

Chapter 3

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Chapter 3

SENSITIVE AREAS AND VEGETATED CORRIDORS

3.01 General Provisions

3.01.1 Introduction

The purpose of this chapter is to outline design requirements for storm and surface water management related to water quality Sensitive Areas and Vegetated Corridors. The provisions of this chapter are intended to prevent or reduce adverse impacts to the drainage system and water resources of the Tualatin River Basin. In combination with other state, federal, and local laws and ordinances, these requirements are intended to protect the beneficial uses of waters within the Tualatin River Basin and within the District.

3.01.2 Application and Interpretation of Chapter

The provisions of this chapter shall apply to storm and surface water systems within the District jurisdiction. Interpretations of such provisions and their application in specific circumstances shall be made by the District. Any City operating a local program may adopt stricter design specifications within its jurisdiction than the specifications stated in this chapter. No person shall undertake development activities within the District's jurisdiction without first obtaining a Stormwater Connection Permit from the District pursuant to Ordinance 27 and these rules, or receiving a written determination from the District that no Stormwater Connection Permit is required. Applicants may apply for permits as a single project or as part of a master planned activity.

3.01.3 Unbuildable Lots

If the application of these Vegetated Corridor regulations results in a lot being unbuildable, the Vegetated Corridor shall be reduced to ensure the lot will be buildable while still providing for the maximum Vegetated Corridor to the greatest extent practicable.

3.01.4 Other Permits

The Applicant shall obtain and comply with all permits and approvals required under applicable local, state and federal law.

3.01.5 Prohibited Activities

Except as allowed in Sections 3.04 and 3.05, no person shall erect any structure, conduct any development or construction activities, establish or maintain any garden or lawn, clear native vegetation, remove non-native invasive vegetation other than with an integrated vegetation management

approach, store uncontained hazardous materials, dump or dispose of materials of any kind (including pet waste), or conduct other activities within a Sensitive Area and Vegetated Corridor that may negatively impact water quality.

3.02 Service Provider Letter and Permits Required

3.02.1 Service Provider Letter (SPL)

- a. In order to determine if the proposed activity will require a Service Provider Letter, the applicant may apply for a Prescreening Site Assessment. If no Water Quality Sensitive Areas appear to exist on or within 200 feet of the site, then no further site assessment or service provider letter is required. The Prescreening Site Assessment does not eliminate the need to evaluate and protect Water Quality Sensitive Areas if they are subsequently discovered on, or within 200 feet of, the site.
- b. Prior to land use application or issuance of a building permit for a development activity as defined in the Definitions in Chapter 1, the applicant shall secure a Service Provider Letter from the District, which specifies the conditions and requirements associated with Vegetated Corridors and Sensitive Areas necessary for the District to issue a Stormwater Connection Permit pursuant to Ordinance 27 and these rules and regulations. If allowed by the land use jurisdiction, the applicant may begin the land use permit application process and secure the service provider letter prior to completing the land use permit application.
- c. In order to secure a Service Provider Letter from the District, the applicant shall perform a Site Assessment in accordance with Section 3.02.2. The applicant shall perform a Tier 1, 2 or 3 Alternatives Analysis pursuant to Section 3.07 if the proposed site plan can not meet the standards outlined in Sections 3.04 and 3.05
- d. No person shall perform development activities without first obtaining a Stormwater Connection Permit from the District as required pursuant to Ordinance 27, Section 4.B. The Stormwater Connection Permit shall be issued upon District approval of final construction plans showing that all of the applicable conditions from the service provider letter have been met.
- e. Exceptions to the process outlined in 3.02.1(a)-(d) include:
 1. For lot line adjustments that are not part of a land use or building permit application, and that do not result in any physical construction or grading, the applicant shall complete a Prescreening Site Assessment. If Sensitive Areas appear to exist on or within 200 feet of the site, then further site assessment may

be required. The lot line adjustment shall be reviewed by the District to ensure the proposed configuration of the lots retain buildable status. Vegetated Corridor enhancement conditions shall not be required as conditions for the lot line adjustment approval, but shall apply to subsequent land use or development applications or activity on any of the subject property. A storm, surface water drainage and detention easement over the sensitive area and Vegetated Corridor granted to the District may be required.

2. For redevelopment, the standards in Section 3.10 shall apply only when the activity alters 10% or more of existing improved impervious area within 100 feet of the Sensitive Area.

3.02.2 Site Assessment Required

- a. If Water Quality Sensitive Areas appear on or within 200 feet of a site, a Simplified or Standard Site Assessment is required unless specifically waived in writing by the District.
- b. A Simplified Site Assessment may be used when the activity is not likely to adversely impact the Sensitive Area or Vegetated Corridor and the activity meets all the following criteria:
 1. Adds less than 500 square feet of impervious surface.
 2. Does not encroach closer to the Sensitive Area than existing development on the property.
 3. Is not located on a slope greater than 25%.
- c. A Standard Site Assessment shall be used when the criteria for a Simplified Site Assessment are not met.
- d. Site Assessments shall be performed and documented in accordance with the provisions of Section 3.13.
- e. Submittals will not be reviewed for Service Provider Letter issuance unless a complete submittal is received by District staff.

3.03 Vegetated Corridors

3.03.1 Extent of Vegetated Corridors

- a. Vegetated Corridor widths shall be measured from the Edge of Sensitive Area as defined in Chapter 1.
- b. Vegetated Corridor widths described in this section are for each side of the Vegetated Corridor.

- c. Vegetated Corridor widths shall be as defined by Table 3-1.
- d. Slopes Greater than or Equal to 25%
 - 1. For development sites containing slopes greater than or equal to 25% adjacent to the Sensitive Area, the boundary of the Vegetated Corridor shall be 35 feet beyond the Break in Slope as defined in Chapter 1, unless otherwise indicated in Table 3-1.
 - 2. Slope measurements and determination of Break in Slope shall be accomplished in accordance with Section 3.14.4
- e. Vegetated Corridor widths for intermittent streams, as identified in Table 3-1, may change within a development site when the drainage basin area passes a size threshold within the development site.

