

DIVISION 6: EROSION CONTROL

6.1 EROSION CONTROL

A. GENERAL

1. The Standards established by this chapter are intended to represent the minimum Design Standards for land altering activities such as clearing, grading, and erosion control work. Compliance with these Design Standards does not relieve the designer of the responsibility to apply sound professional judgment to protect the health, safety, and welfare of the general public. Additionally, since these are minimum standards, special site conditions and environmental constraints may require a greater level of protection than would normally be required under these Design Standards. The designer must apply these Design Standards bearing in mind these constraints.
2. This section supplements the OSSC Standard Specifications
3. Conditions may change after land altering activities, or construction has started due to unforeseen conditions. Design elements of the proposed project may have to be changed to comply with the conditions of any permits, codes and regulations, or these Design Standards.
4. The primary objective of this chapter is the control of erosion at its source as a means of controlling water pollution, flooding, and habitat damage downstream. Typical examples of techniques for source control are limiting cleared areas, especially on steep terrain or adjacent to other sensitive areas; seasonal limits on work; mulching, hydroseeding or covering cleared areas as soon as work has finished; control of land use in sensitive areas; and establishment and maintenance of setbacks and buffer areas.
5. Secondary containment measures must be provided to back up the above measures in case of failure. These backup measures include desilting ponds and sediment traps, filter fencing and straw bales, catch basin filtration, and management plans. Both source control and containment measures are mandatory to protect property, lives, and habitat.
6. Land alteration activities include those activities which are commonly referred to as:
 - a. Clearing: the act of vegetation removal from the land surface by mechanical or chemical means – often referred to as land clearing.
 - b. Grubbing: the act of root vegetation removal from beneath the surface of the earth - usually in association with clearing.
 - c. Excavation: the mechanical removal of earth material.
 - d. Filling: deposition of earth material placed by artificial means.
 - e. Grading: excavation or filling or combination thereof.
 - f. Compaction: densification of earth material by artificial means.
 - g. Stockpiling: temporary deposition of earth material placed by artificial means.
 - h. Stabilizing: counteracting the actions of gravity, wind, or water.

B. SEASONAL LIMITS

1. Land alteration activities shall be limited by the seasonal limitations specified below:
 - a. When land alteration activities are interrupted by heavy rain, operations shall not be resumed until the City determines that erosion control facilities are operating satisfactorily;
 - b. Work shall be stopped and the site shall be secured from erosion at any time when weather conditions change or the threat of heavy rain makes erosion problems likely, as determined by the City; from October 1st through April 30th, no soils shall remain exposed for more than two days. From May 1st through September 30th, no soils shall remain exposed for more than seven days; and
 - c. No earthwork shall take place on slopes in excess of 25% between the dates of October 1st and May 1st. This period may be shortened or extended by the City.

C. PRESERVATION OF EXISTING VEGETATION

1. Existing vegetation shall be preserved whenever possible.
2. All excavations and fills in the proximity of trees and shrubs shall be kept outside the dripline of said trees and shrubs. The dripline of said trees and shrubs shall be clearly marked with orange construction fencing.

D. TEMPORARY EROSION/SEDIMENTATION CONTROL

1. Prior to any land alteration activity, devices for interception of all runoff from the cleared area shall be installed. Said interception shall preclude discharging silt-laden runoff from the proposed land development to downstream properties to the maximum extent possible with the best available technology. Said interception shall cause all silt-laden runoff to be conveyed by open swale or other means to whatever temporary facility is necessary or required to remove silt from said runoff prior to discharge to downstream properties. Sequence of work shall be specified on the plans.
2. Care shall be taken so as to deposit no material from sites of land alteration activity onto public rights-of-way and/or adjoining properties. If such depositions occur, it shall be the responsibility of the contractor to immediately remove such material and restore to the original conditions.
3. Since site conditions may change rapidly during construction due to construction activity, weather, and other factors, it should be anticipated that the approved erosion control measures might become ineffective. Under special conditions, additional measures may be required by the City Engineer, in order to control erosion and sedimentation.
4. The types of erosion and sedimentation controls as outlined in the Oregon DEQ (Erosion and Sediment Control Manual) shall be utilized in such combination as is necessary to achieve the level of erosion control required by these Design Standards and meet water quality objectives. Erosion control facilities shall be periodically inspected and maintenance performed in order to ensure their proper functioning as required by the approved erosion and sedimentation control management plan.

