

## Map Unit Description (MN)

Stevens 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]

### AaA--Aastad clay loam, 0 to 2 percent slopes

#### Aastad

*Extent:* 85 percent of the unit

*Landform(s):* flats on moraines, rises on moraines

*Slope gradient:* 0 to 2 percent

*Parent material:* loamy glacial 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):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .15

*Land capability, nonirrigated* 1

*Hydric soil:* no

*Hydrologic group:* C/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,A1,A2 --	0 to 14 in clay loam	moderately slow	2.41 to 2.69 in	6.1 to 7.8
Bw --	14 to 23 in clay loam	moderately slow	1.30 to 1.65 in	6.6 to 7.8
Bk,C --	23 to 60 in clay loam	moderately slow	5.18 to 5.92 in	7.4 to 8.4

### Af--Alluvial land, frequently flooded

#### Alluvial land, frequently flooded

*Extent:* 85 percent of the unit

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

*Slope gradient:* 0 to 2 percent

*Parent material:* stratified variable soil material

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

*Flooding:* frequent

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):*

*Wind erodibility group (WEG):*

*Wind erodibility index (WEI):*

*Kw factor (surface layer)*

*Land capability, nonirrigated* 6w

*Hydric soil:* yes

*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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### Ar--Arveson fine sandy loam

#### Arveson

*Extent:* 85 percent of the unit

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

*Slope gradient:* 0 to 1 percent

*Parent material:* loamy mantle over sandy and gravelly outwash

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

*Flooding:* none

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 3

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .10

*Land capability, nonirrigated* 3w

*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>
Ap,A -- 0 to 12 in	fine sandy loam	moderately rapid	1.54 to 1.77 in	7.4 to 8.4
Ak,Bkg -- 12 to 24 in	fine sandy loam	moderately rapid	1.83 to 2.07 in	7.4 to 8.4
2C -- 24 to 60 in	fine sand	rapid	1.79 to 5.37 in	7.4 to 8.4

### BaA--Barnes loam, 0 to 2 percent slopes

#### Barnes

*Extent:* 85 percent of the unit

*Landform(s):* flats on moraines, hillslopes on moraines

*Slope gradient:* 0 to 2 percent

*Parent material:* loamy glacial 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):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 1

*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 8 in	loam	moderate	1.42 to 1.89 in	6.1 to 7.3
Bw -- 8 to 16 in	loam	moderate	1.24 to 1.57 in	6.1 to 7.3
Bk,C -- 16 to 60 in	loam	moderate	6.12 to 8.30 in	7.4 to 8.4

## Map Unit Description (MN)

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### BaB--Barnes loam, 2 to 6 percent slopes

#### Barnes

*Extent:* 85 percent of the unit

*Landform(s):* hillslopes on moraines

*Slope gradient:* 2 to 6 percent

*Parent material:* loamy glacial 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):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .20

*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 8 in	loam	moderate	1.42 to 1.89 in	6.1 to 7.3
Bw -- 8 to 16 in	loam	moderate	1.24 to 1.57 in	6.1 to 7.3
Bk,C -- 16 to 60 in	loam	moderate	6.12 to 8.30 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### BbB2--Barnes-Buse loams, 2 to 6 percent slopes, eroded

#### Barnes, eroded

*Extent:* 50 percent of the unit

*Landform(s):* hillslopes on moraines

*Slope gradient:* 2 to 6 percent

*Parent material:* loamy glacial 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):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .20

*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 8 in	loam	moderate	1.42 to 1.89 in	6.1 to 7.3
Bw -- 8 to 16 in	loam	moderate	1.24 to 1.57 in	6.1 to 7.3
Bk,C -- 16 to 60 in	loam	moderate	6.12 to 8.30 in	7.4 to 8.4

#### Buse, eroded

*Extent:* 30 percent of the unit

*Landform(s):* hillslopes on moraines

*Slope gradient:* 3 to 6 percent

*Parent material:* loamy glacial 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):* 4L

*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>
A1,A2 -- 0 to 5 in	loam	moderate	0.87 to 1.13 in	7.4 to 8.4
Bk -- 5 to 14 in	loam	moderate	1.27 to 1.72 in	7.4 to 8.4
C -- 14 to 60 in	loam	moderate	6.39 to 8.68 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### BbC2--Barnes-Buse loams, 6 to 12 percent slopes, eroded

#### Barnes, eroded

*Extent:* 50 percent of the unit

*Landform(s):* hillslopes on moraines

*Slope gradient:* 6 to 12 percent

*Parent material:* loamy glacial 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):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .20

*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 8 in	loam	moderate	1.42 to 1.89 in	6.1 to 7.3
Bw -- 8 to 16 in	loam	moderate	1.24 to 1.57 in	6.1 to 7.3
Bk,C -- 16 to 60 in	loam	moderate	6.12 to 8.30 in	7.4 to 8.4

#### Buse, eroded

*Extent:* 30 percent of the unit

*Landform(s):* hillslopes on moraines

*Slope gradient:* 6 to 12 percent

*Parent material:* loamy glacial 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):* 4L

*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>
A1,A2 -- 0 to 5 in	loam	moderate	0.87 to 1.13 in	7.4 to 8.4
Bk -- 5 to 14 in	loam	moderate	1.27 to 1.72 in	7.4 to 8.4
C -- 14 to 60 in	loam	moderate	6.39 to 8.68 in	7.4 to 8.4

## Map Unit Description (MN)

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### BdA--Bearden silt loam, 0 to 2 percent slopes

#### Bearden

*Extent:* 85 percent of the unit

*Landform(s):* flats on lake plains, rises on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* silty glaciolacustrine deposits

*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):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .37

*Land capability, nonirrigated* 2s

*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,A -- 0 to 8 in	silt loam	moderate	1.57 to 1.89 in	7.4 to 8.4
Ak,Bk -- 8 to 29 in	silt loam	moderately slow	3.40 to 4.68 in	7.4 to 8.4
C1 -- 29 to 37 in	silt loam	moderately slow	1.26 to 1.73 in	7.4 to 8.4
C2 -- 37 to 60 in	silt loam	slow	3.65 to 5.02 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### Be--Biscay silty clay loam

#### Biscay

*Extent:* 85 percent of the unit

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

*Slope gradient:* 0 to 1 percent

*Parent material:* loamy mantle over sandy and gravelly outwash

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

*Flooding:* none

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 3

*Wind erodibility group (WEG):* 4L

*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

*Representative soil profile:*

		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A1,A2 --	0 to 20 in	silty clay loam	moderate	4.02 to 4.42 in	6.1 to 7.8
Bg --	20 to 38 in	loam	moderate	3.01 to 3.37 in	6.6 to 7.8
2Cg --	38 to 60 in	stratified gravelly coarse sand to loamy sand	rapid	0.44 to 0.88 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### Bf--Biscay silty clay loam, depressional

#### Biscay, depressional

*Extent:* 85 percent of the unit

*Landform(s):* depressions on outwash plains

*Slope gradient:* 0 to 1 percent

*Parent material:* loamy mantle over sandy and gravelly outwash

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

*Flooding:* none

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 3

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 3w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

#### *Representative soil profile:*

		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A1,A2 --	0 to 20 in	silty clay loam	moderate	4.02 to 4.42 in	6.1 to 7.8
Bg --	20 to 38 in	loam	moderate	3.01 to 3.37 in	6.6 to 7.8
2Cg --	38 to 60 in	stratified gravelly coarse sand to loamy sand	rapid	0.44 to 0.88 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### Bh--Blue Earth silt loam

