CHAPTER 9: CONSTRUCTION STORMWATER POLLUTION PREVENTION

The 2005 Ecology Manual provides detailed guidance regarding the plans for stormwater runoff management during construction. That guidance is to be followed in the City of Redmond. Field adjustments, likely to be required as the project construction progresses, must also be consistent with the Stormwater Notebook and the 2005 Ecology Manual.

9.1 Key Points to Address

The following are key points to address when formulating a Stormwater Pollution Prevention Plan (SWPPP) and Temporary Erosion and Sedimentation Control (TESC) Plan in Redmond:

1. Consider Stormwater Pollution Prevention in the "Bigger Picture" of the project.

    A. Review Volume II of the Ecology Manual, particularly the general principles in Section 3.1.4.

    B. Plan the use of the site or adjust critical parts of the site plan (in Critical Areas, for example) to avoid potential issues and problems. As noted in the Rainy-Season Guidelines (Chapter 10 of this document).

    C. Avoid Rainy-Season work, especially on large and/or weather-sensitive sites. The Rainy-Season Guidelines (Chapter 10 of this document) may show that work can be done in the rainy season but enhanced (and more costly) TESC Plans are typically required.

2. Include a list of Key Contacts on the TESC Plan.

    Key Contacts related to preparation, implementation, and operation of the TESC measures shall be included on a plan sheet. For each person include the name, title, role in preparing the plan, and phone number(s). The types of people involved in preparing the plan will typically vary depending on the complexity of the project. For relatively small, straightforward projects, the Key Contact may be just the project's civil engineer. For complex sites and projects the list could include:
    - Project's Civil Engineer
    - Project's lead SWPPP specialist
    - Applicant's Project Manager
    - General Contractor
    - Grading Contractor

3. Include the construction Start-up Sequence on the TESC Plan.

   The construction start-up sequence is a list of actions to be followed, in the order presented, to set up the stormwater pollution prevention measures prior to other construction.

   Initial work in the field needs to follow the sequence on the approved plan, with adjustments to fit field conditions that are approved, in advance, by the City Inspector.

4. Delineate Clearing Limits.

   Clearing limits show the area(s) of the site to be left undisturbed. Staging and stockpile areas are considered to be disturbed so they need to be included as cleared area(s). In all cases, disturbed areas shall be the minimum necessary for construction.

   On the TESC Plan, show the Clearing Limits. If there are key dimensions to use in the field for locating the clearing limits, show the dimensions on the plan. Such dimensions involve buffers, setbacks, geotechnical considerations, and other such factors.

5. Include "Disconnection" of Surface Inflows.

   Runoff from areas upslope of the project's disturbed area(s) must be managed so the upslope runoff does not mix with the disturbed area.

   The basic approach is to: cut off the approaching runoff using lined trenches or barriers (that are erosion-proof); collect that runoff at one or more points (depending on topography and other site circumstances); and convey the water around (or across) the work area (in erosion-proof ditches and/or temporary pipes).

6. Apply all available measures to surface runoff leaving the disturbed area to meet water quality standards.

   Water quality standards include the State Standards and the City Standards. City Standards include the following:
   A. At the outflow point(s) from the treatment system(s), the turbidity standard is 50 NTU, maximum. NTU = Nephelometric Turbidity Unit.
   B. At downstream points of discharge to surface waters, the standard is as follows: runoff from the site is not to cause the turbidity level in the receiving water(s) to increase more than 5 NTU.
   C. At the outflow point(s) from the site, the standard for pH is 6.5, minimum, and 8.5, maximum.

All available measures can include, but are not necessarily limited to, project phasing, advanced erosion and sediment control measures, and delaying all or part of any project work that has not commenced to avoid working during the rainy season.

Unless a larger design storm is specified for a specific project or pollution control method, the minimum design storm for construction phase measures is the 10-year return frequency storm.

7. Surface runoff leaving the disturbed area shall be controlled using all available measures to meet water quantity limits where sensitive downstream conveyance situations exist. For discharge(s) to streams or channels subject to erosion, the standards for construction phase discharge are the same as those specified for permanent stormwater management for the project.

8. The TESC Plan must include provisions for other pollutants that are likely to be present on site during construction.

   The SWPPP must:
   - list other potential pollutants that are likely to be present on site and provide basic instructions for their management and control;
   - list materials and equipment to be onsite to implement the instructions; and
   - list key emergency phone numbers for resource agencies involved in pollution incidents.

   The 2005 Ecology Manual provides additional information about potential problem areas (Volume II, Chapter 4).

9. Include provisions to prevent mud and dirt from being tracked onto off-site streets in the TESC Plan.

   The minimum basic provision for controlling mud and dirt is the temporary quarry spall entry/exit pad. This approach is successful only in limited circumstances.

   A more reliable approach (which may be proposed or required by the City) is a wheel-wash station. At a minimum (unless specifically waived by the City) the TESC Plan must show the standard wheel-wash facility (including site location and related "plumbing") as an optional measure. The City may stipulate that this measure is required. The City Inspector may require immediate implementation of an optional wheel wash if off-site streets become muddy or dirty from the project. Also see 2005 Ecology Manual Volume II, Chapter 4, BMPs C105, C106, and C107.

10. Include provisions to prevent sediment-laden stormwater from draining into areas proposed for infiltration BMPs like infiltration basins or areas designed for low impact development.

11. Include a Minimum Inspection and Maintenance Schedule for all management practices included on the plan.

    The Minimum Inspection and Maintenance Schedule is to be a table or matrix listing the management practices on the left and the inspection and maintenance frequencies across the top. Two types of frequencies need to be specified. One type is the minimum time-related frequency (e.g. once per day, once per week, beginning and end of each work day, etc.) The other type is the event-related frequency (e.g. after each rainfall, after each larger storm rainfall, after each windstorm, etc.).

12. Comply with other federal, state, and city laws and regulations that relate to the construction phase.

    Of primary importance under this title is safety. Safety of the project workers and other personnel, City staff, the neighbors, and other people who could be affected by the work is of paramount concern. The SWPPP should be reviewed by the plan's designers with safety in mind. Extra features (e.g. fencing, signs, walkways, etc.) should be considered.

    Other laws and regulations that typically apply include:
    A. Noise standards (City)
    B. Construction work hours (City)
    C. Dust control (City and the Clean Air Agency)
    D. Rainy-Season Guidelines (City)
    E. A Pre-Construction Meeting with the City prior to starting work (City)

13. Post required Performance Securities prior to starting work.

    The performance securities that are required for a specific project are specified either in the approval conditions for the project or in the requirements for permits that are required for the project.

9.2 CONTENTS OF CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

The 2005 Ecology Manual requires a Construction Stormwater Pollution Prevention Plan (SWPPP) for Medium and Large Projects. A copy of the SWPPP is to be submitted to the City of Redmond. The SWPPP shall follow the outline and include the elements provided in the "Construction Stormwater Pollution Prevention Plan Checklist" at the end of Volume II, Chapter 3 of the 2005 Ecology Manual.

9.3 National Pollutant Discharge Elimination Systems Permit

A permit is required from the Washington State Department of Ecology for all soil disturbing activities (including clearing, grading, and/or excavation) where 1 or more acres will be disturbed, and stormwater will be discharged to a receiving water directly (e.g., wetlands, creeks, unnamed creeks, rivers, marine waters, ditches, estuaries), or to storm drains that discharge to a receiving water. If all stormwater is retained on-site and cannot enter surface waters of the state under any condition, you do not need permit coverage.