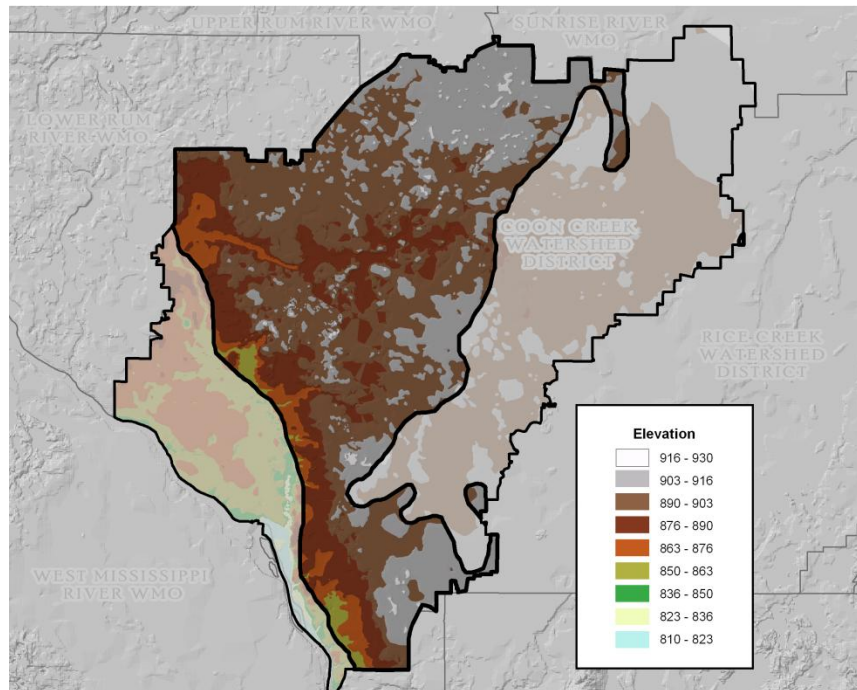


# Glacial Lake Hugo Lake Plain

## Occurrence

This is the predominant land type in the watershed. It occurs in all of the portions of the watershed within Andover and Coon Rapids, and in Ham Lake and Blaine west of TH 65.

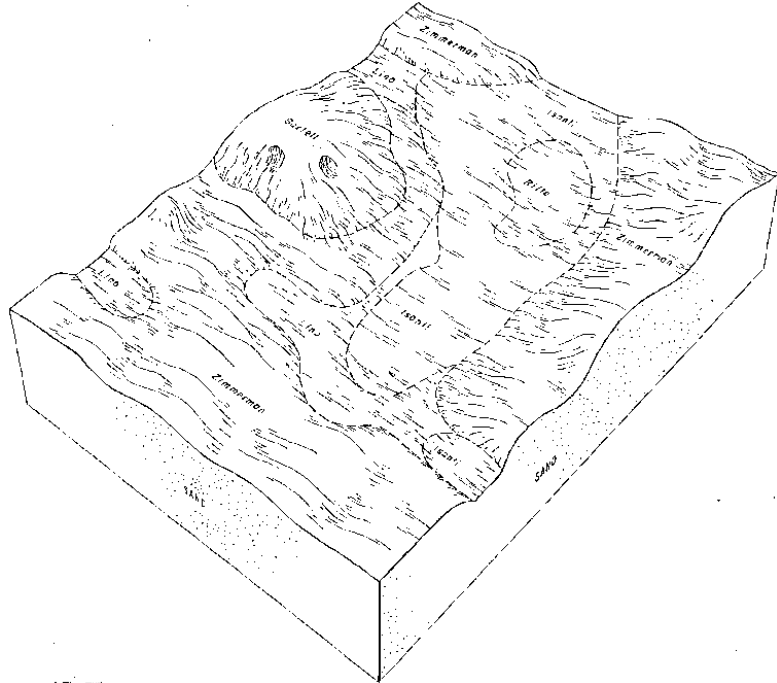
The Coon Creek portion of the Glacial Lake Hugo Lake Plain is approximately 37,000 acres (57 sq mi.). This comprises about 54% of the watershed.