#### Blue Earth

*Extent:* 85 percent of the unit

*Landform(s):* depressions on moraines, lakebeds (relict) on moraines

*Slope gradient:* 0 to 1 percent

*Parent material:* coprogenous organic material

*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):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .37

*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 7 in	silt loam	moderate	1.28 to 1.70 in	7.4 to 8.4
A1 -- 7 to 17 in	mucky silty clay loam	moderate	1.77 to 2.36 in	7.4 to 8.4
2Cg -- 17 to 60 in	silty clay loam	moderate	6.01 to 6.87 in	7.4 to 8.4

### Bm--Borup silt loam

#### Borup

*Extent:* 85 percent of the unit

*Landform(s):* flats on lake plains, swales on lake plains

*Slope gradient:* 0 to 1 percent

*Parent material:* loamy mantle over sandy and gravelly outwash

*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):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 2w

*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>
Ap,A -- 0 to 12 in	silt loam	moderately rapid	2.36 to 2.72 in	7.4 to 8.4
Ak,Bkg -- 12 to 31 in	silt loam	moderately rapid	3.28 to 3.86 in	7.4 to 8.4
2Cg -- 31 to 60 in	very fine sand	rapid	4.31 to 5.46 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### BnE--Buse loam, 18 to 35 percent slopes

#### Buse

*Extent:* 85 percent of the unit

*Landform(s):* hillslopes on moraines

*Slope gradient:* 18 to 35 percent

*Parent material:* loamy glacial 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):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 7e

*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>
A1,A2 -- 0 to 5 in	loam	moderate	0.87 to 1.13 in	7.4 to 8.4
Bk -- 5 to 14 in	loam	moderate	1.27 to 1.72 in	7.4 to 8.4
C -- 14 to 60 in	loam	moderate	6.39 to 8.68 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### BoD2--Buse-Barnes loams, 12 to 18 percent slopes, eroded

#### Buse, eroded

*Extent:* 50 percent of the unit

*Landform(s):* hillslopes on moraines

*Slope gradient:* 12 to 18 percent

*Parent material:* loamy glacial 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):* 4L

*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>
A1,A2 -- 0 to 5 in	loam	moderate	0.87 to 1.13 in	7.4 to 8.4
Bk -- 5 to 14 in	loam	moderate	1.27 to 1.72 in	7.4 to 8.4
C -- 14 to 60 in	loam	moderate	6.39 to 8.68 in	7.4 to 8.4

#### Barnes, eroded

*Extent:* 30 percent of the unit

*Landform(s):* hillslopes on moraines

*Slope gradient:* 12 to 18 percent

*Parent material:* loamy glacial 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):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .20

*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 8 in	loam	moderate	1.42 to 1.89 in	6.1 to 7.3
Bw -- 8 to 16 in	loam	moderate	1.24 to 1.57 in	6.1 to 7.3
Bk,C -- 16 to 60 in	loam	moderate	6.12 to 8.30 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### BuD--Buse-Forman complex, 12 to 18 percent slopes

#### Buse

*Extent:* 50 percent of the unit

*Landform(s):* hillslopes on moraines

*Slope gradient:* 12 to 18 percent

*Parent material:* loamy glacial 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):* 4L

*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>
A1,A2 -- 0 to 5 in	loam	moderate	0.87 to 1.13 in	7.4 to 8.4
Bk -- 5 to 14 in	loam	moderate	1.27 to 1.72 in	7.4 to 8.4
C -- 14 to 60 in	loam	moderate	6.39 to 8.68 in	7.4 to 8.4

#### Forman

*Extent:* 30 percent of the unit

*Landform(s):* hillslopes on moraines

*Slope gradient:* 12 to 18 percent

*Parent material:* loamy glacial 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):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .17

*Land capability, nonirrigated* 6e

*Hydric soil:* no

*Hydrologic group:* C

*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	clay loam	moderate	1.34 to 1.50 in	6.6 to 7.8
Bt -- 8 to 20 in	clay loam	moderate	1.83 to 2.32 in	6.6 to 7.8
Bk,C -- 20 to 60 in	clay loam	moderately slow	5.57 to 7.56 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### Co--Colvin silty clay loam

#### Colvin

*Extent:* 85 percent of the unit

*Landform(s):* flats on lake plains, swales on lake plains

*Slope gradient:* 0 to 1 percent

*Parent material:* silty glaciolacustrine 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):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .28

*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 10 in	silty clay loam	moderately slow	1.97 to 2.17 in	6.6 to 8.4
Bkg -- 10 to 23 in	silty clay loam	moderately slow	2.08 to 2.60 in	7.4 to 9.0
Cg -- 23 to 60 in	silt loam	moderate	5.55 to 7.40 in	7.4 to 8.4

### Cp--Colvin silty clay loam, depressional

#### Colvin, depressional

*Extent:* 85 percent of the unit

*Landform(s):* depressions on lake plains

*Slope gradient:* 0 to 1 percent

*Parent material:* silty glaciolacustrine deposits

*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):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 3w

*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 10 in	silty clay loam	moderately slow	1.97 to 2.17 in	6.6 to 8.4
Bkg -- 10 to 23 in	silty clay loam	moderate	2.08 to 2.60 in	7.4 to 8.4
Cg -- 23 to 60 in	silt loam	moderate	5.55 to 7.40 in	7.4 to 8.4

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### Cu--Colvin-Borup complex

#### Colvin

*Extent:* 50 percent of the unit

*Landform(s):* flats on lake plains, swales on lake plains

*Slope gradient:* 0 to 1 percent

*Parent material:* silty glaciolacustrine 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):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .28

*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 10 in	silty clay loam	moderately slow	1.97 to 2.17 in	6.6 to 8.4
Bkg -- 10 to 23 in	silty clay loam	moderately slow	2.08 to 2.60 in	7.4 to 9.0
Cg -- 23 to 60 in	silt loam	moderate	5.55 to 7.40 in	7.4 to 8.4

#### Borup

*Extent:* 30 percent of the unit

*Landform(s):* flats on lake plains, swales on lake plains

*Slope gradient:* 0 to 1 percent

*Parent material:* loamy mantle over sandy and gravelly outwash

*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):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 2w

*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>
Ap,A -- 0 to 12 in	silt loam	moderately rapid	2.36 to 2.72 in	7.4 to 8.4
Ak,Bkg -- 12 to 21 in	silt loam	moderately rapid	1.54 to 1.81 in	7.4 to 8.4
2Cg -- 21 to 60 in	very fine sandy loam	rapid	5.85 to 7.41 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### DaB--Darnen loam, 0 to 4 percent slopes

#### Darnen

*Extent:* 85 percent of the unit

*Landform(s):* hillslopes on moraines

*Slope gradient:* 0 to 4 percent

*Parent material:* loamy alluvium over loamy glacial 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):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .17

*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>
A1,A2 -- 0 to 24 in	loam	moderate	4.32 to 4.80 in	6.6 to 7.8
Bw -- 24 to 42 in	loam	moderate	2.72 to 3.44 in	6.1 to 7.8
Bk1,2Bk2,2C -- 42 to 60 in	loam	moderate	2.48 to 3.37 in	7.4 to 8.4

