Appendix C

Meteorological and Air Quality Data

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Regional Air Quality Monitoring Network

Regional Air Quality Monitoring Network

The table below lists the regional air quality monitors used for the D–FW SIP modeling.

Site Code	UTM Zone 15 (km)		Location	Data Availability		
	Easting	Northing				
ADTC	43.7	3356.7	Austin, Travis Co., Texas		NO	NO2
AL01	1077.0	3711.5	Hoover, Jefferson Co., Alabama	O3		
AL02	951.7	3590.1	Not in a city, Sumter Co., Alabama	O3		
AL03	1145.6	3615.7	Not in a city, Elmore Co., Alabama	O3		
AL04	1066.3	3721.5	Fairfield, Jefferson Co., Alabama	O3		
AL05	1058.6	3703.2	Not in a city, Jefferson Co., Alabama	O3		
AL06	1087.3	3747.0	Not in a city, Jefferson Co., Alabama	O3		
AL07	1078.6	3732.1	Tarrant City, Jefferson Co., Alabama	O3		
AL08	1021.2	3814.1	Not in a city, Lawrence Co., Alabama	O3		
AL09	1088.8	3857.1	Huntsville, Madison Co., Alabama	O3		
AL10	970.6	3414.1	Chickasaw, Mobile Co., Alabama	O3		
AL11	975.6	3435.1	Mobile, Mobile Co., Alabama	O3		
AL12	1135.1	3605.1	Montgomery, Montgomery Co., Alabama	O3		
AL13	1045.6	3847.4	Not in a city, Morgan Co., Alabama	O3		
AL14	1075.5	3703.3	Not in a city, Shelby Co., Alabama	O3	NO	
AL15	1171.1	3704.8	Not in a city, Clay Co., Alabama	O3		
AL16	1153.4	3462.7	Not in a city, Geneva Co., Alabama	O3		
AL18	1071.5	3726.2	Birmingham, Jefferson Co., Alabama			
AL19	1075.6	3724.0	Birmingham, Jefferson Co., Alabama			
AL20	1076.0	3724.8	Birmingham, Jefferson Co., Alabama			
AL21	1088.0	3880.9	Huntsville, Madison Co., Alabama	O3		
ANWC	42.8	3367.4	Austin, Travis Co., Texas	O3		
AR01	756.0	3897.7	Marion, Crittenden Co., Arkansas	O3		
AR02	480.3	3964.5	Not in a city, Newton Co., Arkansas	O3		
AR03	425.1	3833.6	Not in a city, Montgomery Co., Arkansas	O3		
AR04	566.6	3845.8	North Little Rock, Pulaski Co., Arkansas	O3		
AR05	560.6	3844.5	Little Rock, Pulaski Co., Arkansas			
AR06	568.1	3853.7	North Little Rock, Pulaski Co., Arkansas	O3	NO	NO2
AUNC	47.9	3374.4	Not in a city, Travis Co., Texas	O3		
BMTC	396.7	3323.2	Beaumont, Jefferson Co., Texas	O3	NO	NO2

