Water-Data Report 2007

05536275 THORN CREEK AT THORNTON, IL

Upper Illinois Basin
Chicago Subbasin

LOCATION.--Lat 41°34′06″, long 87°36′28″ referenced to North American Datum of 1927, in SE ¼ NW ¼ sec.34, T.36 N., R.14 E., Cook County, IL, Hydrologic Unit 07120003, on right bank at downstream side of bridge on Margaret Street in Thornton, 1.0 mi downstream from North Creek, and at mile 4.2.

DRAINAGE AREA.--104 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.—
SURFACE-WATER DISCHARGE AND STAGE
DISCHARGE: May 1948 to current year. Prior to October 1974, records published with those for streams in the St. Lawrence River basin (WSP 1307, 1727, 1911, 2111, WDR IL 1971-74).
STAGE: Water years 1994 to current year.
SURFACE-WATER QUALITY
CHEMICAL: Water years 1979-91.

REVISED RECORDS.-- WSP 1707: Drainage area.

GAGE.-- Water-stage recorder, phone and satellite telemeter, and crest-stage gage. Datum of gage is 586.43 ft above NGVD of 1929 (586.11 ft NAVD 1988). Prior to Dec. 18, 1948, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Effluent from sewage-treatment plant upstream averaged 24.3 ft^3/s during the year. The maximum monthly average was 35 ft^3/s in March and the minimum was 16.4 ft^3/s in September. Effluent from sewage-treatment plant upstream consists of publicly supplied water from Lake Michigan and ground water sources. Flows greater than 1500 ft^3/s can be diverted to the Thornton Transitional Reservoir 1 mile downstream from gage.

EXTREMES FOR PERIOD OF RECORD.—
SURFACE-WATER DISCHARGE AND STAGE: Maximum discharge, 5,540 ft^3/s, Apr. 17, 2006, gage height, 15.10 ft; maximum gage height, 17.06 ft, June 14, 1981, discharge, 4,140 ft^3/s, minimum daily discharge, 4.4 ft^3/s, Sept. 11, 1949.

EXTREMES OUTSIDE PERIOD OF RECORD.—
SURFACE-WATER DISCHARGE AND STAGE: Flood of Apr. 5, 1947, reached a stage of 14.34 ft (from floodmark), discharge, 4,200 ft^3/s.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	40	51	e1,600	115	60	550	485	133	67	43	49	93
2	79	48	e2,180	94	58	1,170	299	108	59	41	49	62
3	911	46	e500	82	55	431	175	117	49	39	48	51
4	487	44	e180	163	51	200	130	126	67	74	39	47
5	211	45	e145	1,820	48	152	105	103	114	56	57	54
6	94	50	114	1,150	e49	154	93	74	85	64	122	74
7	83	44	83	561	e51	159	83	69	69	67	79	90
8	77	44	63	327	47	121	77	70	52	46	245	56
9	55	57	58	232	49	128	72	72	46	41	181	42
10	47	70	55	183	48	488	70	69	45	39	124	39
11	101	702	57	125	48	384	403	76	44	44	81	65
12	81	373	332	111	49	256	991	76	44	38	56	45
13	63	158	491	126	51	235	434	62	44	40	48	40
14	54	82	277	192	49	227	240	54	42	36	92	38
15	50	75	166	888	49	436	141	122	43	35	68	36
16	49	160	99	604	49	341	111	187	51	35	57	35
17	527	132	82	264	51	204	97	103	52	44	51	35
18	450	75	72	155	49	133	87	78	48	47	53	33
19	253	62	66	116	50	133	80	65	217	222	131	34
20	138	59	65	94	61	123	73	57	111	84	676	33
21	79	57	195	89	81	221	72	54	69	54	866	33
22	76	54	1,020	85	111	407	65	51	58	45	334	32
23	66	48	1,130	80	121	850	60	53	84	41	796	31
24	58	44	417	83	106	809	58	56	84	39	2,250	32
25	51	42	201	83	629	387	1,100	64	61	38	1,880	35
26	55	41	118	92	734	232	1,410	66	51	147	806	78
27	82	41	95	95	377	186	1,260	82	47	132	377	54
28	71	44	93	70	230	283	617	61	47	74	191	49
29	61	103	77	67	---	251	269	52	50	59	162	35
30	53	1,030	69	65	---	162	171	49	52	51	132	31
31	53	---	86	61	---	140	---	53	---	48	98	---
Total	4,555	3,881	10,186	8,272	3,411	9,953	9,328	2,462	1,952	1,863	10,198	1,412
Mean	147	129	329	267	122	321	311	79.4	65.1	60.1	329	47.1
Max	911	1,030	2,180	1,820	734	1,170	1,410	187	217	222	2,250	93
Min	40	41	55	61	47	121	58	49	42	35	39	31