### DIA--Doland silt loam, 0 to 2 percent slopes

#### Doland

*Extent:* 85 percent of the unit

*Landform(s):* flats on moraines, hillslopes on moraines

*Slope gradient:* 0 to 2 percent

*Parent material:* silty loess or lacustrine deposits over loamy glacial 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):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 1

*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	silt loam	moderate	2.36 to 2.76 in	6.1 to 7.3
Bw1,Bw2 -- 10 to 21 in	silt loam	moderate	1.87 to 2.43 in	6.1 to 7.3
2Bk,2C -- 21 to 60 in	loam	moderate	5.46 to 7.41 in	6.6 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### DIB--Doland silt loam, 2 to 6 percent slopes

#### Doland

*Extent:* 85 percent of the unit

*Landform(s):* hillslopes on moraines

*Slope gradient:* 2 to 6 percent

*Parent material:* silty loess or lacustrine deposits over loamy glacial 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):* 6

*Wind erodibility index (WEI):* 48

*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 10 in	silt loam	moderate	2.36 to 2.76 in	6.1 to 7.3
Bw1,Bw2 -- 10 to 21 in	silt loam	moderate	1.87 to 2.43 in	6.1 to 7.3
2Bk,2C -- 21 to 60 in	loam	moderate	5.46 to 7.41 in	6.6 to 8.4

### Do--Dovray clay, poorly drained

#### Dovray, poorly drained

*Extent:* 85 percent of the unit

*Landform(s):* swales on moraines

*Slope gradient:* 0 to 1 percent

*Parent material:* clayey alluvium over clayey glacial 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):* 4

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .17

*Land capability, nonirrigated* 3w

*Hydric soil:* yes

*Hydrologic group:* C/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 7 in	clay	moderately slow	0.99 to 1.28 in	6.1 to 7.8
A1 -- 7 to 34 in	clay	moderately slow	3.48 to 4.28 in	6.1 to 7.8
Bg.Cg -- 34 to 60 in	clay	moderately slow	3.38 to 4.16 in	6.6 to 7.8

## Map Unit Description (MN)

Stevens County, Minnesota

### Dv--Dovray clay, very poorly drained

#### Dovray, very poorly drained

*Extent:* 85 percent of the unit

*Landform(s):* depressions on moraines

*Slope gradient:* 0 to 1 percent

*Parent material:* clayey alluvium over clayey glacial 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):* 4

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .17

*Land capability, nonirrigated* 3w

*Hydric soil:* yes

*Hydrologic group:* C/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 7 in	clay	moderately slow	0.99 to 1.28 in	6.1 to 7.8
A1 -- 7 to 34 in	clay	moderately slow	3.48 to 4.28 in	6.1 to 7.8
Bg,Cg -- 34 to 60 in	clay	moderately slow	3.38 to 4.16 in	6.6 to 7.8

### EcB--Eckman very fine sandy loam, 1 to 4 percent slopes

#### Eckman

*Extent:* 85 percent of the unit

*Landform(s):* ridges on lake plains

*Slope gradient:* 1 to 4 percent

*Parent material:* silty and loamy glaciolacustrine deposits

*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* 1

*Hydric soil:* no

*Hydrologic group:* B

*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,A1 -- 0 to 11 in	very fine sandy loam	moderate	2.20 to 2.43 in	6.6 to 7.8
Bw -- 11 to 27 in	very fine sandy loam	moderate	2.68 to 3.46 in	6.6 to 8.4
Bk,C,2C -- 27 to 60 in	very fine sandy loam	moderate	4.63 to 7.28 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### EsA--Estelline silt loam, 0 to 2 percent slopes

#### Estelline

*Extent:* 85 percent of the unit

*Landform(s):* flats on outwash plains

*Slope gradient:* 0 to 2 percent

*Parent material:* silty deposits over sandy and gravelly outwash deposits

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

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 3

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .37

*Land capability, nonirrigated* 2s

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* low

*Representative soil profile:*

		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A1,A2 --	0 to 14 in	silt loam	moderate	2.69 to 3.12 in	6.1 to 7.3
Bw1,Bw2 --	14 to 32 in	silt loam	moderate	2.83 to 3.54 in	7.4 to 8.4
2Bk,2C --	32 to 60 in	sand	very rapid	0.84 to 1.68 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### FdA--Fordville loam, 0 to 2 percent slopes

#### Fordville

*Extent:* 85 percent of the unit

*Landform(s):* hillslopes on moraines, flats on outwash plains,  
hillslopes on outwash plains

*Slope gradient:* 0 to 2 percent

*Parent material:* loamy mantle over sandy and gravelly  
outwash

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

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 3

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 2s

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* low

*Representative soil profile:*

		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A1,A2 --	0 to 15 in	loam	moderate	2.69 to 2.99 in	6.1 to 7.3
Bw1 --	15 to 30 in	loam	moderate	2.69 to 3.14 in	6.1 to 7.8
Bw2 --	30 to 36 in	fine sandy loam	moderately rapid	0.71 to 1.06 in	6.1 to 8.4
2Bk,2C --	36 to 60 in	gravelly sand	very rapid	0.72 to 1.44 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### FmA--Forman clay loam, 0 to 2 percent slopes

#### Forman

*Extent:* 85 percent of the unit

*Landform(s):* flats on moraines, hillslopes on moraines

*Slope gradient:* 0 to 2 percent

*Parent material:* loamy glacial 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):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .17

*Land capability, nonirrigated* 1

*Hydric soil:* no

*Hydrologic group:* C

*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 8 in	clay loam	moderate	1.34 to 1.50 in	6.6 to 7.8
Bt -- 8 to 20 in	clay loam	moderate	1.83 to 2.32 in	6.6 to 7.8
Bk,C -- 20 to 60 in	clay loam	moderately slow	5.57 to 7.56 in	7.4 to 8.4

### FmB--Forman clay loam, 2 to 6 percent slopes

#### Forman

*Extent:* 85 percent of the unit

*Landform(s):* hillslopes on moraines

*Slope gradient:* 2 to 6 percent

*Parent material:* loamy glacial 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):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .17

*Land capability, nonirrigated* 2e

*Hydric soil:* no

*Hydrologic group:* C

*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 8 in	clay loam	moderate	1.34 to 1.50 in	6.6 to 7.8
Bt -- 8 to 20 in	clay loam	moderate	1.83 to 2.32 in	6.6 to 7.8
Bk,C -- 20 to 60 in	clay loam	moderately slow	5.57 to 7.56 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### FmB2--Forman clay loam, 2 to 6 percent slopes, eroded

#### Forman, eroded

*Extent:* 85 percent of the unit

*Landform(s):* hillslopes on moraines

*Slope gradient:* 2 to 6 percent

*Parent material:* loamy glacial 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):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .17

*Land capability, nonirrigated* 2e

*Hydric soil:* no

*Hydrologic group:* C

*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 8 in	clay loam	moderate	1.34 to 1.50 in	6.6 to 7.8
Bt -- 8 to 20 in	clay loam	moderate	1.83 to 2.32 in	6.6 to 7.8
Bk,C -- 20 to 60 in	clay loam	moderately slow	5.57 to 7.56 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### FuB2--Forman-Buse complex, 2 to 6 percent slopes, eroded

#### Forman, eroded

*Extent:* 50 percent of the unit

*Landform(s):* hillslopes on moraines

*Slope gradient:* 2 to 6 percent

*Parent material:* loamy glacial 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):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .17