Site Code	UTM Zone 15 (km)		Location	Data Availability		
	Easting	Northing				
C35C	282.0	3291.2	Houston, Harris Co., Texas	O3	NO	NO2
CLTA	267.0	3210.9	Clute, Brazoria Co., Texas	O3		
DANC	144.1	3648.5	Dallas, Dallas Co., Texas	O3	NO	NO2
DCLC	139.9	3665.5	Not in a city, Denton Co., Texas	O3		
DHIC	138.9	3637.5	Dallas, Dallas Co., Texas	O3	NO	NO2
DMAC	109.3	3681.5	Denton, Denton Co., Texas	O3		
DRPA	294.3	3284.4	Deer Park, Harris Co., Texas	O3		
FL01	1056.7	3390.7	Cantonment, Escambia Co., Florida	O3		
FL02	1051.1	3373.3	Pensacola, Escambia Co., Florida	O3		
FL03	1273.1	3357.6	Blountstown, Calhoun Co., Florida	O3		
FL04	1340.8	3390.8	Tallahassee, Leon Co., Florida	O3		
FRIC	146.8	3671.4	Frisco, Collin Co., Texas	O3		
FWMC	92.2	3637.7	Fort Worth, Tarrant Co., Texas	O3	NO	NO2
GA01	1236.6	3782.2	Not in a city, Paulding Co., Georgia	O3	NO	NO2
GA02	1310.3	3761.7	Decatur, De Kalb Co., Georgia	O3	NO	NO2
GA03	1312.7	3773.1	Not in a city, De Kalb Co., Georgia			
GA04	1314.6	3779.4	Tucker, De Kalb Co., Georgia	O3	NO	NO2
GA05	1276.7	3764.8	Not in a city, Douglas Co., Georgia	O3		
GA06	1275.5	3895.2	Not in a city, Fannin Co., Georgia	O3		
GA07	1297.4	3770.1	Atlanta, Fulton Co., Georgia		NO	
GA08	1302.2	3764.6	Atlanta, Fulton Co., Georgia	O3		
GA09	1298.9	3781.5	Atlanta, Fulton Co., Georgia			
GA10	1327.3	3793.6	Lawrenceville, Gwinnett Co., Georgia	O3		
GA11	1258.1	3626.6	Columbus, Muscogee Co., Georgia	O3		
GA12	1267.4	3629.3	Not in a city, Muscogee Co., Georgia	O3		
GA13	1330.3	3751.9	Not in a city, Rockdale Co., Georgia	O3	NO	NO2
GGGC	339.4	3583.2	Not in a city, Gregg Co., Texas	O3		
HALC	275.7	3309.9	Not in a city, Harris Co., Texas	O3	NO	NO2
HCFA	272.1	3293.3	Houston, Harris Co., Texas	O3	NO	NO2
HCQA	260.8	3279.1	Houston, Harris Co., Texas	O3		
HLAA	259.7	3302.8	Houston, Harris Co., Texas	O3	NO	NO2
HMCA	279.9	3287.9	Houston, Harris Co., Texas	O3		
HNWA	242.4	3325.7	Not in a city, Harris Co., Texas	O3		
HSMA	280.5	3278.9	Houston, Harris Co., Texas	O3		

Site Code	UTM Zone 15 (km)		Location	Data Availability		
	Easting	Northing				
HWAA	279.3	3301.2	Houston, Harris Co., Texas	O3		
KELC	100.0	3650.3	Not in a city, Tarrant Co., Texas	O3		
KS01	118.1	4189.6	Not in a city, Sedgwick Co., Kansas	O3		
KS02	120.1	4181.1	Wichita, Sedgwick Co., Kansas	O3		
KS03	117.7	4178.4	Wichita, Sedgwick Co., Kansas			
KS04	117.6	4179.6	Wichita, Sedgwick Co., Kansas			
KY01	1006.2	4099.4	Not in a city, Christian Co., Kentucky	O3		
KY02	1115.2	4141.3	Not in a city, Edmonson Co., Kentucky	O3		
KY03	900.7	4093.7	Not in a city, Graves Co., Kentucky	O3		
KY04	909.6	4121.6	Not in a city, Livingston Co., Kentucky	O3		
KY05	915.0	4112.6	Not in a city, Livingston Co., Kentucky	O3		
KY06	891.8	4113.2	Paducah, Mc Cracken Co., Kentucky			
KY07	894.0	4109.9	Paducah, Mc Cracken Co., Kentucky	O3	NO	NO2
KY08	1074.9	4081.2	Franklin, Simpson Co., Kentucky	O3	NO	NO2
KY09	944.8	4082.7	Not in a city, Trigg Co., Kentucky	O3		
KY10	959.6	4083.1	Not in a city, Trigg Co., Kentucky	O3		
KY11	1140.8	4229.1	Shepherdsville, Bullitt Co., Kentucky	O3	NO	NO2
KY12	1022.2	4198.3	Owensboro, Daviess Co., Kentucky	O3	NO	NO2
KY13	1019.2	4196.4	Owensboro, Daviess Co., Kentucky			
KY14	1037.0	4216.2	Not in a city, Hancock Co., Kentucky	O3		
KY15	1128.9	4197.3	Elizabethtown, Hardin Co., Kentucky	O3		
KY16	977.6	4203.6	Henderson, Henderson Co., Kentucky	O3	NO	NO2
KY17	987.6	4205.6	Not in a city, Henderson Co., Kentucky	O3		
KY18	1240.4	4226.9	Nicholasville, Jessamine Co., Kentucky	O3		
KY19	1007.7	4176.0	Not in a city, Mc lean Co., Kentucky	O3		
KY20	1246.5	4138.0	Somerset, Pulaski Co., Kentucky	O3		
KY21	1328.5	4091.3	Not in a city, Bell Co., Kentucky	O3		
LA01	695.6	3346.2	Not in a city, Ascension Par, Louisiana	O3		
LA02	430.2	3599.7	Shreveport, Bossier Par., Louisiana	O3		
LA03	472.7	3347.1	Westlake, Calcasieu Par., Louisiana	O3		
LA04	672.2	3384.9	Not in a city, East Baton Rouge Par., Louisiana	O3	NO	NO2
LA05	673.5	3287.7	Morgan City, St Mary Par., Louisiana	O3		
LA06	486.6	3372.7	Not in a city, Beauregard Par., Louisiana	O3	NO	NO2
LA07	419.8	3615.1	Not in a city, Caddo Par., Louisiana	O3		

