

Sensitive Areas and Tree Protection Update Project

**Advisory Committee Meeting #6 – Review of Proposed Updates focused on Key Issues
Monday August 14, 2017 – 6:00 to 8:30 PM, ([King County Fire District, Station #45](#))**

MEETING AGENDA

The City is updating Sensitive Areas and Tree Protection standards – this agenda is for the 6th Advisory Group meeting. This meeting will focus on the Sensitive Areas Ordinance update, and will be an opportunity for additional review of the Draft #2 proposed update, and consideration of ESA and Staff recommended revisions for several key issues.

6:00 – 6:10	Introduction Agenda preview: Aaron Recap of Meeting #5, PC/CC Workshop, and Ecology meeting: Lara and Aaron	No action
6:10 – 8:00 ~20 minutes for each issue	Key SAO Update Issues – including: <ol style="list-style-type: none"> 1. Residential density calculations / max allowable impervious surface coverage 2. Limited exemption for existing, legally established residential structures that are (or become) non-conforming 3. Stream buffers – understanding standard buffers vs performance-based buffers 4. Buffer Reduction / Alteration Allowances – Integration of Watershed Plan and input from Ecology meeting 5. Implications of proposed changes for future Commercial development along Main Street 6. Landslide Hazard Areas – new mapping <p>For each key issue / section:</p> <ul style="list-style-type: none"> • What we heard after Meeting #5 • Implications of changes • Staff recommendation • Issue “voting” to focus discussion 	Review Meeting #6 Prep Memo ahead of the meeting, which touches on each of these issues – and provides ESA/staff recommended approach for moving forward. Additional review of SAO Draft #2 Redline Updates, as necessary ahead of the meeting. Discussion
8:00 – 8:20	Open Time for Other Advisory Committee Comments <ul style="list-style-type: none"> • Limited discussion on issues not previously addressed • Recommended direction for each 	Come with questions / comments / suggestions for code areas that we have not fully addressed.
8:20 – 8:25	Public Comment Opportunity for input and questions from any interested members of the public in attendance (other than Advisory Group members)	No action
6:25 – 6:30	Next Steps – August 15th Meeting #6 Draft #3 Sensitive Areas Update and Recommendation Re-Initiating Tree Protection Update Effort	No action

Please call Lara Thomas (425-789-9658) if you have any questions on the project.

memorandum

date August 10, 2017

to Project Advisory Group, Sensitive Areas and Tree Protection Updates
Lara Thomas, City of Duvall Planning Department

from Lara Thomas, City of Duvall Planning Director
Aaron Booy, ESA;

subject City of Duvall Sensitive Areas Update – Meeting #6 Prep Memo

Thank you all for your ongoing support of the Sensitive Areas and Tree Protection Update project. This memorandum is provided in advance of our 6th Advisory Committee meeting. Our intention is that this will be the final meeting with focused discussion on the proposed Sensitive Areas Update. While we do not anticipate getting a final recommendation on the Sensitive Areas Update during this meeting, we do hope to get your final input, which we will use to prepare the 3rd Draft of the proposed update following our meeting. The 3rd Draft will be issued for final Advisory Committee review and recommendation in late August.

This memorandum provides follow-up on several of the key issues discussed during our last meeting (on July 26), as well as considering input from the Joint Planning Commission / City Council Workshop (also on July 26) and from a meeting with Washington State Department of Ecology staff on August 8. Follow-up and Staff/consultant recommendations on the following issues is provided:

1. Residential density calculations (and also consideration of maximum allowable impervious surface coverage)
2. Limited exemption for existing, legally established residential structures that are (or become) non-conforming
3. Stream buffers – understanding standard buffers vs performance-based buffers
4. Buffer Reduction / Alteration Allowances – Integration of Watershed Plan
5. Implications of proposed changes for future Commercial development along Main Street

Residential Density Calculations

Input from the Advisory Committee during Meeting #5 was generally supportive of the Residential Density Calculation method included in Draft #2 of the proposed Sensitive Areas Update (Page 12, section 14.42.090). Comments from the Advisory Committee included the following:

- *Determination of Net Usable Area* for all residential development sites must consider the “standard buffer widths” for wetlands, streams, and landslide hazard areas. If this section does not explicitly require use of standard buffer widths, then it would create a situation where there is an additional advantage for developers to always ask for the maximum buffer reductions allowed by the Code. This is not the intent of the proposed residential density calculation approach (in fact, the intent is to reduce the development pressure on properties that have sensitive areas and associated buffers).

RECOMMENDATION: Revise proposed DMC 14.42.090 to specifically require use of standard buffer widths (for wetlands, streams, and landslide hazard areas) in determining Net Usable Area.

Define “standard buffer widths” to mean the buffer widths required by 14.42.210 (wetlands), 14.42.320 (streams), and 14.42.430 (landslide hazard areas), not including any allowances for buffer averaging or buffer reduction provided by these sections.

- *Calculation of maximum impervious coverage within Unified Development Regulations* – The Advisory Committee asked about the City’s current approach for application of maximum impervious surface coverage; along with calculation of maximum residential density, the maximum impervious surface coverage allowed for a residential subdivision has influence on the intensity and scale of development that may be permitted.

The current standards for calculation of maximum impervious surface coverage (as set for each zoning district) do not subtract out sensitive areas or associated buffers. Generally, the gross site area is used to determine the maximum impervious surface coverage. The only thing that is subtracted from the gross site area are areas of right-of-way proposed for binding site plan developments (associated with single family residential and multifamily zoning districts).

RECOMMENDATION: Revise proposed DMC 14.42.090 to be applicable to calculation of both maximum residential site density and maximum residential site impervious surface coverage. Use the same calculation method, where sensitive areas (and a percentage of buffers, depending on the subbasin management group) are subtracted from the gross area. Additionally, allow for subtraction of right-of-ways for residential binding site plans (as currently allowed by Title 14 zoning code).

This will have the effect of reducing the maximum impervious surface coverage that could occur across a residential development site. During meeting #6, implications of this proposed change for hypothetical development sites will be presented.

Limited exemption for existing, legally established residential structures

The City of Duvall is proposing to include an allowance for modifying existing single-family residences as part of the Sensitive Areas code update. This allowance would permit structural modification of, addition to, or replacement of an existing single family residence limited to 500 square feet beyond the existing footprint. A similar allowance supported by best available science is found in the *Critical Areas Assistance Handbook: Protecting Critical Areas Within the Framework of the Washington Growth Management Act: Appendix A X.10.160* (CTED, 2007):

“**Modification to Existing Structures.** Structural modification of, addition to, or replacement of an existing legally constructed structure that does not further alter or increase the impact to the critical area or buffer and there is no increased risk to life or property as a result of the proposed modification or replacement...”

RECOMMENDATION: Currently, the many residential lots within the City occurring along stream corridors and adjacent to wetlands are considered ‘non-conforming’ as many were developed before the current Sensitive Areas standards and buffers were adopted. In addition, the City’s proposed Sensitive Areas code

update will widen wetland buffers in many locations throughout the City, rendering more existing residences as ‘non-conforming’. For these reasons, the City is recommending that this allowance be included as part of their Sensitive Areas code update. The following is draft text for the proposed allowance, to be added to DMC 14.42.050:

C. Existing single-family residences may be expanded, reconstructed, or replaced, provided all of the following are met:

1. Expansion within a critical area buffer is limited to 500 square feet of footprint beyond the existing footprint;
2. The expansion extends no closer to critical area than the existing setback;
3. The proposal preserves the functions and values of wetlands, fish and wildlife habitat conservation areas, and their buffers;
4. The proposal includes on-site mitigation to offset any impacts;
5. The proposal will not significantly affect drainage capabilities, flood potential, and steep slopes and landslide hazards on neighboring properties; and
6. The expansion would not cause a tree within a buffer to be labeled as a hazardous tree and thus require the removal of the hazardous tree.

Stream Buffers

Input from the Advisory Committee during Meeting #5 highlighted some confusion about buffers for streams. The existing DMC 14.42.320 includes “Standard Buffers”, and “Performance-Based Buffers”. This summary is provided to highlight the intent and application of “Performance-Based Buffer” standards, which were developed during the last comprehensive update of the Sensitive Areas Code in 2004/05.

For all streams, as a baseline the “Standard Buffers” included in subsection (C) apply. Performance-Based Buffers were incorporated into the code, to provide an incentive-based approach to implement stream habitat restoration measures originally identified in the City’s [2002 Fish Habitat Restoration Plan](#)¹ and updated in the [2006 Stream Habitat Survey](#)² (both prepared by Herrera). The Stream Habitat Restoration Plan was prepared to support the City’s efforts to impact fish habitat conditions in four streams located in Duvall: Thayer Creek, Coe-Clemmons Creek, Cherry Creek Tributary A, and Cherry Creek Tributary B. The Restoration Plan was informed by a detailed stream survey, and from initiation was intended to facilitate an incentive-based approach, through would the City could “encouraging developers

to implement restoration projects as a condition for their permits.”

The 2002 Restoration Plan included maps for each of these streams, breaking each channel into segments (and further into reaches). For each stream (and organized by segment number) a series of restoration actions were

¹ <http://www.duvallwa.gov/DocumentCenter/View/109>

² <http://www.duvallwa.gov/DocumentCenter/View/114>

identified. The stream maps and restoration projects tables are attached to this memo for Thayer, Coe-Clemmons, Cherry Creek Tributary A, and Cherry Creek Tributary B.

The Performance-Based Buffers included in the existing Code was structured to encourage stream restoration consistent with the 20020 Restoration Plan. For proponents of development adjacent to specific stream segments, Performance-Based Buffers allow for reductions in the Standard Buffer Widths only when the “specific provisions” listed in the right-hand column of the table are implemented.

Several projects have been reviewed by the City that have proposed use of Performance-Based Buffers. However, none of these projects have been built. That said, we will use two proposed developments along Thayer Creek (during meeting #6 next week) to highlight the on-site and off-site restoration of stream functions that is intended through the Performance-Based Buffer approach.

Clarifications on implementation of Performance-Based Buffers:

- Performance-Based Buffers only apply to Thayer Creek, Coe-Clemmons Creek (excluding upper tributary reaches), and Cherry Creek Tributary A.
- Performance-Based Buffers were established during the last major code update to address stream-segment specific impairments and implement opportunities for enhancement identified in the City’s [2002 Fish Habitat Restoration Plan](#) and [2006 Stream Habitat Survey](#) (see attached). Most of the identified restoration opportunities still remain available.
- When an applicant for a project along one of these stream segments proposes use of Performance-Based Buffers, all provisions for buffers, enhancement, site design, and downstream (off-site) restoration must be implemented.
- Applicants using Performance-Based Buffers may not further average or reduce the stream buffers. In fact, buffer averaging and reduction is not available for streams where the Performance-Based Buffer approach applies (per DMC 14.42.320.F).

RECOMMENDATION: The Staff and ESA recommend maintaining the system of Performance-Based Buffers, with several specific revisions to the Stream Buffer:

- Eliminating Performance-Based Buffers for the Snoqualmie River (Type S stream), which is now managed consistent with the adopted SMP.
- Increasing the Standard Buffer to 125 feet for Type F salmon-bearing streams.
- For Thayer Creek (all segments) and for Coe-Clemmons Creek downstream of the 3rd Avenue NE crossing, ensure that the minimum buffer width allowed through the Performance-Based Buffer system is 75 feet. This maintains some opportunity for flexibility (incentivizing restoration consistent with the 2002 Stream Habitat Restoration Plan) while increasing the riparian zone maintained.
- Reviewing the Performance-Based Buffer provisions for restoration opportunities that have been completed, and for surface/stormwater management standards (including provisions that “encourage low impact development (LID) strategies”), and complete updates to make these standards consistent with additional opportunities identified in the Shoreline Restoration Plan, Watershed Plan, and with

current policy for management of surface and stormwater runoff from new developments. Among other updates, revise provisions for Thayer Creek upstream of Big Rock Road to include removal of the fish passage barrier created by an existing 12” culvert, associated berm and artificial pond.

Buffer Reduction / Alteration Allowances – Integration of Watershed Plan

During the meeting and from Advisory Committee feedback prior to the meeting, it is apparent that the proposed buffer reduction, averaging, and alteration allowances approach for wetlands and streams is overly complex. This concern was echoed during a follow-up meeting with Ecology staff (with Lara, Aaron, Misty Blair, Stephen Stanley, and Diane Hennessey). The primary concern is that implementation of these provisions may prove challenging, especially when considered in-concert with new Habitat Corridor Protections.

Ecology staff also noted that the majority of areas within the City (and Urban Growth Areas) fall within Subbasin Management Groups 3 (Urban Development) and Group 2C (Least Conservation). These are areas where integrating the Watershed Plan approach maintains more flexibility for future development. Ecology suggested that simplifying the integration approach by treating all Group 2 (whether Group 2A, 2B, or 2C) subbasins the same, with respect to wetland and stream allowances, could be useful. They suggested this approach could be used to provide a higher level of protection for all Group 2 subbasin, which support many of the most important features for protection in the City. For example, Lake Rasmussen and Cherry Creek Tributary A occur within a Group 2C subbasin, and include areas where significant potential for additional development remains.

Ecology additionally suggested that where allowances for impacts to small, low value wetlands are maintained (primarily within Group 3 subbasins), that the expectation should be for mitigation of those impacts to occur in the City within Group 1 subbasins and prioritized areas of Group 2A and 2B subbasins. This approach more fully integrates the intent of the Watershed Plan, by ensuring that approved impacts in areas prioritized for higher levels of development result in protection in Duvall’s watersheds in areas prioritized highly for conservation and restoration.

RECOMMENDATION:

- Simplify variable allowances between different Subbasin Management Groups to treat all Group 2 areas the same. See initial proposed example of this below.
- Consider opportunity to consolidate allowance sections for wetland and streams so that all content comes in table form, as opposed to the current draft where some content is listed as provisions, and additional details are included in the tables. Revision suggested to improve clarity. See initial proposed example of this below.
- Ensure that where allowance for impacts is provided within Group 3 areas, that required mitigation occurs in subbasins prioritized for restoration

14.42.210.B. Wetland Buffer Reduction. Outright reduction of wetland buffer widths shall not be allowed within shoreline jurisdiction. Outside of shoreline jurisdiction, the director shall have the authority to reduce the standard buffer widths when the applicant demonstrates through a sensitive area study to the satisfaction of the director that all the following criteria are met:

1. The buffer reduction shall not adversely affect the functions and values of the adjacent wetlands, meaning that:
 - a. The ability of the wetland to support wetland-adapted and/or wetland-dependent wildlife will not be impaired;
 - b. The ability of the wetland to perform water quality functions such as storage/treatment/removal of pollutants will not be impaired; and
 - c. The ability of the wetland to store runoff and provide flood protection will not be impaired.

