

## **Section 4-2000 River and Stream Corridor Overlay District (RCSOD)**

**4-2001 Purpose and Intent.** These provisions are intended to promote, preserve, and enhance the important hydrologic, biological, ecological, aesthetic, recreational, and educational functions that river and stream corridors provide. Specifically, the provisions are intended to:

- (A) Protect life and. prevent or minimize property damage from soil erosion and flooding; and reduce public costs for flood control, rescue, and relief efforts occasioned by unwise use or occupancy of floodplains;
- (B) Comply with federal and state laws and regulations that address the need for floodplain management and protection;
- (C) Qualify Loudoun County residents for the insurance and subsidies provided by the National Flood Insurance Program;
- (D) Conserve the natural state of watercourses and stream banks to enable a dynamic and healthy river and stream corridor ecosystem;
- (E) Maintain water quality and minimize or remove pollutants delivered in stormwater through the natural capacity of riparian areas to filter and purify run-off;
- (F) Protect against the damages of soil erosion and flooding;
- (G) Reduce water treatment cost;
- (H) Maintain and. provide a riparian canopy to shade streams and promote desirable aquatic organisms and fish habitats;
- (I) Conserve wildlife habitat and corridors;
- (J) Perpetuate biological diversity and natural resource management to provide educational and recreational value;
- (K) Protect and. preserve functioning forest cover and riparian forest buffers for their biological and hydrological benefits;
- (L) Protect wetlands;
- (M) Preserve and protect Loudoun County's historic and prehistoric heritage in the form of archeological sites: and
- (N) Protect the scenic value of the rivers and streams of Loudoun County.

**4-2002 Authority.** Authority for these provisions includes:

- (A) Flood Damage Reduction Act, Va. Code Sections 62.1-44.108 et seq.
- (B) Chapter 11, Title 15.2, Code of Virginia (Planning, Subdivision of Land. and Zoning).
- (C) Soil conservation Districts Law, Va. Code Sections 21-2(c), 21-2(d).
- (D) Virginia Environmental Quality Act, Va. Code Section 10-178.
- (E) Erosion and Sediment Control Act, Va. Code Section 21-89.2.
- (F) Potomac River Basin Compact, Va. Code Section 62.1-69.1.
- (G) National Flood Insurance Act of 1968, 42 U.S.C. 4001 et seq.
- (H) Section 10. 1-2100 et seq. (The Chesapeake Bay Preservation Act) and. Section 15.1-489, of the Code of Virginia.

#### **4-2003 Applicability and Exemptions.**

- (A) **Applicability—Land Area & Features Included in the RSCOD.** This Section 4-2000 shall apply to all land areas and natural features within the River and Stream Corridor Overlay District (RSCOD), as shown on the official River and Stream Corridor Overlay District Map of Loudoun County ("RSCOD Map"), which with all explanatory matter thereon, is hereby incorporated by reference. The description of the Protected River and Stream Corridors ("Protected Corridors") in RSCOD is set forth in Section 4-2005, "Establishment of Protected Corridors." (*Note: Map sources are listed on RSCOD Map.*)
- (B) **Applicability--Covered Activities.** This Section 4-2000 shall apply to all proposed land disturbing activity, including new single-family development and subdivision that occurs within the RSCOD Protected River and Stream Corridors ("Protected Corridors"). This Section shall not apply to the expansion, alteration; or reconstruction of legally existing buildings, structures, and. impervious surface areas existing on January 7, 2003, provided that such alteration does not increase the total footprint of a structure or impervious surface by more than twenty-five percent (25%) or 2000 square feet whichever is greater.
- (C) **Exemptions.** The following land disturbing activities are exempt from this Section 4-2000's requirements, subject to the specific limits set forth below:
  - (1) **Agricultural Operations.** This section shall not apply to agricultural operations located in the Protected. Corridor that are covered by a Conservation Farm Management Plan approved by the Loudoun County Soil and Water Conservation District or the

U.S. Natural Resources and Conservation Service that includes best management practices. Structures associated with agricultural operations are not exempt from these provisions.

