TECHNICAL MEMORANDUM

THE WATERSHED COMPANY

Date: October 11, 2018
To: Kelly Purnell, PSE
From: Watershed team
TWC Project Number: 111103
Project Name: Energize Eastside Critical Areas Impact Analysis – South Bellevue

Subject: South Bellevue Review Comments

Overview

This memorandum responds to select land use review comments in the City of Bellevue's August 14, 2018, comment letter regarding the Energize Eastside Project, and additional information requested by Environmental Science Associates (ESA). Information intended to address ESA's request is provided at the end of this memo.

COB Comments and Responses

The City of Bellevue (COB) comments are summarized below, followed by The Watershed Company's (Watershed's) response.

Critical Areas:

Functional Buffer

The code recognizes degraded conditions and does not use the term "Functioning Buffer." It is recognized that many buffers may be degraded (i.e., have little to no vegetation or contain structures). The Critical Areas Report (see page 27) appropriately recognizes the lack of function provided by existing impervious surfaces. It is unclear however what is meant by the term development as used in this report. As noted above in comments associated with geologic hazard areas, commercial and residential landscaping may provide some critical area function and should not be disregarded in the report. When these areas are within the prescribed buffers their function should be considered and mitigation should take into account impacts to these functions.

Watershed Response: Portions of critical area buffers that contained "development" were removed from standard buffers. Areas removed included primary structures and other areas which did not contribute to buffer function such as pavement, secondary structures, and compact gravel. Specific examples occur on the Richards Creek Substation parcel, Somerset

Substation, Coal Creek Parkway, and on some residential parcels (Figure 1). Areas characterized as commercial or residential landscaping have not been removed from functioning buffers.

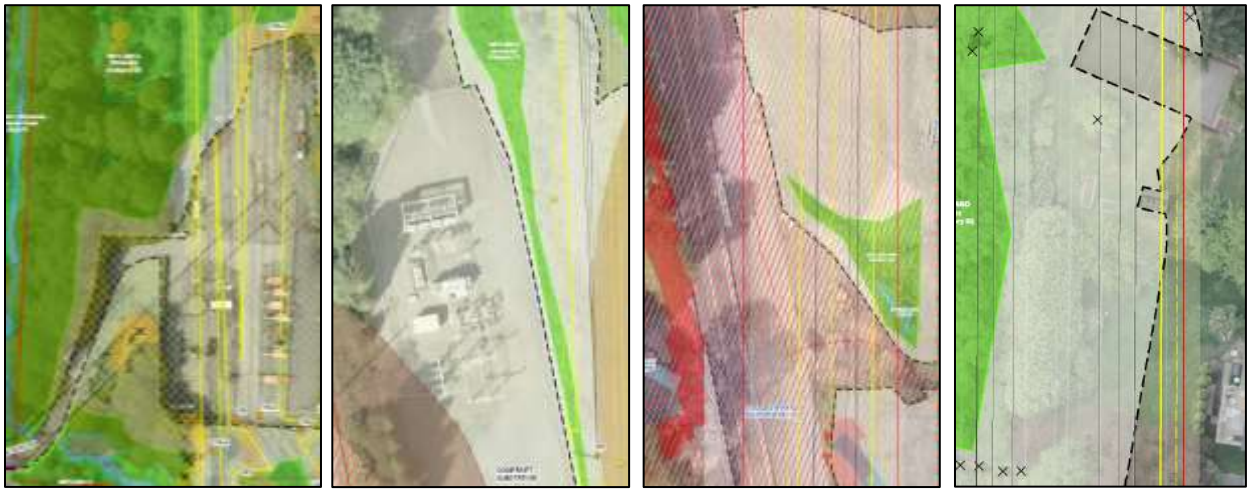

Figure 1. Examples of development removed from functional buffers from CAIA maps submitted with the South Bellevue CAR. From left to right: 1) access road and gravel pad removed from buffer at Richards Creek; 2) Somerset substation removed from Wetland A (Somerset) buffer; 3) Coal Creek Parkway and associated parking area removed nearby critical area buffers; and 4) private sport court and shed removed from Wetland MN01 buffer.

