

4. **Stabilization of Road Slope Surfaces and Spoil Disposal Areas** **(PRACTICE: 2-4)**

- a. Objective: To minimize erosion from exposed cut slopes, fill slopes, and spoil disposal areas.
- b. Explanation: This is a preventative practice using mechanical, biological and structural techniques to prevent erosion or minimize its transport. Selection of techniques depends on site specific characters such as soil properties, slope, road surface type, appropriate vegetation, and cost. The techniques, or combination thereof, are applied to cut and fill slopes at risk of erosion or sediment transport. Selection of techniques involves the design professional along with input from soil scientist, hydrologist, and botanist.

Spoil disposal areas, regardless of location, are candidates from stabilization techniques, which may differ from those applied at the original road location.

Mechanical techniques may include erosion nets/mats, blankets, mulch, tackifiers (may include seed), windrowed construction slash at toe of fill slopes, or soil seals. Biological techniques may include planting vegetation such as grass(es), brush, trees, or a combination thereof. Vegetation types are native seed or stock, certified weed-free to prevent transport of non-native invasive plants. If native vegetation is not feasible, non-native species that are non-invasive may be substituted. Vegetation methods, which take effect over time, may be used in combination with other methods. Structural methods may include terraced or roughened cut and fill slope faces, allowing larger rock and boulders to remain in place, if they don't present safety hazards. Riprap placement, mid-slope drainage ditches, retaining walls, or construction of reinforced earth embankment may also be incorporated, within funding availability.

- c. Implementation: Beginning with project analysis, through road location selection and design process, the site characteristics are weighed and mitigation measures planned and designed to minimize impacts to water quality and other resources. The designer has the full complement of procedures available to consider for incorporation, and selection is made with respect to effectiveness and funding availability.

Project drawings, and specifications if project work is contracted, include details of methods, materials, locations, quantities of slope stabilization requirements. For contracts, the COR and inspector insure compliance by the contractor. For force account labor, the project manager, designer, hydrologist, and crew supervisor/leader work together to assure the slope stabilization is constructed as planned. Compliance with operating plans for timber sales, mining operations, or other authorized activity is ensured by the ER, FSR, or permit administrator through inspection and feedback communication. Regardless of implementation method, monitoring for effectiveness provides important information to influence future slope stabilization method selection.

Reference: FP-03 – Section 157 – Soil Erosion Control
 FP-03 – Section 204 – Excavation and Embankment
 FP-03 – Section 207 – Earthwork Textiles
 FP-03 – Division 250 – Slope Reinforcement and Retaining Walls
 FP-03 – Division 600 – Incidental Construction
 FP-03 – Division 700 – Material