Site Code	UTM Zone 15 (km)		Location	Data Availability		
	Easting	Northing				
LA08	464.4	3334.1	Not in a city, Calcasieu Par., Louisiana	O3		
LA09	492.0	3348.5	Not in a city, Calcasieu Par., Louisiana	O3	NO	NO2
LA10	444.8	3343.5	Vinton, Calcasieu Par., Louisiana	O3	NO	NO2
LA11	674.5	3366.3	Baton Rouge, East Baton Rouge Par., Louisiana	O3	NO	NO2
LA13	675.4	3370.6	Baton Rouge, East Baton Rouge Par., Louisiana	O3	NO	NO2
LA14	682.9	3342.3	Not in a city, Iberville Par., Louisiana	O3	NO	NO2
LA15	651.6	3364.0	Not in a city, Iberville Par., Louisiana	O3	NO	NO2
LA16	662.7	3344.1	Not in a city, Iberville Par., Louisiana	O3	NO	NO2
LA17	763.1	3326.1	Kenner, Jefferson Par., Louisiana	O3	NO	NO2
LA19	712.4	3297.2	Thibodaux, Lafourche Par., Louisiana	O3		
LA20	710.8	3354.7	Not in a city, Livingston Par., Louisiana	O3	NO	NO2
LA21	779.6	3321.0	New Orleans, Orleans Par., Louisiana	O3	NO	NO2
LA22	586.9	3598.1	Monroe, Ouachita Par., Louisiana	O3		
LA23	656.5	3395.6	New Roads, Pointe Coupee Par., Louisiana	O3	NO	NO2
LA24	790.2	3319.7	Not in a city, St Bernard Par., Louisiana	O3		
LA25	750.2	3319.6	Hahnville, St Charles Par., Louisiana	O3		
LA26	710.4	3319.5	Not in a city, St James Par., Louisiana	O3	NO	NO2
LA27	730.9	3327.1	Not in a city, St John The Baptist Par., Louisiana	O3		
LA28	672.2	3375.5	Port Allen, West Baton Rouge Par., Louisiana	O3	NO	NO2
LA29	686.4	3397.8	Not in a city, East Baton Rouge Par., Louisiana	O3	NO	NO2
LA30	552.1	3374.1	Not in a city, Grant Par., Louisiana	O3		
LA31	591.4	3343.1	Lafayette, Lafayette Par., Louisiana	O3		
LA32	782.5	3316.9	New Orleans, Orleans Par., Louisiana			
MO01	477.1	4108.1	Springfield, Greene Co., Missouri	O3		
MO02	477.1	4108.0	Springfield, Greene Co., Missouri			
MO03	473.4	4122.9	Springfield, Greene Co., Missouri	O3	NO	
MO04	474.7	4054.3	Branson, Taney Co., Missouri			
MO05	726.9	4196.7	Not in a city, Ste Genevieve Co., Missouri	O3	NO	NO2
MS01	929.4	3368.4	Pascagoula, Jackson Co., Mississippi	O3		
MS02	699.1	3642.2	Not in a city, Sharkey Co., Mississippi	O3		
MS03	653.0	3492.2	Natchez, Adams Co., Mississippi	O3		
MS04	775.6	3857.4	Not in a city, De Soto Co., Mississippi	O3		
MS05	705.2	3476.3	Not in a city, Franklin Co., Mississippi	O3		
MS06	831.3	3348.6	Not in a city, Hancock Co., Mississippi	O3		

