

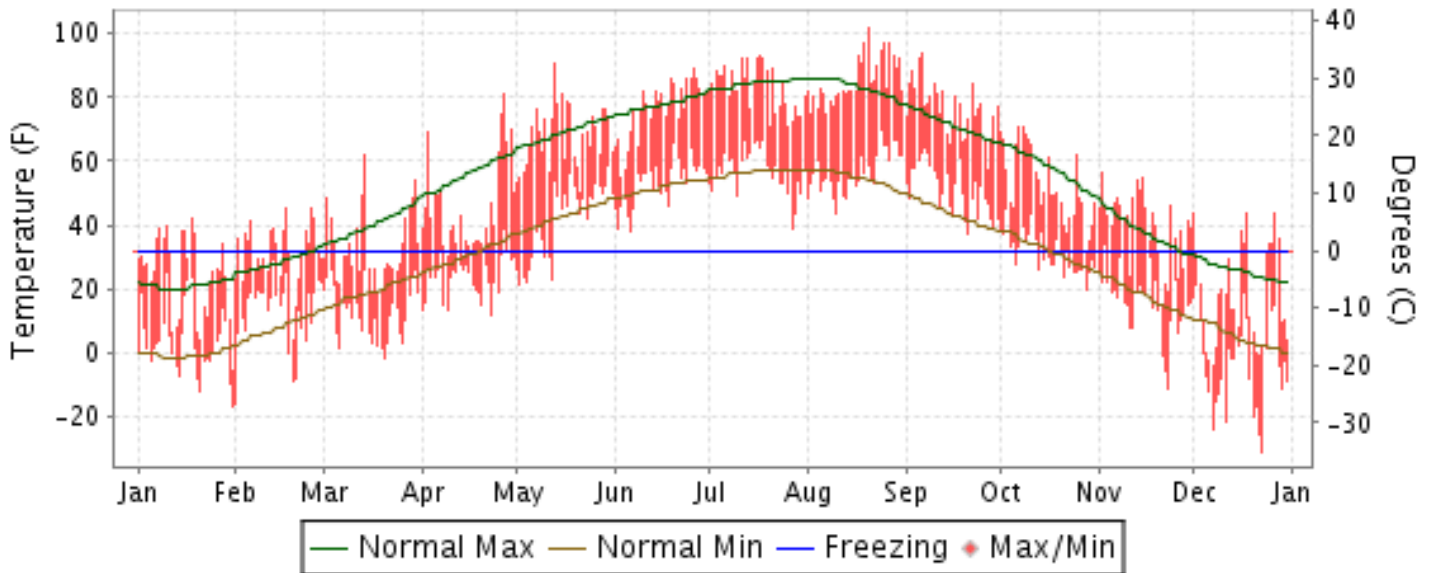


2013 LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA

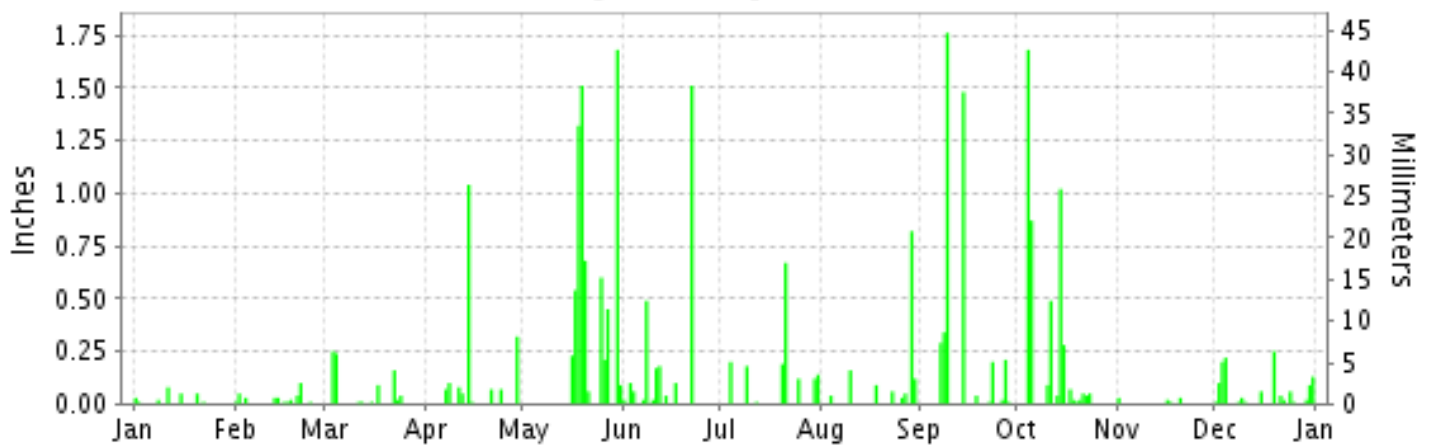
ISSN 0198-3814

BISMARCK, NORTH DAKOTA (KBIS)

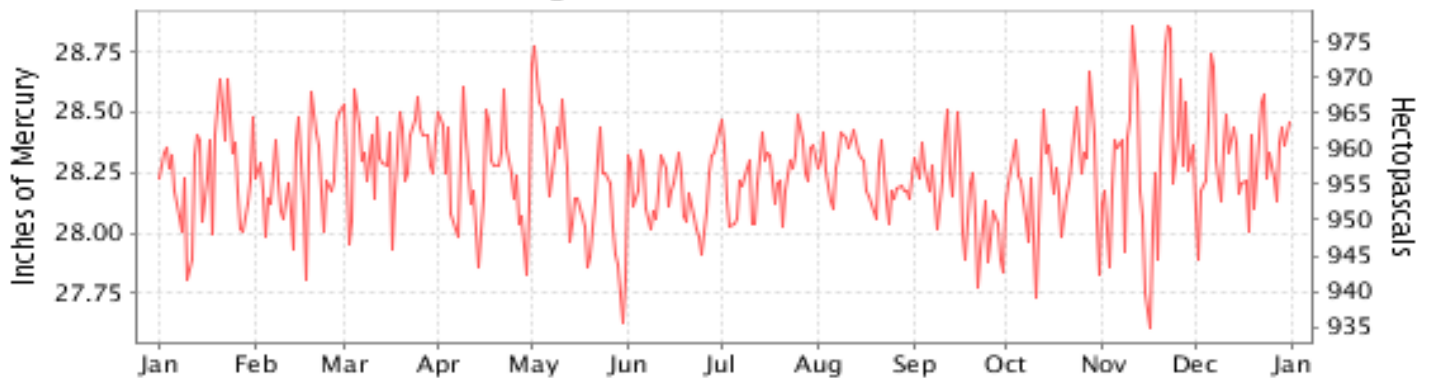
Daily Max/Min Temperature



Daily Precipitation



Daily Station Pressure



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NATIONAL
OCEANIC AND
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NATIONAL
ENVIRONMENTAL SATELLITE, DATA
AND INFORMATION SERVICE

