From: Pam Maloney, Water Resources Planning Manager
Subject: Wastewater System Plan Update
Plan Findings and Recommendations

Action Required at this Time

Staff will present the results of wastewater system analysis that was undertaken as part of the Wastewater 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 Wastewater System Plan.

Background

Bellevue's Comprehensive Wastewater Plan was adopted by Council in 2002. An update to the Plan is underway; it is now known as the 'Wastewater System Plan'.

Major elements of this system plan update include:

- Review of wastewater utility general policies;
- Review of system planning criteria;
- Revised service area population forecasts;
- Capacity evaluation of the parts of the wastewater system that were assumed from Coal Creek Utility District in 2003;
- Re-evaluation of system capacity in downtown Bellevue;
- Analysis of basin-wide flow monitoring and infiltration & inflow investigations;
- Updated programmatic and capital investment recommendations for a 20-year planning horizon; and
- Updated descriptions of wastewater system operational practices.

Proposed changes to wastewater policies and the wastewater system planning criteria used for analysis of the system were previously discussed with the ESC. The programmatic and capital recommendations that are outcomes of system evaluation will be presented in June.

Recommendations

Plan recommendations for a 20-year planning horizon are based on:

- Computer analysis of projected flows for forecasted population, compared with existing system capacity;
- System operational experience; and
- Asset management program recommendations for system renewal and replacement.

The recommendations are aligned with the last Wastewater Comprehensive Plan—there are no surprises. Plan recommendations will lead to future utility investments (capital and operating), so it's important that the ESC understands and can support them. Planning level costs for each recommendation will be provided as part of the presentation.

Plan recommendations fall into three categories. The first focuses on areas of the system which convey high volumes of stormwater inflow and infiltration (I&I), creating **potential capacity issues not related to population growth**. Increasing I&I is an expected natural consequence of aging systems. King County's regional flow monitoring program provided real flow estimates to incorporate into the model. With I&I added to build-out flow projections, computer analysis identified several areas where flows could exceed system capacity, resulting in surcharging and the potential for sewer overflows. Model predictions are conservative and I&I data is imprecise (averaged over entire basins), so historical operational experience was also used to corroborate areas of concern. The Plan recommends a programmatic approach to cost effectively address capacity problems associated with I&I:

- Further, more targeted flow monitoring,
- Targeted I&I investigation,
- Elimination of unauthorized or inadvertent stormwater sources,
- Considering pipes with high infiltration for earlier replacement as part of the sewer pipe replacement program, and
- If those actions are unsuccessful, evaluate alternatives to divert flow or increase capacity.

The second category of recommended investment is for **projects to add system capacity for anticipated population and employment growth**. Each of these projects was previously anticipated and is budgeted in the adopted CIP program:

- Capacity improvements to the major conveyance pipes and pump station serving the east side of Downtown;
- Upgrades to the Wilburton sewer and Midlakes Pump Stations to accommodate growth as a result of the Bel-Red and Wilburton rezones;
- Recognize the need for sewer extensions to undeveloped pockets or to serve septic areas.

Lastly, the plan recognizes strategic management of wastewater assets over their entire life cycle as critical to maintaining service levels cost effectively and managing risk. It recommends **continued investment in renewal and replacement of assets consistent with the Utility Asset Management Program (AMP)**. Wastewater AMP refinements based on independent program review in 2012 are incorporated. Specifically:

- Continued R&R investments already included in the Utility CIP are recommended, but with additional funding for sewer pipe replacement/relining and pump station rehabilitation.
- Increased emphasis is placed on the need for sewer lake line replacement, with details about the timing of replacement of specific segments dependent on outcomes of the condition assessment study currently underway.
- Pressurized sewer pipes (forcemains) have a higher consequence of failure than standard gravity pipes, and particularly those constructed of asbestos cement pipe have an increased likelihood of failure. The Plan recommends development of a prioritized replacement strategy for forcemains as a separate asset class from gravity sewer mains because of the increased risk should they fail.

