

**Appendix Five**  
**Metro Functional Plan**  
**Title 3: Water Quality, Flood Management and Fish and**  
**Wildlife Conservation**

**TITLE 3: WATER QUALITY, FLOOD MANAGEMENT AND FISH AND WILDLIFE CONSERVATION**

3.07.310 Intent

To protect the beneficial water uses and functions and values of resources within the Water Quality and Flood Management Areas by limiting or mitigating the impact on these areas from development activities, protecting life and property from dangers associated with flooding and working toward a regional coordination program of protection for Fish and Wildlife Habitat Areas.

(Ordinance No. 97-715B, Sec. 1. Replaced by Ordinance No. 98-730C, Sec. 1.)

3.07.320 Applicability

A. This Title applies to:

1. Development in Water Quality Resource and Flood Management Areas.
2. Development which may cause temporary or permanent erosion on any property within the Metro Boundary.
3. Development in Fish and Wildlife Habitat Conservation Areas when Metro's section 3.07.350 analysis and mapping are completed.

B. This title does not apply to work necessary to protect, repair, maintain, or replace existing structures, utility facilities, roadways, driveways, accessory uses and exterior improvements in response to emergencies provided that after the emergency has passed, adverse impacts are mitigated in accordance with the performance standards in section 3.07.340.

(Ordinance No. 97-715B, Sec. 1. Replaced by Ordinance No. 98-730C, Sec. 1.)

3.07.330 Implementation Alternatives for Cities and Counties

A. Cities and counties shall comply with this title in one of the following ways:

1. Amend their comprehensive plans and implementing ordinances to adopt all or part of the Title 3 Model Ordinance or code language that substantially complies with the performance standards in section 3.07.340 and the intent of this title, and adopt either the Metro Water Quality and Flood Management Area Map or a map which substantially complies with the Metro map. Cities and counties may choose one of the following options for applying this section:
  - a. Adopt code language implementing this title which prevails over the map and uses the map as reference; or
  - b. Adopt a city or county field verified map of Water Quality and Flood Management Areas based on the Metro Water Quality and Flood Management map, updated according to section 3.07.370, implementing this title which prevails over adopted code language.

Field verification is a process of identifying or delineating Protected Water Features, Water Quality Resource Areas and Flood Management Areas shown on the Metro Water Quality and Flood Management Areas map. This process includes examination of information such as site visit reports, wetlands inventory maps, aerial photographs, and public input and review. The field verification process shall result in a locally adopted Water Quality and Flood Management Areas map which:

- i. Applies the Title 10 definitions of Protected Water Feature, Water Quality Resource Areas and Flood Management Areas to all those protected areas on the Metro Water Quality and Flood Management Areas map to show the specific boundaries of those protected areas on the locally adopted Water Quality and Flood Management Areas map; and
- ii. Is subject to amendment by applying adopted code language to add Protected Water Features, Water Quality Resource Areas and Flood Management Areas and to correct errors in the local Water Quality and Flood Management Areas

map as required by section 3.07.370 and consistent with section 3.07.330(D).

2. Demonstrate that existing city and county comprehensive plans and implementing ordinances substantially comply with the performance standards in section 3.07.340 and the intent of this title.
  3. Any combination of (1) and (2) above that substantially complies with all performance standards in section 3.07.340.
- B. Cities and counties shall hold at least one public hearing prior to adopting comprehensive plan amendments, ordinances and maps implementing the performance standards in section 3.07.340 of this title or demonstrating that existing city or county comprehensive plans and implementing ordinances substantially comply with section 3.07.340, to add Protected Water Features, and wetlands which meet the criteria in section 3.07.340(E) (3), to their Water Quality and Flood Management Area map. The proposed comprehensive plan amendments, implementing ordinances and maps shall be available for public review at least 45 days prior to the public hearing.
- C. Cities and counties shall conduct a review of their Water Quality and Flood Management Areas map concurrent with local periodic review required by ORS 197.633 (1997).
- D. Some areas which would otherwise be mapped as Protected Water Features, Water Quality Resource Areas and Flood Management Areas do not appear on the Metro Water Quality and Flood Management Areas map because streams had been culverted, wetlands had been filled or a fill permit had been approved, or the area was demonstrated to have existing conflicting water dependent uses, or existing plans or agreements for such uses, or the area was developed or committed to other uses.

