

## Map Unit Description (MN)

Anoka County, Minnesota

[Data apply to the entire extent of the map unit within the survey area. Map unit and soil properties for a specific parcel of land may vary somewhat and should be determined by onsite investigation]

### Af--Alluvial land, mixed, frequently flooded

#### Alluvial land, frequently flooded

*Extent:* 100 percent of the unit

*Landform(s):* alluvial flats on flood plains

*Slope gradient:* 0 to 1 percent

*Parent material:* alluvium

*Restrictive feature(s):* greater than 60 inches

*Flooding:* frequent

*Ponding:* none

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .20

*Land capability, nonirrigated:* 6w

*Hydric soil:* yes

*Hydrologic group:* A/D

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 6 in	loamy sand	rapid	0.41 to 0.77 in	6.6 to 8.4
Cg -- 6 to 28 in	sandy loam	moderately rapid	1.10 to 4.85 in	5.1 to 7.3
2Cg -- 28 to 80 in	sand	rapid	1.56 to 5.20 in	5.6 to 7.3

### AnA--Anoka loamy fine sand, 0 to 2 percent slopes

#### Anoka

*Extent:* 90 percent of the unit

*Landform(s):* outwash plains

*Slope gradient:* 0 to 2 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .28

*Land capability, nonirrigated:* 3s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	loamy fine sand	rapid	0.71 to 1.26 in	5.1 to 6.5
E, E&Bt -- 8 to 60 in	fine sand	rapid	3.12 to 8.31 in	5.1 to 6.5
C -- 60 to 80 in	fine sand	rapid	1.20 to 2.41 in	5.6 to 7.3

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### AnB--Anoka loamy fine sand, 2 to 6 percent slopes

#### Anoka

*Extent:* 90 percent of the unit

*Landform(s):* outwash plains

*Slope gradient:* 2 to 6 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .28

*Land capability, nonirrigated:* 3e

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	loamy fine sand	rapid	0.71 to 1.26 in	5.1 to 6.5
E, E&Bt -- 8 to 60 in	fine sand	rapid	3.12 to 8.31 in	5.1 to 6.5
C -- 60 to 80 in	fine sand	rapid	1.20 to 2.41 in	5.6 to 7.3

### AnC--Anoka loamy fine sand, 6 to 12 percent slopes

#### Anoka

*Extent:* 90 percent of the unit

*Landform(s):* outwash plains

*Slope gradient:* 6 to 12 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .28

*Land capability, nonirrigated:* 4e

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	loamy fine sand	rapid	0.71 to 1.26 in	5.1 to 6.5
E, E&Bt -- 8 to 60 in	fine sand	rapid	3.12 to 8.31 in	5.1 to 6.5
C -- 60 to 80 in	fine sand	rapid	1.20 to 2.41 in	5.6 to 7.3

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### Ba--Becker very fine sandy loam

#### Becker

*Extent:* 85 percent of the unit

*Landform(s):* flood plains, stream terraces

*Slope gradient:* 0 to 3 percent

*Parent material:* alluvium

*Restrictive feature(s):* greater than 60 inches

*Flooding:* rare

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 3

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .37

*Land capability, nonirrigated:* 2s

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	very fine sandy loam	moderately rapid	1.57 to 1.97 in	5.1 to 7.3
A1,A3 -- 10 to 35 in	very fine sandy loam	moderately rapid	3.78 to 5.04 in	5.1 to 7.3
Bw -- 35 to 39 in	very fine sandy loam	moderately rapid	0.59 to 0.75 in	5.6 to 7.8
2C -- 39 to 80 in	coarse sand	rapid	0.82 to 4.09 in	5.6 to 7.8

## Map Unit Description (MN)

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### Bm--Blomford loamy fine sand

#### Blomford

*Extent:* 85 percent of the unit

*Landform(s):* swales on moraines

*Slope gradient:* 0 to 2 percent

*Parent material:* outwash over till and/or lacustrine deposits

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .28

*Land capability, nonirrigated:* 3w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	loamy fine sand	rapid	0.72 to 1.09 in	5.1 to 7.3
E, E&Bt -- 9 to 33 in	fine sand	rapid	1.20 to 1.92 in	5.1 to 7.3
2Btg -- 33 to 42 in	fine sandy loam	moderate	1.18 to 1.54 in	5.1 to 7.3
2Cg -- 42 to 60 in	fine sandy loam	moderate	1.77 to 2.66 in	6.1 to 8.4

## Map Unit Description (MN)

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### BtB--Braham loamy fine sand, 2 to 6 percent slopes

#### Braham

*Extent:* 85 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 2 to 6 percent

*Parent material:* outwash over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .28

*Land capability, nonirrigated:* 3s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	loamy fine sand	rapid	0.91 to 1.09 in	5.6 to 7.3
E -- 9 to 21 in	loamy fine sand	rapid	0.94 to 1.18 in	5.6 to 7.3
2Bt -- 21 to 46 in	sandy clay loam	moderate	3.78 to 4.54 in	5.1 to 7.3
2Bk -- 46 to 60 in	sandy clay loam	moderate	2.07 to 2.48 in	7.4 to 8.4

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### BtC--Braham loamy fine sand, 6 to 18 percent slopes

#### Braham

*Extent:* 85 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 6 to 18 percent

*Parent material:* outwash over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .28

*Land capability, nonirrigated:* 4e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	loamy fine sand	rapid	0.91 to 1.09 in	5.6 to 7.3
E -- 9 to 21 in	loamy fine sand	rapid	0.94 to 1.18 in	5.6 to 7.3
2Bt -- 21 to 46 in	sandy clay loam	moderate	3.78 to 4.54 in	5.1 to 7.3
2Bk -- 46 to 60 in	sandy clay loam	moderate	2.07 to 2.48 in	7.4 to 8.4

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### Bx--Brickton silt loam

#### Brickton

*Extent:* 85 percent of the unit

*Landform(s):* flats on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* lacustrine

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .37

*Land capability, nonirrigated:* 2w

*Hydric soil:* yes

*Hydrologic group:* C/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 7 in	silt loam	moderate	1.56 to 1.70 in	5.6 to 7.3
E -- 7 to 9 in	silt loam	moderate	0.31 to 0.43 in	5.6 to 7.3
Btg -- 9 to 40 in	silty clay	moderately slow	3.73 to 5.91 in	5.6 to 7.8
C -- 40 to 60 in	silt loam	moderately slow	2.36 to 4.33 in	7.4 to 8.4

### Cb--Cathro muck

#### Cathro

*Extent:* 85 percent of the unit

*Landform(s):* depressions on moraines

*Slope gradient:* 0 to 1 percent

*Parent material:* organic material over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 1

*Wind erodibility group (WEG):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .02

*Land capability, nonirrigated:* 6w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oa1,Oa2 -- 0 to 30 in	muck	moderately rapid	13.46 to 16.46 in	
2A -- 30 to 38 in	mucky silt loam	moderate	0.87 to 1.73 in	
2Cg -- 38 to 80 in	silt loam	moderate	4.63 to 9.27 in	

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### CkB--Chetek sandy loam, 2 to 6 percent slopes

#### Chetek

*Extent:* 85 percent of the unit

*Landform(s):* moraines, outwash plains

*Slope gradient:* 2 to 6 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat excessively drained

*Soil loss tolerance (T factor):* 2

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated:* 3e

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	sandy loam	moderately rapid	0.79 to 1.18 in	5.1 to 7.3
Bt -- 8 to 17 in	sandy loam	moderately rapid	0.72 to 1.18 in	5.1 to 7.3
2Bt -- 17 to 21 in	gravelly loamy sand	rapid	0.16 to 0.39 in	5.1 to 7.3
2C -- 21 to 60 in	gravelly coarse sand	rapid	0.78 to 1.56 in	5.1 to 7.3

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### CkC--Chetek sandy loam, 6 to 12 percent slopes

#### Chetek

*Extent:* 85 percent of the unit  
*Landform(s):* moraines, outwash plains  
*Slope gradient:* 6 to 12 percent  
*Parent material:* outwash  
*Restrictive feature(s):* greater than 60 inches  
*Flooding:* none  
*Ponding:* none  
*Drainage class:* somewhat excessively drained

*Soil loss tolerance (T factor):* 2  
*Wind erodibility group (WEG):* 3  
*Wind erodibility index (WEI):* 86  
*Kw factor (surface layer)* .24  
*Land capability, nonirrigated:* 4e  
*Hydric soil:* no  
*Hydrologic group:* A  
*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	sandy loam	moderately rapid	0.79 to 1.18 in	5.1 to 7.3
Bt -- 8 to 17 in	sandy loam	moderately rapid	0.72 to 1.18 in	5.1 to 7.3
2Bt -- 17 to 21 in	gravelly loamy sand	rapid	0.16 to 0.39 in	5.1 to 7.3
2C -- 21 to 60 in	gravelly coarse sand	rapid	0.78 to 1.56 in	5.1 to 7.3