*Land capability, nonirrigated* 2e

*Hydric soil:* no

*Hydrologic group:* C

*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 8 in	clay loam	moderate	1.34 to 1.50 in	6.6 to 7.8
Bt -- 8 to 20 in	clay loam	moderate	1.83 to 2.32 in	6.6 to 7.8
Bk,C -- 20 to 60 in	clay loam	moderately slow	5.57 to 7.56 in	7.4 to 8.4

#### Buse, eroded

*Extent:* 30 percent of the unit

*Landform(s):* hillslopes on moraines

*Slope gradient:* 3 to 6 percent

*Parent material:* loamy glacial 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):* 4L

*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>
A1,A2 -- 0 to 5 in	loam	moderate	0.87 to 1.13 in	7.4 to 8.4
Bk -- 5 to 14 in	loam	moderate	1.27 to 1.72 in	7.4 to 8.4
C -- 14 to 60 in	loam	moderate	6.39 to 8.68 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### FuC2--Forman-Buse complex, 6 to 12 percent slopes, eroded

#### Forman, eroded

*Extent:* 50 percent of the unit

*Landform(s):* hillslopes on moraines

*Slope gradient:* 6 to 12 percent

*Parent material:* loamy glacial 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):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .17

*Land capability, nonirrigated* 4e

*Hydric soil:* no

*Hydrologic group:* C

*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 8 in	clay loam	moderate	1.34 to 1.50 in	6.6 to 7.8
Bt -- 8 to 20 in	clay loam	moderate	1.83 to 2.32 in	6.6 to 7.8
Bk,C -- 20 to 60 in	clay loam	moderately slow	5.57 to 7.56 in	7.4 to 8.4

#### Buse, eroded

*Extent:* 30 percent of the unit

*Landform(s):* hillslopes on moraines

*Slope gradient:* 6 to 12 percent

*Parent material:* loamy glacial 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):* 4L

*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>
A1,A2 -- 0 to 5 in	loam	moderate	0.87 to 1.13 in	7.4 to 8.4
Bk -- 5 to 14 in	loam	moderate	1.27 to 1.72 in	7.4 to 8.4
C -- 14 to 60 in	loam	moderate	6.39 to 8.68 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### GdA--Glyndon silt loam, 0 to 2 percent slopes

#### Glyndon

*Extent:* 85 percent of the unit

*Landform(s):* flats on lake plains, rises on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* silty over sandy glaciolacustrine deposits

*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):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 2s

*Hydric soil:* no

*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,Ak -- 0 to 15 in	silt loam	moderate	2.99 to 3.44 in	7.4 to 9.0
Bk,C1 -- 15 to 30 in	silt loam	moderately rapid	2.54 to 2.99 in	7.4 to 9.0
2C2 -- 30 to 60 in	very fine sand	moderately rapid	4.49 to 5.69 in	7.4 to 9.0

### GIA--Glyndon very fine sandy loam, 0 to 2 percent slopes

#### Glyndon

*Extent:* 85 percent of the unit

*Landform(s):* flats on lake plains, rises on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* silty over sandy glaciolacustrine deposits

*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* 2s

*Hydric soil:* no

*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,Ak -- 0 to 15 in	very fine sandy loam	moderate	2.99 to 3.44 in	7.4 to 9.0
Bk,C1 -- 15 to 30 in	very fine sandy loam	moderately rapid	2.54 to 2.99 in	7.4 to 9.0
2C2 -- 30 to 60 in	very fine sand	moderately rapid	4.49 to 5.69 in	7.4 to 9.0

## Map Unit Description (MN)

Stevens County, Minnesota

### GmA--Glyndon-McIntosh complex, 0 to 2 percent slopes

#### Glyndon

*Extent:* 50 percent of the unit  
*Landform(s):* flats on till-floored lake plains, rises on till-floored lake plains  
*Slope gradient:* 0 to 2 percent  
*Parent material:* silty over sandy glaciolacustrine deposits  
*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* 2s  
*Hydric soil:* no  
*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,Ak -- 0 to 15 in	very fine sandy loam	moderate	2.99 to 3.44 in	7.4 to 9.0
Bk,C1 -- 15 to 30 in	very fine sandy loam	moderately rapid	2.54 to 2.99 in	7.4 to 9.0
2C2 -- 30 to 60 in	very fine sand	moderately rapid	4.49 to 5.69 in	7.4 to 9.0

#### McIntosh

*Extent:* 30 percent of the unit  
*Landform(s):* flats on till-floored lake plains, rises on till-floored lake plains  
*Slope gradient:* 0 to 2 percent  
*Parent material:* silty glaciolacustrine deposits over loamy glacial 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):* 4L  
*Wind erodibility index (WEI):* 86  
*Kw factor (surface layer)* .28  
*Land capability, nonirrigated* 2s  
*Hydric soil:* no  
*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,Ak -- 0 to 14 in	silt loam	moderate	2.83 to 3.40 in	7.4 to 8.4
Bk1 -- 14 to 21 in	silt loam	moderate	1.07 to 1.47 in	7.4 to 8.4
2Bk2,2C -- 21 to 60 in	loam	moderate	5.46 to 7.41 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

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### GP--Gravel pit

#### Pits, gravel

*Extent:* 100 percent of the unit

*Landform(s):* outwash plains, terraces

*Slope gradient:*

*Parent material:* 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:*

*Representative soil profile:*

*Texture*

*Permeability*

*Available water  
capacity*

*pH*

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## Map Unit Description (MN)

Stevens County, Minnesota

### Gr--Grimstad-Rockwell fine sandy loams

#### Grimstad

*Extent:* 50 percent of the unit  
*Landform(s):* flats on till-floored lake plains, rises on till-floored lake plains  
*Slope gradient:* 0 to 2 percent  
*Parent material:* sandy glaciolacustrine deposits over loamy glacial 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* 2s  
*Hydric soil:* no  
*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,Ak --	0 to 13 in fine sandy loam	moderately rapid	1.69 to 2.34 in	7.4 to 8.4
Bk1,Bk2 --	13 to 24 in loamy fine sand	rapid	0.88 to 1.54 in	7.4 to 9.0
2C,2Cg --	24 to 60 in loam	moderate	3.94 to 6.81 in	7.4 to 9.0

#### Rockwell

*Extent:* 30 percent of the unit  
*Landform(s):* flats on till-floored lake plains, swales on till-floored lake plains  
*Slope gradient:* 0 to 1 percent  
*Parent material:* loamy and sandy glaciolacustrine deposits over loamy glacial 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)* .15  
*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 8 in fine sandy loam	moderately rapid	1.26 to 1.42 in	7.4 to 8.4
Ak --	8 to 13 in fine sandy loam	moderately rapid	0.77 to 0.87 in	7.9 to 8.4
Ck,C --	13 to 29 in loamy fine sand	rapid	0.81 to 1.13 in	7.4 to 7.8
2Cg --	29 to 60 in clay loam	moderate	5.53 to 6.76 in	7.4 to 7.8

## Map Unit Description (MN)

Stevens County, Minnesota

### HaA--Hamerly clay loam, 0 to 3 percent slopes

#### Hamerly

*Extent:* 85 percent of the unit

*Landform(s):* flats on moraines, rises on moraines

*Slope gradient:* 0 to 3 percent

*Parent material:* loamy glacial 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):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .15

