

City of Edmonds
Critical Areas Ordinance (CAO) Update
Best Available Science Review and Gap Analysis Matrix
August 2015

Final version – consistent with Planning Board recommended CAO Updates

Existing CAO Provision EDCD Chapter / Section	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Potential Action	Rationale/ Basis for Change	Recommended Action
23.40 Environmentally Critical Areas General Provisions					
23.40.000 Purpose	Consistent with BAS			CTED, 2007	None; consistent with BAS
23.40.010 Authority	Consistent with BAS			CTED, 2007	None; consistent with BAS
23.40.020 Relationship to other regulations	Generally consistent, but could be strengthened			CTED, 2007	None; consistent with BAS
23.40.030 Severability	Consistent with BAS			CTED, 2007	None; consistent with BAS
23.40.040 Jurisdiction – Critical Areas	Consistent with BAS			CTED, 2007 and Wetlands and CAO Updates: Guidance for Small Cities. Western Washington Version. Revised October 2012 Ecology Publication #10-06-002 (Bunten et al. 2012)	None; consistent with BAS
23.40.050 Protection of critical areas	Consistent with BAS			CTED, 2007	None; consistent with BAS
23.40.060 General requirements	Consistent with BAS			CTED, 2007	None; consistent with BAS
23.40.070 Critical areas preapplication consultation	Consistent with BAS			CTED, 2007	None; consistent with BAS
23.40.080 Notice of initial determination	Generally consistent, but could be strengthened	Section B.2 could be strengthened by including criteria	Add the following statement to Section B.2.: "A waiver may be granted if there is	CTED, 2007	Revise to remove vague decision criteria language (do

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		for granting a waiver.	substantial evidence that all of the following requirements will be met: <ul style="list-style-type: none"> a. There will be no alteration of the critical area or buffer; b. The development proposal will not affect the critical area in a manner contrary to the purpose, intent, and requirements of this Title; and c. The proposal is consistent with other applicable regulations and standards. D. Critical areas determinations shall be considered valid for five years from the date in which the determination was made; after such date the city shall require a new determination, or at minimum documentation of a new assessment verifying the accuracy of the previous determination .	D. Provides for consistency with 23.40.090.F, 23.40.220.C.1.c, and 23.50.010.E	not use the term “substantial evidence”). “A waiver may be granted if the <u>director determines</u> that all of the following requirements will be met:...” Subsection c. not included because consistency with “other applicable regulations and standards” is not determined with the critical area review.
23.40.090 Critical areas report – Requirements	Generally consistent, but could be strengthened	Additional detail could be added to strengthen reporting requirements in Section D.	Revise Section D to include the following requirements: <ul style="list-style-type: none"> - A statement specifying the accuracy of the report and all assumptions made and relied upon; -A description of the methodologies used to conduct the critical areas study, including references -An assessment of the probable cumulative effects to critical areas resulting from development of the site and the proposed 	CTED, 2007 and Wetlands and CAO Updates: Guidance for Small Cities. Western Washington Version. Revised October 2012 Ecology Publication #10-06-002 (Bunten et al. 2012) These recommendations will clarify for the City how and what was done for a critical areas report as well as bolster the concept of mitigation sequencing	Revise Section D to include only the first, second, and fourth requirements in suggested change.

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			development; - Plans for adequate mitigation, as needed to offset any effects, in accordance with the Mitigation Plan Requirements in Section 23.40.130	and appropriate mitigation.	
23.40.100 Critical areas report – Modifications to requirements	Consistent with BAS			CTED, 2007	None; consistent with BAS
23.40.110 Mitigation requirements	Could be brought closer to consistency	Section B sets the standard for the types of mitigation allowed as: "in-kind and on-site, when possible, and sufficient." With respect to wetlands and streams especially, a watershed-based focus may be more successful or provide more ecological benefit. Language in this section is not fully consistent with mitigation banking discussed in 23.50.050.H.	Revise Section B to include allowances for: off-site and out-of-kind mitigation, in lieu fee programs, mitigation banks, or other mitigation strategies according to the criteria set forth in Innovative Mitigation Section 23.40.140.	Improve internal code consistency with 23.50.	Revise to include specific reference to Ecology Credit/Debit methodology, and allowance for out-of-basin mitigation with an approved mitigation bank or ILF program.
23.40.120 Mitigation sequencing	Consistent with BAS			CTED, 2007 and Wetlands and CAO Updates: Guidance for Small Cities. Western Washington Version. Revised October 2012 Ecology Publication #10-06-002 (Bunten et al. 2012)	None; consistent with BAS
23.40.130 Mitigation plan requirements	Section C Generally consistent but could be strengthened	Does not specify that impact and mitigation areas should be shown on plans.	Revise Section C to include areas of proposed effects to critical areas or buffers.	CTED, 2007	Make suggested change
	Section D	Requires monitoring for 3 years instead of 5.	Revise Section D last sentence to read: "The compensation project shall be monitored for	CTED, 2007	Make suggested change.

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	Inconsistent with BAS		a period necessary to establish that performance standards have been met, but not for a period less than 5 years without approval from the director.		
23.40.140 Innovative mitigation	Consistent with BAS		Could provide additional clarification of types of innovative mitigation allowed (e.g., in lieu fee programs).	CTED, 2007 and Wetlands and CAO Updates: Guidance for Small Cities. Western Washington Version. Revised October 2012 Ecology Publication #10-06-002 (Bunten et al. 2012)	Revise to include clearer, more detailed definition of in-lieu fee mitigation programs. Use example language from Bunten et al. (20012).
23.40.150 Critical areas decision	Consistent with BAS			CTED, 2007	None; consistent with BAS
23.40.160 Review criteria	Consistent with BAS			CTED, 2007	None; consistent with BAS
23.40.170 Favorable critical areas decision	Consistent with BAS			CTED, 2007	None; consistent with BAS
23.40.180 Unfavorable critical areas decision	Consistent with BAS			CTED, 2007	None; consistent with BAS
23.40.190 Completion of the critical areas review	Consistent with BAS			CTED, 2007	None; consistent with BAS
23.40.200 Appeals	Consistent with BAS			CTED, 2007	None; consistent with BAS
23.40.210 Variances	Consistent with BAS			CTED, 2007	None; consistent with BAS
23.40.215 Critical Area Restoration Projects	New section		Insert new section that provides relief for restoration projects that are not required as mitigation for development proposal.	The City does not want to discourage projects that would provide a net benefit to the City's critical areas.	Insert new section 23.40.215 that would grant relief for restoration projects associated with a stream or wetland allow buffer reduction of up to 50% standard buffer if certain criteria are met.

