

Analysis of Existing San Juan County Regulations Pertaining to Wetlands

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Overview

This report is organized around the major components of the County's existing regulations that cover wetlands. These components are:

1. Definition of Wetland(s)
2. Wetlands Delineation
3. Wetland Delineator Qualifications
4. Countywide Wetlands Map
5. Wetlands Rating and Classification
6. Categories for Development Intensity
7. Categories for Pollutant Transport Capacity and Wetland Sensitivity
8. Buffer Widths and Determination Procedures
9. Buffer Configuration and Width Adjustments
10. New Activities Exempt or Allowed in Wetlands and/or Their Buffers
11. Minimum Wetland Sizes for Regulation
12. Mitigation of Unavoidable Impacts to Wetlands

Within each section, there are subsections that quote and/or describe the following:

- State regulations most-relevant to that component
- Existing county regulations (1992 SJCC as amended)
- Analysis of existing county regulations – relationship to BAS and State regulations, and description of deficiencies, aspects considered to be overly restrictive as compared with BAS, and aspects needing clarification/ simplification/ coordination.
- Options for addressing problems – not necessarily comprehensive

In the last (Options) subsection, the Option which the author believes best complies with BAS, State regulations, and conditions in San Juan County is in bold font.

1. Definition of Wetland(s)

1.1 State Regulations Most-relevant to Defining Wetlands

WAC 365-190-090 (2) states:

In designating wetlands for regulatory purposes, counties and cities must use the definition of wetlands in RCW [36.70A.030](#).

That section states:

*(21) "Wetland" or "wetlands" means areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, **or those wetlands created after July 1,***

1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas created to mitigate conversion of wetlands.

1.2 Existing County Regulations That Define Wetlands

Wetlands are defined in SJCC 18.20.220 which states:

“Wetland” means an area that is inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities.

SJCC 18.30.150 also includes the following sentence:

However, wetlands may include artificial wetlands created intentionally from nonwetland areas to mitigate conversion of wetlands if permitted by the County.

1.3 Analysis of Existing County Regulations

The County’s definition in SJCC 18.30.150 is similar to, but does not precisely follow the wording in the WAC.

1.4 Options for Addressing Problems: Wetlands Definition

Option A. Retain wording in the SJCC.

Option B. Add the phrase in the WAC that is bolded above.

2. Wetlands Delineation

2.1 State Regulations Most-relevant to Wetland Delineation

WAC 365-190-090 (5) requires use of the wetland delineation manual adopted by the Washington State Department of Ecology:

(5) Counties and cities must use the methodology for regulatory delineations in the adopted state manual identified in RCW 36.70A.175.

However, effective 3-14-11, the state wetland delineation manual is repealed, and delineations must now conform to the procedures in the 1987 Corps of Engineers wetlands delineation manual and applicable regional supplement as is described in WAC 173-22-035. Unlike the County’s UDC, neither State nor Federal wetland regulations specify instances where wetland delineations may be waived, nor do they specify the topics and format of a wetland delineation report.

2.2 Existing County Regulations

G. Determination of Regulatory Boundary, and Requirements for Special Reports.

1. Determination of Regulatory Boundary. The location of the wetland boundary shall be determined through a field investigation by a qualified wetlands consultant utilizing the currently accepted federal and state delineation procedures and manuals, as a part of a special report prepared in accordance with subsection (G)(2) of this section. This requirement may be waived under the following circumstances:

a. Single-Family Residences. The requirement for a wetland delineation and special report will be waived for construction of a single-family residence on an existing lot of record if field investigation by County staff indicates the following:

- i. Sufficient information exists for staff to estimate the boundaries of a wetland without a delineation; and
- ii. The single-family residence and all accessory structures and uses are not proposed to be located within the distances identified in Table 3.5, below, from the estimated wetland boundary.

b. Simple Land Divisions. The requirement for a wetland delineation and special report will be waived for a simple land division submitted in accordance with SJCC [18.70.040](#) if field investigation by County staff indicates the following:

- i. Sufficient information exists for staff to estimate the boundaries of a wetland without delineation;
- ii. Both parcels resulting will have buildable area outside the wetland and the wetland buffer identified in Table 3.5, below; and
- iii. The simple land division approval will be recorded in the County auditor’s file together with a statement that development on both described parcels is subject to the provisions of SJCC [18.30.110](#).

c. Subdivisions, Short Subdivisions and Binding Site Plans. The requirement for a wetland delineation and special report will be waived for subdivisions, short subdivisions, and binding site plans of an existing lot of record if field investigation by County staff indicates the following:

- i. Sufficient information exists for staff to estimate the boundaries of a wetland without a delineation; and
- ii. Building envelopes or building setback lines are not proposed to be located within the distances identified in Table 3.5, below, from the estimated wetland boundary.

2. Special Report Contents. When a special wetland report is required, it must be completed by a qualified wetlands consultant as defined in Chapter [18.20](#) SJCC and must contain the following:

a. A map, at a scale no smaller than one inch equals 200 feet, of the delineated regulated wetland boundary as determined by the criteria in this subsection. In addition, the map shall show the general location of the wetland boundary for all other wetlands located on the property proposed for the use or development activity. When regulated wetlands do not occur on the subject property, but wetland buffers from offsite wetlands do occur, those wetland buffers must be indicated on the submitted maps.

Table 3.5. Minimum wetland buffers necessary as part of qualifying for a waiver from delineation and special report requirements.^(1, 2,3)

Wetland Category	Required Distance from Estimated Wetland Boundary(feet)
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I	200
II	125
III	75
IV	60

Notes:

1. These buffers are one part of the complete requirements necessary to qualify for a waiver – see SJCC 18.30.150(G)(1).
2. These are not standard wetland buffers: they are optional buffers for cases when a delineation is not made. If a single-family residence, building envelope, or setback line in a subdivision is proposed to be closer to the wetland than the distance identified in the table, a wetland delineation must be performed.
3. The same opportunities for exemption from delineation shall apply to uncategorized wetlands. Permit center staff shall either determine the wetland category or hire a qualified wetland consultant at the expense of the County.

2.3 Analysis of Existing County Regulations

The County's UDC is compliant with State and Federal requirements in stating:

“The location of the wetland boundary shall be determined through a field investigation by a qualified wetlands consultant utilizing the currently accepted federal and state delineation procedures and manuals.”

Waivers of delineation requirements (under certain specified circumstances) are not explicitly prohibited or allowed by State and Federal regulations. However, a permit applicant may incur risk of a significant financial penalty if a delineation is not done (or is done incorrectly) and an area subject to new development is independently found to be a wetland.

2.4 Options for Addressing Problems: Wetlands Delineation

Option A. Retain current wording in the SJCC. The current waiver system does not reflect BAS and the need to protect wetland functions from future harm.

Option B. Only delete the portions of the SJCC that allow waiver of delineations.

Option C. Narrow or expand the situations where the County may waive delineations as a requirement for applying for a County permit. Specifically, redefine the situations to read as follows:

The County shall not require a permit applicant to have wetlands delineated for purposes only of applying for a permit from the County, if the proposed development meets all of the following conditions:

- (a) the Development Intensity of the proposed development is determined to be LOW [as determined by procedures described in section 6, or an alternative procedure];
- (b) the County's most recent map of "Possible Wetlands" shows no wetlands in or within a specified distance of the Development Area;
- (c) the most recent NRCS soil survey map shows no soils classified as hydric or partially hydric in or within a distance of the Development Area that is equal to the maximum buffer width for the Development Intensity [as determined by procedures described in section 6, or an alternative procedure];
- (d) the County's most recent maps of Drainageways and Streams show no Drainageways or Streams of any type in the Development Area;
- (e) neither the landowner nor County staff have noticed the presence of standing or flowing surface water in the Development Area for any length of time exceeding 14 consecutive days.