- (2) **Existing Legal Lots within the Protected Corridor.** A legal lot of record (a) in existence on January 7, 2003; and. (b) located in whole or in part within the Protected Corridor, may be developed for a single-family detached dwelling use and. accessory structures, provided such dwellings and structures are located outside of the 100 year floodplain. This exemption shall not apply to nonresidential uses. Such dwelling and accessory structures shall be sited on the lot as far from the stream bank as feasible.
- (3) **Man-Made Drainage Channels, Ditches, and Similar Structures.** Standards set forth in Section 4-2005, "Establishment of Protected Corridors," shall not apply to man-made drainage channels, ditches, and similar structures. However, all other relevant development standards set forth in Section 4-2008 shall apply.
- (D) **Zone District Development and Dimensional Standard Flexibility Provisions.** When twenty-five percent (25%) or more of the total area of a parcel or lot is subject to RSCOD restrictions (excluding any management buffer), the following modifications of development and dimensional standards shall be applicable for the purposes of accommodating the density/intensity of development allowed in the underlying zoning district, unless the underlying zoning requires less restrictive standards:
  - (1) **Minimum Lot Size:** No minimum.
  - (2) **Minimum Lot Width:** No minimum
  - (3) **Minimum Yards:**
    - (a) Residential: No minimum
    - (b) Nonresidential:
      - (i) Front. 15 feet
      - (ii) Side. 9 feet.
      - (iii) Rear. 15 feet.
  - (4) Height. 45 feet (residential); 55 feet, without additional setbacks being required (nonresidential)
  - (5) Parking (nonresidential only). Twenty-five percent (25%) reduction in the required off-street parking space requirement as set forth in Section 5-1002.

- (6) **Buffering and Screening.** To the extent necessary to accommodate the density/intensity of development allowed in the underlying zoning district, the Zoning Administrator may waive or reduce the buffer yard requirements set forth in Section 5-1400 upon a showing that the building and/or yard has been designed to minimize adverse impact through a combination of architectural, landscape, and/or other design techniques.

**4-2004 Review Procedures.** All development approvals, review procedures, modifications, and density calculations in the RSCOD are governed by Article VI, "Development Process and Administration," as applicable, and procedures in Chapter 8 of the Facilities Standards Manual.