5. All developments shall implement erosion control plan(s) as required by the following:
- a. BMPs. BMPs shall be selected, designed, and maintained in accordance with the Oregon DEQ (Erosion and Sediment Control Manual). Outlet protection shall also include energy dissipation structures or devices that retard peak flows to non-erosive conditions.
 - b. Access. Construction vehicle access shall be limited, wherever possible, to only one (1) route. Access points shall be stabilized with 2- to 4-inch diameter gravel to minimize tracking of sediment (mud) onto public roads. Evidence of tracking of material from a construction site may require construction activities to cease until corrections are made. Vehicles not performing a construction activity shall not be permitted off-street. Worker personal vehicles shall be parked on adjacent streets or other approved areas.
 - c. Roadways. If sediment is transported onto a road surface, the roads shall be cleaned thoroughly at the end of the workday, or more often if necessary. Significant soil deposits shall be removed from roads by shoveling or sweeping. Street washing, which must be approved by the City Engineer, shall be allowed only after sediment is removed in this manner. Prior to washing, all inlets and down-stream facilities must be protected.
 - d. Clearing limits. At the site, clearly mark all clearing limits and/or any easements, setbacks, sensitive/critical areas and their buffers, trees, and drainage courses.
 - e. Exposed soils. All exposed and un-worked soils shall be stabilized by suitable application of BMPs, including but not limited to sod or other vegetation, plastic covering, mulching, or application of ground base on areas to be paved. All BMPs shall be selected, designed, and maintained in accordance with the Oregon DEQ (Erosion And Sediment Control Manual). Construction materials such as lumber shall be delivered and stored on designated locations that are stabilized and protected from erosion.
 - f. Staging. Sediment ponds and traps, perimeter dikes, sediment barriers, and other BMPs intended to trap sediment on-site shall be constructed as a first step in grading. These BMPs shall be stabilized and functional before land alteration activities take place. Earthen structures such as dams, dikes, and diversions shall be seeded and mulched according to the timing noted above.
 - g. Infiltration systems. Permanent infiltration systems shall be isolated and protected from sedimentation by sediment traps, sacrificial systems, duplicate systems, or redundant systems.
 - h. Waterways. Properties and waterways downstream from development sites shall be protected from erosion due to increases in the volume, velocity, and peak flow rate of stormwater runoff from the project site. Acceptable BMPs include temporary or permanent detention ponds and temporary infiltration BMPs limiting the discharge from a 2-year storm to one-half the pre-development 2-year storm peak runoff rate.

- i. Water bodies and adjacent properties. Water bodies and adjacent properties shall be protected from sediment deposition by appropriate use of vegetative buffer strips, sediment barriers or filters, dikes, mulching, or by a combination of these measures and other appropriate BMPs. Each owner, builder, or permit holder shall install and maintain inlet protection on storm drain inlets impacted from construction activity on their site.
- j. Conveyance systems. All temporary on-site conveyance channels shall be designed, constructed, and stabilized to prevent erosion from the expected velocity of flow from a 2-year, 24-hour frequency storm for the developed condition. Stabilization adequate to prevent erosion of outlets, adjacent stream banks, slopes, and downstream reaches shall be provided at the outlets of all conveyance systems.
- k. Storm inlets. All storm drain inlets shall be protected so that stormwater runoff shall not enter the conveyance system without first being filtered or otherwise treated to remove sediment. BMPs shall be selected, designed, and maintained in accordance with the Oregon DEQ (Erosion and Sediment Control Manual).
- l. Storm outfalls. All storm outfalls will be designed to prevent scouring at the outfall discharge and provide velocity reduction prior to discharge to the receiving channel. All outfalls shall be provided with a rock splash pad or other approved erosion control measure according to the Oregon DEQ (Erosion and Sediment Control Manual).
- m. Maintenance. All erosion and sediment control BMPs shall be inspected, maintained, and repaired as needed to ensure continued performance of their intended function. Maintenance and repair shall be conducted in accordance with the bmp manual or approved site plan. Damaged BMPs shall be replaced or repaired.
- n. Underground Utility Construction. The construction of underground utility lines shall be subject to the following criteria:
 - i. Where feasible, no more than 500 feet of trench shall be opened at one time.
 - ii. Excavated material shall be placed to minimize runoff into the trench and adjacent roadway consistent with safety and space considerations.
 - iii. Trench dewatering devices shall discharge into a sediment trap or sediment pond.
 - iv. BMPs shall be used to control erosion during and after construction.
 - o. Construction Site Dewatering. Dewatering devices shall discharge into a sediment trap or sediment pond.
 - p. Control of pollutants other than sediment on construction sites. All pollutants other than sediment that occur on-site during development shall be handled and disposed of in a manner that does not cause contamination of stormwater.
- 6. Removal of temporary BMPS. All temporary erosion and sediment control BMPs shall be removed within 30 days after final site stabilization is achieved or after the temporary BMPs are no longer needed. Trapped sediment shall be removed or stabilized on-site. Disturbed soil areas resulting from removal shall be permanently stabilized.

