Tracey Redd

From: Kristi Beckham <KBeckham@Cairncross.com>
Sent: Monday, December 29, 2014 4:58 PM
To: Nancy Rogers; MDRT User; Andy Williamson; 'olbrechtslaw@gmail.com'
Subject: RE: Yarrow Bay Reply materials, Plat 2C PLN 13-0027 (Email 3b3 of 3)
Attachments: Pages from Pages from Pages from scan_20141229154717 Reduced File Size Part 3b3.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Attached is email 3b3. This is the final email.

CH& **Kristi Beckham**
Legal Assistant
Cairncross & Hempelmann
524 Second Ave. | Ste. 500 | Seattle, WA 98104-2323
KBeckham@Cairncross.com | d:206-254-4494 | f:206-587-2308

From: Kristi Beckham
Sent: Monday, December 29, 2014 4:57 PM
To: Nancy Rogers; 'MDRT User'; 'Andy Williamson'; 'olbrechtslaw@gmail.com'
Subject: RE: Yarrow Bay Reply materials, Plat 2C PLN 13-0027 (Email 3b2 of 3)

Attached is email 3b2.

CH& **Kristi Beckham**
Legal Assistant
Cairncross & Hempelmann
524 Second Ave. | Ste. 500 | Seattle, WA 98104-2323
KBeckham@Cairncross.com | d:206-254-4494 | f:206-587-2308

This email message may contain confidential and privileged information. Any unauthorized use is prohibited. If you are not the intended recipient, please contact the sender by reply email and destroy all copies of the original message. To comply with IRS regulations, we advise you that any discussion of Federal tax issues in this email is not intended or written to be used, and cannot be used by you, (a) to avoid any penalties imposed under the Internal Revenue Code or (b) to promote, market, or recommend to another party any transaction or matter addressed herein. Please be advised that if you use a public or employer-provided computer or workplace device or system, then there is a risk that your email correspondence may be disclosed to your employer or other third party.

From: Kristi Beckham
Sent: Monday, December 29, 2014 4:53 PM
To: Nancy Rogers; 'MDRT User'; 'Andy Williamson'; 'olbrechtslaw@gmail.com'
Subject: RE: Yarrow Bay Reply materials, Plat 2C PLN 13-0027 (Email 3b1 of 3)

Attached is email 3b1.

CH& **Kristi Beckham**
Legal Assistant
Cairncross & Hempelmann
524 Second Ave. | Ste. 500 | Seattle, WA 98104-2323
KBeckham@Cairncross.com | d:206-254-4494 | f:206-587-2308

From: Kristi Beckham
Sent: Monday, December 29, 2014 4:53 PM
To: Nancy Rogers; 'MDRT User'; 'Andy Williamson'; 'olbrechtslaw@gmail.com'
Subject: RE: Yarrow Bay Reply materials, Plat 2C PLN 13-0027 (Email 3a2 of 3)

Attached is email 3a2.

CH& **Kristi Beckham**
Legal Assistant
Cairncross & Hempelmann
524 Second Ave. | Ste. 500 | Seattle, WA 98104-2323
KBeckham@Cairncross.com | d:206-254-4494 | f:206-587-2308

From: Kristi Beckham
Sent: Monday, December 29, 2014 4:52 PM
To: Nancy Rogers; 'MDRT User'; 'Andy Williamson'; 'olbrechtslaw@gmail.com'
Subject: RE: Yarrow Bay Reply materials, Plat 2C PLN 13-0027 (Email 3a1 of 3)

Attached is email 3a1.

CH& **Kristi Beckham**
Legal Assistant
Cairncross & Hempelmann
524 Second Ave. | Ste. 500 | Seattle, WA 98104-2323
KBeckham@Cairncross.com | d:206-254-4494 | f:206-587-2308

From: Kristi Beckham
Sent: Monday, December 29, 2014 4:35 PM
To: Nancy Rogers; 'MDRT User'; 'Andy Williamson'; 'olbrechtslaw@gmail.com'
Subject: RE: Yarrow Bay Reply materials, Plat 2C PLN 13-0027 (Email 3 of 3)

I am resending the attachment to Email 3 of 3 in two parts, 3a and 3b. We received bounce backs because of the file size. Attached is Part 3b.

Thank you.

CH& **Kristi Beckham**
Legal Assistant
Cairncross & Hempelmann
524 Second Ave. | Ste. 500 | Seattle, WA 98104-2323
KBeckham@Cairncross.com | d:206-254-4494 | f:206-587-2308

This email message may contain confidential and privileged information. Any unauthorized use is prohibited. If you are not the intended recipient, please contact the sender by reply email and destroy all copies of the original message. To comply with IRS regulations, we advise you that any discussion of Federal tax issues in this email is not intended or written to be used, and cannot be used by you, (a) to avoid any penalties imposed under the Internal Revenue Code or (b) to promote, market, or recommend to another party any transaction or matter addressed herein. Please be advised that if you use a public or employer-provided computer or workplace device or system, then there is a risk that your email correspondence may be disclosed to your employer or other third party.