Notwithstanding any other provision of this title, cities and counties are not required to establish Protected Water Features, Water Quality Resource Areas and Flood Management Areas through adopted code provisions or mapping for areas which were examined but not included on the Water Quality and Flood Management Areas map adopted by the Metro Council.

(Ordinance No. 97-715B, Sec. 1. Replaced by Ordinance No. 98-730C, Sec. 1.)

3.07.340 Performance Standards

A. Flood Management Performance Standards.

1. The purpose of these standards is to reduce the risk of flooding, prevent or reduce risk to human life and property, and maintain functions and values of flood-plains such as allowing for the storage and conveyance of stream flows through existing and natural flood conveyance systems.
2. All development, excavation and fill in the Flood Management Areas shall conform to the following performance standards:
  - a. Development, excavation and fill shall be performed in a manner to maintain or increase flood storage and conveyance capacity and not increase design flood elevations.
  - b. All fill placed at or below the design flood elevation in Flood Management Areas shall be balanced with at least an equal amount of soil material removal.
  - c. Excavation shall not be counted as compensating for fill if such areas will be filled with water in non-storm winter conditions.
  - d. Minimum finished floor elevations for new habitable structures in the Flood Management Areas shall be at least one foot above the design flood elevation.
  - e. Temporary fills permitted during construction shall be removed.
  - f. Uncontained areas of hazardous materials as defined by DEQ in the Flood Management Area shall be prohibited.
3. The following uses and activities are not subject to the requirements of subsection 2:

- a. Excavation and fill necessary to plant new trees or vegetation.
- b. Excavation and fill required for the construction of detention facilities or structures, and other facilities such as levees specifically designed to reduce or mitigate flood impacts. Levees shall not be used to create vacant buildable lands.
- c. New culverts, stream crossings, and transportation projects may be permitted if designed as balanced cut and fill projects or designed to not significantly raise the design flood elevation. Such projects shall be designed to minimize the area of fill in Flood Management Areas and to minimize erosive velocities. Stream crossing shall be as close to perpendicular to the stream as practicable. Bridges shall be used instead of culverts wherever practicable.

B. Water Quality Performance Standards.

1. The purpose of these standards is to: (1) protect and improve water quality to support the designated beneficial water uses as defined in Title 10, and (2) protect the functions and values of the Water Quality Resource Area which include, but are not limited to:
  - a. Providing a vegetated corridor to separate Protected Water Features from development;
  - b. Maintaining or reducing stream temperatures;
  - c. Maintaining natural stream corridors;
  - d. Minimizing erosion, nutrient and pollutant loading into water;
  - e. Filtering, infiltration and natural water purification;
  - f. Stabilizing slopes to prevent landslides contributing to sedimentation of water features.

2. Local codes shall require all development in Water Quality Resource Areas to conform to the following performance standards:
  - a. The Water Quality Resource Area is the vegetated corridor and the Protected Water Feature. The width of the vegetated corridor is specified in Table 3.07-3. At least three slope measurements along the water feature, at no more than 100-foot increments, shall be made for each property for which development is proposed. Depending on the width of the property, the width of the vegetated corridor will vary.
  - b. Water Quality Resource Areas shall be protected, maintained, enhanced or restored as specified in section 3.07.340(B)(2).
  - c. Prohibit development that will have a significant negative impact on the functions and values of the Water Quality Resource Area, which cannot be mitigated in accordance with subsection 2(f).
  - d. Vegetative cover native to the Portland metropolitan region shall be maintained, enhanced or restored, if disturbed, in the Water Quality Resource Area. Invasive non-native vegetation may be removed from the Water Quality Resource Area and replaced with native cover. Only native vegetation shall be used to enhance or restore the Water Quality Resource Area. This shall not preclude construction of energy dissipaters at outfalls consistent with watershed enhancement, and as approved by local surface water management agencies.
  - e. Uncontained areas of hazardous materials as defined by DEQ in the Water Quality Resource Area shall be prohibited.
  - f. Cities and counties may allow development in Water Quality Resource Areas provided that the governing body, or its designate, implement procedures which:
    - i. Demonstrate that no practicable alternatives to the requested development exist which will

