Urban/Suburban Interpretation Activities

Joyce Scheyer

NCSS National Conference

June 5, 2007

Madison, Wisconsin

Urban/Suburban Soils Long Range Plan

- Assistance to states
  - Travel requested through NSSC annual process in August
  - Additional consultations by phone, email, net meeting

- Technology transfer
  - Focus on interdisciplinary projects (such as ecosystems)
  - Broaden network beyond NRCS and traditional partners

- Marketing to target groups including exhibits at meetings
  - Planners (Aug 2006-Apr 2008)

  - Landscape Architects (Jan 2007-June 2008)
  (Sustainable Sites Initiative to rollout in summer 2008)

  - Realtors (Apr 2007-Nov 2007)

Assistance to States - Runoff (Fargo, ND)

How We Measure and Monitor Runoff

Storm Water Management (TR-55)

Urban Sedimentation and Water Quality

Erosion And Sediment Control (RUSLE2 urban default layers)

Underlying Soil Properties and Qualities

Soil Sealing at surface, surface ponding

Compaction below surface, bulk density, clay content

TR-55 runoff curve numbers by housing density and vigor of cover.
http://www.wcc.nrcs.usda.gov/water/quality/common/tr55/tr55.html

Cover Type	Increasing runoff (RCN) by decreasing infiltration (HSG)				soil condition
	A	B	C	D	
Paved Driveway	98	98	98	98	impervious
Commercial District	89	92	94	95	85% impervious
Newly graded area	77	86	91	94	no vegetation
Housing lot <1/8 acre	77	85	90	92	65% impervious
Housing lot 1/4 acre	61	75	83	87	38% impervious
Housing lot 1/2 acre	54	70	80	85	25% impervious
Housing lot 2 acres	46	65	77	82	12% impervious
"Poor" open lawn	68	79	86	89	<50% grassed
"Good" open lawn	39	61	74	80	>75% grassed

Table 2.2a in TR-55 Urban Hydrology for Small Watersheds.
RCN is runoff curve number (30-98) where 30 has the least runoff,
HSG is hydrologic soil group (A-D where A has rapid infiltration)

Soil Ch
Calciu
Catio
Effec
Electr
Gypsu
pH (1
Sodiu
Soil Erc
Soil Ph
Availa
Availa
Availa
Availa
Availa
Bulk D

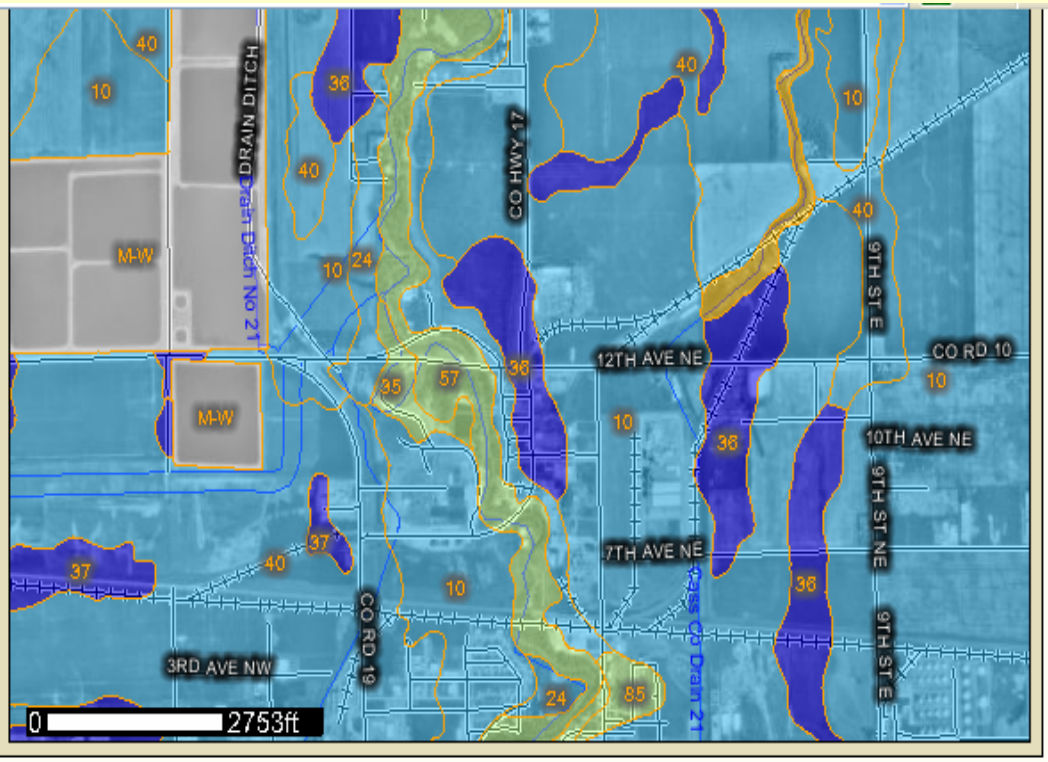
- Soil Survey Areas
- Soil Map Units
- Soil Ratings
  - <= 25
  - > 25 AND <= 27.4
  - > 27.4 AND <= 48
  - > 48 AND <= 51
  - > 51 AND <= 52.3
  - Not rated or not available
- Special Point Features
- Special Line Features
- Political Features
  - Postal Code
  - Public Land Survey
    - Township and Range