From: Nancy Rogers
Sent: Monday, December 29, 2014 4:22 PM
To: 'MDRT User'; 'Andy Williamson'; 'olbrechtslaw@gmail.com'
Cc: Kristi Beckham
Subject: Yarrow Bay Reply materials, Plat 2C PLN 13-0027 (Email 3 of 3)

Dear Mr. Examiner and MDRT Team and Mr. Williamson:

Yarrow Bay's reply materials are in three parts: (1) a 22 page memo, (2) the full PP1A decision (December 2012), and (3) the attached PDF containing the Hearing Examiner's Recommendation of Approval for The Villages Development Agreement (September 2011), together with a Department of Ecology Guidance Document (April 2005), and a memo from Transpo (December 2014). Please let me know if you do not receive all parts or have any trouble opening.

We will also be filing the separate reply materials on January 9 after we review the City's response, due Jan 7.

Thank you,

CH& **Nancy Bainbridge Rogers**
Attorney
Cairncross & Hempelmann
524 Second Ave. | Ste. 500 | Seattle, WA 98104-2323 | vCard | Bio
NRogers@Cairncross.com | d:206-254-4417 | f:206-587-2308

8C.2.4 Special Conditions for a Possible Reduction in Buffer Widths

8C.2.4.1 Condition 1: Reduction in Buffer Width Based on Reducing the Intensity of Impacts from Proposed Land Uses

The buffer widths recommended for proposed land uses with high-intensity impacts to wetlands can be reduced to those recommended for moderate-intensity impacts under the following conditions:

- For wetlands that score moderate or high for habitat (20 points or more for the habitat functions), the width of the buffer can be reduced if both of the following criteria are met:

  1) A relatively undisturbed, vegetated corridor at least 100-feet wide is protected between the wetland and any other Priority Habitats as defined by the Washington State Department of Fish and Wildlife ("relatively undisturbed" and "vegetated corridor" are defined in questions H 2.1 and H 2.2.1 of the *Washington State Wetland Rating System for Western Washington – Revised*, (Hruby 2004b)). Priority Habitats in western Washington include:

     - Wetlands
     - Riparian zones
     - Aspen stands
     - Cliffs
     - Prairies
     - Caves
     - Stands of Oregon White Oak
     - Old-growth forests
     - Estuary/estuary-like
     - Marine/estuarine shorelines
     - Eelgrass meadows
     - Talus slopes
     - Urban natural open space (for current definitions of Priority Habitats, see http://wdfw.wa.gov/hab/phshabs.htm)

     The corridor must be protected for the entire distance between the wetland and the Priority Habitat by some type of legal protection such as a conservation easement.

  2) Measures to minimize the impacts of different land uses on wetlands, such as the examples summarized in Table 8C-8, are applied.

- For wetlands that score less than 20 points for habitat, the buffer width can be reduced to that required for moderate land-use impacts by applying measures to minimize the impacts of the proposed land uses (see examples in Table 8C-8).

Table 8C-8. Examples of measures to minimize impacts to wetlands from proposed change in land use that have high impacts. (This is not a complete list of measures.)

Examples of Disturbance	Activities and Uses that Cause Disturbances	Examples of Measures to Minimize Impacts
Lights	• Parking lots • Warehouses • Manufacturing • Residential	• Direct lights away from wetland
Noise	• Manufacturing • Residential	• Locate activity that generates noise away from wetland
Toxic runoff*	• Parking lots • Roads • Manufacturing • Residential areas • Application of agricultural pesticides • Landscaping	• Route all new, untreated runoff away from wetland while ensuring wetland is not dewatered • Establish covenants limiting use of pesticides within 150 ft of wetland • Apply integrated pest management
Stormwater runoff	• Parking lots • Roads • Manufacturing • Residential areas • Commercial • Landscaping	• Retrofit stormwater detention and treatment for roads and existing adjacent development • Prevent channelized flow from lawns that directly enters the buffer
Change in water regime	• Impermeable surfaces • Lawns • Tilling	• Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns
Pets and human disturbance	• Residential areas	• Use privacy fencing; plant dense vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the ecoregion; place wetland and its buffer in a separate tract
Dust	• Tilled fields	• Use best management practices to control dust

* These examples are not necessarily adequate for minimizing toxic runoff if threatened or endangered species are present at the site.

8C.2.4.2 Condition 2: Reductions in Buffer Widths Where Existing Roads or Structures Lie Within the Buffer

Where a legally established, non-conforming use of the buffer exists (e.g., a road or structure that lies within the width of buffer recommended for that wetland), proposed actions in the buffer may be permitted as long as they do not increase the degree of non-conformity. This means no increase in the impacts to the wetland from activities in the buffer.

For example, if a land use with high impacts (e.g., building an urban road) is being proposed next to a Category II wetland with a moderate level of function for habitat, a 150-foot buffer would be needed to protect functions (see Table 8C-6). If, however, an existing urban road is already present and only 50 feet from the edge of the Category II wetland, the additional 100 feet of buffer may not be needed if the road is being widened. A vegetated buffer on the other side of the road would not help buffer the existing impacts to the wetland from the road. If the existing road is resurfaced or widened (e.g., to add a sidewalk) along the upland edge, without any further roadside development that would increase the degree of non-conformity, the additional buffer is not necessary. The associated increase in impervious surface from widening a road, however, may necessitate mitigation for impacts from stormwater.

If, however, the proposal is to build a new development (e.g., shopping center) along the upland side of the road, the impacts to the wetland and its functions may increase. This would increase the degree of non-conformity. The project proponent would need to provide the additional 100 feet of buffer extending beyond the road or apply buffer averaging (see Section 8C.2.6).