TABLE 3-1
Vegetated Corridor Widths Adjacent to the Sensitive Area
Where Activity is Not Redevelopment

Sensitive Area Type	Width Slope <25%	Width Slope ≥25%
Existing or created wetlands:		
< 0.5 acres and isolated*	25 ft	Variable from 25-200 ft.
<0.5 acres and not isolated*	50 ft.	Variable from 50-200 ft.
≥ 0.5 acres	50 ft.	Variable from 50-200 ft.
Natural lakes, ponds, and in-stream impoundments	50 ft.	Variable from 50-200 ft.
Springs:		
Intermittent flow	0	15 ft.
Perennial flow	50 ft.	Variable from 50-200 ft.
Intermittent Streams draining:		
< 10 acres	0	0
≥10 to <50 acres	15 ft.	Variable from 50-200 ft.
≥50 to <100 acres	25 ft.	Variable from 50-200 ft.
≥100 acres	50 ft.	Variable from 50-200 ft.
Perennial Streams:		
Other than Tualatin River	50 ft.	Variable from 50-200 ft.
Tualatin River	125 ft.	Variable from 125-200 ft.

*See definition of Isolated Wetland in Chapter 1.

3.03.2 Vegetated Corridor Width Reductions and Adjustments

In addition to the requirements in Sections 3.03.1, Vegetated Corridor width shall be based on the following considerations.

a. Pre-Existing Conditions

The Vegetated Corridor shall not extend beyond an existing building or improved roadway separating the proposed development from the Sensitive Area. For the purposes of this section, an “improved roadway”

shall be gravel or paved, a minimum of 12-feet in width, and actively used for vehicular traffic. The building or roadway must remain as part of the proposed development and not planned for future demolition.

b. Reduction for Very Wide Corridors

If a Vegetated Corridor in marginal or degraded condition extends 125 feet or more from the boundary of the Sensitive Area, and averaging is not practicable in the opinion of the District, the required width of the Vegetated Corridor shall be reduced by 20%. A stamped geotechnical report confirming that slope stability can be maintained with the reduced setback may be required by the District. This reduction shall not be used in combination with minor averaging or with the encroachment allowed through a Tier 1 or Tier 2 Alternatives Analysis.

c. Reduction for Corridors with Steep Slopes

When the slope is greater than 25% and the Vegetated Corridor extends 35 feet from break in slope and the Vegetated Corridor is in marginal or degraded condition, the outer boundary of the Vegetated Corridor may be reduced from 35 feet beyond the break in slope, as long as the resulting vegetated corridor is no less than 50 feet beyond the edge of the sensitive area. This reduction is allowed only if a stamped geotechnical report confirms that slope stability can be maintained with the reduced setback from the break in slope. This reduction shall not be used in combination with minor encroachment or with the encroachment allowed through a Tier 1 or Tier 2 Alternatives Analysis.

d. Adjustment for Ordinary High Water Mark (OHWM) on Streams

On streams where OHWM is below the Top of Bank (TOB) resulting in a horizontal offset between the OHWM and the TOB, the District shall require enhancement of the offset between OHWM and TOB and allow the outside edge of the Vegetated Corridor to be adjusted the lesser of the width of the offset or:

1. up to 3 feet for Vegetated Corridors \leq 25 feet
2. up to 5 feet for Vegetated Corridors $>$ 25 feet

3.03.3 Vegetated Corridor Condition

- a. Each plant community type within the Vegetated Corridor shall be determined to be in Good, Marginal or Degraded condition as follows:
 1. Good Corridor Condition
Combination of native trees, shrubs and groundcover covering

greater than 80% of the community and greater than 50% tree canopy exists (areal measure).

2. Marginal Corridor Condition
Combination of native trees, shrubs and groundcover covering 50% to 80% of the community and 26% to 50% tree canopy exists (areal measure).

3. Degraded Corridor Condition
Combination of native trees, shrubs and groundcover covering less than 50% of the community and less than 25% tree canopy exists (areal measure).

b. Vegetated Corridor Condition Assessments shall be prepared in accordance with Section 3.14.

c. When a single plant community type contains multiple condition characteristics, the higher quality condition shall prevail.

3.04 Activities Allowed in a Sensitive Area

a. The following activities are allowed within a Sensitive Area when impact is minimized through choice of mode, sizing, and placement:

1. Maintenance practices and enhancement activities, as defined or permitted by the DSL or COE, are allowed within the Sensitive Area per criteria set forth by DSL and/or COE.

2. Development within the Sensitive Area shall be allowed if the required permits are issued, when necessary, by the DSL and/or the COE.

3. On-site relocation of intermittent streams that drain less than 50 acres and have a perpendicular land slope of less than 25%, provided that the pre-existing discharge point off the site is maintained.

4. As approved by the District through an alternatives analysis set out in Section 3.07 of these rules, the activities listed in Section 3.05.3 through 3.05.8 within Water Quality Sensitive Areas that are not regulated by DSL and the COE.

b. Mitigation shall be required per the DSL and COE rules and regulations or as determined by the District for areas or activities not regulated by COE or DSL.

3.05 Activities Allowed in a Vegetated Corridor

3.05.1 General

- a. Upon review and approval by the District, the activities in this section are allowed within a Vegetated Corridor when the impact is minimized through choice of mode, sizing, and placement.
- b. Mitigation for negative impacts to the Vegetated Corridor and/or enhancement of the Vegetated Corridor to Good Corridor Condition, as defined in Section 3.14, Table 3-3, is required for the activities listed in 3.05.3 through 3.05.8.

3.05.2 Non-Development Activities

- a. Activities excluded from the definition of Development in Chapter 1 are allowed in the Vegetated Corridor without a Service Provider Letter and without approval of the District.
- b. Other regulating jurisdictions may require review and approval for the proposed activities.

3.05.3 Riparian Enhancement Projects

Enhancement of the riparian corridors for water quality or quantity benefits and improved aquatic habitat shall be allowed without a Service Provider Letter, provided any grading does not require an Erosion Control Permit.

3.05.4 Grading

- a. Grading for the purpose of enhancing the Vegetated Corridor shall be allowed if the impacted area of the Vegetated Corridor is re-vegetated to Good Corridor Condition.
- b. Grading within the Vegetated Corridor for purposes other than enhancement of the Vegetated Corridor shall be allowed, when all the following conditions are met:
 1. The Vegetated Corridor condition is degraded.
 2. The proposed grading does not result in a permanent change to existing contours.
 3. The proposed grading does not result in the removal of native vegetation.
 4. The final graded slopes are no more than 4H:1V.
 5. The impacted area of the Vegetated Corridor is re-vegetated to Good Corridor Condition.