**4-2005 Establishment of Protected Corridors.**

(A) **General Rule--Protected Corridors along Streams and Rivers.**

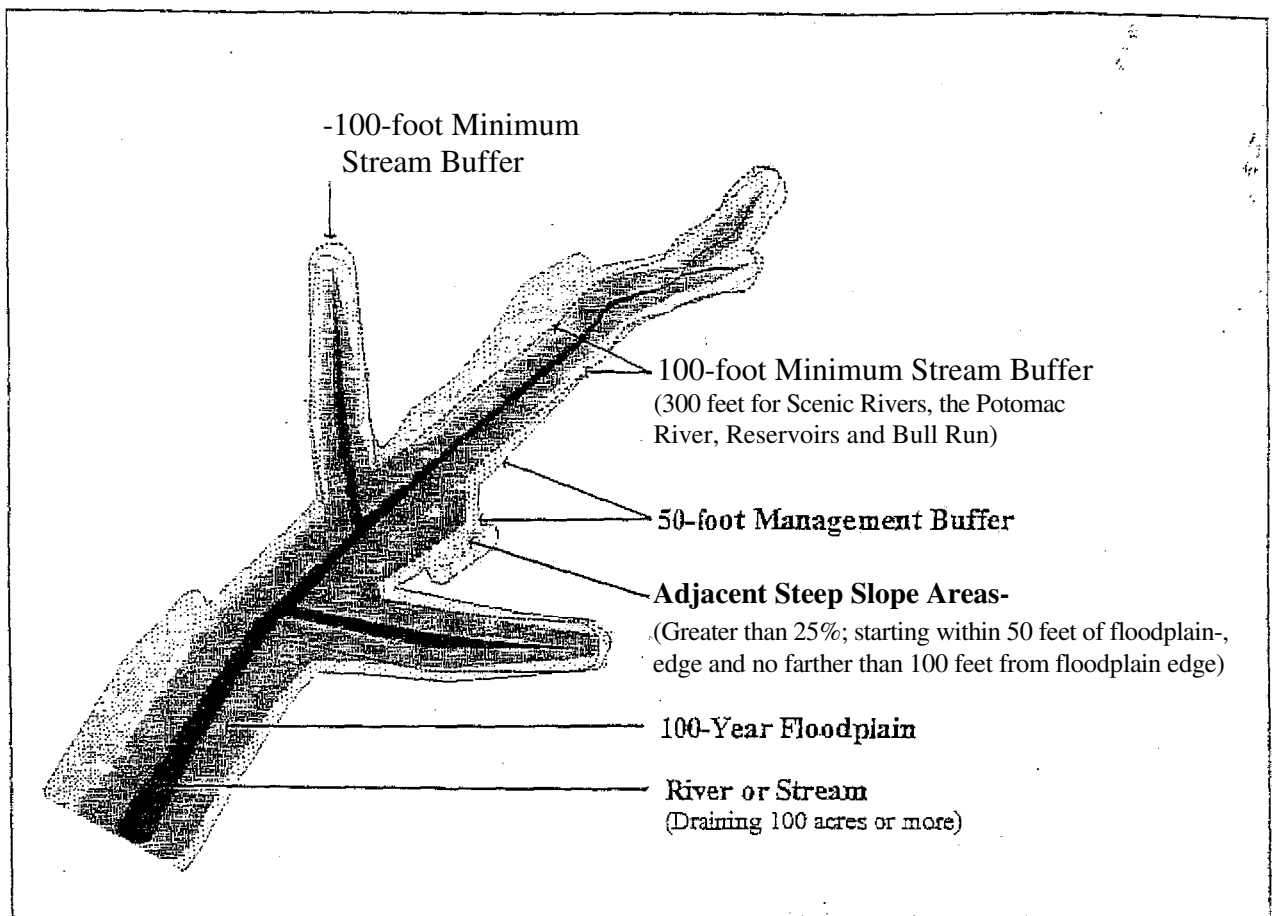
- (1) **Minimum Protected Corridor Width.** Except for those waters listed under section 4-2005(B)(1) below, for all stream and river segments draining 100 acres or more and shown on the RSCOD Map, the Protected Corridor shall be the greater of (1)(a) or (1)(b) below:

(a) The cumulative width of the following:

- (i) The 100-year floodplain, and
- (ii) Adjacent very steep slopes (greater than 25%) starting within 50 feet of the edge of the 100-year floodplain and extending no greater than 100 horizontal feet beyond the edge of the 100-year floodplain, and
- (iii) A 50-foot Management Buffer measured from the edge of the 100-year floodplain in (a)(i) above or when adjacent very steep slopes are present, from the very steep slope areas in (a)(ii) above.

OR

- (b) A minimum stream buffer measured as the area located within 100 feet of both sides of the stream or river, measured as a line extending perpendicularly from the stream bank of the active channel of the stream or river.



**Protected River and Stream Corridor ("Protected Corridor") Diagram**

**(B) Protected Corridors Along Specific Rivers/Streams and Water Supply Reservoirs**

- (1) **Minimum Protected Corridor Width.** For the following specific rivers and streams and water supply reservoirs, the Protected Corridor shall be the greater of the Protected Corridor width required by Subsection 4-2005(A), "General Rule—Protected Corridors along Streams and Rivers," above, or the area located within three-hundred (300) feet from:
  - (a) The defined stream bank of the Potomac River;
  - (b) The defined stream bank of Bull Run;
  - (c) The stream bank of the active channel for any state scenic rivers, including but not limited to Goose Creek, Catoctin Creek; and
  - (d) The projected shoreline of any drinking water supply reservoir, as denoted on the RSCOD map.