8C.2.4.3 Condition 3: Reduction in Buffer Widths Through an Individual Rural Stewardship Plan

A Rural Stewardship Plan (RSP) is the product of a collaborative effort between rural property owners and a local government to tailor a management plan specific for a rural parcel of land. The goal of the RSP is better management of wetlands than what would be achieved through strict adherence to regulations. In exchange, the landowner gains flexibility in the widths of buffers required, in clearing limits, and in other requirements found in the regulations. For example, dense development in rural residential areas can be treated as having a low level of impact when the development of the site is managed through a locally approved RSP. The voluntary agreement includes provisions for restoration, maintenance, and long-term monitoring and specifies the widths of buffers needed to protect each wetland within the RSP.

8C.2.5 Conditions for Increasing the Width of, or Enhancing, the Buffer

8C.2.5.1 Condition 1: Buffer is Not Vegetated with Plants Appropriate for the Region

The recommended widths for buffers are based on the assumption that the buffer is vegetated with a native plant community appropriate for the ecoregion or with one that performs similar functions. If the existing buffer is unvegetated, sparsely vegetated, or vegetated with invasive species that do not perform needed functions, the buffer should either be planted to create the appropriate plant community or the buffer should be widened to ensure that adequate functions of the buffer are provided. Generally, improving the vegetation will be more effective than widening the buffer.

8C.2.5.2 Condition 2: Buffer Has a Steep Slope

The review of the literature (Volume 1) indicates that the effectiveness of buffers at removing pollutants before they enter a wetland decreases as the slope increases. If a buffer is to be based on the score for its ability to improve water quality (see Tables 8C-4 through 8C-7) rather than habitat or other criteria, then the buffer should be increased by 50% if the slope is greater than 30% (a 3-foot rise for every 10 feet of horizontal distance).

8C.2.5.3 Condition 3: Buffer Is Used by Species Sensitive to Disturbance

If the wetland provides habitat for a species that is particularly sensitive to disturbance (such as a threatened or endangered species), the width of the buffer should be increased to provide adequate protection for the species based on its particular, life-history needs. Some buffer requirements for priority species are available on the Washington State Department of Fish and Wildlife web page (http://wdfw.wa.gov/hab/phsrecs.htm). The list of priority species for vertebrates is at http://wdfw.wa.gov/hab/phsvert.htm; for invertebrates it is at http://wdfw.wa.gov/hab/phsinvrt.htm. Information on the buffer widths needed by some threatened, endangered, and sensitive species of wildlife is provided in Appendix 8-H.

8C.2.6 Buffer Averaging

The widths of buffers may be averaged if this will improve the protection of wetland functions, or if it is the only way to allow for reasonable use of a parcel. There is no scientific information available to determine if averaging the widths of buffers actually protects functions of wetlands. The authors have concluded that averaging could be allowed in the following situations:

Averaging may not be used in conjunction with any of the other provisions for reductions in buffers (listed above).

- Averaging to **improve wetland protection** may be permitted when **all** of the following conditions are met:
  - The wetland has significant differences in characteristics that affect its habitat functions, such as a wetland with a forested component adjacent to a degraded emergent component or a "dual-rated" wetland with a Category I area adjacent to a lower rated area
  - The buffer is increased adjacent to the higher-functioning area of habitat or more sensitive portion of the wetland and decreased adjacent to the lower-functioning or less sensitive portion
  - The total area of the buffer after averaging is equal to the area required without averaging
  - The buffer at its narrowest point is never less than 3/4 of the required width
- Averaging to **allow reasonable use** of a parcel may be permitted when **all** of the following are met:
  - There are no feasible alternatives to the site design that could be accomplished without buffer averaging
  - The averaged buffer will not result in degradation of the wetland's functions and values as demonstrated by a report from a qualified wetland professional (see Appendix 8-G for a definition of a qualified wetland professional)
  - The total buffer area after averaging is equal to the area required without averaging
  - The buffer at its narrowest point is never less than 3/4 of the required width

8C.2.7 Modifying Buffer Widths in Alternative 3 Using a Graduated Scale for the Habitat Functions (Alternative 3A)

Alternative 3 contains recommendations for protecting the habitat functions of wetlands using only three groupings of scores (0-19, 20-28, 29-36). As a result, a one-point difference between 28 and 29 can result in a 150-foot increase in the width of a buffer around a wetland. The habitat scores were divided into three groups to simplify the regulations based on this guidance. This division is not based on a characterization of risks since the scientific information indicates that the decrease in risk with increasing widths of buffers is relatively continuous for habitat functions.

Such a large increase in width with a one-point increase in the habitat score may be contentious. A jurisdiction may wish to reduce the increments in the widths for buffers by developing a more graduated (but inherently more complicated) scale based on the scores for habitat. Table 8C-9 provides one example of a graduated scale for widths of buffers where the width increases by 20 feet for every one point increase in the habitat score (Figure 8C-1 shows the buffer widths graphically).