3. Wetland Delineator Qualifications

3.1 State Regulations Most-relevant to Wetland Delineator Qualifications

State and Federal agencies do not provide a mandatory definition of "qualified wetlands consultant" or "qualified wetlands professional." They do not require certification of persons tasked with delineating wetlands nor do they require a minimum set of skills, training, or experience.

3.2 Existing County Regulations

SJCC 18.20.170 states:

"Qualified wetlands consultant" means a person who has the qualifications to conduct wetland studies and make recommendations for wetland mitigation. These qualifications include specialization in wetland biology, botany, and hydrology, with appropriate education and experience. (Ord. 2-1998 Exh. B § 2.3)"

3.3 Analysis of Existing County Regulations

The County's BAS supports the fact that delineating wetlands accurately is a highly specialized skill, requiring the ability to identify up to 230 plant species as well as understanding and interpreting hydrology and soil indicators. Not everyone with "specialization in wetland biology, botany, and hydrology, with appropriate education and experience" is likely to have such skills. Consequently, there is high risk that incorrect delineations will be performed, and wetlands adversely impacted in some

cases, if only the present definition in the UDC is used. Certification by professional programs, such as those of the Society of Wetland Scientists or University of Washington, is not based on measured performance in delineating wetlands, so should not be considered the sole qualification for delineators.

3.4 Options for Addressing Problems: Qualifications of Wetlands Delineators

Option A. Retain current wording in the SJCC. This does not reflect BAS and the need to protect wetland functions from future harm.

Option B. Use the WDOE's non-regulatory definition of qualified wetland professional, or some variation thereof: "a professional wetland scientist with at least two years of full-time work experience as a wetlands professional, including delineating wetlands using the state or federal manuals, preparing wetlands reports, conducting function assessments, and developing and implementing mitigation plans." In some instances this may not be sufficient to protect landowners from inaccurate wetland delineations.

Option C. Define a qualified wetland professional as follows:

A person trained in the procedures of the 1987 Federal wetland delineation manual, who has previously submitted wetland delineations to the Washington Department of Ecology and/or U.S. Army Corps of Engineers, with none being permanently rejected by those agencies. Typically, an understanding of hydrology and advanced skills in plant identification and soils classification are essential.

This would reduce the risk to landowners of inaccurate wetland delineations.

Regardless of the Option chosen, the County may wish to consider hiring (or at least retaining on-call) a person meeting the above qualifications, as a service to landowners applying for building permits. This could help ensure consistency in the delineations but would make the County and/or its contractor liable. Alternatively, the status quo could continue, wherein permit applicants hire their own wetland consultant.

4. Countywide Wetlands Map

4.1 State Regulations Most-relevant to Countywide Wetlands Maps

There are no provisions of the WAC that pertain explicitly to countywide wetlands maps used solely for planning purposes. However, WAC 365-190-080(4) states:

- (a) Maps may benefit the public by increasing public awareness of critical areas and their locations. County and city staff may also benefit from maps which provide a useful tool for

determining whether a particular land use permit application may affect a critical area. However, because maps may be too inexact for regulatory purposes, counties and cities should rely primarily on performance standards [e.g., wetlands delineation manual and rating systems] to protect critical areas.

(b) Counties and cities should clearly state that maps showing known critical areas are only for information or illustrative purposes.

4.2 Existing County Regulations

The SJCC currently does not specify the use of any particular countywide wetlands map, and no existing map showing all the County's wetlands is currently used for *regulatory* purposes. However, for planning purposes the County has been using wetlands maps prepared in the early 1990's, which are referenced in SJCC 18.30.150(B) footnote 2 of Table 3.3:

The general location and extent of wetlands in San Juan County are shown in the National Wetlands Inventory (U.S. Department of the Interior) and the San Juan County Wetlands Inventory.

4.3 Analysis of Existing County Regulations

It may be advisable to adopt countywide wetland map(s) that represent the current BAS and which will be used only for general planning purposes. For example, they will provide a consistent basis for helping decide on when to waive a wetland delineations as a requirement for applying for a County permit (see section 2 above). The maps may be updated over time as better data become available.

4.4 Options for Addressing Problems: Countywide Wetlands Map

Option A. Adopt the 2010 "Possible Wetlands" map and "Tidal Wetlands" map for use in general planning, with appropriate cautions to landowners that they do not show all wetlands, that conditions found on-site shall always prevail, and that a qualified wetland professional must be contracted to visit the site and conduct a formal wetland delineation for all permit applications except as outlined in the section above.

Option B. Do not adopt the 2010 "Possible Wetlands" and "Tidal Wetlands" map at this time. This would not reflect BAS and the need to protect wetland functions from future harm.

5. Wetlands Rating and Classification

5.1 State Regulations Most-relevant to Wetland Rating and Classification

WAC 365-190-040. Process.

(4) Classification is the first step in implementing RCW [36.70A.170](#) and requires defining categories to which natural resource lands and critical areas will be assigned.

(a) Counties and cities are encouraged to adopt classification schemes that are consistent with federal and state classification schemes and those of adjacent jurisdictions to ensure regional consistency. Specific classification schemes for natural resource lands and critical areas are described in WAC [365-190-050](#) through [365-190-130](#).

(b) State agency classification schemes are available for specific critical area types, including the wetlands rating systems for eastern and western Washington from the Washington State Department of Ecology, the priority habitats and species categories and recommendations from the Washington State Department of Fish and Wildlife, and the high quality ecosystem and rare plant categories and listings from the Department of Natural Resources, Natural Heritage Program.

WAC 365-190-090. Wetlands.

(3) Wetlands rating systems. Wetland functions vary widely.

(a) When designating wetlands, counties and cities should use a rating system that evaluates the existing wetland functions and values to determine what functions must be protected.

(b) In developing wetlands rating systems, counties and cities should consider using the wetland rating system developed jointly by the department of ecology and the United States Army Corps of Engineers.

(c) If a county or city chooses to use an alternative rating system, it must include the best available science.

(d) A rating system should evaluate, at a minimum, the following factors:

(i) Wetlands functions and values;

(ii) Degree of sensitivity to disturbance;

(iii) Rarity;

(iv) The degree to which a wetland contributes to functions and values of a larger ecosystem. Rating systems should generally rate wetlands higher when they are well-connected to adjacent or nearby habitats, are part of an intact ecosystem or function in a network of critical areas; and

(v) The ability to replace the functions and values through compensatory mitigation.

5.2 Existing County Regulations (SJCC 18.30.150)

A. Wetland Rating. The San Juan County wetland rating system (on file with the administrator) is designed to differentiate between wetlands based on their sensitivity to disturbance, rarity, irreplaceability, and the functions and values they provide. Rating categories apply to the regulated wetland as it exists on the effective date of this code, as the regulated wetland may naturally change thereafter, and as the regulated wetland may change in accordance with permitted activities. Ratings shall not be based on illegal modifications to a wetland. The categories are summarized in subsections (A)(1) through (A)(4) of this section.