NATIONAL
CLIMATIC DATA CENTER
ASHEVILLE, NORTH CAROLINA

Thomas R. Karl
DIRECTOR
NATIONAL CLIMATIC DATA CENTER

METEOROLOGICAL DATA FOR 2013

BISMARCK (KBIS)

LATITUDE: 46° 46'N LONGITUDE: 100° 45'W ELEVATION (FT): GRND: 1651 BARO: 1654 TIME ZONE: CENTRAL (UTC -6) WBAN: 24011

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	24.1	31.0	32.9	45.4	67.8	76.2	82.9	85.4	76.5	52.5	39.5	17.9	52.7	
	HIGHEST DAILY MAXIMUM	42	45	62	81	91	89	93	102	94	71	56	44	102	
	DATE OF OCCURRENCE	18	25+	14	27	13	26	17	20	06	08+	02	27+	AUG 20	
	MEAN DAILY MINIMUM	3.6	12.7	12.5	23.7	41.7	53.2	57.0	56.6	51.2	31.5	15.6	-3.1	29.7	
	LOWEST DAILY MINIMUM	-17	-16	-2	12	21	38	39	44	37	20	-11	-31	-31	
	DATE OF OCCURRENCE	31	01	20	23	02	06	27	10	21	28	23	23	DEC 23	
	AVERAGE DRY BULB	13.9	21.9	22.7	34.6	54.7	64.7	70.0	71.0	63.8	42.0	27.6	7.4	41.2	
	MEAN WET BULB	12.7	19.9	20.4	29.8	48.5	58.6	62.2	62.0	56.8	38.3	24.9	7.0	36.8	
	MEAN DEW POINT	8.2	16.0	16.2	23.5	40.8	54.1	57.1	56.3	52.0	33.5	19.2	2.3	31.6	
	NUMBER OF DAYS WITH:														
	MAXIMUM >= 90°	0	0	0	0	1	0	0	6	10	2	0	0	0	19
MAXIMUM <= 32°	22	15	18	2	0	0	0	0	0	1	7	23	88		
MINIMUM <= 32°	31	28	31	29	9	0	0	0	0	18	29	31	206		
MINIMUM <= 0°	13	4	1	0	0	0	0	0	0	0	3	19	40		
H/C	HEATING DEGREE DAYS	1577	1203	1307	907	323	86	22	6	103	707	1117	1775	9133	
	COOLING DEGREE DAYS	0	0	0	0	12	84	185	199	75	0	0	0	555	
RH	MEAN (PERCENT)	76	79	78	69	64	70	66	64	70	74	72	75	71	
	HOUR 00 LST	79	82	83	81	76	82	79	77	78	82	79	78	80	
	HOUR 06 LST	79	83	85	83	84	88	88	89	87	86	80	77	84	
	HOUR 12 LST	73	74	71	56	52	57	51	49	57	63	62	72	61	
	HOUR 18 LST	74	74	71	58	48	54	46	41	54	64	66	74	60	
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG(VISBY <= 1/4 MI)	3	1	2	4	1	4	0	1	1	0	0	0	17	
	THUNDERSTORMS	0	0	0	1	5	4	7	3	4	1	0	0	25	
PR	MEAN STATION PRESS. (IN.)	28.25	28.22	28.32	28.24	28.20	28.18	28.24	28.24	28.15	28.22	28.30	28.31	28.24	
	MEAN SEA-LEVEL PRESS. (IN.)	30.11	30.06	30.18	30.05	29.98	29.92	29.98	29.98	29.89	30.02	30.12	30.19	30.04	
WINDS	RESULTANT SPEED (MPH)	4.3	1.9	3.0	3.6	5.1	1.3	1.0	2.1	1.1	4.2	3.1	2.9	1.8	
	RES. DIR. (TENS OF DEGS.)	30	35	02	01	05	01	09	11	14	35	30	33	37	
	MEAN SPEED (MPH)	9.2	8.9	9.9	10.9	10.3	9.0	7.9	7.1	8.3	9.0	7.9	9.2	9.0	
	PREVAIL.DIR.(TENS OF DEGS.)	29	33	31	33	07	30	15	15	15	06	29	29	29	
	MAXIMUM 2-MINUTE WIND														
	SPEED (MPH)	36	40	37	37	39	41	33	44	33	36	30	31	44	
	DIR. (TENS OF DEGS.)	32	31	32	28	15	15	31	32	13	29	31	34	32	
	DATE OF OCCURRENCE	19	02	18	30	26	22	08	29	08	11	08	28	AUG 29	
	MAXIMUM 3-SECOND WIND:														
	SPEED (MPH)	47	54	48	48	53	51	45	53	44	48	44	41	54	
DIR. (TENS OF DEGS.)	31	31	29	28	28	21	31	31	29	30	33	34	31		
DATE OF OCCURRENCE	19	02	18	30	14	22	09	29	30	11	08	28	FEB 02		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	0.25	0.34	0.83	1.81	7.37	2.71	1.63	1.37	4.36	4.73	0.09	1.26	26.75	
	GREATEST 24-HOUR (IN.)	0.08	0.14	0.47	1.04	2.22	1.51	0.67	0.82	1.90	2.43	0.03	0.38	2.43	
	DATE OF OCCURRENCE	11	20-21	03-04	14	18-19	22	21	29	08-09	04-05	20+	03-04	OCT 04-05	
	NUMBER OF DAYS WITH:														
PRECIPITATION 0.01	7	11	9	9	11	11	8	8	10	14	4	16	118		
PRECIPITATION 0.10	0	1	3	3	9	6	7	3	6	5	0	5	48		
PRECIPITATION 1.00	0	0	0	1	3	1	0	0	2	2	0	0	9		
SNOWFALL	SNOW,ICE PELLETS,HAIL														
	TOTAL (IN.)	2.9	3.5	6.9	21.8	0.0	0.0	0.0	0.0	0.0	1.0	0.6	15.5	52.2	
	GREATEST 24-HOUR (IN.)	1.2	0.6	1.9	17.3	0.0	0.0	0.0	0.0	0.0	0.6	0.6	3.4	17.3	
	DATE OF OCCURRENCE	11	02	22	14						04	20	04	APR 14	
	MAXIMUM SNOW DEPTH (IN.)	7	4	2	14	0	0	0	0	0	1	7	7	14	
	DATE OF OCCURRENCE	02+	06+	22+	15						20	31+	31+	APR 15	
NUMBER OF DAYS WITH:															
SNOWFALL >= 1.0	1	0	3	2	0	0	0	0	0	0	0	5	11		