E. PERMANENT EROSION CONTROL AND VEGETATION RESTORATION

1. Permanent erosion control shall be required per the requirements of the Oregon DEQ (Erosion and Sediment Control Manual).
2. Vegetation shall be restored on those areas of the site disturbed by the land alteration activity which are not covered by permanent impervious surface improvements (i.e. buildings, parking lots, etc.) At the earliest possible time consistent with appropriate planting times. The soil shall be stabilized prior to vegetation restoration since vegetation alone cannot provide an effective erosion control cover and prevent soil slippage on a soil that is not stable due to its texture, structure, water movement, or excessive slope.
3. In no case will the period between the land alteration activity and final and complete restorative, or permanent erosion control, vegetation planting for a given project or project phase be longer than one year. Said planting shall restore the vegetation on site to a condition equal to or better than the pre-development condition to the maximum extent possible. Temporary erosion and sedimentation control measures shall be maintained in full operating condition for all areas to be restored until said restoration is complete and the site fully stabilized.

F. 100-YEAR FLOOD PLAIN

1. Encroachments, including fill, new construction, substantial improvements, and other development within the regulatory floodway that would result in any increase in flood levels during the occurrence of the 100-year flood discharge shall be prohibited.
2. Delineation of the 100-year flood plain shall be in accordance with the elevations established by the u.s. geological survey's flood insurance study (latest published edition) for the u.s. department of housing and urban development.

G. LAND ALTERATION ACTIVITIES ON ENVIRONMENTALLY SENSITIVE LANDS

1. Land alteration activities shall be prohibited in environmentally sensitive areas, unless otherwise approved.

H. ENVIRONMENTAL PROTECTION DURING CONSTRUCTION

1. GENERAL POLICY AND REQUIREMENTS

- a. It is the policy of the City of Dundee to require temporary and permanent measures for all construction projects to lessen the adverse effects of construction on the environment. The contractor shall properly install, operate, and maintain both temporary and permanent works as provided in this section to protect the environment during the term of the project.
- b. The City may, in addition, require that a construction project be scheduled so as to minimize erosion or other environmental harm.
- c. Nothing in this section shall relieve any person from the obligation to comply with the regulations or permits of any federal, state, or other local authority.

2. For all projects, the prohibitions and regulations of this section shall apply. The City Engineer may temporarily suspend the work or require additional protection measures if it appears, based upon observed conditions of the project, that the current measures are insufficient to prevent environmental harm and that such suspension or additional measures will prevent or minimize such harm.

3. AIR POLLUTION CONTROL

a. Dust shall be minimized to the extent practicable, utilizing all measures necessary, including but not limited to:

- i. Sprinkling haul and access roads and other exposed dust-producing areas with water. Obtaining water from a hydrant will require specific authorization from the applicable water jurisdiction.
- ii. Applying DEQ-approved dust palliatives on access and haul roads.
- iii. Establishing temporary vegetative cover.
- iv. Placing wood chips or other effective mulches on vehicle and pedestrian use areas.
- v. Maintaining the proper moisture condition on all fill surfaces.
- vi. Pre-wetting cut and borrow area surfaces.
- vii. Use of covered haul equipment.

b. Fumes, smoke, and odors.

- i. Tires, oils, paints, asphalts, coated metals, or other such materials will not be permitted in combustible waste piles, and will not be burned at the construction site. They will be removed from the site in accordance with DEQ rules and regulations as they are no longer deemed necessary for use in the construction process.
- ii. Open burning shall not be permitted unless approved by the Dundee Fire Department, and shall be subject to the following requirements.
 - 1) Open burning shall not be permitted within 1,000 feet of a structure or within 250 feet of the drip line of any standing timber or flammable growth.
 - 2) Open burning shall not be permitted during a local air inversion or other climatic conditions that may result in a smoke pall hanging over a built-up area or community.
 - 3) Open burning shall not be permitted when climatic and moisture conditions are contributing to high danger of forest or range fires as determined by City, State, or Federal authorities.
 - 4) All open burning shall be constantly attended by a crew with a supply of firefighting tools and equipment. The number and size of fires shall be limited to such that the attendant crew can adequately control them.

4. MAINTAINING SURFACE WATER QUALITY

- a. Construction between stream banks shall be kept to a minimum.
- b. Pollutants such as fuels, lubricants, bitumen's, raw sewage, and other harmful materials shall not be discharged into the public storm drainage system or near rivers, streams, or impoundments.
- c. Sterilizing water from water line construction activities shall not be directly discharged into the public storm drainage system.
- d. The use of water from a stream or impoundment shall not result in altering the temperature of the water body enough to affect aquatic life.