#### 4-2006 Permitted Uses and Activities.

- (A) **General.** Only those uses and activities set forth in this subsection shall be permitted by right or special exception within a Protected Corridor, and land so encumbered may be used in a manner permitted in the underlying district only if and to the extent such use is also permitted in the overlay district.
- (B) **Permitted Uses.** The following uses shall be permitted in a Protected Corridor, subject to development standards in this section:
  - (1) Roads, railroad tracks, bridges, paths and trails, and below ground utilities when any such facilities cross a stream or river;
  - (2) Paths and trails, including footpaths., bicycling or hiking paths, and horse trails constructed of permeable materials;
  - (3) Stormwater management facilities that do not alter a river or stream channel;
  - (4) Sanitary sewer pipelines;
  - (5) Lakes, ponds, and water supply reservoirs;
  - (6) Historic sites, structures, archaeological sites, and restoration/recovery activities;
  - (7) Passive recreation, limited to biking, non-motorized biking, horseback riding, picnicking, camping, climbing, hunting, fishing, and wildlife viewing;
  - (8) Active recreation on the waters only, limited to swimming and non-powered boating with public points of entry identified and approved by the Town;
  - (9) Silviculture, as defined in the Zoning Ordinance;
  - (10) Wildlife and fisheries management projects that are consistent with the purposes of the Federal Endangered Species Act or consistent with the regulations, policies, and habitat programs of the Commonwealth of Virginia;
  - (11) Conservation and educational activities, including but not limited to Adopt-a-Stream and Keep Loudoun Beautiful programs, teaching visits, and scientific study of nature, historic sites, and archaeological sites;
  - (12) Stream and riparian restoration projects:

- (13) Wetlands mitigation banking; and
- (14) Water quality monitoring and stream gauging.

#### **4-2007 Special Exception Uses.**

- (A) **General.** The following uses may be permitted in a Protected Corridor by special exception, subject to the procedures and criteria stated in Section 4-2008, "Development Standards," and Section 6-1300, "Special Exception:"
  - (1) Marinas or boat launches for non-powered boats, boat rental entry points, docks and piers; and
  - (2) Above-ground structures or uses required for the operation of a public utility, such as intake and outfall structures of power plants, sewage treatment plants, water treatment plants, and substations.
- (B) **Additional Criteria for a Special Exception Use.** In considering applications for a special exception, the Council shall find that the following standards, in addition to those of Section 6-1300, "Special Exception," have been met:
  - (1) The proposed use will not increase the danger to life and property due to increased flood heights or velocities.
  - (2) The proposed use will not increase the danger that materials may be swept downstream to the injury of others.
  - (3) The proposed water supply and sanitation systems are designed to prevent disease, contamination, and unsanitary conditions.
  - (4) The proposed use or structure must be located and designed to limit its susceptibility to flood damage, and alternative locations that are not subject to flooding must be considered.
  - (5) The expected heights, velocity, duration, rate of rise and sediment transport of the floodwaters expected at the site shall not cause significant damage, nor increase erosion downstream due to increased flood heights or velocities.
  - (6) The proposed use will not adversely affect water quality or impair the function or chemical, physical, biological, and ecological integrity of the stream or river corridor.

**4-2008 Development Standards.** All development and land disturbing activities permitted by right or special exception in the RSCCD Protected Corridor shall adhere to the following development standards:

(A) **General.** To the maximum extent feasible, all uses and activities shall minimize land disturbance in the Protected Corridor.

(1) **Preferred Development Sites.** Preferred development sites for permitted uses and activities set forth in Section 4-2006 and special exception uses set forth in Section 4-2007 are those that:

- (a) Avoid all parts of the Protected Corridor except to the extent that the Management Buffer is reduced or eliminated pursuant to Section 4-2009, "Permitted Reductions in Protected Corridor Width;"
- (b) Do not impair, interrupt, or fragment the functioning of the river and stream ecology; and protect the safety of residents and their property.