Site Code	UTM Zone 15 (km)		Location	Data Availability		
	Easting	Northing				
MS07	769.3	3586.7	Jackson, Hinds Co., Mississippi	O3		
MS08	904.5	3589.4	Meridian, Lauderdale Co., Mississippi	O3		
MS09	895.7	3791.3	Not in a city, Lee Co., Mississippi	O3		
MS10	764.4	3606.6	Canton, Madison Co., Mississippi	O3		
MS11	699.0	3577.7	Vicksburg, Warren Co., Mississippi	O3		
MS20	765.0	3576.0	Jackson, Hinds Co., Mississippi			
OK01	84.9	3903.2	Not in a city, McClain Co., Oklahoma	O3		
OK02	91.5	3939.5	Oklahoma City, Oklahoma Co., Oklahoma	O3	NO	NO2
OK03	232.8	4009.2	Tulsa, Tulsa Co., Oklahoma	O3		
OK04	92.1	3917.4	Moore, Cleveland Co., Oklahoma	O3	NO	
OK05	95.0	3949.4	Oklahoma City, Oklahoma Co., Oklahoma	O3	NO	NO2
OK06	230.8	4029.1	Skiatook, Tulsa Co., Oklahoma	O3		
OK07	229.2	3980.9	Glenpool, Tulsa Co., Oklahoma	O3	NO	NO2
OK08	8.5	3846.3	Lawton, Comanche Co., Oklahoma	O3	NO	
OK09	61.3	4039.9	Not in a city, Garfield Co., Oklahoma		NO	
OK10	292.0	3962.8	Muskogee, Muskogee Co., Oklahoma		NO	
OK11	87.9	3934.9	Oklahoma City, Oklahoma Co., Oklahoma			
OK12	88.7	3938.2	Oklahoma City, Oklahoma Co., Oklahoma			
OK13	232.8	4004.7	Tulsa, Tulsa Co., Oklahoma			
OK14	-309.3	4036.8	Tulsa, Tulsa Co., Oklahoma		NO	NO2
PAWC	404.8	3306.8	Port Arthur, Jefferson Co., Texas	O3		
SANC	-37.1	3276.3	San Antonio, Bexar Co., Texas	O3	NO	NO2
SAWC	-45.1	3277.4	San Antonio, Bexar Co., Texas	O3		
T04A	62.9	3078.2	Corpus Christi, Nueces Co., Texas	O3		
T21A	51.3	3087.0	Corpus Christi, Nueces Co., Texas	O3		
TLMC	312.4	3252.8	Texas City, Galveston Co., Texas	O3		
TN01	1063.1	4024.5	Nashville-Davidson, Davidson Co., Tennessee	O3	NO	NO2
TN02	1074.4	4019.3	Nashville-Davidson, Davidson Co., Tennessee	O3		
TN03	822.5	3962.9	Not in a city, Haywood Co., Tennessee	O3		
TN08	1079.9	3972.4	Not in a city, Rutherford Co., Tennessee	O3		
TN09	771.4	3901.0	Memphis, Shelby Co., Tennessee	O3		
TN10	788.4	3918.8	Not in a city, Shelby Co., Tennessee	O3		
TN11	1070.4	4034.9	Not in a city, Sumner Co., Tennessee	O3		
TN12	1027.6	3992.2	Fairview, Williamson Co., Tennessee	O3	NO	