Attachments:

- 1) Powerpoint presentation "2013 Wastewater System Plan Update Findings and Recommendations"

2013 Wastewater System Plan Update

Findings and Recommendations

Wastewater System Plan

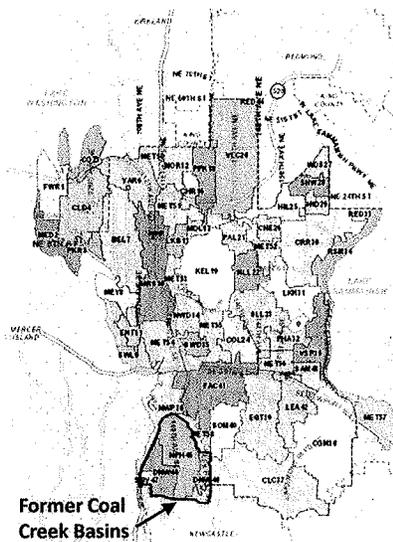
Affirms and Documents

- System operational policies
- Operational practices
- System evaluation criteria such as flow per capita and population projections

Recommends capital investments for a 20 year planning horizon

Wastewater System Analysis

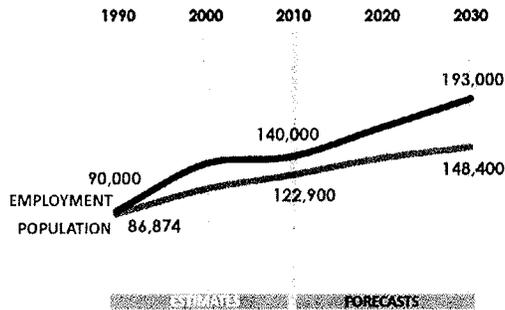
- Hydraulic computer model
- King Co. and local flow monitoring
- Included the Bellevue-assumed portions of the Coal Creek Utility District
- Staff operational experience
- 2012 Wastewater Asset Management Program review



5

Wastewater System Analysis

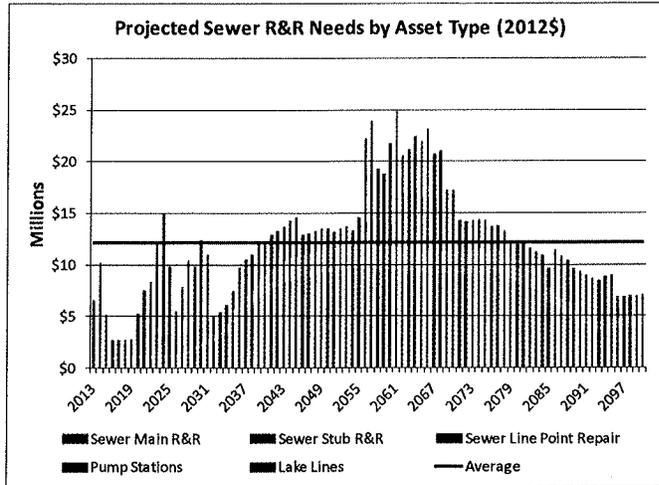
Bellevue population & employment



- With Eastgate Annexation, Bellevue population is 130,100.
- 2030 Population forecast of 148,400 includes
 - 9000 new residents Downtown
 - 8500 new residents in Bel-Red/Wilburton
- Downtown jobs forecast to grow from 40,000 in 2010 to 79,000 by 2030