### Cu--Cut and fill land

#### Cut and fill land

*Extent:* 100 percent of the unit  
*Landform(s):* moraines  
*Slope gradient:* 0 to 2 percent  
*Parent material:* variable soil material  
*Restrictive feature(s):* greater than 60 inches  
*Flooding:* none  
*Ponding:* none  
*Drainage class:*

*Soil loss tolerance (T factor):*  
*Wind erodibility group (WEG):*  
*Wind erodibility index (WEI):*  
*Kw factor (surface layer)*  
*Land capability, nonirrigated:*  
*Hydric soil:* no  
*Hydrologic group:*  
*Potential for frost action:*

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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## Map Unit Description (MN)

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### DIA--Dalbo silt loam, 1 to 5 percent slopes

#### Dalbo

*Extent:* 85 percent of the unit

*Landform(s):* lake plains

*Slope gradient:* 1 to 5 percent

*Parent material:* lacustrine

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .37

*Land capability, nonirrigated:* 2e

*Hydric soil:* no

*Hydrologic group:* C

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 6 in	silt loam	moderate	1.30 to 1.42 in	5.6 to 7.3
Bt -- 6 to 28 in	clay	moderately slow	2.20 to 3.97 in	5.1 to 7.3
C -- 28 to 60 in	silty clay loam	moderately slow	5.10 to 7.02 in	7.4 to 8.4

### DnA--Dickman sandy loam, 0 to 2 percent slopes

#### Dickman

*Extent:* 90 percent of the unit

*Landform(s):* stream terraces

*Slope gradient:* 0 to 2 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat excessively drained

*Soil loss tolerance (T factor):* 2

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .20

*Land capability, nonirrigated:* 3s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 12 in	sandy loam	moderately rapid	1.54 to 1.77 in	5.6 to 6.5
Bw -- 12 to 18 in	sandy loam	moderately rapid	0.76 to 0.88 in	5.6 to 7.3
2C -- 18 to 60 in	sand	rapid	0.83 to 2.92 in	5.6 to 7.8

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### DnB--Dickman sandy loam, 2 to 6 percent slopes

#### Dickman

*Extent:* 90 percent of the unit

*Landform(s):* stream terraces

*Slope gradient:* 2 to 6 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat excessively drained

*Soil loss tolerance (T factor):* 2

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .20

*Land capability, nonirrigated:* 3e

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 12 in	sandy loam	moderately rapid	1.54 to 1.77 in	5.6 to 6.5
Bw -- 12 to 18 in	sandy loam	moderately rapid	0.76 to 0.88 in	5.6 to 7.3
2C -- 18 to 60 in	sand	rapid	0.83 to 2.92 in	5.6 to 7.8

### Dp--Duelm loamy coarse sand

#### Duelm

*Extent:* 90 percent of the unit

*Landform(s):* stream terraces

*Slope gradient:* 0 to 2 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .10

*Land capability, nonirrigated:* 4s

*Hydric soil:* no

*Hydrologic group:* A/D

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 11 in	loamy coarse sand	rapid	0.88 to 1.32 in	5.6 to 7.3
Bw -- 11 to 42 in	coarse sand	rapid	0.93 to 3.42 in	5.1 to 7.3
C -- 42 to 60 in	coarse sand	rapid	0.35 to 1.24 in	5.6 to 7.8

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### Du--Dundas loam

#### Dundas

*Extent:* 85 percent of the unit

*Landform(s):* flats on moraines

*Slope gradient:* 0 to 2 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 5

*Wind erodibility index (WEI):* 56

*Kw factor (surface layer)* .32

*Land capability, nonirrigated:* 2w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	loam	moderate	1.97 to 2.17 in	5.1 to 7.3
E -- 10 to 15 in	fine sandy loam	moderate	0.67 to 1.13 in	5.1 to 7.3
Btg -- 15 to 39 in	sandy clay loam	moderate	3.60 to 4.56 in	5.6 to 7.3
Cg -- 39 to 60 in	fine sandy loam	moderate	2.71 to 3.96 in	7.4 to 8.4

### EmC--Emmert gravelly coarse sandy loam, 6 to 12 percent slopes

#### Emmert

*Extent:* 90 percent of the unit

*Landform(s):* moraines, outwash plains

*Slope gradient:* 6 to 12 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 5

*Wind erodibility index (WEI):* 56

*Kw factor (surface layer)* .10

*Land capability, nonirrigated:* 6s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	gravelly coarse sandy loam	rapid	0.16 to 0.59 in	5.1 to 6.5
BA,Bw,C -- 4 to 60 in	extremely gravelly coarse sand	very rapid	1.12 to 2.24 in	5.1 to 7.3

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### EmD--Emmert gravelly coarse sandy loam, 12 to 25 percent slopes

#### Emmert

*Extent:* 90 percent of the unit

*Landform(s):* moraines, outwash plains

*Slope gradient:* 12 to 25 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 5

*Wind erodibility index (WEI):* 56

*Kw factor (surface layer)* .10

*Land capability, nonirrigated:* 7s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	gravelly coarse sandy loam	rapid	0.16 to 0.59 in	5.1 to 6.5
BA,Bw,C -- 4 to 60 in	extremely gravelly coarse sand	very rapid	1.12 to 2.24 in	5.1 to 7.3

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### EpC--Emmert complex, 4 to 12 percent slopes

#### Emmert

*Extent:* 70 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 4 to 12 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 5

*Wind erodibility index (WEI):* 56

*Kw factor (surface layer)* .10

*Land capability, nonirrigated:* 6s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	gravelly coarse sandy loam	rapid	0.16 to 0.59 in	5.1 to 6.5
BA,Bw,C -- 4 to 60 in	extremely gravelly coarse sand	very rapid	1.12 to 2.24 in	5.1 to 7.3

#### Kingsley

*Extent:* 30 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 4 to 12 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .37

*Land capability, nonirrigated:* 3e

*Hydric soil:* no

*Hydrologic group:* C

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	fine sandy loam	moderate	0.31 to 0.57 in	5.6 to 6.5
E -- 3 to 13 in	fine sandy loam	moderate	0.98 to 1.48 in	5.6 to 6.5
Bt -- 13 to 34 in	fine sandy loam	moderately slow	2.71 to 3.34 in	5.1 to 7.3
C -- 34 to 60 in	sandy loam	moderately slow	2.86 to 3.64 in	5.6 to 7.8

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### EpD--Emmert complex, 12 to 25 percent slopes

#### Emmert

*Extent:* 70 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 12 to 25 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 5

*Wind erodibility index (WEI):* 56

*Kw factor (surface layer)* .10

*Land capability, nonirrigated:* 7s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	gravelly coarse sandy loam	rapid	0.16 to 0.59 in	5.1 to 6.5
BA,Bw,C -- 4 to 60 in	extremely gravelly coarse sand	very rapid	1.12 to 2.24 in	5.1 to 7.3

#### Kingsley

*Extent:* 30 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 12 to 25 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .37

*Land capability, nonirrigated:* 6e

*Hydric soil:* no

*Hydrologic group:* C

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	fine sandy loam	moderate	0.31 to 0.57 in	5.6 to 6.5
E -- 3 to 13 in	fine sandy loam	moderate	0.98 to 1.48 in	5.6 to 6.5
Bt -- 13 to 34 in	fine sandy loam	moderately slow	2.71 to 3.34 in	5.1 to 7.3
C -- 34 to 60 in	sandy loam	moderately slow	2.86 to 3.64 in	5.6 to 7.8

## Map Unit Description (MN)

Anoka County, Minnesota

### Fo--Fordum-Winterfield complex, 0 to 2 percent slopes, frequently flooded

#### Fordum, frequently flooded

<p><i>Extent:</i> 50 to 100 percent of the unit</p> <p><i>Landform(s):</i> alluvial flats on flood plains</p> <p><i>Slope gradient:</i> 0 to 1 percent</p> <p><i>Parent material:</i> alluvium</p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i> frequent</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i> very poorly drained</p>	<p><i>Soil loss tolerance (T factor):</i> 3</p> <p><i>Wind erodibility group (WEG):</i> 3</p> <p><i>Wind erodibility index (WEI):</i> 86</p> <p><i>Kw factor (surface layer)</i> .28</p> <p><i>Land capability, nonirrigated:</i> 6w</p> <p><i>Hydric soil:</i> yes</p> <p><i>Hydrologic group:</i> A/D</p> <p><i>Potential for frost action:</i> high</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 7 in	fine sandy loam	moderately rapid	0.78 to 1.28 in	5.1 to 7.3
Cg -- 7 to 28 in	sandy loam	moderately rapid	2.09 to 4.59 in	5.1 to 7.3
2Cg -- 28 to 80 in	sand	rapid	2.08 to 5.20 in	5.6 to 7.3