1. Category I. These wetlands are the “best of the best.” These are wetlands that:

a. Contain a particular rare species;

- b. Represent a high-quality example of a rare wetland type as defined in Appendix A*;
 - c. Are regionally rare; or
 - d. Provide irreplaceable functions and values.
2. Category II. These are wetlands that:
 - a. Contain very sensitive or important wildlife or plants on a seasonal or annual basis;
 - b. Are difficult to replace, as defined in Appendix A*; or
 - c. Provide very high functions and values, particularly for wildlife habitat.
 3. Category III. These wetlands provide important functions and values. They provide habitat for a variety of flora and fauna and occur more commonly throughout the County than either Category I or II wetlands.
 4. Category IV. These are wetlands that are smaller, isolated, and have less diverse vegetation than Categories I, II, and III but still provide important functions and values.

5.3 Analysis of Existing County Regulations

There are six problems:

1. The Rating System specified in the current SJCC regulations, which were adopted in 1998, is very similar to a Rating System developed by the WDOE in the early 1990's. However, in 2004 the WDOE revised that Rating System to comply with BAS current at that time, but the County has not revised theirs.
2. Of the five factors specified in WAC 365-190-090 for rating wetlands, there are two that the County's existing rating system does not clearly address:
 - (iv) The degree to which a wetland contributes to functions and values of a larger ecosystem.
 - (v) The ability to replace the functions and values through compensatory mitigation.
3. The BAS suggests that neither the WDOE's Rating System nor the one modeled after it and used in the current SJCC are optimally sensitive to the specific *local conditions* (physical, biological, social) present in San Juan County.
4. The WDOE's Rating System, and thus the SJCC one modeled after it, may or may not *currently* represent Best Available Science, because scientific understanding of some aspects of wetlands has expanded considerably since the Rating System and the WDOE's buffer guidance associated with it were published in 2004-05. For a Rating System to truly represent BAS, it should include the *most recent and relevant* peer-reviewed research findings, applied to conditions present in a particular city or county.
5. The WDOE Rating System (and consequently the current SJCC) may not adequately account for differences in *sensitivity* of among some wetland types (e.g., those with outlets vs. those without) and differences in the ability of landscapes to *transport* potential pollutants from upland development areas to wetlands.

6. WAC 365-190-020(7), 365-190-080(2), and RCW-36.70A.172(1) specify that “counties and cities shall give special consideration to conservation or protection measures necessary to preserve or enhance anadromous fisheries.” Neither the WDOE’s Rating System nor the SJCC one modeled after it explicitly address anadromous fisheries.

For these reasons, neighboring Island County developed a Wetland Classification and Rating System that was generally similar to the WDOE’s and the existing one in San Juan County, but better addressed the above concerns. The WDOE subsequently supported Island County’s adoption and use of that alternative 5-category System (as opposed to the WDOE’s 4-categories), and the Growth Board of Western Washington in that case concurred.

5.4 Options for Addressing Problems: Wetlands Rating and Classification

Option A. Adopt the WDOE’s 2004 Rating System for Wetlands of Western Washington, without modifications to address the above concerns. This may or may not reflect current BAS for San Juan County, and may or may not be sufficient to protect SJC wetland functions from future harm. Adoption shall not necessarily imply agreement with or adoption of the WDOE’s buffer width or mitigation guidance associated with that Rating System.

Option B. Adopt the Wetland Rating System developed for this project in 2010 that is based on the most recent and relevant BAS, is tailored specifically to San Juan County, and which addresses the Importance of a wetland in SJC (as described in Appendix A) as well as other factors described in this document.

Option C. Adopt some modification of either Option A or Option B.

Option D. Make no change to the current SJCC. That would not reflect BAS and the need to protect wetland functions from future harm.

6. Categories for Development Intensity

6.1 State Regulations Most-relevant to Defining Development Intensities

The WAC does not explicitly require that adjoining land uses or the intensity of the proposed development be used as a basis for determining required buffer widths to protect wetland functions. However, subsequent guidance from the WDOE on buffer

widths (Appendix 8-C of *Wetlands in Washington State, Volume 2*) recommends that cities and counties use land use intensity along with the factors mentioned in WAC 365-190-090(3)(d) to determine buffer widths, and most counties have done so. The WDOE suggests that counties use the following land use intensity categories:

HIGH: Residential with more than 1 dwelling unit/acre; industrial; commercial; high-intensity recreation (e.g., golf course, athletic field), or conversion to high-intensity agriculture such as dairies, nurseries, greenhouses, or lands for growing and harvesting crops and requiring annual tilling, or conversion to lands for raising and maintaining animals, hobby farms, etc.

MODERATE: Residential with 1 dwelling unit per multiple acres; logging roads, driveways, paved trails; right-of-way or utility corridor shared by several utilities; or conversion to moderate-intensity agriculture such as orchards, hay fields.

LOW: Forestry (tree-cutting only), unpaved trails, utility corridor without a maintenance road and little or no vegetation management.

An alternative approach is to base the intensity categories on the proportion of vegetation cleared, impervious surface created, degree of hydrologic alteration associated with the proposed development, or other measurable features. Island County adopted that alternative approach, which was supported by the WDOE and the Growth Board of Western Washington.

6.2 Existing County Regulations

The current SJCC, e.g., in section 18.30.150(E)(1-4), does not explicitly account for the intensity of proposed development when specifying the required buffer width.

6.3 Analysis of Existing County Regulations

Existing County wetland buffer regulations do not reflect BAS because they do not explicitly account for one of the most important factors that influence the potential for developments to adversely impact wetland functions. That is, the intensity of the development.

6.4 Options for Addressing Problems

Option A. Make no change to current SJCC (i.e., do not consider Development Intensity as a factor for establishing required buffer widths). The BAS indicates that this would be a high-risk approach, thus implying the need for larger wetland buffers.

Option B. Adopt definitions for categories of Development Intensity provided in the WDOE's guidance (described in 6.1 above) and use these and other factors for establishing required buffer widths. Those do not reflect BAS and may not protect wetland functions sufficiently from future harm.

Option C. Adopt definitions for categories of Development Intensity used by Island County and apply these and other factors for establishing required buffer widths, after modifying the category definitions as shown in Appendix B.

Option D. Adopt some other definitions for categories of Development Intensity.

7. Categories for Pollutant Transport Capacity and Wetland Sensitivity

7.1 State Regulations Most-relevant to Pollutant Transport to Wetlands

As noted in section 5.3 (#5) above, the WDOE Rating System (and consequently the current SJCC) does not explicitly define characteristics that contribute to wetland *sensitivity* (e.g., wetlands with outlets vs. those without) nor does it consider differences in the ability of landscapes to *transport* potential pollutants from upland development areas to wetlands.

7.2 Existing County Regulations

See above.

7.3 Analysis of Existing County Regulations

Current BAS indicates that these two factors (sensitivity and transport potential) should be considered in evaluating the likelihood a wetland's functions may be harmed by a development, and thus the appropriate width for a site-specific buffer.

7.4 Options for Addressing Problems

Option A. Make no change to current SJCC (i.e., do not consider Pollutant Transport Potential and Wetland Sensitivity as factors for establishing required buffer widths). Doing so would not reflect BAS and the need to protect wetland functions from future harm.

Option B. Adopt definitions of categories for Transport Potential and Wetland Sensitivity as shown in Appendix C.

Option C. Adopt some modification of the definitions of categories for Transport Potential and Wetland Sensitivity as shown in Appendix C.