Bulk Density, one-tenth bar
Bulk Density, one-third bar
Linear Extensibility
Organic Matter
Percent Clay

View Description | View Rating

View Options

Map ☑
Table ☑
Description of Rating ☑



Tables — Percent Clay — Summary By Map Unit

Summary by Map Unit — Cass County Area, North Dakota

Map Unit Symbol	Map Unit Name	Rating (percent)	Acres in AOI	Percent of AOI
10	Fargo-Ryan silty clays	50.9	3,610.3	48.0%
24	Cashel silty clay	50.0	183.1	2.4%
25	Cashel silty clay, channeled	50.0	3.3	0.0%
35	Fairdale silt loam, 1 to 3 percent slopes	48.0	42.1	0.6%
36	Fargo silty clay	52.3	549.6	7.3%
37	Fargo silty clay,	52.3	302.3	4.0%

Done

Microsoft PowerPoint - [FargoWSS1.ppt]

Technology Transfer for Urban Residences and Small Businesses

To reduce runoff with a **rain garden**

- decrease the impervious area
- improve the plant vigor on the site.

On a larger scale these might be called

- **bio- swales**
- **retention ponds**
- **riparian areas**

(Plant selection and length of ponding are factors.)

Water Management

How can I find a suitable location for a small urban pond? I want to include vegetation that would attract wildlife.

- *Soil suitability and limitation ratings*
  - Water Management
  - Embankments, Dikes, and Levees
  - Excavated Ponds (Aquifer-fed)

- *Soil property and quality ratings*
  - Percent Clay
  - Drainage Class
  - Hydric Rating
  - Flooding Frequency Class
  - Ponding Frequency Class

Area Of Interest (AOI)

Soils

- Soil Survey Areas
- Soil Map Units
- Soil Ratings
  - Very limited
  - Somewhat limited
  - Not limited
  - Not rated or not available
- Special Point Features
- Special Line Features

Political Features

- Postal Code
- Public Land Survey
  - Township and Range
  - Section
- States

Building
Constru
Land Cl
Recrea
Sanitar
Vegeta
Water

Emba

View

Rating Values (Numbers)

Description of Rating

Rating Options

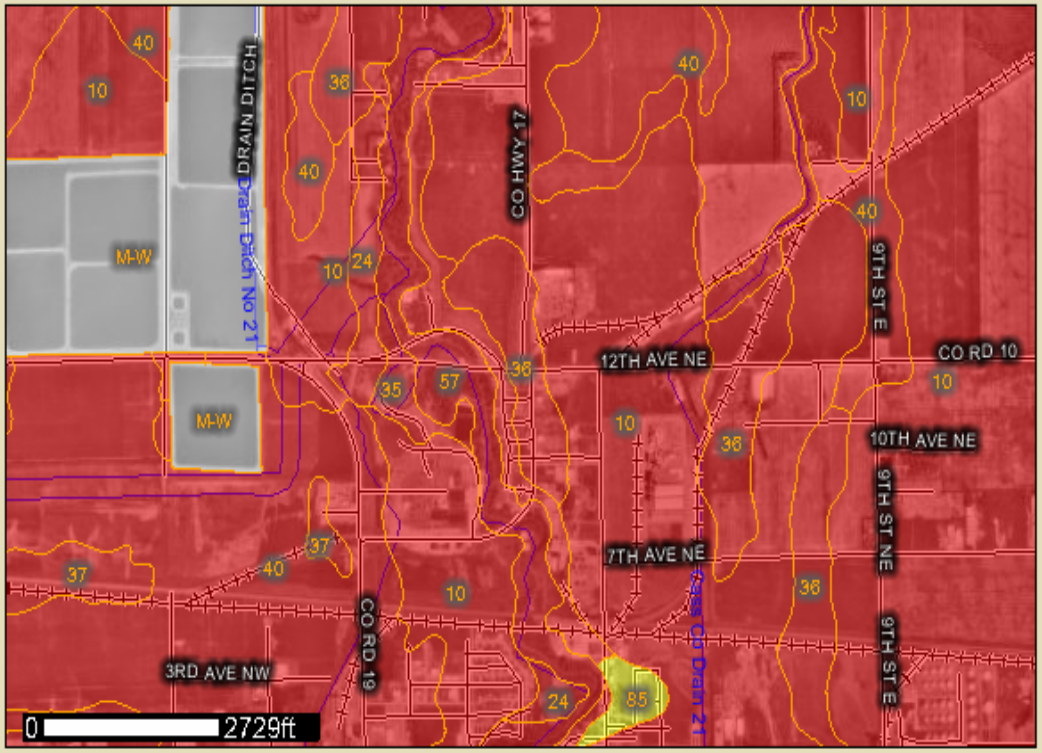
Detailed Description

Advanced Options

View Description | View Rating

Legend

Scale (not to scale)