#### Winterfield, frequently flooded

<p><i>Extent:</i> 20 to 40 percent of the unit</p> <p><i>Landform(s):</i> rises on flood plains</p> <p><i>Slope gradient:</i> 0 to 2 percent</p> <p><i>Parent material:</i> alluvium</p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i> frequent</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i> somewhat poorly drained</p>	<p><i>Soil loss tolerance (T factor):</i> 5</p> <p><i>Wind erodibility group (WEG):</i> 2</p> <p><i>Wind erodibility index (WEI):</i> 134</p> <p><i>Kw factor (surface layer)</i> .20</p> <p><i>Land capability, nonirrigated:</i> 4w</p> <p><i>Hydric soil:</i> no</p> <p><i>Hydrologic group:</i> A/D</p> <p><i>Potential for frost action:</i> moderate</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 8 in	loamy fine sand	rapid	0.79 to 0.94 in	5.6 to 7.3
C1,C2 -- 8 to 20 in	sand	rapid	0.73 to 1.34 in	5.6 to 7.3
C3,C5 -- 20 to 80 in	sand	rapid	2.39 to 5.98 in	5.6 to 7.3

## Map Unit Description (MN)

Anoka County, Minnesota

### Gc--Glencoe loam

#### Glencoe

*Extent:* 85 percent of the unit

*Landform(s):* depressions on moraines

*Slope gradient:* 0 to 1 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 5

*Wind erodibility index (WEI):* 56

*Kw factor (surface layer)* .28

*Land capability, nonirrigated:* 3w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	loam	moderate	1.81 to 2.17 in	5.6 to 7.3
A -- 9 to 27 in	fine sandy loam	moderate	2.72 to 3.08 in	5.6 to 7.3
Bg -- 27 to 45 in	loam	moderate	2.66 to 3.01 in	5.6 to 7.3
Cg -- 45 to 60 in	fine sandy loam	moderate	2.24 to 2.84 in	7.4 to 8.4

### GP--Pits, gravel-Udipsamments complex

#### Pits, gravel

*Extent:* 100 percent of the unit

*Landform(s):* outwash plains, stream terraces, moraines

*Slope gradient:* 0 to 50 percent

*Parent material:* sandy and gravelly outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:*

*Ponding:*

*Drainage class:*

*Soil loss tolerance (T factor):*

*Wind erodibility group (WEG):*

*Wind erodibility index (WEI):*

*Kw factor (surface layer)*

*Land capability, nonirrigated:*

*Hydric soil:*

*Hydrologic group:*

*Potential for frost action:*

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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## Map Unit Description (MN)

Anoka County, Minnesota

### GrA--Growton fine sandy loam, 1 to 4 percent slopes

#### Growton

*Extent:* 85 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 1 to 4 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .28

*Land capability, nonirrigated:* 2e

*Hydric soil:* no

*Hydrologic group:* C

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 7 in	fine sandy loam	moderately rapid	0.92 to 1.13 in	5.1 to 7.3
E -- 7 to 11 in	sandy loam	moderately rapid	0.43 to 0.59 in	5.1 to 6.5
Bt -- 11 to 37 in	sandy loam	moderate	2.86 to 4.94 in	5.1 to 6.5
2C -- 37 to 60 in	sandy loam	moderate	2.28 to 3.88 in	7.4 to 8.4

## Map Unit Description (MN)

Anoka County, Minnesota

### HdB--Hayden fine sandy loam, 2 to 6 percent slopes

#### Hayden

*Extent:* 85 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 2 to 6 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated:* 2e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 6 in	fine sandy loam	moderately rapid	0.77 to 1.06 in	5.6 to 7.3
E -- 6 to 10 in	fine sandy loam	moderately rapid	0.43 to 0.75 in	5.6 to 7.3
Bt -- 10 to 37 in	sandy clay loam	moderate	4.07 to 5.16 in	5.6 to 7.8
C -- 37 to 60 in	fine sandy loam	moderate	2.51 to 4.34 in	7.4 to 8.4

## Map Unit Description (MN)

Anoka County, Minnesota

### HdC2--Hayden fine sandy loam, 6 to 12 percent slopes, eroded

#### Hayden, eroded

*Extent:* 85 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 6 to 12 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated:* 3e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 6 in	fine sandy loam	moderately rapid	0.77 to 1.06 in	5.6 to 7.3
E -- 6 to 10 in	fine sandy loam	moderately rapid	0.43 to 0.75 in	5.6 to 7.3
Bt -- 10 to 37 in	sandy clay loam	moderate	4.07 to 5.16 in	5.6 to 7.8
C -- 37 to 60 in	fine sandy loam	moderate	2.51 to 4.34 in	7.4 to 8.4

## Map Unit Description (MN)

Anoka County, Minnesota

### HdD--Hayden fine sandy loam, 12 to 24 percent slopes

#### Hayden

*Extent:* 85 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 12 to 24 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated:* 4e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 6 in	fine sandy loam	moderately rapid	0.77 to 1.06 in	5.6 to 7.3
E -- 6 to 10 in	fine sandy loam	moderately rapid	0.43 to 0.75 in	5.6 to 7.3
Bt -- 10 to 37 in	sandy clay loam	moderate	4.07 to 5.16 in	5.6 to 7.8
C -- 37 to 60 in	fine sandy loam	moderate	2.51 to 4.34 in	7.4 to 8.4

## Map Unit Description (MN)

Anoka County, Minnesota

### HeB--Heyder fine sandy loam, 2 to 6 percent slopes

#### Heyder

*Extent:* 85 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 2 to 6 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .32

*Land capability, nonirrigated:* 2e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	fine sandy loam	moderate	0.50 to 0.57 in	5.6 to 7.3
E -- 3 to 22 in	fine sandy loam	moderate	2.27 to 3.40 in	5.6 to 7.3
Bt -- 22 to 53 in	sandy loam	moderate	3.42 to 5.29 in	5.6 to 6.5
C -- 53 to 60 in	sandy loam	moderate	0.74 to 0.87 in	6.6 to 7.8

## Map Unit Description (MN)

Anoka County, Minnesota

### HeC2--Heyder fine sandy loam, 6 to 12 percent slopes, eroded

#### Heyder, eroded

*Extent:* 85 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 6 to 12 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .32

*Land capability, nonirrigated:* 3e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	fine sandy loam	moderate	0.50 to 0.57 in	5.6 to 7.3
E -- 3 to 22 in	fine sandy loam	moderate	2.27 to 3.40 in	5.6 to 7.3
Bt -- 22 to 53 in	sandy loam	moderate	3.42 to 5.29 in	5.6 to 6.5
C -- 53 to 60 in	sandy loam	moderate	0.74 to 0.87 in	6.6 to 7.8

## Map Unit Description (MN)

Anoka County, Minnesota

### HeD--Heyder fine sandy loam, 12 to 18 percent slopes

#### Heyder

*Extent:* 85 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 12 to 18 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .32

*Land capability, nonirrigated:* 4e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	fine sandy loam	moderate	0.50 to 0.57 in	5.6 to 7.3
E -- 3 to 22 in	fine sandy loam	moderate	2.27 to 3.40 in	5.6 to 7.3
Bt -- 22 to 53 in	sandy loam	moderate	3.42 to 5.29 in	5.6 to 6.5
C -- 53 to 60 in	sandy loam	moderate	0.74 to 0.87 in	6.6 to 7.8

## Map Unit Description (MN)

Anoka County, Minnesota

### HeE--Heyder fine sandy loam, 18 to 30 percent slopes

#### Heyder

*Extent:* 85 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 18 to 30 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .28

*Land capability, nonirrigated:* 6e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	fine sandy loam	moderate	0.50 to 0.57 in	5.6 to 7.3
E -- 3 to 22 in	fine sandy loam	moderate	2.27 to 3.40 in	5.6 to 7.3
Bt -- 22 to 53 in	sandy loam	moderate	3.42 to 5.29 in	5.6 to 6.5
C -- 53 to 60 in	sandy loam	moderate	0.74 to 0.87 in	6.6 to 7.8

## Map Unit Description (MN)

Anoka County, Minnesota

### HIC--Heyder complex, 4 to 12 percent slopes

#### Heyder

*Extent:* 70 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 4 to 12 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .32

*Land capability, nonirrigated:* 3e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	fine sandy loam	moderate	0.50 to 0.57 in	5.6 to 7.3
E -- 3 to 22 in	fine sandy loam	moderate	2.27 to 3.40 in	5.6 to 7.3
Bt -- 22 to 53 in	sandy loam	moderate	3.42 to 5.29 in	5.6 to 6.5
C -- 53 to 60 in	sandy loam	moderate	0.74 to 0.87 in	6.6 to 7.8

#### Hayden

*Extent:* 15 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 4 to 12 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated:* 3e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 6 in	fine sandy loam	moderately rapid	0.77 to 1.06 in	5.6 to 7.3
E -- 6 to 10 in	fine sandy loam	moderately rapid	0.43 to 0.75 in	5.6 to 7.3
Bt -- 10 to 37 in	sandy clay loam	moderate	4.07 to 5.16 in	5.6 to 7.8
C -- 37 to 60 in	fine sandy loam	moderate	2.51 to 4.34 in	7.4 to 8.4

## Map Unit Description (MN)

Anoka County, Minnesota

### HIC--Heyder complex, 4 to 12 percent slopes

#### Emmert

*Extent:* 15 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 4 to 12 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 5