(2) **Restoration/Mitigation of Disturbance.**

(a) **Disturbance During Development.** All areas disturbed during development in the Protected Corridor shall be restored to preexisting conditions by the applicant to the maximum extent feasible. Where restoration will not be feasible, then the applicant shall mitigate any disturbance of the Protected Corridor that exceeds 10,000 square feet in area by providing mitigation in other areas in the Protected in the form of:

- (i) Providing riparian buffer pursuant to Chapter 7 of the FSM, either on the development site or off site; or
- (ii) Enhanced BMPs pursuant to Chapter 5 of the FSM, either on the development site or off site; or
- (iii) Stabilization of off-site stream banks; or
- (iv) Off-site vegetation restoration of erosion that is affecting water quality; or
- (v) Establishment of a restoration area equal in quality and quantity of the area encroaching into the 50-foot management buffer elsewhere on the lot or parcel in a way that maximizes the purpose and intent of the protected corridor.



All mitigation areas shall be located in the general vicinity of the disturbed area (e.g., within the immediate drainage area) and shall be similar in size and quality as the disturbed area prior to development activity.

- (b) **Pre-existing Conditions.** On-site stream bank stabilization and vegetation restoration shall be required if a site shows evidence of pre-existing erosion that is affecting water quality and/or stream banks that are unstable. Restoration shall be performed in accordance with Chapter 7 of the Facilities Standards Manual.

(B) **Alterations to the 100-Year Floodplain.** No alterations shall occur in the 100-year floodplain to create additional buildable land by elevating land or relocating or altering a natural stream channel, except as specifically allowed as either a permitted or special exception use. Where alterations are permitted, they shall be pursuant to the provisions in this Section 4-2000, and the following criteria:

- (1) Alterations to the floodplain shall result in no off-site increase in the water surface elevation of the base flood. Alterations in the floodway shall result in no rise in the water surface elevation of the base floodplain consisting of the water channel and overbank areas capable of conveying the deep and fast moving water discharge of the base flood as defined in the Federal Emergency Management Agency Flood Insurance Study.
- (2) Alterations to the floodplain shall not create erosive water velocity on or off-site (where erosive water velocity is based on analysis of the surface material and permissible velocities for specific cross sections affected by the proposed alteration, using standard engineering tables as a general guide), and the mean velocity of stream flow at the downstream end of the site after alteration shall be no greater than the mean velocity of the stream flow under existing conditions.
- (3) The applicant shall provide plans for any alteration to the 100-year floodplain. The floodplain alteration plan shall further include plans for erosion control of cut and fill slopes and restoration of excavated areas. The site plan shall incorporate the use of natural materials (earth, stone, wood) on cut and fill slopes and provide for tree protection.

- (4) The flood carrying capacity within the altered floodplain shall be maintained.
  - (5) Alterations to the floodplain shall be in conformance with the provisions of Chapter 1220 of the Codified Ordinances of Loudoun County and the Erosion and Sediment Control Law, Va. Code Section 21-89.1 et. sec.
- (C) **Vehicular, Pedestrian, and Utility Crossings.** Where permitted, road, driveway, railroad track, path and trail, and utility crossings of streams and rivers shall be subject to Chapter 5 of the Facilities Standards Manual and the following conditions:
- (1) The proposed activity shall be supported by an analysis conducted by a qualified and licensed professional engineer (P.E.) or Class B surveyor (L.S.) that establishes that:
    - (a) No available, economically feasible alternative exists to locating within the Protected Corridor or to crossing the river or stream; and
    - (b) The crossing is designed to avoid or mitigate environmental damage to the Protected Corridor and disturbance of the aquatic environment, alteration of the waterway, downstream migration of sediment, damage to bank stability, and damage to stream or river bank and riparian area vegetation.
  - (2) The applicant shall mitigate any disturbance of the Protected Corridor by grading and planting to enhance the biological and hydrologic processes. Provisions for reclamation of the disturbed area shall be approved by the Town and included in any development or subdivision agreement for the project, with adequate security to guarantee that the reclamation will be completed.
  - (3) Any stream or river crossing shall minimize the length of the crossing and minimize clearing and other land disturbance.
  - (4) Utility crossings shall be combined with road, railroad track, and driveway crossings when feasible. Crossings in a subdivision shall be spaced with a minimum separation of one thousand (1,000) feet unless closer spacing will reduce adverse environmental impacts.
  - (5) Rights-of-way shall be the minimum width necessary for installation access and maintenance.
  - (6) The Town shall allow construction of low-water crossings intended for use only by pedestrians, equestrians, or bicyclists, but not for

crossings designated for automobiles or other vehicles, except as specified in the Facilities Standards Manual.