In all instances where an existing buffer is comprised of predominantly native and woody vegetation, the director shall assume that buffer reduction is not feasible without adversely affecting the functions and values of the adjacent wetland, and shall deny requests for buffer reduction.

2. **The buffer of any wetland can be reduced by no more than the maximum allowances for subbasin management groups detailed here:**

	1-Protect /Restore	2 (A, B, and C)	3 – Urban Development
Maximum reduction allowed for Category I and II wetlands.	No reduction		
Maximum reduction allowed for Category III and IV wetlands.	No reduction	15%	25%

3. Buffer reduction shall only be allowed when opportunity for wetland buffer averaging as provided in subsection C of section is determined unfeasible due to site constraints.
4. In the limited instances where buffer reduction is approved, the director shall require enhancement throughout all remaining buffer and wetland areas on the development site consistent with all applicable mitigation requirements of this Chapter. In all instances, required enhancement shall meet a minimum enhancement area to reduced area ratio of three to one (3:1), even if achieving this enhancement ratio results in off-site enhancement within a location approved by the City.

14.42.220.I. Category IV Wetlands Less Than 1,000 Square Feet. The director will allow alteration or displacement of isolated Category IV wetlands less than two thousand (1,000) square feet when all of the following criteria are met as documented in a wetland sensitive area study and mitigation plan:

1. The wetland does not provide significant suitable breeding habitat for native amphibian species. Suitable breeding habitat may be indicated by adequate and stable seasonal inundation, presence of thin-stemmed emergent vegetation, and clean water;
2. The wetland is not located within a fish and wildlife habitat conservation area as defined in Section 14.42.350 of this chapter;
- ~~3. The wetland is not located within a floodplain and/or not associated with a shoreline of the state as defined by the city's shoreline master program (DMC Chapter 14.22);~~
4. **Wetland alteration is only allowed when consistent with applicability for subbasin management groups detailed here:**

	1-Protect /Restore	2 (A, B, and C)	3 – Urban Development
Where allowance applies:	Not applicable	Applicable only with 25% additional mitigation per DMC 14.42.240	Applicable per mitigation requirements of DMC 14.42.240

5. The wetland does not provide significant wildlife water quality, or water storage functions that would be difficult to replicate;
6. The wetland is not part of a wetland mosaic;
7. The wetland does not score 5 or more points for habitat function based on the Washington State Wetland Rating System for Western Washington: 2014 Update (Ecology Publication #14-06-029, or as revised and approved by Ecology);
8. The wetland does not contain a Priority Habitat or a Priority Area for a Priority Species identified by the Washington Department of Fish and Wildlife, does not contain federally listed species or their critical habitat;
9. **Mitigation for wetland impacts allowed through this provision occurs within a Group 1 or Group 2 (A, B, or C) subbasin identified by Chapter 14.XX (Watershed Management). If occurring within a Group 2 subbasin, mitigation actions should be consistent with opportunities identified in the 2015 Watershed Plan.**
10. Alterations or displacement shall adhere to applicable city, state, and federal requirements and permitting including, but not limited to, US Army Corps of Engineers and the Department of Ecology.

Implications for Commercial Development along Main Street

During the Planning Commission / City Council Workshop, Staff and ESA received a number of comments about increasing wetland buffer widths, additional restrictions on buffer reduction and alteration allowances for both wetlands and streams, and the implications of these changes on future commercial development along Main Street. The City has invested significant resources in the Main Street Corridor (reconstructing the right-of-way with enhanced sidewalks, utilities, and travel lanes). These Main Street Corridor improvements were intended to facilitate and support existing and future commercial uses along this corridor (consistent with goals and policies in several 2015 Comprehensive Plan elements).

During our last meeting, implications of proposed changes for one highly constrained commercial lot (along the west side of Main Street, to the north of the Coe-Clemmons Creek corridor) were presented. This same site was presented to the Planning Commission and City Council. Input from the joint workshop recommended that we look at additional undeveloped commercial properties, including along the east side of Main Street. At our meeting, we will review two additional example commercial sites and assess the implications of the proposed changes that are currently being considered. Based on assessment and the extent of the impacts, Staff and ESA may present a recommended approach to provide an additional alteration allowance specifically for areas zoned for commercial uses.



Figure 2. Location of streams in Duvall, Washington.

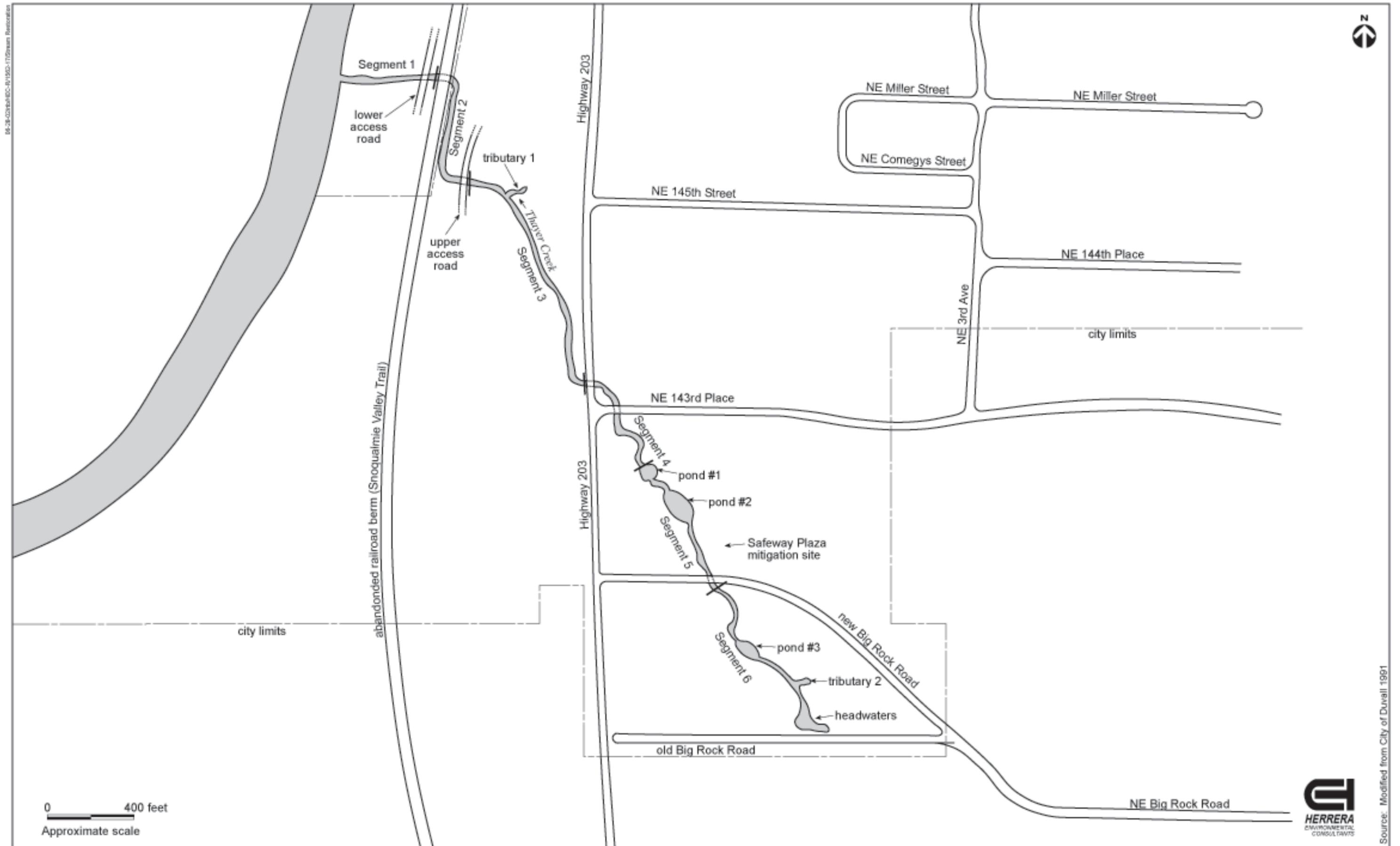


Figure 3. Channel configuration of Thayer Creek within the City of Duvall.

Table 15. Potential restoration projects within Thayer Creek in the City of Duvall.

Segment No.	Reach No.	Potential Restoration Action	Priority	Rationale	Photographs
1	1-12	<u>Option A:</u> Restore segment 1 by a creating new channel, stabilizing the stream banks, and improving riparian vegetation. This requires excavation to create a wider channel with more sinuosity, and regrading the stream banks to create 4:1 slopes that are stable during flooding by the Snoqualmie River. Install large woody debris and boulders as bed controls to lower the gradient and to provide juvenile rearing habitat. Plant native tree, shrub, and herbaceous species on the reconfigured stream banks. <u>Option B:</u> Stabilize the stream banks by removing invasive species and planting native vegetation.	3	The incised stream banks and narrow channel in this segment provides poor habitat for adult migration and juvenile rearing	1-4
1	13	<u>Option A:</u> Remove 26-inch-diameter culvert underneath access road, regrade the stream banks, and revegetate the disturbed area. This requires excavation to remove the culvert and regrading of the stream banks to create 4:1 slopes. Revegetate the reconfigured stream banks by planting native tree, shrub, and herbaceous species. <u>Option B:</u> Remove the existing culvert and provide a bridge over the channel to maintain access to the farm fields. This bridge could be constructed using ecology blocks and a truck trailer or pre-fabricated span. Stabilize the stream banks by planting native tree, shrub, and herbaceous species.	1	This clogged culvert is a partial migration barrier to salmon and it acts as a bed control that contributes to downcutting.	5-6
2	16-25	Improve riparian zone along stream banks in segment 2. This requires selectively removing invasive species and planting native tree, shrub, and herbaceous species along the stream banks.	4	Portions of the riparian zone in this segment lack an overstory of trees and shrubs.	10-12
2	26	<u>Option A:</u> Remove 26-inch-diameter culvert underneath access road, regrade the stream banks, and revegetate the disturbed area. This requires excavation to remove the culvert and regrading of the stream banks. Revegetate the reconfigured stream banks by planting native tree, shrub, and herbaceous species. <u>Option B:</u> Remove the existing culvert and provide a bridge over the channel to maintain access. This bridge could be constructed using ecology blocks and a truck trailer or other pre-fabricated span. Stabilize the stream banks by planting native tree, shrub, and herbaceous species.	5	This culvert is a partial migration barrier to salmon.	13-14
3	33	<u>Option A:</u> Stabilize tributary 1 stream channel between the culvert outfall and mainstem. This requires reconfiguring the stream banks to create 4:1 slopes, lining the channel with gravel substrate, and revegetating the reconfigured stream banks by planting native tree, shrub, and herbaceous species. <u>Option B:</u> Stabilize the tributary channel by armoring with quarry spalls to prevent further erosion.	14	The culvert outfall is eroding the tributary channel and contributing sediment to the mainstem.	17
3	34-44	Provide bed controls to improve adult migration in segment 3. This requires installing log and boulder weirs in several high gradient areas where partial migration barriers occur.	2	The stream cascades over existing bed controls but the gradient is too high or plunge pools are not present.	20-21

Table 15. Potential restoration projects within Thayer Creek in the City of Duvall (continued).

Segment No.	Reach No.	Potential Restoration Action	Priority	Rationale	Photographs
3	49	Improve riparian vegetation in this reach that is limiting adult spawning and migration. This requires selectively removing invasive species and planting native tree, shrub, and herbaceous species along the stream banks.	7	The channel is clogged by reed canarygrass, which restricts migration through this reach.	23
4	51	Replace 2-foot-diameter culvert underneath Highway 203 that is restricting adult migration. This requires excavation to remove the existing culvert and replacing it with a bottomless arch culvert.	6	The slope of this culvert may be a partial migration barrier to adult salmon.	25-26
4	53-55	Enhance riparian zone along stream banks in the pasture between Highway 203 and NE 143 rd Place. This requires planting native tree, shrub, and herbaceous species along the stream banks.	8	The lack of a forested riparian zone is degrading water quality and limiting juvenile rearing habitat.	27-28
4	60-62	Remove riparian vegetation in this reach that is limiting adult spawning and migration. This requires selectively removing shrubs obstructing the stream channel, and lining the channel with spawning gravels.	12	The channel is clogged with shrubs that prevents spawning gravel accumulation and restricts migration through this reach.	32-33
5	63-66	<u>Option A:</u> Remove the farm pond and restore this area by creating a new channel, stabilizing the stream banks, and improving riparian vegetation. This requires excavation to remove the berm around the farm pond and creating a new channel. The elevation differences in this area will require installing bed controls to lower the gradient, and regrading the stream banks to create 4:1 slopes. Plant native tree, shrub, and herbaceous species on the reconfigured stream banks. <u>Option B:</u> Replace the culvert with a larger diameter pipe with a level slope.	10	The culvert through the farm pond berm is a migration barrier, the lack of a forested riparian zone is degrading water quality, and there is no spawning habitat.	34-37
5	68	Restore berm that contains second pond by installing a new culvert and filling the trench that breaches the berm. This will require removing the existing obsolete culvert and replacing it with a bottomless arch culvert.	11	The existing culvert and the trench that breaches the berm is a partial migration barrier and is contributing sediment to downstream habitat.	39-40
5	70-72	Remove sediment deposits downstream of Safeway Plaza wetland mitigation site and reline the channel with gravel substrate. This will require selectively excavating sediment deposits interspersed with the existing vegetation, and lining the stream channel with gravels.	9	Runoff from the mitigation site has clogged the channel with sediment, which is causing a partial migration barrier and is filling in the second pond.	43-44
6	78-79	<u>Option A:</u> Remove the third pond and restore this area by creating a new channel, stabilizing the stream banks, and improving riparian vegetation. This requires excavation to remove the berm around the third pond and creating a new channel. The elevation differences in this area will require installing bed controls to lower the gradient, and regrading the stream banks to create 4:1 slopes. Plant native tree, shrub, and herbaceous species on the reconfigured stream banks. <u>Option B:</u> Replace the culvert with a larger diameter pipe with a level slope	13	The culvert through the berm is a migration barrier.	52-53