*Wind erodibility index (WEI):* 56

*Kw factor (surface layer)* .10

*Land capability, nonirrigated:* 6s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A --	0 to 4 in	gravelly coarse sandy loam	rapid	0.16 to 0.59 in	5.1 to 6.5
BA,Bw,C --	4 to 60 in	extremely gravelly coarse sand	very rapid	1.12 to 2.24 in	5.1 to 7.3

## Map Unit Description (MN)

Anoka County, Minnesota

### HID--Heyder complex, 12 to 25 percent slopes

#### Heyder

*Extent:* 70 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 12 to 25 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .32

*Land capability, nonirrigated:* 4e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	fine sandy loam	moderate	0.50 to 0.57 in	5.6 to 7.3
E -- 3 to 22 in	fine sandy loam	moderate	2.27 to 3.40 in	5.6 to 7.3
Bt -- 22 to 53 in	sandy loam	moderate	3.42 to 5.29 in	5.6 to 6.5
C -- 53 to 60 in	sandy loam	moderate	0.74 to 0.87 in	6.6 to 7.8

#### Hayden

*Extent:* 15 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 12 to 25 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated:* 4e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 6 in	fine sandy loam	moderately rapid	0.77 to 1.06 in	5.6 to 7.3
E -- 6 to 10 in	fine sandy loam	moderately rapid	0.43 to 0.75 in	5.6 to 7.3
Bt -- 10 to 37 in	sandy clay loam	moderate	4.07 to 5.16 in	5.6 to 7.8
C -- 37 to 60 in	fine sandy loam	moderate	2.51 to 4.34 in	7.4 to 8.4

## Map Unit Description (MN)

Anoka County, Minnesota

### HID--Heyder complex, 12 to 25 percent slopes

#### Emmert

*Extent:* 15 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 12 to 25 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 5

*Wind erodibility index (WEI):* 56

*Kw factor (surface layer)* .10

*Land capability, nonirrigated:* 6s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	gravelly coarse sandy loam	rapid	0.16 to 0.59 in	5.1 to 6.5
BA,Bw,C -- 4 to 60 in	extremely gravelly coarse sand	very rapid	1.12 to 2.24 in	5.1 to 7.3

### HuA--Hubbard coarse sand, 0 to 2 percent slopes

#### Hubbard

*Extent:* 90 percent of the unit

*Landform(s):* stream terraces

*Slope gradient:* 0 to 2 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 1

*Wind erodibility index (WEI):* 180

*Kw factor (surface layer)* .05

*Land capability, nonirrigated:* 4s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,AB -- 0 to 20 in	coarse sand	rapid	1.61 to 2.41 in	5.1 to 7.3
Bw -- 20 to 32 in	coarse sand	rapid	0.35 to 0.83 in	5.1 to 7.3
BC,C -- 32 to 60 in	gravelly coarse sand	rapid	0.56 to 1.96 in	5.6 to 7.8

## Map Unit Description (MN)

Anoka County, Minnesota

### HuB--Hubbard coarse sand, 2 to 6 percent slopes

#### Hubbard

*Extent:* 90 percent of the unit

*Landform(s):* stream terraces

*Slope gradient:* 2 to 6 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 1

*Wind erodibility index (WEI):* 180

*Kw factor (surface layer)* .05

*Land capability, nonirrigated:* 4s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,AB -- 0 to 20 in	coarse sand	rapid	1.61 to 2.41 in	5.1 to 7.3
Bw -- 20 to 32 in	coarse sand	rapid	0.35 to 0.83 in	5.1 to 7.3
BC,C -- 32 to 60 in	gravelly coarse sand	rapid	0.56 to 1.96 in	5.6 to 7.8

### HuC--Hubbard coarse sand, 6 to 12 percent slopes

#### Hubbard

*Extent:* 95 percent of the unit

*Landform(s):* stream terraces

*Slope gradient:* 6 to 12 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 1

*Wind erodibility index (WEI):* 180

*Kw factor (surface layer)* .05

*Land capability, nonirrigated:* 6s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,AB -- 0 to 20 in	coarse sand	rapid	1.61 to 2.41 in	5.1 to 7.3
Bw -- 20 to 32 in	coarse sand	rapid	0.35 to 0.83 in	5.1 to 7.3
BC,C -- 32 to 60 in	gravelly coarse sand	rapid	0.56 to 1.96 in	5.6 to 7.8

## Map Unit Description (MN)

Anoka County, Minnesota

### Is--Isan sandy loam

#### Isan

*Extent:* 85 percent of the unit

*Landform(s):* swales on stream terraces

*Slope gradient:* 0 to 1 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 2

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .20

*Land capability, nonirrigated:* 6w

*Hydric soil:* yes

*Hydrologic group:* A/D

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 14 in	sandy loam	moderately rapid	1.42 to 2.13 in	5.6 to 7.3
AB,Bg -- 14 to 34 in	loamy sand	rapid	1.18 to 1.97 in	5.1 to 6.5
Cg -- 34 to 60 in	coarse sand	rapid	0.52 to 1.56 in	5.6 to 7.3

### Iw--Isanti fine sandy loam

#### Isanti

*Extent:* 85 percent of the unit

*Landform(s):* swales on outwash plains

*Slope gradient:* 0 to 1 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated:* 6w

*Hydric soil:* yes

*Hydrologic group:* A/D

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	fine sandy loam	moderately rapid	1.28 to 1.77 in	5.1 to 6.5
Bg -- 10 to 31 in	fine sand	rapid	1.28 to 1.70 in	5.1 to 6.5
Cg -- 31 to 60 in	fine sand	rapid	1.44 to 2.01 in	5.6 to 6.5

## Map Unit Description (MN)

Anoka County, Minnesota

### KmB--Kingsley fine sandy loam, 2 to 6 percent slopes

#### Kingsley

*Extent:* 85 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 2 to 6 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .37

*Land capability, nonirrigated:* 2e

*Hydric soil:* no

*Hydrologic group:* C

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	fine sandy loam	moderate	0.31 to 0.57 in	5.6 to 6.5
E -- 3 to 13 in	fine sandy loam	moderate	0.98 to 1.48 in	5.6 to 6.5
Bt -- 13 to 34 in	fine sandy loam	moderately slow	2.50 to 3.34 in	5.1 to 7.3
C -- 34 to 60 in	sandy loam	moderately slow	2.60 to 3.64 in	5.6 to 7.8

## Map Unit Description (MN)

Anoka County, Minnesota

### KmC2--Kingsley fine sandy loam, 6 to 12 percent slopes, eroded

#### Kingsley, eroded

*Extent:* 85 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 6 to 12 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .37

*Land capability, nonirrigated:* 3e

*Hydric soil:* no

*Hydrologic group:* C

*Potential for frost action:* low

<i>Representative soil profile:</i>		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A --	0 to 3 in	fine sandy loam	moderate	0.31 to 0.57 in	5.6 to 6.5
E --	3 to 13 in	fine sandy loam	moderate	0.98 to 1.48 in	5.6 to 6.5
Bt --	13 to 34 in	fine sandy loam	moderately slow	2.50 to 3.34 in	5.1 to 7.3
C --	34 to 60 in	sandy loam	moderately slow	2.60 to 3.64 in	5.6 to 7.8

## Map Unit Description (MN)

Anoka County, Minnesota

### KmD--Kingsley fine sandy loam, 12 to 18 percent slopes

#### Kingsley

*Extent:* 85 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 12 to 18 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .37

*Land capability, nonirrigated:* 4e

*Hydric soil:* no

*Hydrologic group:* C

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	fine sandy loam	moderate	0.31 to 0.57 in	5.6 to 6.5
E -- 3 to 13 in	fine sandy loam	moderate	0.98 to 1.48 in	5.6 to 6.5
Bt -- 13 to 34 in	fine sandy loam	moderately slow	2.50 to 3.34 in	5.1 to 7.3
C -- 34 to 60 in	sandy loam	moderately slow	2.60 to 3.64 in	5.6 to 7.8

## Map Unit Description (MN)

Anoka County, Minnesota

### KmE--Kingsley fine sandy loam, 18 to 30 percent slopes

#### Kingsley

*Extent:* 85 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 18 to 30 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .32

*Land capability, nonirrigated:* 6e

*Hydric soil:* no

*Hydrologic group:* C

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	fine sandy loam	moderate	0.31 to 0.57 in	5.6 to 6.5
E -- 3 to 13 in	fine sandy loam	moderate	0.98 to 1.48 in	5.6 to 6.5
Bt -- 13 to 34 in	fine sandy loam	moderately slow	2.50 to 3.34 in	5.1 to 7.3
C -- 34 to 60 in	sandy loam	moderately slow	2.60 to 3.64 in	5.6 to 7.8

### Kr--Kratka loamy fine sand

#### Kratka

*Extent:* 85 percent of the unit

*Landform(s):* swales on moraines

*Slope gradient:* 0 to 1 percent

*Parent material:* outwash over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .20