8. Buffer Widths and Determination Procedures

8.1 State Regulations Most-relevant to Determining Buffer Widths for Wetlands

As part of requirements for protection of wetlands as part of city and county Critical Areas Ordinances, there are no State regulations that require particular buffer widths, or that the buffer widths be variable (site-specific) rather than standard (same width for all wetlands). Nonetheless, many cities and counties have chosen to adopt the variable-sized buffers recommended by the Washington Department of Ecology in their 2005 document: *Wetlands in Washington State, Volume 2, Appendix 8-C*. That document offers three alternative approaches for determining buffer widths. The first is based strictly on the WDOE's wetland categories, the second on both category and adjacent land uses, and the third, on category, adjacent land uses, and the functions or special characteristics of the wetland, as determined through the WDOE's Rating System. Most cities and counties also have adopted the WDOE's *Wetland Rating System* that dovetails with those buffer recommendations, but it is not imperative that they do so. Island County did not, and its approach was subsequently supported by the WDOE and the Growth Board of Western Washington.

8.2 Existing County Regulations

San Juan County currently specifies buffer widths for wetlands in SJCC 18.30.150(E)(1) as follows:

1. Standard Buffer Zone Widths.

a. The following buffers in Table 3.4 shall be required for wetlands based on the category of wetland as outlined in subsection (A) of this section:

Table 3.4. Standard buffer widths for wetlands.

Wetland Category	Buffer Width (feet)(1)
I	150
II	75
III	50

 Note:

1. Measured as per subsection (E)(1)(b) of this section.
- b. All buffers shall be measured from the wetland boundary as delineated in the field pursuant to the requirements of subsection (G)(1) of this section.
- c. Except as otherwise specified in subsection (D) of this section, wetland buffers shall be retained in their natural condition.
- d. Where buffer disturbance or alteration has or will occur in conjunction with regulated activities, revegetation with native vegetation shall be required and completed within the next growing season.
- e. Any wetland created, restored, or enhanced as compensation for approved wetland alterations shall also include the standard buffer required for the category of the created, restored, or enhanced wetland. Created wetlands will be deemed as Category II for the purposes of establishing a buffer.

8.3 Analysis of Existing County Regulations

The buffer widths in the County's existing SJCC are smaller than those recommended by the WDOE in their 2005 document: *Wetlands in Washington State, Volume 2, Appendix 8-C*, which may or may not have represented BAS for San Juan County when they were published in 2005. More importantly, the buffer widths in the existing SJCC are smaller than can be supported by the current (2011) Best Available Science. As noted above, neither the SJCC nor the WDOE buffer width recommendations explicitly incorporate all factors that BAS suggests are important to protecting wetland functions.

8.4 Options for Addressing Problems in Buffer Width Determinations

Option A. Make no change to the buffer widths or determination procedures in the existing SJCC. This would not reflect BAS and the need to protect wetland functions from future harm.

Option B. Adopt a variable-width buffer determination procedure suggested by the WDOE in their 2005 document: *Wetlands in Washington State, Volume 2, Appendix 8-C*, and the specific buffer widths and wetland category definitions associated with that procedure.

Option C. Adopt a variable-width buffer determination procedure tailored to the specific conditions of San Juan County, which reflects the most current BAS, provides greater protection to salmonids, adds some key factors not used explicitly by the WDOE recommendations for buffer width determination (e.g., pollutant transport potential), and which allows for *minimal risk* to wetland functions, as described in Appendix D.

Option D. Same as C, except allowing for *moderate risk* to wetland functions as described in Appendix D. The range of resulting buffer widths is roughly comparable to widths recommended in 2005 by the WDOE based on their interpretation of what was BAS at that time.

Option E. Adopt a standard-sized buffer for all SJC wetlands. This would not comply with current BAS.

9. Buffer Configuration and Width Adjustments

9.1 State Regulations Most-relevant to Buffer Configuration and Width Adjustments

In particular situations, cities and counties are allowed to increase or decrease the width requirement of a wetland buffer, based on explicit decision criteria. Cities and counties may also choose to narrow the required buffer adjoining some parts of a wetland if they widen it in other parts to compensate. These provisions are neither required nor prohibited by state regulations. The WDOE, in its 2010 document, *Wetlands & CAO Updates: Guidance for Small Cities, Western Washington Version*, recommends that no buffer be reduced to less than 75% of the otherwise required width.

9.2 Existing County Regulations

The current SJCC describes buffer width adjustments as follows:

2. Buffer Width – Averaging. Buffer averaging allows limited reductions of buffer width in specified locations on the property proposed for development while requiring increases in others so that the total area of the buffer is unchanged. Averaging of required buffer widths will be allowed only if the applicant demonstrates that all of the following criteria are met:
- a. Averaging is necessary to accomplish the purposes of the proposal, and no reasonable alternative is available;
 - b. The wetland contains variations in sensitivity due to existing physical characteristics and the reduction from standard buffer widths will occur only contiguous to the area of the wetland determined to be least sensitive;
 - c. Averaging width will not adversely affect the wetland functional values;
 - d. The total area contained within the wetland buffer after averaging is no less than that contained within the standard buffer prior to averaging. In no instance shall the buffer width be reduced by more than 25 percent of the standard buffer width; and
 - e. If a portion of the buffer is to be reduced, the remaining buffer area will be enhanced, using native vegetation and fencing where appropriate to improve the functional attributes of the buffer, to provide additional protection for wetland functions and values. A proposal to enhance a buffer shall not be used as justification to reduce an otherwise functional standard buffer width, unless such buffer reduction complies with all other criteria for buffer width averaging.
3. Buffer Width – Decreasing. Decreasing of required buffer widths will be allowed only if the applicant

demonstrates that all of the following criteria are met:

- a. Buffer width averaging pursuant to subsection (E)(2) of this section is not possible due to site characteristics;
 - b. A decrease is necessary to accomplish the purposes of the proposal and no reasonable alternative is available;
 - c. The wetland contains variations in sensitivity due to existing physical characteristics, and reduction from standard buffer widths will occur only adjacent to the area of the wetland determined to be the least sensitive;
 - d. Decreasing width will not adversely affect the wetland functional values;
 - e. In no instance will the buffer width be reduced by more than 50 percent of the standard buffer width; and
 - f. If a portion of a buffer is to be reduced, the remaining buffer area will be enhanced, using native vegetation and fencing where appropriate to improve the functional attributes of the buffer and to provide additional protection for wetland functions and values. A proposal to enhance a buffer shall not be used as justification to reduce an otherwise functional standard buffer width, unless such buffer reduction complies with all other criteria for reducing buffer widths.
4. Buffer Width – Increasing. Standard buffers may be increased by the County only upon a determination that:
- a. The increase is recommended by a County-employed qualified wetland consultant who has inspected the site and demonstrated that a larger buffer is necessary to:
 - i. Maintain viable populations of existing species proposed or listed by the federal government or the state as rare, endangered, threatened, and sensitive, or species of local concern as defined in Chapter [18.20](#) SJCC;
 - ii. Protect critical or outstanding potential habitat for those species listed in subsection (E)(4)(a)(i) of this section is present; or
 - iii. Protect nesting sites such as heron rookeries or raptor nesting trees that are present in the wetland or its buffer.
 - b. If a Category I, II, or III wetland is located within 25 feet of the toe of slopes of 30 percent or more, buffers may be increased to include the tops of slopes determined to be “erosion hazard areas” as defined in Chapter [18.20](#) SJCC.

9.3 Analysis of Existing County Regulations

The current SJCC implies that buffers must completely encircle a wetland, but this is not supported in all cases by BAS. Option B below attempts to address this and other problems related to buffer adjustment provisions of the existing SJCC.

9.4 Options for Addressing Problems

Option A. Make no change to the buffer adjustment provisions in the existing SJCC. This would not reflect BAS and the need to protect wetland functions from future harm.