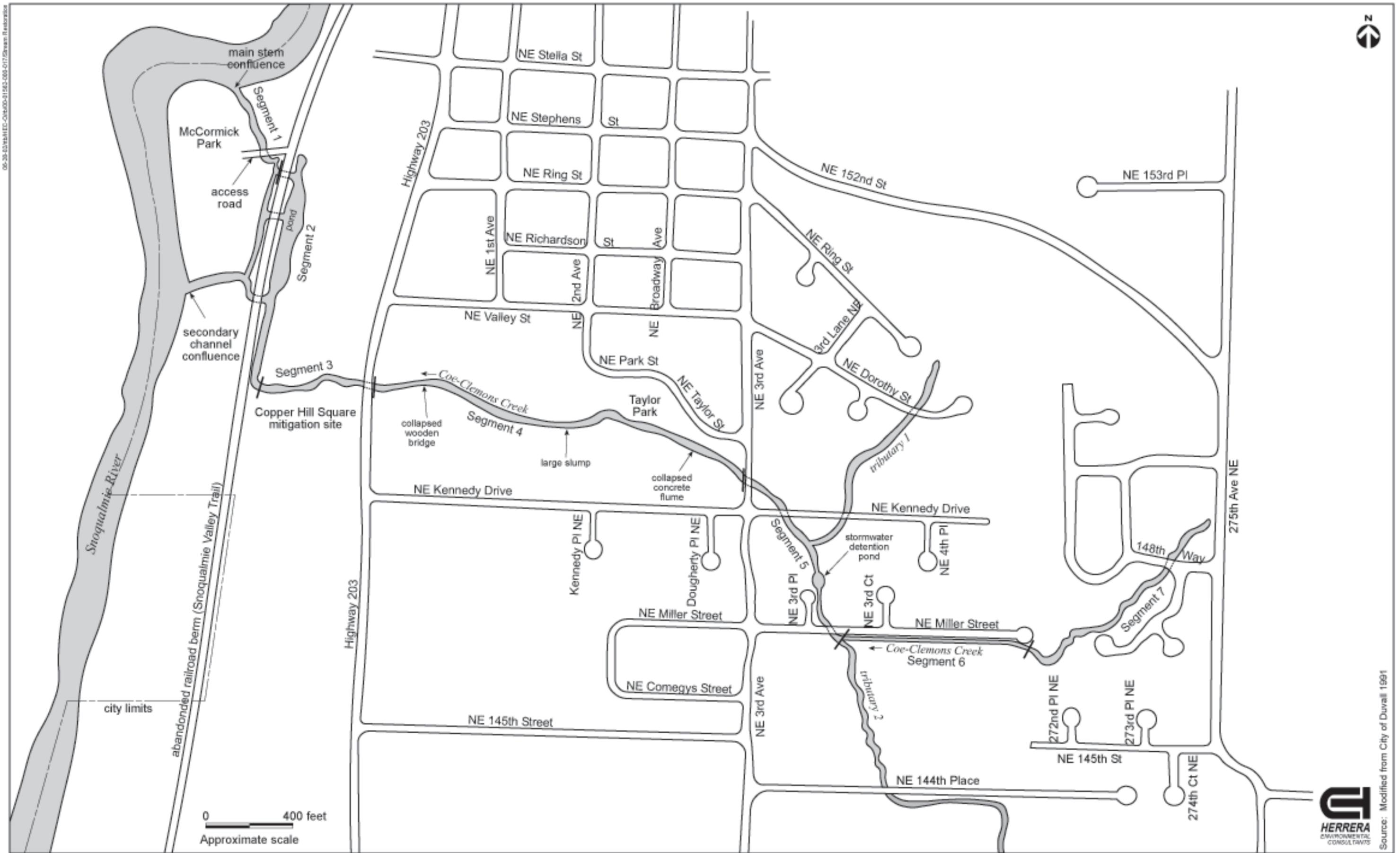


Figure 4. Channel configuration of Coe-Clemons Creek within the City of Duvall.

dh /00-01562-000 final duvall stream survey report.doc

April 11, 2006

Table 16. Potential restoration projects within Coe-Clemons Creek in the City of Duvall.

Segment No.	Reach No.	Potential Restoration Action	Priority	Rationale	Photographs
1	1-2	<u>Option A:</u> Restore segment 1 by creating a wider channel, stabilizing the stream banks, and improving riparian vegetation. This requires excavation to create a wider channel cross-section, and regrading the stream banks to create 4:1 slopes that are stable during flooding by the Snoqualmie River. Install large woody debris and boulders as bed controls to lower the gradient and to provide juvenile rearing habitat. Plant native tree, shrub, and herbaceous species on the reconfigured stream banks. <u>Option B:</u> Stabilize the stream banks by removing invasive species and planting native vegetation.	5	The incised stream banks and narrow channel in this segment provides poor habitat for adult migration and juvenile rearing	57-59
1	7-9	Improve fish passage through the culvert underneath the access road into McCormick Park. This requires removing quarry spalls and creating a plunge pool at the culvert outlet, and removing quarry spalls at the culvert inlet.	7	Adult migration through this culvert is limited by the lack of deep pools at the entrance and exit of the pipe.	60-62
2	11	Replace culvert underneath abandoned railroad berm that is restricting adult migration. This requires excavation to remove the existing culvert and replacing it with a bottomless arch culvert.	3	Beavers have blocked the inlet to the culvert and sediment has accumulated inside the pipe, which restricts migration.	64-65
3	14-17	Restore channel through wetland mitigation site that is limiting adult migration. This involves creating a new channel and improving riparian vegetation. Install large woody debris and boulders as bed controls to lower the gradient and to provide juvenile rearing habitat. Improve riparian vegetation by selectively removing invasive species and planting native tree, shrub, and herbaceous species along the stream banks.	2	The channel is clogged by sediment and reed canarygrass, which restricts migration through this reach.	70-72
3	18-27	Remove sediment deposits and reline the channel with gravel substrate to improve adult migration. This will require selectively excavating sediment deposits interspersed with the existing vegetation, and lining the stream channel with gravels.	6	Sediment from a slump upstream of this area has clogged the channel, which is causing a partial migration barrier.	75-78
3	28	Replace the culvert underneath Highway 203 that is restricting adult migration. This requires excavation to remove the existing culvert and replacing it with a bottomless arch culvert.	4	Sediment from a slump upstream of this area has clogged the culvert, which is causing a partial migration barrier.	79-80
4	36	Remove collapsed wooden bridge that is restricting adult migration. This requires removing the woody debris jam that is obstructing the channel.	8	The channel is clogged by sediment and woody debris, which restricts migration through this reach.	84-85

Table 16. Potential restoration projects within Coe-Clemons Creek in the City of Duvall (continued).

Segment No.	Reach No.	Potential Restoration Action	Priority	Rationale	Photographs
4	58	Option A: Stabilize the stream banks that have slumped into the channel and are contributing a large volume of sediment to downstream reaches. Reconfigure the stream channel by removing sediment and woody debris jams, and revegetate the disturbed area with riparian vegetation. This requires excavation to create a wider channel cross-section, and regrading the stream banks to create 4:1 slopes that are stable. Install large woody debris and boulders as bed controls to lower the gradient and to prevent further downcutting. Plant native tree, shrub, and herbaceous species on the reconfigured stream banks. Option B: Place logs at the toe of the slumped bank to prevent further erosion. Cover the eroded banks with coir fabric and plant with native tree, shrub, and herbaceous species.	1	Sediment from the slump has clogged the channel, and is degrading downstream habitat.	97-100
4	70-72	Stabilize the stream banks where a clay layer is contributing sediment to downstream reaches.	15	Scouring of the clay layer is degrading spawning habitat by contributing fine-grained sediment.	104-105
4	73	Remove concrete flume that has collapsed into channel and is restricting adult migration. This requires removing the concrete debris jam that is obstructing the channel.	9	The channel is clogged by sediment and concrete debris, which restricts migration through this reach.	107-108
5	76	Improve fish passage through the culvert underneath NE 3rd Avenue by removing a log from the culvert outlet and creating a plunge pool. This will require installing large woody debris and boulders as bed controls to create a plunge pool at the culvert outlet.	10	The culvert is a migration barrier to fish using upstream habitat.	110-111
5	88-90	Improve fish passage through the culverts draining the stormwater detention pond near NE 3 rd Place by creating a plunge pool. This will require installing large woody debris and boulders as bed controls to create a plunge pool at the culvert outlet.	11	These culverts are a migration barrier to fish using upstream habitat.	118-119
5	92	Improve fish passage through the culvert near NE 3 rd Place by reducing water velocities at the culvert inlet. This will require installing large woody debris and boulders as bed controls to create a resting pool at the culvert inlet.	12	Adult migration through this culvert is limited by the lack of a pool at the exit of the pipe.	121-122
5	98	Improve fish passage through the culverts underneath Miller Street by reducing water velocities at the culvert inlet. This will require installing large woody debris and boulders as bed controls to create a resting pool at the culvert inlet.	13	Adult migration through these culverts is limited by the lack of a pool at the exit of the pipe.	124-125
6	100-135	Improve fish passage through the 12 culverts underneath private driveways along NE Miller Street by reducing water velocities. This will require installing large woody debris and boulders as bed controls to create resting pools at the culverts outlet and inlet.	14	Adult migration through these culverts is limited by the lack of pools at the entrance and exit of the pipes.	126-139

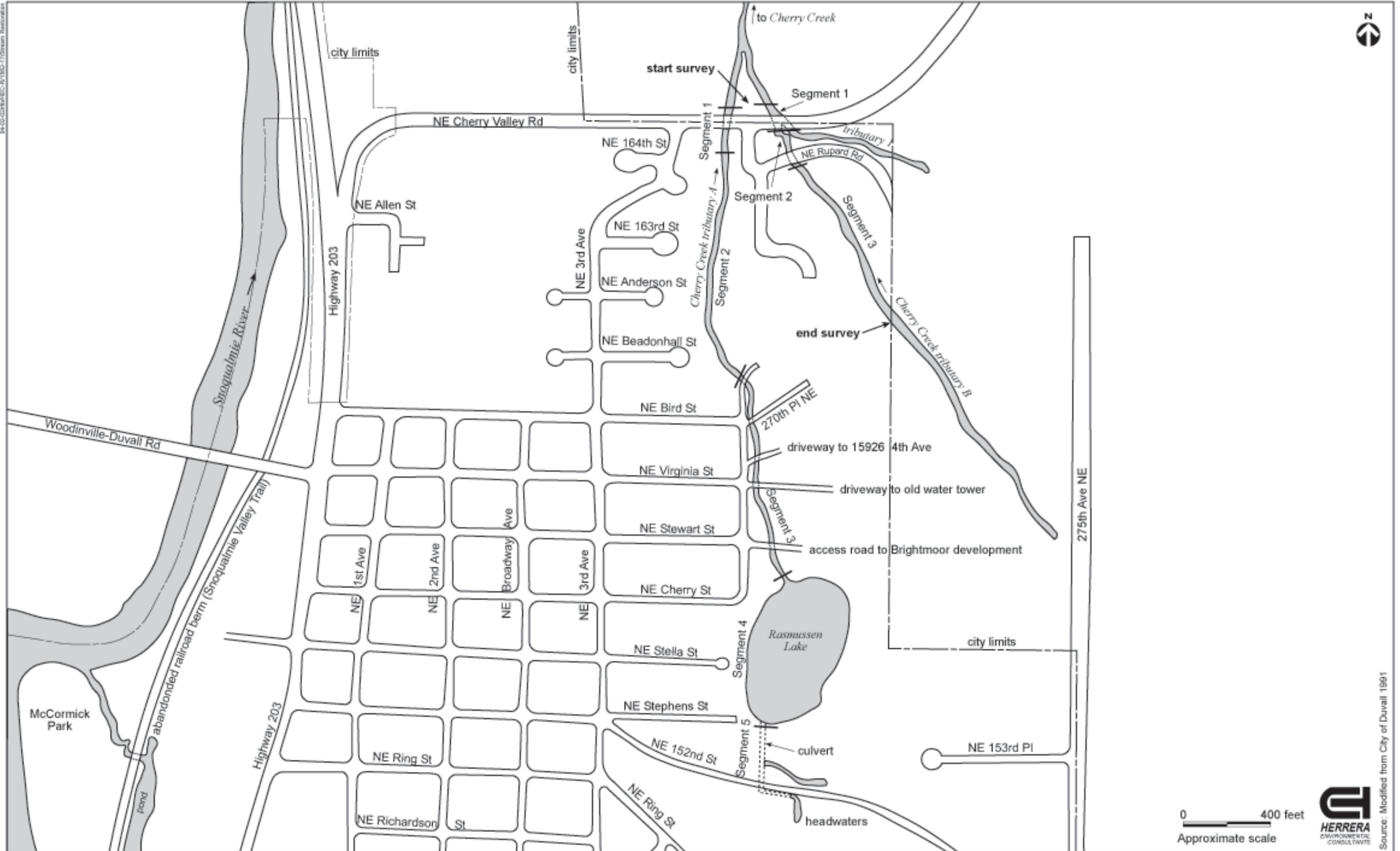


Figure 5. Channel configuration of Cherry Creek tributary A and B within the City of Duvall.