Site Code	UTM Zone 15 (km)		Location	Data Availability		
	Easting	Northing				
TN13	1105.2	4010.9	Lebanon, Wilson Co., Tennessee	O3		
TN14	1133.9	3959.3	Not in a city, Coffee Co., Tennessee	O3	NO	
TN15	1060.2	4019.0	Nashville-Davidson, Davidson Co., Tennessee			
TN16	1068.5	4020.9	Nashville-Davidson, Davidson Co., Tennessee			
TN17	1061.8	4021.0	Nashville-Davidson, Davidson Co., Tennessee			
TN18	1007.1	4025.3	Not in a city, Dickson Co., Tennessee	O3	NO	NO2
TN19	835.5	4003.4	Not in a city, Dyer Co., Tennessee	O3		
TN20	1029.3	3907.9	Not in a city, Giles Co., Tennessee	O3		
TN21	1216.4	3909.2	Chattanooga, Hamilton Co., Tennessee	O3		
TN22	1214.2	3916.3	Not in a city, Hamilton Co., Tennessee	O3		
TN23	954.2	4001.2	Not in a city, Humphreys Co., Tennessee	O3		
TN24	1017.1	4068.4	Clarksville, Montgomery Co., Tennessee		NO	NO2
TN25	769.8	3893.6	Memphis, Shelby Co., Tennessee		NO	
TN26	771.7	3884.8	Memphis, Shelby Co., Tennessee			
TN27	774.9	3890.5	Memphis, Shelby Co., Tennessee			
TN28	771.5	3886.4	Memphis, Shelby Co., Tennessee			
TN29	1077.6	4053.3	Not in a city, Sumner Co., Tennessee	O3		
TN30	1054.0	3977.8	Not in a city, Williamson Co., Tennessee	O3		
TN31	1292.7	4015.0	Not in a city, Anderson Co., Tennessee	O3		
TN32	1304.4	3982.1	Not in a city, Blount Co., Tennessee	O3		
TN33	1250.7	3934.8	Not in a city, Bradley Co., Tennessee		NO	
TN34	1287.1	3995.3	Not in a city, Loudon Co., Tennessee	O3	NO	NO2
TN35	1286.9	3989.2	Loudon, Loudon Co., Tennessee		NO	
TN36	1251.0	3936.6	Not in a city, Mc Minn Co., Tennessee		NO	
TN37	1320.0	4017.4	Knoxville, Knox Co., Tennessee			
TN38	1323.6	4024.5	Knoxville, Knox Co., Tennessee			
TN39	1321.6	3980.2	Not in a city, Blount Co., Tennessee			
TX41	-32.5	3267.2	San Antonio, Bexar Co., Texas			
TX42	50.0	2870.8	Brownsville, Cameron Co., Texas	O3		
TX43	144.8	3633.5	Dallas, Dallas Co., Texas			
TX44	136.9	3621.7	Dallas, Dallas Co., Texas	O3	NO	NO2
TX45	258.0	3290.4	Houston, Harris Co., Texas	O3		
TX46	285.4	3295.1	Houston, Harris Co., Texas	O3	NO	NO2
TX47	273.6	3582.1	Tyler, Smith Co., Texas	O3		

Site Code	UTM Zone 15 (km)		Location	Data Availability		
	Easting	Northing				
TX48	94.8	3632.4	Fort Worth, Tarrant Co., Texas		NO	NO2
VCTC	109.3	3196.2	Victoria, Victoria Co., Texas	O3		
WORA	427.0	3328.2	West Orange, Orange Co., Texas	O3	NO	NO2

O3 = ozone

NO = nitric oxide

NO2 = nitrogen dioxide

Continuous Air Monitoring Systems

Continuous Air Monitoring Systems

The TNRCC operates the Continuous Air Monitoring Systems (CAMS) network to collect continuous measurements of surface meteorology and air quality in Texas. The first table below lists the seven CAMS stations located in the D–FW core domain, along with the availability of meteorological data at each station during the two modeled episodes. The CAMS meteorological data consist of hourly vector resultant horizontal wind speed and direction, and hourly averaged temperatures. Data from CAMS sites C05N and HINN were not included in the 1996 episode modeling due to apparent erratic behavior of the data.

Site ID	Station Location	Lat (°N)	Lon (°W)	UTM (km)		Data Availability	
				East	North	June 18-22, 1995	June 30-July 4, 1996
C05N	North CO5	32.91	96.80	144.5	3647.5	W,T	
C16N	Downtown C16	32.75	97.32	95.1	3631.6	W,T	W,T
C17N	Keller C17	32.91	97.27	100.6	3649.2	W,T	W,T
COLN	Collin Co	33.12	96.78	147.3	3670.8	W,T	W,T
DENN	Denton Co	33.12	96.85	140.7	3671.0	W,T	W,T
HINN	Hinton	32.82	96.85	139.5	3637.7	W,T	
REDN	Redbird Airport	32.67	96.87	137.0	3621.1		W,T

W = wind data T = temperature data

The next table lists the seven CAMS stations located in the D–FW core domain, along with the availability of air quality data at each station during the modeled episodes. The CAMS air quality data consist of hourly averaged measurements of various pollutants.

Site ID	Station Location	Lat (°N)	Lon (°W)	UTM (km)		Data Availability	
				East	North	June 18-22, 1995	June 30-July 4, 1996
C05N	North CO5	32.91	96.80	144.5	3647.5	O_3,NO_x	O_3,NO_x
C16N	Downtown C16	32.75	97.32	95.1	3631.6	CO,NO_x	CO
C17N	Keller C17	32.91	97.27	100.6	3649.2	O_3	O_3
COLN	Collin Co	33.12	96.78	147.3	3670.8	O_3	O_3
DENN	Denton Co	33.12	96.85	140.7	3671.0	O_3	O_3,NO_x,VOC
HINN	Hinton	32.82	96.85	139.5	3637.7	O_3,CO,SO_2,NO_x	O_3,CO,SO_2,NO_x,VOC
REDN	Redbird Airport	32.67	96.87	137.0	3621.1	O_3,NO_x	O_3,NO_x