Tables — Embankments, Dikes, and Levees — Summary By Map Unit

Summary by Map Unit — Cass County Area, North Dakota

Map Unit Symbol	Map Unit Name	Rating	Component Name (Percent)	Rating Reasons (Rating Values)	Acres in AOI	Percent of AOI
10	Fargo-Ryan silty clays	Very limited	Fargo (47%)	Depth to saturated zone (1.00)	3,610.3	48.0%
				Hard to		

Done

Monday, February 26, 2007

American Planning Association

Over 6,000 planners attended & 33% visited our 2007 exhibit

Provided planner-friendly color Fact Sheets on CD
- Farmland Protection
- PLANTS database
- Soil Data Viewer
- Soil Data Mart
- Compare Web Soil Survey to Soil Data Mart

Two computer stations to demo online technology

Technology Showcase Presentation on GIS Applications of Soil Survey Information including Data Downloads

Large part of soils 3-D exhibit from World Soils Congress

Responses: 3 most requested services were Best Management Practices, Basic Soil Information, and Examples using Soil Survey in Urban Planning

Web Soil Survey (WSS)

www.soils.usda.gov

Sustainable Sites Initiative (SSI)

LEEDS (Leadership in Energy and Environmental Design of Structures)
- Lady Bird Johnson Wildflower Center (U Texas)
- American Society of Landscape Architects

Soils sub-committee
- Collate and review Best Management Practices from any source
- Provide basic soil information for planning and maintaining BMPs
- Explain benefits of adopting BMPs

Product timeline
- June 2007 Draft (first Austin meeting)
- October 2007 Draft (possible mid-November meeting)
- June 2008 Final (probable meeting of entire SSI team)

Upcoming Marketing Opportunities

American Society of Landscape Architects (ASLA)

- San Francisco, CA
- October 5-8, 2007
- Exhibit with Web Soil Survey Display

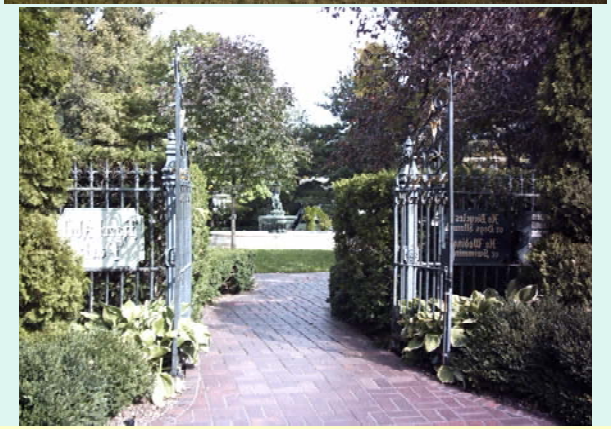
National Association of Realtors (NAR)

- Las Vegas, NV (Sands Convention Center)
- November 13-18, 2007
- Exhibit with Web Soil Survey Display
- Possible technical presentation

Urban and Suburban Soils Field Guide

Version 1.0

September 2007



Urban/Suburban Soils Field Guide

Contents

Cover
Introduction

Section 1: Assessing and Sampling Soils
Section 2: Technical Topics
Section 3: Input for Disturbed Soils in Programs and Models

Glossary (acronyms, technical vocabulary)

Appendix 1: Programs, Regulations, Technical details (internal NRCS)
Appendix 2: Contact list of Customers and Cooperators

**programmed as interactive electronic file - demo on desktop*

Urban/Suburban Soils Field Guide

Section 2: Technical Topics

- Compaction
- Sealed Soils
- Expansive Soils
- Storm Water Recharge, Infiltration, and Rain Gardens
- Erosion and Sediment Transport
- Soil Quality Field Tests and Cards for on-site
- Acid Sulfate Soils

- Urban and Community Forestry (RESERVED)
- Community Gardens and Riparian Buffer Plantings (RESERVED)
- Contamination (metals, nitrates, etc.) (RESERVED)
- Air Quality from construction sites or tillage (RESERVED)
- Dredged Materials (RESERVED)
- Additional topics (RESERVED)

Thanks

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