Option B: Adopt one or more of the following provisions, replacing the related existing provisions where appropriate:

- Apply buffer requirements only to the area directly connecting a proposed development (including associated lawns, driveway, paved areas, landscaping, etc.) and the object wetland. Doing so will reduce the need for buffer averaging.
- Within that area, exclude lands that are at a lower elevation than the object wetland, i.e., they drain away from the wetland. However, in all cases maintain a buffer of no less than 10 ft on all sides of the object wetland, because even those downslope areas, as well as the areas not in a direct line between a proposed development and a wetland, provide some support to a wetland's habitat functions.
- The SJCC could state more explicitly that wetland buffers can potentially extend to properties other than those containing a wetland, if doing so is necessary to meet the buffer requirements the County adopts. However, under WAC 365-190-040 (12), such a provision would not apply to "agricultural, forest, and mineral lands" "unless an alternative is mutually agreed on by adjacent landowners."
- In areas near a wetland where a buffer is required, tie the amount of allowed buffer reduction to the Importance of the wetland as categorized in Appendix A. Specifically, allow a width reduction of up to 50% the otherwise required width for wetlands with Importance rating of LOW, 75% of the otherwise specified width for wetlands with Importance of MEDIUM. Disallow any buffer reduction for wetlands with Importance of HIGH.
- Specify that a wetland's buffer can only be reduced once. That is, if a reduction is allowed for the first new development near a wetland, then no additional reductions of the same part of the buffer would be allowed for subsequent developments.
- Continue most of the provisions for buffer averaging as described in the current SJCC, but replace the requirement for buffer enhancement (2e and 3f), which as-described provides only marginal functional benefit, with a requirement to employ one of the following re-habilitative or protective actions, in situations where buffer averaging or reduction will be implemented. These are:
 - (a) Implementation of all or most applicable Low Impact Development (LID) measures described in the *Low Impact Development Technical Guidance Manual for Puget Sound* (Puget Sound Action Team/Washington State University, 2005) as revised, provided they are geotechnically and ecologically feasible and appropriate for the particular Development Parcel. These could include, for example, sod roofs, rain gardens, and use of non-erodible surfacing on driveways and parking areas that is designed to facilitate infiltration or which directs runoff in small quantities to areas with greater infiltration capacity. Credit may be given for use of LID in the new development or for retrofitting of existing development located upslope of a wetland and within its buffer; or
 - (b) Use of sod roofs or enamel-coated metal roofs or other roofing materials that are not susceptible to the growth of moss and that are not treated to prevent the growth of moss; or
 - (c) Removal or permanent reduction in the extent of existing buildings, impervious areas (including lawns), and/or drainage features (e.g., by blocking them) currently located in the wetland or affecting more than 10% of its buffer area; or

(d) Installation of fencing that completely excludes livestock from the wetland, applicable only in situations where overgrazing of wetland vegetation is occurring.

- IF the County adopts the Minimal Risk option (see section 8 of this document), delete provisions in the existing SJCC related to buffer increases. Otherwise, from that section on buffer increases, delete “County-employed” from 4(a) and delete “Category I, II, or III” from 4(b).

Option C. Adopt some other modification of the above, including but not limited to:

- Disallow *any* buffer reductions that result in buffers being less than 75% (or 90%, or some other figure) of their otherwise required width. The WDOE recommends 75% of the otherwise required width as the greatest buffer reduction that should be allowed. Alternatively, if the Minimal Risk option (section 8 of this document) is adopted, a provision could be adopted that no buffer width could ever be reduced to less than that which would be required under the Medium Risk option.
- Disallow buffer reductions and/or averaging for wetlands whose Importance is MEDIUM, as well as for those categorized as LOW.

Option D. Disallow any reduction or increase in buffer widths, and/or disallow buffer averaging. Remove those provisions of the existing SJCC.

10. New Activities Exempt, Allowed, or Prohibited in Wetlands and/or Their Buffers

10.1 State Regulations Most-relevant to Exempt/Allowed Activities in Buffers

As part of requirements for protection of wetlands as part of city and county Critical Areas Ordinances, there are no State regulations that explicitly allow or prohibit specific activities or land uses in wetlands or their buffers. Rather, under RCW36.70A.172 and other provisions, the emphasis is on protecting wetland *functions*. The WDOE as well as many cities and counties have determined that one way of protecting wetland functions is by limiting the types of activities that are allowed in wetlands and their buffers. Moreover, under its responsibilities under Section 401 of the federal Clean Water Act, the WDOE is charged with protecting wetland “uses” (such as aquatic life support) from degradation.

10.2 Existing County Regulations

Under SJCC 18.30.150(c), the County regulates the following in wetlands:

1. The removal, excavation, grading, or dredging of material of any kind, including the construction of ponds and trails;
2. The dumping, discharging, or filling of any material;
3. The draining, flooding, or disturbing of the wetland water level or water table;
4. The driving of pilings;
5. The placing of obstructions;
6. The construction, reconstruction, demolition, or expansion of any structure;
7. The destruction or alteration of wetland vegetation through clearing, harvesting, shading, intentional burning, application of herbicides or pesticides, or planting of vegetation that would alter the character of a regulated wetland; provided, that these activities are not part of a forest practice governed under Chapter 76.09 RCW (Forest Practices Act) and its rules; or
8. Activities that result in:
 - a. A significant change of water temperature;
 - b. A significant change of physical or chemical characteristics of wetlands water sources, including quantity; or
 - c. The introduction of pollutants.

However, if not associated with forest practices and conversions (which are governed by Chapter 76.09 RCW and its rules), the following are currently allowed by the SJCC in wetlands if they are not prohibited by any other law:

- a. Normal maintenance, repair, or operation of existing structures, facilities, or improved areas, such as lawns, landscaping, orchards, gardens, and driveways. Maintenance and repair do not include any modification that changes the character, scope, or size of the original structure, facility, or improved area, and do not include the construction of a maintenance road.
- b. Modification or expansion of existing uses and structures, pursuant to the requirements of the nonconforming use and structure provisions of SJCC [18.40.310](#) and [18.80.120](#).
- c. Outdoor recreational activities, including hunting and fishing (pursuant to state law), birdwatching, hiking, boating, and swimming.
- d. The harvesting of wild crops in a manner that is not injurious to natural reproduction of such crops and provided the harvesting does not require tilling soil, planting crops, or changing existing topography, water conditions, or water sources.
- e. Existing and ongoing agricultural activities.
- f. Normal maintenance, but not construction, of drainage ditches.
- g. Use of existing nature trails.
- h. Installation of navigation aids and boundary markers.
- i. Site investigative work necessary for land use application submittal, such as surveys, soil logs, percolation tests, and other related activities. In every case, wetland impacts shall be minimized and disturbed areas shall be immediately restored.
- j. Drilling or digging and maintenance of wells; provided, that wetland impacts are minimized and disturbed areas are immediately restored.

In addition to those activities allowed in wetlands, the SJCC currently allows the following activities within wetland **buffers** provided that impacts to the buffers are minimized and that disturbed areas are immediately restored:

- a. In association with a single-family residence only, the establishment and expansion of lawns, landscaping, orchards, gardens, and fences; provided, that:
- i. Lawns, landscaping, orchards, and gardens shall be allowed within the outer 25 percent of the buffer width where no reasonable alternative is available. No structure other than fences nor any impervious surface shall be included in the above; and
 - ii. Fences shall be designed to allow the unimpeded passage of surface water beneath them.
- b. Activities having minimal adverse impacts on buffers and no adverse impacts on regulated wetlands. These include low intensity, passive recreational activities, such as pervious trails, nonpermanent wildlife watching blinds, scientific or educational activities, and sports fishing or hunting. Trails within buffers shall be designed to minimize impacts to the wetland, shall be no wider than five feet, shall not include any impervious surfaces, and shall not totally circumnavigate the wetland perimeter.
- c. Within the buffers of Category III and IV wetlands only, vegetation-lined swales designed for stormwater management or conveyance when topographic restraints determine there are no other upland alternative locations. Swales used for detention purposes may only be placed in the outer 25 percent of the buffer. Conveyance swales may be placed through the buffer, if necessary.
- d. All legal parcels less than one acre in size as of the date of adoption of this code are exempt from the wetland buffer provisions.