6

Wastewater System Analysis



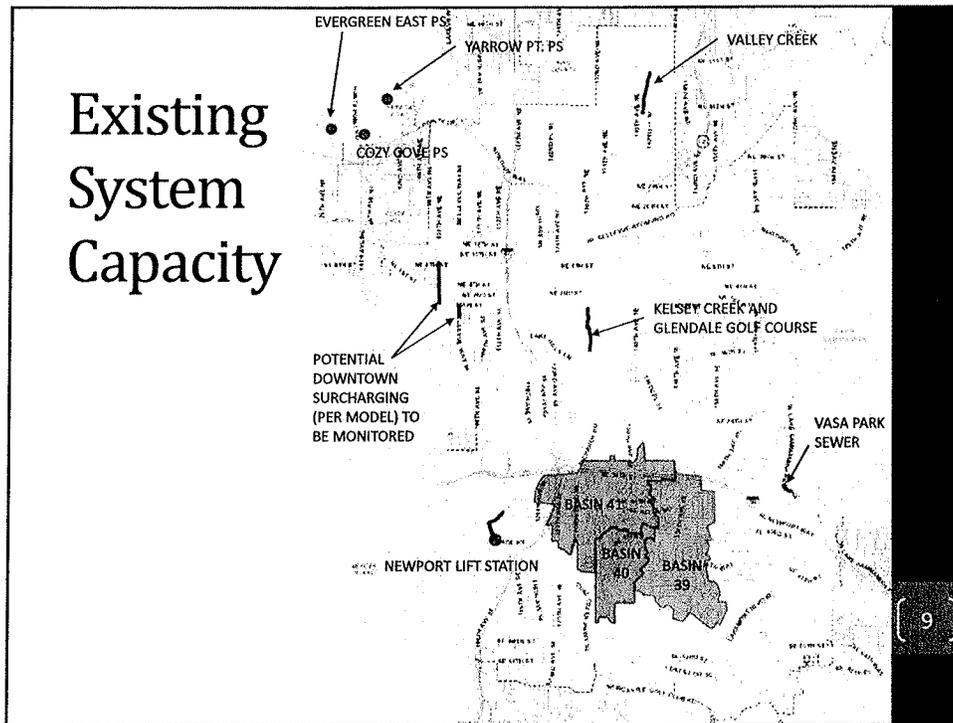
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Plan Recommendations

We need to invest in:

- Existing System Capacity
- System Capacity to meet Planned Growth
- Infrastructure Renewal and Replacement

{ 8 }

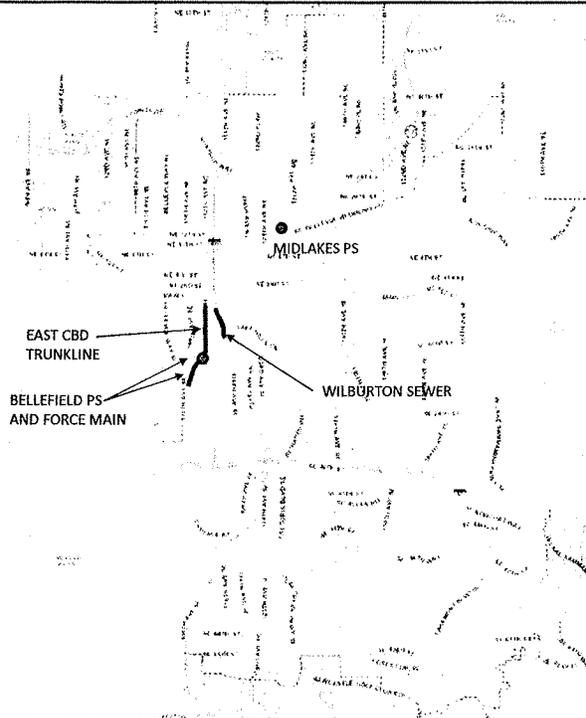


Existing System Capacity

Recommendations:

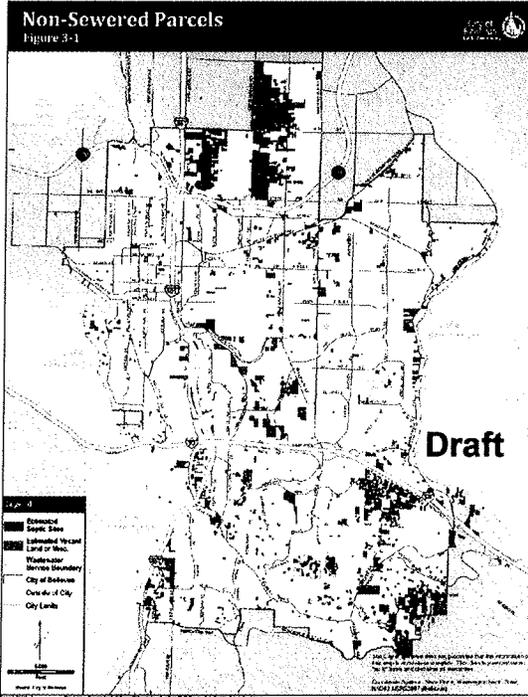
- Establish a sewer flow monitoring program for areas of concern
- Perform targeted I&I investigation, including smoke and dye testing
- Require elimination of unauthorized or inadvertent connections of sump pumps or roof drains
- Incorporate findings into plan for renewal or replacement of assets
- Where necessary, evaluate alternatives to divert or bypass flows, or increase pipe or pump station capacity