*Land capability, nonirrigated:* 6w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	loamy fine sand	rapid	0.98 to 1.18 in	5.6 to 7.3
Bg -- 10 to 30 in	fine sand	rapid	1.20 to 2.21 in	5.6 to 7.3
2Bg,2Cg -- 30 to 60 in	fine sandy loam	moderate	3.29 to 5.69 in	6.1 to 8.4

## Map Unit Description (MN)

Anoka County, Minnesota

### Lb--Lake beaches

#### Beaches, lake

*Extent:* 90 percent of the unit

*Landform(s):* shorelines

*Slope gradient:* 0 to 3 percent

*Parent material:* sandy beach sediments

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 1

*Wind erodibility index (WEI):* 220

*Kw factor (surface layer)* .02

*Land capability, nonirrigated:* 4w

*Hydric soil:* no

*Hydrologic group:* A/D

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 5 in	sand	rapid	0.20 to 0.36 in	6.1 to 7.8
C -- 5 to 80 in	gravelly coarse sand	rapid	1.50 to 7.48 in	7.4 to 8.4

### LgB--Langola loamy sand, 0 to 6 percent slopes

#### Langola

*Extent:* 85 percent of the unit

*Landform(s):* stream terraces

*Slope gradient:* 0 to 6 percent

*Parent material:* outwash over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .20

*Land capability, nonirrigated:* 3s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	loamy sand	rapid	0.98 to 1.18 in	5.1 to 6.5
Bw -- 10 to 31 in	loamy sand	rapid	1.70 to 2.13 in	5.1 to 6.5
2Bt -- 31 to 38 in	sandy loam	moderate	0.57 to 1.06 in	5.1 to 6.5
2Cd -- 38 to 60 in	sandy loam	slow	0.65 to 2.17 in	5.6 to 7.3

## Map Unit Description (MN)

Anoka County, Minnesota

### LnA--Lino loamy fine sand, 0 to 4 percent slopes

#### Lino

*Extent:* 85 percent of the unit

*Landform(s):* outwash plains

*Slope gradient:* 0 to 4 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .24

*Land capability, nonirrigated:* 3s

*Hydric soil:* no

*Hydrologic group:* A/D

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	loamy fine sand	rapid	0.79 to 0.94 in	5.1 to 6.0
Bw -- 8 to 38 in	fine sand	rapid	1.80 to 2.39 in	5.1 to 6.0
Cg -- 38 to 80 in	fine sand	rapid	2.11 to 2.95 in	5.1 to 6.5

### Lw--Loamy wet land

#### Loamy wet land

*Extent:* 100 percent of the unit

*Landform(s):* swales on moraines, swales on outwash plains

*Slope gradient:* 0 to 1 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 5

*Wind erodibility index (WEI):* 56

*Kw factor (surface layer)* .28

*Land capability, nonirrigated:* 6w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 21 in	loam	moderate	2.71 to 5.01 in	5.6 to 7.3
Bg -- 21 to 43 in	loam	moderate	2.65 to 3.75 in	5.6 to 7.3
Cg -- 43 to 60 in	loam	moderate	1.86 to 3.22 in	7.4 to 8.4

## Map Unit Description (MN)

Anoka County, Minnesota

### Lx--Lupton muck

#### Lupton

*Extent:* 85 percent of the unit

*Landform(s):* depressions on outwash plains

*Slope gradient:* 0 to 1 percent

*Parent material:* organic material

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 2

*Wind erodibility group (WEG):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .02

*Land capability, nonirrigated:* 7w

*Hydric soil:* yes

*Hydrologic group:* A/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oap -- 0 to 9 in	muck	moderately rapid	3.17 to 4.07 in	
Oa -- 9 to 60 in	muck	moderately rapid	17.78 to 22.85 in	

### M-W--Water, miscellaneous

#### Water, miscellaneous

*Extent:* 100 percent of the unit

*Landform(s):*

*Slope gradient:*

*Parent material:*

*Restrictive feature(s):* greater than 60 inches

*Flooding:*

*Ponding:*

*Drainage class:*

*Soil loss tolerance (T factor):*

*Wind erodibility group (WEG):*

*Wind erodibility index (WEI):*

*Kw factor (surface layer)*

*Land capability, nonirrigated:*

*Hydric soil:*

*Hydrologic group:*

*Potential for frost action:*

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

## Map Unit Description (MN)

Anoka County, Minnesota

### Ma--Markey muck

#### Markey

*Extent:* 85 percent of the unit

*Landform(s):* depressions on outwash plains, depressions on stream terraces

*Slope gradient:* 0 to 1 percent

*Parent material:* organic material over outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 1

*Wind erodibility group (WEG):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .02

*Land capability, nonirrigated:* 6w

*Hydric soil:* yes

*Hydrologic group:* A/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oap,Oa2,Oa3 - 0 to 31 in	muck	moderately rapid	10.89 to 14.00 in	
2A -- 31 to 36 in	fine sandy loam	rapid	0.14 to 0.66 in	
2Cg -- 36 to 80 in	fine sand	rapid	1.32 to 3.53 in	

### Mc--Marsh

#### Marsh

*Extent:* 100 percent of the unit

*Landform(s):* depressions

*Slope gradient:* 0 to 1 percent

*Parent material:* organic material

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 2

*Wind erodibility group (WEG):* 8

*Wind erodibility index (WEI):* 0

*Kw factor (surface layer)* .02

*Land capability, nonirrigated:* 8w

*Hydric soil:* yes

*Hydrologic group:* A/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oa1 -- 0 to 15 in	muck	moderately rapid	5.24 to 6.73 in	
Oa2,Oa3 -- 15 to 80 in	muck	moderately rapid	22.74 to 29.23 in	

## Map Unit Description (MN)

Anoka County, Minnesota

### Me--Meehan sand

#### Meehan

*Extent:* 85 percent of the unit

*Landform(s):* stream terraces

*Slope gradient:* 0 to 2 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 1

*Wind erodibility index (WEI):* 220

*Kw factor (surface layer)* .05

*Land capability, nonirrigated:* 4s

*Hydric soil:* no

*Hydrologic group:* A/D

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	sand	rapid	0.55 to 0.71 in	5.1 to 6.5
Bw -- 8 to 40 in	sand	rapid	1.94 to 3.55 in	5.1 to 6.5
C -- 40 to 60 in	sand	rapid	0.39 to 1.38 in	5.6 to 7.3

### Mk--Millerville mucky peat

#### Millerville

*Extent:* 85 percent of the unit

*Landform(s):* depressions on outwash plains

*Slope gradient:* 0 to 1 percent

*Parent material:* organic material over coprogenous earth

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 1

*Wind erodibility group (WEG):* 5

*Wind erodibility index (WEI):* 56

*Kw factor (surface layer)* .02

*Land capability, nonirrigated:* 7w

*Hydric soil:* yes

*Hydrologic group:* A/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oe, Oa -- 0 to 30 in	mucky peat	moderately rapid	13.46 to 16.46 in	
Lco -- 30 to 60 in	coprogenous earth	moderately rapid	5.98 to 10.47 in	

## Map Unit Description (MN)

Anoka County, Minnesota

### MoA--Mora fine sandy loam, 1 to 4 percent slopes

#### Mora

*Extent:* 85 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 1 to 4 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated:* 2e

*Hydric soil:* no

*Hydrologic group:* C

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	fine sandy loam	moderately rapid	1.18 to 1.42 in	5.1 to 6.5
E -- 8 to 15 in	fine sandy loam	moderately rapid	0.99 to 1.20 in	5.1 to 6.5
Bt -- 15 to 22 in	fine sandy loam	moderate	1.06 to 1.20 in	5.6 to 6.5
BC -- 22 to 41 in	fine sandy loam	moderately slow	1.51 to 3.02 in	5.6 to 7.3
C -- 41 to 60 in	sandy loam	moderately slow	1.51 to 2.65 in	5.6 to 7.3

## Map Unit Description (MN)

Anoka County, Minnesota

### NeA--Nessel fine sandy loam, 1 to 4 percent slopes

#### Nessel

*Extent:* 85 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 1 to 4 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated:* 2e

*Hydric soil:* no

*Hydrologic group:* C

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	fine sandy loam	moderately rapid	1.18 to 1.63 in	5.6 to 7.3
E -- 9 to 16 in	fine sandy loam	moderately rapid	0.78 to 1.35 in	5.6 to 7.3
Bt -- 16 to 40 in	sandy clay loam	moderate	3.60 to 4.56 in	5.6 to 7.8
C -- 40 to 60 in	fine sandy loam	moderate	2.95 to 3.74 in	7.4 to 8.4

### No--Nowen sandy loam

#### Nowen

*Extent:* 85 percent of the unit

*Landform(s):* swales on moraines

*Slope gradient:* 0 to 2 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated:* 2w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 15 in	sandy loam	moderate	2.09 to 2.69 in	5.6 to 7.3
Btg -- 15 to 49 in	fine sandy loam	moderate	4.74 to 5.42 in	5.6 to 7.3
Cg -- 49 to 60 in	sandy loam	moderate	0.99 to 1.54 in	6.1 to 7.8