not disturb the Water Quality Resource Area;  
and

- ii. If there is no practicable alternative, limit the development to reduce the impact associated with the proposed use; and
  - iii. Where the development occurs, require mitigation to ensure that the functions and values of the Water Quality Resource Area are restored.
- g. Cities and counties may allow development for repair, replacement or improvement of utility facilities so long as the Water Quality Resource Area is restored consistent with section 3.07.340(B)(2)(d).
  - h. The performance standards of section 3.07.340(B)(2) do not apply to routine repair and maintenance of existing structures, roadways, driveways, utilities, accessory uses and other development.
- 3. For lots or parcels which are fully or predominantly within the Water Quality Resource Area and are demonstrated to be unbuildable by the vegetative corridor regulations, cities and counties shall reduce or remove vegetative corridor regulations to assure the lot or parcel will be buildable while still providing the maximum vegetated corridor practicable. Cities and counties shall encourage landowners to voluntarily protect these areas through various means, such as conservation easements and incentive programs.

C. Erosion and Sediment Control.

- 1. The purpose of this section is to require erosion prevention measures and sediment control practices during and after construction to prevent the discharge of sediments.
- 2. Erosion prevention techniques shall be designed to prevent visible and measurable erosion as defined in Title 10.

3. To the extent erosion cannot be completely prevented, sediment control measures shall be designed to capture, and retain on-site, soil particles that have become dislodged by erosion.

D. Implementation Tools to protect Water Quality and Flood Management Areas.

1. Cities and counties shall either adopt land use regulations, which authorize transfer of permitted units and floor area to mitigate the effects of development restrictions in Water Quality and Flood Management Areas, or adopt other measures that mitigate the effects of development restrictions.
2. Metro encourages local governments to require that approvals of applications for partitions, subdivisions and design review actions be conditioned upon one of the following:
  - a. Protection of Water Quality and Flood Management Areas with a conservation easement;
  - b. Platting Water Quality and Flood Management Areas as common open space; or
  - c. Offer of sale or donation of property to public agencies or private non-profits for preservation where feasible.
3. Additions, alterations, rehabilitation or replacement of existing structures, roadways, driveways, accessory uses and development in the Water Quality and Flood Management Area may be allowed provided that:
  - a. The addition, alteration, rehabilitation or replacement is not inconsistent with applicable city and county regulations, and
  - b. The addition, alteration, rehabilitation or replacement does not encroach closer to the Protected Water Feature than the existing structures, roadways, driveways or accessory uses and development, and

- c. The addition, alteration, rehabilitation or replacement satisfies section 3.07.340(C) of this title.
- d. In determining appropriate conditions of approval, the affected city or county shall require the applicant to:
  - i. Demonstrate that no reasonably practicable alternative design or method of development exists that would have a lesser impact on the Water Quality Resource Area than the one proposed; and
  - ii. If no such reasonably practicable alternative design or method of development exists, the project should be conditioned to limit its disturbance and impact on the Water Quality Resource to the minimum extent necessary to achieve the proposed addition, alteration, restoration, replacement or rehabilitation; and
  - iii. Provide mitigation to ensure that impacts to the functions and values of the Water Quality Resource Area will be mitigated or restored to the extent practicable.
- 4. Cities and counties may choose not to apply the Water Quality and Flood Management Area performance standards of section 3.07.340 to development necessary for the placement of structures when it does not require a grading or building permit.
- 5. Metro encourages cities and counties to provide for restoration and enhancement of degraded Water Quality Resource Areas through conditions of approval when development is proposed, or through incentives or other means.
- 6. Cities and counties shall apply the performance standards of this title to Title 3 Wetlands as shown on the Metro Water Quality and Flood Management Areas Map and locally adopted Water Quality and Flood Management Areas maps. Cities and counties may also apply the performance standards of this title to other wetlands.

