3.3.3.3 Sensitive Areas

Source: TNWRRC

Definition and Purpose

Sensitive areas require protection from construction activities such as clearing, grading, mowing, staging activities, materials storage, and other related activities. Identify such areas with high visibility markings, flags, or fencing to make them known to all personnel.

Appropriate Applications

Features considered to be sensitive need to be identified. Sensitive areas can include tree preservation areas, streams, wetlands, endangered or protected species and/or habitats, water quality buffers, mitigation or stream relocation boundaries, sinkholes, stormwater treatment areas, caves, cemeteries, and historic preservation areas.

Limitations and Maintenance

Boundary markers or high visibility fencing must be maintained throughout construction. Markers that have been damaged, removed or degraded to the point that they are no longer visible require replacement. At the end of construction remove all markers unless a regulatory authority has required them to be left in place.

Planning and Design Criteria

Any sensitive area within the project boundaries are to be identified in the SWPPP and on the EPSC plans. It is the responsibility of the design professional to clearly label all areas on the plans and specify the type of marking materials to be used. Mark all sensitive features in the field accordingly. If these areas are disturbed, additional site design components may be needed to meet local or state requirements.

Sensitive areas that require markings and protection include:

- Streams and wetland buffers;
- Permitted Impact;
    - If the ARAP allows a specific area of stream or wetland encroachment, clearly marking these boundaries in the field aids in maintaining compliance with the ARAP conditions.
- Stream mitigation or relocation boundaries;
    - It is likely that a two-step field marking process is necessary for stream relocations and/or mitigation. The first boundary should identify the permitted impacts to the natural resource and should occur before work in the area. Once the relocation or mitigation has been installed and stabilized, these areas should be marked to show the outer limits and prevent disturbance or damage to vegetation.
- Sinkholes;
    - Sinkhole basins should be protected from sediment from construction sites by using appropriate erosion prevention and sediment controls upgradient from the basin. Leaving sinkhole basins undisturbed provides additional protection. It should be noted that discharges to sinkholes may require an underground injection control permit (Chapter 1.3.2).
- Areas to remain undisturbed;
    - Often, undisturbed open space requirements are established and enforced by the local jurisdiction. The amount of undisturbed open space per development is typically a percentage of the development. Disturbing these areas can lead to additional development restrictions or mitigation requirements. In addition, disturbed areas increase the required capacity of sediment control. Disturbing areas of land that were intended to be left undisturbed may result in overwhelming sediment controls and potential violations.
- Threatened and/or endangered species habitat; and
    - Critical habitat for threatened or endangered species should be protected from land disturbing activities. These areas should be clearly identified on the plans and in the field to prevent inadvertent disturbance or encroachment.
- Stormwater management areas.

- Land-disturbing activities destroy the infiltration capacity of soils by changing the soil structure, compacting the soils, and subjecting soil organic matter to a more rapid decay process. Many stormwater management practices, such as bioretention areas and water quality swales, rely on the soil infiltration capacity. When the infiltration capacity of the in-situ soils is substantially altered, the area may no longer be suitable for permanent stormwater management controls.

Many types of boundary markers are available. Flags, stakes, posts or fencing can be used as field boundary markers. Any marker must be highly visible and installed along the outer perimeter of the boundaries of the protected feature. Bright colors and highly distinguishable marking materials, such as orange fencing, neon or brightly colored flags, or highly visible signage, are the best for construction. Some markers will be temporary (such as ARAP permit boundaries) while others may be more permanent (such as permanent buffer zones). The decision about the type of marker to be used at the site may in part be dictated by the lifespan of the feature being marked.

Example Application

No formal design or quantities are required for this measure and therefore are not presented here.

References

None.