10.3 Analysis of Existing County Regulations

Clarification is recommended regarding some of the activities that would qualify under (8) above in the existing SJCC, i.e.,

8. Activities that result in:
- a. A significant change of water temperature;
 - b. A significant change of physical or chemical characteristics of wetlands water sources, including quantity; or
 - c. The introduction of pollutants.

10.4 Options for Addressing Problems with Allowed/Prohibited Activities

Option A. Make no change in the regulated and exempt provisions of the existing SJCC. This would not reflect BAS and the need to protect wetland functions from future harm.

Option B. Change the existing SJCC such that the following are more explicitly identified as being disallowed or regulated in wetlands and/or their buffers, because they could potentially cause a significant change in water temperature, physical or chemical characteristics of wetlands water sources, or introduce pollutants:

- Felling of trees within a wetland or along more than 20% of the wetland-upland boundary, including areas within 25 ft upslope from that boundary, except where essential for safety of people or structures.
- Removal or burning of downed wood in forested areas, except as necessary to reduce fire hazards near buildings or halt the spread of disease or damaging insects.
- Addition of prolonged (> 2 months/year) use by more than one domestic grazing animal (e.g., cow, horse, or sheep) per acre, in the same place within a wetland or its buffer.

Also, clarify that the removal of plant species considered to be noxious weeds by the SJC Weed Control Board is allowed.

Option C. To the list of disallowed or regulated activities in Option B, add:

- **Creation or expansion of gardens, orchards, or other agricultural activities, or landscaping with plant species not native to SJC, within wetlands. Within wetland buffers, disallow creation or expansion of these land uses if that would cause them to occupy more than 10% of the buffer, or more than 1000 square feet (whichever is larger). They would be allowed in the wetland buffer only if located in the outer 25% of the wetland buffer, as is stated in the current SJCC.**

Option D. Adopt some modification of Option B or C. For example, consider allowing small gardens and orchards or the felling of trees only in the buffers of wetlands where the ratings for Pollutant Transport Potential and Wetland Importance are both LOW.

Option E. If they are not specifically prohibited by state or federal laws, de-regulate some of the activities that are regulated or prohibited in wetlands and/or their buffers under the existing SJCC. This would not reflect BAS and would increase the risk of harm to wetland functions.

Option F. Identify additional activities that should be regulated in wetlands and/or their buffers in order to decrease the risk of harm to wetland functions.

Option G. For any of the above, allow some of the prohibited activities (Appendix C) to occur in the outer 25% of a buffer (the part closest to the development and farthest from the stream being protected). Such allowance could be made either universally or only where Pollutant Transport Potential and/or Wetland Importance were LOW.

11. Minimum Wetland Sizes for Regulation

11.1 State Regulations Most-relevant to Minimum Regulated Size

As part of requirements for protection of wetlands under city and county Critical Areas Ordinances, there are no State regulations that explicitly give a threshold wetland size below which wetlands should or might not be regulated. Federal regulations cover wetlands regardless of size.

11.2 Existing County Regulations

From SJCC 18.30.150(B):

2. Regulated Wetlands. Not all “wetlands” as defined in SJCC [18.20.220](#) are “regulated wetlands.” Regulation of a wetland by this section is determined by the size and category of the wetland. Wetland sizes are determined in accordance with subsection (G) of this section, and are not limited by parcel boundaries. For the purposes of this section, “regulated wetlands” shall include those wetlands that meet the criteria in Table 3.3:

Table 3.3. Threshold size above which a wetland is regulated under SJCC [18.30.150](#).

Wetland Category	Threshold Size ^{1, 2}
I	[All Category I wetlands are regulated]
II	Greater than 2,500 sq. ft.
III	Greater than 5,000 sq. ft.
IV	Greater than 10,000 sq. ft.

Notes:

1. Wetland sizes are determined in accordance with SJCC [18.30.150](#)(G) and are not limited by parcel boundaries.
2. Wetlands smaller than the threshold size for the category are not regulated by the County under SJCC 18.30.150.

Also, from SJCC 18.30.150(D)(2)(d):

All legal parcels less than one acre in size as of the date of adoption of this code are exempt from the wetland buffer provisions.

11.3 Analysis of Existing County Regulations

Provisions covering this topic in the existing SJCC are not inconsistent with State guidance, but would need to be modified for the County’s new wetland categorization system, if that is adopted. Exclusion of small wetlands is not consistent with BAS, nor is the above provision exempting wetlands that are located in parcels smaller than one acre.

11.4 Options for Addressing Problems

Option A. Apply required buffers to all wetlands regardless of wetland size, parcel size, and wetland category. This would not reflect BAS and the need to protect wetland functions from future harm.

Option B. Retain the current SJCC concept of varying the threshold for minimum size (below which a wetland would not be regulated by the SJCC, though still by federal agencies) depending on its category, after converting the current SJCC

categories (I, II, III, IV) to the new locally-tailored category definitions, if adopted, that reflect wetland Importance and ratings for Development Intensity and/or Pollutant Transport Potential. Delete the SJCC regulatory exclusion for wetlands on parcels smaller than one acre.

Option C. Do not regulate any wetland, regardless of its Importance and/or other ratings, if it is smaller than some threshold size, e.g., 1000 sq. ft. This would not reflect BAS and the need to protect wetland functions from future harm.

12. Mitigation of Unavoidable Impacts to Wetlands

12.1 State Regulations Most-relevant to Wetland Impacts Mitigation

As part of requirements for protection of wetlands as part of city and county Critical Areas Ordinances, there are no State regulations that explicitly define mitigation ratios or sequencing. However, there is extensive Federal and State guidance on this topic, and that is cited and described in section 2.4.6 of the County's BAS report.

12.2 Existing County Regulations

From SJCC 18.30.150(H):

H. Mitigation. The overall goal of mitigation shall be no net loss of wetland function, value, and acreage.

1. Mitigation Sequence. Mitigation includes avoiding, minimizing, or compensating for adverse impacts to regulated wetlands or their buffers. When a proposed use or development activity poses potentially significant adverse impacts to a regulated wetland or its buffer, the preferred sequence of mitigation as defined below shall be followed unless the applicant demonstrates that an overriding public benefit would warrant an exception to this preferred sequence.

- a. Avoiding the impact altogether by not taking a certain action or parts of actions on that portion of the site which contains the regulated wetland or its buffer;
- b. Minimizing impacts by limiting the degree or magnitude of the action and its implementation;
- c. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
- d. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or
- e. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments.

2. Compensatory Mitigation – General Requirements. As a condition of any permit or other approval allowing alteration which results in the loss or degradation of regulated wetlands, or as an enforcement action pursuant to Chapter [18.100](#) SJCC, compensatory mitigation shall be required to offset impacts resulting from the actions of the applicant or any code violator.

- a. Except persons exempt under SJCC [18.30.110](#)(E), any person who alters or proposes to alter regulated wetlands shall restore or create areas of wetland equivalent to or larger than those altered in order to compensate for wetland losses. The following Table 3.6 specifies the ratios that apply to

creation or restoration which is in-kind, on-site, and is accomplished prior to or concurrently with alteration:

Table 3.6. Required replacement ratios for compensatory wetland mitigation.