The lake plain is a broad undulating sand plain comprised of rolling dunes and small flats in the upland, and low-lying depressions and flats.

Elevations range from 930 to 840 FASL  
Topographic changes of 5-15 feet are typical.  
The average slope of 0.95%

# Glacial Lake Hugo Lake Plain



## Soils

The soils are excessively drained, somewhat poorly drained, or very poorly drained and are dominated by fine sands throughout.

- Zimmerman fine sand (45%)
- Isanti fine sand (15%)
- Lino fine sand (10%)

Soil hydrology and conductivity within the Lake Hugo Lake Plain has changed:

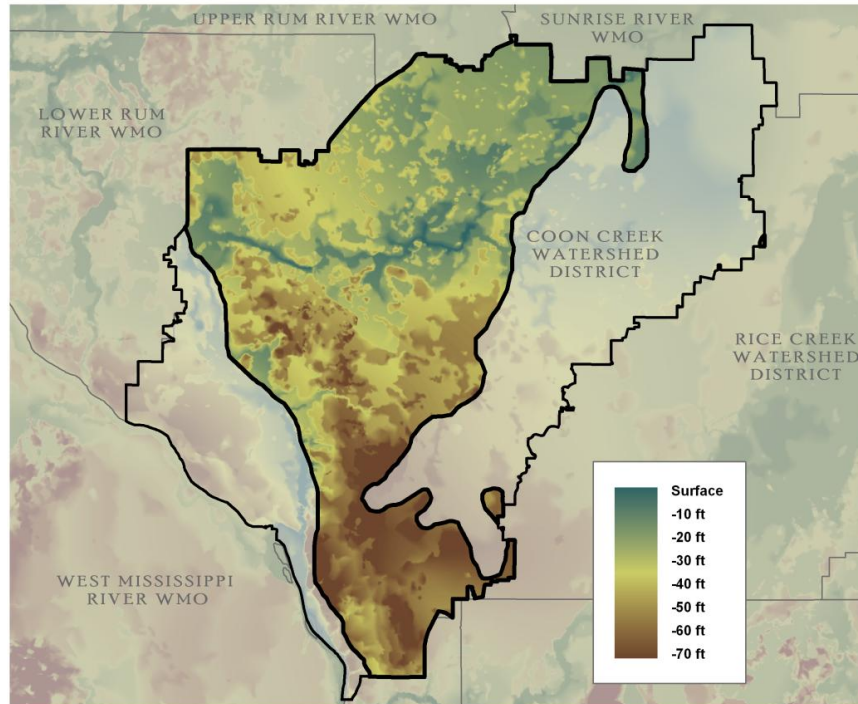
Hydrologic Soil Group	Presettlement	Current	Change
A-Well Drained	64%	88%	+24%
B-Moderately Well Drained	0%	11%	+11%
C-Poorly Drained			
D-Very Poorly Drained	35%	1%	-34%

## Surficial Groundwater

The naturally-occurring high water table is at or near the surface in most depressed areas.

Water Table	Historic Depth (Ft)	Current Depth (Ft)	Change
Average	17	21	-4
Maximum	57	65	-8

# Glacial Lake Hugo Lake Plain



## Ditches and Water Courses

The Hugo Lake Plain has nearly 400 miles of creek, ditch and storm sewer systems:

	<b>Miles</b>
Channels (Public)	64.5
Channels (Private)	63.5
<b>Channels (Total)</b>	<b>128.0</b>
Stormsewer	271.3
<b>Total</b>	<b>399.3</b>

**Drainage Density** **7.0 Miles per Square M**

# Glacial Lake Hugo Lake Plain

## Impervious Area

Approximately 19% of the Hugo Lake Plain is impervious:

Land Use	Acres	% Land Type	% Imprv.	Imprv. Acres
Agricultural	3,065	8%	5%	153
Airport	124	0%	20%	25
Commercial	1,266	3%	75%	950
Industrial	1,091	3%	70%	764
Major Highway	1,041	3%	50%	520
Multi-Family Residential	1,274	3%	40%	509
Parks & Rec	3,734	10%	5%	187
Public/Semipublic	1,009	3%	30%	303
Railway	24	0%	35%	8
Single Family Residential	13,252	36%	25%	3,313
Vacant	10,469	28%	5%	523
Water	700	2%	100%	700

## Stormwater

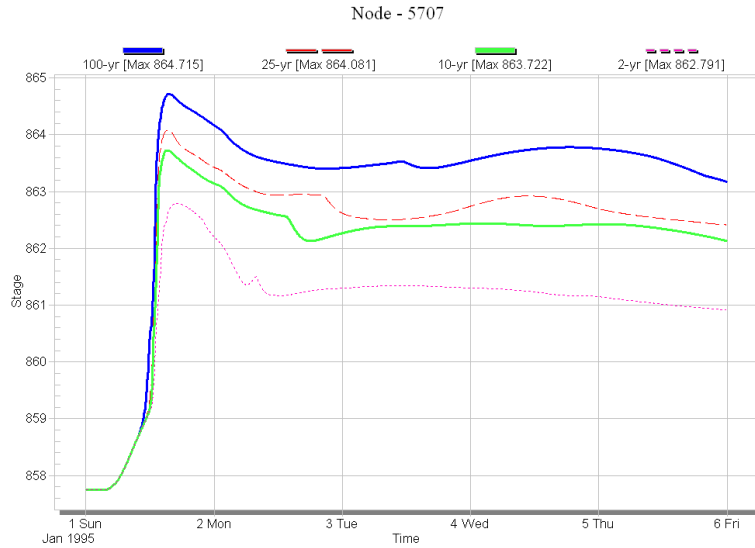
The Glacial Lake Hugo Lake Plain outlets in two locations:

1. Where Coon Creek (Ditch 57) crosses under South Coon Creek Drive
2. Where Sand Creek enters Coon Creek north of Northdale Boulevard in Coon Rapids.

The Time of Concentration at this point is approximately 16 hours on all storm events.

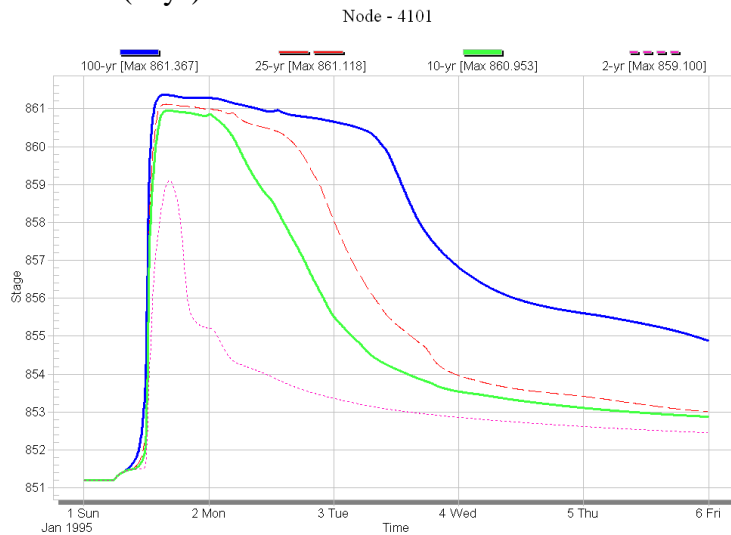
**Coon Creek (Ditch 57) at South Coon Creek Drive**

	<b>1999</b>	<b>2009</b>	<b>Change</b>	<b>Percent Change</b>
Time to Peak (Hrs)	28.4	17	-11.4	-40%
100 yr Elevation	886.6	884.7	-1.9	-
Peak Discharge (cfs)	1,883	1,490	-393	-20%
Flow Duration on 2 year event (days)	11 days			