Capacity for Growth



11

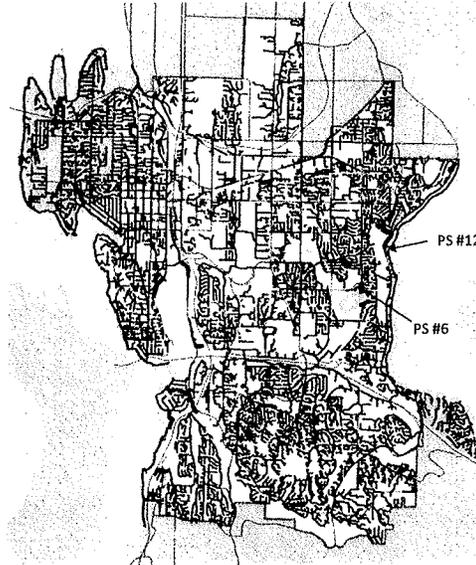
Capacity for Growth



12

Infrastructure Renewal: Pipes

- Gravity Mains –
525 miles
- Sewer Stubs –
130 miles
- Force Mains –
5.8 miles



13

Infrastructure Renewal: Lakelines

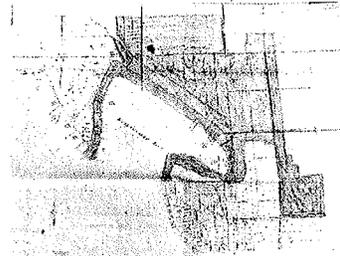
- Lake
Washington:
14.6 miles
- Lake
Sammamish:
4.1 miles



14

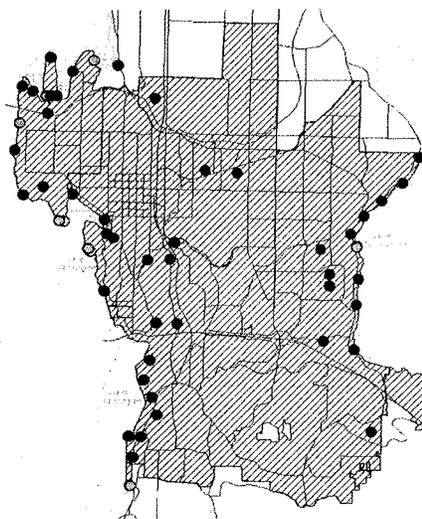
Infrastructure Renewal: Lakelines

- Rehabilitation
 - Limited Options; Limited Benefit
- In-kind replacement in lake
 - Expensive; City access on private land
 - Mercer Island: \$1,200+ per L.F. in 2008
- In-kind replacement on land
 - Impact/Disturbance on Private Property
- Low pressure grinder pumps
 - Question of who maintains
- Vacuum pump systems



*Original (1948) Bellevue Sewer District
(Meydenbauer Bay)*

Infrastructure Renewal: Pump and Flush Stations



- KC Metro Pump Stations
- Bellevue Pump/Lift Stations
- Lake Line Flush Stations
- Existing On-Site Backup Power

Wastewater System Plan

Recommended investments for

- Evaluation and resolution of potential capacity problems in the existing system
- Add capacity to meet planned population and employment growth
- Continue to renew and replace wastewater system assets responsibly to cost-effectively maintain service levels and manage risk

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Wastewater System Plan

Questions?

18



MEMORANDUM

DATE: May 30, 2013

TO: Environmental Services Commission

From: Pamela J. Maloney, Water Resources Planning Manager, Utilities
425-452-4625 pmaloney@bellevuewa.gov
Nicholas Matz, Senior Planner, Planning and Community Development
425-452-5371 nmatz@bellevuewa.gov

SUBJECT: Comprehensive Plan Update: Utilities, Capital Facilities, and Environment Policies

The Environmental Services Commission has an opportunity over the next several months to provide input in support of the City's major update of the Comprehensive Plan. In particular, the Utilities, Capital Facilities, and Environment elements contain policies that guide Utility operations.