## Map Unit Description (MN)

Anoka County, Minnesota

### NrD--Nymore loamy coarse sand, 12 to 25 percent slopes

#### Nymore

*Extent:* 95 percent of the unit

*Landform(s):* stream terraces

*Slope gradient:* 12 to 25 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .10

*Land capability, nonirrigated:* 7s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 7 in	loamy coarse sand	rapid	0.71 to 0.85 in	5.1 to 6.5
Bw -- 7 to 26 in	loamy sand	rapid	0.57 to 1.51 in	5.1 to 7.3
C -- 26 to 60 in	sand	rapid	0.68 to 2.71 in	5.1 to 7.8

### NyA--Nymore loamy sand, 0 to 2 percent slopes

#### Nymore

*Extent:* 95 percent of the unit

*Landform(s):* stream terraces

*Slope gradient:* 0 to 2 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .15

*Land capability, nonirrigated:* 4s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 7 in	loamy sand	rapid	0.71 to 0.85 in	5.1 to 6.5
Bw -- 7 to 26 in	loamy sand	rapid	0.57 to 1.51 in	5.1 to 7.3
C -- 26 to 60 in	sand	rapid	0.68 to 2.71 in	5.1 to 7.8

## Map Unit Description (MN)

Anoka County, Minnesota

### NyB--Nymore loamy sand, 2 to 6 percent slopes

#### Nymore

*Extent:* 95 percent of the unit

*Landform(s):* stream terraces

*Slope gradient:* 2 to 6 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .15

*Land capability, nonirrigated:* 4s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 7 in	loamy sand	rapid	0.71 to 0.85 in	5.1 to 6.5
Bw -- 7 to 26 in	loamy sand	rapid	0.57 to 1.51 in	5.1 to 7.3
C -- 26 to 60 in	sand	rapid	0.68 to 2.71 in	5.1 to 7.8

### NyC--Nymore loamy sand, 6 to 12 percent slopes

#### Nymore

*Extent:* 95 percent of the unit

*Landform(s):* stream terraces

*Slope gradient:* 6 to 12 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .15

*Land capability, nonirrigated:* 6s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 7 in	loamy sand	rapid	0.71 to 0.85 in	5.1 to 6.5
Bw -- 7 to 26 in	loamy sand	rapid	0.57 to 1.51 in	5.1 to 7.3
C -- 26 to 60 in	sand	rapid	0.68 to 2.71 in	5.1 to 7.8

## Map Unit Description (MN)

Anoka County, Minnesota

### Rf--Rifle mucky peat

#### Rifle

*Extent:* 85 percent of the unit

*Landform(s):* depressions on outwash plains

*Slope gradient:* 0 to 1 percent

*Parent material:* organic material

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 2

*Wind erodibility group (WEG):* 5

*Wind erodibility index (WEI):* 56

*Kw factor (surface layer)* .02

*Land capability, nonirrigated:* 6w

*Hydric soil:* yes

*Hydrologic group:* A/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oe1 -- 0 to 8 in	mucky peat	moderately rapid	3.78 to 4.57 in	
Oe2 -- 8 to 60 in	mucky peat	moderately rapid	24.94 to 30.14 in	

### Rg--Rifle muck, woody

#### Rifle, woody

*Extent:* 85 percent of the unit

*Landform(s):* depressions on outwash plains

*Slope gradient:* 0 to 1 percent

*Parent material:* organic material

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 2

*Wind erodibility group (WEG):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .02

*Land capability, nonirrigated:* 6w

*Hydric soil:* yes

*Hydrologic group:* A/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oa -- 0 to 8 in	muck	moderately rapid	3.78 to 4.57 in	
Oe -- 8 to 60 in	mucky peat	moderately rapid	24.94 to 30.14 in	

## Map Unit Description (MN)

Anoka County, Minnesota

### Rh--Rifle soils, ponded

#### Rifle, ponded

*Extent:* 85 percent of the unit

*Landform(s):* depressions on outwash plains

*Slope gradient:* 0 to 1 percent

*Parent material:* organic material

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 2

*Wind erodibility group (WEG):* 8

*Wind erodibility index (WEI):* 0

*Kw factor (surface layer)* .02

*Land capability, nonirrigated:* 8w

*Hydric soil:* yes

*Hydrologic group:* A/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oa1 -- 0 to 8 in	muck	moderately rapid	3.78 to 4.57 in	
Oa2 -- 8 to 60 in	muck	moderately rapid	24.94 to 30.14 in	

### Ru--Rondeau muck

#### Rondeau

*Extent:* 85 percent of the unit

*Landform(s):* depressions on outwash plains

*Slope gradient:* 0 to 1 percent

*Parent material:* organic material over marl

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 1

*Wind erodibility group (WEG):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .02

*Land capability, nonirrigated:* 6w

*Hydric soil:* yes

*Hydrologic group:* A/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oa -- 0 to 44 in	muck	moderately rapid	15.43 to 21.17 in	
Lco -- 44 to 49 in	coprogenous earth	moderately rapid	0.94 to 1.04 in	
Lma -- 49 to 60 in	marl	moderately rapid	2.20 to 2.43 in	

## Map Unit Description (MN)

Anoka County, Minnesota

### Ry--Ronneby fine sandy loam

#### Ronneby

*Extent:* 85 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 0 to 2 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated:* 2w

*Hydric soil:* no

*Hydrologic group:* C/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 5 in	fine sandy loam	moderately rapid	0.67 to 0.92 in	5.1 to 6.5
Eg -- 5 to 15 in	fine sandy loam	moderately rapid	1.18 to 1.87 in	5.1 to 6.5
Btg -- 15 to 32 in	fine sandy loam	moderate	2.03 to 3.22 in	5.1 to 6.5
BC -- 32 to 42 in	fine sandy loam	moderately slow	1.33 to 1.64 in	5.6 to 7.3
C -- 42 to 60 in	fine sandy loam	moderately slow	1.95 to 2.48 in	5.6 to 7.3

## Map Unit Description (MN)

Anoka County, Minnesota

### SbB--Sartell fine sand, 2 to 6 percent slopes

#### Sartell

*Extent:* 99 percent of the unit

*Landform(s):* outwash plains

*Slope gradient:* 2 to 6 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 1

*Wind erodibility index (WEI):* 250

*Kw factor (surface layer)* .10

*Land capability, nonirrigated:* 4s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	fine sand	rapid	0.63 to 1.00 in	4.5 to 6.0
Bw -- 9 to 26 in	fine sand	rapid	1.02 to 1.69 in	5.1 to 6.0
C -- 26 to 60 in	fine sand	rapid	1.69 to 2.71 in	5.6 to 7.3

### SbC--Sartell fine sand, 6 to 12 percent slopes

#### Sartell

*Extent:* 90 percent of the unit

*Landform(s):* outwash plains

*Slope gradient:* 6 to 12 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 1

*Wind erodibility index (WEI):* 250

*Kw factor (surface layer)* .10

*Land capability, nonirrigated:* 6s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	fine sand	rapid	0.63 to 1.00 in	4.5 to 6.0
Bw -- 9 to 26 in	fine sand	rapid	1.02 to 1.69 in	5.1 to 6.0
C -- 26 to 60 in	fine sand	rapid	1.69 to 2.71 in	5.6 to 7.3

## Map Unit Description (MN)

Anoka County, Minnesota

### SbC2--Sartell fine sand, 6 to 12 percent slopes, eroded

#### Sartell, eroded

*Extent:* 90 percent of the unit

*Landform(s):* outwash plains

*Slope gradient:* 6 to 12 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 1

*Wind erodibility index (WEI):* 250

*Kw factor (surface layer)* .10

*Land capability, nonirrigated:* 6s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	fine sand	rapid	0.63 to 1.00 in	4.5 to 6.0
Bw -- 9 to 26 in	fine sand	rapid	1.02 to 1.69 in	5.1 to 6.0
C -- 26 to 60 in	fine sand	rapid	1.69 to 2.71 in	5.6 to 7.3

### SbD2--Sartell fine sand, 12 to 24 percent slopes, eroded

#### Sartell, eroded

*Extent:* 90 percent of the unit

*Landform(s):* outwash plains

*Slope gradient:* 12 to 24 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 1

*Wind erodibility index (WEI):* 250

*Kw factor (surface layer)* .10

*Land capability, nonirrigated:* 7s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	fine sand	rapid	0.81 to 1.00 in	4.5 to 6.0
Bw -- 9 to 26 in	fine sand	rapid	1.02 to 1.69 in	5.1 to 6.0
C -- 26 to 60 in	fine sand	rapid	1.69 to 3.05 in	5.6 to 7.3

## Map Unit Description (MN)

Anoka County, Minnesota

### Se--Seelyeville muck

#### Seelyeville

*Extent:* 85 percent of the unit

*Landform(s):* depressions on outwash plains

*Slope gradient:* 0 to 1 percent

*Parent material:* organic material

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 2

*Wind erodibility group (WEG):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .02