E. Map Administration.

Cities and counties shall amend their comprehensive plans and implementing ordinances to provide a process for each of the following:

1. Amendments to city and county adopted Water Quality and Flood Management Area maps to correct the location of Protected Water Features, Water Quality Resource Areas and Flood Management Areas. Amendments shall be initiated within 90 days of the date the city or county receives information establishing a possible map error.
2. Modification of the Water Quality Resource Area upon demonstration that the modification will offer the same or better protection of water quality, the Water Quality and Flood Management Area and Protected Water Feature.
3. Amendments to city and county adopted Water Quality and Flood Management Area maps to add Title 3 wetlands when the city or county receives significant evidence that a wetland meets any one of the following criteria:
  - a. The wetland is fed by surface flows, sheet flows or precipitation, and has evidence of flooding during the growing season, and has 60 percent or greater vegetated cover, and is over one-half acre in size;  
  
or the wetland qualifies as having "intact water quality function" under the 1996 Oregon Freshwater Wetland Assessment Methodology; or
  - b. The wetland is in the Flood Management Area, and has evidence of flooding during the growing season, and is five acres or more in size, and has a restricted outlet or no outlet;  
  
or the wetland qualifies as having "intact hydrologic control function" under the 1996 Oregon Freshwater Wetland Assessment Methodology; or

- c. The wetland or a portion of the wetland is within a horizontal distance of less than one-fourth mile from a water body which meets the Department of Environmental Quality definition of "water quality limited water body" in OAR Chapter 340, Division 41 (1996).

Examples of significant evidence that a wetland exists that may meet the criteria above are a wetland assessment conducted using the 1996 Oregon Freshwater Wetland Assessment Methodology, or correspondence from the Division of State Lands that a wetland determination or delineation has been submitted or completed for property in the city or county.

- 4. Cities and counties are not required to apply the criteria in section 3.07.340(E) (3) to water quality or stormwater detention facilities.

(Ordinance No. 97-715B, Sec. 1. Replaced by Ordinance No. 98-730C, Sec. 1.)

### 3.07.350 Fish and Wildlife Habitat Conservation Area

- A. The purpose of these standards is to conserve, protect, and enhance fish and wildlife habitat within the fish and wildlife habitat conservation areas to be identified on the water quality and flood management area map by establishing performance standards and promoting coordination by Metro of regional urban water sheds.
- B. Fish and Wildlife Habitat Conservation Area Recommendations.

These areas shall be shown on the Water Quality and Flood Management Area Map. Fish and Wildlife Habitat Conservation Areas generally include and/or go beyond the Water Quality and Flood Management Areas. These areas to be shown on the map will be Metro's inventory of significant fish and wildlife habitat conservation areas. Metro hereby recommends that local jurisdictions adopt the following temporary standards:

- 1. Prohibit development in fish and wildlife conservation areas that adversely impacts fish and wildlife habitat.

Exceptions: It is recognized that urban development will, at times, necessitate development activities within or adjacent to Fish and Wildlife Habitat Conservation Areas. The following Fish and Wildlife Habitat Conservation Mitigation Policy, except for emergency situations, applies to all the following exceptions:\_

A project alternatives analysis, where public need for the project has been established, will be required for any of the exceptions listed below. The alternatives analysis must seek to avoid adverse environmental impacts by demonstrating there are no practicable, less environmentally damaging alternatives available. In those cases where there are no practicable, less environmentally damaging alternatives, the project proponent will seek alternatives which reduce or minimize adverse environmental impacts. Where impacts are unavoidable, compensation, by complete replacement of the impacted site's ecological attributes or, where appropriate, substitute resources of equal or greater value will be provided in accordance with the Metro Water Quality and Flood Management model ordinance.