NORMALS, MEANS, AND EXTREMES BISMARCK (KBIS)

LATITUDE:
46° 46'N

LONGITUDE:
100° 45'W

ELEVATION (FT):
GRND: 1651 BARO: 1654

TIME ZONE:
CENTRAL (UTC -6)

WBAN: 24011

	ELEMENT	POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	23.4	28.3	40.4	57.0	68.4	77.3	84.7	83.5	72.1	57.5	39.6	26.2	54.9	
	MEAN DAILY MAXIMUM	66	20.4	26.5	38.0	55.4	68.0	77.0	84.6	83.4	72.1	58.4	39.7	26.0	54.1	
	HIGHEST DAILY MAXIMUM	74	63	69	81	93	98	111	112	109	105	95	79	65	112	
	YEAR OF OCCURRENCE		2002	1992	2012	1992	1941	2002	2006	1941	1959	1963	1999	1979	1979	JUL 2006
	MEAN OF EXTREME MAXS.	66	44.1	48.7	63.0	80.5	87.2	92.6	98.9	98.6	92.5	82.2	63.5	49.0	75.1	
	NORMAL DAILY MINIMUM	30	2.2	7.9	19.4	30.7	42.6	52.0	57.4	55.5	45.0	32.2	18.8	6.1	30.8	
	MEAN DAILY MINIMUM	66	-0.6	5.7	17.1	30.7	42.3	51.8	57.1	54.9	44.2	32.6	18.4	5.8	30.0	
	LOWEST DAILY MINIMUM	74	-44	-43	-31	-12	15	30	35	33	11	-10	-30	-43	-44	
	YEAR OF OCCURRENCE		2009	1994	1948	1975	1967	1969	1971	1988	1974	1991	1985	1967	1967	JAN 2009
	MEAN OF EXTREME MINS.	66	-26.0	-19.9	-7.4	14.2	26.6	38.5	45.2	41.1	28.3	16.8	-2.4	-17.6	11.5	
	NORMAL DRY BULB	30	12.8	18.1	29.9	43.8	55.5	64.7	71.1	69.5	58.5	44.8	29.2	16.2	42.8	
	MEAN DRY BULB	66	9.9	16.1	27.6	43.1	55.2	64.5	70.9	69.1	58.1	45.5	29.2	16.1	42.1	
	MEAN WET BULB	30	11.1	15.7	25.1	35.6	46.8	56.6	61.2	59.1	50.3	37.7	24.5	14.1	36.5	
	MEAN DEW POINT	30	9.2	13.3	22.5	31.2	43.4	54.0	58.7	56.3	46.4	34.2	22.4	12.0	33.6	
	NORMAL NO. DAYS WITH: MAXIMUM >= 90	30	0.0	0.0	0.0	0.1	0.4	2.5	8.0	7.7	1.7	0.1	0.0	0.0	20.5	
	MAXIMUM <= 32	30	20.8	16.3	8.0	1.0	0.0	0.0	0.0	0.0	0.0	0.8	8.8	18.8	74.5	
MINIMUM <= 32	30	30.8	27.4	28.9	17.1	3.5	0.0	0.0	0.0	1.7	15.3	27.3	30.8	182.8		
MINIMUM <= 0	30	13.4	8.8	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.9	9.6	36.2		
H/C	NORMAL HEATING DEG. DAYS	30	1618	1313	1088	636	310	93	17	38	231	626	1074	1514	8558	
	NORMAL COOLING DEG. DAYS	30	0	0	0	1	16	83	204	177	38	1	0	0	520	
RH	NORMAL (PERCENT)	30	75	75	73	63	62	66	64	63	65	67	75	77	69	
	HOURLY 00 LST	30	78	80	80	73	72	79	78	75	75	74	80	80	77	
	HOURLY 06 LST	30	78	81	83	81	81	85	86	86	83	81	83	81	82	
	HOURLY 12 LST	30	71	69	63	51	49	52	49	49	51	54	68	73	58	
	HOURLY 18 LST	30	74	71	62	47	45	49	45	43	47	54	70	76	57	
S	PERCENT POSSIBLE SUNSHINE	63	53	53	58	58	61	64	74	71	65	58	44	47	59	
W/O	MEAN NO. DAYS WITH: HEAVY FOG(VISBY <= 1/4 MI)	50	1.4	1.4	1.6	1.2	0.4	0.8	0.8	0.8	0.6	1.0	1.6	1.6	13.2	
	THUNDERSTORMS	66	0.0	0.0	0.1	1.0	3.8	8.0	8.7	7.0	2.6	0.5	0.0	0.0	31.7	
CLOUDINESS	MEAN: SUNRISE-SUNSET (OKTAS)															
	MIDNIGHT-MIDNIGHT (OKTAS)															
	MEAN NO. DAYS WITH: CLEAR	1	6.0	10.0	6.0	3.0										
	PARTLY CLOUDY	1	10.0	10.0	9.0	10.0										
CLOUDY	1	15.0	9.0	16.0	17.0											
PR	MEAN STATION PRESSURE(IN)	30	28.26	28.27	28.24	28.19	28.16	28.14	28.19	28.20	28.21	28.22	28.22	28.25	28.21	
	MEAN SEA-LEVEL PRES. (IN)	30	30.12	30.12	30.06	29.97	29.91	29.88	29.92	29.94	29.97	30.00	30.04	30.10	30.00	
WINDS	MEAN SPEED (MPH)	30	9.2	9.1	10.2	10.7	10.7	9.5	8.6	8.8	9.0	9.4	9.0	9.1	9.4	
	PREVAIL.DIR(TENS OF DEGS)	45	31	33	32	06	33	30	16	16	32	31	31	32	31	
	MAXIMUM 2-MINUTE: SPEED (MPH)	18	45	52	44	55	54	55	64	56	41	45	47	47	64	
	DIR. (TENS OF DEGS)		31	30	30	31	27	15	22	27	25	32	31	29	22	
	YEAR OF OCCURRENCE		2007	2002	2011	2000	1996	2010	2001	2011	1997	2012	1999	2004	JUL 2001	
	MAXIMUM 3-SECOND SPEED (MPH)	18	55	68	61	71	69	78	76	71	64	61	61	55	78	
	DIR. (TENS OF DEGS)		31	31	32	32	26	15	22	28	23	31	30	28	15	
YEAR OF OCCURRENCE		2007	2002	2004	2000	1996	2010	2001	2011	1997	2010	1999	2004	JUN 2010		
PRECIPITATION	NORMAL (IN)	30	0.43	0.51	0.87	1.26	2.40	3.17	2.89	2.28	1.59	1.25	0.71	0.49	17.85	
	MAXIMUM MONTHLY (IN)	74	1.29	1.74	3.19	5.46	7.37	8.29	13.75	9.29	6.93	4.73	2.56	1.41	13.75	
	YEAR OF OCCURRENCE		1969	2000	1975	1975	2013	1947	1993	1998	1977	2013	1944	2008	JUL 1993	
	MINIMUM MONTHLY (IN)	74	0.02	0.03	0.09	T	0.28	0.50	0.18	0.03	0.02	0.02	T	T	0.02	
	YEAR OF OCCURRENCE		1940	1985	1981	1952	1984	1974	1968	2001	1948	1993	1990	1944	OCT 1993	
	MAXIMUM IN 24 HOURS (IN)	74	0.67	1.18	1.30	1.97	2.54	5.77	5.27	4.74	4.34	2.43	1.43	0.72	5.77	
	YEAR OF OCCURRENCE		1952	2008	1950	1964	1985	2009	1993	1999	1994	2013	2008	2006	JUN 2009	
	NORMAL NO. DAYS WITH: PRECIPITATION >= 0.01	30	7.5	7.0	7.9	7.4	10.1	11.2	9.7	8.2	7.5	6.6	7.0	7.6	97.7	
PRECIPITATION >= 1.00	30	0.0	0.0	0.0	0.1	0.4	0.7	0.5	0.5	0.3	0.2	0.0	0.0	2.7		
SNOWFALL	NORMAL (IN)	30	8.9	8.1	9.1	4.2	0.4	0.0	0.0	0.0	0.2	2.2	8.8	9.3	51.2	
	MAXIMUM MONTHLY (IN)	74	25.0	25.6	31.1	21.8	10.3	T	T	T	5.0	23.7	29.9	33.3	33.3	
	YEAR OF OCCURRENCE		1982	1979	1975	2013	1950	2006	2009	2009	1984	1991	1993	2008	DEC 2008	
	MAXIMUM IN 24 HOURS (IN)	74	13.2	11.0	15.5	17.3	11.0	T	T	T	4.8	14.3	11.4	10.0	17.3	
	YEAR OF OCCURRENCE		1996	1996	1966	2013	1967	1993	2009	2009	1984	1991	1986	1988	APR 2013	
	MAXIMUM SNOW DEPTH (IN)	65	19	28	27	22	11	0	0	0	2	10	19	15	28	
	YEAR OF OCCURRENCE		1982	1979	1979	1975	1967				1984	1991	1993	2009	FEB 1979	
NORMAL NO. DAYS WITH: SNOWFALL >= 1.0	30	2.6	2.7	2.5	1.0	0.1	0.0	0.0	0.0	0.1	0.6	2.3	2.7	14.6		

