OKR10 Requirements for When to Use Buffers and Sediment Basins

INCOG Presentation to GCSA

Mohawk Education Building

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Buffers: Overview

- Must be used under certain circumstances, dealing with special water quality protection situations, such as ARC, ORW, etc.
- Buffer requirements are in numerous places in OKR10.
- Two types: 50' and 100' "natural" buffers.
- Purpose is to provide a vegetated area from the waterbody's edge upland towards the site that will act as a pollutant filter.
- Addendum I provides guidance on employing buffers, and describes alternatives when natural buffers are not possible.

Types of Streams Determine Buffer Size

Perennial

- *Flows year-round.*

Intermittent

- *Flows periodically/seasonally when there is enough water from various sources.*

Ephemeral

- *Exist for short periods of time, usually during a rainy period.*
- *No refuge pools to sustain aquatic community.*
- *May not have defined channels when they are dry.*

Buffers: Three Alternative Situations

Alternative 1: Full buffer is possible. Provide and maintain a 50/100-foot natural buffer.

Alternative 2: Partial buffer is possible. Provide and maintain < 50/100-foot buffer, and install additional erosion and sediment controls per Addendum I.

Alternative 3: No buffer is possible. Implement equivalent erosion and sediment controls to achieve the same sediment load reduction as provided by a 50/100 foot natural buffer if natural buffer of any size is infeasible per Addendum I.

When Should Buffers Be Used

1. Protection of surface waters (Waters of the State). *3.3.1.A.
2. Discharges to ORW or ARC. *3.5.2.A.
3. ≥ 5 acres disturbance by ORW/ARC where sediment basins or equivalent controls are not attainable. *3.5.2.B.
4. ≥ 10 acres disturbance not by ORW/ARC where sediment basins or equivalent controls are not attainable. *4.5.11.A.3.a.
5. < 10 acres disturbance for all down slope boundaries. *4.5.11.A.3.b.
6. Protect Endangered or Threatened species in ARC, use vegetated buffer zones. *11.2.Step2.A.2.

1. Protect Surface Waters

3.3.1.A

- "if any waters of the State are located on or immediately adjacent to your site…"
- "maintain at least 50 feet of natural buffer zone…"
- "unless 100 feet… is required by Part 1.3.2.E."
- Refer to Addendum I if there is only a partial 50 foot natural buffer.
- No need to comply with this part if there is no natural buffer at start of project planning due to pre-existing disturbances.
- Locate stockpiles of sediment or soil outside of natural buffers established under 1.3.2.E or 3.3.1.A…

2. Discharges to ORW or ARC

3.5.2.A

- 3.5.2 "if you discharge to… [ORW] or are within… [ARC]" and you are relying on Part 1.3.2.E.2. option b (located in ARC + SWP3 has BMPs)
- 3.5.2.A "if an ORW or ARC is located on or immediately adjacent to your site…"
- 100 foot buffer is retained or established for perennial or intermittent streams.
- 50 foot buffer is retained or established for ephemeral streams.
- If a buffer is impossible, "…you must provide equivalent controls."
- Use Addendum I to determine appropriate equivalent controls if a full buffer width cannot be maintained.

3. ≥ 5 Acres Disturbance by ORW or ARC

3.5.2.B

- 3.5.2 "if you discharge to… [ORW] or are within… [ARC]" and you are relying on Part 1.3.2.E.2. option b (located in ARC + SWP3 has BMPs)
- 3.5.2.B "to minimize sediment discharges within the areas of the [ORW] or [ARC]."
- A "…sediment basin and/or sediment traps shall be used…"
- The sediment basin should provide runoff storage for a 2-year, 24-hour storm event (or 3,600 cubic feet of storage) drained from each disturbed acre, or equivalent control measures used.
- When neither sediment basins or equivalent controls are attainable, use smaller sediment basins, sediment traps, silt fences, vegetative buffer strips, or equivalent sediment controls for all down slope boundaries… and for side-slope boundaries deemed appropriate.

