Soil Surveys can Help You

Soil Surveys available from the Natural Resources Conservation Service are intended for many different users. They can help a home-buyer or developer determine soil-related hazards or limitations that affect home sites. They can help land use planners determine the suitability of areas for housing or on-site sewage disposal systems. They can help a farmer estimate the potential crop or forage production of the land. They can be used to determine the suitability and limitations of soil for pipelines, buildings, landfills, recreation areas, and many other uses. This pamphlet explains just a few of the ways soil surveys can help land users.

Planning Conservation

Conservation of land and water resources is an important part of all land use. The maps and soil descriptions in soil surveys can help in identifying specific conservation problems in a given area and planning measures to reduce erosion, sedimentation, subsidence, slippage, wetness, and other hazards.

How to Obtain a Soil Survey

You can call the local office of the Natural Resources Conservation Service to determine whether a soil survey of the area that interests you is available in paper copy or you can go to the web to have electronic access at http://websoilsurvey.nrcs.usda.gov.

You can also discuss soils and land use with the soil conservationist or soil scientist assigned to your county.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA’s TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice or TDD).

Potential for flooding and other hazards that affect buildings are indicated in soil surveys.

Why Soil Data are Needed

Many people assume that soils are all more or less alike. They are unaware that great differences in soil properties can occur within even short distances.

Soils may be seasonally wet or subject to flooding. They may be shallow to bedrock. They may be too unstable to be used as a foundation for buildings or roads. Very clayey or wet soils are poorly suited to septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These soil properties and many other that affect land use are given in soil surveys. Each soil survey describes the properties of soils in the county or area surveyed and shows the location of each kind of soil on detailed maps.
Determining Soil Properties that Affect Construction

Many soil properties affect the construction and maintenance of roads, pipelines, buildings, and other structures. Among the important soil properties described in soil surveys are:

- Natural soil drainage
- Permeability
- Infiltration rate
- Flood hazard
- Depth to water table
- Seasonal wetness
- Depth to bedrock, stoniness
- Erodibility
- Acidity and alkalinity
- Load bearing capacity
- Slope
- Content of sand, silt, and clay
- Shrink-swell potential
- Risk of corrosion
- Soil structure.

Soil surveys provide information on the highest levels of saturated zone in the soil in most years.

Evaluating Areas for Houses and Other Buildings

Soil properties are a major consideration for all building construction. The range of potential soil-related problems is great. Swelling and shrinking of certain kinds of clayey soils may crack walls and foundations. Flooding or high water tables may flood basements or damage buildings and other installations. Soils that are too clayey or too wet are not suitable for septic tank absorption fields. These and other soil-related problems can be anticipated through the use of soil surveys.

Planning Land Use

Soil surveys can help community planners determine the most appropriate areas for urban expansion. Soil surveys show areas that are subject to flooding and describe soil properties that affect septic tank absorption fields. The soil data can help planners in zoning flood plains, in determining the suitability of areas for various uses, and in applying the soil and water considerations of subdivision regulations and building codes to specific developing areas. Soil surveys can also help planners identify areas of prime agricultural land and areas that are best suited to use for recreation, wildlife, and open space.

Landscaping

Soil properties are a major consideration in selecting and planting trees, shrubs, and grasses for beautification and erosion control. Soil surveys describe soil properties that affect the growth of such plants.

Soil Surveys can help you...

Buying Land

Soil surveys can help in evaluating the suitability of a tract of land for the intended use before buying. Where soil maps show that soil-related hazards may damage structures or installations, alternate sites that have favorable soil properties can be selected. Structural designs can also be changed to compensate for the hazards. Soil maps and descriptions of the soils also can help in planning development in accordance with soil capabilities and limitations.

Evaluating Areas for Houses and Other Buildings

Soil properties are a major consideration for all building construction. The range of potential soil-related problems is great. Swelling and shrinking of certain kinds of clayey soils may crack walls and foundations. Flooding or high water tables may flood basements or damage buildings and other installations. Soils that are too clayey or too wet are not suitable for septic tank absorption fields. These and other soil-related problems can be anticipated through the use of soil surveys.

Planning Land Use

Soil surveys can help community planners determine the most appropriate areas for urban expansion. Soil surveys show areas that are subject to flooding and describe soil properties that affect septic tank absorption fields. The soil data can help planners in zoning flood plains, in determining the suitability of areas for various uses, and in applying the soil and water considerations of subdivision regulations and building codes to specific developing areas. Soil surveys can also help planners identify areas of prime agricultural land and areas that are best suited to use for recreation, wildlife, and open space.

Landscaping

Soil properties are a major consideration in selecting and planting trees, shrubs, and grasses for beautification and erosion control. Soil surveys describe soil properties that affect the growth of such plants.

Some soils have slow infiltration rates when thoroughly wet because of layers that impede the downward movement of water.

Some soils can subside, endangering the structure.