This memo describes the larger framework of the update, as well as the approach for updating the Utilities, Capital Facilities, and Environment elements. It answers the questions: Why are we updating the plan; where are we in the process; and what are the update goals specific to these elements?

Why are we updating the plan?

The Comprehensive Plan captures the community's vision for the future of Bellevue, sets policy that directs City actions and decisions, and guides capital investments. With the Comprehensive Plan, the City plans for people, for places to live and recreate, for jobs and a strong local economy, for schools and colleges, and for a healthy environment.

Bellevue is periodically required to update its Comprehensive Plan to ensure continued compliance with the state Growth Management Act and, just as important, to ensure it reflects the dynamic changes and trends that have and will continue to affect the growth of the community. The City's Comprehensive Plan last underwent a major review in 2004. With adoption scheduled for 2014, this will be a 10-year update of Bellevue's Comprehensive Plan.

Where are we in the update process?

Following the October 22, 2012 Council briefing on the Comprehensive Plan update, staff presented Comprehensive Plan update information to the Planning Commission at their December 12, 2012 and February 13, 2013 meetings; and to the Environmental Services Commission at your December 6, 2012 meeting. Several ESC commissioners participated in the Joint Boards and Commissions Update Forum on January 24, 2013. Each of these engagements allowed the Commission to provide early input on the needs of the Bellevue community, and on the scope of the Comprehensive Plan update.

Planning and Community Development (PCD) project staff will soon return to Council for approval of the update schedule and scope; a point that starts work towards proposed amendments. Engagement with the commissions and with the community will continue throughout the Comprehensive Plan update process.

General schedule for the Comprehensive Plan Update

2012	2013	2014
Review of existing Comp Plan		
Data collection		
Council Initiation		
Scoping		
	Analysis and development	
We're here	Draft and review potential amendments	
		Public Hearing
		Council adoption
Community outreach		

What are the update goals specific to the Utilities, Capital Facilities, and Environment Elements?

The **Utilities Element** includes policies regarding city-managed and non-city-managed utility facilities. The policies guide the siting of utility facilities in the city, focusing on their quality, reliability, capacity, safety, and regulation. Updating the Utilities Element will include:

- 1) Assuring continued compliance with the State Growth Management Act (GMA):
 - a. Per WAC 365-196-420, the Utilities Element must contain the general location, proposed location, and capacity of all existing and proposed utilities, including but not limited to electrical lines, telecommunication lines, and natural gas lines.

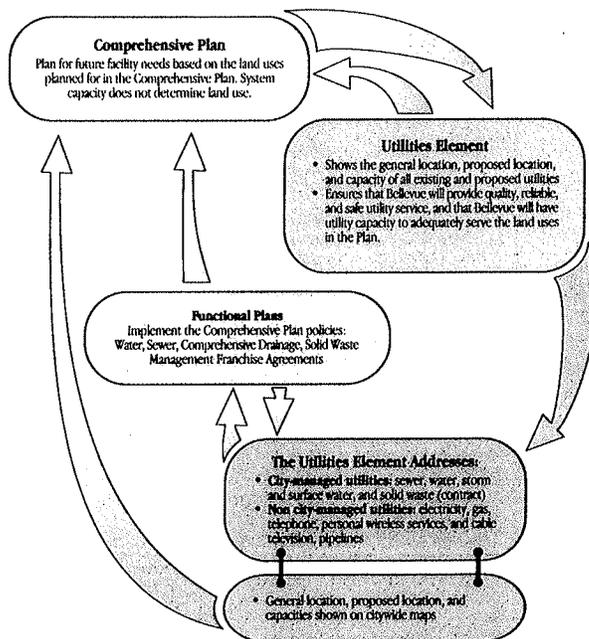
The WAC further recommends that Utilities Elements include:

- b. Integration with the Land Use element for the location and capacity of utility facilities to serve anticipated growth over the planning period;
- c. Evaluation of whether facilities should be identified as essential public facilities to assist with difficult siting issues, and whether separate siting processes should be established for them;
- d. Other facility siting considerations, including whether utility facilities are subject to county-wide planning policies, accounting for anticipated growth densities per the Land Use Element, public service obligations of various utilities, the effect of siting on the ability to provide service, and balancing local design considerations against needs for system-wide uniformity;
- e. Include policy support for joint use of transportation rights of way and utility corridors; and coordination between transportation and utility plans, proposals and permitting work;
- f. Encourage cooperation between city and utility providers for vegetation management policies and plans for utility corridors; public education about preventable utility conflicts through choice of vegetation; reduction of potential critical area conflicts through consideration of alternate routes and expedited vegetation management plans and permitting;

- g. Coordination to assure consistency with adjacent city's and county's utilities elements and regional utility plans, and for coordinated process for siting of regional utility facilities.
- 2) Identifying any policy gaps. Based on preliminary review and public input to date, these issues have been identified (so far) for consideration as possible gaps:
- a. NPDES-related stormwater policy that emphasizes low impact development where appropriate;
 - b. Recognition of the importance of planned utility renewal and replacement to assure continued reliability and quality service;
 - c. Improved explanation of the nexus between the Comprehensive Plan and functional utility plans (Water, Wastewater, and Storm and Surface Water System Plans);
 - d. Policies that recognize and support changing technologies and terminology.
- 3) Recognizing and rectifying inconsistent and obsolete policies.

The Utilities Element has and will continue to point to functional system plans, including the System Plans for each city-managed utility, to meet many of the GMA requirements, as shown on Figure UT.1 of the Utilities element.

Figure UT.1
How Utilities Provide Service Under the GMA



Utilities staff will be primarily responsible for coordinating review of those sections of the Utilities element focused on city-managed utilities; PCD staff will coordinate review of the non-city-managed utility policies. The ESC is welcomed to review and comment on the entire Utilities Element.

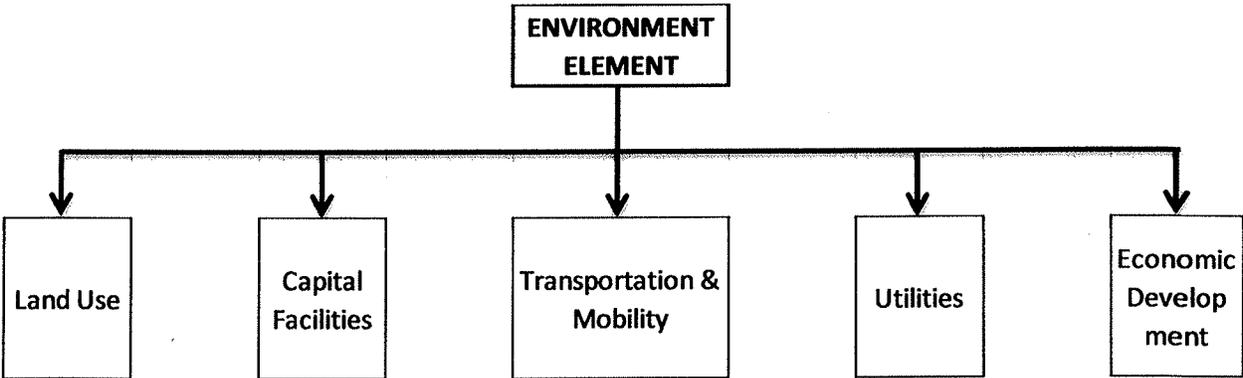
The **Capital Facilities Element** assures that public facilities are available for anticipated growth to realize the community's vision of a well-managed city. Updating the Capital Facilities Element will include:

- 1) Assuring continued compliance with the State Growth Management Act (GMA):
 - a. Per WAC 365-196-415, the Capital Facilities Element must contain at least the following features:
 - i. An inventory of publicly owned capital facilities, indicating the locations and capacities of the facilities;
 - ii. A forecast of the future needs for such capital facilities, based on the land use element;
 - iii. Proposed locations and capacities of expanded or new capital facilities;
 - iv. At least a six-year plan to finance such capital facilities within projected funding capacities, with sources of public money clearly identified; and
 - v. A requirement to re-assess the land use element if probable funding falls short of needs, as well as coordination and consistency with the land use element.
 - b. The WAC also recommends that the element include:
 - i. Include an inventory of public facilities;
 - ii. Forecast future needs for public capital facilities;
 - iii. Include a financing plan;
 - iv. Include provision for reassessment.
- 2) Identifying any policy gaps. Based on preliminary review and public input to date, these issues have been identified (so far) for consideration as possible gaps:
 - a. Clearer explanation of the nexus between the Capital Facilities Element and the city's Capital Investment Plan (CIP), which includes many of the GMA-required elements;
 - b. NPDES-related stormwater policy that emphasizes low impact development where appropriate.
- 3) Recognizing and rectifying inconsistent and obsolete policies.

The Capital Facilities Element also points to functional system plans to meet some of the GMA-mandated content.

Capital Facilities policies affect many of the city's business lines beyond Utilities, including Parks and Recreation, Transportation, Police and Fire Emergency Services; and Municipal Buildings. It also addresses non city-managed capital facilities including Public Education and Library facilities. Multiple boards and commissions will be reviewing this element.

The **Environmental Element** is less prescriptive than the other two highlighted tonight, in that its content is not mandated by GMA. It contains broad, over-arching policies that affect several other Comprehensive Plan elements, or that don't have a 'home' elsewhere in the Comprehensive Plan, as illustrated below:



As with the other elements, review will consist of identification and resolution of policy gaps, inconsistencies, and obsolete policies. Possible areas of policy gaps identified to date include:

- 1) Policy addressing the impact of climate change;
- 2) Policy regarding preservation and enhancement of the natural environment;
- 3) Incorporating policies contained in the city's Environmental Stewardship Initiative;

Multiple boards and commissions will review the Environmental Element policies.

Next Steps

At this meeting, staff will provide an overview of existing Utilities, Capital Facilities, and Environment Elements and the update process. Following the City Council's direction on the scope of the update, expected to occur in the near term, the commissions will be asked to engage in a more detailed review of the policies. Commissioners can prepare for this effort by

- 1. Becoming more familiar with existing Comprehensive Plan Policies.
- 2. Identifying any current or future issues that are not addressed by existing policies.
- 3. Identifying policies that address specific issues or strategies that have been addressed or are no longer necessary.
- 4. Identifying potential inconsistencies with other elements or policies.

City staff will be systematically evaluating the policies in parallel, as well as collecting information via various public forums about policy needs. We will return in the fall to request your specific input, and to summarize proposed changes based on staff and public input that should be incorporated into each element. For elements with policies that directly impact multiple boards or commissions (i.e. Capital Facilities and Environment), joint meetings may be scheduled to fully identify policy issues.

Staff will then craft updated elements, review them for internal consistency, and then submit them for review by the various commissions and for public comment. Ultimately, the Planning Commission will submit recommended Comprehensive Plan policies to the City Council for consideration and adoption in late 2014.

We look forward to working collaboratively with the Environmental Services Commission to address in our Comprehensive Plan the policies that impact all Bellevue utility customers.

Attachments (Provided in desk packet):

1. Utilities Element – available for download at
<http://www.bellevuewa.gov/pdf/PCD/06.UtilitiesElement2008.pdf>
2. Capital Facilities Element - available for download at
[http://www.bellevuewa.gov/pdf/PCD/05.CapitalFacilities02\(3\).pdf](http://www.bellevuewa.gov/pdf/PCD/05.CapitalFacilities02(3).pdf)
3. Environment Element – available for download at
http://www.bellevuewa.gov/pdf/PCD/CompPlan_Vol_1_09.Environment.pdf
4. WAC 365-106-420 (Utilities Element requirements per GMA)
<http://apps.leg.wa.gov/WAC/default.aspx?cite=365-196-420>
5. WAC 365-196-415 (Capital Facilities Element requirements per GMA)
<http://apps.leg.wa.gov/WAC/default.aspx?cite=365-196-415>