PRECIPITATION (inches) 2013 BISMARCK (KBIS)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1984	0.38	0.31	1.65	3.65	0.28	3.58	0.81	0.87	0.94	0.99	0.73	0.58	14.77
1985	0.27	0.03	0.80	1.77	4.13	1.80	0.55	4.61	1.29	1.33	0.91	0.35	17.84
1986	0.36	0.25	0.25	3.60	3.11	3.95	4.24	1.61	4.41	0.35	2.09	0.02	24.24
1987	0.14	1.65	1.34	0.13	4.19	1.52	4.59	3.03	0.29	0.10	0.02	0.13	17.13
1988	0.68	0.40	0.92	0.12	1.16	2.18	0.55	2.19	0.63	0.15	0.48	0.71	10.17
1989	0.59	0.21	0.29	1.86	1.92	0.70	1.76	1.62	1.23	0.21	0.64	0.30	11.33
1990	0.26	0.23	0.55	0.31	1.65	4.73	1.53	1.37	1.25	0.29	T	0.50	12.67
1991	0.16	0.24	0.62	1.62	3.34	2.64	0.65	1.77	2.49	2.33	0.74	0.16	16.76
1992	0.31	0.40	0.61	0.22	1.12	3.64	2.46	0.98	1.28	0.39	0.81	0.48	12.70
1993	0.29	0.33	0.38	1.26	2.36	4.57	13.75	1.89	0.26	0.02	1.04	0.84	26.99
1994	0.58	0.45	0.66	1.06	0.54	3.35	1.76	0.33	5.01	3.41	1.50	0.29	18.94
1995	0.41	0.33	1.67	1.00	4.15	1.39	4.99	1.99	0.80	1.11	0.51	0.55	18.90
1996	0.94	0.66	1.18	0.51	1.62	2.93							
1997	0.84	0.59	0.97	3.26	0.32	1.23	2.21	1.07	1.73	2.29	0.31	0.08	14.90
1998	0.09	1.67	0.39	0.66	1.10	2.90	1.89	9.29	0.98	3.09	1.40	0.24	23.70
1999	1.13	0.39	0.25	1.61	6.96	3.61	2.52	7.91	1.31	0.43	0.10	0.23	26.45
2000	0.39	1.74	1.27	1.51	2.73	5.10	4.03	1.00	0.98	2.48	1.53	0.24	23.00
2001	0.46	0.44	0.24	1.88	2.00	6.91	7.31	T	1.06	0.85	0.06	0.13	21.34
2002	0.33	0.13	0.79	1.15	0.52	1.53	2.61	2.39	0.62	0.79	0.12	0.32	11.30
2003	0.26	0.22	0.43	0.85	5.26	2.11	1.36	0.26	1.77	0.62	0.43	0.48	14.05
2004	0.59	0.31	1.25	0.78	1.39	3.17	2.83	2.29	2.08	1.09	0.14	0.18	16.10
2005	0.36	0.11	0.54	1.04	2.37	6.23	2.65	2.87	0.26	1.21	0.74	0.84	19.22
2006	0.18	0.20	0.54	0.73	1.77	0.83	0.58	2.50	1.74	1.11	0.09	0.83	11.10
2007	0.13	0.75	1.18	0.80	5.42	3.32	1.25	3.26	1.77	0.83	0.13	0.23	19.07
2008	0.11	0.41	0.45	0.73	1.27	3.92	2.84	1.13	2.46	1.73	2.25	1.41	18.71
2009	0.83	0.78	2.73	0.69	2.02	7.94	3.15	0.58	1.24	2.21	0.04	0.91	23.12
2010	0.70	0.63	1.06	3.08	3.05	2.48	3.01	2.74	3.60	0.68	0.75	1.40	23.18
2011	1.13	0.57	1.56	2.35	2.32	3.19	5.24	4.02	0.96	1.35	0.06	0.47	23.22
2012	0.30	0.48	0.54	1.71	1.98	2.15	2.65	2.33	0.05	1.02	1.07	0.63	14.91
2013	0.25	0.34	0.83	1.81	7.37	2.71	1.63	1.37	4.36	4.73	0.09	1.26	26.75
POR= 66 YRS	0.48	0.48	0.79	1.45	2.36	3.02	2.50	1.99	1.44	1.09	0.57	0.51	16.68