- c. The provisions of Chapter 6, Erosion Prevention and Sediment Control, and the requirements for an Erosion Control Permit apply to activities conducted under this section.

3.05.5 Utility Infrastructure

- a. Construction of utility infrastructure, including but not limited to storm and sanitary sewers, sewer laterals, water mains, phone and cable lines, power lines, and gas lines shall be allowed if all the following conditions are met:
 - 1. The permanent utility corridor is no greater than 20 feet wide.
 - 2. The temporary construction/access corridor is no greater than 50 feet wide.
 - 3. Native trees greater than 6" dbh are not removed.
 - 4. The impacted area of the Vegetated Corridor is re-vegetated to Good Corridor Condition.
- b. If the utility corridor can be replanted with native herbs and shrubs, the encroachment will be considered a temporary encroachment mitigated in place. The re-vegetation for the area above or below the utility lines shall be designed to avoid conflicts with the utility. For example, trees shall not be required directly over pipes.
- c. Placement of manholes, or other minor permanent encroachments associated with the utility construction, within the Vegetated Corridor shall be allowed without replacement mitigation.
- d. Individual permanent encroachments greater than 100 square feet shall be required to be mitigated in accordance Section 3.08.

3.05.6 Surface Stormwater Facilities

- a. Stormwater outfalls where the permanent encroachment area is less than 100 square feet shall be allowed without mitigation.
- b. Stormwater outfalls with permanent encroachments greater than 100 square feet shall be allowed if replacement mitigation is provided in accordance with Section 3.08.
- c. Stormwater vegetated swales within a Vegetated Corridor for an intermittent stream draining less than 50 acres and having a slope less than 25% shall be allowed without mitigation if the facility is planted with appropriate native vegetation and impacts to the corridor are minimized.

3.05.7 Road and Path Crossings

Roads, pedestrian or bike paths crossing a Vegetated Corridor from one side to the other, in order to provide access to a Sensitive Area or across a Sensitive Area, shall be allowed if all the following conditions are met:

- a. Impacts to the Vegetated Corridor are minimized through choice of mode, sizing and placement.
- b. Replacement mitigation is provided in accordance with section 3.08.

3.05.8 Paths

- a. Paths, 12 feet or less in width, including any structural embankment, shall be allowed if all the following conditions are met:
 1. Paths shall be constructed so as to minimize disturbance to existing vegetation and maintain slope stability.
 2. For the Tualatin River, the path shall be located no closer than 30 feet from the two-year 24-hour design storm elevation.
 3. For all other Sensitive Areas, the path shall be located in the outermost 40% of the Vegetated Corridor.
 4. The area of the path beyond the first 3 feet of width shall be mitigated in accordance with Section 3.08.
 5. Path construction shall not remove native trees greater than 6" dbh.
- b. Paths greater than 12 feet, but less than or equal to 14 feet in width shall be considered an allowed use if constructed using low impact development approaches in accordance with Chapter 4 of these standards. If these conditions cannot be met, the project shall be reviewed in accordance with section 3.07.

3.05.9 Other Uses

Other uses not listed in 3.05.2 through 3.05.8 above, as approved by the District through an Alternatives Analysis process as described in Section 3.07.

3.06 General Requirements for Development Activities

3.06.1 Protection of Sensitive Area and Vegetated Corridor during Construction

Prior to any site clearing, grading or construction, the applicant shall survey, stake, and demarcate with standard orange construction fencing or equivalent the outer boundary of the combined Sensitive Area and Vegetated Corridor per the approved plans. During construction the outer boundary of the combined Sensitive Area and Vegetated Corridor shall remain fenced and undisturbed except as allowed in the Service Provider Letter.

3.06.2 Required Vegetated Corridor Enhancement

The applicant shall enhance the Vegetated Corridor in accordance with the following requirements:

- a. For Vegetated Corridors up to 50 feet wide the applicant shall enhance the entire corridor to meet or exceed good corridor condition as defined in Section 3.14.2, Table 3-3.
- b. For Vegetated Corridors greater than 50 feet in width, the applicant shall enhance the first 50 feet closest to the Sensitive Area to meet or exceed good corridor condition as defined in Section 3.14.2, Table 3-3.
- c. Enhancement shall be accomplished in accordance with Section 3.14.2, Table 3-3.

3.06.3 Easements

The District may require an easement over the Sensitive Area and Vegetated Corridor for surface and stormwater management in order to prevent the Owner of the Sensitive Area and Vegetated Corridor from carrying out activities and uses inconsistent with the purpose of the corridor and any easements therein.

3.06.4 Unauthorized Pre-Development Clearing

- a. If trees or native vegetation have been cleared from the Vegetated Corridor or Sensitive Area prior to development without the approval of the District, then the following provisions shall be included as Service Provider Letter conditions for any subsequent development activity:
 1. The maximum Vegetated Corridor widths for the resource type and pre-existing site condition shall apply.
 2. Mitigation and enhancement of the entire impacted Sensitive Area and Vegetated Corridor shall be required for the full extent of the Sensitive Area and Vegetated Corridor in the impacted area.
 3. Trees removed shall be replaced at a 1:1 ratio based on the removed trees' total cumulative caliper size at dbh.
 4. Tree density for the plant community shall equal or exceed a Good Condition Vegetated Corridor standard for re-vegetation.
 5. Shrub and herbaceous material replacement shall meet the Good Condition Vegetated Corridor standard for re-vegetation.
- b. The requirements of subsection (a) above shall not apply to:
 1. The removal of "hazard" trees if they threaten a structure or public area. Hazard trees shall be topped and standing trunks retained, if possible.
 2. Vegetated Corridors or Sensitive Areas in which clearing occurred prior to February 22, 2000.

3.07 Encroachment Standards

3.07.1 General

The applicant shall conduct an Alternatives Analysis if the proposed activity is not an allowed use as outlined in Section 3.05 or cannot meet the standards outlined in Section 3.07.2. In conducting the Alternatives Analysis:

- a. The applicant shall prepare the submittal requirements outlined in this section for the type of encroachment proposed;
- b. The District may require that the applicant to participate in one or more meetings with the District to negotiate the Vegetated Corridor encroachment and mitigation;
- c. The District shall review the Alternatives Analysis pursuant to the criteria for acceptance as outlined in this section for the type of encroachment proposed; and
- d. The District shall review the proposed project and accept or deny the proposed encroachment based on the criteria for acceptance detailed in this Section.
- e. If the encroachment is approved, the District shall prepare a Service Provider Letter documenting the results of the Alternatives Analysis and District's requirements necessary to comply with water quality protection.
- f. If the District denies the proposed encroachment, the applicant shall be provided with the reasons for the denial in written form.