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2007, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	60.7	88.7	100	104	122	175	179	136	114	75.5	66.6	59.0
Max	356	385	391	330	421	534	362	399	445	333	329	372
(WY)	(1955)	(1991)	(1983)	(2005)	(1997)	(1979)	(1950)	(1996)	(1993)	(1996)	(2007)	(1961)
Min	12.5	14.3	15.5	16.2	26.1	37.4	34.0	29.3	24.9	21.7	14.9	11.7
(WY)	(1951)	(1949)	(1951)	(1954)	(2003)	(1981)	(1986)	(1958)	(1948)	(1952)	(1948)	(1948)

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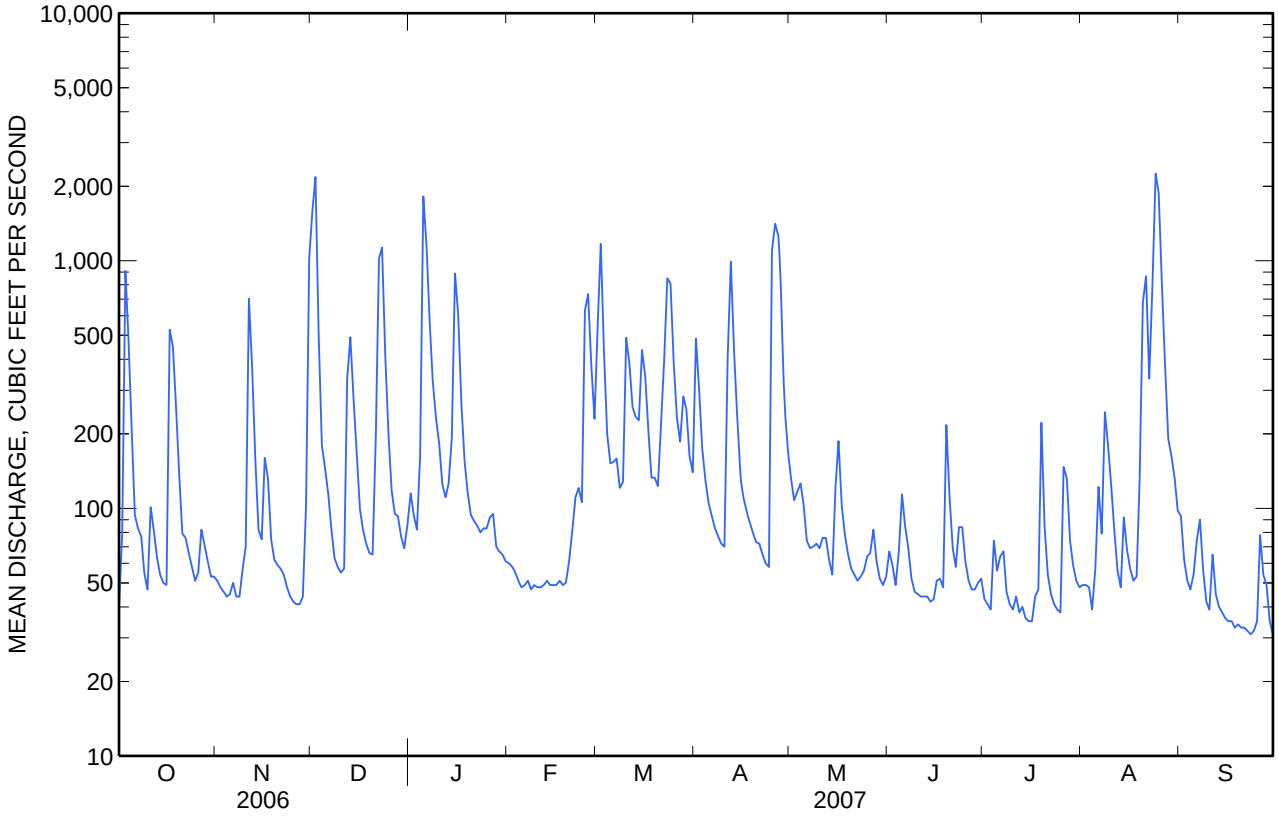
SUMMARY STATISTICS