Existing CAO Provision EDCD Chapter / Section	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Potential Action	Rationale/ Basis for Change	Recommended Action
23.40.220 Allowed activities	Generally consistent, but could be strengthened	Can add additional clarity	Revise Section C.1.c. to include "There is no new information available that is applicable to any critical area review of the site or particular critical area;"	CTED, 2007 and Wetlands and CAO Updates: Guidance for Small Cities. Western Washington Version. Revised October 2012 Ecology Publication #10-06-002 (Bunten et al. 2012)	Make suggested change
	Section C4 Inconsistent with BAS	Any activities that directly affect a wetland or stream should receive further review	Revise Section C.4 to include "Except those activities that alter a wetland or watercourse, such as culverts or bridges, or result in the transport of sediment or increased stormwater; subject to the following: - Retention and replanting of native vegetation shall occur wherever possible along the right-of-way improvement and resulting disturbance.	CTED, 2007 and Wetlands and CAO Updates: Guidance for Small Cities. Western Washington Version. Revised October 2012 Ecology Publication #10-06-002 (Bunten et al. 2012)	Make suggested change
23.40.220 Allowed activities (continued)	New subsection	Physically separated and functionally isolated buffers are not directly addressed by the existing CAO.	Provide code language to allow for development within a physically separated and functionally isolated buffer.	Improve clarity/user-friendliness	Make suggested change.
	Section C.6 Partially inconsistent	Updated model code for wetlands and wetland buffers suggests more strict requirements for trails and walkways. See discussion for 23.50.040.F.8 below.	Revise Section C.6. first sentence to read: "Public and private trails, except in wetlands, fish, and wildlife habitat conservation areas, or their buffers,..."	Wetlands and CAO Updates: Guidance for Small Cities. Western Washington Version. Revised October 2012 Ecology Publication #10-06-002 (Bunten et al. 2012)	Make suggested change as described below under 23.50.040, which will allow trails in buffers under a set of criteria.
	Section C.7 Partially inconsistent	BAS suggests several strategies including but not limited to: hand removal, chemical treatment,	Revise Section C.7.a. to include an additional information regarding invasive removal: "Removal of invasive plant species shall be	Wetlands and CAO Updates: Guidance for Small Cities. Western Washington Version.	Make suggested change. Ensure that all references to chemical treatments in code

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		shading, or other techniques may be appropriate depending on the species and situation. See discussion in 23.50.020.	restricted to hand removal unless permits or approval from the appropriate regulatory agencies have been obtained for approved biological or chemical treatments or other removal techniques. All removed plant material shall be taken away from the site and appropriately disposed of. Plants that appear on the Washington State Noxious Weed Control Board list of noxious weeds must be handled and disposed of according to a noxious weed control plan appropriate to that species.” Add additional allowed activities in Section C.7: - Chemical Applications. The application of herbicides, pesticides, organic or mineral-derived fertilizers, or other hazardous substances, if necessary, as approved by the City, provided that their use shall be restricted in accordance with state Department of Fish and Wildlife Management Recommendations and the regulations of the state Department of Agriculture and the U.S. Environmental Protection Agency.	Revised October 2012 Ecology Publication #10-06-002 (Bunten et al. 2012)	are revised similarly. Also add a square foot threshold for limiting invasive vegetation removal activities. Language will be developed during code revision stage, but suggest something similar to City of Seattle Environmentally Critical Areas Code (SMC 25.09.320), which permits restoring or improving vegetation and trees through invasive plant removal (by hand) to “promote maintenance or creation of a naturally functioning condition that prevents erosion, protects water quality, or provides diverse habitat... when the area of work is under one thousand five hundred (1,500) square feet in area calculated cumulatively over three (3) years...”
	Section C.7.b. Inconsistent with BAS and City code	Generally consistent with BAS and model code language; however, portions of 18.45—Land Clearing and Tree Cutting are not consistent with Section 23.40 and would allow clearing and cutting	Revise 18.45 for internal consistency with Section 23.40. Clearing and tree cutting should not be allowed within critical areas or buffers without review and compliance with Section 23.40.	Inconsistent with BAS and internal code	No changes to 23.40. City to make revisions to 18.45 per ESA suggestion, which is the more appropriate ECDC chapter.

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		within wetland and stream buffers. There is no reference to Section 23.40.	The terms “environmentally sensitive site” and “environmentally sensitive areas” should be revised to refer to environmentally critical areas for consistency.		
23.40.230 Exemptions	Could be brought closer to consistency	No definition in Section C.2 to clarify what actions constitute operations and maintenance activities for vegetation removal.	Revise Section C.2 to include: “Operation and maintenance also includes vegetation management performed in accordance with best management practices provided that such management actions are part of regular and ongoing maintenance, do not expand further into the critical area, are not the result of an expansion of the structure or utility, and do not directly impact an endangered or threatened species.”	CTED, 2007	Make suggested change. Will address lack of clarity regarding vegetation maintenance under definitions. See row 23.40.320 below.
23.40.240 Unauthorized critical areas alterations and enforcement	Generally consistent with BAS, but can be strengthened	Section E. references tree code, which sets a penalty for tree cutting, but other types of violations are not covered.	Revise Section E. to include a daily penalty per day per violation (this is the recommended language used in the model code). Penalties could be included for tree cutting in addition to violation penalty.	Wetlands and CAO Updates: Guidance for Small Cities. Western Washington Version. Revised October 2012 Ecology Publication #10-06-002 (Bunten et al. 2012). Both Lynnwood and Mountlake Terrace have a fine of \$1,000 and/or 90 days in jail. Snohomish County has a penalty scale, with a \$500 penalty for the first 20 days and the penalty increasing with time thereafter to a max of \$10,000 (SCC 30.85.170).	Revise Section E to include a penalty equal to the cost of the permit and a square footage cost (\$3/SF of impact) and a per tree penalty where applicable.
23.40.250 Critical areas markers and signs	Consistent with BAS			CTED, 2007	None; consistent with BAS
23.40.270 Critical areas	Partially Inconsistent	Section E: Use of herbicides is prohibited; however, BAS	Section E. Update text to include herbicide treatment (aquatic approved herbicides	Wetlands and CAO Updates: Guidance for Small Cities.	Make suggested change