3.07.2 Minor Encroachment

a. Applicability

Proposed encroachments into marginal or degraded Vegetated Corridors shall be determined to be a minor encroachment where the encroachment does not exceed either of the following criteria:

1. 20% of the depth of the Vegetated Corridor
2. 20% of the length of the Vegetated Corridor

b. Submittal Requirements

A Standard Site Assessment required in Section 3.02.2.

c. Criteria for Acceptance

Acceptance of a Minor Encroachment shall be based on meeting all the following criteria:

1. The proposed encroachment shall be mitigated at a 1:1 ratio.
2. The mitigation area shall be incorporated into the remaining Vegetated Corridor on the project site and meet the Good Corridor Condition standards as defined in Section 3.14.2 regardless of its distance from the Sensitive Area.

3.07.3 Tier 1 Alternatives Analysis

a. Applicability

Proposed encroachments into marginal or degraded Vegetated Corridors where the encroachment does not exceed either of the following criteria:

1. 30% of the depth of the Vegetated Corridor
2. 40% of the length of the Vegetated Corridor

b. Submittal Requirements

Unless specifically waived in writing by the District, the applicant shall submit the following information with the Standard Site Assessment required in Section 3.02.2:

Description of why the encroachment is needed including rejected alternatives that would result in less encroachment.

c. Criteria for Acceptance

Acceptance of the encroachment proposed as part of a Tier 1 Alternatives Analysis shall be based on meeting all the following criteria:

1. The proposed encroachment area is mitigated in accordance with Section 3.08.
2. Enhancement of the replacement area, if not already in good condition, and either the remaining Vegetated Corridor on the site or the first 50 feet of width closest to the resource, whichever is less, to a Good Corridor Condition.
3. A District Stormwater Connection Permit is likely to be issued based on proposed plans.
4. Location of development and site planning minimizes incursion into the Vegetated Corridor.
5. No practicable alternative to the location of the development exists that will not disturb the Sensitive Area or Vegetated Corridor.

3.07.4 Tier 2 Alternatives Analysis

a. Applicability

A Tier 2 Alternatives Analysis shall be required when:

1. The proposed encroachment is into a Vegetated Corridor in Good Corridor Condition, or
2. The proposed encroachment is into a marginal or degraded Vegetated Corridor where the encroachment exceeds either of the following criteria:
 - A) 30% of the depth of the Vegetated Corridor
 - B) 40% of the length of the Vegetated Corridor
3. Activities listed in Section 3.05 which are proposed to occur in a water quality sensitive area.

b. Submittal Requirements

Unless specifically waived in writing by the District, the applicant shall submit the following information with the Standard Site Assessment required in Section 3.02.2:

1. Description of why the encroachment is needed including rejected alternatives that would result in less encroachment.
2. Functional Analysis Report, as described in Section 3.14.7

c. Criteria for Acceptance

Acceptance of the encroachment proposed as part of a Tier 2 Alternatives Analysis shall be based on meeting all the following criteria:

1. The proposed encroachment area is mitigated in accordance with Section 3.08.
2. The replacement mitigation protects the functions and values of the Vegetated Corridor and Sensitive Area.
3. Enhancement of the replacement area, if not already in Good Corridor Condition, and either the remaining Vegetated Corridor on the site or the first 50 feet of width closest to the resource, whichever is less, to a Good Corridor Condition.
4. A District Stormwater Connection Permit is likely to be issued based on proposed plans.
5. Location of development and site planning minimizes incursion into the Vegetated Corridor.
6. No practicable alternative to the location of the development exists that will not disturb the Sensitive Area or Vegetated Corridor.
7. The proposed encroachment provides public benefits.

3.07.5 Tier 3 Alternatives Analysis (Redevelopment Sites only)

a. Applicability

Tier 3 Alternative Analysis shall be required for sites with existing encroachments into a Vegetated Corridor where the proposed activity meets the definition of redevelopment.

b. Submittal requirements

Unless specifically waived in writing by the District, the applicant shall submit the following information with the Standard Site Assessment required in Section 3.02.2:

Description of why the encroachment is needed under proposed redevelopment plan including rejected alternatives that would result in less encroachment.

c. Criteria for Acceptance

Acceptance of the encroachment proposed as part of a Tier 3 Alternatives Analysis shall be based on meeting all the following criteria:

1. The proposed encroachment area is mitigated in accordance with Section 3.08.
2. Enhancement of the remaining Vegetated Corridor on the site or the first 50 feet of width closest to the resource, whichever is less, to a Good corridor condition, if not already in Good condition.
3. A District Stormwater Connection Permit is likely to be issued based on proposed plans.
4. Location of the redevelopment and site planning minimizes incursion into the Vegetated Corridor.
5. There is no practicable alternative to the location of the redevelopment that will not disturb the Sensitive Area or Vegetated Corridor.

3.08 Vegetated Corridor Mitigation Standards

3.08.1 General

- a. Replacement mitigation for encroachments allowed in this chapter shall be accomplished by any of the methods described in Sections 3.08.2 through 3.08.4.
- b. Replacement mitigation shall not include enhancing an existing Sensitive Area unless approved by the District through a Tier 2 Alternatives Analysis.

3.08.2 Vegetated Corridor Replacement as Mitigation

- a. The Vegetated Corridor replacement area required for approved encroachments shall be at the ratio of replacement to impacted vegetated corridor as shown in Table 3-2.

TABLE 3-2
Replacement Mitigation Ratios Required for Approved
Encroachments into a Vegetated Corridor

Location of Replacement Mitigation	Condition of Vegetated Corridor to be Replaced		
	Good	Marginal	Degraded
On development site	1:1	1:1	1:1
Off-Site:			
Less than 0.25 miles from site and within same drainage basin	1.5:1	1:1	1:1
0.25 miles or more from site and within same drainage basin	1.75:1	1.25:1	1.25:1
Different drainage subbasin (Drainage subbasin must be located within the Tualatin River Basin and no further than 1 mile outside the District's Boundary)	2:1	1.5:1	1.5:1

- b. The replacement Vegetated Corridor shall be in addition to the existing Vegetated Corridor.
- c. The replacement Vegetated Corridor must be contiguous with existing Vegetated Corridor.
- d. Replacement Vegetated Corridor areas that are in marginal or degraded condition shall be improved to Good corridor condition as described in Section 3.14.2, Table 3-3.