	Calendar Year 2006		Water Year 2007		Water Years 1948 - 2007	
Annual total	61,056		67,473			
Annual mean	167		185		107	
Highest annual mean					199	1993
Lowest annual mean					51.5	1963
Highest daily mean	4,520	Apr 17	2,250	Aug 24	4,520	Apr 17, 2006
Lowest daily mean	25	Jul 2	31	Sep 23,30	4.4	Sep 11, 1949
Annual seven-day minimum	30	Jun 26	33	Sep 18	9.0	Sep 14, 1948
Maximum peak flow			2,820	Aug 24	[A]5,540	Apr 17, 2006
Maximum peak stage			12.14	Aug 24	[B]17.06	Jun 14, 1981
Instantaneous low flow			26	Sep 30		
10 percent exceeds	365		442		228	
50 percent exceeds	67		75		47	
90 percent exceeds	36		43		23	

[A] Gage height, 15.10 ft.
[B] Discharge, 4140 ft³/s.



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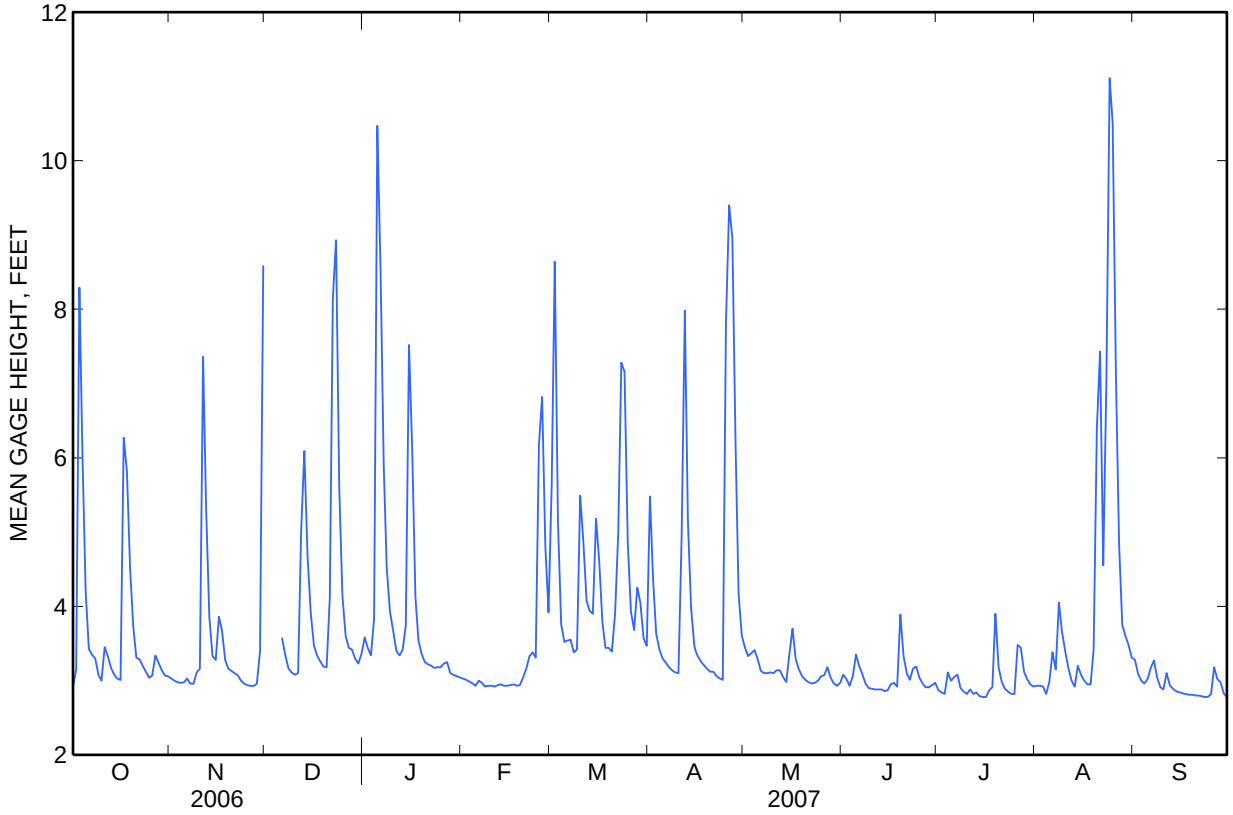
GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	2.92	3.03	---	3.58	3.03	5.65	5.48	3.44	3.08	2.87	2.93	3.28
2	3.15	3.00	---	3.44	3.01	8.64	4.34	3.33	3.02	2.84	2.93	3.09
3	8.29	2.98	---	3.34	2.99	5.14	3.63	3.37	2.93	2.82	2.92	3.00
4	6.05	2.97	---	3.84	2.96	3.76	3.42	3.41	3.06	3.11	2.82	2.96
5	4.21	2.98	---	10.47	2.93	3.52	3.30	3.29	3.35	3.00	2.98	3.02
6	3.43	3.03	3.57	8.56	3.00	3.54	3.24	3.13	3.20	3.05	3.38	3.17
7	3.35	2.96	3.34	5.90	2.97	3.55	3.18	3.10	3.09	3.08	3.15	3.27
8	3.30	2.96	3.16	4.51	2.92	3.38	3.14	3.10	2.96	2.90	4.05	3.04
9	3.08	3.11	3.11	3.93	2.93	3.42	3.11	3.11	2.90	2.85	3.66	2.91
10	3.00	3.16	3.08	3.67	2.93	5.49	3.10	3.10	2.89	2.82	3.40	2.88
11	3.45	7.36	3.10	3.40	2.92	4.86	4.94	3.14	2.88	2.88	3.17	3.10