00-01562-000 final duvall stream survey report.doc

April 11, 2006

Source: Modified from City of Duvall 1991



0 400 feet
Approximate scale



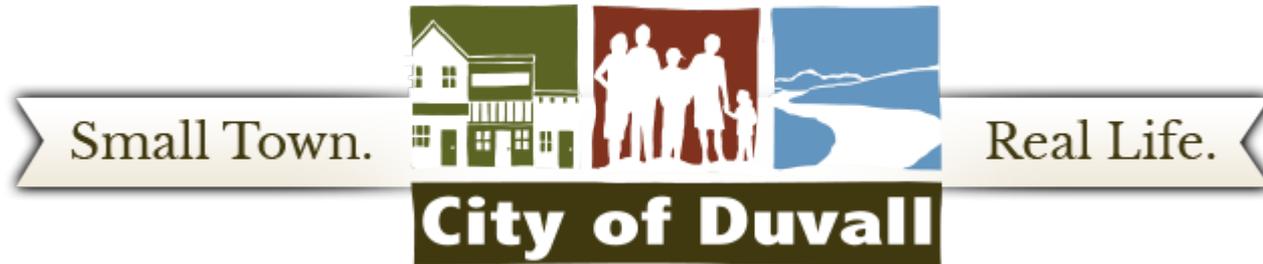
04-00-02648(BC)-R1590-1120stream restoration

Table 17. Potential restoration projects within Cherry Creek tributary A in the City of Duvall.

Segment No.	Reach No.	Potential Restoration Action	Priority	Rationale	Photographs
1	5-6	Improve fish passage through the culvert underneath NE Cherry Valley Road by creating a plunge pool. This will require installing large woody debris and boulders as bed controls to create a plunge pool at the culvert outlet.	1	This culvert is a migration barrier to fish using upstream habitat.	148-150
1	8	Improve riparian vegetation in this reach that is limiting adult spawning and migration. This requires selectively removing invasive species and planting native tree, shrub, and herbaceous species along the stream banks.	2	The channel is clogged by reed canarygrass, which restricts migration through this reach.	151-152
2	31-41	Provide bed controls to improve adult migration in this segment. This requires installing log and boulder weirs in several high gradient areas where partial migration barriers occur.	4	The stream cascades over existing bed controls but the gradient is too high or plunge pools are not present.	161-168
3	42	Replace the culvert underneath NE 4th Avenue that is restricting adult migration. This requires excavation to remove the existing culvert and replacing it with a bottomless arch culvert. Install large woody debris and boulders as bed controls to create a plunge pool at the culvert outlet.	3	The slope of this culvert and the outfall drop is a migration barrier to adult salmon.	170-171
3	48	Provide bed controls to improve adult migration at the upstream end of the 270 th Place NE culvert. This requires installing log and boulder weirs through a cascade where a migration barrier occurs.	5	The stream cascades over a clay layer and the gradient is too high.	175
3	51	Replace the culvert underneath a private driveway to 15926-NE 4th Avenue that is restricting adult migration. This requires excavation to remove the existing culvert and replacing it with a bottomless arch culvert.	6	This culvert is undersized and may be a migration barrier to adult salmon.	177-178
3	55	Replace the culvert underneath a driveway to the old water tower that is restricting adult migration. This requires excavation to remove the existing culvert and replacing it with a bottomless arch culvert.	8	This culvert may be a migration barrier to adult salmon.	180-181
3	60	Replace the culvert underneath the berm containing Rasmussen Lake that is restricting adult migration. This requires excavation to remove the existing culvert and replacing it with a bottomless arch culvert. Install large woody debris and boulders as bed controls to create a plunge pool at the culvert outlet.	7	The slope of this culvert and the outfall drop is a migration barrier to adult salmon.	186-187

Table 18. Potential restoration projects within Cherry Creek tributary B in the City of Duvall.

Segment No.	Reach No.	Potential Restoration Action	Priority	Rationale	Photographs
1	6-8	Improve fish passage through the culvert underneath NE Cherry Valley Road by creating pools at both ends. This requires removing quarry spalls and creating a plunge pool at the culvert outlet, and removing quarry spalls at the culvert inlet. Install large woody debris and boulders as bed controls to create a plunge pool at the culvert outlet.	1	Adult migration through this culvert is limited by the lack of deep pools at the entrance and exit of the pipe.	192-194
2	9-10	Remove sediment deposits in the channel between NE Cherry Valley Road and NE Rupard Road that is limiting adult spawning and migration. This will require selectively excavating sediment deposits interspersed with the existing vegetation, and lining the stream channel with gravels. Enhance riparian vegetation in this reach by selectively removing invasive species and planting native tree, shrub, and herbaceous species along the stream banks.	3	The channel is clogged by sediment and reed canarygrass, which restricts migration through this reach.	195
2	11	Replace the culvert underneath NE Rupard Road that is restricting adult migration. This requires excavation to remove the existing culvert and replacing it with a bottomless arch culvert.	2	Sediment from erosion in upstream reaches has clogged the culvert with sediment, which is causing a partial migration barrier.	196-197



City of Duvall Sensitive Areas and Tree Protection Update

Advisory Group Meeting #6

Lara Thomas, Planning Director

Aaron Booy, ESA

August 14, 2017



Meeting Overview

- Introduction
- Key Update Issues
(as summarized in
Agenda and Memo)
- Public Comment
- Next Steps



Residential Density Calculations

Subbasin Management Group	<p style="text-align: center;">Calculation Method</p> <p style="text-align: center;"><i>Notes: Wetlands, streams, landslide hazard areas, and frequently flooded areas are the sensitive areas to be included in the area calculations. Only on-site areas are to be included.</i></p>
Group 3 (Urban Development)	Net Usable Area = Gross Site Area – (Sensitive Areas + 50% of Buffers)
Group 2C (Least Conservation)	Net Usable Area = Gross Site Area – (Sensitive Areas + Buffers)
Group 2B (Moderate Conservation)	Net Usable Area = Gross Site Area – (Sensitive Areas + 110% of Buffers)
Group 2A (Highest Conservation); Group 1 (Protect/Restore)	Net Usable Area = Gross Site Area – (Sensitive Areas + 125% of Buffers)

Residential Density Calculations

Staff / ESA Recommendation:

- Maintain Draft #2 proposed approach
- Require use of standard buffer widths for all calculations:
 - Includes wetlands, streams, landslide hazard areas, and associated standard buffers
 - Standard buffer widths defined to mean: “widths required by 14.42.210 (wetlands), 14.42.320 (streams), and 14.42.430 (landslide hazard areas), not including any allowances for buffer averaging or buffer reduction provided by these sections.”

Consideration of maximum impervious coverage for development sites

- Existing code, residential zones: impervious coverage calculated on a lot-by-lot basis

R4, R4.5, R6	R12	R20
60%	75%	85%



- Existing code, non-residential zones: maximum impervious coverage calculated based on Gross site area (sensitive areas and buffers not excluded)

Consideration of maximum impervious coverage for development sites - Recommendation

- Residential zones: maintain code; ensure that updates to zoning district standards clarify interpretation during next update

Rationale – proposed residential density calculation modifications will already reduce intensity of future residential development.
- Non-residential zones: calculate impervious extent based on Net Usable Area, implementing watershed plan approach

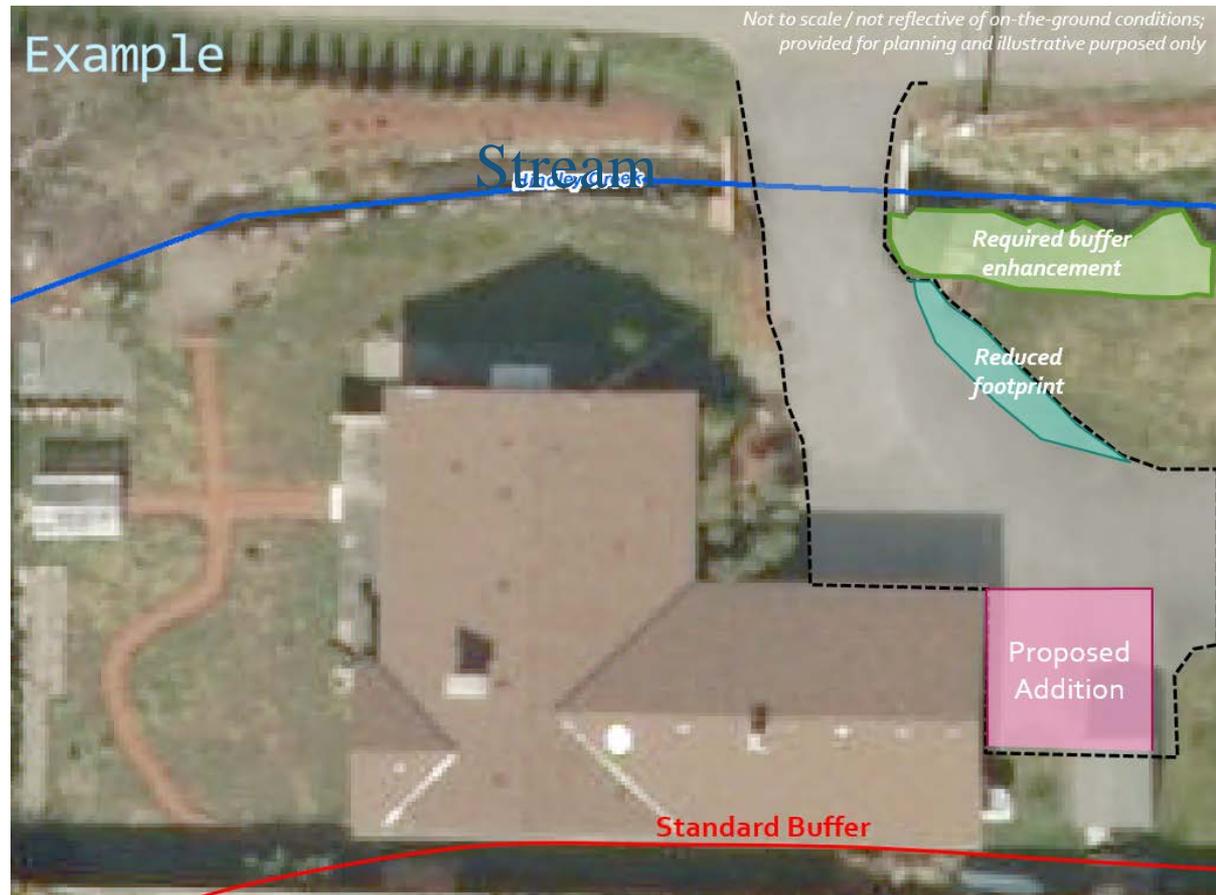
Limited exemption for existing, legally established residential structures

- Many existing single family residences are non-conforming to existing Sensitive Areas buffer standards
- More homes will become non-conforming as a result of proposed Sensitive Areas updates (developed with consideration of BAS)
- Many jurisdictions have a limited exemption for these circumstances
- Input from Advisory Group (meeting #5) requested a proposal for these circumstances

Limited exemption for existing, legally established residential structures

Recommendation:

- New “allowance” under DMC 14.42.050
- Applicable to existing, legal structures within buffers
- Limited allowance for additions, with mitigation provided (based on City of Medina’s code)
- 500 SF maximum
- No closer to critical area
- Functions preserved
- Mitigation required



Stream Buffers -

- Clarification on Performance-Based Buffers
- Examples of Application (proposed)
- Recommended changes to stream buffer requirements



Downstream corridor

Access to downstream reaches

SITE A

SITE B

Snoqualmie Valley Trail

Snoqualmie Valley Trail

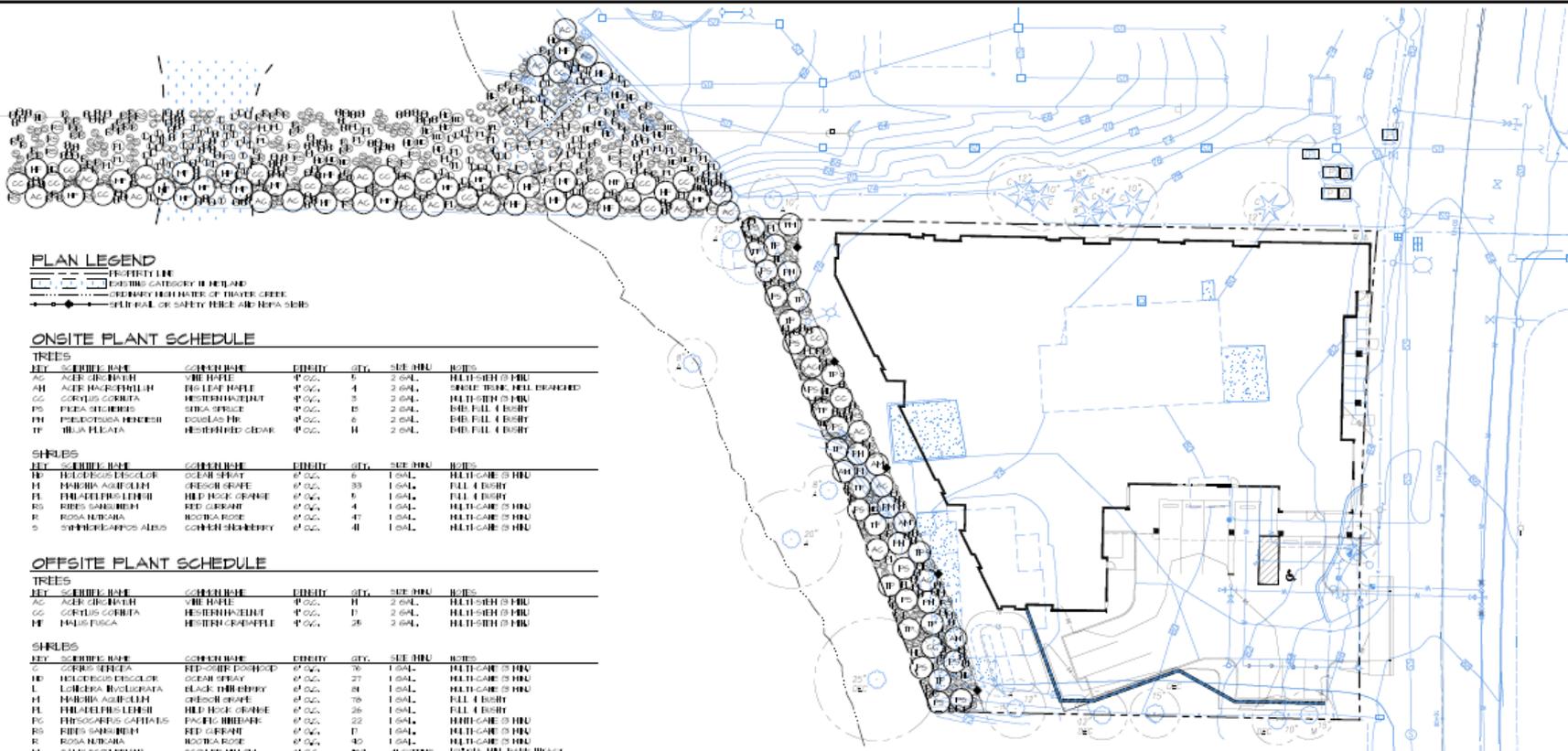
Snoqualmie Valley Trail

Main St NE

203

203

Google



PLAN LEGEND

- PROPERTY LINE
- FENCING CATEGORY II INLAND
- ORDINARY HIGH WATER OF TRAVEL CREEK
- SPIRITUAL OR SAFETY FENCE AND REPAIRS