Table 8C-9. Comparison of widths for buffers in Alternatives 3 (step-wise scale) and 3A (graduated scale) for proposed land uses with high impacts based on the score for habitat functions in western Washington

Points for Habitat from Wetland Rating Form	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
Alternative 3	100	150	150	150	150	150	150	150	150	150	300	300	300	300	300	300	300	300
Alternative 3A	100	100	100	120	140	160	180	200	220	240	260	280	300	300	300	300	300	300

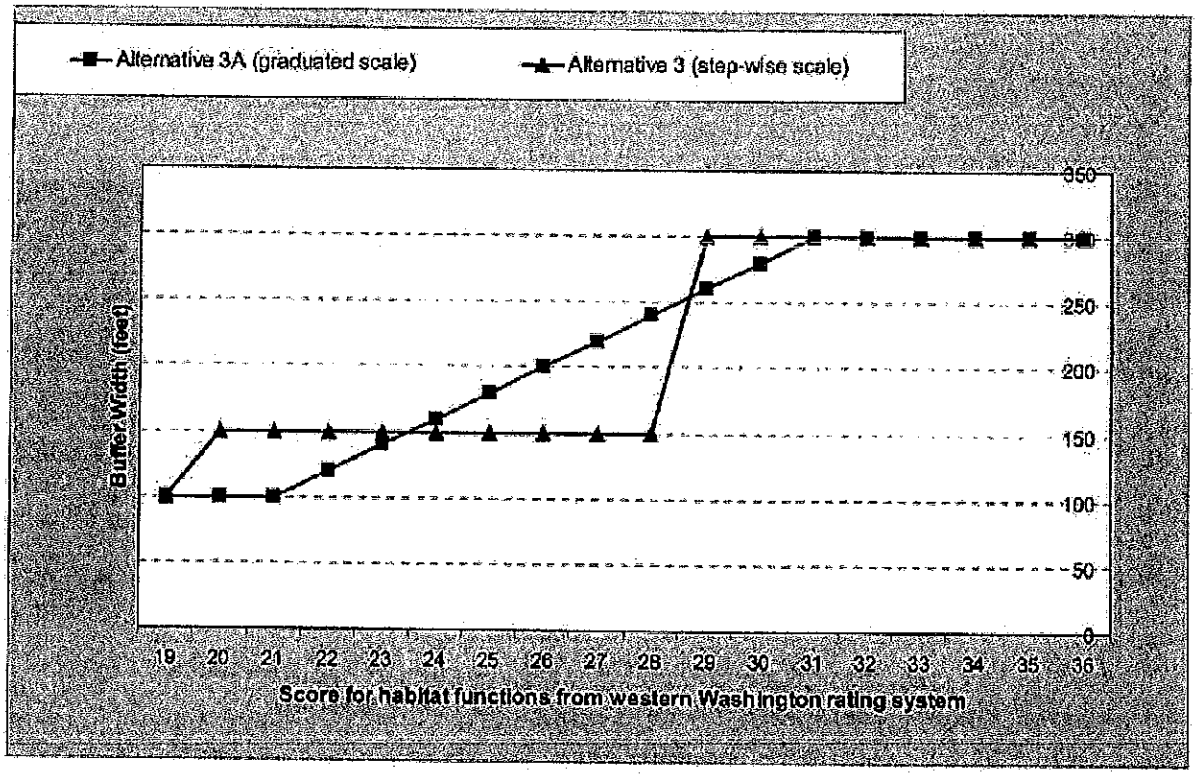

Figure 8C-1. Graphical comparison of widths for buffers in Alternative 3 and 3A for proposed land uses with high impacts based on the score for habitat functions in western Washington.

Other scales are possible as long as they keep within the limits established from the scientific information currently available: wetlands with scores for habitat that are higher than 31 points need buffers that are at least 300-feet wide; wetlands with a score of 26 points need buffers of at least 150 feet; and wetlands with a score of 22 points need buffers that are at least 100-feet wide.

These buffer widths can be further reduced by 25 percent if a proposed project with high impacts implements the mitigation measures such as those described in Table 8C-8. The measures are part of "Condition 1" in Section 8C.2.4 (Special Conditions for a Possible Reduction in Buffer Widths). The buffer widths under Buffer Alternatives 3 and 3A, and the corresponding 25 percent reduction (per buffer reduction condition 1) are shown in Table 8C-10 and represented graphically below in Figure 8C-2.

Table 8C-10. Comparison of widths for buffers in Alternatives 3 (step-wise scale) and 3A (graduated scale) for proposed land uses with high impacts based on the score for habitat functions in western Washington if the impacts are mitigated.

Points for Habitat from Wetland Rating Form	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
Alternative 3 (with mitigation of impacts)	75	110	110	110	110	110	110	110	110	110	225	225	225	225	225	225	225	225
Alternative 3A (with mitigation of impacts)	75	75	75	90	105	120	135	150	165	180	195	210	225	225	225	225	225	225