WBAN : 24011

AVERAGE TEMPERATURE (°F) 2013 BISMARCK (KBIS)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1984	15.5	28.0	25.4	41.7	51.9	63.1	70.1	71.6	52.6	45.5	30.3	8.6	42.0
1985	6.2	13.2	31.6	46.0	59.1	59.3	69.9	64.3	53.6	44.3	14.0	9.1	39.2
1986	20.1	13.8	38.8	42.3	55.9	66.5	70.1	65.5	54.3	46.1	23.5	22.3	43.3
1987	21.8	28.1	27.9	51.2	59.8	68.2	72.4	64.9	58.7	42.0	34.5	24.1	46.1
1988	8.9	14.9	30.2	45.0	61.0	75.7	73.2	69.5	56.6	43.8	29.0	18.1	43.8
1989	16.0	6.3	24.8	44.3	56.2	63.7	76.3	69.6	58.6	45.3	29.2	8.2	41.5
1990	23.6	20.0	35.2	43.5	54.8	65.7	70.2	71.8	61.7	43.8	31.2	9.4	44.2
1991	8.8	28.1	32.7	46.1	57.7	68.5	71.4	73.7	58.9	40.7	23.2	25.1	44.6
1992	23.3	27.1	35.0	42.1	58.1	62.7	64.0	64.2	56.5	43.9	28.8	11.8	43.1
1993	8.2	10.9	32.4	42.2	55.4	60.2	64.4	66.6	53.2	43.9	26.7	17.5	40.1
1994	0.6	4.8	32.7	43.0	60.0	65.5	67.3	67.5	61.6	48.0	31.0	16.2	41.5
1995	10.4	19.2	26.0	38.9	53.3	66.1	69.4	71.4	57.2	44.6	25.1	15.0	41.4
1996	2.0	19.2	19.8	39.6	52.0	65.6							
1997	3.7	18.9	26.1	38.6	54.8	69.1	71.9	69.7	62.1	47.7	27.2	28.2	43.2
1998	13.2	30.4	24.0	48.0	58.0	61.4	72.9	72.5	63.5	46.8	31.0	20.7	45.2
1999	8.4	24.9	35.6	43.3	56.0	64.3	71.3	69.4	55.0	45.3	38.6	25.5	44.8
2000	15.2	22.6	35.7	43.6	56.6	62.7	72.0	70.9	59.7	48.8	24.1	6.8	43.2
2001	18.7	7.6	29.9	44.7	57.9	64.4	72.6	72.6	61.1	44.1	38.0	20.8	44.4
2002	19.4	25.7	18.8	40.8	50.3	68.1	74.8	69.2	61.4	36.4	32.6	22.8	43.4
2003	14.5	11.8	25.1	47.0	54.1	63.7	72.5	75.6	60.2	49.4	22.2	24.0	43.3
2004	7.7	17.4	35.3	46.0	53.6	61.6	70.1	64.5	61.1	46.0	35.1	22.0	43.4
2005	9.5	24.1	32.5	48.7	53.7	67.6	72.3	68.2	61.4	46.9	33.7	19.5	44.8
2006	26.8	20.1	31.4	49.9	57.5	67.8	77.3	71.6	57.0	41.6	29.9	23.5	46.2
2007	14.7	9.0	36.6	42.1	57.4	67.0	75.5	67.1	59.5	47.0	31.1	15.1	43.5
2008	11.7	14.5	30.6	41.8	53.0	62.0	72.2	71.6	59.0	45.7	31.2	6.9	41.7
2009	8.7	13.6	21.6	41.2	54.3	61.5	67.0	66.8	65.0	39.5	38.1	10.6	40.7
2010	9.4	10.6	33.7	47.8	54.3	65.3	70.7	71.1	56.3	48.7	28.4	11.6	42.3
2011	8.7	12.2	21.2	40.1	52.4	62.7	71.6	69.2	57.7	49.0	31.4	25.1	41.8
2012	22.7	22.2	43.3	47.1	55.2	67.2	75.7	67.7	59.0	42.8	28.6	14.9	45.5
2013	13.9	21.9	22.7	34.6	54.7	64.7	70.0	71.0	63.8	42.0	27.6	7.4	41.2
POR= 66 YRS	9.9	16.1	27.6	43.1	55.2	64.5	70.9	69.1	58.1	45.5	29.2	16.1	42.1

HEATING DEGREE DAYS (base 65°F) 2013 BISMARCK (KBIS)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1984-85	17	27	373	602	1033	1749	1821	1450	1027	562	194	192	9047
1985-86	21	85	345	636	1526	1731	1386	1427	807	673	297	44	8978
1986-87	5	65	314	580	1237	1319	1332	1023	1144	416	189	36	7660
1987-88	10	88	199	708	909	1260	1737	1454	1071	597	184	16	8233
1988-89	1	40	251	651	1075	1448	1513	1640	1239	621	274	110	8863
1989-90	0	38	218	606	1066	1761	1278	1256	916	650	318	78	8185
1990-91	10	5	173	649	1006	1722	1740	1028	995	557	253	10	8148
1991-92	7	0	236	748	1247	1231	1286	1093	921	689	248	117	7823
1992-93	74	111	256	645	1077	1645	1757	1513	1004	678	296	177	9233
1993-94	68	52	347	645	1141	1466	1998	1684	995	651	192	51	9290
1994-95	34	64	152	520	1017	1508	1689	1276	1204	778	355	84	8681
1995-96	13	3	262	627	1189	1547	1953	1322	1396	756	399	84	9551
1996-97	10	1	249	644	1126	1793	1891	1283	1201	786	317	9	9310
1997-98	16	34	115	538	1126	1134	1601	962	1264	502	230	143	7665
1998-99	2	3	121	556	1013	1368	1747	1114	903	646	280	86	7839
1999-00	9	21	298	604	787	1215	1537	1223	900	633	256	114	7597
2000-01	20	21	196	495	1219	1798	1431	1601	1079	613	228	100	8801
2001-02	9	5	170	641	802	1360	1407	1095	1426	718	470	58	8161
2002-03	3	30	179	881	965	1300	1560	1483	1229	537	344	94	8605
2003-04	1	16	210	477	1276	1266	1770	1373	913	564	351	127	8344
2004-05	30	83	173	584	889	1326	1711	1141	1001	482	350	28	7798
2005-06	9	21	160	557	931	1401	1176	1251	1034	449	268	40	7297
2006-07	0	0	256	724	1046	1281	1555	1562	871	680	240	56	8271
2007-08	0	57	222	550	1011	1541	1647	1459	1058	686	369	114	8714
2008-09	7	13	200	587	1008	1798	1739	1435	1340	707	330	148	9312
2009-10	23	43	80	783	799	1681	1720	1518	963	508	352	65	8535
2010-11	7	13	256	499	1092	1650	1738	1472	1353	740	382	103	9305
2011-12	1	5	221	505	1002	1228	1302	1235	668	530	302	33	7032
2012-13	0	26	206	683	1082	1545	1577	1203	1307	907	323	86	8945
2013-	22	6	103	707	1117	1775							