O_3 = ozone; CO = carbon monoxide; SO_2 = sulfur dioxide; NO_x = nitrogen oxides; VOC = volatile organic compounds

National Weather Service
Surface Meteorological Stations

National Weather Service Surface Meteorological Stations

A total of 57 National Weather Service (NWS) land-base surface meteorological observation stations were available in and near the D–FW core modeling domain. The table below shows the locations of these 57 surface meteorological observation stations. NWS surface meteorological data typically consist of once per hour instantaneous horizontal wind speed and direction, temperature, relative humidity, air pressure, visibility measurements, and sky and weather conditions. Specific humidity values required by meteorological models were calculated based on temperature, relative humidity, and air pressure data.

NWS Surface Meteorological Stations

Site ID	Station Location	Lat (°N)	Lon (°W)	UTM (km)		Data Availability	
				East	North	June 18-23, 1995	June 30-July 4, 1996
7R5N	Cameron, LA	29.78	93.30	471.0	3294.6	W,T,H,P	W,T,H,P
ABIN	Abilene Regional Airport, TX	32.25	99.41	-129.0	3606.2	W,T,H,P	W,T,H,P
ACTN	Waco-Madison Cooper Field, TX	31.62	97.22	99.9	3505.5	W,T,H,P	W,T,H,P
ADSN	Dallas / Addison Airport	32.58	96.50	141.9	3653.2	W,T	W,T
AFWN	Fort Worth Alliance Airport, TX	32.59	97.19	97.1	3657.1	W,T	W,T
AMAN	Amarillo International Airport, TX	35.14	101.4	-292.7	3933.2	W,T,H,P	W,T,H,P
ALIN	Alice International Airport, TX	27.73	98.03	3.6	3077.6	W,T,H,P	W,T,H,P
AUSN	Austin Mueller Mun. Airport, TX	30.28	97.70	47.7	3359.3	W,T,H,P	W,T,H,P
BPTN	Port Arthur/WSO, TX	29.97	94.02	401.9	3315.4	W,T,H,P	W,T,H,P
BRON	Brownsville Airport , TX	25.54	97.26	56.0	2872.0	W,T,H,P	W,T,H,P
CDSN	Childress Municipal Airport	34.26	100.2	-169.6	3833.8	W,T	W,T
COTN	Cotulla_La Salle Co Airport	28.27	99.13	-108.7	3162.6		W,T
CLLN	College Station, TX	30.58	96.37	177.1	3388.0	W,T,H,P	W,T,H,P
CRPN	Corpus Christi Intl. Airport, TX	27.77	97.50	56.3	3079.3	W,T,H,P	W,T,H,P
DALN	Dallas Love Field, TX	32.51	96.51	139.6	3641.0	W,T,H,P	W,T,H,P
DHTN	Dalhart Municipal Airport	36.01	102.3	-360.9	4037.3	W,T	W,T
DLFN	Laughlin Air Force Base Airfield	29.22	100.5	-256.4	3273.0	W,T,H,P	W,T,H,P
DRTN	Del Rio Inter. Airport	29.22	100.6	-269.0	3273.8	W,T,H,P	W,T,H,P
DWHN	David Wayne Hooks Airport, TX	30.07	95.55	254.2	3328.8	W,T	W,T
EFDN	Ellington Air Force Base, TX	29.62	95.17	290.2	3278.1	W,T,H,P	W,T,H,P