5. FISH AND WILDLIFE HABITAT PRESERVATION

- a. The construction shall be done in a manner to minimize the adverse effects on wildlife and fishery resources.
- b. The requirements of local, state, and federal agencies charged with wildlife and fish protection shall be adhered to by the entire construction work force.

6. CONTROL OF NOISE LEVELS

- a. Construction noise shall be minimized by the use of proper engine mufflers, protective sound reducing enclosures, and other sound barriers. Construction activities producing excessive noise that cannot be reduced by mechanical means shall be restricted to locations where their sound impact is reduced to a minimum at the edge of the work area. All construction noise shall be in accordance with ORS 467.030 and Dundee Municipal Code Section 8.16.030.

7. NATURAL VEGETATION

- a. As far as is practicable and as required through a land use approval; the natural vegetation shall be protected and left in place. Work areas shall be carefully located and marked to reduce potential damage. Trees shall not be used as anchors for stabilizing working equipment.
- b. During clearing operations, trees shall not be permitted to fall outside the work area. In areas designated for selective cutting or clearing, care in falling and removing trees and brush shall be taken to avoid injuring trees and shrubs to be left in place. All remaining debris from cutting or removing trees is to be removed from the site. The natural grade is to be restored and reseeded.

8. HISTORICAL AND ARCHAEOLOGICAL AREAS

- a. When burial sites, buried camp areas, village sites, and other distinctive archaeological or historical items are uncovered, or other items suspected of being of historical or archaeological significance are encountered, the developer shall report the matter to the City Engineer and the State Historic Preservation officer. Construction operations shall be stopped until the appropriate authorities can examine the area and give clearance to proceed with the work.
- b. Under the Natural Historic Preservation Act, State Historic Preservation Officers shall be notified when historical or archaeological items are unearthed.

9. USE OF PESTICIDES

- a. The use of pesticides including insecticides, herbicides, defoliants, soil sterilants, and so forth, must strictly adhere to federal, state, county, and local restrictions. Time, area, method, and rate of application must be approved by all relevant authorities and their requirements followed.
- b. All materials delivered to the job site shall be covered and protected from the weather. None of the materials shall be exposed during storage. Waste material, rinsing fluids, and other such material shall be disposed of in such a manner that pollution of groundwater, surface water, or the air does not occur. In no case shall toxic materials be dumped into drainage ways.
- c. All personnel shall stay out of sprayed areas for the prescribed time. All such areas should be fenced, appropriately signed, or otherwise protected to restrict entry.

I. CONTRACTOR CERTIFICATION

1. All development activities performed by licensed contractors shall be supervised by an individual who shall have successfully completed formal training in erosion and sediment control during construction by a recognized organization acceptable to the City Engineer. A certification of successful completion of such training shall be submitted at the preconstruction conference. This shall not apply to residential homeowners constructing their own development activity.

J. SITE RESTORATION AND CLEANUP

1. The contractor shall keep the premises clean and orderly at all times during the work and leave the project free of rubbish or excess materials of any kind upon completion of the work. During construction, the contractor shall stockpile excavated materials so as to do the least damage to adjacent lawns, grassed areas, gardens, shrubbery, trees, or fences, regardless of the ownership of these areas. All excavated materials shall be removed from these areas, and these surfaces shall be left in a condition equivalent to their original condition and free from all rocks, gravel, boulders, or other foreign material. Stockpiling of construction materials shall not be allowed on existing public rights-of way.
2. All existing storm systems adjacent to the project area shall be cleaned and flushed with a vacator truck and/or sewer jetter, and original drainage restored. Sediment, rock, and other debris shall be collected and disposed of in a proper manner. In no case shall debris be flushed down a storm or sanitary sewer for disposal. All damaged/impaired storm facilities, irrigation, and house drainage pipes, drain tiles, sewer laterals and culverts shall be repaired expeditiously.
3. All areas disturbed by the contractor's operations inside dedicated rights-of-way or easements shall be restored to original condition. Areas outside of the easements or rights-of-way which are disturbed by the contractor's operations shall be restored to their original or better condition in a method acceptable to the property owner. The contractor shall obtain a written release from such property owners for any claims of injury or property damage prior to final acceptance of the work by the City.

4. STREET CLEANUP

- a. The contractor shall clean all spilled dirt, gravel, or other foreign material caused by the construction operations from all streets and roads at the conclusion of each day's operation. If any spilled material poses an erosion control threat, it shall be cleaned immediately. Cleaning shall be by grader and front-end loader, supplemented by power brushing and hand labor, unless otherwise approved by the City. The contractor shall follow the City's erosion control procedures as detailed in these Design Standards.
- b. As soon as practical after completion of all paving and gravel shoulder resurfacing, the contractor shall remove all dirt, mud, rock, gravel, and other foreign material from the paved surface and storm drainage system.