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tracts		suggests several strategies including but not limited to: hand removal, chemical treatment, shading, or other techniques may be appropriate depending on the species and situation. See discussion in 23.40.220 and 23.50.020. These Sections should all be consistent.	when wetlands and streams are present) where recommended by the Noxious Weed Control Board.	Western Washington Version. Revised October 2012 Ecology Publication #10-06-002 (Bunten et al. 2012)	
	New subsection	No discussion of notice on title or Native Growth Protection Areas	Include discussion of notice on title or Native Growth Protection Areas for all lots, not just subdivisions. ESA can provide example language during code revision process.	CTED, 2007. This informs subsequent purchases of property of critical areas present on their properties.	Make suggested change
23.40.280 Building setbacks	Consistent with BAS			CTED, 2007	Keep section except for geologically hazardous areas where buffer and setback will be determined by geotechnical report.
23.40.290 Bonds to ensure mitigation, maintenance, and monitoring	Could be brought closer to consistency	Section D requires that a bond be held for 3 years. The standard is typically 5 years.	Revise Section D to reflect a 5 year period for holding the bond, to ensure consistency with 5 year monitoring period.	CTED, 2007 and Wetlands and CAO Updates: Guidance for Small Cities. Western Washington Version. Revised October 2012 Ecology Publication #10-06-002 (Bunten et al. 2012)	Make suggested change.
23.40.300 Critical areas inspections	Consistent with BAS			CTED, 2007	None; consistent with BAS
23.40.310 Best available science	Could be brought closer to consistency	Section D mentions "anecdotal information" but leaves out other forms of nonscientific	Revise Section D to include "Non-expert opinion and hearsay" as forms on nonscientific information	CTED, 2007	Make suggested change

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		information			
23.40.320 Definitions pertaining to critical areas	Generally consistent, but could be brought closer to consistency	Definitions out of date	<p>Update definitions of:</p> <ul style="list-style-type: none"> -Adjacent -Compensatory mitigation (include re-establishment and rehabilitation; update definition of restoration) -Geologist -Habitats of local importance -Noxious weeds -Qualified critical area professional -Storm Water Management Manual <p>Add definitions for:</p> <ul style="list-style-type: none"> -Footprint of Existing Development or Footprint of Development -In lieu fee program -Normal maintenance of vegetation -Wetland mitigation bank 	CTED, 2007 and Wetlands and CAO Updates: Guidance for Small Cities. Western Washington Version. Revised October 2012 Ecology Publication #10-06-002 (Bunten et al. 2012)	Make suggested changes.
23.50 Wetlands					
23.50.000 Wetlands compliance requirements flowchart	Partially consistent	The flow chart states that no additional compliance is required when a "reconnaissance determines a wetland is not jurisdictional."	Revise this to state that the Corps determines a wetland is not jurisdictional, or revise text to clarify.	Wetland jurisdictional determinations are made at a federal level (Corps). Even if a wetland is exempt under City code, it may be regulated at a federal and/or state level. An applicant would need to request a jurisdictional determination from the Corps to get assurance that a wetland is not	Make suggested change

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				jurisdictional.	
23.50.010 Designation, rating and mapping – Wetlands	Not consistent	Sections A, B, and E reference outdated wetland delineation and rating manuals.	Revise Sections A, B, and E to refer to the approved federal wetland delineation manual and applicable regional supplements and the Washington State Wetland Rating System for Western Washington, 2014 Update.	WAC 173-22-035, WAC 365-190-090 The federal wetland delineation manual and regional supplements and updated 2014 wetland rating manual constitute BAS for wetland identification, delineation, and rating.	Make suggested change
	Section B.1 Could be strengthened to be more consistent	References wetland function scores from the City of Edmonds’s wetland field data form, which is based on an older version of the wetland rating manual.	Revise Section B.1. to reflect the updated wetland function scores for each wetland Category based on the point system used in the updated 2014 rating manual. Consider revising the City’s wetland field data form or referencing the appropriate state or federal manual instead.	Washington State Wetland Rating System for Western Washington: 2014 Update. Ecology Publication #14-06-029 (Hruby 2014)	Make suggested change.
	Section E Could be strengthened to be more consistent	Does not specify how long a wetland delineation is valid.	Section E could be improved for consistency with BAS by specifying that wetland delineations are valid for five years.	User-friendliness and clarity, improved consistency with BAS Corps of Engineers Regulatory Guidance Letters RGL 05-02 and 08-02 set a five year standard on wetland determinations. ⁱ	Make suggested change. Add a provision regarding critical area assessment reports and statute of limitations earlier in CAO chapter (23.40.090).
23.50.020 Allowed activities – Wetlands	Section D Could be revised to be more consistent.	The Washington State Noxious Weed Control Board has recommendations and resources for controlling state listed noxious weeds and invasive species.	Update Section D to include that those noxious weeds listed on the Washington State Noxious Weed Control Board list must be handled and disposed of according to a noxious weed control plan appropriate to that species.	BAS suggests several strategies including but not limited to: hand removal, chemical treatment, shading, or other techniques may be appropriate depending on the species and situation. ⁱⁱ Wetlands and CAO Updates: Guidance for Small Cities.	Make suggested change