NWS Surface Meteorological Stations

Site ID	Station Location	Lat (°N)	Lon (°W)	UTM (km)		Data Availability	
				East	North	June 18-23, 1995	June 30-July 4, 1996
ESFN	Alexandria/Esler, LA	31.40	92.30	566.5	3474.0	W,T,H,P	W,T,H,P
FTWN	Meacham International Airport	32.49	97.22	91.7	3638.5	W,T,H,P	W,T,H,P
GGGN	Longview, Gregg County Airport	32.21	94.39	344.7	3580.2	W,T	W,T
GLSN	Galveston/Scholes Field, TX	29.27	94.87	318.6	3238.8	W,T,H,P	W,T,H,P
GRKN*	Robert Gray AAF, TX	31.07	97.83	38.6	3446.9	W	W
GVTN	Greenville, TX	33.04	96.04	165.9	3723.4	W	W
HDON	Hondo Municipal Airport	29.22	99.10	-98.5	3263.5	W,T	W,T
HLRN	FT Hood AAF, Killeen, TX	31.15	97.72	50.1	3455.6	W,T,H,P	W,T,H,P
HOUN	Houston Hobby Airport, TX	29.65	95.28	279.0	3282.0	W,T,H,P	W,T,H,P
HRLN	Harlingen International Airport, TX	26.22	97.67	33.5	2908.0	W,T,H,P	W,T,H,P
IAHN	Houston International Airport, TX	29.97	95.35	273.2	3317.3	W,T,H,P	W,T,H,P
ILEN*	Killeen Municipal Airport, TX	31.08	97.68	53.1	3448.1	W	W
LBBN	Lubbock International Airport	33.39	101.5	-318.2	3758.2	W,T,H,P	W,T,H,P
LCHN	Lake Charles Municipal Airport,	30.12	93.22	479.1	3331.6	W,T,H,P	W,T,H,P
LFKN	Lufkin, Angelina County, TX	31.23	94.75	333.3	3456.6	W,T,H,P	W,T,H,P
MAFN	Midland International Airport, TX	31.57	102.1	-372.1	3572.0	W,T,H,P	W,T,H,P
MFEN+	McAllen Miller Intl. Airport, TX	26.18	98.23	-23.3	2906.4	W,T,H,P	W,T,H,P
MWLN	Mineral Wells Airport, TX	32.47	98.04	-24.8	3640.6	W,T,H,P	W,T,H,P
NBEN	Dallas U.S. Naval Air Station	32.44	96.58	128.8	3628.1	W,T,H,P	W,T,H,P
NFWN	Fort Worth Naval Air Station, TX	32.46	97.27	83.0	3633.3	W,T,H,P	W,T,H,P
NGPN	Corpus Christi NAAS, TX	27.68	97.28	77.4	3069.3	W,T,H,P	W,T,H,P
NQIN	Kingsville NAS, TX	27.50	97.82	23.9	3050.9	W,T,H,P	W,T,H,P
OCHN	Nacogdoches, TX	31.35	94.43	337.7	3495.0		W,T
POEN	Fort Polk (Army), LA	31.05	93.00	500.0	3435.0	W,T,H,P	W,T,H,P
PSXN	Palacios (FAA) Airport, TX	28.72	96.25	182.5	3180.8	W,T,H,P	W,T,H,P
RBDN	Dallas / Redbird Airport, TX	32.41	96.52	138.0	3622.2	W,T	W,T

NWS Surface Meteorological Stations							
Site ID	Station Location	Lat (°N)	Lon (°W)	UTM (km)		Data Availability	
				East	North	June 18-23, 1995	June 30-July 4, 1996
REEN	Reese Air Force Base	33.36	102.0	-383.0	3758.4	W,T,H,P	W,T,H,P
RNDN+	Randolph Air Force Base, TX	29.53	98.28	-12.3	3278.5	W,T,H,P	W,T,H,P
RPEN*	Sabine Pass, TX	29.73	93.87	408.1	3285.7	W	W
SATN+	San Antonio Intl. Airport, TX	29.53	98.47	-30.2	3279.4	W,T,H,P	W,T,H,P
SJTN	Mathis Field / San Angelo, TX	31.22	100.3	-214.3	3493.7	W,T,H,P	W,T,H,P
SKFN+	Kelly Air Force Base, TX	29.38	98.58	-42.3	3263.2	W,T,H,P	W,T,H,P
SPSN	Sheppard Air Force Base	33.59	98.30	-8.3	3773.4	W,T,H,P	W,T,H,P
SSFN	Stinson Municipal Airport	29.20	98.28	-30.5	3256.8	W,T	W,T
TPLN	Temple/Miller (AWOS), TX	31.15	97.42	78.8	3454.5	H,P	W,T,H,P
TYRN	Tyler Pounds Field	32.21	95.24	274.1	3581.6		W,T
VCTN	Victoria Regional Airport, TX	28.85	96.92	117.8	3197.5	W,T,H,P	W,T,H,P

W = wind data T = temperature data H = humidity data P = pressure data

National Weather Service
Upper Air Meteorological Monitoring Stations

National Weather Service Upper Air Meteorological Monitoring Stations

The National Weather Service operates an upper air meteorological network to collect temperature, humidity and horizontal wind data across the U.S. at various elevations from near the surface to as high as 25 kilometers. The table below lists the 18 upper air stations located in the regional domain that were used in the meteorological modeling for both episodes. The upper air meteorological data consist of twice daily measurements at 6:00 A.M. (CST) and 6:00 P.M. (CST) every day, seven days a week.