Wetland Category	Replacement Ratio ⁽¹⁾
I	6 : 1
II or III	
• Forested	3 : 1
• Scrub-Shrub	2 : 1
• Emergent	1.5 : 1
IV	1.25 : 1

Note:

1. The first number in the ratio specifies the acreage of wetlands to be created, and the second number specifies the acreage of wetlands proposed to be altered or lost.
 - b. Enhancement of existing wetlands, other than Category I and Category II wetlands, may be considered as compensation; but above ratios must then be doubled.
 - c. Compensation must be completed prior to wetland destruction, where possible.
 - d. Compensatory mitigation must follow an approved compensatory mitigation plan pursuant to subsection (G)(3) of this section, with the replacement ratios as specified above.
 - e. Compensatory mitigation must be conducted on property which will be protected and managed to avoid further development or degradation. The applicant or code violator must provide for long-term preservation of the compensation area.
 - f. The applicant shall demonstrate sufficient scientific expertise, supervisory capability, and financial resources, including bonding in accordance with Appendix C* (Performance and Maintenance Bonding for Wetlands), to carry out the project. The applicant must demonstrate the capability for monitoring the site and making corrections if the project fails to meet projected goals.
3. Compensatory Mitigation – Type, Location, and Timing.
- a. Priority will be given to in-kind, on-site compensation if feasible and if the wetland to be lost has a moderate to high functional value.
 - b. When the wetland to be impacted is of a limited functional value and is degraded, compensation may be of the wetland community type most likely to succeed with the highest functional value possible.
 - c. Out-of-kind compensation may be allowed when out-of-kind replacement will best meet identified goals (for example, replacement of historically diminished wetland types). Where out-of-kind replacement is accepted, greater acreage replacement ratios may be required to compensate for lost functional values.
 - d. Off-site compensation can be allowed only if:
 - i. On-site compensation is not feasible due to hydrology, soils, waves, or other factors;
 - ii. On-site compensation is not practical due to probable adverse impacts from surrounding land uses;
 - iii. Potential functional values at the site of the proposed restoration are significantly greater than the lost wetland functional values; or
 - iv. Off-site compensation will be conducted in accordance with subsection (H)(4) of this section, cooperative compensation projects.
 - e. Except in the case of cooperative compensation projects, off-site compensation must occur within the

- same watershed where the wetland loss occurs; provided, that Category IV wetlands may be replaced outside of the watershed if there is no reasonable technical alternative. The stormwater storage function provided by Category IV wetlands must be provided for within the design of the development project.
- f. Except in the case of cooperative compensation projects, in selecting compensation sites applicants must pursue locations in the following order of preference:
 - i. Filled, drained, or cleared sites which were formerly wetlands and where appropriate hydrology exists; and
 - ii. Upland sites, adjacent to wetlands, if the upland is significantly disturbed and does not contain a mature forested or shrub community of native species, and where the appropriate natural hydrology exists.
 - g. Construction of compensation projects must be timed to reduce impacts to existing wildlife and flora. Construction must be timed to assure that grading and soil movement occurs during the dry season. Planting of vegetation must be specifically timed to the needs of the target species.
4. Cooperative Compensation Projects. The County may encourage, facilitate, and approve cooperative projects where one or more applicants, or an organization with demonstrated capability, may undertake a compensation project if it is demonstrated that:
- a. Creation of one or several larger wetlands may be preferable to many small wetlands;
 - b. The group demonstrates the organizational and fiscal capability to act cooperatively;
 - c. The group demonstrates that long term management of the compensation area can and will be provided; and
 - d. There is a clear potential for success of the proposed compensation at the identified compensation site. Conducting compensation as part of a cooperative process does not reduce or eliminate the required replacement ratios outlined in subsection (H)(2) of this section. (Ord. 7-2005 §§ 6, 7, 8; Ord. 14-2000 § 7 (CCC); Ord. 11-2000 § 4; Ord. 2-1998 Exh. B § 3.6.8)

12.3 Analysis of Existing County Regulations Relevant to Wetlands Mitigation

Provisions covering this topic in the existing SJCC are not inconsistent with State and Federal guidance, but would need to be modified to incorporate the County's new wetland categorization system (e.g., rather than the references to the wetland "Classes"), if that is adopted. Also, the description of mitigation should include a requirement for *monitoring* of mitigation. The BAS indicates that success of mitigation is difficult to achieve. Monitoring of mitigation plan implementation is critical to ensuring success; if mitigation is unsuccessful, compensation is not really occurring.

12.4 Options for Mitigation Revisions

Option A. Retain all current provisions of the SJCC that pertain to mitigation of impacts to wetlands, changing only the definitions of the wetland categories. This would not reflect BAS and the need to protect resources from future harm.

Option B. As most other counties have done, modify the current provisions (e.g., for wetland replacement ratios) to comply with guidance from the WDOE, which (among

other features) recommends higher replacement ratios than the existing SJCC, and varies the amount of required compensatory acreage depending if the compensation action is creation, re-establishment, rehabilitation, enhancement, or preservation. In addition, add a provision that allows use of the WDOE's new (2011) procedure, *Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Western Washington*, as an alternative to the WDOE's and the County's existing mitigation ratios. Use of that procedure would first require cross-walking the County's new locally-sensitive wetland categories to the old ones used by the WDOE. Also, add a requirement for monitoring of mitigation wetlands and specify consistent standards for that based on BAS (e.g., what parameters to be monitored, at what frequency and for how long, how "success" will be judged). Change the requirement that off-site mitigation be done in the same watershed to a requirement that it be done on the same island and as near as possible to the development site. The Importance of compensatory wetlands should be at least as great as that of the impacted wetlands, and their Pollutant Transport Potential should be the same or less.

Option C. Retain all current provisions of the SJCC that pertain to this topic, changing only the definitions of the wetland categories, and adding a provision that allows use of the WDOE's new (2011) procedure, *Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Western Washington*, as an alternative to the existing mitigation ratios.

Option D. Do not under any circumstance allow compensatory mitigation as defined in the existing SJCC. Proposed developments that cannot mitigate their impacts entirely through an avoidance and minimization strategy would not be permitted.

Option E. Among the major types of mitigation (wetland re-establishment, rehabilitation, enhancement, preservation) and mitigation vehicles (e.g., mitigation banks, in-lieu fee), include in the CAO only the types and vehicles for mitigation which the County believes it has the resources to administer and/or monitor adequately over the long term.

Appendix A. Proposed Procedure for Categorizing Importance of SJC Wetlands

The following wetland types could be categorized as being of HIGH local or regional importance due to the species or levels of functions they support or are likely to support. Each is defined in Chapter 2.4.3 (D) of the BAS document.

- (a) Tidal wetland
- (b) Bog
- (c) Wet prairie wetland
- (d) Mature forested wetland
- (e) Aspen/cottonwood wetland
- (e) Lakeside wetland
- (f) Salmonid wetland
- (g) Rare species wetland

The following wetland types could be categorized as being of MEDIUM local or regional importance due to the species or levels of functions they support or are likely to support. Each is defined in Chapter 2.4.3 (D) of the BAS document.