**Sand Creek at Coon Creek**

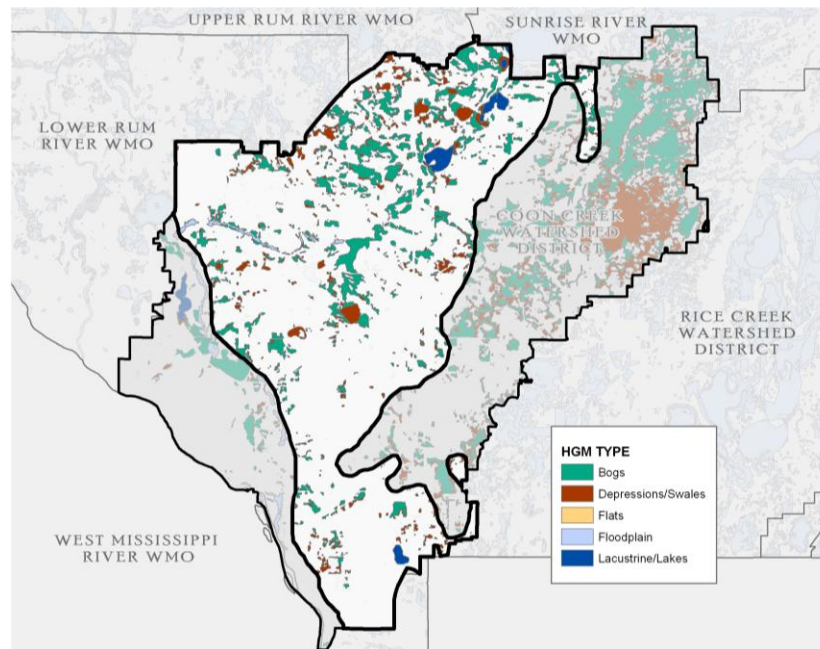
	<b>1998</b>	<b>2009</b>	<b>Change</b>	<b>% Change</b>
Time to Peak (Hrs)	24.2	16.5	-7.7	-31%
100 yr Elevation	861.5	861.4	.1	-
Peak Discharge (cfs)	678	544	134	-20%
Flow Duration on 2 year event (days)	12 days			



## Water Quality

	Standard	Ditch 57		Sand Creek	
		Base flow	Storm	Base flow	Storm
Chloride	≥ 230 mg/L	39.3	32.8	95.9	52.6
Dissolved Oxygen	<6.3 mg/L	15	8	8	8.5
Total Phosphorus	>.130 mg/L	.090	.160	.090	.130
Total Suspended Solids	>13.7 mg/L	5.5	18.5	7.7	37.3
Turbidity	>25 FRNU	8.3	27	7.3	29.3

## Lakes and Wetlands



## Lakes

The Hugo Lake Plain has three lakes and lacustrine wetlands comprising 393 acres:

Lake Name	Nature	Lake ID	Size (Ac)	Littoral Zone (%)	Max Depth (ft)	Water Clarity (ft)	Overall Condition	TSI
Amelia	Man Made							
Andover	Man Made							
Bunker	Wetland	020090	70	100%	6			
Dianne	Man Made							
Ham	Shallow Lake	020053	174	92%	22	6.8	A	47

Laddie	Shallow Lake	020072	61	77%	4	na	na	na
McKay	Wetland	020083		100%	6			
Netta	Shallow Lake	020052	115		19	7.6	B	51

**Wetlands**

The Lake Hugo Land Type contains 5,551 acres of wetlands.

Approximately 91% of these wetlands are ephemeral in nature, relying on saturated, seasonal or temporary hydrology to sustain their wetland characteristics.

The remaining wetlands tend to be semi-permanently flooded.

<b>Hydrogeomorphic Classification</b>	<b>Acres</b>	<b>% Land Type</b>
Bogs	3,482.2	64%
Depressions/Swales	1,557.1	27%
Flats	8.1	0%
Floodplain	142.9	3%
Lacustrine	361.3	6%