*Land capability, nonirrigated* 2s

*Hydric soil:* no

*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 7 in	clay loam	moderate	1.20 to 1.56 in	6.6 to 8.4
Ak,Bk -- 7 to 28 in	clay loam	moderate	3.13 to 3.96 in	7.4 to 8.4
C -- 28 to 60 in	clay loam	moderate	4.46 to 6.06 in	7.4 to 8.4

### HcC2--Hattie clay, 6 to 12 percent slopes, eroded

#### Hattie, eroded

*Extent:* 85 percent of the unit

*Landform(s):* hillslopes on moraines

*Slope gradient:* 6 to 12 percent

*Parent material:* clayey glacial 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):* 4

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .15

*Land capability, nonirrigated* 3e

*Hydric soil:* no

*Hydrologic group:* C

*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	clay	slow	0.94 to 1.30 in	7.4 to 8.4
Bk,Cg -- 6 to 60 in	clay	slow	6.47 to 8.63 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### HcD2--Hattie clay, 12 to 18 percent slopes, eroded

#### Hattie, eroded

*Extent:* 85 percent of the unit

*Landform(s):* hillslopes on moraines

*Slope gradient:* 12 to 18 percent

*Parent material:* clayey glacial 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):* 4

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .15

*Land capability, nonirrigated* 4e

*Hydric soil:* no

*Hydrologic group:* C

*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	clay	slow	0.94 to 1.30 in	7.4 to 8.4
Bk,Cg -- 6 to 60 in	clay	slow	6.47 to 8.63 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### HnB--Hattie-Nutley clays, 2 to 6 percent slopes

#### Hattie

*Extent:* 50 percent of the unit

*Landform(s):* hillslopes on moraines

*Slope gradient:* 2 to 6 percent

*Parent material:* clayey glacial 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):* 4

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .15

*Land capability, nonirrigated* 2e

*Hydric soil:* no

*Hydrologic group:* C

*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	clay	slow	0.94 to 1.30 in	7.4 to 8.4
Bk,Cg -- 6 to 60 in	clay	slow	6.47 to 8.63 in	7.4 to 8.4

#### Nutley

*Extent:* 30 percent of the unit

*Landform(s):* hillslopes on moraines

*Slope gradient:* 2 to 6 percent

*Parent material:* clayey lacustrine deposits and clayey glacial 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):* 4

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 3e

*Hydric soil:* no

*Hydrologic group:* C

*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,A1,A2 -- 0 to 17 in	clay	slow	1.69 to 2.71 in	6.6 to 8.4
Bkg,Cg -- 17 to 60 in	clay	slow	3.43 to 6.44 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### Ho--Hegne clay

#### Hegne

*Extent:* 85 percent of the unit

*Landform(s):* flats on moraines, swales on moraines

*Slope gradient:* 0 to 1 percent

*Parent material:* clayey 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):* 4

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .10

*Land capability, nonirrigated* 2w

*Hydric soil:* yes

*Hydrologic group:* C/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 7 in	clay	slow	0.99 to 1.20 in	7.4 to 8.4
Bkg -- 7 to 33 in	clay	slow	3.38 to 4.16 in	7.4 to 8.4
Cg -- 33 to 60 in	clay	slow	2.14 to 3.75 in	7.4 to 8.4

### Hw--Hidewood silty clay loam

#### Hidewood

*Extent:* 85 percent of the unit

*Landform(s):* flats on till-floored lake plains, swales on till-floored lake plains

*Slope gradient:* 0 to 1 percent

*Parent material:* silty loess or lacustrine deposits over loamy glacial 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):* 6

*Wind erodibility index (WEI):* 48

*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,A1,A2 -- 0 to 23 in	silty clay loam	moderate	4.80 to 5.25 in	6.1 to 7.8
Bg -- 23 to 30 in	silty clay loam	moderate	1.28 to 1.42 in	6.6 to 8.4
2C -- 30 to 60 in	loam	moderate	4.19 to 4.79 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### INT--Water, intermittent

#### Water, intermittent

*Extent:* 100 percent of the unit

*Landform(s):*

*Slope gradient:*

*Parent material:*

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

*Flooding:* none

*Ponding:* none

*Drainage class:*

*Soil loss tolerance (T factor):*

*Wind erodibility group (WEG):* 8

*Wind erodibility index (WEI):* 0

*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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### Lm--Lamoure silty clay loam

#### Lamoure, occasionally flooded

*Extent:* 85 percent of the unit

*Landform(s):* flats on flood plains

*Slope gradient:* 0 to 1 percent

*Parent material:* silty alluvium

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

*Flooding:* occasional

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*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,A1 -- 0 to 17 in	silty clay loam	moderate	3.22 to 3.72 in	7.4 to 8.4
A2 -- 17 to 29 in	silty clay loam	moderate	2.07 to 2.44 in	7.4 to 8.4
Cg1 -- 29 to 39 in	silty clay loam	moderate	1.67 to 1.97 in	7.4 to 8.4
Cg2 -- 39 to 60 in	stratified sandy loam to silty clay loam	moderate	1.88 to 3.76 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### Ln--Lamoure silty clay loam, frequently flooded

#### Lamoure, frequently flooded

*Extent:* 85 percent of the unit

*Landform(s):* flats on flood plains, oxbows on flood plains

*Slope gradient:* 0 to 1 percent

*Parent material:* silty alluvium

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

*Flooding:* frequent

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 5w

*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>
A1,A2 -- 0 to 17 in	silty clay loam	moderate	3.22 to 3.72 in	7.4 to 8.4
A3 -- 17 to 29 in	silty clay loam	moderate	2.07 to 2.44 in	7.4 to 8.4
Cg1 -- 29 to 39 in	silty clay loam	moderate	1.67 to 1.97 in	7.4 to 8.4
Cg2 -- 39 to 60 in	stratified sandy loam to silty clay loam	moderate	1.88 to 3.76 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### Lp--La Prairie loam

#### La Prairie, occasionally flooded

*Extent:* 85 percent of the unit

*Landform(s):* flats on flood plains

*Slope gradient:* 0 to 1 percent

*Parent material:* loamy over sandy and gravelly alluvium

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

*Flooding:* occasional

*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)* .17

*Land capability, nonirrigated* 1

*Hydric soil:* no

*Hydrologic group:* C

*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	loam	moderate	1.00 to 1.30 in	6.6 to 8.4
A -- 6 to 28 in	loam	moderate	3.75 to 4.85 in	6.6 to 8.4
Bw -- 28 to 47 in	loam	moderate	2.83 to 4.16 in	6.6 to 8.4
2C -- 47 to 60 in	stratified fine sandy loam to silty clay loam	moderate	1.95 to 2.86 in	6.6 to 8.4

### 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>
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## Map Unit Description (MN)

Stevens County, Minnesota

### MaB--Maddock sandy loam, 0 to 4 percent slopes

#### Maddock

*Extent:* 85 percent of the unit

*Landform(s):* hillslopes on outwash plains

*Slope gradient:* 0 to 4 percent

*Parent material:* sandy outwash deposits

*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)* .15

*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,A -- 0 to 12 in	sandy loam	rapid	1.54 to 2.13 in	6.6 to 7.8
Bw,Bk,C -- 12 to 60 in	fine sand	rapid	2.40 to 6.24 in	6.6 to 8.4