As described in the South Bellevue CAR, developed areas within the buffer that are not providing functions were excluded from the CAIA since the primary purpose of the analysis was to determine project impacts to critical area functions and the amount of mitigation that would be required based on those impacts. However, some non-functional buffers are viewed as "standard buffer" by the City, including the existing paved driveway and gravel pad located on the Richards Creek substation parcel, ancillary residential structures, and some roadways and parking areas. The majority of excluded non-functioning buffer areas will not experience any type of new impact as a result of the proposed project (largely due to the fact that these areas have already been developed to some degree – *i.e.,* no trees – and transmission lines will span large areas). The only exception is the existing development at the Richards Creek substation parcel. Here, the roadway, gravel pad, and detention pond will be redeveloped during construction of the Richards Creek Substation.

The total buffer area being impacted (conversion and permanent) in the Richards Creek sub-basin reported in the CAR is 35,336 square feet (SF). This number did not include the roadway, gravel pad, and detention pond on the Richards Creek substation parcel (they were considered

"non-functioning") that will also be impacted by the project; these buffer areas total 47,512 SF. Therefore, the total buffer area to be impacted (including non-functional areas) is 82,848 SF. However, the proposal provides mitigation for 35,336 SF of functional buffer impact. This is because the driveway and gravel pad on the Richards Creek substation parcel were determined to provide little water quality/hydrology/habitat function to nearby areas as they are paved or consist of compact, crushed gravel. The detention pond was also removed from the buffer based on its association with the impacted/developed condition of the substation parcel. Additionally, PSE stated that at other developed substation sites within the City, detention ponds were not considered buffer.

Stream Realignment Mitigation

The project proposes to mitigate for wetland, and stream and wetland buffer impacts through both wetland enhancement and stream restoration. The applicable provision is as follows:

> ***Wetlands Enhancement as Mitigation**. Impacts to wetland critical area functions may be mitigated by enhancement of existing significantly degraded wetlands. Applicants proposing to enhance wetlands must produce a critical areas report meeting the requirements of LUC 20.25H.110 and 20.25H.230 that identifies how enhancement will increase the functions of the degraded wetland and how this increase will adequately mitigate for the loss of wetland area and function at the impact site. An enhancement proposal must also show whether existing wetland functions will be reduced by the enhancement actions.*

The Critical Areas Report does not address whether existing wetland functions will be reduced by the enhancement actions. As shown on figure 2 of the report, wetlands are located within the proposed stream realignment area. Address how the functions in these areas will be maintained as part of the proposed mitigation. Prepare a written response to all applicable standards in LUC 20.25H.105 and 110.

Watershed Response: The stream realignment proposal will not result in impacts to wetland function except over the very short term – during the year or season of construction. It's important to note that the stream and wetland features at this site are part of an interrelated and interdependent system.

The re-aligned stream channel will improve habitat complexity and interspersion of the wetland and stream functions. The stream channel and its habitat functions will be improved by moving the channel away from the top edge of a concrete ecology block wall bordering an industrial storage yard located to the west. As a result of the increased area between the stream and the wall, the new condition will have vegetated buffers on both sides of the stream rather than just one. This will provide the additional space necessary to allow for channel meanders, new gravel substrate, and pools with log structure cover as fish habitat features, as well as the wildlife

habitat and water quality functions of a vegetated buffer. Buffers will also be wider and the prevalence of invasive plant cover will be reduced. Native trees, shrubs, and groundcover will be added to the existing and expanded wetland, stream and buffer areas.

The plan will provide equivalent or greater critical area functions when compared to existing conditions. Following are specific increases in wetland functions expected as a result of the restoration project (see additional discussion in Table 15 of the CAR).

Water quality

- Wider and more fully vegetated buffers along both sides of the stream will increase biofiltration function, helping to improve water quality from stormwater originating off-site upstream, as well as helping to filter storm water originating onsite prior to it reaching the stream onsite.
- Preventing flows from spilling out onto a lower, paved industrial area adjoining to the west during high-flow events (and even from pervasive seepage) will reduce the entrainment of pollutants from this potentially pollution-generating surface.

Hydrologic

- Invasive, channel-clogging vegetation will be removed and replaced with bare root or container native trees and shrubs, as well as live stakes.
- New native plantings will provide increased soil stability and native vegetation that will reduce velocity of peak flows; improving wetland and stream buffer functions, along with increased channel dimensions and flow-carrying capacity.

Habitat

- New native plantings will provide a net increase in species and structural diversity.
- The function of the 35 trees proposed for removal in the stream restoration project area will be replaced by planting approximately 260 trees.
- New plantings will provide organic matter, as well as foraging and nesting opportunities for terrestrial wildlife, including songbirds and small mammals.
- Culvert replacement and stream restoration will improve fish passage, and improve in-stream and riparian habitat conditions.