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				Western Washington Version. Revised October 2012 Ecology Publication #10-06-002 (Bunten et al. 2012)	
23.50.030 Special study and report requirements – Wetlands	Generally consistent with BAS			CTED, 2007 and Wetlands and CAO Updates: Guidance for Small Cities. Western Washington Version. Revised October 2012 Ecology Publication #10-06-002 (Bunten et al. 2012)	None; consistent with BAS
23.50.040 Development standards – Wetlands (continued)	Section F.1. Inconsistent with BAS	Buffer widths are inconsistent with BAS and with Draft SMP buffers. BAS supports increased standard buffer widths or modified buffer widths based on intensity of impacts from adjacent land use or based on wetland functions.	Revise Section F.1. to reflect recent BAS updates for buffers (Ecology, 2013) ⁱⁱⁱ . The draft SMP uses Ecology’s Table “XX.1” for wetland buffers in shoreline areas. Table XX.1 was recently revised in December 2014, based on habitat scores used in the updated 2014 wetland rating manual. Ecology’s updated Table XX.1 for standard buffer widths requires additional measures (Table “XX.2”) to minimize wetland impacts. The draft SMP incorporates these measures. The CAO should be revised to reflect these BAS updates and to be consistent with the SMP section F.2.	Wetlands in Washington State, Volume 2: Guidance for Protecting and Managing Wetlands, Ecology Publication #05-06-008 (Granger et al. 2005).	Make suggested change
	Section F.1. Supplemental material	Can supplement section by expanding inadequate vegetation to include previously disturbed areas and also requiring revegetation pursuant to an approved planting plan.	Supplement F.1 with additional discussion of previously disturbed areas. These are generally considered those areas which are not composed of an intact native vegetation community, but still consist of pervious surfaces. Previously disturbed areas would include non-native vegetation, lawn, and	User-friendliness	Revise Section F1 to: “If the vegetation is inadequate <u>buffer is composed of</u> <u>nonnative vegetation, lawn, or</u> <u>bare ground, then, at the</u> <u>discretion of the director...</u> ”

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	Section F.2. Partially inconsistent	Increased buffer widths required in general when needed “to protect other critical areas.”	gravel. Include requirement for revegetation according to an approved planting plan. This section can be revised to be more specific by referencing federal or state listed endangered, threatened, candidate, sensitive, monitored or documented species or habitats, or essential habitat (e.g., nesting sites or rookeries).iv	Improve clarity regarding when an increased buffer is needed.	Revise Section F2 to: Add new subsection “d.”: <u>“If a wetland is occupied by a federally listed threatened or endangered species, a bald eagle nest, a great blue heron rookery, or at the discretion of the director to protect species considered locally important”</u>
23.50.040 Development standards – Wetlands (continued)	New subsection in F	Create a new subsection for “Buffer Modification” that contains code for buffer averaging and buffer reductions.	Create a new subsection that incorporates criteria for allowing a buffer modification (outlined in F.3.) and outlines the sequence for preferred buffer modifications: buffer averaging with enhancement, then buffer reductions with enhancement.	User-friendliness and clarity. Will improve internal consistency and make criteria easy to follow.	Make suggested change
	Section F.3 Inconsistent	A buffer reduction of up to 50 percent is allowed. Buffer reduction with buffer enhancement is not discussed in BAS documents (Granger et al., 2005; or Ecology, 2012). However, the City’s code requires that functions will be increased or retained, which is consistent with the state’s requirement of no net loss.	Model codes typically allow up to a 25 percent modification through averaging, which affords better protection to wetlands than a 50 percent reduction. Recommend revising code to only allow a reduction up to 25 percent of the standard buffer width with buffer enhancement. The draft SMP includes a 25 percent reduction; Revise code to be consistent with draft SMP text. Since buffer reductions are not discussed in BAS and buffer reductions result in a net loss of area (even if functions are improved or retained), this step should follow after buffer averaging in the sequence and be used only when	Inconsistent with BAS and City’s SMP. Wetlands in Washington State, Volume 2: Guidance for Protecting and Managing Wetlands, Ecology Publication #05-06-008 (Granger et al. 2005).	Make suggested change

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	Section F.4. Inconsistent	Code appears to allow reduction and averaging. Buffer averaging of up to 50 percent is allowed. BAS does not support the use of both tools in conjunction.	buffer averaging cannot be accomplished on-site. This is also more consistent with the wetlands review flow chart in 23.50.000 Revise Section F.4., first sentence, to exclude mention of a “reduced” wetland buffer. Only allow a reduction up to 25 percent of the standard buffer width. Buffer averaging should also include a requirement for buffer enhancement, as many urban buffers are degraded. The draft SMP includes a 25 percent reduction; revise code to be consistent with draft SMP text. See discussion above regarding prioritizing buffer averaging before buffer reductions where possible. ESA can provide example code language during code revision stage.	Inconsistent with BAS and City's SMP. Wetlands in Washington State, Volume 2: Guidance for Protecting and Managing Wetlands, Ecology Publication #05-06-008 (Granger et al. 2005).	Make suggested change
23.50.040 Development standards – Wetlands (continued)	Section F.8. Generally consistent, but could be clarified.	Some of the uses allowed in wetlands are not listed as buffer uses, but would presumably be necessary. Could be revised to address applicable uses and parallel treatment.	Revise to include uses allowed in wetlands that would also be allowed in wetland buffers. For example (not an inclusive list): -Education and scientific research -Normal and routine maintenance and repair of public or private facilities within an existing right-of-way	Improved internal consistency	Make suggested change
	Section F.8. Inconsistent	Walkways and trails are allowed in buffers with minimal provisions. Scientific research (Ecology, 2013; Granger, 2005) indicates that human disturbance in wetland buffers can affect wetland functions.	Revise text to limit walkways and trails to the outer 25 percent of the wetland buffer perimeter and avoid trees. Revise text to be consistent with draft SMP.	Wetlands and CAO Updates: Guidance for Small Cities. Western Washington Version. Revised October 2012 Ecology Publication #10-06-002 (Bunten et al. 2012) Wetlands in Washington State,	Make suggested change, but add clarification regarding application. Revise F8 to include a priority for limiting trails to the outer 25 percent of the wetland buffer perimeter and avoid trees, or in cases