### Mc--Malachy fine sandy loam, loamy subsoil variant

#### Malachy, loamy subsoil variant

*Extent:* 85 percent of the unit

*Landform(s):* flats on outwash plains, rises on outwash plains

*Slope gradient:* 0 to 1 percent

*Parent material:* loamy and sandy outwash over loamy lacustrine deposits

*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)* .10

*Land capability, nonirrigated* 2s

*Hydric soil:* no

*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,A -- 0 to 13 in	fine sandy loam	moderately rapid	1.69 to 2.34 in	7.4 to 8.4
Bg -- 13 to 25 in	loamy fine sand	rapid	0.98 to 1.71 in	7.4 to 9.0
2Bkg,2Cg -- 25 to 60 in	loam	moderate	3.81 to 6.58 in	7.4 to 9.0

## Map Unit Description (MN)

Stevens County, Minnesota

### MfA--Malachy sandy loam, 0 to 2 percent slopes

#### Malachy

*Extent:* 85 percent of the unit

*Landform(s):* flats on lake plains, rises on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* loamy mantle over sandy outwash deposits

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

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat poorly drained

*Soil loss tolerance (T factor):* 3

*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/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,A -- 0 to 18 in	sandy loam	moderately rapid	2.35 to 3.26 in	7.4 to 8.4
Bg,Bkg -- 18 to 30 in	sandy loam	moderately rapid	1.42 to 2.24 in	7.4 to 8.4
2C -- 30 to 60 in	sand	rapid	0.60 to 2.99 in	7.4 to 8.4

### Mh--Marsh

#### Marsh

*Extent:* 100 percent of the unit

*Landform(s):* depressions on moraines, 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:*

*Soil loss tolerance (T factor):*

*Wind erodibility group (WEG):* 8

*Wind erodibility index (WEI):* 0

*Kw factor (surface layer)*

*Land capability, nonirrigated* 8w

*Hydric soil:* yes

*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)

Stevens County, Minnesota

### Mr--Marysland sandy loam

#### Marysland

*Extent:* 85 percent of the unit

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

*Slope gradient:* 0 to 1 percent

*Parent material:* loamy mantle over sandy and gravelly outwash deposits

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

*Flooding:* none

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 3

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .15

*Land capability, nonirrigated* 2w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

*Representative soil profile:*

		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A --	0 to 10 in	sandy loam	moderate	1.77 to 1.97 in	7.4 to 8.4
Ak,Bkg --	10 to 32 in	loam	moderate	3.31 to 4.19 in	7.4 to 8.4
Cg1,2Cg2 --	32 to 60 in	stratified gravelly coarse sand to fine sand	rapid	0.56 to 1.96 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### MsA--McIntosh silt loam, 0 to 3 percent slopes

#### McIntosh

<p><i>Extent:</i> 85 percent of the unit</p> <p><i>Landform(s):</i> flats on till-floored lake plains, rises on till-floored lake plains</p> <p><i>Slope gradient:</i> 0 to 3 percent</p> <p><i>Parent material:</i> silty loess or lacustrine deposits over loamy glacial till</p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i> moderately well drained</p>	<p><i>Soil loss tolerance (T factor):</i> 5</p> <p><i>Wind erodibility group (WEG):</i> 4L</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> 2s</p> <p><i>Hydric soil:</i> no</p> <p><i>Hydrologic group:</i> B/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>
Ap,Ak -- 0 to 14 in	silt loam	moderate	2.83 to 3.40 in	7.4 to 8.4
Bk1 -- 14 to 21 in	silt loam	moderate	1.07 to 1.47 in	7.4 to 8.4
2Bk2,2C -- 21 to 60 in	loam	moderate	5.46 to 7.41 in	7.4 to 8.4

# Map Unit Description (MN)

Stevens County, Minnesota

## Mu--Muck, shallow

### Muck, shallow

*Extent:* 90 percent of the unit

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

*Slope gradient:* 0 to 1 percent

*Parent material:* herbaceous organic material over loamy glacial 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* 4w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

*Representative soil profile:*

		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oa1 --	0 to 8 in	muck	moderately rapid	3.54 to 4.33 in	
Oa2 --	8 to 24 in	sp	moderately rapid	5.65 to 7.26 in	
Cg --	24 to 60 in	loam	moderate	3.94 to 6.81 in	

## Map Unit Description (MN)

Stevens County, Minnesota

### Mv--Muck and peat, calcareous

#### Muck and peat, calcareous

*Extent:* 90 percent of the unit

*Landform(s):* depressions on moraines

*Slope gradient:* 0 to 1 percent

*Parent material:* herbaceous organic material over loamy or sandy material

*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* 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>
Oa -- 0 to 22 in	muck	moderately rapid	7.72 to 10.58 in	
Cg1 -- 22 to 34 in	mucky silt loam	moderate	2.60 to 3.07 in	
Cg2 -- 34 to 47 in	silt loam	moderate	2.34 to 2.86 in	
Cg3 -- 47 to 60 in	loam	moderate	1.95 to 2.47 in	

## Map Unit Description (MN)

Stevens County, Minnesota

### Mw--Muck and peat, calcareous, flooded

#### Muck and peat, calcareous, frequently flooded

*Extent:* 90 percent of the unit

*Landform(s):* channels on flood plains

*Slope gradient:* 0 to 1 percent

*Parent material:* herbaceous organic material over loamy or sandy material

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

*Flooding:* frequent

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 1

*Wind erodibility group (WEG):* 8

*Wind erodibility index (WEI):* 0

*Kw factor (surface layer)* .02

*Land capability, nonirrigated* 8w

*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>
Oa -- 0 to 22 in	muck	moderately rapid	7.72 to 10.58 in	
Cg1 -- 22 to 34 in	mucky silt loam	moderate	2.60 to 3.07 in	
Cg2 -- 34 to 47 in	silt loam	moderate	2.34 to 2.86 in	
Cg3 -- 47 to 60 in	loam	moderate	1.95 to 2.47 in	

### NcA--Nutley clay, silty substratum, 0 to 2 percent slopes

#### Nutley, silty substratum

*Extent:* 85 percent of the unit

*Landform(s):* flats on moraines, rises on moraines

*Slope gradient:* 0 to 2 percent

*Parent material:* clayey lacustrine deposits and clayey glacial 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):* 4

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 2s

*Hydric soil:* no

*Hydrologic group:* C

*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,A1,A2 -- 0 to 17 in	clay	slow	1.69 to 2.71 in	6.6 to 8.4
Cg -- 17 to 60 in	clay	slow	3.43 to 6.44 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### NhA--Nutley-Hattie clays, 0 to 2 percent slopes

#### Nutley

*Extent:* 50 percent of the unit

*Landform(s):* flats on moraines, rises on moraines

*Slope gradient:* 0 to 2 percent

*Parent material:* clayey lacustrine deposits and clayey glacial 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):* 4

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 2s

*Hydric soil:* no

*Hydrologic group:* C

*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,A1,A2 -- 0 to 17 in	clay	slow	1.69 to 2.71 in	6.6 to 8.4
Cg -- 17 to 60 in	clay	slow	3.43 to 6.44 in	7.4 to 8.4

#### Hattie

*Extent:* 30 percent of the unit

*Landform(s):* flats on moraines, rises on moraines

*Slope gradient:* 1 to 2 percent

*Parent material:* clayey glacial 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):* 4

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .15

*Land capability, nonirrigated* 2e

*Hydric soil:* no

*Hydrologic group:* C

*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	clay	slow	0.94 to 1.30 in	7.4 to 8.4
Bk,Cg -- 6 to 60 in	clay	slow	6.47 to 8.63 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### Om--Oldham silty clay loam