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COOLING DEGREE DAYS (base 65°F) 2013 BISMARCK (KBIS)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1984	0	0	0	0	21	44	180	241	11	4	0	0	501
1985	0	0	0	0	16	26	180	67	8	0	0	0	297
1986	0	0	0	0	21	96	169	88	0	0	0	0	374
1987	0	0	0	11	33	136	245	92	15	0	0	0	532
1988	0	0	0	1	65	340	264	184	6	0	0	0	860
1989	0	0	0	4	8	78	359	190	33	0	0	0	672
1990	0	0	0	14	9	105	177	224	82	0	0	0	611
1991	0	0	0	0	36	122	212	278	61	0	0	0	709
1992	0	0	0	9	40	52	50	95	9	0	0	0	255
1993	0	0	0	0	7	42	55	110	3	0	0	0	217
1994	0	0	0	1	44	70	111	148	58	0	0	0	432
1995	0	0	0	0	1	122	154	210	35	0	0	0	522
1996	0	0	0	0	2	109	111	211	47	0	0	0	480
1997	0	0	0	0	5	138	236	187	35	8	0	0	609
1998	0	0	0	0	17	42	253	242	79	0	0	0	633
1999	0	0	0	0	7	72	210	165	3	0	0	0	457
2000	0	0	0	0	5	51	242	209	42	0	0	0	549
2001	0	0	0	10	12	86	252	249	59	0	0	0	668
2002	0	0	0	0	26	158	313	168	80	0	0	0	745
2003	0	0	0	5	11	61	241	349	70	0	0	0	737
2004	0	0	0	0	5	34	198	77	62	3	0	0	379
2005	0	0	0	1	12	113	241	128	57	3	0	0	555
2006	0	0	0	0	42	128	386	211	24	2	0	0	793
2007	0	0	0	0	12	123	334	130	67	0	0	0	666
2008	0	0	0	1	0	34	240	223	26	0	0	0	524
2009	0	0	0	0	3	49	90	106	83	0	0	0	331
2010	0	0	0	0	25	79	187	213	0	3	0	0	507
2011	0	0	0	0	0	42	215	143	11	14	0	0	425
2012	0	0	0	0	5	104	339	118	33	0	0	0	599
2013	0	0	0	0	12	84	185	199	75	0	0	0	555

SNOWFALL (inches) 2013 BISMARCK (KBIS)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1984-85	0.0	0.0	5.0	1.3	2.0	14.9	3.9	0.5	12.4	0.2	0.0	0.0	40.2
1985-86	0.0	0.0	T	3.2	24.2	7.1	6.1	6.5	2.4	11.7	T	0.0	61.2
1986-87	0.0	0.0	0.0	T	28.5	1.3	2.6	23.2	11.8	0.5	T	0.0	67.9
1987-88	0.0	0.0	0.0	0.3	T	1.2	12.1	8.2	9.2	0.5	0.0	0.0	31.5
1988-89	0.0	0.0	0.0	0.1	3.3	15.9	12.9	7.4	6.4	1.8	T	T	47.8
1989-90	0.0	T	T	1.7	7.6	5.1	3.7	3.6	3.5	3.1	0.8	T	29.1
1990-91	T	T	0.0	2.5	T	10.9	4.1	5.2	4.8	8.4	6.5	T	42.4
1991-92	0.0	T	T	23.7	7.5	1.5	7.0	9.5	5.3	3.0	T	T	57.5
1992-93	0.0	0.0	0.0	4.8	10.5	8.5	9.0	7.9	3.3	T	T	T	44.0
1993-94	T	0.0	0.0	0.5	29.9	14.0	14.5	12.7	11.4	8.8	0.0	0.0	91.8
1994-95	0.0	0.0	0.0	0.0	16.6	7.0	12.5	8.2	20.5	2.3	T	0.0	67.1
1995-96	0.0	0.0	T	2.5	6.1	12.1	21.3	15.2	20.0	2.9	T	0.0	80.1
1996-97	0.0	0.0	0.0	5.0	25.2	13.5	15.1	9.2	16.1	17.5	T	0.0	101.6
1997-98	0.0	T	0.0	0.4	6.3	1.7	3.3	12.1	2.8	T	T	T	26.6
1998-99	0.0	T	0.0	T	17.1	6.0	22.2	4.7	1.8	12.7	0.0	0.0	64.5
1999-00	T	T	0.0	T	T	5.4	5.7	13.4	6.0	1.4	T	0.0	31.9
2000-01	0.0	T	0.0	T	18.0	5.5	8.8	7.5	0.1	4.3	0.0	T	44.2
2001-02	0.0	0.0	0.0	0.2	1.7	2.8	5.1	3.1	16.8	4.5	2.2	0.0	36.4
2002-03	0.0	T	T	6.8	2.0	5.3	5.2	5.1	8.0	0.8	0.0	0.0	33.2
2003-04	0.0	0.0	0.0	2.8	10.2	8.3	15.3	3.3	6.3	T	0.2	0.0	46.4
2004-05	0.0	0.0	0.0	0.8	0.1	2.9	4.8	2.3	7.2	0.6	0.3	0.0	19.0
2005-06	0.0	0.0	0.0	0.0	1.8	12.7	3.1	4.5	5.9	0.0	T	T	28.0
2006-07	0.0	T	0.0	3.7	0.7	11.8	2.7	14.5	2.6	10.3	0.0	0.0	46.3
2007-08	0.0	0.0	0.0	0.0	0.8	4.8	3.0	8.0	2.2	T	0.5	0.0	19.3
2008-09	T	0.0	T	T	12.5	33.3	16.0	8.7	29.7	0.1	T	0.0	100.3
2009-10	T	T	0.0	0.7	T	19.1	13.8	12.6	2.9	5.3	1.0	0.0	55.4
2010-11	0.0	0.0	T	3.4	10.1	21.1	18.2	5.5	13.7	13.4	T	0.0	85.4
2011-12	0.0	0.0	0.0	T	0.6	3.4	1.9	7.2	0.5	T	0.0	0.0	13.6
2012-13	0.0	0.0	0.0	T	10.5	11.7	2.9	3.5	6.9	21.8	0.0	0.0	57.3
2013-	0.0	0.0	0.0	1.0	0.6	15.5							
POR= 66 YRS	T	T	0.1	1.6	6.6	8.3	8.3	7.4	8.2	4.2	0.8	T	45.5

