

MINIMUM STANDARD CHECKLIST

Yes No NA

- MS-1 Have temporary and permanent stabilization been addressed in the narrative?
 Are practices shown on the plan?
 Seed specifications? yes/no Mulching? yes/no Gravel? yes/no
- MS-2 Has stabilizations of soil stockpiles been addressed in the narrative?
 Are sediment trapping measures provided?
- MS-3 Has maintenance of permanent stabilization been addressed?
- MS-4 Are sediment trapping facilities to be constructed as a first step in LDA?
- MS-5 Has stabilizatio of earthen structures been addressed?
- MS-6 Are sediment basins required where needed?
- MS-7& MS-9 Has stabilization of cut and fill slopes been adequately addressed?
 (i. e. Surface Roughening, Outlet Protection)
- MS-8 Are paved flumes, channels, or slope drains required where necessary?
- MS-10 Is adequate inlet protection required on all operational storm sewer inlets?
- MS-11 Are channel lining and/or outlet protection required on stormwater conveyance channels?
- MS-12 Are in-stream construction measures erquired so that channel damage is minimized?
- MS-13 Are temporary stream crossings of non-erodible material required where applicable?
- MS-14 (NOTE: This regulation requires that all applicable federal, state, and local regulations pertaining to working in or crossing live watercourses be followed.)
- MS-15 Has restabilization of areas subject to in-stream construction been adequately addressed?
- MS-16 Is stabilization of utility trenches addressed?
- MS-17 Is the transport of soil and mud onto public roadways properly controlled? (i. e. Construction Entrances, Wash Racks, daily cleaning of road ways, transport of sediment to a trapping facility)
- MS-18 Has the removal of temporary practices been addressed?
 Has maintenance of practices been addressed? (i. e. repair of structures and removal of accumulated sediment)
- MS-19 Are properties and waterways downstream from from development adequately protected from erosion and sediment deposition due to increases in peak stormwater runoff?

Plan Review Checklist

FOR EROSION AND SEDIMENT CONTROL PLANS

_____ Minimum Standards - All applicable Minimum Standards must be addressed

- All Minimum Standards must be adhered to during the entire project regardless of the phasing
- Request for a Variance should be addressed

NARRATIVE

_____ Project description - Briefly describes the nature and purpose of the land-disturbing activity, and the area (acres) to be disturbed.

- What time of year will the project start and finish? (construction sequence)
- How long will it take to complete the project?
- How many acres will be disturbed for completion of this project?
- How much impervious area will the project have in post-developed conditions?
- What will be the ultimate developed conditions of the site?

_____ Existing site conditions - A description of the existing topography, vegetation and drainage.

- Should list percentages of slope on the site.
- Types of existing vegetation that can be used as erosion control, or areas to be left undisturbed.
- Discuss marking of areas where existing vegetation is to be preserved.
- Discuss size of drainage areas in pre-development and post-development conditions.
- Discuss any existing drainage or erosion problems and how they are to be corrected.
- Discuss orientation of slopes (north or south facing).
- Discuss how existing site conditions can be used to reduce the potential for erosion and how proposed E&S controls will be designed to "fit" the site.
- Photographs?

_____ Adjacent areas - A description of neighboring areas such as streams, lakes, residential areas, roads, etc., which might be affected by the land disturbance.

- The potential for off-site damages must be considered and discussed
- ANY environmentally sensitive areas should be mentioned
- Other private or public lands adjacent to the site should be described and considered for possible problems during and after construction (traffic problems, dust control, increases in runoff etc...)
- Discuss perimeter controls to be used.

_____ Off-site areas - Describe any off-site land-disturbing activities that will occur (including borrow sites, waste or surplus areas, etc.). Will any other areas be disturbed?

- Any off-site borrow or spoil areas should have an approved plan to supplement the overall project plan.
- If off-site areas are under other permits, proof of permits should be provided.
- List specific locations of all off-site areas
- Discuss who will be responsible for final stabilization and maintenance of off-site areas.

_____ Soils - A brief description of the soils on the site giving such information as soil name, mapping unit, erodibility, permeability, depth, texture and soil structure.

- Indicate references for soil information
- Provide a copy of soil survey map
- Indicate what sheet of site plan soils are delineated
- Check for soils with a high K factor, or poor drainage, low pH etc...

_____ Critical areas - A description of areas on the site which have potentially serious erosion problems (e.g., steep slopes, channels, wet areas, streams, underground springs, etc.).

- Discuss any area of the project which may become critical during the project. Some areas of the site may have long or steep slopes during a certain phase of the grading.
- Indicate areas to be left alone until they can be graded and stabilized in favorable conditions.
- Discuss precautions to communicate limits of these areas to contractors and equipment operators.

_____ Erosion and sediment control measures - A description of the methods which will be used to control erosion and sedimentation on the site. (Controls should meet the specifications in Chapter 3.)

- List all controls used, list specification numbers (3.02) location of practice.
- Discuss why it was selected.
- Sequence of installation, maintenance and removal for each control.
- Discuss temporary seeding as a means of erosion control, list the types to be used

_____ Permanent stabilization - A brief description, including specifications, of how the site will be stabilized after construction is completed.

- Final stabilization needs careful review.
- Is the timing of seeding correct with the construction sequence?
- List soil testing requirements
- Provide seeding specifications (pure live seed minimums), fertilizer and liming specifications. Seeding tables and rates.
- Is the type of permanent vegetation appropriate for the site?
- Discuss all other areas to be stabilized other than vegetation (gravel, paved etc...)