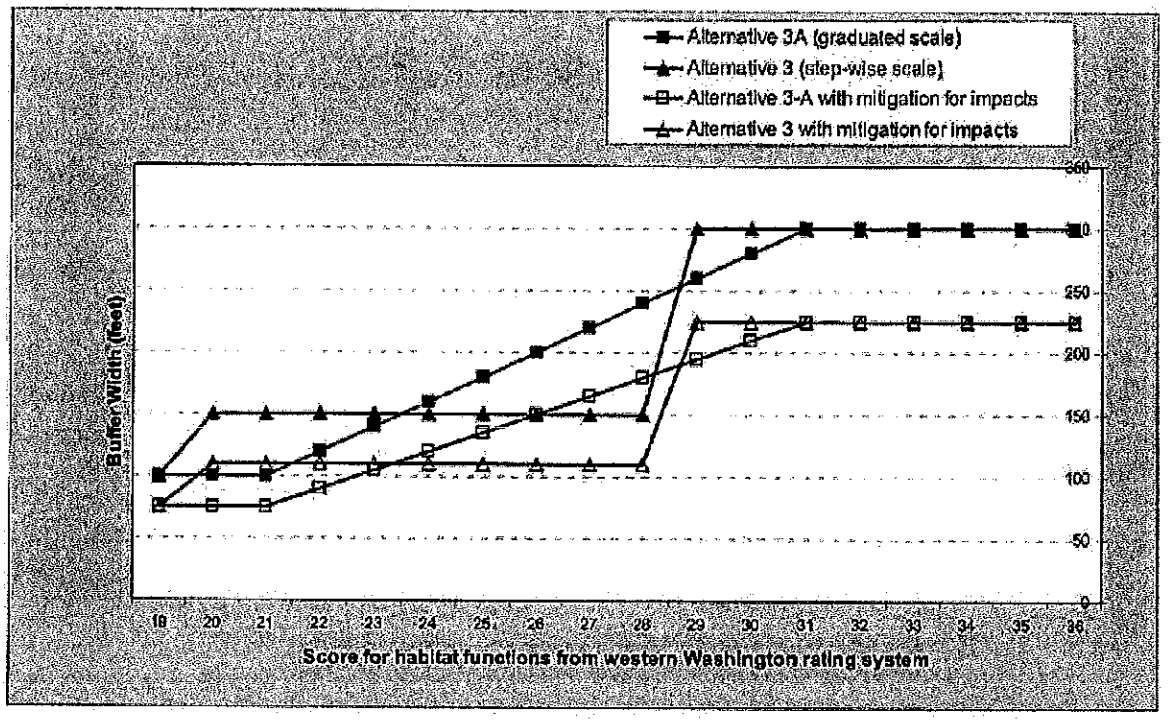

Figure 8C-2. Graphical comparison of widths for buffers in Alternatives 3 and 3A based on the score for habitat functions in western Washington with and without mitigating impacts of proposed development outside the buffer.

Alternatives 3 and 3A represent two separate approaches for determining widths of buffers for wetlands scoring between 20 and 31 points for the habitat functions. Local governments should select one of the two approaches and should not hybridize the approaches or adopt both at the same time.

8C.3 Ratios for Compensatory Mitigation

When the acreage required for compensatory mitigation is divided by the acreage of impact, the result is a number known variously as a *replacement, compensation,* or *mitigation* ratio. Compensatory mitigation ratios are used to help ensure that compensatory mitigation actions are adequate to offset unavoidable wetland impacts by requiring a greater amount of mitigation area than the area of impact. Requiring greater mitigation area helps compensate for the risk that a mitigation action will fail and for the time lag that occurs between the wetland impact and achieving a fully functioning mitigation site.

8C.3.1 Definitions of Types of Compensatory Mitigation

The ratios presented are based on the type of compensatory mitigation proposed (e.g., restoration, creation, and enhancement). In its *Regulatory Guidance Letter 02-02*, the U.S. Army Corps of Engineers provided definitions for these types of compensatory mitigation. For consistency, the authors of this document use the same definitions which are provided below.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural or historic functions to a former or degraded wetland. For the purpose of tracking net gains in wetland acres, restoration is divided into:

- **Re-establishment.** The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural or historic functions to a **former** wetland. Re-establishment results in a gain in wetland acres (and functions). Activities could include removing fill material, plugging ditches, or breaking drain tiles.

- **Rehabilitation.** The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural or historic functions of a **degraded** wetland. Rehabilitation results in a gain in wetland function but does not result in a gain in wetland acres. Activities could involve breaching a dike to reconnect wetlands to a floodplain or return tidal influence to a wetland.

Creation (Establishment): The manipulation of the physical, chemical, or biological characteristics present to develop a wetland on an upland or deepwater site where a wetland did not previously exist. Establishment results in a gain in wetland acres. Activities typically involve excavation of upland soils to elevations that will produce a wetland hydroperiod, create hydric soils, and support the growth of hydrophytic plant species.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of a wetland site to heighten, intensify, or improve specific function(s) or to change the growth stage or composition of the vegetation present. Enhancement is undertaken for specified purposes such as water quality improvement, flood water retention, or wildlife habitat. Enhancement results in a change in some wetland functions and can lead to a

decline in other wetland functions, but does not result in a gain in wetland acres. Activities typically consist of planting vegetation, controlling non-native or invasive species, modifying site elevations or the proportion of open water to influence hydroperiods, or some combination of these activities.

Protection/Maintenance (Preservation): Removing a threat to, or preventing the decline of, wetland conditions by an action in or near a wetland. This includes the purchase of land or easements, repairing water control structures or fences, or structural protection such as repairing a barrier island. This term also includes activities commonly associated with the term *preservation*. Preservation does not result in a gain of wetland acres, may result in a gain in functions, and will be used only in exceptional circumstances.

Distinction between rehabilitation and enhancement

The distinction between rehabilitation and enhancement as defined above is not clear-cut and can be hard to understand. Actions that rehabilitate or enhance wetlands span a continuum of activities that cannot be defined by specific criteria.