- (a) Tidally contiguous wetland
- (b) Large pond wetland
- (c) Structurally diverse wetland
- (d) Wetland contiguous to extensive forest
- (e) Salmonid watershed wetland
- (f) Water supply watershed wetland

Appendix B. Proposed Option for Categorizing Development Intensity in SJC

Assign a rating of HIGH:

If implementation of the proposed development involves any of the following:

(a) removal or alteration of vegetation such that the new Developed Area comprises greater than the following percentages:

Parcel Size	0-3 acres	3-5 acres	5-10 acres	10-20 acres	>20 acres
New Developed Area:	50%	45%	40%	35%	30%

(b) removal of trees results in fewer than 25 trees per acre; they must be well-distributed within the Development Parcel(s), or

(c) changes in the land surface, within or between the Developed Area and the wetland, intentionally redirect runoff which otherwise would reach the wetland or a stream during wet periods, e.g., construction of cut-off trenches, ditches, berms, ponds.

Cisterns and features designed to increase infiltration are exempt.

Assign a rating of MEDIUM: If neither HIGH nor LOW.

Assign a rating of LOW:

If implementation of the proposed development meets all of the following:

(a) not located in areas known to support Threatened or Endangered species, or which qualify as Locally Significant Habitat Conservation Areas under Fish and Wildlife Habitat Conservation Area provisions of this ordinance; and

(b) any clearing of vegetation associated with the development does not create a linear forest opening wider than 100 ft in a manner that causes a forested area larger than 100 acres to be separated from a forested area that would otherwise be contiguous to it; and

(c) hydrology of the land surface is not changed as described in (c) above, and

(d) lighting complies with standards described in San Juan County Code Section 18.60.170 (Lighting) and Ord. 2-1998 Exh. B § 6.15, as amended; and

(e) the new Developed Area comprises less than the following percentages:

Parcel Size:	0-3 acres	3-5 acres	5-10 acres	10-20 acres	>20 ac
New Developed Area:	35%	30%	25%	20%	15%

Appendix C. Proposed Option for Categorizing Pollutant Transport Potential/ Wetland Sensitivity in San Juan County

Assign a rating of HIGH:

If any of the following are true:

- (a) the same mapped Drainageway or Stream intersects both the Development Area and a Downslope Wetland, and no more than 400 horizontal feet separate the two, or
- (b) the percent slope of land, measured between the Development Area and the Downslope Wetland, is greater than 30%, or
- (c) more than 10% of the land between the upper edge of the Development Area and the Downslope Wetland is Impervious Area or will become so as part of the proposed development, or
- (d) the wetland is or contains a Bog, or
- (e) the wetland has no surface water connection to a separate wetland, pond, stream, lake, or tidal water for longer than 3 consecutive days at any time during most years. The connection need not be located within the Development Parcel. Temporary blockages of outflow, such as beaver dams, shall not be considered to interrupt the surface water connection.

Assign a rating of MEDIUM: If neither HIGH nor LOW.

Assign a rating of LOW:

If all of the following are true:

- (a) no Drainageway or Stream intersects both the Development Area and a Downslope Wetland within 400 horizontal feet, and
- (b) The average percent slope of land, measured between the proposed development and the Downslope Wetland, is <10%, and
- (c) >50% of the cover of herbaceous plants in the wetland consists of invasive herbaceous plants or >50% of the cover of shrubs in the wetland consists of invasive shrubs.

Appendix D. Proposed Options for Determining Required Widths of Wetland Buffers in San Juan County

The County may adopt the buffer widths and protocols associated with either the Minimal Risk or the Medium Risk procedure, or some other level of risk.

1. Development Intensity	2. Pollution Transport/ Wetland Sensitivity	3. Importance	Necessary Buffer Width (ft)		
			Minimal Risk to Functions	Medium Risk to Functions	
High	High	High	450	300	
		Medium	400	250	
		Low	350	200	
	Medium	Medium	High	400	250
			Medium	350	200
			Low	300	150
	Low	Low	High	350	200
			Medium	300	150
			Low	275	100
Medium	High	High	300	225	
		Medium	250	175	
		Low	200	125	
	Medium	Medium	High	225	175
			Medium	200	125
			Low	175	100
	Low	Low	High	200	125
			Medium	150	100
			Low	125	75
Low	High	High	100	80	
		Medium	80	60	
		Low	60	40	
	Medium	Medium	High	80	60
			Medium	60	40
			Low	40	20
	Low	Low	High	60	40
			Medium	40	25
			Low	20	15

Rationale

1. The “Minimal Risk” option assumes (a) some but not most of the loads of soluble pollutants from new developments will travel aboveground (in runoff) in some parts of the county during prolonged or intense wet periods, (b) *more than 90%* of the pollutant load will be processed in a wetland buffer of the specified width before it reaches a wetland, (c) the proposed wetland buffers, in combination with existing protected natural lands, will be sufficient for maintaining *all* aquatic life within the natural range of variation expected for SJC wetlands, and (d) there is *very low* (“beyond a reasonable doubt”) probability that adverse impacts to wetland functions will be worse than described in the accompanying BAS report.
2. The “Medium Risk” option assumes (a) *all* loads of nearly all soluble pollutants from new developments will travel entirely belowground during prolonged or intense wet periods, (b) *between 50 and 90%* of the pollutant load will be processed in a wetland buffer of the specified width before it reaches a wetland, (c) the proposed wetland buffers, in combination with existing protected natural lands, will be sufficient for maintaining *most* aquatic life within the natural range of variation expected for SJC wetlands, and (d) there is a *moderate* possibility that impacts to wetland functions will be worse than described in the accompanying report.
3. The minimum buffer width of 10 feet represents the distance required to remove about half the load of nitrate from subsurface seepage from a minimally impacting development in flat terrain with no drainageway connecting the proposed development to a wetland.
4. Use of the above range of widths for specifying buffers in San Juan County was influenced significantly but not exclusively by the statistical analysis of over 60 studies of nitrate transport and assimilation published by Mayer et al. (2007). As a whole, newer studies have not refuted conclusions from that analysis. That analysis and many others were not used by FEMAT (1993), Knutson & Naef (1997), or the WDOE (Granger et al. 2005) in arriving at their buffer specifications because Mayer et al. published their analysis after those authors had published theirs. The other reviews did not use the rigorous, statistical analysis (meta-analysis) of the literature that Mayer et al. used. The newer analysis focused on just one soluble substance (nitrate). BAS is insufficient to determine if buffers needed to adequately remove or retain some of the other potentially harmful substances and human pathogens, in the concentrations they do or could occur in SJC, should be narrower or wider.

5. The width of buffer needed to protect **habitat** functions of wetlands (apart from water quality) could not be specified with confidence because it depends on the type of wetland (e.g., only forested wetlands are susceptible to blowdown) and species that are present (e.g., woody vegetation that is beneficial to some wetland songbirds discourages wetland use by foraging herons and waterfowl). Desirable buffer widths have not been documented in applicable literature for any of the priority or sensitive wildlife species that occur in SJC wetlands, and for the reasons demonstrated in the BAS report, applying the buffer widths appropriate for species from other regions to those present in SJC is not necessarily supported by BAS. Nonetheless, buffer widths sufficient to protect wetland water quality (as described above) are expected to be sufficient to protect most wetland-dependent species in the county. This conclusion was influenced significantly by the literature analysis of Marczak et al. (2010) which mainly covered stream riparian buffers.

Literature that most influenced the recommendations

Marczak, L., T. Sakamaki, S. Turvey, I. Deguise, S. Wood, and J. Richardson. 2010. Are forested buffers an effective conservation strategy for riparian fauna? An assessment using meta-analysis. *Ecol. Appl.* 20(1):126-34.

Mayer, P.M., S.K. Reynolds, M.D. McCutchen, and T.J. Canfield. 2007. Meta-analysis of nitrogen removal in riparian buffers. *J. Environ. Qual.* 36:1172-80.