4. ≥ 10 Acres Disturbance Not by ORW / ARC

4.5.11.A.3.a

- Pertains to ≥ 10 acre sites not having adjacent ORW / ARC.
- A "sediment basin… shall be provided… until final stabilization"
- The sediment basin should provide runoff storage for a 2-year, 24-hour storm event (or 3,600 cubic feet of storage) drained from each disturbed acre, or equivalent control measures used.
- When neither sediment basins or equivalent controls are attainable, use smaller sediment basins, sediment traps, silt fences, vegetative buffer strips, or equivalent sediment controls for all down slope boundaries… and for side-slope boundaries deemed appropriate.

5. < 10 Acres Disturbance Not by ORW / ARC

4.5.11.A.3.b

- Pertains to < 10 acre sites not having adjacent ORW / ARC.
- "…smaller sediment basins and/or sediment traps should be used."
- Silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries… and for side-slope boundaries deemed appropriate, unless...
- (unless) a sediment basin is provided for runoff storage for a 2-year, 24-hour storm event (or 3,600 cubic feet of storage) drained from each disturbed acre.

6. Protected Species in ARC

11.2.Step2.A.2

- Step 1: if site is located within [ARC]
- Step 2.A.2: If "…on or adjacent to the construction site"
- 100 foot buffer is retained or established for perennial or intermittent streams.
- 50 foot buffer is retained or established for ephemeral streams.
- Use Addendum I to determine appropriate equivalent sediment controls if a full buffer width cannot be maintained.
- Buffer must be maintained, and no construction can take place within the buffer.
- "All discharges through the buffer must be non-channelized…, and must first be treated by the site's sediment and erosion controls"

OKR10 Sediment Basin Requirements

Part 3: Special Conditions and Effluent Limitations.

Part 3.3: Non-Numeric Technology-Based Effluent Limitations.

Part 3.3.1: Erosion and Sediment Control Requirements.

Part 3.3.1.K: Sediment Basins.

Part 3.5.2: Discharges to waters identified as an Outstanding Resource Water (ORW) or Aquatic Resource of Concern (ARC)

OKR10 Sediment Basin Requirements

Part 4: Pollution Prevention Plans (SWP3).

Part 4.5: Contents of Plan.

Part 4.5.11: Controls to Reduce Pollutants.

Part 4.5.11.A: Stormwater Control Measures.

Part 4.5.11.A.3: Structural Practices.

OKR10 Sediment Basin Requirements

Part 3.3.1.K: Sediment Basins: If you install a sediment basin, you must comply with the following:

1. Design requirements. Provide storage for either the calculated volume of runoff from a 2-year, 24-hour storm, or 3,600 cubic feet per acre drained;

2. When discharging from the sediment basin, utilize outlet structures that withdraw water from the surface in order to minimize the discharge of pollutants, unless infeasible;

3. Prevent erosion of the sediment basin using stabilization controls (e.g., erosion control blankets), and the inlet/outlet using erosion controls and velocity dissipation devices; and

4. Sediment basins must be situated outside of surface waters and any natural buffers established under Parts 1.3.2.E and 3.3.1.A.

OKR10 Sediment Basin Requirements

Part 3.5.2: Discharges to [ARC and ORW]:

B. For drainage locations serving **five (5)** or more acres disturbed at one time, a temporary (or permanent) sediment basin and/or sediment traps shall be used to minimize sediment discharges within the areas of the Outstanding Resource Waters or Aquatic Resources of Concern…

A temporary (or permanent) sediment basin that provides storage for a calculated volume of runoff from a 2 year, 24 hour storm from each disturbed acre drained, or equivalent control measures, shall be provided where attainable until final stabilization of the site. Where no such calculation has been performed, a temporary (or permanent) sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent control measures, shall be provided where attainable until final stabilization of the site. [There are additional siting requirements]

OKR10 Sediment Basin Requirements

Part 4.5.11.A.3: Structural Practices:

a. For common drainage locations that serve an area with **ten (10) or more acres** disturbed at one time (or **5 acres** if required by Part 3.5.2), a temporary (or permanent) sediment basin that provides storage for a calculated volume of runoff from a 2 year, 24 hour storm from each disturbed acre drained, or equivalent control measures, shall be provided where attainable until final stabilization of the site. Where no such calculation has been performed, a temporary (or permanent) sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent control measures, shall be provided where attainable until final stabilization of the site. [There are additional siting requirements]

b. For drainage locations serving **less than 10 acres**, smaller sediment basins and/or sediment traps should be used. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries… [There are additional requirements]