3.08.3 Payment to Provide Mitigation

- a. Replacement mitigation through the Payment to Provide method shall be allowed when one of the following criteria is met:
 - 1. Elimination of the Sensitive Area adjacent to the Vegetated Corridor is allowed by the Department of State Lands (DSL) through approval of payment to provide for the Sensitive Area; or
 - 2. The approved encroachment to the Vegetated Corridor is less than 300 square feet.
 - 3. As provided in Section 3.11.2 (c)
- b. Payment to Provide shall be based on the area of Vegetated Corridor that

will be eliminated at a 1:1 ratio.

- c. The cost of replacement mitigation using Payment to Provide is described in the District's Rates and Charges Ordinance.

3.08.4 Enhancement of Existing Vegetated Corridor as Mitigation

Vegetated Corridor may be replaced by enhancing an existing Vegetated Corridor. The method of replacement mitigation may be used if all the following criteria are met:

- a. In the opinion of the District, the proposed Vegetated Corridor to be enhanced is unlikely to be enhanced in the future.
- b. The Vegetated Corridor to be enhanced is in Marginal or Degraded Corridor Condition.
- c. The area replacement ratio of existing Vegetated Corridor to enhanced Vegetated Corridor shall be no less than 1:2.
- d. The enhanced Vegetated Corridor shall be protected by an easement in accordance with Section 3.06.3 or tract in accordance with Section 3.09.

3.09 Land Division

3.09.1 Creating Multiple Parcels

For any development which creates multiple parcels or lots intended for separate ownership, the Sensitive Area and Vegetated Corridor shall be contained in a separate tract. The first 50 feet of Vegetated Corridor on intermittent streams draining 10-100 acres shall be contained in a separate tract covered by an easement in accordance with 3.06.3; the remainder may be placed in an easement. The District, City, or County may also require that the Sensitive Area and Vegetated Corridor be signed, fenced, or otherwise physically set apart from parcels that will be developed. Signage shall meet the requirements of Standard Detail No. 790. Signs may also be available for purchase from the District.

3.09.2 Lot Line Adjustments without Physical Development

For lot line adjustments that are not part of a land use or building permit application and do not result in any physical development, the following special considerations shall apply:

- a. The proposal shall be reviewed by the District to ensure that the proposed configuration of the lots retain buildable status.

- b. The Applicant shall complete a Sensitive Area and Vegetated Corridor Prescreen. If a Sensitive Area appears to exist on or within 200 feet of the site, then the District may require a Site Assessment.
- c. Requirements for easements, tracts, and improvements to the Vegetated Corridor shall not apply, but may apply to subsequent land use or development applications on the subject property.

3.10 Redevelopment

3.10.1 Purpose

The purpose of this Section is to decrease encroachments into Vegetated Corridors when major alterations occur to existing development on a site.

3.10.2 Modified Vegetated Corridor Widths

If a redevelopment activity alters 10% or more of existing impervious area within 100 feet of a Sensitive Area, then the impervious areas shall be the following minimum distances from the Sensitive Area:

- a. 50 feet for the Tualatin River
- b. 25 feet for Sensitive Areas with Vegetated Corridors 25 feet or more
- c. Vegetated Corridor widths in Table 3-1 where these widths are less than 25 feet

3.10.3 Corridor Averaging

Corridor Averaging is permitted for redevelopment activities and shall exclude any existing building footprint area already encroaching into the Vegetated Corridor.

3.10.4 Exemptions

The following activities are exempted from the requirements of this Section:

- a. Alterations of impervious areas associated with a single family residence, provided the use of the property does not change from single family residential.
- b. The impervious surface to be altered is fully separated from the Sensitive Area by a building.
- c. Properties with pre-existing Vegetated Corridors or setbacks averaging at least 25 feet from streams and 50 feet from the Tualatin River.

- d. Properties bordering wetlands at least 25 feet from a stream may utilize the wetlands as the Vegetated Corridor. If not already in Good Corridor Condition, enhancement of the wetlands to a Good Corridor Condition for a width of 25 feet towards the stream is required.

3.11 Wetland Fills

- a. For Wetland Fills Where Physical Sensitive Area Mitigation is Required.

Where Department of State Lands and/or Corps of Engineers permits fill of wetland and requires mitigation through Sensitive Area creation, restoration, or enhancement, a Vegetated Corridor meeting the requirements of this Chapter shall be provided adjacent to the Sensitive Area mitigation site and the Vegetated Corridor shall meet the following conditions:

1. The Vegetated Corridor adjacent to the Sensitive Area mitigation site shall meet the width requirements in Table 3-1 and shall be restored to Good condition.
2. If the Sensitive Area mitigation site is located in an area where the full required Vegetated Corridor width cannot be obtained, then the difference shall be considered an encroachment and be reviewed and mitigated in accordance with Sections 3.07 and 3.08.
3. Mitigation shall occur on-site where possible. If the square footage of the replacement Vegetated Corridor cannot be mitigated on-site, off-site mitigation shall be allowed and the square footage adjusted in accordance with Table 3-2.
4. All remaining on-site Vegetated Corridor shall be enhanced to Good Corridor Condition in accordance with Section 3.14.2, Table 3-2.
5. A Vegetated Corridor of zero (0) feet in width shall be allowed along the edge of a partial wetland fill.

- b. For Wetland Fills with Marginal or Degraded Vegetated Corridors and Not Requiring DSL/COE Permits.

The District shall not require mitigation for the Vegetated Corridor associated with total wetland fills if all of the following conditions are met:

1. The Vegetated Corridor associated with the total wetland fill is in Marginal or Degraded condition per Table 3-3.
2. The wetland to be filled is isolated.
3. The wetland requires less than 50 cubic yards of material to be filled entirely and will be filled entirely as a result of the proposed project.
4. No permits are required from the Department of State Lands and the Army Corps of Engineers.

