

Chapter 12: Soils

Introduction and Setting

Nevada County is part of the Sierra Nevada Range, a geologic block approximately 400 miles long and 80 miles wide which extends in a north-south band along the eastern portion of California. The terrain of Nevada County is distinctly characterized by two features of the Sierra Nevada Range. The western third of the County is comprised of rolling foothills which form a transition between the low-lying Sacramento Valley and the mountains to the east. The eastern two-thirds of the County is comprised of the steep terrain and exposed granite of the Sierra Nevada range itself.

The geologic substructure of the county can be divided into three very broad groups, which are reflected in the surface soils:

- **Western Foothills.** This area, extending from the Yuba County border to just northeast of the Grass Valley/Nevada City area, is generally comprised of metavolcanic and granitic formations.
- **Central Portion.** The area extending northeast of the Grass Valley/Nevada City area to the upper mountainous area near Bowman Lake Road is generally comprised of sedimentary, metasedimentary and volcanic formations.
- **Eastern Portion.** This portion of the County through the high Sierra to the Nevada state line is generally comprised of volcanic and granitic formations.

Soil surveys for Nevada County conducted by the United States Department of Agriculture Soil Conservation Service and the Tahoe National Forest have identified general soil types found in the County. The characteristics of different soil types result in varying potential capabilities and constraints in terms of permeability, suitability for intensive development, erosion hazards, or agricultural and timber capabilities. Within these general soil types, however, there is a great deal of variation in soil capability from location to location.

The general soil types present potential constraints to septic uses and effluent disposal due to slow permeability, steep slopes, and soil depth. While conditions vary greatly within the County, there are locations which may require application of specific measures to ensure effective use of land based disposal of effluent. These same constraints may limit the suitability of soils for

installation of pipelines and subsurface infrastructure or may require the use of site specific measures to avoid potential future problems. Erosion hazard is variable but generally increases near major rivers and with steeper slopes and is increased by more intensive development. Although the soils are generally poor for intensive agriculture use, ranging from Class II and up, the moderate to high elevation soils are an excellent resource for timber growth.

Further discussion of the soils and underlying geology of the county is contained in Section 3 of the Nevada County Master Environmental Inventory, which is part of Volume 3 of the Nevada County General Plan.

Goals, Objectives, and Policies

The soils types found in the County present potential constraints on future development in terms of permeability, erosion potential, soil depths, and suitability for installation of subsurface infrastructure.

Additional goals, policies and objectives generally related to soils are located in Chapter 1: Land Use; Chapter 3: Public Facilities and Services; Chapter 10: Safety; and Chapter 16: Agriculture.

Goal 12.1

Minimize adverse impacts of grading activities, loss of soils and soil productivity.

Objective 12.1

Minimize earth movement and disturbance.

Directive Policies

Policy 12.1

Enforce Grading Ordinance provisions for erosion control on all new development projects by adopting provisions for ongoing monitoring of project grading. Project site inspection shall be required prior to initial site disturbance and grading to ensure all necessary control measures, including proper staking and tree protection measures, are in place. The installation, maintenance, and performance of erosion and sedimentation control measures shall be monitored by County or District staff (or their designee) and completely funded by a project applicant. All County projects shall comply with this policy.

Policy 12.2

Enforce Grading Ordinance requirements for grading or vegetation removal not associated with a development project. Exempted from this requirement are actions necessary for evaluation of soils and other environmental characteristics, and for control of fire fuels, and for agricultural and timber production.

Policy 12.3 Cooperate and encourage those activities dealing with techniques and practices to minimize erosion in cooperation with Nevada County Resource Conservation District, including provision of educational materials for the general public regarding techniques and practices to minimize erosion from construction activities.

Objective 12.2

Minimize erosion due to road construction and maintenance.

Directive Policies

Policy 12.4 Require erosion control measures as an element of all County contracts, discretionary projects, and ministerial projects.

Policy 12.5 Encourage the efforts of the Resource Conservation District and other related agencies to educate and assist the general public about techniques and practices to minimize private road maintenance related erosion.

*Also See: Chapter 1: Land Use
Policy 1.17*

Objective 12.3

Minimize vegetation removal.

*Also See: Chapter 13: Wildlife and Vegetation
Policy 13.2 Policy 13.3; Policy 13.8*