*Land capability, nonirrigated:* 6w

*Hydric soil:* yes

*Hydrologic group:* A/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oap -- 0 to 10 in	muck	moderately rapid	3.44 to 4.43 in	
Oa2,Oa5 -- 10 to 60 in	muck	moderately rapid	17.50 to 22.50 in	

### SoA--Soderville fine sand, 0 to 3 percent slopes

#### Soderville

*Extent:* 85 percent of the unit

*Landform(s):* outwash plains

*Slope gradient:* 0 to 3 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 1

*Wind erodibility index (WEI):* 250

*Kw factor (surface layer)* .10

*Land capability, nonirrigated:* 3s

*Hydric soil:* no

*Hydrologic group:* A/D

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	fine sand	rapid	0.72 to 1.09 in	5.1 to 6.5
E -- 9 to 36 in	loamy fine sand	rapid	1.61 to 2.14 in	5.1 to 6.5
Bt -- 36 to 46 in	loamy fine sand	rapid	0.61 to 1.13 in	5.1 to 6.5
C -- 46 to 60 in	fine sand	rapid	0.69 to 1.38 in	5.1 to 6.5

## Map Unit Description (MN)

Anoka County, Minnesota

### Ub--Urban land-Becker complex, 0 to 3 percent slopes

#### Urban land

*Extent:* 85 percent of the unit

*Landform(s):* stream terraces

*Slope gradient:* 0 to 3 percent

*Parent material:* variable sandy material

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:*

*Soil loss tolerance (T factor):*

*Wind erodibility group (WEG):*

*Wind erodibility index (WEI):*

*Kw factor (surface layer)*

*Land capability, nonirrigated:*

*Hydric soil:*

*Hydrologic group:*

*Potential for frost action:*

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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#### Becker

*Extent:* 15 percent of the unit

*Landform(s):* flood plains on stream terraces

*Slope gradient:* 0 to 3 percent

*Parent material:* alluvium

*Restrictive feature(s):* greater than 60 inches

*Flooding:* rare

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 3

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .37

*Land capability, nonirrigated:* 2s

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	very fine sandy loam	moderately rapid	1.57 to 1.97 in	5.1 to 7.3
A1,A3 -- 10 to 35 in	very fine sandy loam	moderately rapid	3.78 to 5.04 in	5.1 to 7.3
Bw -- 35 to 39 in	very fine sandy loam	moderately rapid	0.59 to 0.75 in	5.6 to 7.8
2C -- 39 to 80 in	coarse sand	rapid	0.82 to 4.09 in	5.6 to 7.8

## Map Unit Description (MN)

Anoka County, Minnesota

### Ud--Urban land-Dundas complex, 0 to 3 percent slopes

#### Urban land

*Extent:* 85 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 0 to 3 percent

*Parent material:* variable loamy material

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:*

*Soil loss tolerance (T factor):*

*Wind erodibility group (WEG):*

*Wind erodibility index (WEI):*

*Kw factor (surface layer)*

*Land capability, nonirrigated:*

*Hydric soil:*

*Hydrologic group:*

*Potential for frost action:*

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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#### Dundas

*Extent:* 15 percent of the unit

*Landform(s):* flats on moraines

*Slope gradient:* 0 to 2 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 5

*Wind erodibility index (WEI):* 56

*Kw factor (surface layer)* .32

*Land capability, nonirrigated:* 2w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	loam	moderate	1.97 to 2.17 in	5.1 to 7.3
E -- 10 to 15 in	fine sandy loam	moderate	0.67 to 1.13 in	5.1 to 7.3
Btg -- 15 to 39 in	sandy clay loam	moderate	3.60 to 4.56 in	5.6 to 7.3
Cg -- 39 to 60 in	fine sandy loam	moderate	2.71 to 3.96 in	7.4 to 8.4

## Map Unit Description (MN)

Anoka County, Minnesota

### UhdC--Urban land-Hayden complex, 3 to 15 percent slopes

#### Urban land

*Extent:* 85 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 3 to 15 percent

*Parent material:* variable loamy material

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:*

*Soil loss tolerance (T factor):*

*Wind erodibility group (WEG):*

*Wind erodibility index (WEI):*

*Kw factor (surface layer)*

*Land capability, nonirrigated:*

*Hydric soil:*

*Hydrologic group:*

*Potential for frost action:*

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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#### Hayden

*Extent:* 15 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 3 to 15 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated:* 3e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 6 in	fine sandy loam	moderately rapid	0.77 to 1.06 in	5.6 to 7.3
E -- 6 to 10 in	fine sandy loam	moderately rapid	0.43 to 0.75 in	5.6 to 7.3
Bt -- 10 to 37 in	sandy clay loam	moderate	4.07 to 5.16 in	5.6 to 7.8
C -- 37 to 60 in	fine sandy loam	moderate	2.51 to 4.34 in	7.4 to 8.4

## Map Unit Description (MN)

Anoka County, Minnesota

### UhdD--Urban land-Hayden complex, 15 to 25 percent slopes

#### Urban land

*Extent:* 85 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 15 to 25 percent

*Parent material:* variable loamy material

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:*

*Soil loss tolerance (T factor):*

*Wind erodibility group (WEG):*

*Wind erodibility index (WEI):*

*Kw factor (surface layer)*

*Land capability, nonirrigated:*

*Hydric soil:*

*Hydrologic group:*

*Potential for frost action:*

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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#### Hayden

*Extent:* 15 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 15 to 25 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated:* 6e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 6 in	fine sandy loam	moderately rapid	0.77 to 1.06 in	5.6 to 7.3
E -- 6 to 10 in	fine sandy loam	moderately rapid	0.43 to 0.75 in	5.6 to 7.3
Bt -- 10 to 37 in	sandy clay loam	moderate	4.07 to 5.16 in	5.6 to 7.8
C -- 37 to 60 in	fine sandy loam	moderate	2.51 to 4.34 in	7.4 to 8.4

## Map Unit Description (MN)

Anoka County, Minnesota

### UhuB--Urban land-Hubbard complex, 0 to 8 percent slopes

#### Urban land

*Extent:* 35 to 80 percent of the unit

*Landform(s):* stream terraces

*Slope gradient:* 0 to 8 percent

*Parent material:* variable sandy material

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:*

*Soil loss tolerance (T factor):*

*Wind erodibility group (WEG):*

*Wind erodibility index (WEI):*

*Kw factor (surface layer)*

*Land capability, nonirrigated:*

*Hydric soil:*

*Hydrologic group:*

*Potential for frost action:*

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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#### Hubbard

*Extent:* 0 to 20 percent of the unit

*Landform(s):* stream terraces

*Slope gradient:* 0 to 8 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .10

*Land capability, nonirrigated:* 4s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 18 in	loamy sand	rapid	1.45 to 2.17 in	5.1 to 7.3
Bw -- 18 to 23 in	loamy sand	rapid	0.14 to 0.33 in	5.1 to 7.3
BC,C -- 23 to 80 in	sand	rapid	1.71 to 4.00 in	5.6 to 7.8

## Map Unit Description (MN)

Anoka County, Minnesota

### Ui--Urban land-Isanti complex, 0 to 2 percent slopes

#### Urban land

*Extent:* 85 percent of the unit

*Landform(s):* outwash plains

*Slope gradient:* 0 to 2 percent

*Parent material:* variable sandy material

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:*

*Soil loss tolerance (T factor):*

*Wind erodibility group (WEG):*

*Wind erodibility index (WEI):*

*Kw factor (surface layer)*

*Land capability, nonirrigated:*

*Hydric soil:*

*Hydrologic group:*

*Potential for frost action:*

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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#### Isanti

*Extent:* 15 percent of the unit

*Landform(s):* swales on outwash plains

*Slope gradient:* 0 to 1 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated:* 6w

*Hydric soil:* yes

*Hydrologic group:* A/D

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	fine sandy loam	moderately rapid	1.28 to 1.77 in	5.1 to 6.5
Bg -- 10 to 31 in	fine sand	rapid	1.28 to 1.70 in	5.1 to 6.5
Cg -- 31 to 60 in	fine sand	rapid	1.44 to 2.01 in	5.6 to 6.5

## Map Unit Description (MN)

Anoka County, Minnesota

### UKD--Urban land-Kingsley complex, 15 to 25 percent slopes

#### Urban land

*Extent:* 85 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 15 to 25 percent

*Parent material:* variable loamy material

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:*

*Soil loss tolerance (T factor):*

*Wind erodibility group (WEG):*

*Wind erodibility index (WEI):*

*Kw factor (surface layer)*

*Land capability, nonirrigated:*

*Hydric soil:*

*Hydrologic group:*

*Potential for frost action:*

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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#### Kingsley

*Extent:* 15 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 15 to 18 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .37

*Land capability, nonirrigated:* 4e

*Hydric soil:* no

*Hydrologic group:* C

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	fine sandy loam	moderate	0.31 to 0.57 in	5.6 to 6.5
E -- 3 to 13 in	fine sandy loam	moderate	0.98 to 1.48 in	5.6 to 6.5
Bt -- 13 to 34 in	fine sandy loam	moderately slow	2.50 to 3.34 in	5.1 to 7.3
C -- 34 to 60 in	sandy loam	moderately slow	2.60 to 3.64 in	5.6 to 7.8