- (7) Vehicular crossings shall be designed to allow wildlife to pass over or under crossings.
- (D) **Stormwater management.** Stormwater management structures, practices, and activities permitted in the Protected Corridor, shall be subject to development standards in Chapter 5 of the Facilities Standards Manual, and shall adhere to the Virginia Stormwater Management Handbook and the Virginia Erosion and Sediment Control Handbook.
- (E) **Lakes, Ponds, and Reservoirs.** Lakes, ponds, and reservoirs shall be designed using best management practices and with measures to mitigate the following potential adverse environmental impacts:
  - (1) Wetland loss;
  - (2) Forest habitat loss;
  - (3) Barriers to fish migration;
  - (4) Groundwater contamination;
  - (5) Downstream warming;
  - (6) Downstream water quality during dry weather;
  - (7) Potential interruption of downstream bedload movement;
  - (8) Damage to historic and cultural resources and archaeological sites; and
  - (9) Water quality of the pond or lake effluent.
- (F) **Recreation Facilities.** Recreation facilities shall be subject to the following standards:
  - (1) Access to waterways shall be limited to specific points of entry as approved by the Town.
  - (2) Facilities shall be located on previously disturbed areas to the maximum extent possible.
  - (3) Facilities shall be designed to minimize disturbance to the biological and hydrologic processes in the Protected Corridor.

- (4) All paths and trails shall be constructed of permeable materials (e.g., permeable soft or pervious hardstand materials, including but not limited to pervious bitumen or concrete).
- (G) **Silviculture.** Silviculture shall be subject to best management practice measures and shall be conducted only in accordance with an approved Forest Management Plan that is approved by both the Virginia Division of Forestry and the Town. Silviculture does not include commercial harvesting or clear cutting of a forest.
- (H) **Tree and Vegetation Conservation.** Natural vegetation in the Protected Corridor shall be preserved in accordance with Chapter 7 of the Facilities Standards Manual. Existing healthy trees and vegetation within the Protected Corridor shall be supplemented with additional native planting and landscaping approved by the Town where necessary. This provision shall not prohibit removal of dead trees/vegetation that present a danger to public safety, noxious weeds, non-native trees/vegetation that threaten native species growth or reintroduction, or any other tree/vegetation that is a threat to the public health or safety.

**4-2009 Permitted Reductions in Protected Corridor Width.** Where the Protected Corridor on a specific property includes a 50-foot Management Buffer as established by Section 4-2005(A)(1)(a) above, the Town Zoning Administrator, upon the recommendation of the Town Engineer, may approve a reduction of or elimination of the 50-foot Management Buffer in the following circumstances :

- (A) **Demonstration of No Adverse Impact.** If the applicant can demonstrate that the existing floodplain is of sufficient size and quality so as to protect water quality and meet other purposes set forth in Section 4-2001 and that reduction of the Management Buffer will not adversely impact other RSCOD elements, or
- (B) **Economic Use of Property.** If the area of the property to be developed that is outside the Protected Corridor, including the 50-foot Management Buffer, is insufficient to accommodate the density or intensity of development allowed in the underlying zoning district, provided that:
  - (1) The applicant shall mitigate any adverse environmental impacts the reduction or elimination may have on primary conservation areas located on- or off-site as identified through the conservation design, process in Section 6-2000, if applicable.
  - (2) Any reduction shall be the minimum necessary to achieve a reasonable buildable area for a principal structure and necessary utilities.