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				Volume 2: Guidance for Protecting and Managing Wetlands, Ecology Publication #05-06-008 (Granger et al. 2005).	where the buffer is below the regulatory minimum, trails could be outer 25 % of existing buffer. Specific language to be developed during code revision stage.
23.50.040 Development standards – Wetlands (continued)	Section G. Inconsistent	Permanent fencing is not discussed as a form of wetland protection.	Section G. Revise text to discuss perimeter fencing. Perimeter fencing is mentioned as a measure to avoid impacts in Ecology’s Table “XX.2” and in the draft SMP. Clarify that fencing, if required, should be designed so it doesn’t interfere with wildlife migration and should be constructed in a way that minimizes impacts to the wetland, buffer, and associated habitat.	Improve consistency with internal code requirements and consistency with BAS.	Make suggested change
	Section H. Inconsistent	Additions to structures existing within buffers lists a sequence of steps. Buffer reduction through enhancement is prioritized before buffer averaging. The sequence also allows development beyond the 25 percent reduction in the standard buffer, which is not supported by BAS. See discussion in Section F.3.	Section H. Revise text to prioritize buffer averaging before buffer reductions. Consider a threshold for limiting the size of the addition when occurring outside of the inner 25 percent (e.g., 150 square feet or another number based on planning staff experience and feedback). Include a requirement for buffer enhancement and fencing or other mitigation measures (e.g. LID, etc.) to avoid further encroachment.	Wetlands and CAO Updates: Guidance for Small Cities. Western Washington Version. Revised October 2012 Ecology Publication #10-06-002 (Bunten et al. 2012) Reduction beyond the 25 percent standard buffer would be considered an impact and therefore requires mitigation.	Make suggested change
	Section I: Inconsistent	Scientific literature does not support exempting wetlands based on size or category alone without mitigation. Small wetlands may perform important functions. However, Ecology has developed a strategy for	Revise Section I to allow exemptions for isolated wetlands under 500 square feet and include additional provisions for considering wetland functions/connectivity/habitat and a requirement for mitigation. ESA can provide example suggestions during code revision	Mitigation is required to be consistent with BAS. Wetlands in Washington State, Volume 2: Guidance for Protecting and Managing Wetlands, Ecology Publication	Make suggested change. Also revise title of Section I to: “Small, hydrologically isolated wetlands”. Revise I.2 to better define “low-quality” by using scores

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		exempting small wetlands when wetland functions are considered and mitigation is required.	process.	#05-06-008 (Granger et al. 2005).	from Ecology Wetland Rating System. Revise I.3 to include a wildlife habitat score (value or range) that defines "no significant habitat value".
23.50.040 Development standards – Wetlands (continued)	New subsection		New subsection to allow development within the footprint of existing development (per new definition) in exchange for enhancement equivalent to the footprint of the new development.	Development in the City of Edmonds has occurred over many years, much of this development occurred prior to the established of critical area regulations. Allowing some development within the footprint of existing development in exchange for enhancement of the critical area and/or critical area buffer will result in a net benefit to the City's critical areas.	Make suggested change.
23.50.050 Mitigation requirements – Wetlands	Intro Inconsistent with BAS	Introductory paragraph refers to outdated mitigation guidance.	Revise introductory paragraph to include latest mitigation guidance documents: <i>Wetland Mitigation in Washington State—Part 2: Developing Mitigation Plans</i> (Ecology, 2006) and <i>Selecting Wetland Mitigation Sites Using a Watershed Approach</i> (Ecology, 2009).	Wetlands and CAO Updates: Guidance for Small Cities. Western Washington Version. Revised October 2012 Ecology Publication #10-06-002 (Bunten et al. 2012)	Make suggested change
	Section A Inconsistent with BAS	Mitigation preference is not consistent with federal and state guidance. Federal and state agencies are requiring the use of mitigation banks and ILF programs.	Consider specifying that mitigation using banks or ILF programs is preferred over permittee-responsible mitigation (regardless of location).	Compensatory Mitigation for Losses of Aquatic Resources. Final Rule. (Federal Register 73(70): 19594-1970) BAS indicates that mitigation banks and ILF programs have a	Make suggested change, but add prioritization for in-basin mitigation followed by mitigation within City limits.

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				significantly greater likelihood of mitigation success, as opposed to permittee-responsible mitigation.	
	Section F. Mitigation Ratios Partially consistent	Mitigation ratios are appropriate and generally consistent with BAS. This section could be clarified by adding a table with mitigation ratios for each type of mitigation action. As an alternative to mitigation ratios, the Credit/Debit method may be used, and in some cases, may be required by Ecology.	Include mitigation ratios in a table. Include reference to the Credit/Debit Method.	Clarity/user-friendliness Improved consistency by referencing Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Western Washington: Final Report (Hruby, 2012)	Make suggested change.
	Section H.3. Wetland Mitigation Banks Generally consistent, but could be strengthened	This section can be strengthened with additional discussion of in lieu fee programs. These programs should also have a system of calculating debits and credits specified in the approved instrument.	Incorporate text from model code (Ecology, 2012) to clarify the credit-debit process. ESA can provide example code language during code revision stage.	Improved consistency	Make suggested change to incorporate provisions from model wetland code that allow use of ILF programs only with an approved instrument.
23.50.060 Performance standards – Subdivisions	Consistent with BAS				None; consistent with BAS
23.50.070 Wetland field data form	Inconsistent with BAS	The City of Edmonds’s wetland field data form is based on an older version of the wetland rating manual.	Consider revising the City’s wetland field data form or referencing the appropriate state or federal manual instead.	The wetland rating manual was updated in 2014 (Hruby, 2014) Washington State Wetland Rating System for Western Washington: 2014 Update. Ecology Publication #14-06-029 (Hruby 2014).	Make suggested change.