WBAN : 24011

REFERENCE NOTES :

<p>PAGE 1: THE TEMPERATURE GRAPH SHOWS NORMAL MAXIMUM AND NORMAL MINIMUM DAILY TEMPERATURES (SOLID CURVES) AND THE ACTUAL DAILY HIGH AND LOW TEMPERATURES (VERTICAL BARS).</p> <p>PAGE 2 AND 3: H/C INDICATES HEATING AND COOLING DEGREE DAYS. RH INDICATES RELATIVE HUMIDITY W/O INDICATES WEATHER AND OBSTRUCTIONS S INDICATES SUNSHINE. PR INDICATES PRESSURE. CLOUDINESS ON PAGE 3 IS THE SUM OF THE CEILOMETER AND SATELLITE DATA NOT TO EXCEED EIGHT EIGHTHS(OKTAS).</p> <p>GENERAL: T INDICATES TRACE PRECIPITATION, AN AMOUNT GREATER THAN ZERO BUT LESS THAN THE LOWEST REPORTABLE VALUE. + INDICATES THE VALUE ALSO OCCURS ON EARLIER DATES. BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA. ASOS INDICATES AUTOMATED SURFACE OBSERVING SYSTEM. PM INDICATES THE LAST DAY OF THE PREVIOUS MONTH. POR (PERIOD OF RECORD) BEGINS WITH THE JANUARY DATA MONTH AND IS THE NUMBER OF YEARS USED TO COMPUTE THE MEAN. INDIVIDUAL MONTHS WITHIN THE POR MAY BE MISSING. WHEN THE POR FOR A NORMAL IS LESS THAN 30 YEARS, THE NORMAL IS PROVISIONAL AND IS BASED ON THE NUMBER OF YEARS INDICATED. 0.* OR * INDICATES THE VALUE OR MEAN-DAYS-WITH IS BETWEEN 0.00 AND 0.05. CLOUDINESS FOR ASOS STATIONS DIFFERS FROM THE NON-ASOS OBSERVATION TAKEN BY A HUMAN OBSERVER. ASOS STATION CLOUDINESS IS BASED ON TIME-AVERAGED CEILOMETER DATA FOR CLOUDS AT OR BELOW 12,000 FEET CLEAR INDICATES 0 - 2 OKTAS, PARTLY CLOUDY INDICATES 3 - 6 OKTAS, AND CLOUDY INDICATES 7 OR 8 OKTAS.</p> <p>GENERAL CONTINUED: WIND DIRECTION IS RECORDED IN TENS OF DEGREES (2 DIGITS) CLOCKWISE FROM TRUE NORTH. "00" INDICATES CALM. "36" INDICATES TRUE NORTH. RESULTANT WIND IS THE VECTOR AVERAGE OF THE SPEED AND DIRECTION. AVERAGE TEMPERATURE IS THE SUM OF THE MEAN DAILY MAXIMUM AND MINIMUM TEMPERATURE DIVIDED BY 2. SNOWFALL DATA COMPRISE ALL FORMS OF FROZEN</p>	<p>PRECIPITATION, INCLUDING HAIL. A HEATING (COOLING) DEGREE DAY IS THE DIFFERENCE BETWEEN THE AVERAGE DAILY TEMPERATURE AND 65 F. DRY BULB IS THE TEMPERATURE OF THE AMBIENT AIR. DEW POINT IS THE TEMPERATURE TO WHICH THE AIR MUST BE COOLED TO ACHIEVE 100 PERCENT RELATIVE HUMIDITY. WET BULB IS THE TEMPERATURE THE AIR WOULD HAVE IF THE MOISTURE CONTENT WAS INCREASED TO 100 PERCENT RELATIVE HUMIDITY. ON JULY 1, 1996, THE NATIONAL WEATHER SERVICE BEGAN USING THE "METAR" OBSERVATION CODE THAT WAS ALREADY EMPLOYED BY MOST OTHER NATIONS OF THE WORLD. THE MOST NOTICEABLE DIFFERENCE IN THIS ANNUAL PUBLICATION WILL BE THE CHANGE IN UNITS FROM TENTHS TO EIGHTHS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER. STATION HISTORY STOPPED WITH THE 2009 ANNUAL. IF YOU NEED STATION HISTORY INFORMATION GO TO "Historical Observing Metadata Repository", URL IS: http://www.ncdc.noaa.gov/homr/ SNOWFALL STOPPED MONTH & YEAR INDICATED ABOVE. NO FURTHER YEARS INCLUDED UNLESS RESTARTED.</p> <p>NOTE: The "Period of Record:(POR)" for all "averages" is based on "Summary of the Day First Order Station" and "Cooperative Summary of the Day" archives.</p>
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2013 BISMARCK NORTH DAKOTA (KBIS)

Bismarck, the State Capital and County Seat of Burleigh County, is located in south-central North Dakota, near the center of North America. It is on the east bank of the Missouri River in a shallow basin 7 miles wide and 11 miles long.

The Weather Service Forecast Office is located at the Municipal Airport approximately 2 miles southeast of city center. It is almost entirely surrounded by low-lying hills. The closest hills, 3 miles to the north, and other hills 5 miles to the southeast, are about 200 to 300 feet high. West across the Missouri River the land is more hilly and 300 to 600 feet higher.

The climate is semi-arid, typically continental in character, and invigorating. Summers are warm, but there are not many hot days, and very few hot and humid days. Winters tend to be long and quite cold, but there are plenty of mild days to make winter weather pleasant much of the time. Sunshine is abundant, averaging 2,700 hours out of a possible 4,470 hours.

More than 75 percent of annual precipitation falls during the six month period from April through September, and nearly 50 percent during May, June, and July. Snow has been reported in all months except July and August. Three inches or more can be expected on about three days each year.