- a. Utility construction within a maximum construction zone width established by cities and counties.
  - b. Overhead or underground electric power, telecommunications and cable television lines within a sewer or stormwater right-of-way or within a maximum construction zone width established by cities and counties.
  - c. Trails, boardwalks and viewing areas construction.
  - d. Transportation crossings and widenings. Transportation crossings and widenings shall be designed to minimize disturbance, allow for fish and wildlife passage and crossings should be preferably at right angles to the stream channel.
2. Limit the clearing or removal of native vegetation from the Fish and Wildlife Habitat Conservation Area to ensure its long term survival and health. Allow and encourage enhancement and restoration projects for the benefit of fish and wildlife.

3. Require the revegetation of disturbed areas with native plants to 90 percent cover within three years. Disturbed areas should be replanted with native plants on the Metro Plant List or an approved locally adopted plant list. Planting or propagation of plants listed on the Metro Prohibited Plant List within the Conservation Area shall be prohibited.
4. Require compliance with Oregon Department of Fish and Wildlife (ODFW) seasonal restrictions for in-stream work. Limit development activities that would impair fish and wildlife during key life-cycle events according to the guidelines contained in ODFW's "Oregon Guidelines for Timing of In-water Work to Protect Fish and Wildlife Resources."

C. Fish and Wildlife Habitat Protection.

Within eighteen (18) months from the effective date of this functional plan, Metro shall complete the following regional coordination program by adoption of functional plan provisions.

1. Metro shall establish criteria to define and identify regionally significant fish and wildlife habitat areas.
2. Metro shall adopt a map of regionally significant fish and wildlife areas after a) examining existing Goal 5 data, reports and regulation from cities and counties, and b) holding public hearings.
3. Metro shall identify inadequate or inconsistent data and protection in existing Goal 5 data, reports and regulations on fish and wildlife habitat. City and county comprehensive plan provisions where inventories of significant resources were completed and accepted by a LCDC Periodic Review Order after January 1, 1993, shall not be required to comply until their next periodic review.
4. Metro shall complete Goal 5 economic, social, environmental and energy (ESEE) analyses for mapped regionally significant fish and wildlife habitat areas only for those areas where inadequate or inconsistent data or protection has been identified.

5. Metro shall establish performance standards for protection of regionally significant fish and wildlife habitat that must be met by the plans implementing ordinances of cities and counties.

(Ordinance No. 97-715B, Sec. 1. Amended by Ordinance No. 98-730C, Sec. 2.)

#### 3.07.360 Metro Model Ordinance Required

Metro shall adopt a Water Quality and Flood Management Areas Model Ordinance and map. The Model Ordinance shall represent one method of complying with this title. The Model Ordinance shall be advisory, and cities and counties are not required to adopt the Model Ordinance, or any part thereof, to substantially comply with this title. However, cities and counties which adopt the Model Ordinance in its entirety and a Water Quality and Flood Management Areas Map shall be deemed to have substantially complied with the requirements of this title.

Sections 3.07.310-.340 of this title shall not become effective until 18 months after the Metro Council has adopted the Model Ordinance and Water Quality and Flood Management Areas Map. Section 3.07.350 of this title shall be implemented by adoption of new functional plan provisions. The Metro Council may adopt a Fish and Wildlife Habitat Conservation Areas Model Ordinance and Map for protection of regionally significant fish and wildlife habitat.

(Ordinance No. 97-715B, Sec. 1. Amended by Ordinance No. 98-730C, Sec. 2.)

#### 3.07.370 Variances

City and county comprehensive plans and implementing regulations are hereby required to include procedures to consider claims of map error and hardship variances to reduce or remove Fish and Wildlife Habitat Protection for any property demonstrated to be converted to an unbuildable lot by application of Fish and Wildlife Habitat Protection regulations.

(Ordinance No. 97-715B, Sec. 1. Amended by Ordinance No. 98-730C, Sec. 2.)