Rehabilitation ◄——————————► *Enhancement*

In general, rehabilitation involves actions that are more sustainable and that reinstate environmental processes, both at the site and landscape scale (e.g., reinstating hydrologic processes in a diked floodplain by breaching the dikes). Rehabilitation actions often focus on restoring environmental processes that have been disturbed or altered by previous or ongoing, human activity. Ecology further defines *rehabilitation* as:

- Actions that restore the original hydrogeomorphic (HGM) class, or subclass, to a wetland whose current HGM class, or subclass, has been changed by human activities
- Actions that restore the water regime that was present and maintained the wetland before human activities changed it

Any other actions taken in existing wetlands would be considered *enhancement*. Enhancement typically involves actions that provide gains in only one or a few functions and can lead to a decline in other functions. Enhancement actions often focus on structural or superficial improvements to a site and generally do not address larger-scale environmental processes.

For example, a wetland that was once a forested, riverine wetland was changed to a depressional, emergent wetland by the construction of a dike and through grazing. Rehabilitating the wetland would involve breaching the dike so the wetland becomes a riverine wetland again, discontinuing the grazing, and reforesting the area. Discontinuing the grazing and reforesting the wetland without re-establishing the links to the riverine system would be considered enhancement.

Basic assumptions for using the guidance on ratios

- The ratios are for a compensatory mitigation project that is concurrent with impacts to wetlands. If impacts are to be mitigated by using an approved and established mitigation bank, the rules and ratios applicable to the bank should be used.
- The ratios are based on the assumption that the category (based on the rating system for western Washington) and hydrogeomorphic (HGM) class or subclass of the wetland proposed as compensation are the same as the category and HGM class or subclass of the affected wetland (e.g., impacts to a Category II riverine wetland are compensated by creating, restoring, or enhancing a Category II riverine wetland).
- Ratios for projects in which the category and HGM class or subclass of wetlands proposed as compensation is not the same as that of the wetland affected will be determined on a case-by-case basis using the recommended ratios as a starting point. The ratios could be higher in such cases.
- The ratio for using rehabilitation as compensation is 2 times that for using re-establishment or creation (R/C) (2 acres of rehabilitation are equivalent to 1 acre of R/C). The ratio for using enhancement as compensation is 4 times that for using R/C (4 acres of enhancement are equivalent to 1 acre of R/C).
- Re-establishment or creation can be used in combination with rehabilitation or enhancement. For example, 1 acre of impact to a Category III wetland would require 2 acres of R/C. If an applicant provides 1 acre of R/C (i.e., replacing the lost acreage at a 1:1 ratio), the remaining 1 acre of R/C necessary to compensate for the impact could be substituted with 2 acres of rehabilitation or 4 acres of enhancement.
- Generally the use of enhancement alone as compensation is discouraged. Using enhancement in combination with the replacement of wetland area at a minimum of 1:1 through re-establishment or creation is preferred.

These ratios were developed to provide a starting point for further discussions with each proponent of compensatory mitigation. They are based on the observations of the success and risk of compensatory mitigation, as reviewed in Volume 1, and do not represent the specific risk or opportunities of any individual project.

As noted above, the ratios for compensatory mitigation are based on the assumption that the category and hydrogeomorphic (HGM) class or subclass of the affected wetland and the mitigation wetland are the same. The ratios may be adjusted either up or down if the category or HGM class or subclass of the wetland proposed for compensation is different. For example, ratios may be lower if impacts to a Category IV wetland are to be mitigated by creating a Category II wetland. The same is true for impacts to wetlands that currently would be considered *atypical* (see definition below).

Also, compensatory mitigation should not result in the creation, restoration, or enhancement of an atypical wetland. An atypical wetland is defined as a wetland whose design does not match the type of wetland that would be found in the geomorphic setting

of the proposed site (i.e., the water source(s) and hydroperiod proposed for the mitigation site are not typical for the geomorphic setting). In addition, any designs that provide exaggerated morphology or require a berm or other engineered structures to hold back water would be considered atypical. For example, excavating a permanently inundated pond in an existing seasonally saturated or inundated wetland is one example of an enhancement project that could result in an atypical wetland. Another example would be excavating depressions in an existing wetland on a slope that required the construction of berms to impound water.

On a case-by-case basis, it is possible to use the scores from the Washington State wetland rating system to compare functions between the mitigation wetland and the impacted wetland. This information may also be used to adjust replacement ratios. Scores from the methods for assessing wetland functions (Hruby et al. 1999) provide another option to establish whether the functions lost will be replaced if both the affected wetland and the wetland used for compensation are of the same HGM class and subclass.

Mitigation ratios for projects in western Washington are shown in Table 8C-11. Refer to the text box on the basic assumptions on the previous page before reading the table. As mentioned previously, these ratios were developed to provide a starting point for further discussions with each proponent of compensatory mitigation. They only factor in the observations of mitigation success and risk at a programmatic level, and do not represent the specific risk or opportunity of any individual project.

Table 8C-11. Mitigation ratios for projects in western Washington.

