

Course Name: Using Soil Surveys in Urban Areas	
Course Coordinator: William Frederick	Course Number: MI0076

Overview: This is a module that studies the making and use of urban soil surveys.

Purpose: To provide trainees with a basic understanding of the uses of soil surveys in urban areas

Prerequisites: Read the following from a county soil survey published since 1980.

From a county soil survey published since 1980

- How this soil survey was made
- Subsections in Use and Management of Soils
- Introductions to Retailed Map Units
- Soil Series and Their Morphologies

From Internet Sources

- The New York City Approach to Soil Surveying
<http://members.aol.com/nycsoil/cover.html>
- Internet sections on urban soils found at the National Soil Survey Center
www.statlab.iastate.edu/soils/nssc

Duration: Six to eight hours

Target Audience: Trainees and new employees who have not had the training module

Expected Outcomes: Employee to become proficient in the use of a soil survey

Resources needed: A 1980 or later county soil survey and access to the internet

Module Outline for Using Soil Surveys in Urban Areas

USING SOIL SURVEYS In Urban Areas MODULE OUTLINE

Objective: To provide trainees a basic understanding on the uses of soil surveys in urban areas.

Training environment: The majority of this training should be held in the field where soils can be observed in their natural environment.

1. Pre-Reading List

a. A Published Soil Survey

Participants should read the following sections from a county soil survey published since 1980.

- How This Soil Survey was Made
- Subsections in Use and Management of Soils
- Introductions to Detailed Map Units
- Soil Series and Their Morphology

2. Required Internet Sources for Viewing or Browsing

a. The New York City Approach to Soil Surveying

Discusses mapping techniques and interpretations of man-made soil types.

<http://members.aol.com/nycsoil/cover.html>

b. Internet section on Urban Soils found at the National Soil Survey Center at:

www.statlab.iastate.edu/soils/nssc

Choose "Soil Use and Management" and then select Urban Soils

3. Recommended Inside Training

a. Sources of Reference Information

The employee needs to know the various informational tools that are available and how to use them to find needed information.

Published Soil Surveys

- Section II of the Technical Guide
- Soil Survey Data Base in FOCS and in Conservation Toolkit
- Michigan Tax Appraisers Manual (Chapter 12)
- Leaflet: Homebuyers - Soil Surveys Can Help You
- Leaflet: Construction Engineers - Soil Surveys Can Help You

b. Using A Soil Survey

Employee needs to know how to navigate through a soil survey. They need to know to find areas of concern so that they can assist customers with information on specific areas. The trainer should first set up an exercise for all trainees to locate themselves in a certain area in the soil survey and then tie the spatial data observed to the other sections of the soil survey, i.e. mapping unit descriptions, series descriptions and tables.

c. Other Agency Involvement

Identify agencies' roles and responsibilities from the urban perspective. Request representatives from respective agencies to speak on their roles.

- State Health Departments
- County Department of Tax Equalization
- Township Planning and Zoning Board

d. Inventory

Review the following for each planned field stop:

- Soil Series
- Soil Map Unit Description
- Interpretations for building site, recreation, sanitary facilities and water management
- Windbreaks and Environmental Plantings

e. Safety Awareness

The employee needs to consider the following aspects of safety while in the field. These aspects should be considered:

- Use good body positioning when pulling augers and using shovels.
(Demonstration)
- Be careful when crossing farm fences and streams.
- Stay back from unstable cuts, especially in recent excavations without adequate shoring.
- Stay back from operating backhoes and bulldozers and wear hard hats.
- Examine pits that are deeper than chest high from outside of the pit.
- Be careful when walking through woods, across uneven surfaces and on soils with coarse fragments in the surface layer

f. Soil Interpretation Exercise

Using the family particle size classes of the taxonomic table and the permeability and drainage class of the soil series, the class will fill in a chart that will allow them.

to generate interpretations for many uses.

4. Recommended In Field Training Outline

a. Using inventoried tools shows trainees how to identify resource concerns associated with:

- Drainage
- Soil texture
- Permeability
- Slope
- Erosion
- Shrink-swell
- Stability
- Poor filter
- Frost action
- Seepage

b. Information Needed From the Landowner or Planner

- Objectives of the tract of land
- Land use zoning restrictions
- Flexibility in altering a plan

c. Field Stops

Examine the landscape and soils at each stop. Employees need to understand how soil properties affect soil interpretations. Discuss the affects of soil and geomorphic properties at each site concerning the following uses:

- Sanitary facilities
- Building site development
- Recreational uses
- Construction materials
- Horticultural uses
 - Tree species to plant
 - Shrubs
 - Flowers
- Wildlife habitat suitability
 - Open land
 - Woodland
 - Wetland

TRAINING MODULE PROGRAM

USING SOIL SURVEYS IN URBAN AREAS

EXIMANATION FOR TRAINEES

1. Name ten urban uses of soil surveys.
2. Explain the difference between perched and apparent water tables.
3. How is a soil series different from a soil map unit?
4. If a soil has a K value of .43, does this value apply to urban uses of the soil?
5. Can interpretations be generated for sanitary landfills, brownfields or udorthents?
6. A soil is rated severe for dwellings without basements. Does this mean the soil cannot be used for dwellings without basements? Explain your answer.
7. What practice would you use to overcome a high shrink-swell limitation if you were building a home with a basement?
8. A soil has a 3A woodland ordination symbol. What does that mean?
9. Name four trees or shrubs adapted to wet soils.

Why would a soil with small stones in the surface layer be rated poor for topsoil?