#### Oldham

*Extent:* 85 percent of the unit

*Landform(s):* depressions on moraines, glacial lakes on moraines

*Slope gradient:* 0 to 1 percent

*Parent material:* clayey local alluvium

*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):* 4

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 3w

*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,A1 -- 0 to 20 in	silty clay loam	moderately slow	2.61 to 3.81 in	6.6 to 7.8
A2,A3,A4 -- 20 to 45 in	silty clay loam	moderately slow	3.47 to 4.96 in	7.4 to 8.4
Bg,Cg -- 45 to 60 in	silty clay loam	moderately slow	2.09 to 2.99 in	7.4 to 8.4

### Pa--Parnell silty clay loam

#### Parnell

*Extent:* 85 percent of the unit

*Landform(s):* depressions on moraines

*Slope gradient:* 0 to 1 percent

*Parent material:* silty and clayey alluvium over glacial 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):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 3w

*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,A1,A2 -- 0 to 30 in	silty clay loam	moderately slow	5.39 to 6.58 in	6.1 to 7.8
Btg,BCg -- 30 to 46 in	silty clay loam	slow	2.10 to 3.07 in	6.1 to 7.8
2Cg -- 46 to 60 in	clay loam	slow	1.52 to 2.62 in	6.6 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### Pf--Parnell and Flom soils

#### Parnell

*Extent:* 45 percent of the unit

*Landform(s):* depressions on moraines

*Slope gradient:* 0 to 1 percent

*Parent material:* silty and clayey alluvium over glacial 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):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 3w

*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,A1,A2 -- 0 to 30 in	silty clay loam	moderately slow	5.39 to 6.58 in	6.1 to 7.8
Btg,BCg -- 30 to 46 in	silty clay loam	slow	2.10 to 3.07 in	6.1 to 7.8
Cg -- 46 to 60 in	clay loam	slow	1.52 to 2.62 in	6.6 to 8.4

#### Flom

*Extent:* 45 percent of the unit

*Landform(s):* flats on moraines

*Slope gradient:* 0 to 1 percent

*Parent material:* loamy glacial 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):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*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,A1 -- 0 to 17 in	silty clay loam	moderately slow	3.05 to 3.72 in	6.1 to 7.8
Bg -- 17 to 25 in	silty clay loam	moderately slow	1.24 to 1.57 in	6.6 to 8.4
Bkg,Cg -- 25 to 60 in	clay loam	moderately slow	4.85 to 6.58 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### Ra--Rauville silty clay loam

#### Rauville, frequently flooded

*Extent:* 85 percent of the unit

*Landform(s):* channels on flood plains

*Slope gradient:* 0 to 1 percent

*Parent material:* silty alluvium over sandy and gravelly 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):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 5w

*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>
A1,A2 -- 0 to 24 in	silty clay loam	moderate	4.56 to 5.28 in	7.4 to 8.4
Bkg,Cg1 -- 24 to 50 in	silty clay loam	moderate	4.42 to 5.20 in	7.4 to 8.4
2Cg -- 50 to 60 in	stratified gravelly sand to clay loam	moderately rapid	0.79 to 1.48 in	6.6 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### ReA--Renshaw loam, 0 to 2 percent slopes

#### Renshaw

*Extent:* 90 percent of the unit

*Landform(s):* flats on outwash plains, hillslopes on outwash plains

*Slope gradient:* 0 to 2 percent

*Parent material:* loamy mantle over sandy and gravelly outwash deposits

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

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat excessively drained

*Soil loss tolerance (T factor):* 3

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 3s

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* low

*Representative soil profile:*

		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A --	0 to 12 in	loam	moderate	2.13 to 2.36 in	6.1 to 7.8
Bw --	12 to 20 in	loam	moderately rapid	0.91 to 1.49 in	6.6 to 8.4
2C --	20 to 60 in	gravelly sand	very rapid	1.19 to 2.39 in	6.6 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### ReB--Renshaw loam, 2 to 6 percent slopes

#### Renshaw

*Extent:* 90 percent of the unit

*Landform(s):* hillslopes on outwash plains

*Slope gradient:* 2 to 6 percent

*Parent material:* loamy mantle over sandy and gravelly outwash deposits

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

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat excessively drained

*Soil loss tolerance (T factor):* 3

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 4s

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* low

*Representative soil profile:*

		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A --	0 to 12 in	loam	moderate	2.13 to 2.36 in	6.1 to 7.8
Bw --	12 to 20 in	loam	moderately rapid	0.91 to 1.49 in	6.6 to 8.4
2C --	20 to 60 in	gravelly sand	very rapid	1.19 to 2.39 in	6.6 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### RoA--Rothsay silt loam, 0 to 2 percent slopes

#### Rothsay

*Extent:* 85 percent of the unit

*Landform(s):* flats on moraines, hillslopes on moraines

*Slope gradient:* 0 to 2 percent

*Parent material:* silty loess or lacustrine deposits

*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):* 5

*Wind erodibility index (WEI):* 56

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 1

*Hydric soil:* no

*Hydrologic group:* B

*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,A -- 0 to 10 in	silt loam	moderate	2.17 to 2.36 in	6.6 to 7.3
Bw -- 10 to 15 in	silt loam	moderate	0.87 to 1.13 in	6.6 to 7.8
Bk -- 15 to 28 in	silt loam	moderately rapid	2.60 to 2.86 in	7.4 to 8.4
C -- 28 to 60 in	silt loam	moderately rapid	6.38 to 7.02 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### RzB--Rothsay-Zell silt loams, 2 to 6 percent slopes

#### Rothsay

*Extent:* 50 percent of the unit

*Landform(s):* hillslopes on moraines

*Slope gradient:* 2 to 6 percent

*Parent material:* silty loess or lacustrine deposits

*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):* 5

*Wind erodibility index (WEI):* 56

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 2e

*Hydric soil:* no

*Hydrologic group:* B

*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,A -- 0 to 10 in	silt loam	moderate	2.17 to 2.36 in	6.6 to 7.3
Bw -- 10 to 15 in	silt loam	moderate	0.87 to 1.13 in	6.6 to 7.8
Bk -- 15 to 28 in	silt loam	moderately rapid	2.60 to 2.86 in	7.4 to 8.4
C -- 28 to 60 in	silt loam	moderately rapid	6.38 to 7.02 in	7.4 to 8.4

#### Zell

*Extent:* 30 percent of the unit

*Landform(s):* hillslopes on moraines

*Slope gradient:* 2 to 6 percent

*Parent material:* silty loess or lacustrine deposits

*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):* 5

*Wind erodibility index (WEI):* 56

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 3e

*Hydric soil:* no

*Hydrologic group:* B

*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	silt loam	moderate	1.87 to 2.17 in	6.6 to 8.4
Bk -- 10 to 17 in	silt loam	moderate	1.06 to 1.42 in	7.4 to 8.4
C -- 17 to 60 in	silt loam	moderate	6.44 to 8.58 in	7.4 to 9.0

## Map Unit Description (MN)

Stevens County, Minnesota

### Sa--Sandy lake beaches

#### Beaches, sandy

*Extent:* 100 percent of the unit

*Landform(s):* hillslopes on beaches

*Slope gradient:* 0 to 1 percent

*Parent material:* sandy and gravelly outwash lake beach deposits

*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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### SgC--Sioux gravelly sandy loam, 2 to 12 percent slopes