Sediment transport

- Culvert replacement and stream realignment will help remove flood-flow-deposited gravel from the existing wetland and prevent future deposition of streambed gravel into the wetland.

It is anticipated that once the stream is relocated to the east, wetland functions will further develop in the location of the old stream channel. The former stream channel will transition into a low-flow, low-energy backwater channel. This feature, within the overall habitat context, will provide diversity and additional habitat opportunities for wildlife. The backwater channel will continue to intercept shallow groundwater seepage and will support emergent and other obligate wetland vegetation. This combination of hydrology and vegetation is anticipated to function well and provide improved amphibian habitat. Fish would also have access to the old channel volitionally – smaller fish could move in and out seasonally or as flows otherwise allow.

A low "berm" is proposed along the entire length of the west side of the stream (left bank facing downstream) within the project area in order to form a better-defined stream bank along that downslope side where channel definition is currently lacking. This "berm" area totals approximately 2,169 SF. Channel definition and a streambank of sufficient height is needed along that side of the stream to contain anticipated high flows in this flashy stream fed by upstream impervious surfaces in this urban setting. Downstream of the access road crossing, the existing, poorly-defined channel sits atop a concrete block wall and it readily overtops and spills into the H. D. Fowler paved storage yard when flows are elevated. Seepage onto the paved storage yard continues to occur even at base flows. Setting the channel back (east) from atop this wall and providing a defined west channel bank of sufficient height is necessary to solve or greatly alleviate this problem. As noted above, the existing channel (approximately 2,110 SF) will not be filled and will remain as a means of collecting seepage before it reaches the storage yard, and returning it back to the stream channel.

In addition to preventing overbank flows from spilling into the adjoining paved storage yard, the proposed elevated west streambank extending downstream of the access road crossing is intended to function similarly to or the same as hummocks do in a forested wetland setting. Such hummocks provide limited areas of upland-type soils, allowing additional plant species, particularly trees, to grow, thereby enabling the desired forested wetland effect and function to develop over time. With a few exceptions (such as willow species, cottonwood, and Oregon ash), most or many tree species (including bigleaf maple, red alder, western red cedar, Douglas-fir, hemlock, birch) will not grow or flourish in overtly wetland soils, even though they are often considered to be integral components of forested wetlands. Most trees associated with forested wetlands actually tend to grow in areas of upland soils along a wetland boundary or fringe, or in the localized areas of upland soils associated with hummock "islands "contained within the overall wetland boundaries. Though not technically rooted in wetland soils, many or

most of these canopy trees do grow over, shade, provide wildlife habitat to, and otherwise contribute to the overall function of forested wetlands. The area encompassed by such relatively small, upland hummock areas contained within forested wetlands is not typically subtracted from the overall wetland area, in part because they contribute so importantly to highly-valued forested wetland function. While we have not counted the stream bank as part of the wetland rehabilitation area proposed around the new stream channel, we have also not explicitly counted it as impact to existing wetland. This is partly because it is difficult to precisely quantify how much of it will actually become non-wetland, but also because of its expected significant contribution to overall forested wetland function.

Upstream of the access road, a higher and better-defined west side streambank is also needed to keep peak flows within the channel and prevent them from spilling downslope, as they do now. These overbank flows are eventually collected in the SE 30th Street stormwater system as opposed to contributing to stream function by staying within the stream channel. The concern has been raised that retaining surface flows within a defined channel will impact wetland hydrology in Wetland D on the downslope (west) side of the stream. We do not believe this will occur because, even though surface flows will be contained within the channel, subsurface flows will continue to seep downslope along the path of least resistance to keep the defined wetland areas adequately supplied with hydrology. Our interpretation and analysis of the existing stream channel and flow patterns in that vicinity indicate that a high-flow event several years ago resulted in a large amount of cobbly deposition in that area which caused the channel to lose definition and its flows to disperse. Some of this dispersed flow finds its way back into the channel, but some of it also seeps directly downslope. We believe this to be an alteration from the previous situation, prior to the high-flow event. Our design is intended to restore the more normal and historic situation while still maintaining downslope wetland hydrology.