Category and Type of Wetland Impacts	Re-establishment or Creation	Rehabilitation Only[4]	Re-establishment or Creation (R/C) and Rehabilitation (RH)[4]	Re-establishment or Creation (R/C) and Enhancement (E)[4]	Enhancement Only[4]
All Category IV	1.5:1	3:1	1:1 R/C and 1:1RH	1:1 R/C and 2:1 E	6:1
All Category III	2:1	4:1	1:1 R/C and 2:1 RH	1:1 R/C and 4:1 E	8:1
Category II Estuarine	Case-by-case	4:1 Rehabilitation of an estuarine wetland	Case-by-case	Case-by-case	Case-by-case
Category II Interdunal	2:1 Compensation has to be interdunal wetland	4:1 Compensation has to be interdunal wetland	1:1 R/C and 2:1 RH Compensation has to be interdunal wetland	Not considered an option[5]	Not considered an option[5]
All other Category II	3:1	6:1	1:1 R/C and 4:1 RH	1:1 R/C and 8:1 E	12:1
Category I Forested	6:1	12:1	1:1 R/C and 10:1 RH	1:1 R/C and 20:1 E	24:1
Category I based on score for functions	4:1	8:1	1:1 R/C and 6:1 RH	1:1 R/C and 12:1 E	16:1
Category I Natural Heritage site	Not considered possible[6]	6:1 Rehabilitation of a Natural Heritage site	R/C Not considered possible[6]	R/C Not considered possible[6]	Case-by-case
Category I Coastal Lagoon	Not considered possible[6]	6:1 Rehabilitation of a coastal lagoon	R/C not considered possible[6]	R/C not considered possible[6]	Case-by-case
Category I Bog	Not considered possible[6]	6:1 Rehabilitation of a bog	R/C Not considered possible[6]	R/C Not considered possible[6]	Case-by-case
Category I Estuarine	Case-by-case	6:1 Rehabilitation of an estuarine wetland	Case-by-case	Case-by-case	Case-by-case
NOTE: Preservation is discussed in the following section.					

[4] These ratios are based on the assumption that the rehabilitation or enhancement actions implemented represent the average degree of improvement possible for the site. Proposals to implement more effective rehabilitation or enhancement actions may result in a lower ratio, while less effective actions may result in a higher ratio. The distinction between rehabilitation and enhancement is not clear-cut. Instead, rehabilitation and enhancement actions span a continuum. Proposals that fall within the gray area between rehabilitation and enhancement will result in a ratio that lies between the ratios for rehabilitation and the ratios for enhancement.

[5] Due to the dynamic nature of interdunal systems, enhancement is not considered an ecologically appropriate action.

[6] Natural Heritage sites, coastal lagoons, and bogs are considered irreplaceable wetlands because they perform some special functions that cannot be replaced through compensatory mitigation. Impacts to such wetlands would therefore result in a net loss of some functions no matter what kind of compensation is proposed.

8C.3.2 Conditions for Increasing or Reducing Replacement Ratios

Increases in replacement ratios are appropriate under the following circumstances:

- Success of the proposed restoration or creation is uncertain
- A long time will elapse between impact and establishment of wetland functions at the mitigation site
- Proposed mitigation will result in a lower category wetland or reduced functions relative to the wetland being impacted
- The impact was unauthorized

Reductions in replacement ratios are appropriate under the following circumstances:

- Documentation by a qualified wetland specialist (see Appendix 8-H) demonstrates that the proposed mitigation actions have a very high likelihood of success based on prior experience
- Documentation by a qualified wetland specialist demonstrates that the proposed actions for compensation will provide functions and values that are significantly greater than the wetland being affected
- The proposed actions for compensation are conducted in advance of the impact and are shown to be successful
- In wetlands where several HGM classes are found within one delineated boundary, the areas of the wetlands within each HGM class can be scored and rated separately and the ratios adjusted accordingly, if **all of the following** apply:
  - The wetland does not meet any of the criteria for wetlands with "Special Characteristics" as defined in the rating system
  - The rating and score for the entire wetland is provided along with the scores and ratings for each area with a different HGM class.
  - Impacts to the wetland are all within an area that has a different HGM class from the one used to establish the initial category
  - The proponents provide adequate hydrologic and geomorphic data to establish that the boundary between HGM classes lies at least 50 feet outside of the footprint of the impacts

8C.3.3 Replacement Ratios for Preservation

In some cases, preservation of existing wetlands may be acceptable as compensation for wetland losses. Acceptable sites for preservation include those that:

- Are important due to their landscape position
- Are rare or limited wetland types
- Provide high levels of functions

Ratios for preservation in combination with other forms of mitigation generally range from 10:1 to 20:1, as determined on a case-by-case basis, depending on the quality of the wetlands being impacted and the quality of the wetlands being preserved. Ratios for preservation as the sole means of mitigation generally start at 20:1. Specific ratios will depend upon the significance of the preservation project and the quality of the wetland resources lost.

See Chapter 8 (Section 8.3.7.2) and Appendix 8-B for more information on preservation and the criteria for its use as compensation.

8C.3.4 Replacement Ratios for Temporal Impacts and Conversions

When impacts to wetlands are not permanent, local governments often require some compensation for the temporal loss of wetland functions. *Temporal impacts* refer to impacts to those functions that will eventually be replaced but cannot achieve similar functionality in a short time. For example, clearing forested wetland vegetation for pipeline construction could result in the temporal loss of functions, such as song bird habitat provided by the tree canopy. It may take over 20 years to re-establish the level of function lost as a result of clearing the trees. Although the wetlands will be re-vegetated and over time it is anticipated that their previous level of functioning will be re-established, a temporal loss of functions will occur. There is also some risk of failure associated with the impacts or alterations, especially when soil is compacted by equipment, deep excavation is required, and pipeline trenches alter the water regime at the site.