## Map Unit Description (MN)

Anoka County, Minnesota

### Un--Urban land-Lino complex, 0 to 3 percent slopes

#### Urban land

*Extent:* 85 percent of the unit

*Landform(s):* outwash plains

*Slope gradient:* 0 to 3 percent

*Parent material:* variable sandy material

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:*

*Soil loss tolerance (T factor):*

*Wind erodibility group (WEG):*

*Wind erodibility index (WEI):*

*Kw factor (surface layer)*

*Land capability, nonirrigated:*

*Hydric soil:*

*Hydrologic group:*

*Potential for frost action:*

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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#### Lino

*Extent:* 15 percent of the unit

*Landform(s):* outwash plains

*Slope gradient:* 0 to 3 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .24

*Land capability, nonirrigated:* 3s

*Hydric soil:* no

*Hydrologic group:* A/D

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	loamy fine sand	rapid	0.79 to 0.94 in	5.1 to 6.0
Bw -- 8 to 38 in	fine sand	rapid	1.80 to 2.39 in	5.1 to 6.0
Cg -- 38 to 80 in	fine sand	rapid	2.11 to 2.95 in	5.1 to 6.5

## Map Unit Description (MN)

Anoka County, Minnesota

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### UuB--Urban land-Udorthents (cut and fill land) complex, 0 to 6 percent slopes

#### Urban land

*Extent:* 35 to 80 percent of the unit

*Landform(s):* moraines, outwash plains, stream terraces

*Slope gradient:* 0 to 6 percent

*Parent material:* variable loamy material

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:*

*Soil loss tolerance (T factor):*

*Wind erodibility group (WEG):*

*Wind erodibility index (WEI):*

*Kw factor (surface layer)*

*Land capability, nonirrigated:*

*Hydric soil:*

*Hydrologic group:*

*Potential for frost action:*

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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#### Udorthents, cut and fill land

*Extent:* 20 to 65 percent of the unit

*Landform(s):* moraines, outwash plains, stream terraces

*Slope gradient:* 0 to 6 percent

*Parent material:* variable loamy material

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:*

*Soil loss tolerance (T factor):*

*Wind erodibility group (WEG):*

*Wind erodibility index (WEI):*

*Kw factor (surface layer)*

*Land capability, nonirrigated:*

*Hydric soil:*

*Hydrologic group:*

*Potential for frost action:*

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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## Map Unit Description (MN)

Anoka County, Minnesota

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### Uw--Urban land-Udorthent, wet substratum complex, 0 to 2 percent slopes

#### Urban land

*Extent:* 65 to 90 percent of the unit

*Landform(s):* outwash plains, moraines, stream terraces

*Slope gradient:* 0 to 2 percent

*Parent material:* variable loamy material

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:*

*Soil loss tolerance (T factor):*

*Wind erodibility group (WEG):*

*Wind erodibility index (WEI):*

*Kw factor (surface layer)*

*Land capability, nonirrigated:*

*Hydric soil:*

*Hydrologic group:*

*Potential for frost action:*

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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#### Udorthents, wet substratum

*Extent:* 10 to 35 percent of the unit

*Landform(s):* outwash plains, moraines, stream terraces

*Slope gradient:* 0 to 2 percent

*Parent material:* variable soil material

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:*

*Soil loss tolerance (T factor):*

*Wind erodibility group (WEG):*

*Wind erodibility index (WEI):*

*Kw factor (surface layer)*

*Land capability, nonirrigated:*

*Hydric soil:*

*Hydrologic group:*

*Potential for frost action:*

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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## Map Unit Description (MN)

Anoka County, Minnesota

### UzB--Urban land-Zimmerman complex, 0 to 8 percent slopes

#### Urban land

*Extent:* 85 percent of the unit  
*Landform(s):* outwash plains  
*Slope gradient:* 0 to 8 percent  
*Parent material:* variable sandy material  
*Restrictive feature(s):* greater than 60 inches  
*Flooding:* none  
*Ponding:* none  
*Drainage class:*

*Soil loss tolerance (T factor):*  
*Wind erodibility group (WEG):*  
*Wind erodibility index (WEI):*  
*Kw factor (surface layer)*  
*Land capability, nonirrigated:*  
*Hydric soil:*  
*Hydrologic group:*  
*Potential for frost action:*

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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#### Zimmerman

*Extent:* 15 percent of the unit  
*Landform(s):* outwash plains  
*Slope gradient:* 0 to 8 percent  
*Parent material:* outwash  
*Restrictive feature(s):* greater than 60 inches  
*Flooding:* none  
*Ponding:* none  
*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5  
*Wind erodibility group (WEG):* 1  
*Wind erodibility index (WEI):* 250  
*Kw factor (surface layer)* .10  
*Land capability, nonirrigated:* 4s  
*Hydric soil:* no  
*Hydrologic group:* A  
*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	fine sand	rapid	0.69 to 1.08 in	5.1 to 6.5
E,E&Bt -- 10 to 60 in	fine sand	rapid	3.00 to 5.00 in	5.1 to 7.3

## Map Unit Description (MN)

Anoka County, Minnesota

### W--Water

#### Water

*Extent:* 100 percent of the unit

*Landform(s):*

*Slope gradient:*

*Parent material:*

*Restrictive feature(s):* greater than 60 inches

*Flooding:*

*Ponding:*

*Drainage class:*

*Soil loss tolerance (T factor):*

*Wind erodibility group (WEG):*

*Wind erodibility index (WEI):*

*Kw factor (surface layer)*

*Land capability, nonirrigated:*

*Hydric soil:*

*Hydrologic group:*

*Potential for frost action:*

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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### Wb--Webster loam

#### Webster

*Extent:* 85 percent of the unit

*Landform(s):* swales on moraines

*Slope gradient:* 0 to 2 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 5

*Wind erodibility index (WEI):* 56

*Kw factor (surface layer)* .28

*Land capability, nonirrigated:* 2w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	loam	moderate	1.97 to 2.17 in	5.1 to 7.3
A -- 10 to 16 in	loam	moderate	0.82 to 1.39 in	5.1 to 7.3
Bg -- 16 to 23 in	sandy clay loam	moderate	1.07 to 1.27 in	5.6 to 7.3
Cg -- 23 to 60 in	fine sandy loam	moderate	5.55 to 7.03 in	7.4 to 8.4

## Map Unit Description (MN)

Anoka County, Minnesota

### ZmA--Zimmerman fine sand, 0 to 2 percent slopes

#### Zimmerman

*Extent:* 90 percent of the unit

*Landform(s):* outwash plains

*Slope gradient:* 0 to 2 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 1

*Wind erodibility index (WEI):* 250

*Kw factor (surface layer)* .10

*Land capability, nonirrigated:* 4s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	fine sand	rapid	0.69 to 1.08 in	5.1 to 6.5
E,E&Bt -- 10 to 60 in	fine sand	rapid	3.00 to 5.00 in	5.1 to 7.3

### ZmB--Zimmerman fine sand, 2 to 6 percent slopes

#### Zimmerman

*Extent:* 90 percent of the unit

*Landform(s):* outwash plains

*Slope gradient:* 2 to 6 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 1

*Wind erodibility index (WEI):* 250

*Kw factor (surface layer)* .10

*Land capability, nonirrigated:* 4s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	fine sand	rapid	0.69 to 1.08 in	5.1 to 6.5
E,E&Bt -- 10 to 60 in	fine sand	rapid	3.00 to 5.00 in	5.1 to 7.3

## Map Unit Description (MN)

Anoka County, Minnesota

### ZmC--Zimmerman fine sand, 6 to 12 percent slopes

#### Zimmerman

*Extent:* 95 percent of the unit

*Landform(s):* outwash plains

*Slope gradient:* 6 to 12 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 1

*Wind erodibility index (WEI):* 250

*Kw factor (surface layer)* .10

*Land capability, nonirrigated:* 6s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	fine sand	rapid	0.69 to 1.08 in	5.1 to 6.5
E,E&Bt -- 10 to 60 in	fine sand	rapid	3.00 to 5.00 in	5.1 to 7.3

### ZmD--Zimmerman fine sand, 12 to 24 percent slopes

#### Zimmerman

*Extent:* 95 percent of the unit

*Landform(s):* outwash plains

*Slope gradient:* 12 to 24 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 1

*Wind erodibility index (WEI):* 250

*Kw factor (surface layer)* .10

*Land capability, nonirrigated:* 6s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	fine sand	rapid	0.69 to 1.08 in	5.1 to 6.5
E,E&Bt -- 10 to 60 in	fine sand	rapid	3.00 to 5.00 in	5.1 to 7.3

This report provides a semitabular listing of some soil and site properties and interpretations that are valuable in communicating the concept of a map unit. The report also provides easy access to the commonly used conservation planning information in one place. The major soil components in each map unit are displayed. Minor components may be displayed if they are included in the database and are selected at the time the report is generated.