

## Chapter 4 - BEST MANAGEMENT PRACTICE STANDARDS

### **BUFFER ZONE**

(Permanent Practice)

#### **Definition**

A natural, undisturbed strip or "green belt" surrounding a development or land disturbance activity or bordering a stream or permanent water body.

#### **Purpose**

To improve water quality by filtering runoff to remove sediment and associated insoluble contaminants, to allow increased infiltration opportunity time for soluble nutrients or pesticides to drain into the soil, to provide shade to watercourses to help maintain temperature norms of the water thereby protecting or providing habitat for aquatic life, and to provide sound barrier to or from outside areas (roads, factories, parks).

#### **Conditions Where Practice Applies**

Practice applies to all land disturbance activities, especially those adjacent to a perennial stream or permanent water body.

#### **Planning Considerations**

Buffer zones will vary depending upon location and application. Separate criteria will apply for various forms of land disturbing activities: 1) activities adjacent to a perennial stream or permanent water body, 2) silvicultural operations, 3) construction or other land disturbing activities, 4) agricultural activities.

#### **Design Criteria**

1. General: Runoff from the disturbed areas should not be channeled into the buffer zone but rather be allowed to spread out over entire buffer zone length. For concentrated flows, a level spreader may be required to allow for the proper functioning of the buffer zone.

Where a natural buffer zone is not available, or the required zone width is not attainable, provide flow barriers (diversions, sediment traps, vegetative planting, silt fences, etc.) as needed.

2. Activities Adjacent to a Perennial Stream or Permanent Water Body: This represents the most stringent requirement that applies to buffer zones. As a minimum, a 1501 buffer zone will be left between the land disturbance activity and a water body. The buffer zone width may be greater than 1501 depending upon the soil type and slope of adjacent land. Table 4-100 provides guidance for values greater than the minimum.

Table 4-100 Buffer zones adjacent to permanent water bodies.

Erosion Hazard of Soil 1/	Recommended Buffer Zone Width in feet 2/ (% Slope)		
	30	40	50
Slight			155
Moderate		170	200
Severe	170	210	250

1/ Refer to county soil survey for erosion hazard.

2/ Double these distances for disturbed areas in municipal water supply watersheds. (Source: Mississippi's BMPs Handbook, Mississippi Forestry Commission)

3. Silvicultural Operations: Buffer zone requirements will adhere to the guidance provided by the Mississippi Forestry Commission (MFC) for silvicultural Best Management Practices including Streamside Management Zone and Filter Strip. For areas not adjacent to a permanent water body, a buffer zone of 151 will be maintained on the perimeter of all silvicultural operations adjacent to property boundaries and public rights-of-way.
4. Construction or Other Land Disturbing Activities: For areas not adjacent to a permanent water body, a buffer zone of 151 will be maintained on the perimeter of the construction site. This buffer zone will: a) reduce runoff velocities, b) filter sediment from runoff, c) act as a screen for "vision pollution," d) reduce construction and adjacent noise levels, e) reduce dust problems, and f) improve aesthetics of the area.

The buffer zone may be crossed by construction entrances, utilities construction, etc., but where natural vegetation is removed for these purposes, artificial buffer zone measures should be installed (e.g., construction entrance BMP, silt fence, diversion, etc.).

These buffer zones should be incorporated into the design of the final post-construction landscape providing a permanent green strip on the perimeter of the completed project.

5. Agricultural Activities: Buffer zone design for agricultural activities should adhere to Soil Conservation Service practice standards for either "Field Borders" or "Filter Strips" depending upon the nature of the land slope and field boundary.

## **Maintenance**

Buffer zones by their nature require little or no maintenance. Where buffer zones are utilized for construction activities, consideration should be given to appearance, ease of maintenance, appropriate species of vegetation, etc. The natural buffer zone may be reworked and replanted as part of the final landscape activities of a construction contract. Use of chemicals adjacent to the buffer zone must be applied in such a manner so as not to adversely affect the benefits of the buffer zone.

## **Plans and Specifications**

No formal designs or plans are required except in the case of activities adjacent to a permanent water body in which case a description of the water body, slope of adjacent land, and erodibility of soils in the area will be provided to support buffer zone width selection. If an artificial buffer zone is required, pertinent design information will be provided.