Therefore, in addition to restoring the affected wetland to its previous condition, local governments should consider requiring compensation to account for the risk and temporal loss of wetland functions. Generally, the ratios for temporal impacts to forested and scrub-shrub wetlands are one-quarter of the recommended ratios for permanent impacts (refer to Table 8C-11), provided that the following measures are satisfied:

- An explanation of how hydric soil, especially deep organic soil, is stored and handled in the areas where the soil profile will be severely disturbed for a fairly significant depth or time

- Surface and groundwater flow patterns are maintained or can be restored immediately following construction
- A 10-year monitoring and maintenance plan is developed and implemented for the restored forest and scrub-shrub wetlands
- Disturbed buffers are re-vegetated and monitored
- Where appropriate, the hydroseed mix to be applied on re-establishment areas is identified

When impacts are to a native emergent community and there is a potential risk that its re-establishment will be unsuccessful, compensation for temporal loss and the potential risk should be required in addition to restoring the affected wetland and monitoring the site. If the impacts are to wetlands dominated by non-native vegetation (e.g., blackberry, reed canarygrass, or pasture grasses), restoration of the affected wetland with native species and monitoring after construction is generally all that is required.

Loss of functions due to the permanent conversion of wetlands from one type to another also requires compensation. When wetlands are not completely lost but are converted to another type, such as a forested wetland converted to an emergent or shrub wetland (e.g., for a utility right-of-way), some functions are lost or reduced.

The ratios for conversion of wetlands from one type to another will vary based on the degree of the alteration, but they are generally one-half of the recommended ratios for permanent impacts (refer to Table 8C-11).

Refer to Appendix 8-F for the rationale for the ratios provided in this appendix.

Specific guidance has been developed for conversions of wetlands to cranberry bogs. Please refer to the 1998 *Guidelines for Implementation of Compensatory Mitigation Requirements for Conversion of Wetlands to Cranberry Bogs* for information on ratios associated with this activity (Washington State Department of Ecology, U.S. Environmental Protection Agency Region 10, U.S. Army Corps of Engineers Seattle District, and U.S. Fish and Wildlife Service. 1998. Special Public Notice. http://www.nws.usace.army.mil/publicmenu/DOCUMENTS/ACF101C.pdf).

ATTACHMENT

Declaration of Kevin L. Jones dated December 22, 2014
and attached technical memorandum

BEFORE THE CITY OF BLACK DIAMOND HEARING EXAMINER

IN RE: THE MATTER OF THE VILLAGES MPD PRELIMINARY PLAT 2C (PLN13-0027)

DECLARATION OF KEVIN L. JONES

I, Kevin L. Jones, P.E., PTOE, am a citizen of the United States and a resident of the State of Washington, am over the age of 18 years, have firsthand knowledge of the matters to which I attest below, am fully competent to testify as a witness, and have sworn and do certify and declare, under penalty of perjury, that the following declaration is true and correct.

1. I am a licensed civil engineer and certified professional traffic operations engineer, and a true and correct copy of my curriculum vitae was submitted as an exhibit during the public hearing on Preliminary Plat 2C (Exhibit 62).

2. Oral testimony regarding woonerf-related issues was provided during The Villages MPD Preliminary Plat 2C public hearing on December 11, 2014, which I attended in full.

3. I was asked to respond to such testimony regarding woonerf-related issues. Attached is a true and correct copy of the brief I prepared in response.

Dated this 22nd day of December, 2014 at Kirkland, Washington.

KEVIN L. JONES, P.E., PTOE

transpogroup
WHAT TRANSPORTATION CAN BE.

MEMORANDUM

Date:	December 22, 2014	**TG:**	05387.04
To:	Colin Lund and Megan Nelson – YarrowBay Holdings		
From:	Kevin L. Jones, P.E., PTOE – Transpo Group		
Subject:	The Villages MPD - Phase 2 Plat C, Parametrix's John Perlic Testimony		

I attended the Public Hearing for the subject project on December 11, 2014 and listened to the testimony of Parametrix's John Perlic. He shared that a woonerf is similar to an alley or narrow street and as such, promotes motorized and non-motorized (pedestrian and bicycle) safety due to low vehicle speeds. As a transportation engineering professional with nearly 20 years of experience, I fully agree with Mr. Perlic's testimony and offer the following information as additional support.

Since 2002, the United States Department of Transportation (USDOT) Federal Highway Administration (FHWA) has recognized a woonerf as an effective "whole street design" traffic calming measure. For context, the Institute of Transportation Engineers (ITE) defines traffic calming as "the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior, and *improve conditions for non-motorized street users*." (Emphasis added.)

Moreover, FHWA Publication No. FHWA-RD-01-102 entitled *Pedestrian Facilities User Guide—Providing Safety and Mobility* states that woonerf design creates "a very low automobile volume, primarily on local access streets" and "physical and visual cues that induce drivers to travel at slower speeds." The FHWA University Course on Bicycle and Pedestrian Transportation also addresses woonerf speed and safety, stating "The street is designed so motorists are forced to slow down and exercise caution." This is further emphasized with the provision for on-street parking on one side of each woonerf, recognizing motorists generally travel at slower speeds in the presence of on-street parking.

The relationship between speed and safety is quite obvious: lower speeds generally coincide with fewer collisions. This is supported by published research. In designing a woonerf to limit vehicular speeds, it promotes safety by reducing the likelihood of serious collisions. Therefore, based on the information presented above and my extensive transportation engineering experience, it is my professional opinion that Woonerfs A, B, C and D will act as effective traffic calming measures for Plat 2C.

It's also worth mentioning that based on The Villages Phase 2 Plat C site plan, nearly all vehicle traffic on Woonerfs A, B, C and D will be limited to adjacent residents as Road A provides a parallel and preferred connection to Willow Avenue SE.