Bellevue's LUC 20.25H.105 includes specific mitigation and monitoring provisions for mitigation plans designed to mitigate impacts to wetlands and wetland critical area buffers. These provisions have been addressed in the Critical Areas Report in the context of the overall Project's proposed approach to mitigation for wetland impact (wetland conversion, poles in wetlands etc.). The stream realignment project is part of this proposed mitigation strategy for Energize Eastside and is itself considered self-mitigating in terms of wetland impact. As discussed above, the stream realignment proposal will not result in impacts to wetland function, and therefore additional mitigation is not necessary.

While the overall Energize Eastside project is an allowed use in critical areas (new or expanded utility facility), per LUC 20.25H.080.B, modification of a stream channel may be approved only through a Critical Areas Report. Therefore, the submitted Critical Areas Report includes discussion of Critical Areas Report submittal requirements (LUC 20.25H.250) and decision criteria (LUC 20.25H.255). LUC 20.25H.110 consists of additional critical areas report provisions for projects which propose wetland impact through a critical areas report. While the stream realignment proposal will not result in net impacts to wetland function, some wetland modifications are proposed. Therefore, the criteria of LUC 20.25.H.110 are addressed below, as they relate to the stream realignment project.

A. Limitation on Modification.

A critical areas report may not be used to fill a wetland critical area, except where filling is required to allow a use set forth in LUC 20.25H.055.

Response: Existing wetland area will be converted to stream channel, and a comparable area of existing stream channel will transition to wetland. This will be accomplished in a manner that will result in materially improved habitat function for both the stream and wetland. The project is proposed both as a flood protection project and habitat restoration project. Per LUC 20.25H.055 Public flood protection measures and habitat improvement projects are both allowed uses, subject to certain performance standards.

Listed performance standards which must be met for habitat improvement projects include LUC 25.25H.055.C.3.j and LUC 20.25H.100:

> *25.25H.055.C.3.j Habitat Improvement Projects.*
>
> *Disturbance, clearing and grading are allowed in the critical area or critical area buffer for habitat improvement projects demonstrating an improvement to functions and values of a critical area or critical area buffer. Habitat improvement projects shall be:*
>
> *i. Sponsored or cosponsored by a public agency or federally recognized tribe and whose primary function is habitat restoration; or*
>
> *ii. Approved by the Director pursuant to LUC 20.25H.230*

Public agencies, including the City of Bellevue, WDFW and the Muckleshoot and Snoqualmie Tribes have been involved in early coordination on the stream restoration project and have been generally supportive of it. Approval is sought by the Director pursuant to LUC 20.25H.230.

20.25H.100 Performance standards

Development on sites with a wetland or wetland critical area buffer shall incorporate the following performance standards in design of the development, as applicable:

A. Lights shall be directed away from the wetland.

B. Activity that generates noise such as parking lots, generators, and residential uses, shall be located away from the wetland, or any noise shall be minimized through use of design and insulation techniques.

C. Toxic runoff from new impervious area shall be routed away from the wetlands.

D. Treated water may be allowed to enter the wetland critical area buffer.

E. The outer edge of the wetland critical area buffer shall be planted with dense vegetation to limit pet or human use.

F. Use of pesticides, insecticides and fertilizers within 150 feet of the edge of the stream buffer shall be in accordance with the City of Bellevue's "Environmental Best Management Practices," now or as hereafter amended.

All performance standards will be met. See Critical Areas Report Section 9.3 for a discussion of 20.25H.100.

B. Additional Content.

In addition to the general requirements of LUC 20.25H.230, a critical areas report for wetlands shall include a written assessment and accompanying maps of the wetlands and buffers within 300 feet of the project area, including the following information at a minimum:

1. A discussion of measures, including avoidance, minimization, and mitigation, proposed to preserve existing wetlands and restore any wetlands that were degraded prior to the current proposed land use activity.

2. A habitat and native vegetation conservation strategy that addresses methods to protect and enhance on-site habitat and wetland functions.

3. Functional evaluation for the wetland and adjacent buffer using a local or state agency staff-recognized method and including the reference of the method and all data sheets.

Response: As discussed above, the stream realignment project is designed to enhance functions for both the stream and wetland areas present. Some existing wetland area will be converted to stream channel, and a comparable area of existing stream channel will transition to wetland. Additional existing wetland area will be enhanced through invasive species removal and native vegetation planting. Wetlands A and D have been delineated and rated using City-approved methodology (Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Washington Mountains, Valleys, and Coast Region, Version 2.0; and the 2004 Washington State wetland rating system for western Washington –Revised), as documented in the City of Bellevue Critical Areas Delineation Report: Puget Sound Energy – Energize Eastside Project (The Watershed Company 2016) and the CAR.