ONSITE PLANT SCHEDULE

TREES	SYMBOL	COMMON NAME	QUANTITY	SIZE (INCH)	NOTES
AC	ACER CIRCUMDATUM	VINE MAPLE	5	2 GAL.	HALF-SHED @ HNU
AM	ACER FRAXINIFOLIUM	RED LEAF MAPLE	4	2 GAL.	SHADE TREES, FULL BRANCHED
CC	CORYLUS CORNUTA	WESTERN HAZELHUT	3	2 GAL.	HALF-SHED @ HNU
PS	PRUNUS SPINOSA	SILVA SPINOSA	5	2 GAL.	SHADE FULL @ EBONY
TR	TRIFOLIUM HYDRANGEAE	DOUGLAS HUE	6	2 GAL.	SHADE FULL @ EBONY
TF	TILIA FULGIDA	WESTERN RED CEDAR	4	2 GAL.	SHADE FULL @ EBONY

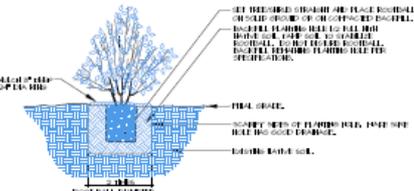
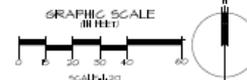
SHRUBS	SYMBOL	COMMON NAME	QUANTITY	SIZE (INCH)	NOTES
TE	TELEKIOSMOS ESCULOR	COYOTE SHRUB	6	1 GAL.	HALF-GAME @ HNU
FL	FRAXINIA AGROSMILUM	GREYBARK GRAPE	33	1 GAL.	FULL @ EBONY
HL	HELIOPSIS SCOPULORUM	WILD ROSE ORANGE	5	1 GAL.	FULL @ EBONY
RS	RIBES SANICHOIUM	RED CURRANT	4	1 GAL.	HALF-GAME @ HNU
R	ROSA NUDICA	ROSCA ROSE	4	1 GAL.	HALF-GAME @ HNU
S	SPIRAEAEALPIS ALBIS	COMMON SNEEBERRY	4	1 GAL.	HALF-GAME @ HNU

OFFSITE PLANT SCHEDULE

TREES	SYMBOL	COMMON NAME	QUANTITY	SIZE (INCH)	NOTES
AC	ACER CIRCUMDATUM	VINE MAPLE	1	2 GAL.	HALF-SHED @ HNU
CC	CORYLUS CORNUTA	WESTERN HAZELHUT	1	2 GAL.	HALF-SHED @ HNU
TF	TILIA FULGIDA	WESTERN RED CEDAR	2	2 GAL.	HALF-SHED @ HNU

SHRUBS	SYMBOL	COMMON NAME	QUANTITY	SIZE (INCH)	NOTES
C	CORNUS BENEDI	RED-CURRANT POSHOP	7	1 GAL.	HALF-GAME @ HNU
ED	EUONYMUS ESCULOR	SPRING SPRAY	27	1 GAL.	HALF-GAME @ HNU
L	LORBERA NUCULIFERA	BLACK OILY EBONY	1	1 GAL.	HALF-GAME @ HNU
FL	FRAXINIA AGROSMILUM	GREYBARK GRAPE	28	1 GAL.	FULL @ EBONY
HL	HELIOPSIS SCOPULORUM	WILD ROSE ORANGE	2	1 GAL.	FULL @ EBONY
PS	PRUNUS SPINOSA	SPINOSA PRUNELLA	22	1 GAL.	HALF-GAME @ HNU
R	ROSA NUDICA	ROSCA ROSE	4	1 GAL.	HALF-GAME @ HNU
H	HELIOPSIS SCOPULORUM	WILD ROSE ORANGE	4	1 GAL.	HALF-GAME @ HNU
T	TILIA FULGIDA	WESTERN RED CEDAR	4	1 GAL.	HALF-GAME @ HNU
S	SPIRAEAEALPIS ALBIS	COMMON SNEEBERRY	1	1 GAL.	HALF-GAME @ HNU

PLANTING PLAN



A CONTAINER TREE/SHRUB PLANTING (TYP.)
SCALE: 1/8" = 1'-0"



B CUTTING INSTALLATION (TYP.)
SCALE: 1/8" = 1'-0"

- NOTES**
1. CONTAINER TREES/SHRUBS TO BE PLANTED IN THE PLANTING AREA.
 2. CONTAINER TREES/SHRUBS TO BE PLANTED IN THE PLANTING AREA.
 3. CONTAINER TREES/SHRUBS TO BE PLANTED IN THE PLANTING AREA.
 4. CONTAINER TREES/SHRUBS TO BE PLANTED IN THE PLANTING AREA.
 5. CONTAINER TREES/SHRUBS TO BE PLANTED IN THE PLANTING AREA.

Call a Member Close Before You Dig
1-800-424-5555
City of Duvall
Public Works Department

NOT FOR CONSTRUCTION
THESE PLANS HAVE BEEN SUBMITTED TO THE APPROPRIATE AGENCIES FOR REVIEW AND APPROVAL. THEY ARE NOT TO BE USED FOR CONSTRUCTION. SUBJECT TO REVISION.

NOTES

1. SOURCE: SITE PLAN PROVIDED BY PACIFIC COAST SURVEYS, INC., P.O. BOX 1001, HILL CREEK, WA 98028 (425) 810-1010
2. SOURCE: TREE LIST WAS PROVIDED BY ACA FOR LOCAL ORIGINATING.
3. SEE CITY PLANTING OFFICE GILBERT REFERENCE.

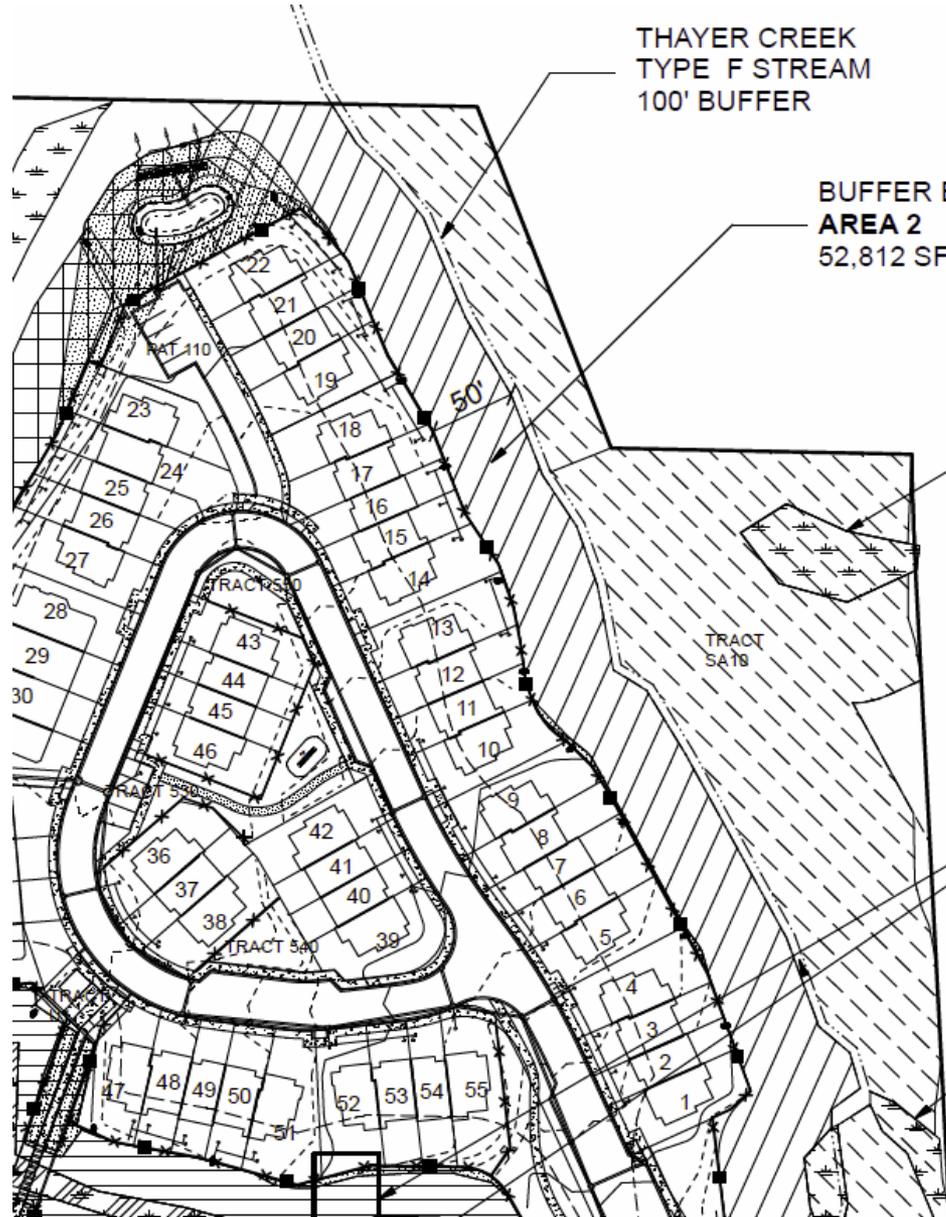
BY: _____
CITY OF DUVALL PLANNING DEPARTMENT

DATE: _____

Altman Oliver Associates, LLC AOA
10000 1st Avenue, Suite 100
Duvall, WA 98019
PH: 206.885.1111 FAX: 206.885.1112
WWW.AOASOCIATES.COM

BUFFER ENHANCEMENT PLAN
PLANTING PLAN
SHERLOCK DUVALL SELF STORAGE
DUVALL, WASHINGTON

Project No.	121
Client	Self Storage
Scale	As Shown
Sheet No.	121

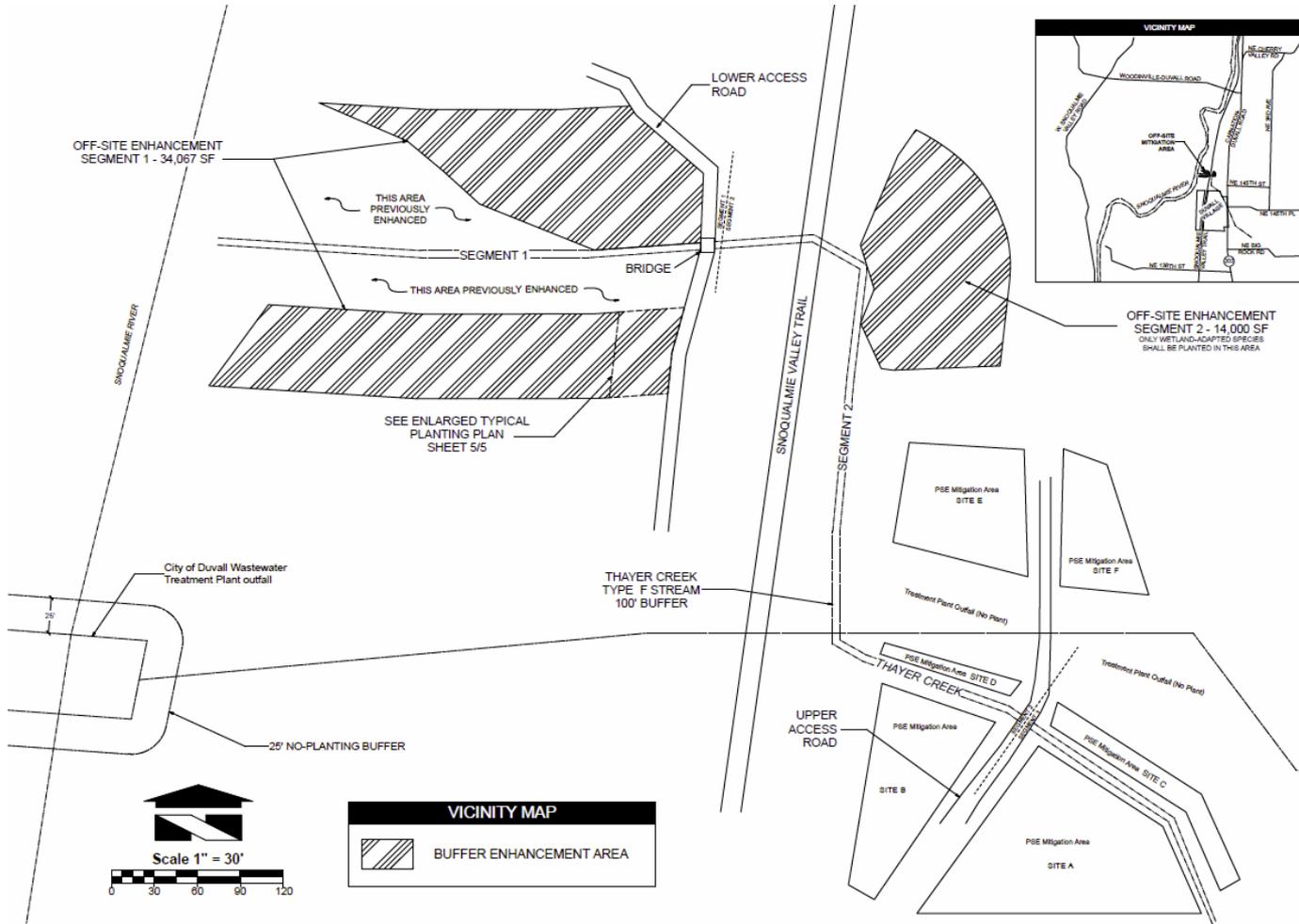


THAYER CREEK
 TYPE F STREAM
 100' BUFFER

**BUFFER ENHANCEMENT
 AREA 2**
 52,812 SF

LEGEND

- WETLAND AREA
- BUFFER ENHANCEMENT AREA 1
- BUFFER ENHANCEMENT AREA 2
- WETLAND & BUFFER ENHANCEMENT AREA 3
- WETLAND ENHANCEMENT AREA 4
- BUFFER ENHANCEMENT AREA 5
- WETLAND & BUFFER ENHANCEMENT AREA 6