_____ Stormwater runoff considerations - Will the developed site cause an increase in peak runoff rates? Will the increase in runoff cause flooding or channel degradation downstream? Describe the strategy to control stormwater runoff.

- Discuss how downstream properties and waterways will be protected (basins, channel improvements, easements)
- Discuss how increased runoff will be managed during construction
- List or discuss all other references for design of permanent facilities.

_____ Calculations - Detailed calculations for the design of temporary sediment basins, permanent stormwater detention basins, diversions, channels, etc. Include calculations for pre- and post-development runoff.

- All calculations showing pre-development and post-development runoff should be provided. Worksheets, assumptions and engineering decisions should be clearly presented to assist the plan reviewer in his or her duties.
- Calculation methods should be clearly presented and organized.
- Have the calculations shown that adequate protection of down-stream properties and waterways are protected?

_____ Maintenance - A schedule of maintenance for permanent stormwater control measure should be provided.

- Should list who is responsible during construction and who will be responsible once the project is complete
- Should provide a schedule of inspections to be conducted
- List maintenance items to check and perform as well as precautions for large storm events

Checklist (continued)
E&S Plan

- _____ **Vicinity map** - A small map locating the site in relation to the surrounding area. Include any landmarks which might assist in locating the site.
 - Provide a reproduction of a topo map, road map etc...

- _____ **Indicate north** - The direction of north in relation to the site.
 - Useful tool for determining slope orientation
 - Useful for communicating written inspection reports and plan review comments
 - Useful in predicting areas off-site that might be effected by dust drift

- _____ **Limits of clearing and grading** - Areas which are to be cleared and graded.
 - Show all areas to be disturbed on the site plan
 - Provide notes on how areas will be marked
 - Provide notes and illustrations to clearly indicate areas NOT to be disturbed

- _____ **Existing contours** - The existing contours of the site.
 - Should be shown as dashed light lines in intervals from 1 to 5 feet.
 - Represent pre-developed drainage areas (check these areas for accuracy)
 - Show potential critical areas (slopes)
 - Helps to determine cut or fill areas, low spots
 - Helps to determine if E&S controls have been designed properly

- _____ **Final contours** - Changes to the existing contours, including final drainage patterns.
 - Should be shown as heavy solid lines
 - Determines final drainage areas
 - Check to see if pre-developed drainage areas have increased
 - Check final grade of slopes to see if they will become critical (may need diversions or flumes)
 - Check vegetative specifications for final grade of slopes (low or high maintenance). Are erosion controls blankets needed?

- _____ **Existing vegetation** - The existing tree lines, grassed areas, or unique vegetation.
 - Clearly indicate existing tree lines, vegetation areas to remain
 - Provide notes on the plan for areas to be undisturbed

- _____ **Soils** - The boundaries of different soil types.
 - Indicate soil boundaries of all soil types on the site. List K factor and soil survey classifications.
 - Provide notes of soil properties (texture, etc...).

- _____ **Existing drainage patterns** - The dividing lines and the direction of flow for the different drainage areas. Include the size (acreage) of each drainage area.
 - Should be indicated by acres and show the direction of flow for all existing drainage areas.
 - Indicates the need for basins, traps or other structural measures
 - Helps to determine if controls are designed correctly
 - Helps to determine if off-site drainage needs to be diverted
 - Useful in planning to break up drainage areas into smaller more manageable areas during construction

Critical erosion areas - Areas with potentially serious erosion problems.

- All critical, environmentally sensitive or prohibited areas should be denoted on the plan and notes provided to state reasons for critical nature
- Stream considerations; temporary crossings, other permits, location of stock piles, trash & debris removal, fuel storage, etc...

Site Development - Show all improvements such as buildings, parking lots, access roads, utility construction, etc.

- All improvements such as building, roads, temporary access roads, right-of-ways and temporary easements should be shown on the plan.
- Utility improvements on and off-site should be shown.

Location of practices - The locations of erosion and sediment controls and stormwater management practices used on the site. Use the standard symbols and abbreviations in Chapter 3 of the VESC handbook.

- The exact location of all practices including vegetation should be clearly shown on the plan.
- A legend denoting symbols, line uses and other special characters should be provided

Off-site areas - Identify any off-site land-disturbing activities (e.g., borrow sites, waste areas, etc.). Show location of erosion controls. (Is there sufficient information to assure adequate protection and stabilization?)

- Are separate plans required for off-site borrow or disposal areas?
- How will off-site areas be stabilized?
- Are there any temporary easements to be disturbed during construction?
- Who has final responsibility for off-site areas?

Detail drawings - Any structural practices used that are not referenced to the E&S handbook or local handbooks should be explained and illustrated with detail drawings.

- Details should be provided which are clearly dimensioned and reflected the ability to be "built" in the field according to the proper design criteria.
- Alternative E&S measures must have proper drawings to indicate how and where they are to be constructed.
- All plan drawings, elevations and cross section drawings should show scales used to prepare the drawings.
- Outlet protection schedules should be provided
- Sizes and materials should be shown for all pipes, flumes and slope drains.
- All details should list the specification number from the VESCH
- If more than one type of specification is being used (inlet protection) details of all practices shall be provided

Maintenance - A schedule of regular inspections and repair of erosion and sediment control structures should be set forth.

- Indicate who is responsible for maintenance and repair of all E&S measures on the project (RLD).
- Indicate who is the primary contact for emergencies, for notification of problems (owner), etc...
- Provide clean-out and maintenance specifications for all major structures such as basins, traps, silt fence, etc...
- Require monitoring reports from the RLD if needed