Existing CAO Provision EDCD Chapter / Section	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Potential Action	Rationale/ Basis for Change	Recommended Action
23.70 Frequently Flooded Areas					
23.70.010 Designation, rating and mapping	Generally consistent, but could be strengthened	Sub-section A references currently effective FIRM panels, and sub-section B notes that newer and/or more restrictive updated information would be used. However, sub-section A references an incorrect effective date (January 30, 1998), only notes inclusion of Zone A floodplain areas, whereas November 2014 draft flood zone maps include both Zone A and Zone V floodplains.	Revise Section A to reference the correct effective date for FIRMs - "Snohomish County, Washington and Incorporated Areas" study and maps, effective date November 8, 1999. Revise Section A to state that both Zone A and Zone V areas on effective FIRMs should be designated as frequently flooded areas.	CTED 2007 guidance notes that both Zone A and Zone V flood hazard areas should be included. Zone V areas are coastal floodplains subject to inundation by the 1-percent-annual-chance flood event with additional hazards associated with storm- induced waves.	Make suggested change
23.70.020 Special study and report requirements	Sections A thru D – Consistent with BAS and Guidance			CTED 2007; PSP 2010	None; consistent with BAS

Existing CAO Provision EDCD Chapter / Section	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Potential Action	Rationale/ Basis for Change	Recommended Action
IBC Appendix G – Floodplain Subdivision standards	Site Improvement Standards (G401) and elevation standards - Inconsistent with BAS	Standards for coastal floodplain development (coastal A zones and V zones) are limited to prohibiting development waterward of “mean high tide” and use of structural fill. Additional standards are available to significantly reduce property damage and human health and safety risks, including an additional 1 to 2 foot freeboard above base flood elevation standard. This additional protection is intended to further minimize risk or anticipate increasing flood risks (either from increased runoff or climate change).	Update EMC 19.00.025 (International Building Code section amendments) to require a minimum of 1 to 2 feet of freeboard above the base flood elevation for coastal A zones and V zones.	PSP 2009; FEMA 2013	City to consider revisions to Title 19.
23.80 Geologically Hazardous Areas (Review conducted by Stratum Group, subconsultant to ESA)					

Existing CAO Provision EDCD Chapter / Section	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Potential Action	Rationale/ Basis for Change	Recommended Action
23.40.090 Critical areas report – Requirements	Inconsistent with BAS	Language does not reflect the applicable role of geologists and engineers	Add language to clarify the role of geologists and engineers in report preparation	Clarify the distinctive roles of geologists and engineers in preparation of reports	Make suggested change
23.40.280 General critical areas protection measures - Building setbacks	Code consistency	Setbacks for geologically hazardous areas are established elsewhere in code	For geologically hazardous areas, remove the additional setback distance of 15 feet.	For geologically hazardous areas, setback widths are determined based on other sections of the code. This code section discusses what is permissible in the setback.	Revise section to read: “Unless otherwise provided Except for geologically hazardous areas where setbacks are determined by a geotechnical report, buildings and other structures shall be set back a distance of 15 feet...”
23.40.320 Definitions			Delete redundant language regarding geologists	It should be up to the Department of Licensing to ensure that geologists licensed in Washington have the appropriate education, skills and experience.	Make suggested change
23.80.010 Designation, rating and mapping	Consistent with BAS and Guidance			CTED 2007	None; consistent with BAS
23.80.020 Designation of specific hazard areas	Subsection A.2 - Inconsistent with BAS and Guidance	Additional language necessary to include erosion hazard areas related to stream and coastal erosion.	Provide new section as follows: A.2. Coastal and stream erosion areas which are subject to the impacts from lateral erosion related to moving water such as stream channel migration and shoreline retreat.	Suggested change reflects the other type of erosion hazard.	Make suggested change
	Section B - Generally consistent with BAS and Guidance		Add the word “potential” before landslide hazard areas in the last sentence	Not all of the areas that should require a landslide hazard assessment are in fact a landslide area.	Make suggested change

Existing CAO Provision EDCD Chapter / Section	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Potential Action	Rationale/ Basis for Change	Recommended Action
			Subsection B.1 - Add reference to more recent report on Meadowdale Landslide (Landau 2007)	The 2007 Landau report provides further guidance on this specific hazard area	
23.80.020 Designation of specific hazard areas, continued	Subsection B.2 - Inconsistent with BAS and Guidance	Takes into account a broader range of potential geology hazards	<p>Delete: current subsection 2, and replace with new subsections 2 – 5 (keep existing subsections 3 and 4):</p> <p>2. Coastal areas mapped as class u (unstable), uos (unstable old slides), and urs (unstable recent slides) in the Department of Ecology Washington coastal atlas; or</p> <p>3. Areas designated as quaternary slumps, earthflows, mudflows, or landslides on maps published by the United States Geological Survey or Washington State Department of Natural Resources.</p> <p>4. Any slope of 40 percent or steeper that exceeds a vertical height of 10 feet over a 25-foot horizontal run/erosion</p> <p>5. Areas with all three of the following characteristics:</p> <p>(i) Slopes steeper than fifteen percent;</p> <p>(ii) Hillsides intersecting geologic contacts with a relatively permeable sediment overlying a relatively impermeable sediment; and</p> <p>(iii) Springs or groundwater seepage.</p>	<p>This captures a resource recommended by guidance and captures any new mapping that may be completed in the future.</p> <p>Simplifies and matches similar approaches that do not include determination of toe and top of slope for determining the 40 percent slope</p> <p>Wet low angle slopes with perched water may be potentially subject to landslides</p>	<p>Make suggested change. For #4 add detail that indicates the provision excludes rockeries that have been engineered and approved by the engineer as having been built according to the engineered design. Stratum notes that rockery walls or engineered walls have high potential for failure due to poor construction, so provision to approve as-built design is critical here.</p> <p>Excluding solid rock from #4 is not applicable as there is no bedrock in Edmonds</p> <p>The list in section B is a list of <u>potential</u> landslide hazard areas. It is not to be used by staff as determining where this criterion is met (e.g, springs or groundwater seepage). The actual mapping is covered in B.3.</p>