Most summer precipitation occurs during thunderstorms in the late afternoon and evening. Thunderstorms occur on about 34 days each year, accompanied by hail on two or three of the days. A damaging hailstorm is experienced about once every ten years. Tornadoes are rare, but damaging winds occasionally occur with the heavier thunderstorms.

The winter season usually begins in late November and continues until late March. Winter precipitation is nearly all in the form of snow and is often associated with strong winds and low temperatures. This combination produces winter storms and occasional blizzards that must never be taken lightly. A severe blizzard lasting two or three days may be expected every few years. But several times each winter storms lasting a few hours occur in which drifting snow can make travel difficult and even block roads. A stalled motorist can be in serious trouble if he is not prepared with adequate winter clothing and some kind of emergency provisions. A motorist must never leave his vehicle in a blinding snowstorm as he can easily become lost.

The temperature range from summer to winter is very large and typical of the Northern Great Plains. The average freeze-free period is 134 days, from mid-May to late September.

Station History

BISMARCK, ND

NAME	Begin Date	End Date	Latitude	Longitude	Elevation Feet	Relocation	Platform
BISMARCK MUNICIPAL AP	1948-01-01	1959-11-01	46° 46'	-100° 45'	1663		AIRWAYS,COOP
BISMARCK MUNICIPAL AP	1940-01-01	1948-01-01	46° 46'	-100° 45'			AIRWAYS
BISMARCK MUNICIPAL AP	2005-11-30	Present	46° 46'	-100° 45'	1651		ASOS,COOP,WXSVC
BISMARCK MUNICIPAL AP	1996-07-16	2005-11-15	46° 46'	-100° 45'	1651	.25 MI SE	ASOS,COOP,WXSVC
BISMARCK MUNICIPAL AP	1939-12-31	1940-01-01	46° 46'	-100° 45'			AIRWAYS,WXSVC
BISMARCK MUNICIPAL AP	1973-01-01	1996-05-01	46° 46'	-100° 45'	1647		COOP,WXSVC
BISMARCK MUNICIPAL AP	1959-11-01	1973-01-01	46° 46'	-100° 45'	1647		AIRWAYS,COOP
BISMARCK MUNICIPAL AP	1996-05-01	1996-05-16	46° 46'	-100° 45'	1647		ASOS,COOP,WXSVC
BISMARCK MUNICIPAL AP	2005-11-15	2005-11-30	46° 46'	-100° 45'	1651		ASOS,COOP,WXSVC
BISMARCK MUNICIPAL AP	1996-05-16	1996-07-16	46° 46'	-100° 45'	1651		ASOS,COOP,WXSVC

Element History

Element	Begin Date	End Date	Frequency	Time Of Observation	Equipment *	Equipment * Modifications	Equipment Exposure
TEMP	1939-12-31	1982-01-01	DAILY	2400			
PRECIP	1982-01-01	1987-09-14	DAILY	2400	UNIV	RCRD	
PRECIP	1987-09-14	1995-07-01	DAILY	2400	UNIV	RCRD	
PRECIP	1995-07-01	1996-07-16	HOURLY	2400	UNIV	RCRD	
SNOWWTREQ	2003-04-30	2010-10-01	DAILY	1200	SCALE		
SNOWDPH	2003-04-30	2010-10-01	DAILY	0600	SNOWSTICK		
PRECIP	1995-07-01	1996-07-16	DAILY	2400		RCRD	
TEMP	2010-10-01	Present	DAILY	2400	ATEMP		
PRECIP	2010-10-01	Present	DAILY	2400	PCPNX	SHLD	
SNOWDPH	2010-10-01	2011-11-01	DAILY	0600	SNOWSTICK		
PRECIP	1982-01-01	1987-09-14	HOURLY	2400			
TEMP	1996-07-16	2001-03-22	DAILY	2400	HYGR		
PRECIP	2001-03-22	2003-04-30	HOURLY	2400	AHTB	RCRD;HTD	
PRECIP	2001-03-22	2003-04-30	DAILY	2400	AHTB	RCRD;HTD	
TEMP	2001-03-22	2003-04-30	DAILY	2400	ATEMP		
SNOWWTREQ	2010-10-01	2011-11-01	DAILY	1200	SCALE		
TEMP	1982-01-01	1987-09-14	DAILY	2400			
TEMP	1987-09-14	1995-07-01	DAILY	2400	MXMN		
TEMP	1995-07-01	1996-07-16	DAILY	2400	MXMN		
PRECIP	1996-07-16	2001-03-22	HOURLY	2400	AHTB	RCRD;HTD	
TEMPATOBS	2003-04-30	2010-10-01	TWICE DAILY	0800	FRONTIER		
TEMP	2003-04-30	2010-10-01	DAILY	2400	ATEMP		
PRECIP	2010-10-01	Present	HOURLY	2400	AHTB	SHLD;RCRD;HTD	
PRECIP	1987-09-14	1995-07-01	HOURLY	2400			
TEMPATOBS	2001-03-22	2003-04-30	TWICE DAILY	1700	FRONTIER		
SNOWWTREQ	2001-03-22	2003-04-30	DAILY	1200	SCALE		
PRECIP	1996-07-16	2001-03-22	DAILY	2400	AHTB	RCRD;HTD	
SNOWDPH	2001-03-22	2003-04-30	DAILY	0600	SNOWSTICK		
PRECIP	2003-04-30	2010-10-01	HOURLY	2400	AHTB	RCRD;HTD	
PRECIP	1939-12-31	1982-01-01	DAILY	2400	UNIV	RCRD	
TEMPATOBS	2003-04-30	2010-10-01	TWICE DAILY	1700	FRONTIER		
PRECIP	2003-04-30	2010-10-01	DAILY	2400	PCPNX		
TEMPATOBS	2010-10-01	2012-05-08	TWICE DAILY	1700	FRONTIER		
TEMPATOBS	2001-03-22	2003-04-30	TWICE DAILY	0800	FRONTIER		
TEMPATOBS	2010-10-01	2012-05-08	TWICE DAILY	0800	FRONTIER		

* For explanation of codes and abbreviations see Station Metadata link below.

Other Station Information can be found at:

ASOS Implementation by NWS: <http://www.nws.noaa.gov/ops2/Surface/asosimplementation.htm>

Station Metadata website: <http://www.ncdc.noaa.gov/homr>

INQUIRES/COMMENTS CALL: (828) 271-4800, option 2

Fax Number : (828) 271-4876

TDD : (828) 271-4010

Email : ncdc.orders@noaa.gov

NOAA/National Climatic Data Center

Attn: User Engagement & Services Branch

151 Patton Avenue

Asheville, NC 28801-5001

Visit our Web Site for other weather data: www.ncdc.noaa.gov