JOB # 13312 SCALE 1" = 30' Drawn By: A. Robinson & S. Walker DATE: August 04, 2016
PREPARED FOR: Wastewater Engineering Alton Madsen & Associates 1010 Market St. Kirkland, WA 98033
FINAL MITIGATION PLAN OFF-SITE BUFFER ENHANCEMENT PLAN DUVAL VILLAGE SECTION 24, TOWNSHIP 20N, RANGE 06E, W.M.
SHEET 6/7

Wetland Rating and Buffers

- 2014 Ecology Rating System includes new scoring system & range
- 2016 Ecology guidance establishes buffers based on BAS

Wetland Category (Updated Rating System)	Minimum Buffer Width (Wetland scores 3-4 habitat points)	Buffer Width (Wetland scores 5 habitat points)	Buffer Width (Wetland scores 6-7 habitat points)	Buffer Width (Wetland scores 8- 9 habitat points)						
Existing DMC 14.42 for all Category I – III wetlands	← Variable based on habitat points →									
	19	20	21	22	23	24	25	26	27	28
	60'	80'	80'	100'	100'	120'	120'	140'	140'	150'
Category I: Based on total score	75 ft	105 ft	165 ft	225 ft						
Category I: Bogs and Wetlands of High Conservation Value	190 ft	190 ft	190 ft	225 ft						
Category I: Forested	75ft	105 ft	165 ft	225 ft						
Category II: Based on score	75 ft	105 ft	165 ft	225 ft						
Category III (all)	60 ft	105 ft	165 ft	225 ft						
Category IV (all)	50 ft (Existing DMC 14.42 = 50 ft)									

Wetland Buffers – Required Measures

(Ecology 2016 Guidance)

Disturbance	Required Measures to Minimize Impacts
Lights	<ul style="list-style-type: none"> • Direct lights away from wetland
Noise	<ul style="list-style-type: none"> • Locate activity that generates noise away from wetland • If warranted, enhance existing buffer with native vegetation plantings adjacent to noise source • For activities that generate relatively continuous, potentially disruptive noise, such as certain heavy industry or mining, establish an additional 10' heavily vegetated buffer strip immediately adjacent to the outer wetland buffer
Toxic runoff	<ul style="list-style-type: none"> • Route all new, untreated runoff away from wetland while ensuring wetland is not dewatered • Establish covenants limiting use of pesticides within 150 ft of wetland • Apply integrated pest management
Stormwater runoff	<ul style="list-style-type: none"> • Retrofit stormwater detention and treatment for roads and existing adjacent development • Prevent channelized flow from lawns that directly enters the buffer • Use Low Intensity Development techniques (per PSAT publication on LID techniques)
Change in water regime	<ul style="list-style-type: none"> • Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns
Pets and human disturbance	<ul style="list-style-type: none"> • Use privacy fencing OR plant dense vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the ecoregion • Place wetland and its buffer in a separate tract or protect with a conservation easement
Dust	<ul style="list-style-type: none"> • Use best management practices to control dust
Disruption of corridors or connections	<ul style="list-style-type: none"> • Maintain connections to offsite areas that are undisturbed • Restore corridors or connections to offsite habitats by replanting

Implications

Residential Site

- Batten Road site
- ~9.3 acres
- High value stream & wetland corridor through property

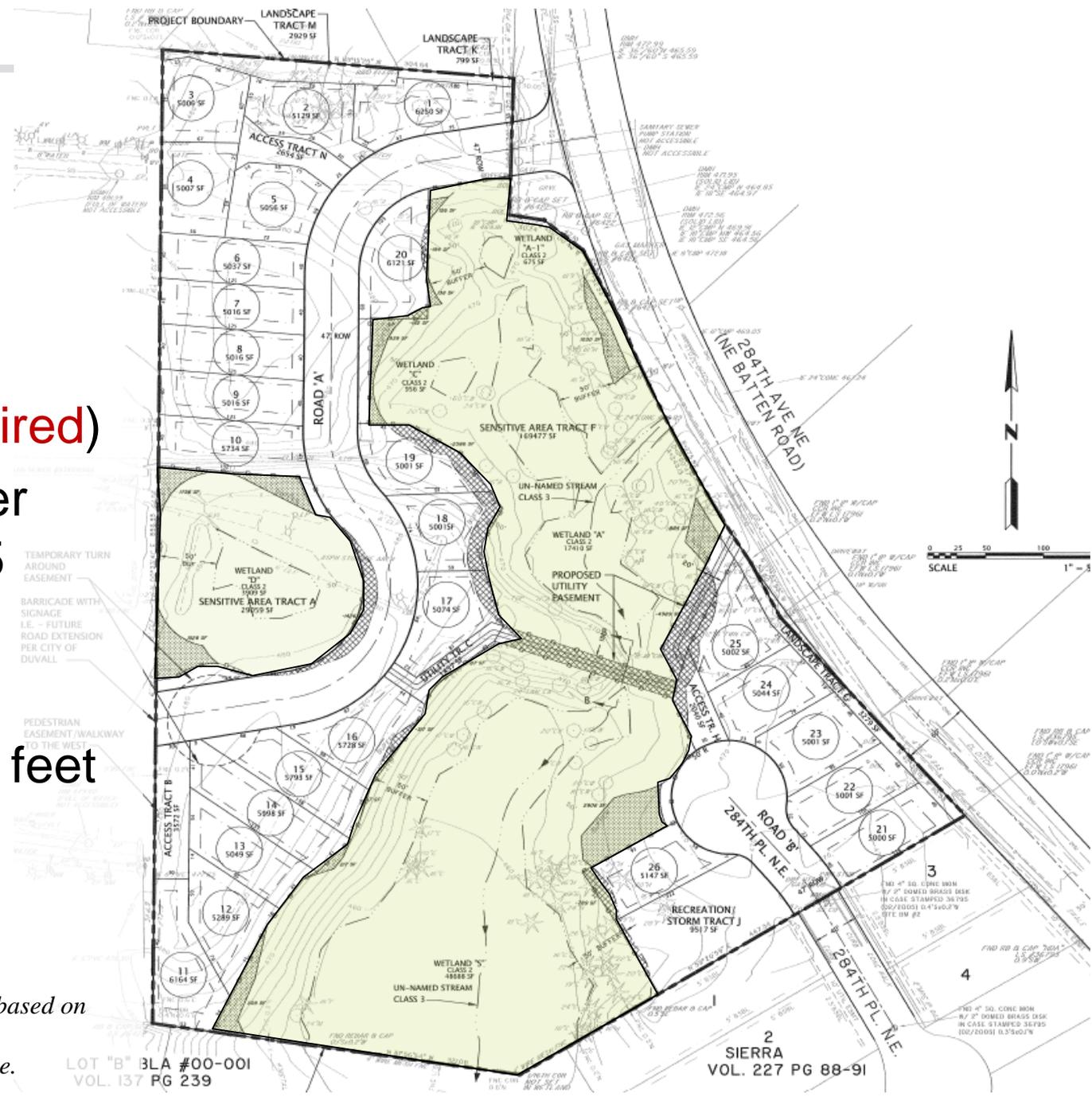


*NOTE: All depicted SA extents are based on site survey by others;
 Depicted buffers are all approximate.*

Previous Plat

- 2006 (now expired)
- Approved under OLD (pre-2005 SAO)
- 50 foot buffers
- Reduced to 40 feet thru averaging
- 26 lots

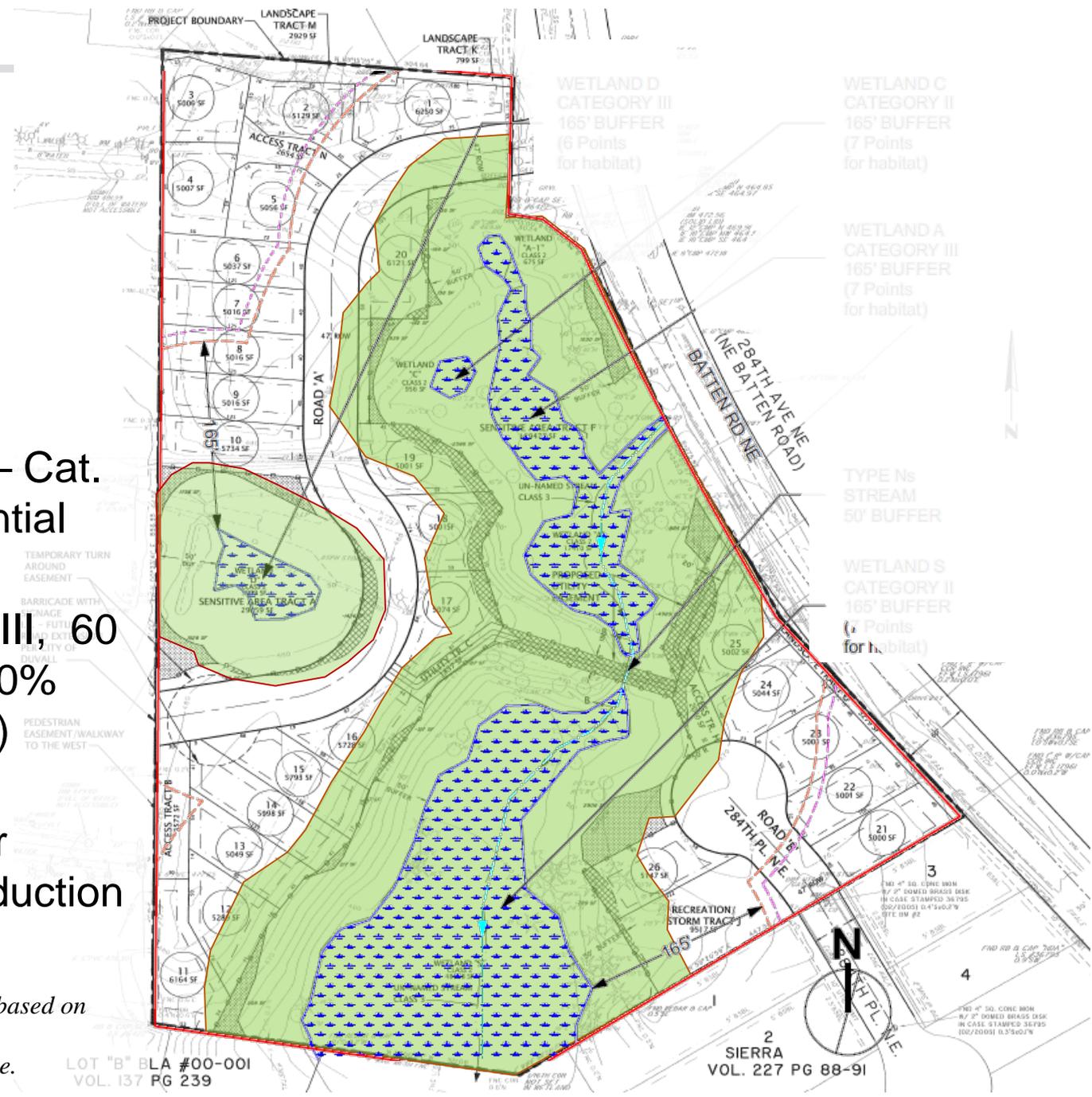
NOTE: All depicted SA extents are based on site survey by others; Depicted buffers are all approximate.



Existing SAO standards

- Wetland corridor – Cat. II, 80 buffer (potential 25% reduction)
- Wetland D – Cat. III, 60 buffer (potential 50% reduction allowed)
- Stream – nonfish bearing, 50' buffer (potential 50% reduction allowed)

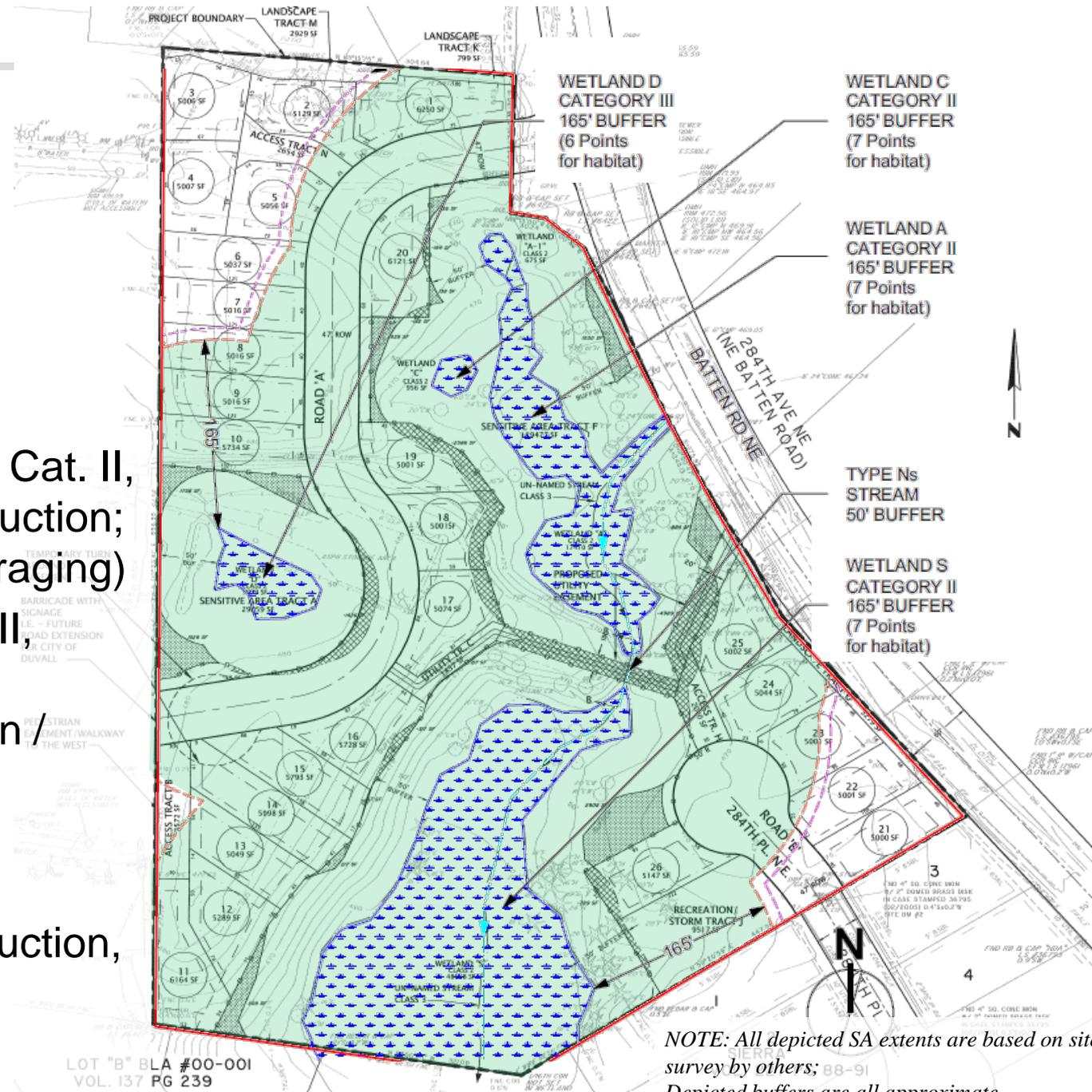
NOTE: All depicted SA extents are based on site survey by others; Depicted buffers are all approximate.