#### Sioux

*Extent:* 90 percent of the unit

*Landform(s):* hillslopes on outwash plains

*Slope gradient:* 2 to 12 percent

*Parent material:* sandy and gravelly outwash deposits

*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)* .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>
Ap -- 0 to 6 in	gravelly sandy loam	moderately rapid	0.77 to 0.89 in	5.6 to 7.8
BC,C -- 6 to 60 in	gravelly coarse sand	very rapid	1.08 to 3.24 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### SsA--Sioux sandy loam, 0 to 2 percent slopes

#### Sioux

*Extent:* 90 percent of the unit

*Landform(s):* flats on outwash plains, hillslopes on outwash plains

*Slope gradient:* 0 to 2 percent

*Parent material:* sandy and gravelly outwash deposits

*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):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*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 6 in	sandy loam	moderately rapid	0.77 to 0.89 in	5.6 to 7.8
BC,C -- 6 to 60 in	gravelly coarse sand	very rapid	1.08 to 3.24 in	7.4 to 8.4

### SsB--Sioux sandy loam, 2 to 6 percent slopes

#### Sioux

*Extent:* 90 percent of the unit

*Landform(s):* hillslopes on outwash plains

*Slope gradient:* 2 to 6 percent

*Parent material:* sandy and gravelly outwash deposits

*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):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*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 6 in	sandy loam	moderately rapid	0.77 to 0.89 in	5.6 to 7.8
BC,C -- 6 to 60 in	gravelly coarse sand	very rapid	1.08 to 3.24 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### SvA--Svea loam, 0 to 2 percent slopes

#### Svea

*Extent:* 85 percent of the unit  
*Landform(s):* flats on moraines, hillslopes on moraines  
*Slope gradient:* 0 to 2 percent  
*Parent material:* loamy glacial 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):* 6  
*Wind erodibility index (WEI):* 48  
*Kw factor (surface layer)* .20  
*Land capability, nonirrigated* 1  
*Hydric soil:* no  
*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,A1,A2 -- 0 to 13 in	loam	moderate	2.34 to 2.60 in	6.1 to 7.8
Bw -- 13 to 22 in	loam	moderate	1.54 to 1.99 in	6.6 to 7.8
Bk,C -- 22 to 60 in	loam	moderate	5.29 to 7.18 in	7.4 to 8.4

### SwA--Sverdrup sandy loam, 0 to 2 percent slopes

#### Sverdrup

*Extent:* 85 percent of the unit  
*Landform(s):* flats on outwash plains, hillslopes on outwash plains  
*Slope gradient:* 0 to 2 percent  
*Parent material:* loamy mantle over sandy outwash deposits  
*Restrictive feature(s):* greater than 60 inches  
*Flooding:* none  
*Ponding:* none  
*Drainage class:* well drained

*Soil loss tolerance (T factor):* 2  
*Wind erodibility group (WEG):* 3  
*Wind erodibility index (WEI):* 86  
*Kw factor (surface layer)* .10  
*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,A -- 0 to 11 in	sandy loam	moderately rapid	1.43 to 1.65 in	6.1 to 7.3
Bw1 -- 11 to 17 in	sandy loam	moderately rapid	0.47 to 0.83 in	6.1 to 7.8
2Bw2,2Bk,2C - 17 to 60 in	sand	rapid	0.86 to 2.57 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### SwB--Sverdrup sandy loam, 2 to 6 percent slopes

#### Sverdrup

*Extent:* 85 percent of the unit

*Landform(s):* hillslopes on outwash plains

*Slope gradient:* 2 to 6 percent

*Parent material:* loamy mantle over sandy outwash deposits

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

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 3

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .10

*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,A -- 0 to 11 in	sandy loam	moderately rapid	1.43 to 1.65 in	6.1 to 7.3
Bw1 -- 11 to 26 in	sandy loam	moderately rapid	1.20 to 2.09 in	6.1 to 7.8
2Bw2,2Bk,2C - 26 to 60 in	sand	rapid	0.68 to 2.03 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### TaA--Tara silt loam, 0 to 2 percent slopes

#### Tara

<p><i>Extent:</i> 85 percent of the unit</p> <p><i>Landform(s):</i> flats on moraines, hillslopes on moraines</p> <p><i>Slope gradient:</i> 0 to 2 percent</p> <p><i>Parent material:</i> silty loess or lacustrine deposits over loamy glacial till</p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i> moderately well drained</p>	<p><i>Soil loss tolerance (T factor):</i> 5</p> <p><i>Wind erodibility group (WEG):</i> 6</p> <p><i>Wind erodibility index (WEI):</i> 48</p> <p><i>Kw factor (surface layer)</i> .37</p> <p><i>Land capability, nonirrigated</i> 1</p> <p><i>Hydric soil:</i> no</p> <p><i>Hydrologic group:</i> B/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>
Ap,A1,A2 -- 0 to 19 in	silt loam	moderate	3.78 to 4.54 in	6.1 to 7.3
Bw1,Bw2 -- 19 to 32 in	silt loam	moderate	2.21 to 2.86 in	6.6 to 7.8
2Bk -- 32 to 42 in	silt loam	moderate	1.74 to 2.15 in	7.4 to 8.4
2C -- 42 to 60 in	loam	moderate	2.66 to 3.37 in	7.4 to 8.4

## Map Unit Description (MN)

Stevens County, Minnesota

### To--Tonka loam

#### Tonka

*Extent:* 85 percent of the unit

*Landform(s):* depressions on moraines

*Slope gradient:* 0 to 1 percent

*Parent material:* silty and clayey alluvium over glacial 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):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 3w

*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,E -- 0 to 18 in	loam	moderate	3.62 to 4.35 in	5.6 to 7.8
Bt -- 18 to 39 in	silty clay loam	slow	2.92 to 4.17 in	5.6 to 7.8
2BCg,2Cg -- 39 to 60 in	clay loam	moderate	2.92 to 3.96 in	6.6 to 8.4

### UDL--Udorthents, loamy (cut and fill land)

#### Udorthents, loamy, (cut and fill land)

*Extent:* 100 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)

Stevens County, Minnesota

### Va--Vallers silty clay loam

#### Vallers

*Extent:* 85 percent of the unit

*Landform(s):* rims on depressions on moraines, flats on moraines

*Slope gradient:* 0 to 1 percent

*Parent material:* loamy glacial 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):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*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 8 in	silty clay loam	moderately slow	1.42 to 1.73 in	7.4 to 8.4
Ak,Bkg -- 8 to 21 in	clay loam	moderately slow	1.95 to 2.47 in	7.4 to 8.4
Cg -- 21 to 60 in	clay loam	moderately slow	6.63 to 7.41 in	7.4 to 8.4

### 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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## Map Unit Description (MN)

Stevens County, Minnesota

### Wn--Winger silty clay loam

#### Winger

*Extent:* 85 percent of the unit

*Landform(s):* rims on depressions on moraines, flats on moraines

*Slope gradient:* 0 to 1 percent

*Parent material:* silty loess or lacustrine deposits over loamy glacial 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):* 4L

*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 7 in		silty clay loam	moderate	1.56 to 1.70 in	7.4 to 8.4
Ak,Bkg,Cg1 --	7 to 31 in		silt loam	moderate	5.28 to 5.76 in	7.4 to 8.4
2Cg2 --	31 to 60 in		loam	moderate	4.02 to 5.46 in	7.4 to 8.4

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.