Proposed plans show disturbance and mitigation offsite and outside of PSE property and easement. Confirm PSE has an easement right or is in conversation with adjacent property owner to establish the proposed mitigation.

Watershed Response: PSE is currently in the process of obtaining an easement from King County to establish the proposed off-site mitigation.

ESA Information Request

We are reviewing the functional lift analysis in the Critical Areas Report to assist the City of Bellevue with their staff report. Would you please fill out the attached spreadsheet to aid our biologists in better understanding the specific impact areas and how net impacts have been derived (see the first tab in the attached spreadsheet), as well as how some of the mitigation elements result in a trade-off between stream and wetland functions (see the second tab in the spreadsheet)?

Watershed Response: See previous comment responses. Two additional tables (Table 1 and Table 2, below) are provided to detail overall project impacts on wetland, stream, and associated buffer critical areas, and proposed restoration activities by sub-basin in South Bellevue, based on the 2017 CAIA. The activities which generate the impact numbers provided in the tables are discussed in Table 14 of the CAR (Functional Lift Analysis).

Table 1. Comprehensive table of activities affecting wetland and stream critical areas in South Bellevue - Richards Creek Basin[1].

IMPACTS					
Critical Area Name	**Category**	**Type of Activity**	**Quantity (SF)**	**Mitigation Ratio**	**Mitigation Required (SF)**
Wetland A (Richards)	III	Conversion	9,945	2:1	19,890
Wetland A (Richards)	III	Permanent	397	4:1	1,588
Wetland B (Richards)	III	Permanent	2,060	4:1	8,240
Wetland D (Richards)	II	Conversion	100	3:1	300
Wetland D (Richards)	II	Permanent	41	6:1	246
Wetland H (Richards)	III	Conversion	73	2:1	146
Wetland H (Richards)	III	Permanent	77	4:1	308
Combined Buffers	N/A	Permanent	23,893	1:1	23,893
Combined Buffers	N/A	Conversion	22,886	0.5:1	11,443
Combined Buffers	N/A	Redevelopment[2]	47,512[2]	N/A[2]	0[2]

RESTORATION			
Critical Area Name	**Category**	**Type of Activity**	**Quantity (SF)**
Stream C	N/A	Restoration (Realignment)[3]	3,557
Wetland A	III	Rehabilitation	30,718
Combined Buffers	N/A	Restoration	35,336

IMPACT & RESTORATION SUMMARY					
Critical Area Type	**Type of Activity**	**Quantity (SF)**	**Total Mitigation Required (SF)**	**Mitigation Proposed**	
				Type	**Quantity (SF)**
Wetland	Conversion	10,118	30,718	Wetland rehabilitation	30,718
	Permanent	2,575		Stream enhancement	3,557
Buffer	Conversion	22,886	35,336	Buffer enhancement	35,336
	Permanent	23,893			
	Redevelopment[2]	47,512[2]			

1. Only activities resulting in a long-term change are included. Temporary impacts will be restored in place and are not shown in this table.
2. This buffer area is already developed and is considered non-functioning; therefore, no mitigation is required.
3. Existing stream channel will be abandoned (not filled) with stream restoration/realignment activities.

Table 2. Comprehensive table of activities affecting wetland and stream critical areas in South Bellevue - Coal Creek Basin[1].

IMPACTS					
Critical Area Name	**Category**	**Type of Activity**	**Quantity (SF)**	**Mitigation Ratio**	**Mitigation Required (SF)**
Wetland MB01	III	Conversion	1,146	2:1	2,292
Combined Buffers	N/A	Permanent	35	1:1	35
Combined Buffers	N/A	Conversion	7,734	0.5:1	3,867

IMPACT SUMMARY					
Critical Area Type	**Type of Activity**	**Quantity (SF)**	**Total Mitigation Required (SF)**	**Mitigation Proposed**	
				Type	**Quantity (SF)**
Wetland	Conversion	1,146	2,292	Wetland rehabilitation	2,300
	Permanent	0			
Buffer	Conversion	7,734	3,902	Buffer enhancement	3,950
	Permanent	35			

1. Only activities resulting in a long-term change are included. Temporary impacts will be restored in place and are not shown in this table.