Existing CAO Provision EDCD Chapter / Section	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Potential Action	Rationale/ Basis for Change	Recommended Action
	Subsection B.1, Figure 1 - Inconsistent with BAS and Guidance	See above	Modify Figure 1	Match text changes	Make suggested change
23.80.020 Designation of specific hazard areas, continued	Section C - Inconsistent with BAS and Guidance		Revise section to read as follows: Seismic Hazard Areas. Seismic hazard areas are areas subject to severe risk of damage as a result of earthquake-induced ground shaking, slope failure, settlement, soil liquefaction, lateral spreading, or surface faulting. These areas are designated as having a high and moderate to high risk of liquefaction as mapped on the Liquefaction Susceptibility Map of Snohomish County by the Washington State Department of Natural Resources or areas located within landslide hazard areas.		Make suggested change.. Also add quotations around the designations “high” and “moderate to high” Although no “moderate to high risk” areas are mapped in Edmonds, the definition should be added as suggested since both “high risk” and “moderate to high risk” areas as mapped make up the definition. Designations will be clarified by adding quotations.
23.80.050 Special study and report requirements	Inconsistent with BAS and State Law	Geologic determinations must be made by licensed geologists. Engineered designed mitigation should be designed by an engineer in most cases.	Preparation by a Qualified Professional. A critical areas report for <u>assessing a potential</u> geologically hazardous area shall be prepared by an engineer or geologist licensed in the state of Washington, with experience analyzing geologic, hydrologic, and ground water flow systems, and who has experience preparing reports for the relevant type of hazard. <u>If mitigation measures are necessary,</u> <u>the report detailing the mitigation measures</u> <u>and design of the mitigation shall be</u> <u>prepared by an engineer licensed in the State</u> <u>of Washington, with experience stabilizing</u> <u>slopes with similar geotechnical properties.</u>	State licensing –required by State law.	Make suggested change

Existing CAO Provision EDCD Chapter / Section	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Potential Action	Rationale/ Basis for Change	Recommended Action
			Critical areas studies and reports on geologically hazardous areas shall be subject to independent review pursuant to ECDC 23.40.090		
23.80.050 Special study and report requirements	Section C - Inconsistent with BAS	Guidance for preparing engineering geology reports has been prepared by the Geology Licensing Board	Add new language consistent with Geology Licensing Board; new language will have added benefit of greatly simplifying this section.	Geology Licensing Board guidance	Make suggested change
	Subsection F.2.e - Inconsistent with BAS	Bluff retreat rate is likely not applicable for most bluffs in Edmonds	Add the phrase "or an estimate of the percent risk of landslide area expansion"	<p>Bluff retreat rate may be appropriate for some slides, but in some cases the percent risk of expansion of the slide area may be a better approach.</p> <p>The bluffs in question all formed by shoreline erosion processes and are over steep due to past landslides having been eroded by waves. That process has been discontinued with the construction of the railroad, but the railroad itself continues to operate as a force of erosion at the toe of these bluff slopes. Each time there is a landslide, the collapsed soil is removed from the toe of the slope so the higher bluffs are still a long way from angle of repose and will continue to retreat. Eventually that will come to an end after enough bluff failures. But the railroad at the base of the slope should not be viewed as a</p>	Make suggested change, which keeps the bluff retreat rate phase in place, but adds a second phrase to apply to other bluffs.

Existing CAO Provision ECCD Chapter / Section	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Potential Action	Rationale/ Basis for Change	Recommended Action
				protection of the toe as any failures will be removed.	
	Subsection H. 1 - Inconsistent with BAS	There are no known faults in Edmonds	Delete H 1 "The site map shall show all known and mapped active faults within 200 feet of the project area or that have the potential to be affected by the proposal."	No known faults and main purpose is recognizing that specific soil types are susceptible to higher risk during seismic events	Make suggested change
23.80.060 Development standards – General requirements	Generally consistent with BAS and guidance; see ECCD 23.80.070 for details.			CTED 2007	None; consistent with BAS
23.80.070 Development standards – Specific hazards.	Subsection A.1 - Inconsistent with BAS	Does not match BAS	Setbacks should meet specific criteria to ensure the structure is not at risk for the life of the structure (120 years). Term setback is used to avoid confusion with buffers such as riparian, wetland or habitat buffers.	A specific policy value should be set for homes and homes are considered to have a life of 120 years. Other values or periods can be used dependent upon policy consistency. Separating setback and buffer terms may reduce potential confusion regarding activities within the buffer.	Make suggested change
	Subsection A.2 - Inconsistent with BAS	BAS for geohazards	Buffers requirements should be established within the geology hazard assessment report.	Buffer requirements will vary and in some case no restrictions may be needed in the buffer.	Make suggested change, but need replace with a clear trigger for City staff during initial application review. Language to be determined during code revision stage.
23.90 Fish and Wildlife Habitat Conservation Areas					
23.90.000 Fish and wildlife	Inconsistent	Flow chart will need to be	Change allowed buffer reduction from 50	Inconsistent with BAS; Internal	Make suggested change

Existing CAO Provision EDCD Chapter / Section	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Potential Action	Rationale/ Basis for Change	Recommended Action
habitat conservation areas compliance requirements flowchart		updated to include change in allowed buffer reductions and mitigation measures.	percent to 25 percent of buffer. Mention buffer reduction with enhancement and buffer averaging with enhancement.	consistency with 23.90.040	
23.90.040 Development standards – Specific habitats	Section A.3 Inconsistent with BAS	References outdated rules for bald eagles.	Remove Section A.3. for bald eagle habitat. Habitat protections are still captured under Section A.2.	Bald eagles were federally delisted in 2007 and downlisted to a state sensitive species. WAC 232-12-292 has been revised (effective May 29, 2011)	Make suggested change
	Section C Inconsistent with BAS	Vegetation retention as currently required is not tied to BAS	Update retention of vegetation standard to be: <ul style="list-style-type: none"> • Applicable only for properties with other critical areas ; • Applicable only to portion of site that supports existing native vegetation; and • Not applicable for sites with no existing native vegetation. 	Intent is to provide increased protection of fish and wildlife habitat throughout the Edmonds in areas where it currently remains	Make suggested changes, with details (including definition of “existing native vegetation” established during code development.
23.90.040 Development standards – Specific habitats (continued)	Section D.1. Inconsistent with BAS	City’s standard buffers range from 25 feet (Type Ns) to 150 feet (Type S). BAS supports wider standard buffer widths. BAS suggests widths from 75 feet to well over 300 feet to protect a suite of ecological functions. Upper ranges are likely not feasible given existing platting and development patterns.	Consider increases to standard stream buffer widths, but at a minimum, increase the stream buffer for Type Ns streams to 40 or 50 feet. Mountlake Terrace has the same buffer for Type 1 streams (150 feet). Woodway’s code requires larger standard buffers (250 feet for a Type 1 stream, 50 feet for a Type 4), but has smaller buffers allowed as minimum buffer widths for low impact land uses. Where it is not feasible to achieve BAS- recommended buffers due to existing	Source: Brennan et al. 2009, May 2003, Knutson and Naef 1997 all suggest BAS based buffers wider than those currently required. Recommended approach improves consistency with neighboring jurisdictions such as Woodway. Alternative strategies to BAS-based buffers can provide some of the ecological functions provided by riparian buffers, and	Revise stream buffer widths as follows: Type Ns: change from 25 to 40 feet