**Table 3.07-3 - Protected Water Features**  
(Section 3.07.340(B(2)(a)))

Protected Water Feature Type (see definitions)	Slope Adjacent to Protected Water Feature	Starting Point for Measurements from Water Feature	Width of Vegetated Corridor
<b>Primary Protected Water Features<sup>1</sup></b>	< 25%	<ul style="list-style-type: none"> <li>• Edge of bankfull flow or 2-year storm level;</li> <li>• Delineated edge of Title 3 wetland</li> </ul>	50 feet
<b>Primary Protected Water Features<sup>1</sup></b>	≥ 25% for 150 feet or more <sup>5</sup>	<ul style="list-style-type: none"> <li>• Edge of bankfull flow or 2-year storm level;</li> <li>• Delineated edge of Title 3 wetland</li> </ul>	200 feet
<b>Primary Protected Water Features<sup>1</sup></b>	≥ 25% for less than 150 feet <sup>5</sup>	<ul style="list-style-type: none"> <li>• Edge of bankfull flow or 2-year storm level;</li> <li>• Delineated edge of Title 3 wetland</li> </ul>	Distance from starting point of measurement to top of ravine (break in ≥25% slope) <sup>3</sup> , plus 50 feet. <sup>4</sup>
<b>Secondary Protected Water Features<sup>2</sup></b>	< 25%	<ul style="list-style-type: none"> <li>• Edge of bankfull flow or 2-year storm level;</li> <li>• Delineated edge of Title 3 wetland</li> </ul>	15 feet
<b>Secondary Protected Water Features<sup>2</sup></b>	≥ 25% <sup>5</sup>	<ul style="list-style-type: none"> <li>• Edge of bankfull flow or 2-year storm level;</li> <li>• Delineated edge of Title 3 wetland</li> </ul>	50 feet

<sup>1</sup>**Primary Protected Water Features** include: all perennial streams and streams draining greater than 100 acres, Title 3 wetlands, natural lakes and springs

<sup>2</sup>**Secondary Protected Water Features** include intermittent streams draining 50-100 acres.

<sup>3</sup>Where the Protected Water Feature is confined by a ravine or gully, the top of ravine is the break in the ≥ 25% slope (see slope measurement in Appendix).

<sup>4</sup>A maximum reduction of 25 feet may be permitted in the width of vegetated corridor beyond the slope break if a geotechnical report demonstrates that slope is stable. To establish the width of the vegetated corridor, slope should be measured in 25-foot increments away from the water feature until slope is less than 25% (top of ravine).

<sup>5</sup>Vegetated corridors in excess of 50-feet for primary protected features, or in excess of 15-feet for secondary protected features, apply on steep slopes only in the *uphill* direction from the protected water feature.

(Ordinance No. 98-730C, Sec. 1.)

## Proposed Method for Determining Vegetated Corridors Next to Primary Protected Water Features

### How measure slope (Figure 1)

Measure 50 feet horizontally (L1) from the stream (top of bank) and determine the slope ( $H1/L1$  - the difference in elevation divided by the difference in horizontal distance multiplied by 100).

If the slope in this 50-foot area is less than 25%, the corridor width is 50 feet from the top of bank (see Figure 2).