LOT "B" BLA #00-001
VOL. 137 PG 239

Proposed SAO standards

- Wetland corridor – Cat. II, 165' buffer (no reduction; 15% max thru averaging)
- Wetland D – Cat. III, 165' buffer (20% maximum reduction / averaging)
- Stream – nonfish bearing, 50' buffer (potential 10% reduction, 15% averaging)



Implications

Commercial Site - A

- West side of Main Street
- ~1 acre total
- Two wetlands:
 - A: Lobe of high value wetland from west
 - B: Small slope wetland

NOTE: Depicted wetland extents and buffers are all approximate.



Existing SAO standards

- Wetland A – Cat. II, 80' buffer (potential 25% reduction)
- Wetland B – Cat. III, 60' buffer (potential 50% reduction)



Proposed SAO standards

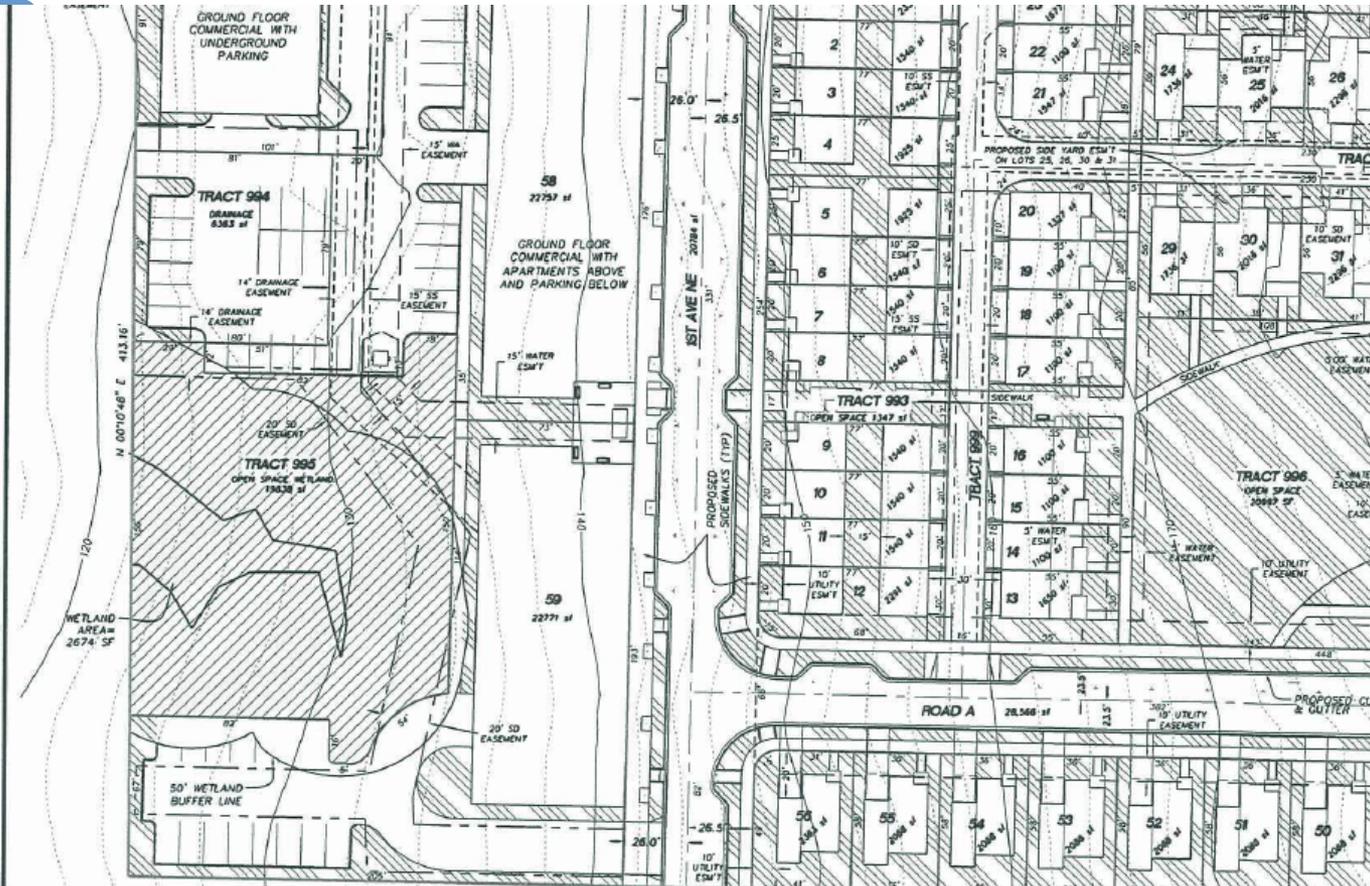
- Wetland A – Cat. II, 105' buffer (no reduction; 25% averaging)
- Wetland B – Cat. III, 105' buffer (25% maximum reduction / averaging)



Implications

Commercial Site - B

- Proposal under existing standards
 - 50 foot standard buffer (Cat IV)
 - Wetland maintained, with some buffer averaging (up to ~35%)



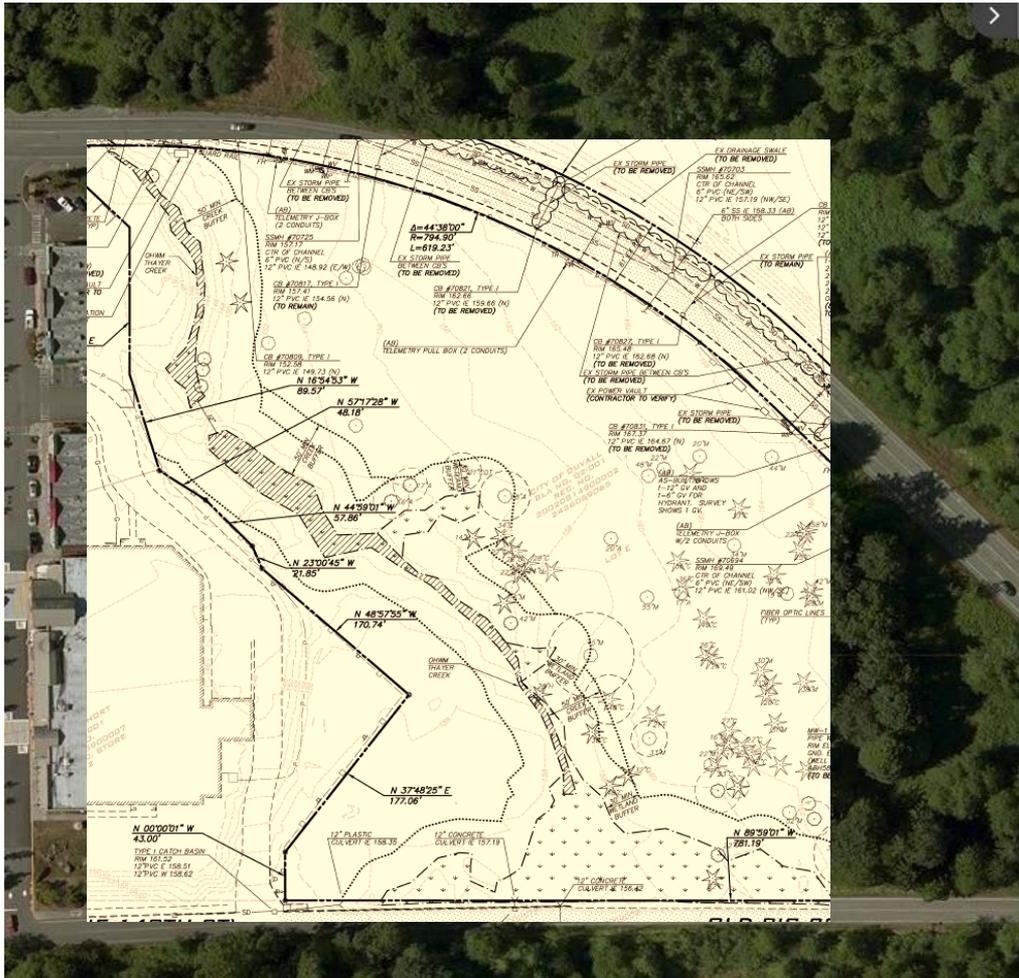
Implications

Commercial Site - B

- Proposed SAO
 - 50 foot standard buffer maintained (Cat IV)
 - Allowance for wetland alteration could be applicable (Cat IV wetland, less than 4,000 SF)
 - Allowances for averaging and/or reduction limited to 25% maximum
 - Mitigation for any impacts would be required within Group 1 or Group 2 subbasin area of the City, consistent with opportunities prioritized by Watershed Plan



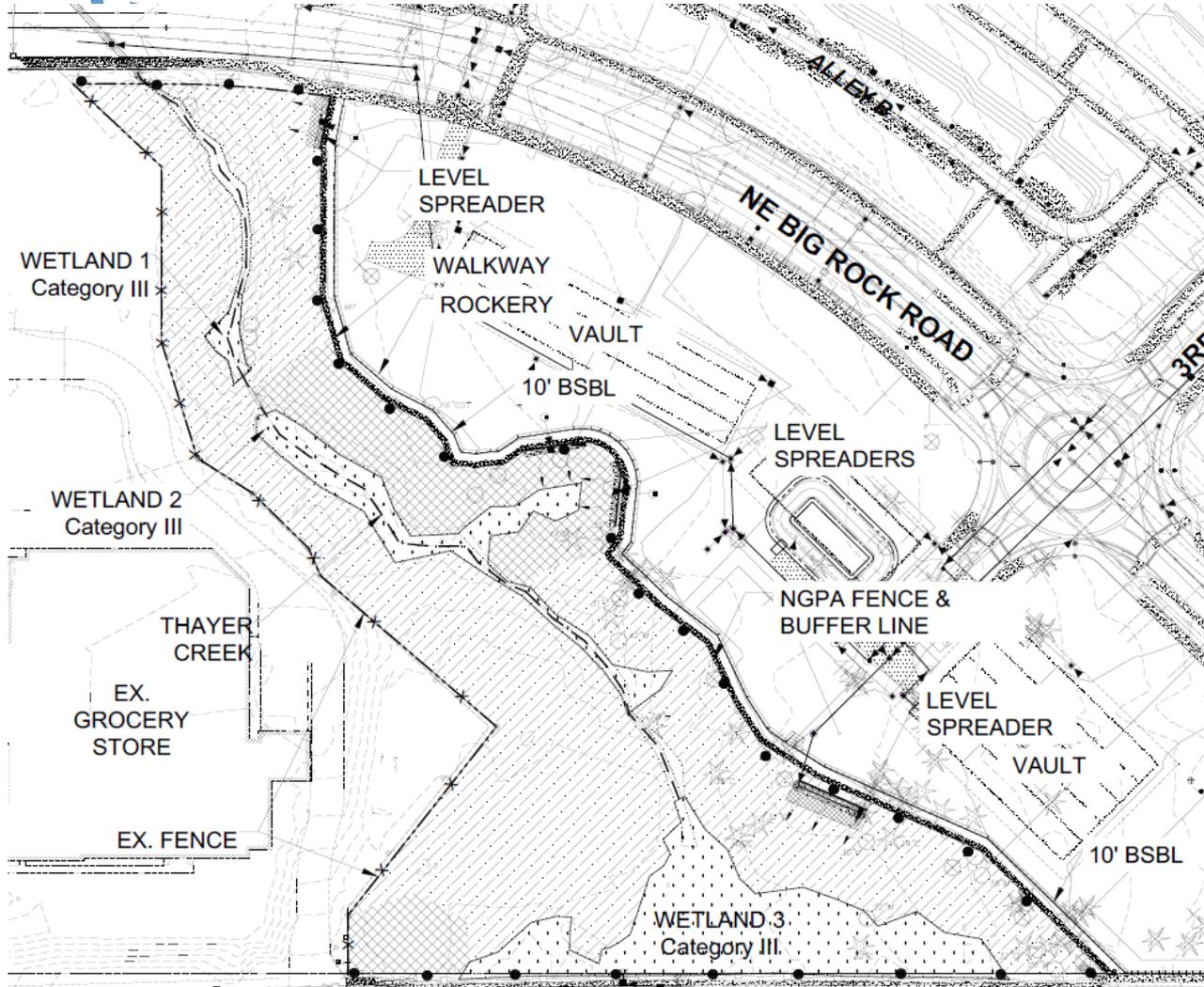
Implications – Commercial Site - C



- Big Rock Road
- Thayer Creek
 - 100' standard buffer
 - 50' performance based buffer
- Three wetlands
 - Cat III, 16 points for habitat functions
 - 60' standard buffers