- c. Payment to Provide For Total Wetland Fills with Good Condition Vegetated Corridors.
The District shall allow Payment to Provide for Vegetated Corridor mitigation on total wetland fills when the associated vegetated corridor is in good condition if the following conditions are met:
 - 1. The wetland to be filled is isolated.
 - 2. The wetland requires less than 50 cubic yards of material to be filled entirely and will be filled entirely as a result of the proposed project.
 - 3. No permits are required from the Department of State Lands and the Army Corps of Engineers.
- d. If the wetland fill is to be mitigated through payment to provide for the Sensitive Area then the Vegetated Corridor shall be mitigated in accordance with Section 3.08.3, Payment to Provide Vegetated Corridor mitigation.
- e. Other Situations.
Where a wetland fill situation is not covered under Sections 3.11.1.a-d, the District shall have the discretion to regulate the Vegetated Corridor related to the fill in a manner consistent with Sections 3.11.1.a-d and the other parts of this Chapter.

3.12 Linear Development Projects

- a. For Linear Development Projects where the applicant does not own or control the parcel, all the following shall apply:
 - 1. The remaining Vegetated Corridor within the limits for the existing permanent easement shall be enhanced to good corridor condition.
 - 2. Subject to the limits provided in 3.05, permanent encroachment into the Vegetated Corridor shall be mitigated in accordance with Section 3.08.
 - 3. Temporary encroachments in to the Vegetated Corridor within the limits of the existing permanent easement shall be enhanced to good corridor condition.
 - 4. All native vegetation within the Vegetated Corridor that is removed as a result of the project shall be replaced at a 1:1 caliper size at Diameter Breast Height (DBH) for trees and on a 1:1 quantity basis for shrubs.
- b. For linear Development Projects where the applicant owns or controls the parcel, all the following shall apply:
 - 1. The Vegetated Corridor enhancement area shall be equal to the total project footprint or the total Vegetated Corridor area on the affected parcels, whichever is less.
 - 2. Subject to the limits provided in 3.05, encroachment into the Vegetated Corridor shall be mitigated in accordance with Section 3.08.

3.13 Site Assessment Requirements

3.13.1 General

Site Assessments shall be required for all activities where Water Quality Sensitive Areas exist or appear to exist on or within 200' of the project site.

3.13.2 Simplified Site Assessment

Unless specifically waived in writing by the District, the Simplified Site Assessment shall contain the following information:

- a. Sensitive Areas Certification Form
- b. Written description of the site and proposed activity, including:
 1. Landscape setting, topography, land uses and site alterations
 2. Description of proposed development activity
 3. General description of the Sensitive Area and Vegetated Corridor
- c. Site plan of the entire property, including the following:
 1. Property lines and dimensions
 2. Location of proposed development activity
 3. Existing and proposed conditions for property and surrounding area within 200 feet
 4. Location and dimensions of roads, driveways, utilities, parking areas, and building footprints
 5. Location and dimensions of yards and cultivated areas
 6. Locations of existing Sensitive Areas, Stormwater Infrastructure, and drainage ditches
 7. Locations, boundaries, and conditions of the Vegetated Corridors including plant communities, contours, data points, and notation of slopes greater than 25%
 8. Site plan at a scale of 1 inch equals 60 feet or less (1"=60')
- d. Photographs of the site labeled and keyed to the site plan.

3.13.3 Standard Site Assessment

Unless specifically waived in writing by the District, the Standard Site Assessment shall contain the following information:

- a. Sensitive Areas Certification Form
- b. Standard Site Assessment

1. Written description of the existing site and adjacent property, Sensitive Area, Vegetated Corridor condition, proposed development, and off-site improvements
2. Description of each plant community within the vegetated corridor
3. Wetland and Vegetated Corridor Sample Points (Prepared in accordance with DSL and Corps Procedures for wetland delineation and Section 3.14)
4. Project Vicinity Map showing entire tax lots for project site and any off-site improvements
5. Existing Condition Figure in accordance with 3.13.3(c)(1)
6. Proposed Development Figure in accordance with 3.13.3(c)(2)
7. Final Conditions Site Plan Figure in accordance with 3.13.3(c)(3)

c. Standard Site Assessment Figures and Site Plan

All figures shall include property lines and dimensions, north arrow and scale bar. Site plans shall be at a standard engineering or architect scale not to exceed one inch equals 60 feet or less (1"=60'). Differing scales may be required in order to show greater detail of site plans.

1. Existing Condition Figure
 - A) Location, boundary, and condition of existing sensitive areas, stormwater infrastructure, and drainage ditches for project site and surrounding area within 200 feet; and any off-site improvements
 - B) Location, boundary, and condition of existing vegetated corridors including plant communities
 - C) Location of wetland and Vegetated Corridor data points
 - D) Vegetated Corridor slope measurements and break in slope line
 - E) Topographic lines
2. Proposed Development Figure
 - A) Location of existing sensitive areas (streams, ponds, wetlands, etc) and proposed sensitive area mitigation, both on-site and off-site, stormwater infrastructure, and drainage ditches on site and within 200 feet
 - B) Location of existing vegetated corridors and proposed vegetated corridor mitigation; including plant communities on site and within 200 feet
 - C) Topographic lines
 - D) Proposed encroachment
 - E) Proposed off-site improvement areas
 - F) Location of proposed mitigation
 - G) Area of Vegetated Corridor as square footage

3. Final Conditions Site Plan Figure (may be combined with Proposed Development Figure)
 - A) Location of proposed boundary of Sensitive Area and Vegetated Corridor
 - B) Location of proposed development
 - C) Location of proposed off-site improvement area
 - D) Sensitive Area and Vegetated Corridor easement/Tract limits.

d. Additional Submittal Requirements

Based on existing site conditions and the proposed project, the following information may be required:

1. Intermittent stream hydrology data and drainage basin calculation in accordance with 3.14.3
2. Geotechnical Report in accordance with 3.14.6
3. Alternatives Analysis for Tier 1, Tier 2, and Tier 3 level reviews, in accordance with Section 3.07
4. Off-site Mitigation Proposal
5. Functional Assessment Requirements in accordance with Section 3.14.7

3.14 Assessment Methods

3.14.1 Assessment Method Definitions

a. Plant Community

A Plant Community is defined as: a grouping of plants that often occur together growing in a uniform habitat.

b. Saturated

A condition in which all voids (pores) between soil particles are filled with water.

c. Sample Point

A representative area within a plant community in which the visually determined characteristics best represent the plant community as a whole.