Existing CAO Provision EDCD Chapter / Section	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Potential Action	Rationale/ Basis for Change	Recommended Action
			conditions, specific alternative strategies should be required (e.g., required use of LID; elevated mitigation requirements for habitat, longer-term maintenance and monitoring).	should be considered (especially where narrow or reduced buffers are allowed).	
	Section D.1. Supplemental Information	Does not include language regarding intact native vegetation and previously disturbed buffers areas. See Section 23.50.040.F.1	Section D.1. Include language regarding intact native vegetation and previously disturbed buffers areas so the concept of buffers will be consistent with the language in Section 23.50.040.F.1	Supplemental information to improve internal code consistency.	Make suggested change, but also need additional discussion of previously developed area. Language to be developed during code revision stage.
	Section D.2. Inconsistent	Stream buffer width reductions greater than 25 percent are not supported by BAS.	Section D.2. Revise section to allow reductions no greater than 25 percent of the standard buffer width with mitigation. Suggest prioritizing buffer averaging with enhancement before buffer reductions with enhancement. See wetland buffer discussion.	CTED, 2007	Make suggested change
23.90.040 Development standards – Specific habitats (continued)	Section D.2.c. Inconsistent	Requirement for 3 years of monitoring. Five years is considered the standard monitoring period.	Revise Section D.2.c. to require 5 years of monitoring.	CTED, 2007	Make suggested change
	Section D.3 Inconsistent	Code appears to allow stream buffer reduction and averaging. Section D.3. also allows a 50 percent reduction of the standard buffer with no buffer enhancement.	Revise Section D.3. to exclude the term “reduced” in the first sentence. Revise the section to allow buffer averaging reductions no greater than 25 percent of the standard buffer. Include buffer enhancement and performance standards similar to Section D.2. as a requirement for buffer averaging. Suggest prioritizing buffer averaging with enhancement before buffer reductions with enhancement. See wetland buffer discussion.	Inconsistent with BAS, User-friendliness. CTED, 2007	Make suggested change
	Section D.4 Inconsistent	Allows additions to existing legally constructed structures outside of the inner 25 percent of	Section D.4. See suggested revisions for wetland buffers in 23.50.040.H.	Inconsistent with BAS. Reduction beyond the 25 percent standard buffer would be considered an	Make suggested change

Existing CAO Provision EDCD Chapter / Section	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Potential Action	Rationale/ Basis for Change	Recommended Action
		the standard stream buffer.		impact and therefore requires mitigation. Source: Bunten et al., 2012; Ecology, 2013.	
	Section D.5. Generally consistent but can be strengthened	Can strengthen this section with additional requirements that protect fish and water quality.	Section D.5. Include provisions: -An alternative alignment or location with less impact is not feasible -The crossing will be designed as near as perpendicular with the water body as possible.	CTED, 2007	Make suggested change
	Section D.6. Inconsistent	Trails should be located along the outer edge of the buffer. See discussion in 23.50.040.F.	Section D.6. See recommendation in 23.50.040.F.	CTED, 2007 and Wetlands and CAO Updates: Guidance for Small Cities. Western Washington Version. Revised October 2012 Ecology Publication #10-06-002 (Bunten et al. 2012)	Make suggested change
23.90.040 Development standards – Specific habitats (continued)	Section D.7. Partially Inconsistent	Storm water management facilities should only be allowed in the outer 25 percent of the buffer	Revise D. 7 to include provision to allow stormwater management facilities in the outer 25 percent of the buffer.	CTED, 2007 and Wetlands and CAO Updates: Guidance for Small Cities. Western Washington Version. Revised October 2012 Ecology Publication #10-06-002 (Bunten et al. 2012)	Make suggested change ESA reviewed new stormwater permit requirements and the Stormwater Management Manual for Western Washington Guide Sheet 2 in App I-D and confirmed that this recommendation is not inconsistent with those standards.

Footnotes

ⁱ Regulatory Guidance Letters 05-02: http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/cwa_guide/app_f_rgl05-02.pdf and 08-02: <http://www.ecy.wa.gov/programs/sea/wetlands/pdf/RGL08-02.pdf>

ⁱⁱ Washington State Noxious Weed Control Board: <http://www.nwcb.wa.gov/>

ⁱⁱⁱ Ecology's buffer recommendations (Table XX.1; Ecology, 2014) are based on a moderate-risk approach to protecting wetland functions. Buffer width recommendations in Table XX.1 are based on the assumption that the buffer is well-vegetated with native species. A recent synthesis regarding buffer functions and required widths, titled *Update on Wetland Buffers: State of the Science* (Hruby, 2013), recommends an approach to buffer widths based on buffer functions. Adequate performance of key buffer functions typically require the average buffer width ranges (depending on the site and landscape setting): 100 feet to 1,000 feet for wildlife, 30 to 100 feet for sediment removal, 100-180 feet for nitrogen removal, and 30 to 100 feet for phosphorus removal (Environmental Law Institute, 2008 in Hruby, 2013). Recent research indicates that fixed-width buffers may not adequately address issues of habitat fragmentation and population dynamics; rather, buffer widths and fragmentation are only two of many variables that affect wildlife population dynamics (Hruby, 2013). Surrounding land use, plant community structure, intensity of human disturbance are additional factors that affect wetland-dependent species (Hruby, 2013). Water quality and quantity factors may also be influenced by adjacent pollution sources and stormwater inputs. Measures included in Table XX.2 are intended to further minimize the impact of these factors.

^{iv} Recent buffer synthesis (Ecology, 2013) confirms that buffer width requirements for wildlife need to be targeted at the species of interest and their life requirements. Uplands surrounding a wetland can serve as critical habitat for certain species, termed "core habitat" (Hruby, 2013). The concept of core habitat expands the idea of the wetland buffer from simply protecting the wetland to protecting the species in the upland (Hruby, 2013).