Implications – Commercial Site -

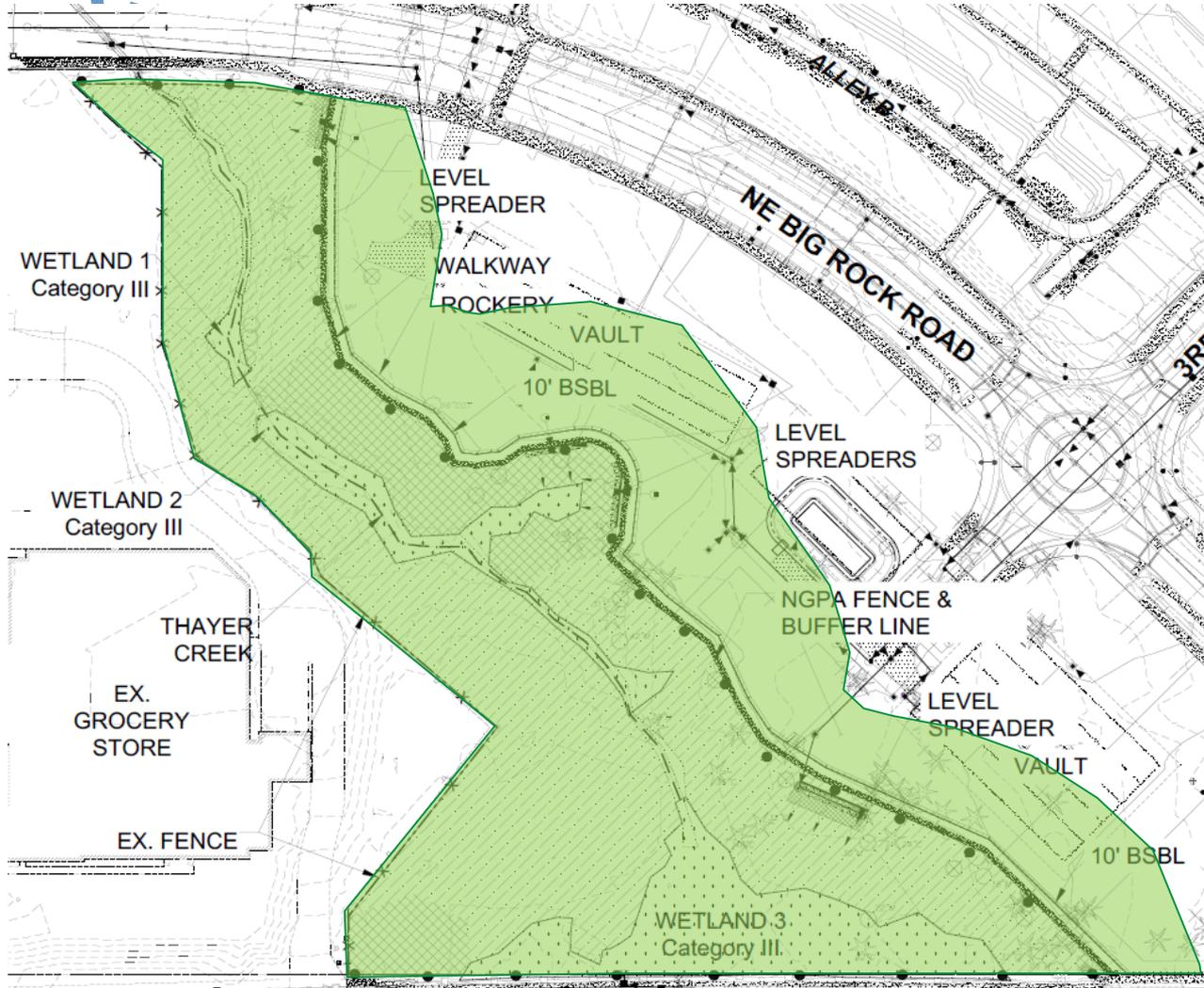
C



- Development proposal consistent with existing SAO:
 - 50' performance-based buffer for Thayer Creek (on-site mitigation)
 - Wetland buffer reduction to 30' minimum (WL 2)

Implications – Commercial Site -

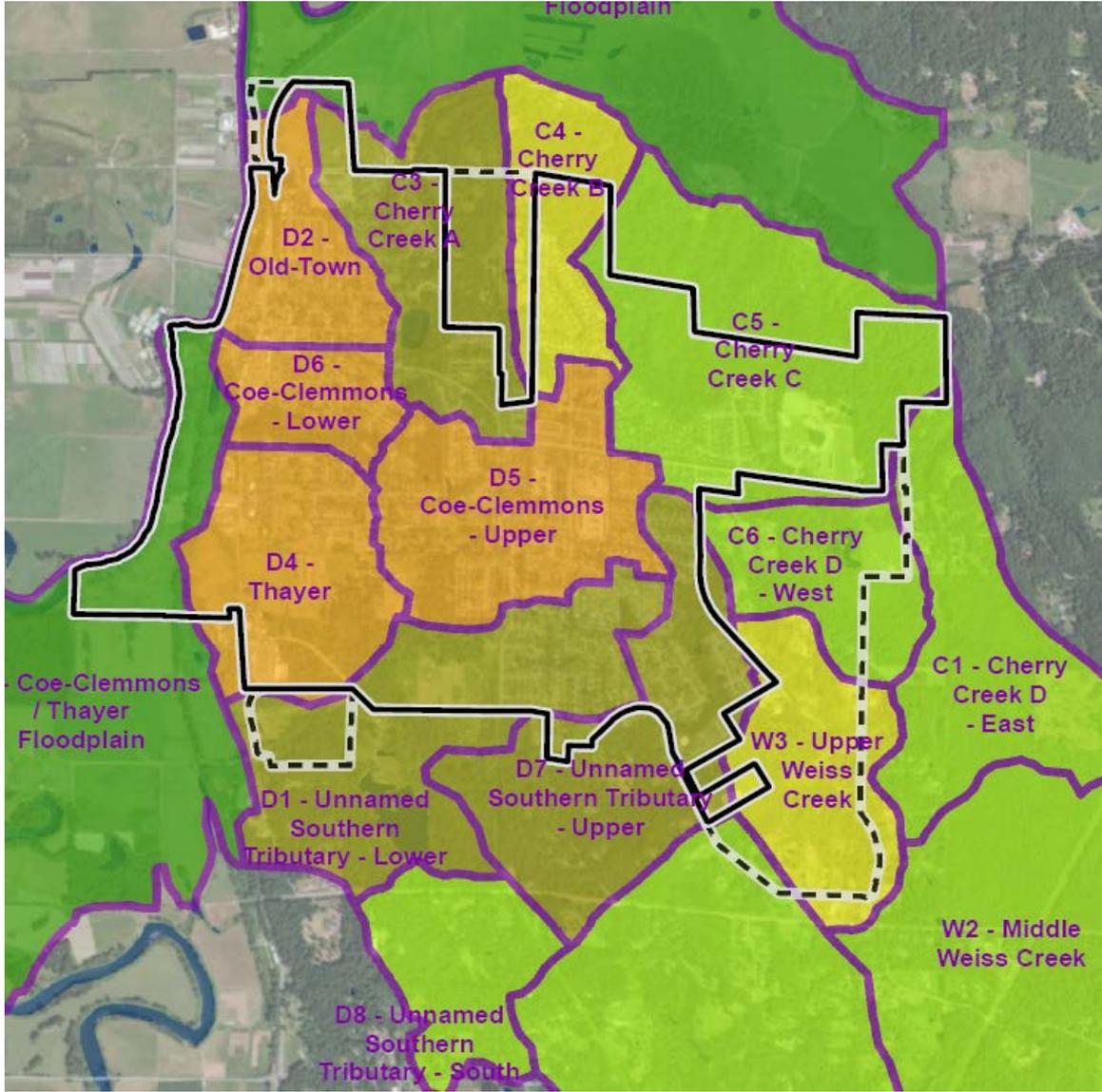
C



- Proposed SAO:
 - 125' standard Thayer buffer
 - 75' performance-based buffer for Thayer Creek (on-site mitigation, and restoration of fish passage)
 - Standard WL buffer of 165' (Cat III, 6 habitat points)
 - 25% allowance for WL buffer averaging or reduction (

Buffer / Alteration Allowances – updated proposal for applying Watershed Plan

-  Group 1 : Protect / Restore
-  Group 2A : Highest Conservation
-  Group 2B : Moderate Conservation
-  Group 2C : Lowest Conservation
-  Group 3 : Urban Development



	Subbasin Management Group				
	1-Protect /Restore	2A – Highest Conservation	All Group 2	2C Least Conservation	3 – Urban Development
Wetland buffer reduction (DMC 14.42.210.B) – maximum reduction allowed for Category I and II wetlands.			No reduction		
Wetland buffer reduction (DMC 14.42.210.B) – maximum reduction allowed for Category III and IV wetlands.	No reduction	No reduction	15%	20%	25%
Wetland buffer averaging (DMC 14.42.210.C) – maximum reduction allowed for Category I and II wetlands.	No averaging	No averaging	10%	15%	25%
Wetland buffer averaging (DMC 14.42.210.C) – maximum reduction allowed for Category III and IV wetlands.	No averaging	10%	15%	20%	25%

Wetland alteration allowances per DMC 14.42.220	Subbasin Management Group				
	1 – Protect/Restore		All Group 2		3 – Urban Development
Private development access in Category II, III, or IV wetlands or their buffers (DMC 14.42.220.E) – where allowance applies	Not applicable	Applicable only with 50% additional mitigation per DMC 14.42.240	Applicable only with 25% additional mitigation per DMC 14.42.240	Applicable	Applicable
Stormwater management facilities, conveyance, or discharge facilities (DMC 14.42.220.F, G) – outer portion (percent) of the standard Category II, III or IV wetland buffer where facilities are allowed.	Not allowed within buffer	10%	20%	30%	40%
Passive recreation facilities, or trails (DMC 14.42.220.H) – outer portion (percent) of the standard Category I, II, III, or IV wetland buffer where allowed.	Consistent with the SMP	10%	20%	30%	40%
Category IV Wetlands less than 1,000 square feet (DMC 14.42.220.I) – where allowance applies.	Not applicable	Not applicable	Applicable only with 25% additional mitigation per DMC 14.42.240	Applicable	Applicable
Category IV Wetlands less than 4,000 square feet (DMC 14.42.220.J) – where allowance applies.	Not applicable	Not applicable	Applicable only with 50% additional mitigation per DMC 14.42.240	Applicable only with 25% additional mitigation per DMC 14.42.240	Applicable

Next Steps

- Draft #3, incorporating all input
- Advisory Committee – final review and recommendation
- Planning Commission (Aug 23 & Sept 13)
- City Council (Sept 19 Hearing & Oct 3)

Questions / Comments:

Lara Thomas – Duvall Planning Director

Lara.thomas@duvallwa.gov, (425) 788-2779 ext 2

Aaron Booy – Consultant project lead with ESA

abooy@esassoc.com, (206) 789-9658

In my opinion, the proposal for residential density calculations is...

...not protective enough

AD-Not protective enough. Mostly ok, but I don't believe buffers should be reduced by 50% for Category I/II wetlands in an urban development group or any group

...right on the money

JK, AO, PF, MH, DB, KL
DW-Finally! Net means Net
AM-Why not have group 3 be the sensitive areas and 100% buffers as opposed to 50%? Would it significantly hamper development?

... too restrictive of future dev

CK-I would recommend that the allowance for buffers be more along the lines of Bellevue, where the density can be transferred to the upland area based on the percentage of the site being impacted. Less impact=more transfer. I do not think the buffer width should be further increased in 2B in determining density. Housing affordability.

The proposal to **revise impervious surface maximums** for non-residential zones is...

<p>...not protective enough</p>	<p>...right on the money</p>	<p>... too restrictive of future dev</p>
<p><u>AD</u>-Commercial areas may have increased activity: traffic, waste that will impact a wetland or</p>	<p><u>AM, DB, KL, JK, AO, PF</u> <u>CK</u>-Suggestions seem reasonable to me</p>	

sensitive area more than it would otherwise offer higher protection.

DW-minimize impervious as much as possible-
this will work.

MH-right on the money

The proposed allowance for **limited expansion of existing SFR structures** is...

...not
protective
enough

...right on the
money

...too
restrictive
of dev

	<p><u>AD</u>, <u>JK</u>, <u>MH</u>, <u>PF</u>, <u>KL</u></p> <p><u>DW</u>-Best that you can do</p> <p><u>AM</u>-Addition (as stated) shouldn't be allowed to get closer to critical area. That's the most important part in the proposal to me.</p>	<p><u>CK</u>-Sounds good as long as there is the option of gaining some flexibility by the planning director.</p> <p><u>DB</u>-I would like to see more flexibility with criteria created to help guide the decision process for a case by case basis.</p> <p><u>AO</u>-would like criteria added, some flexibility, but do what's possible to maintain protection under new buffers while protecting property rights.</p>
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In my opinion, the proposal for **stream buffers (standard & performance-based)** is...

<p>...not protective enough</p>	<p>...right on the money</p>	<p>...too restrictive of future dev</p>
<p><u>PF</u>-Salmon Plan calls for 150-foot buffers on salmon bearing streams. Thayer and Coe-Clemmons need bigger buffers.</p>	<p>DB, AO, JK, MH, AM, AD, KL <u>DW</u> -ok <u>CK</u>-Works as long as City is aware that input will be in the commercial portion of the City/<u>Arch</u>.</p>	

In my opinion, **Draft #2 standard wetland buffers** are...

<p>...not protective enough</p>	<p>...right on the money</p>	<p>...too restrictive of future dev</p>
	<p><u>KL, MH, DB, JK</u> <u>AM</u>-I'm good with what we are proposing, but the larger the buffers on sites according to BAS the better. This is a great step in the right direction. <u>AO</u>-Concerns about commercial implications</p>	

In my opinion, the proposal for **buffer reduction/alteration allowances** is...

...not
protective
enough

...right on the
money

...too
restrictive
of future
dev

KL, MH, AO, DB, JK

AM-I support combining Group 2. But I would prefer using the 2A standards. Though I think the numbers proposed are okay.