3.14.2 Requirements for Vegetated Corridor Enhancement and/or Mitigation

Enhancement and/or mitigation of the Vegetated Corridor shall be accomplished in accordance with the requirements in Table 3-3.

Table 3-3
Vegetated Corridor Standards

Vegetated Corridor Condition Definition ¹	Requirements of Vegetated Corridor, Enhancement, and/or Mitigation
<p>Good Corridor Condition: Combination of native trees, shrubs, and groundcover covering greater than 80% of the area and greater than 50% tree canopy exists (areal measure)</p>	<ul style="list-style-type: none"> • Provide certification to District, per Section 3.13.5, that the Vegetated Corridor meets condition criteria. • Remove any invasive non-native species² within the corridor by hand and re-vegetate cleared area using low impact methods.³ • If impact is to occur, provide District with a native plant re-vegetation plan appropriate to the site conditions developed by an ecologist/biologist or landscape architect to restore condition. See Appendix A: Planting Requirements. • Re-vegetate impacted area per approved plan to re-establish Good Corridor Conditions
<p>Marginal Corridor Condition: Combination of native trees, shrubs, and groundcover covering 50%-80% of the area and 26-50% tree canopy exists (areal measure)</p> <p>(Enhancement up to Good Corridor Condition required regardless of planned impact)</p>	<ul style="list-style-type: none"> • Provide certification to District, per Section 3.13.5, that the Vegetated Corridor meets condition criteria. • Remove any invasive non-native species within the corridor by hand or mechanically with small equipment, to minimize damage to existing native vegetation.² • Provide District with a native plant re-vegetation plan appropriate to the site conditions developed by an ecologist/biologist or landscape architect to restore to a Good Corridor Condition. See Appendix A: Planting Requirements. • Vegetate corridor to establish Good Corridor Conditions.
<p>Degraded Corridor Condition: Combination of native trees, shrubs, and groundcover covering is less than 50% of the area and less than 25% tree canopy exists (areal measure)</p> <p>(Enhancement up to Good Corridor Condition required regardless of planned impact)</p>	<ul style="list-style-type: none"> • Provide certification to District, per Section 3.13.5, that the Vegetated Corridor meets condition criteria. • Remove any invasive non-native species within the corridor by hand or mechanically.² • Provide District with a native plant re-vegetation plan appropriate to the site conditions developed by an ecologist/biologist or landscape architect to restore to a Good Corridor Condition. See Appendix A: Planting Requirements. • Vegetate Corridor to establish Good Corridor Condition

1. When a single plant community type contains multiple condition characteristics, the higher quality condition shall prevail.
2. See Appendix A for plant lists and references.
3. Refer to Integrated Vegetation Management Guidelines for appropriate methodology

3.14.3 Methodology for Documenting Intermittent Status of Streams

- a. A stream shall be determined to be intermittent through one of the following methods:
 1. The stream channel is dry (without visible flow or standing water) for a period of 30 consecutive days during a year with wet to average precipitation patterns (see Table 3-4 below to determine

precipitation pattern). This method requires a minimum of two samples per 100 feet of stream length, collected at the beginning and end of the 30 day period, with supporting data (including maps with photos keyed to each sample location), indicating that the stream is dry. During a year with a dry precipitation pattern, all sampling must be completed prior to August 15. If standing water is present at the first site visit, Method 2 shall be used, or the applicant must wait until the project reach is completely dry to start the 30 day sampling period. For the purposes of this section, the District shall have the discretion to accept data taken up to 37 consecutive days apart.

2. The channel must not have saturated soil in the upper 12 inches, during a year with wet to average precipitation patterns. This method requires representative samples (one per 100 feet of stream length) on only one date. Samples shall include supporting data (including soil texture, level of saturation, and maps with photos keyed to each sample location). During a year with a dry precipitation pattern, all sampling must be completed prior to August 15.
- b. If the applicant attempts to make a determination of intermittence during the wet season (November 1 – June 30), the applicant should consider all other available data (historic photos, data, reports, eyewitness accounts, etc.). The District shall review the available data and, if approved, the intermittent determination shall be considered preliminary until status can be definitively confirmed through one of the field methodologies described in Subsection 3.14.3(a).

Table 3-4
Precipitation for Use in Determining
Perennial and Intermittent Flow Status

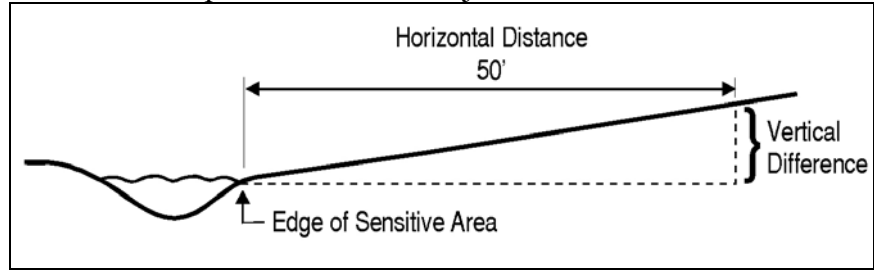
Month	Average Monthly	30% chance will have	
		less than (Dry Year)	more than (Wet Year)
January	5.76	3.70	6.93
February	4.72	3.17	5.65
March	3.93	2.96	4.59
April	2.46	1.65	2.94
May	1.90	1.13	2.30
June	1.46	0.87	1.78
July	0.61	0.22	0.76
August	0.93	0.25	1.12
September	1.61	0.72	2.03
October	2.68	1.45	3.27
November	6.03	4.07	7.21
December	6.44	4.44	7.67
ANNUAL		32.50	42.01

- Precipitation data and calculations from the Hillsboro, OR3908 WETS Table available at <ftp://ftp.wcc.nrcs.usda.gov/support/climate/wetlands/or/41067.txt>
- If other long-term precipitation data is used, provide location and statistical analysis with submittal.
- To determine status of the precipitation levels, review the previous Water Year (October 1 – September 30) to date. For determinations conducted during the month of October, use the previous complete Water Year to determine precipitation levels. Daily and monthly data are available at <http://www.weather.gov/climate/>