12	3.33	5.32	5.02	3.34	2.94	4.07	7.98	3.14	2.88	2.82	3.00	2.94
13	3.17	3.86	6.09	3.41	2.95	3.94	5.16	3.05	2.88	2.84	2.92	2.89
14	3.08	3.33	4.67	3.74	2.93	3.90	3.98	2.98	2.86	2.79	3.20	2.86
15	3.03	3.28	3.91	7.52	2.93	5.18	3.48	3.37	2.87	2.78	3.08	2.84
16	3.01	3.86	3.47	6.12	2.94	4.60	3.34	3.70	2.95	2.78	3.00	2.83
17	6.27	3.68	3.34	4.13	2.95	3.78	3.26	3.29	2.97	2.87	2.95	2.82
18	5.82	3.28	3.26	3.54	2.93	3.44	3.21	3.15	2.92	2.91	2.95	2.81
19	4.50	3.16	3.19	3.36	2.94	3.44	3.16	3.06	3.89	3.90	3.42	2.81
20	3.72	3.13	3.18	3.25	3.04	3.39	3.12	3.01	3.33	3.18	6.38	2.80
21	3.31	3.10	4.11	3.22	3.16	3.90	3.12	2.98	3.10	2.98	7.43	2.80
22	3.29	3.07	8.14	3.20	3.33	5.00	3.06	2.96	3.01	2.89	4.55	2.79
23	3.20	3.00	8.93	3.17	3.38	7.28	3.03	2.97	3.16	2.85	7.08	2.78
24	3.12	2.96	5.60	3.18	3.31	7.16	3.01	3.00	3.19	2.82	11.11	2.78
25	3.04	2.94	4.14	3.18	6.17	4.88	7.81	3.06	3.04	2.82	10.50	2.82
26	3.07	2.93	3.60	3.23	6.82	3.93	9.40	3.07	2.96	3.48	7.15	3.18
27	3.34	2.93	3.44	3.25	4.82	3.68	8.96	3.18	2.91	3.44	4.84	3.02
28	3.24	2.96	3.42	3.10	3.92	4.25	6.18	3.04	2.91	3.12	3.75	2.98
29	3.14	3.40	3.30	3.08	---	4.05	4.16	2.96	2.94	3.02	3.60	2.83
30	3.07	8.58	3.23	3.06	---	3.57	3.61	2.93	2.97	2.95	3.48	2.78
31	3.06	---	3.36	3.04	---	3.47	---	2.97	---	2.92	3.31	---
Mean	3.71	3.54	---	4.12	3.36	4.45	4.33	3.14	3.04	2.98	4.29	2.94
Max	8.29	8.58	---	10.47	6.82	8.64	9.40	3.70	3.89	3.90	11.11	3.28
Min	2.92	2.93	---	3.04	2.92	3.38	3.01	2.93	2.86	2.78	2.82	2.78

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