National Weather Service Upper Air Meteorological Monitoring Stations

Site ID	Station Location	Lat (°N)	Lon (°W)	UTM (km)		Data Availability	
				East	North	June 18-23, 1995	June 30-July 4, 1996
BRON	Brownsville, TX	25.54	97.26	55.7	2872.0	W,T,H	W,T,H
CRPN	Corpus Christi, TX	27.46	97.30	56.3	3079.3	W,T,H	W,T,H
DELN	Del Rio, TX	29.22	100.55	-269.6	3274.6	W,T,H	W,T,H
LCHN	Lake Charles, TX	30.07	93.13	479.1	3331.6	W,T,H	W,T,H
NORN	New Orleans, LA	29.59	90.15	806.1	3359.8	W,T,H	W,T,H
TALN	Tallahassee, FL	30.24	84.21	1331.0	3392.9	W,T,H	W,T,H
MIDN	Midland, TX	27.30	97.49	-369.5	3571.8	W,T,H	W,T,H
JACN	Jackson, MS	32.19	90.05	774.6	3579.1	W,T,H	W,T,H
SHVN	Shreveport, LA	32.28	93.49	423.3	3592.3	W,T,H	W,T,H
FTWN	Fort Worth, TX	32.49	97.22	97.6	3640.9	W,T,H	W,T,H
MOTN	Mobile, AL	30.41	88.15	1081.3	3687.5	W,T,H	W,T,H
ATLN	Atlanta, GA	33.39	84.25	1285.8	3723.4	W,T,H	W,T,H
LITN	Little Rock, AK	34.44	92.14	567.1	3854.6	W,T,H	W,T,H
AMAN	Amarillo, TX	35.14	101.42	-292.7	3933.6	W,T,H	W,T,H
OKCN	Oklahoma City, OK	35.24	97.36	93.0	3909.3	W,T,H	W,T,H
NSHN	Nashville, TN	36.08	86.41	1068.8	4015.2	W,T,H	W,T,H
SPRN	Springfield, MO	37.14	93.23	466.0	4120.6	W,T,H	W,T,H
WICH	Wichita, KS	37.39	97.26	-114.0	4202.6	W,T,H	W,T,H

W = wind data T = temperature data H = Humidity data

Supplementary Data

Supplementary Data

For the 1996 episode the TNRCC obtained upper air horizontal wind data not normally available from the NWS. These supplementary wind data were obtained from the MIT Lincoln Laboratory located at the DFW Airport. The wind data sources are dual Doppler radars, which provide accurate and dense horizontal wind measurements in slices of the atmosphere with sufficient reflectors, such as dust and small bugs. Because one Doppler radar is limited to measuring only the wind component either toward or away from the radar, at least a second Doppler radar is always needed to account for the wind component normal to the radar beam. The table below shows the locations of the nine sites where horizontal wind measurements were recorded by the dual Doppler radar system. The MIT data included the horizontal wind measurement at 17:00 CST on July 2, 1996 and at 7:30, 9:00, 11:00 and 13:00 CST on July 3, 1996.

MIT Vertical Wind Profiler Sites

Site ID	Station Location from DFW Airport	Lat (°N)	Lon (°W)	UTM (km)		Vertical Slice (m)	Data Available
				East	North		July 2-3, 1996
UKWN	65 km West Northwest	33.53	97.82	52.1	3720.9	1525 - 4570	W
R17N	15 km North	33.06	97.02	124.5	3664.9	610 - 2135	W
BYPN	78 km East Northeast	33.54	96.23	199.7	3715.4	1525 - 4570	W
WDFW	46 km West	32.87	97.52	77.0	3645.8	1220 - 5790	W
R13N	15 km Northwest	33.03	97.18	109.5	3662.2	610 - 2135	W
R31N	15 km Southeast	32.81	96.89	135.7	3636.7	610 - 2135	W
JENN	78 km West Southwest	32.16	97.88	39.8	3568.4	1525 - 4570	W
R36N	15 km South	32.75	97.05	120.5	3630.6	610 - 2135	W
CQYN	82 km East Southeast	32.19	96.22	196.6	3565.4	1525 - 4570	W

W = wind data