3.14.4 Methodology for Measuring Slope and Determining Break in Slope

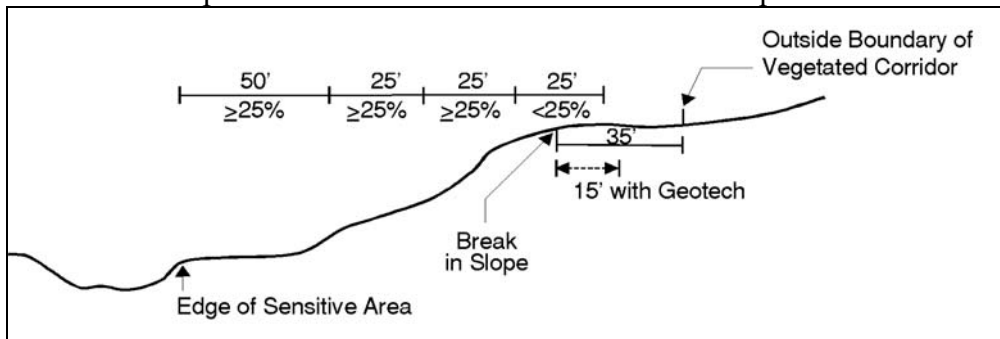
- a. Slopes shall be measured perpendicular to the contours. To meet this requirement, the line along which the slope is measured may bend horizontally so it remains perpendicular to the contours.
- b. The slope adjacent to the Sensitive Area is measured horizontally 50 feet from the Edge of Sensitive Area as shown in Figure 3-1. The slope is equal to the vertical distance divided by the horizontal distance, expressed as a percentage.

Figure 3-1
Slope Measurement Adjacent to Sensitive Area



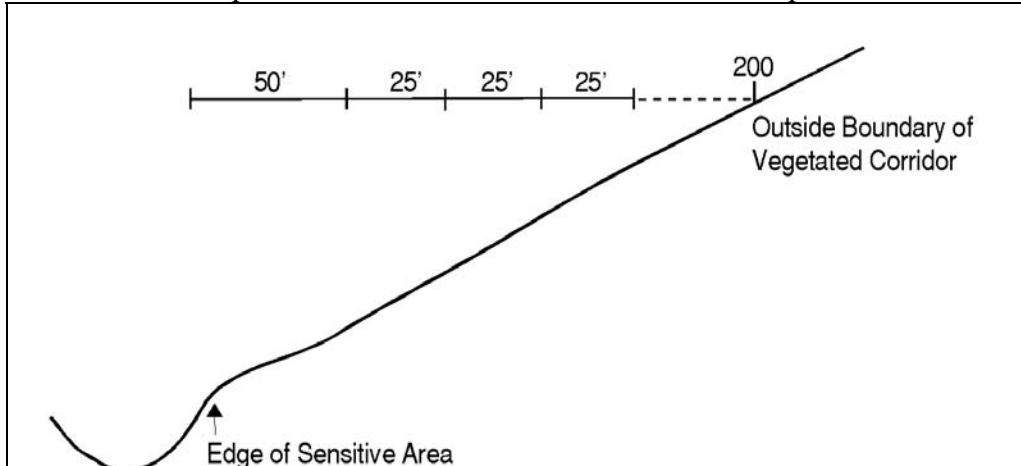
- c. A minimum of three slope measurements along the Sensitive Area, spaced at no more than 100-foot increments, shall be made for each site.
- d. The break in slope shall be determined by measuring 50 feet horizontally from the edge of the Sensitive Area. If the slope is greater than 25% continue measuring in 25 foot horizontal increments until *either*:
 - 1. A slope is encountered that is less than 25 %. In this case, determine the break in slope and add an additional 35 feet to mark the outside boundary of the Vegetated Corridor; *or*

Figure 3-2
Slope Measurement to Determine Break in Slope



- 2. 200 feet is reached (all slope measurements >25%)

Figure 3-3
Slope Measurement to Determine Break in Slope



3.14.5 Methodology for Vegetated Corridor Condition Assessment

- a. Establish at least one representative sample point per acre per community type. All communities must be sampled.
- b. At the sample point, visually determine and document the cover of all plant species providing greater than 5 percent cover within the plot boundary.
- c. Sample Points shall use a 10-foot radius plot for herbs (non-woody vegetation) and a 30-foot radius plot for woody vegetation.
- d. Plot boundaries may be adjusted to ensure that only one plant community is represented in a plot.
- e. For each community type, determine the cover provided by both native and invasive species as follows:
 1. Native species as listed in the most current version of Metro or local Native Plant List, whichever is more comprehensive.
 2. Invasive species are limited to Himalayan or evergreen blackberry (*Rubus discolor, lacinatus*), reed canarygrass (*Phalaris arundinacea*), teasel (*Dipsacus fullonum*), Canada or bull thistle (*Cirsium sp.*), Scotch broom (*Cytisus scoparius*), purple loosestrife (*Lythrum salicaria*), Japanese knotweed (*Polygonium cuspidatum*), morning glory (*Convolvulus sp.*), giant hogweed (*Heracleum mantegazzianum*), English ivy (*Hedra helix*), nightshade (*Solanum sp.*), and clematis (*Clematis ligusticifolia* and *C. vitabla*)
- f. For each community determine the percent areal cover of the tree canopy.

- g. For each community determine if the Vegetated Corridor within that community is in Good, Marginal, or Degraded Corridor Condition in accordance with Section 3.03.3.
- h. If more than one condition (Good, Marginal, or Degraded) exists within a Vegetated Corridor, indicate the condition of each plant community within the Vegetated Corridor on the site base map.

3.14.6 Geotechnical Report Requirements

If development is proposed closer than 35' from the break in slope at the top of the ravine, a geotechnical analysis is required. The geologist or geotechnical engineer shall provide a stamped report containing:

- a. Description and map of soil type and erosion potential of the slope.
- b. Documentation of evidence of potential historic slope movement, if any.
- c. Limits of impact to the slope necessary for it to remain stable.
- d. Estimation of weight that can be applied to the top of a slope and remain stable.
- e. Other relevant information deemed appropriate to include.

3.14.7 Functional Assessment Requirements for Tier 2 Alternatives Analysis

If a Tier 2 Alternatives Analysis is proposed, a functional assessment is required. The report shall be prepared using methodology outlined in Oregon Division of State Lands Hydrogeomorphic (HGM) approach of assessment for wetland and riparian functions.