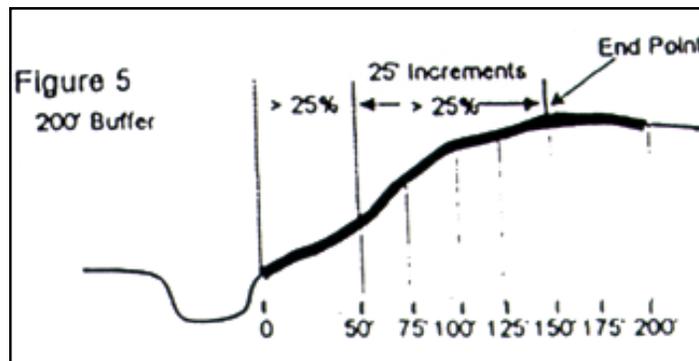
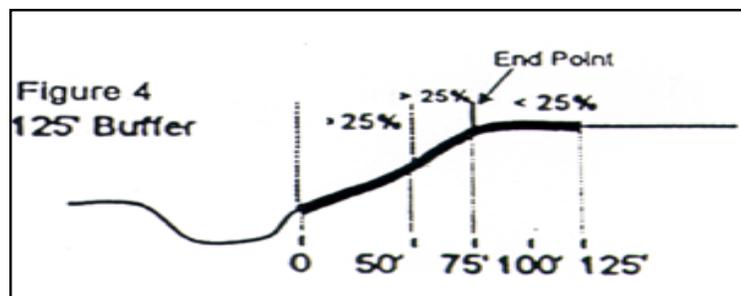
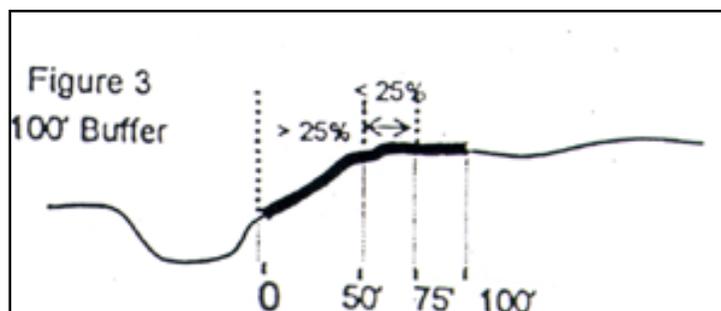
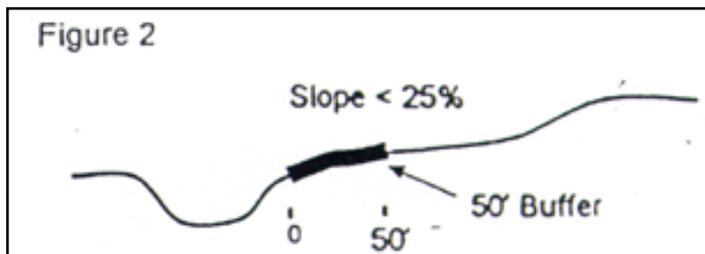
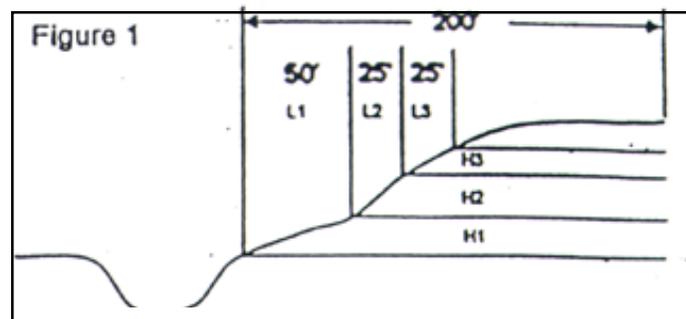
If the slope in the 50-foot area is 25% or greater, measure another 25 feet horizontally. If the slope in this incremental 25-foot area is now *less than 25%* ( $H2/L2 < 25\%$ ), the vegetated corridor width would be 100 feet (50 feet for the horizontal distance from the top of bank with slope greater than 25% **PLUS** an additional 50 feet). (See Figure 3.)

If the slope is greater than 25% in this incremental 25-foot area, continue measuring the slope every 25 feet (H/L) until you either:

- (a) find a slope less than 25% (see Figure 4), or

(When you find a slope less than 25%, the vegetated corridor equals the distance from the stream's top of bank to the **end point** of the last surveyed 25-foot increment with a slope greater than 25% **PLUS** an additional 50 feet).

- (b) reach 200 feet (the maximum corridor width). (See Figure 5.)



**Advantages:**

- Provides protection for most steep slopes, yet corridor widths can be varied to fit a number of different situations (corridor widths include 50 feet to 100 feet, 125 feet, 150 feet, 175 feet, and 200 feet)
- Provides flexibility.

**Disadvantages:**

- Does not protect slopes that rise steeply after a gradual "floodplain" area.